

**PROJECT MANUAL
FOR
POTABLE WATER MAIN
IMPROVEMENTS
PHASE 1**

**SYLVANIA BOULEVARD
FROM: SW 9TH STREET To: SW 57TH AVENUE
AND
SW 58TH AVENUE
FROM SW9TH STREET TO SW 15 STREET
AND
SW 9 TERRACE
FROM SYLVANIA BOULEVARD TO SW 58 AVENUE**

**CITY OF WEST MIAMI
City's BID No.: 2020-06122020**



S

CITY COMMISSION

Mayor:	Rhonda A. Rodriguez
Vice Mayor:	Luciano L. Suarez
Commissioner:	Juan M. Blanes
Commissioner:	Candida Blanca
Commissioner:	Erik Diaz-Padron
City Manager:	Yolanda Aguilar
City Clerk:	Annery Gonzalez
Public Works and Engineering Director:	Juan Pena
City Engineer:	T.Y. Lin International

June 2020

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CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS
PHASE 1**

**SYLVANIA BOULEVARD
FROM: SW 9TH STREET To: SW 57TH AVENUE
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SW 58TH AVENUE
FROM SW9TH STREET TO SW 15 STREET
AND
SW 9 TERRACE
FROM SYLVANIA BOULEVARD TO SW 58 AVENUE**

2020-06122020

UPFRONT DOCUMENTS



**NOTICE OF BID INVITATION
CITY OF WEST MIAMI BID No. 2020-06122020**

The City of West Miami will receive sealed proposals until **3:00pm, Local Time, Monday, June 12, 2020** in the Office of the City Clerk, 901 SW 62 Ave, West Miami, Florida 33144, for the following project:

**POTABLE WATER MAIN IMPROVEMENTS PHASE 1
SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE AND
SW 58TH AVENUE FROM SW 9TH STREET TO SW 15 STREET AND
SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE
CITY OF WEST MIAMI, FLORIDA**

The project consists of the installation of approximately 5,193 linear feet of 8" DIP Water Main, 7,711 linear feet of 4" HDPE pipe with all necessary appurtenances new 4" concrete sidewalk, roadway restoration, pavement milling, and resurfacing.

Bids will be opened publicly at or shortly after 3:05 p.m. on **Friday, June 12, 2020** in the City Commission Chamber, 901 SW 62 Ave, West Miami, Florida.

Bid documents may be obtained on or after **Tuesday, May 26th, 2020** from the **office of the City Engineer**, 201 Alhambra Cir., Coral Gables, FL 33134. A \$50.00 non-refundable deposit for plans and specifications is required.

The bid will be awarded to the lowest responsive/responsible bidder, but the City of West Miami reserves the right to reject any and all bids, to waive any information in any bid, and to increase or decrease the quantities shown in the Bid Form, if the City Manager deems it to be in the best interest of the City of West Miami.

Bids which contain irregularities of any kind may be rejected as informal.

A **non - mandatory pre-bid** conference will be held at the City of West Miami, City Hall, 901 SW 62 Ave, West Miami, Florida, at **11:00am, local time, Friday, May 29, 2020**.

END OF SECTION

SECTION 00200

INSTRUCTIONS TO BIDDERS

1. BID FORM

All bids must be submitted in conformity with the requirements of the Project Manual and on the Bid Form included herewith (Section 00300). Also include the Contractor's Questionnaire (Section 00350, with copies of applicable licenses and certifications, latest financial statement, and a list of similar projects completed), and Bid Bond (Section 00410). The **entire** Project Manual and attachments shall be placed in double sealed envelopes, marked on the outside with the Contractor's name, address, phone number and Project Name, with the words 'SEALED - DO NOT OPEN UNTIL OFFICIAL BID OPENING DATE' clearly marked on the outside. Bids, which contain irregularities of any kind, or incomplete bids, may be rejected as informal.

2. BID GUARANTY

The bid must be accompanied by a Bid Guaranty which shall be for an amount equal to five percent (5%) of the proposal, and at the option of the bidder may be a certified check, cashier's check, or bid bond. Cash deposits will not be accepted. The Guaranty shall be forfeited if the successful bidder fails to enter into a contract in the form shown within ten (10) working days of the Notice of Award of the Contract. The checks and bid bonds of all except the three (3) lowest bidders will be returned immediately after the opening of bids, and the remaining checks or Bid Bonds will be returned within ten (10) working days after the signing of the contract by the successful bidder.

3. TIME FOR RECEIVING BIDS

Bids received prior to the time of opening shall be securely kept, unopened. All bids shall be delivered to the City Clerk's office, City of West Miami, 901 SW 62 Ave, West Miami, Florida 33144. No bids will be received after 3:00 pm on date of bid opening.

4. QUESTIONS' DEADLINE

Deadline for submitting questions is Friday, June 5 by 5:00 pm. All questions shall be submitted in writing by mail or fax to:

**City of West Miami
Public Works and Engineering Department
901 SW 62 Ave
West Miami, Florida 33144
Attention: Juan Pena, Director of Public Works
Fax: 305-266-6574**

5. WITHDRAWAL OF BIDS

Bids may not be withdrawn for a period of sixty (60) days from the opening thereof.

6. BIDDERS PRESENT

At or shortly after 3:05 pm, on Friday, June 12, 2020 the bids will be opened and their contents will be made public for the information of the bidders and others properly interested, who may be present either in person or by representative.

7. AWARD OF CONTRACT

The contract will be awarded not later than **Sixty (60) days from the bid opening date** to the lowest responsible bidder, complying with the conditions of the Notice of Bid Invitation, provided his bid is reasonable, and it is in the interest of the City to accept it. The City however, reserves the right to reject any or all bids.

8. QUALIFICATIONS OF BIDDERS

In the event portions of the work called for in the specifications are to be installed, constructed, or assembled by a sub-contractor or sub-contractors, the bidder must fill in the information requested in the Proposal.

9. WARRANTY

Neither the final payment nor any provision of the Contract Documents, nor the use of the equipment by the City shall constitute an acceptance of items found not to comply with stipulations of the Contract Documents. The Contractor shall furnish suitable warranty and guarantee equal to that generally furnished to purchasers of the equipment described herein. Please refer to paragraph 23 of the Special Provisions for additional express warranties by Contractor.

10. INSURANCE

The bidder to whom a Contract is awarded shall take out and maintain Worker's Compensation Insurance to cover all his/her employees as well as maintain public liability and property damage insurance during the term of this contract and until the last day of furnishing work, labor, services and materials for the project described herein. Refer to Certificate of Insurance (Section 00650), General Conditions (Section 00700) and Supplementary Conditions (Section 00800). The City of West Miami, and T.Y. Lin International shall be named as additional insured in all policies required under this contract. Proof of insurance shall be provided at the time of Contract execution.

11. ELIGIBLE BIDDERS

The City reserves the right, before awarding a Contract, to require a Bidder to submit evidence of his/her qualifications, as may be deemed necessary, and consider any evidence available to it of the financial, technical, and other qualifications and abilities of the bidder. The Contract will be awarded only to a Bidder fully qualified to undertake the proposed work. All material or services must meet all applicable Federal, State and Local specifications and permit requirements.

12. SAFETY PRECAUTIONS

The Contractor shall maintain suitable and sufficient guards and barriers and, at night, suitable and sufficient safety standards required by Municipal, County, State and Federal ordinances and laws.

13. PRE-BID INSPECTION

The Bidder, before submitting a Proposal, is required to visit and examine the site of the work and satisfy himself/herself about the character of the work, any possible difficulties, and all

conditions and circumstances which do and may affect the work.

14. PERFORMANCE AND PAYMENT BONDS

Within ten (10) working days of the award of the Contract, the successful bidder shall furnish a Performance and a Payment Bond in the form shown on Sections 00610 and 00620 guaranteeing the faithful performance of his contract and for the payment of all persons performing labor or furnishing materials in connection therewith. Each bond shall be in the amount of one hundred percent (100%) of the Contract price.

15. PERMITS

When necessary the successful bidder will be required to obtain the necessary permits from required agencies and through the City of West Miami Building Department, located at 901 SW 62 Ave, West Miami, Florida 33144. The City of West Miami's permit fee will be waived by the City of West Miami. The Contractor is responsible for all necessary end of construction clearances, certifications or release fees required by local agencies, if applicable.

16. CONTRACTOR'S QUESTIONNAIRE

Section 00350 contains the form entitled "Contractor's Questionnaire." This form must be completed and submitted as an integral part of the bid package.

17. QUALIFICATION OF SURETIES

- A. General: The following requirements shall be met by all surety companies furnishing bid, performance payment or other type of bonds:
- B. Qualifications: As to companies being rated acceptable:
 - 1. The Surety shall be rated as "A" or better as to General Policyholders Rating and Class V or better as to Financial Category by Best's Key Rating Guide, published by Alfred M. Best Company, Inc., of 75 Fulton Street, New York, New York 10038.
 - 2. The Surety shall be listed on the U.S. Department of the Treasury, Fiscal Service, Bureau of Government Financial Operations, Circular 570, (1982 Revision) entitled, "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies."
 - 3. All Surety Companies are subject to approval and may be rejected by the Owner without cause, in the same manner that bids may be rejected.
- C. Limitations: Bonding Limits or Bonding Capacity refer to the limit or amount of Bond acceptable on any one risk.
 - 1. The bonding limit of the Surety shall not exceed ten percent (10%) of the policyholder surplus (capital and surplus) as listed by the aforementioned Best's Key Rating Guide, on anyone risk (penalty or amount of any one bond).

D. Requirements:

1. Policy Holders Surplus is required to be five (5) times the amount of any one (1) bond.
2. The Agent countersigning the bond shall be a resident of Miami-Dade County.

18. DEFINITIONS

Terms used in the "Instructions to Bidders" shall be as defined in the General Conditions.

END OF SECTION

SECTION 00300

PROPOSAL

**POTABLE WATER MAIN IMPROVEMENTS PHASE 1
SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE AND
SW 58TH AVENUE FROM SW9TH STREET TO SW 15 STREET AND
SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE
CITY OF WEST MIAMI, FLORIDA**

City Clerk's Office
City Hall
901 SW 62 Ave
West Miami, Florida 33144

To Whom It May Concern:

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 the Proposal of the Contract to which the work pertains; that this Proposal is made without connection or arrangement with any other person, company, or parties making a bid or proposal and that the Proposal is in all respects fair and made in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the work and that from personal knowledge and experience, or that he has made sufficient observations of the conditions of the proposed Project Site to satisfy himself that such site is a correct and suitable one for this work and he assumes full responsibility therefore, that he has examined the Drawings and Specifications for the work and from his own experience or from professional advice that the Drawings, including bid item quantities, and Specifications are sufficient for the work to be done and he has examined the other Contractual Documents relating thereto, including the Notice of Bid Invitation, Instructions to Bidders, Proposal, Contract, General and Special Conditions, Technical Specifications, Drawings and has read all addenda prior to the receipt of bids, and that he has satisfied himself fully, relative to all matters and conditions with respect to the work to which this Proposal pertains.

The Bidder proposes and agrees, if this Proposal is accepted, to contract with the City of West Miami (Owner), in the form of contract specified, to furnish all necessary materials, all equipment, all necessary machinery, tools, apparatus, means of transportation, and labor necessary to complete the work specified in the Proposal and the Contract, and called for by the permitted Drawings and Specifications and in the manner specified.

The Bidder further proposes and agrees to comply in all respects with the time limits for commencement and completion of the work as stated in the Contract Form.

The Bidder further agrees that the deductions for liquidated damages, as stated in the Contract Form, constitute fixed, agreed, and liquidated damages to reimburse the Owner for additional costs to the Owner resulting from the work not being completed within the time limit stated in the Contract Form.

Payment and Performance Bonds each in the amount of one-hundred percent (100%) of the Contract price shall be submitted within ten (10) working days after written notice being given by the Owner of the award of the Contract, and the undersigned agrees that in case of failure on his part to execute the said Contract and Performance and Payment Bonds within the ten (10) working days after the award of the Contract, the cashier's check or Bid Bond accompanying his bid and the money

00300-2

payable thereon shall be paid to the Owner as liquidation of damages sustained by the Owner; otherwise, the check accompanying the Proposal shall be returned to the undersigned after the Contract is signed and the Performance and Payment Bonds are filed.

The undersigned agrees to accept in full compensation therefore the total of the unit prices for the items named in the following schedule, based on the plan quantities contained within this bid form. Furthermore, the undersigned has checked these quantities and agrees that bid quantities are correct and adequate to complete the job in its entirety, as described in the contract document.

Bidders Certificate of Competency No. _____

Bidders Occupational License No. _____

Acknowledgment is hereby made of the following Addenda received since issuance of the Project Manual:

Addendum No. _____ Dated: _____ Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____ Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____ Addendum No. _____ Dated: _____

Attached hereto is a cashier's check on the _____
_____ Bank of _____
_____ or Bid Bond for the sum of _____
_____ Dollars

(\$ _____), made payable to the City of West Miami, Florida.

(Name of Bidder) (Affix Seal) L.S.

Signature of Officer L.S.

(Title of Officer) L.S.

Address: _____

City: _____ State: _____

The full names and residences of persons and firms interested in the foregoing bid, as principals, are as follows:



Name of the executive who will give personal attention to the work:

Attach list of subcontractors (Very Important):

POTABLE WATER MAIN IMPROVEMENTS -- PHASE 1

Bid #2020-06222020

BID FORM

Bid prices stated in the proposal shall include all costs and expenses for taxes, labor, equipment, materials, mobilization, and maintenance of traffic, contractor's overhead and profit. The quantities for payment under this Contract will be determined by actual measurement of the completed items in place, ready for service and accepted by the Owner. Contract prices for the various work items are intended to establish a total price for completing the project in its entirety. Payment for any item not listed in the Bid Form but shown in the plans shall be included in the proposal. All work and incidental costs shall be included for payment under the several scheduled items of the overall Contract; no separate or additional payment will be made.

Refer to section 01025, Measurement and Payment, for Basis of Payment of the Following Pay Items.

Pay Item	Pay Item Description	Unit	Plan Qty	Unit Cost	Final Qty
1	Mobilization	LS	1		
2	Maintenance of Traffic	LS	1		
3	Sod Restoration	SY	5000		
4	8" Water Main Pipe, incl. fittings, restraints & trench restoration (12" Compacted Subgrade (98% of AASHTO T-180))	LF	5193		
5	8" Vertical Offsets (est. 1 every 500 ft.)	EA	10		
6	8" Gate Valves (average one every 500')	EA	15		
7	Blow-off Assembly (including plug and flushing valve)	EA	2		
8	Air Release Valve Assembly (est. 1 every 2000 ft.)	EA	4		
9	Fire Hydrant Assembly including valve and base	EA	10		
10	4" Water Main Pipe, incl. fittings, restraints & trench restoration	LF	7711		
11	Blow-off Assembly (including plug and flushing valve)	EA	3		
12	Connections to Exist. Water Main (8"WM)	EA	3		
13	Connections to Exist. Water Main (3"WM)	EA	10		
15	Trench Base, 8" Limerock Base (LBR100)	SY	1731		
16	Asphaltic Concrete (Type S3)	T	2282		
17	Milling	SY	35719		
18	Pavement Marking Complete (5% of overlay cost)	LS	1		
19	Sidewalk Restoration Contingency	LS	1		
20	Driveway Restoration Contingency	LS	1		
21	1" Service Line (to be connected to existing water meters)	EA	228		
22	Owner's Contingency	EA	1		
	TOTAL				

GRAND TOTAL (WRITTEN): _____ DOLLARS

Bidder: _____ Signature of Bidder: _____

By: _____ Date: _____

Title: _____

Telephone: _____

Fax: _____

SECTION 00350

CONTRACTOR'S QUESTIONNAIRE

Submitted to: The Mayor and City Commission of the City of West Miami, Florida:

By _____

Principal Office _____

How many years has your organization been in business as a General Contractor under your present business name? _____

Does your organization have current occupational licenses entitling it to do the work contemplated in this Contract? _____

State of Florida Occupational License (State type and number):

Federal I.D. No: _____

Miami-Dade County Certificate of Competency (State type and number):

City of West Miami Occupational License (State type and number):

Please include copies of above licenses and certifications with proposal.

How many years experience in similar work has your organization had?

- (A) As a General Contractor _____
- (B) As a Sub-Contractor _____
- (C) What contracts has your organization completed? State below:

Contract Amount	Class of Work	When Completed	Name & Address of Owner

Are you a Certified Minority Contractor with Miami-Dade County?

Have you ever failed to complete any work awarded to you? _____

If so, where and why? _____

Has any officer or partner of your organization ever failed to complete a contract handled in his own name? _____

If so, state name of individual, name of owner, and reason thereof:

In what other lines of business are you financially interested or engaged?

Give references as to experience, ability and financial standing.

What equipment do you own that is available for the proposed work and where is it located?

Financial Statement: _____

What Bank or Banks have you arranged to do business with during the course of the Contract should it be awarded to you? _____

I hereby certify that the above answers are true and correct.

Name of Bidder: _____ (Affix Seal)

Signature of Officer: _____

Title of Officer: _____

END OF SECTION

SECTION 00410

BID BOND

STATE OF FLORIDA)
COUNTY OF)^{SS}

KNOW ALL MEN BY THESE PRESENTS, that _____
_____ as Principal, and
_____, as Surety, a
Corporation chartered and existing under the laws of the State of _____, with its principal
offices in the City of _____, and authorized to do business in the State of Florida are
held and firmly bound unto the Owner, _____ in the penal sum
of _____
_____ Dollars (\$ _____) lawful money of
the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs,
executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted
the accompanying bid, dated _____, 2020, for:

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CITY OF WEST MIAMI, FLORIDA**

NOW, THEREFORE:

- A. If the principal shall not withdraw said bid within sixty (60) days after date of opening of the same, and shall within ten (10) working days after the prescribed forms are presented to him for signature, enter into a written contract with the Owner in accordance with the bid as accepted, and give bonds with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract, then the above obligations shall be void and of no effect, otherwise to remain in full force and effect.
- B. In the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give such bonds within the time specified, if the principal shall pay the Owner the difference between the amount specified in said bid and the

amount for which the Owner may procure the required work and supplies, if the latter amount be in excess of the former, then the above obligations shall be void and of no effect, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their several seals, this _____ day of _____, A.D., 2020, 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.

WITNESSES: (If Sole Ownership or Partnership, two (2) witnesses required).
(If Corporation, Secretary Only will attest and affix seal).

WITNESSES:

PRINCIPAL:

Name of Firm

Signature of Authorized (Affix Seal)

Title

Business Address

City, State & Zip Code

WITNESSES:

Corporate Surety

SURETY:

Attorney-in-Fact (Affix Seal)

Business Address

City, State & Zip Code

Name of Local Insurance Agency

CERTIFICATES AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as Principal in the within bond; that _____ who signed said bond on behalf of the principal, was then _____ of said corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

Secretary

(Corporate Seal)

STATE OF FLORIDA)
COUNTY OF _____)^{SS}

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared _____, to be 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 Owner, the _____.

Sworn and Subscribed to before me this _____ day of _____, 2020__, A.D.

(Attach Power of Attorney to original Bid Bond)

Notary Public State of Florida at Large
My Commission Expires:

END OF SECTION

SECTION
00500
CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 2020, A.D., by and between the **City of West Miami**, party of the first part (hereinafter sometimes called the "Owner"), and _____, party of the second part (hereinafter sometimes called the "Contractor").

WITNESSETH: That the parties hereto, for the consideration hereinafter set forth, mutually agree as follows:

1.1 SCOPE OF THE WORK

- A. The Contractor shall furnish all labor, materials, equipment, machinery, tools, apparatus, and transportation and perform all of the work shown on the Permitted Drawings and described in the Project Manual entitled:

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CITY OF WEST MIAMI, FLORIDA

as prepared by T.Y. LIN INTERNATIONAL acting as, and in the Contract Documents entitled the Owner's Engineer, and shall do everything required by this Contract and the other Contract Documents.

1.02 THE CONTRACT SUM

- A. The Owner shall pay to the Contractor for the faithful performance of the Contract, in lawful money of the United States, and subject to addition and deductions as provided in the Contract Documents, as follows:
- B. Based upon the price shown in the Proposal heretofore submitted to the Owner by the Contractor, a copy of said Proposal being a part of these Contract Documents, the aggregate amount of this Contract is the **total sum** of _____ Dollars (\$_____).

1.03 COMMENCEMENT AND COMPLETION OF WORK

- A. The Contractor shall commence work on the date established in the Notice to Proceed.
- B. The Contractor shall prosecute the work with faithfulness and diligence and shall complete the work not later than **ninety (90) calendar days** after the commencement date established in the Notice to Proceed.

1.04 CONTRACTOR'S ACCEPTANCE OF CONDITIONS

- A. The Contractor hereby agrees that he has carefully examined the sites for the work to be performed and has fully satisfied himself that such sites are correct and suitable ones for the work to be performed and he assumes full responsibility therefore. The provisions of this Contract shall control any inconsistent provisions contained in the specifications. All Drawings, Specifications and Contract items contained in this Project Manual have been read and carefully considered by the Contractor, who understands the same and agrees to their sufficiency for the work to be done. It is expressly agreed that under no circumstances, conditions or situations shall this Contract be more strongly construed against the Owner than against the Contractor and his Surety.
- B. Any ambiguity or uncertainty in the Drawings or Project Manual shall be interpreted and construed by the Owner's Engineer and his decision shall be final and binding upon all parties.
- C. It is distinctly understood and agreed that the passing, approval and/or acceptance of any part of the work or material by the Owner, his Engineer, or by any agent or representative as in compliance with the terms of this Contract and/or of the Project Manual covering said work, shall not operate as a waiver by the Owner of strict compliance with the terms of this Contract, and/or the Project Manual covering said work; and the Owner may require the Contractor and/or his insurer to repair, replace, restore and/or make to comply strictly and in all things with this Contract and the Project Manual any and all of said work and/or services which within a period of one (1) year from and after the date of the passing, approval, and/or acceptance of any such work or services, are found to be defective or to fail in any way to comply with the Drawings and Specifications. This provision shall not apply to materials or equipment normally expected to deteriorate or wear out and become subject to normal repair and replacement before their condition is discovered. The Contractor shall not be required to do normal maintenance work under the guarantee provisions. Failure on the part of the Contractor and/or his insurer, immediately after Notice to either, to repair or replace any such defective materials and workmanship shall entitle the Owner, if it sees fit, to replace or repair the same and recover the reasonable cost of such replacement and/or repair from the Contractor and/or his insurer, who shall in any event be jointly and severally liable to the Owner for all damage, loss and expense caused to the Owner by reason of the Contractor's breach of this Contract and/or his failure to comply strictly and in all things with this Contract and with the Drawings and Specifications.

1.05 LIQUIDATED DAMAGES

- A. It is mutually agreed that time is of the essence of this Contract and should the Contractor fail to complete the work within the specified time, or any authorized extension thereof, there shall be deducted from the compensation otherwise to be paid to the Contractor, and the Owner will retain the amount of **Five Hundred Dollars (\$500.00)** per calendar day as fixed, agreed, and liquidated damages for each calendar day elapsing beyond the specified time for completion or any authorized extension thereof, which sum shall represent the actual damages which the Owner will have sustained by failure of the Contractor to complete the work within the specified time; it being further agreed that said sum is not penalty, but is the stipulated amount of damages sustained by the Owner in the event of such default by the Contractor.
- B. For the purposes of this Article, the day of final acceptance of the work shall be considered a day of delay, and the scheduled day of completion of the work shall be considered a day scheduled for production.

1.06 PARTIAL AND FINAL PAYMENTS

- A. In accordance with the provisions fully set forth in the General Conditions, and subject to additions and deductions as provided, the Owner shall pay the Contractor as follows:
1. Within 30 days after receipt of the Contractor's request for partial payment by the Owner, the Owner shall make partial payments to the Contractor, on the basis of the estimate of work as approved by the Owner's Engineer, for work performed during the preceding calendar month, less ten percent (10%) of the amount of such estimate which is to be retained by the Owner until all work has been performed strictly in accordance with this Agreement and until such work has been accepted by the Owner.
 2. Upon submission by the Contractor of evidence satisfactory to the Owner that all payrolls, material bills and other costs incurred by the Contractor in connection with 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 to be acceptable by the Owner, 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 Owner.

1.07 ADDITIONAL BOND

- A. It is further mutually agreed between the parties hereto that if, at any time after the execution of this Agreement and the Performance and Payment Bonds hereto attached for its faithful performance, the Owner shall deem the surety or sureties upon such bonds to be unsatisfactory, or if, for any reason, such bond(s) ceases to be adequate to cover the performance of the work, the Contractor shall at his expense, and within three (3) days after the receipt of Notice from the Owner to do so, furnish an additional bond or bonds, in such form and amount, and with such sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed due under this Agreement until such new or additional security for the faithful performance of the work shall be furnished in the manner and form satisfactory to the Owner.

1.08 SOVEREIGN IMMUNITY AND ATTORNEY'S FEES

- A. The City does not waive sovereign immunity for any claim for breach of contract except for payment of any amount owed under the contract; provided, however, that in any action arising out of or to enforce this Agreement, the prevailing party shall be entitled to its reasonable attorney's fee and costs, including, but not limited to paralegal costs, and computer research costs. The parties shall not be liable for the prejudgment interest.

1.09 MEDIATION

- A. Any claim or dispute arising out of or related to this agreement shall be subject to informal mediation as a condition precedent to the institution of legal or equitable proceedings by either party. Both parties waive the right to arbitration. The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in Miami-Dade County, Florida, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in the circuit court for the 11th Judicial Circuit for the State of Florida.

1.10 SIGNATORY AUTHORITY

- A. The officials executing this Agreement warrant and represent that they are authorized by their respective agency to enter into a binding agreement.

1.11 LIENS

- A. Contractor is prohibited from placing a lien on the City's property. This prohibition shall apply to, *inter alia*, all subconsultants and subcontractors, suppliers and labors.

1.12 INCORPORATE BY REFERENCE DOCUMENTS ENCLOSED IN PROJECT MANUAL

- A. The contract enclosed within the "POTABLE WATER MAIN IMPROVEMENTS PHASE 1 SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE AND SW 58TH AVENUE FROM SW9TH STREET TO SW 15 STREET AND SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE City of West Miami, Florida

And all attachments in the Manual and the Construction Drawings shall be referenced into the contract, as exhibits to the contract. Between the contract and the attachments in the manual, the provisions of the contract shall control should there be any inconsistency in the documents.

1.13 TRANSFER AND ASSIGNMENT

- A. None of the work or services under this contract shall be subcontracted beyond that shown on List of Major Sub-Contractors (page 00300-4 of the Proposal) unless Contractor obtains prior written consent from the City. Approved subcontractors shall be subject to each provision of this contract and Contractor shall be responsible and indemnify the City of all subcontractors' acts, errors or omissions.
- B. The Contractor shall not assign, transfer or pledge any interest in this contract without the prior written consent of the City; provided, however, that claims for money by the Contractor from the City under this contract may be assigned, transferred or pledged to a bank, trust company, or other financial institution without the City's approval. Written notice of any assignment, transfer or pledge of funds shall be furnished within 10 days by the Contractor to the City.

1.14 EXAMINATION AND RETENTION OF CONTRACTOR'S RECORDS

- A. The City, or any of their duly authorized representatives, shall until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's books, ledgers, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- B. The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as subparagraph 1.14A above. "Subcontract," as used in this clause, **excludes purchase order not exceeding \$10,000.**
- C. The right to access and examination of records in subparagraph 1.14A shall continue until disposition of any mediation, claims, litigation or appeals.

1.15 OWNERSHIP OF DOCUMENTS

- A. All documents, reports, plans, specifications or other records, including electronic records, resulting from the services rendered by the Contractor under this contract shall be deemed the property of the City and the City shall have all rights incident to this

ownership. The Contractor acknowledges that all document prepared under this contract shall be public records, and shall be subject to public inspection and copying, as provided by Florida Statutes Chapter 119. Upon conclusion of the contract and any extensions, all documents shall be delivered by the Contractor to the City. The Contractor shall have the right to retain copies of the documents at the Contractor's expense.

1.16 SEVERABILITY

- A. Should any paragraph or any part of any paragraph of this contract be rendered void, invalid or unenforceable by any court of law, for any reason, the determination shall not render void, invalid or unenforceable any other section or part of any section of this contract.

1.17 CONTINGENCY FEE AND CODE OF ETHISWARRANTY

- A. Contractor warrants that neither it, nor any principal, employee, agent, representative or family member has promised to pay, and Contractor has not, and will not pay a fee the amount of which is contingent upon the City awarding this contract to the Contractor.
- B. Contractor warrants that neither it, nor any principal, employee, agent, representative or family member has procured, or attempted to procure, this contract in violation of any of the provisions of Miami-Dade County or the City of West Miami conflict of interest and code of ethics ordinances.
- C. A violation of this paragraph will result in the termination of the contract and forfeiture of funds paid, or to be paid, to the Contractor.

1.18 WARRANTY OF AUTHORITY

- A. The signatories to this contract warrant that they are duly authorized by action to their respective city commission, board of directors or other authority to execute this contract and to bind the parties to the promises, terms, conditions, and warranties contained in this contract.

1.19 INDEPENDENT CONTRACTOR

- A. The Contractor is furnishing its services as an independent Contractor and nothing in this contract shall create any association, partnership or joint venture between the parties, or any employer-employee relationships.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the day and date first above written in five (5) counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original Contract.

City of West Miami, Florida
Party of the First Part

(Seal)
Attest:

By: City Manager

City Clerk

Contractor
Party of the Second Part

WITNESS: (If corporation, attach
Seal and attest by Secretary)

By: _____

Title

Contractor's Resolution No. _____

APPROVED AS TO FORM AND
LEGALITY:

APPROVED AS TO FINANCE:

City Attorney

By: _____
Director of Finance
City of West Miami

(*) In the event that the Contractor is a Corporation, the following certificate of resolution of the Board of Directors of the Corporation, authorizing the officer who signs the Contract to do so in its behalf shall be completed.

**CERTIFICATE
(Sample)**

STATE OF FLORIDA)
COUNTY OF)^{SS}

I **HEREBY CERTIFY** that a meeting of the Board of Directors of _____, a corporation under the laws of the State of _____, held on _____, 2020, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ President of the corporation, be and he is hereby authorized to execute the Contract dated _____, 2020, between the CITY OF WEST MIAMI, a municipal corporation, and this corporation, and that this 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 _____, 2020 .

Secretary

END OF SECTION

SECTION 00610

PERFORMANCE BOND

STATE OF FLORIDA)
COUNTY OF)^{SS}

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto the City of West Miami, as Oblige, hereinafter called Owner, in the amount of _____ Dollars (\$ _____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____, 2020, entered into a Contract with Owner for:

**POTABLE WATER MAIN IMPROVEMENTS PHASE 1
SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE AND
SW 58TH AVENUE FROM SW9TH STREET TO SW 15 STREET AND
SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE
CITY OF WEST MIAMI, FLORIDA**

in accordance with Drawings and Specifications prepared by T.Y. Lin International which Contract is by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that, if the Principal shall in all respects promptly and faithfully perform and comply with the terms and conditions of said Contract and his obligations thereunder and shall indemnify the Owner and the Consulting Engineer and save either or all of them harmless against and from all costs, expenses and damages arising from the performance of said Contract or the repair of any work thereunder, then this obligation shall be void; otherwise, this Bond shall remain in full force and effect, in accordance with the following terms and conditions:

- A. The Principal and Surety jointly and severally agree to pay the Owner any difference between the sum to which the said Principal would be entitled on the completion of the Contract, and that sum which the Owner may be obliged to pay for the completion of said work by Contract or otherwise, and any damages, direct or indirect or consequential, which the said Owner may sustain on account of such work, or on account of the failure of said Contractor to properly and in all things, keep and execute all of the provision of said Contract.
- B. And this Bond shall remain in full force and effect for a period of one (1) year from the date of acceptance of the project by the Owner and shall provide that the Contractor guarantees to repair or replace for said period of one (1) year all work performed and materials and equipment furnished that were not performed or furnished according to the terms of the Contract, and shall make good, defects thereof which have become apparent before the expiration of said period of one (1) year. If any part of the project, in the judgment of the Owner, for the reasons above

stated needs to be replaced, repaired or made good during that time, the Owner shall so notify the Contractor in writing. If the Contractor refuses or neglects to do such work within five (5) days from the date of service of such Notice, the Owner shall have the work done by others and the cost thereof shall be paid by the Contractor or his Surety.

- C. And the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive Notice of any change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.
- D. The surety represents and warrants to the Owner that they have a Best's Key Rating Guide General Policyholder's Rating of " _____ " and Financial Category of "Class _____".

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this _____ day of _____ 2020, A.D., the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole Ownership or Partnership, two (2) Witnesses Required).
(If Corporation, Secretary Only will attest and affix seal).

WITNESSES:

PRINCIPAL:

Signature of Authorized Officer (Affix Seal)

Title

Business Address

City, State & Zip Code

WITNESSES:

SURETY:

Corporate Surety

Title

Business Address

City, State & Zip Code

Name of Local Insurance Agency

SECTION 00620

PAYMENT

BOND

STATE OF FLORIDA)
COUNTY OF)^{SS}

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto the _____, as Obligee, hereinafter called Owner, in the amount of _____ Dollars (\$ _____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____, 2020, entered into a Contract with Owner for:

**POTABLE WATER MAIN IMPROVEMENTS PHASE 1
SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE AND
SW 58TH AVENUE FROM SW9TH STREET TO SW 15 STREET AND
SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE
CITY OF WEST MIAMI, FLORIDA**

in accordance with Drawings and Specifications prepared by T.Y. LIN INTERNATIONAL which Contract is by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the Principal shall promptly make payment to all claimants, as herein below defined, then this obligation shall be void; otherwise, this Bond shall remain in full force and effect, subject to the following terms and conditions:

- A. A claimant is defined as any person supplying the Principal with labor, material and supplies, used directly or indirectly by the said Principal or any subcontractor in the prosecution of the work provided for in said Contract, and is further defined in Section 255.05(1) of the Florida

Statutes.

- B. The above-named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after performance of the labor or after complete delivery of materials and supplies by such claimant, may sue on this Bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
- C. No suit or action shall be commenced hereunder by any claimant.
1. Unless claimant, other than one having a direct contract with the Principal, shall within forty-five (45) days after beginning to furnish labor, materials or supplies for the prosecution of the work, furnish the Principal with a notice that he intends to look to this bond for protection.
 2. Unless claimant, other than one having a direct contract with the Principal, shall within ninety (90) days after such claimant's performance of the labor or complete delivery of materials and supplies, deliver to the Principal written notice of the performance of such labor or delivery of such material and supplies and the nonpayment therefore.
 3. After the expiration of one (1) year from the performance of the labor or completion of delivery of the materials and supplies; it being understood, however, that if any limitation embodied in this Bond is prohibited by any law controlling the construction hereof such limitations shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 4. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
- D. The Principal and the Surety jointly and severally, shall repay the Owner any sum which the Owner may be compelled to pay because of any lien for labor or materials furnished for any work included in or provided by said Contract.
- E. The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration of or addition to the terms of the Contract or to the work to be performed there under or the Specifications applicable thereto shall in any way affect its obligations on this Bond, and the Surety hereby waives notice of any such change, extension of time, alterations of or addition to the terms of the Contract, or to the work or to the Specifications.
- F. The Surety represents and warrants to the Owner that they have a Best's Key Rating Guide General Policyholder's rating of " _____ " and Financial Category of "Class _____."

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this day of _____ 2020, A.D., 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 governingbody.

WITNESS: (If Sole Ownership or Partnership, two (2) Witnesses Required).
(If Corporation, Secretary Only will attest and affix seal).

WITNESSES:

WITNESSES:

PRINCIPAL:

Signature of Authorized Officer

(Affix Seal)

Title

Business Address

City, State & Zip Code

SURETY:

Corporate Surety

Title

Business Address

City, State & Zip Code

Name of Local Insurance Agency

CERTIFICATES AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as Principal in the within Bond; that _____ who signed the said bond on behalf of the Principal, was then _____ of said Corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said Corporation by authority of its governing body.

Secretary

(Corporate Seal)

STATE OF FLORIDA)
COUNTY OF _____)^{ss}

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared _____ to be 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 West Miami, Florida.

Sworn and Subscribed to before me this ____ day of _____, 2020 A.D.

(Attach Power of Attorney to original Bid Bond)

Notary Public State of Florida at Large
My Commission Expires:

END OF SECTION

SECTION 00650

CERTIFICATE OF INSURANCE

THIS IS TO CERTIFY THAT THE _____

(Insurance Company)

Address _____

of _____

has issued policies of insurance, as described below and identified by a policy number, to the insured named below; and to certify that such policies are in full force and effect at this time. It is agreed that none of these policies will be canceled or changed so as to affect the interest(s) of the City of West Miami (hereinafter sometimes called the Owner) until thirty (30) days after written notice of such cancellation or change has been delivered to the Engineer; T.Y. LIN INTERNATIONAL.

Insured _____

Address _____

Status of Insured: _____ Corporation _____ Partnership _____ Individual

Location of Operations Insured _____

Description of Work:

**POTABLE WATER MAIN IMPROVEMENTS PHASE 1
SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE AND
SW 58TH AVENUE FROM SW 9TH STREET TO SW 15 STREET AND
SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE
CITY OF WEST MIAMI, FLORIDA**

INSURANCE POLICIES IN FORCE:

Forms of Coverage	Policy Number	Exp. Date
*Workers Comp/Employers Liability	_____	_____
+Comprehensive Automobile Liability	_____	_____
°Comprehensive General Liability	_____	_____
+Excess Liability	_____	_____
Other (Please specify type: _____)	_____	_____

POLICY INCLUDES COVERAGE FOR:

	YES	NO
1. Additional Insured: Owner & Engineer	_____	_____
2. * Liability under the United States Longshoremen's and Harbor Workers' Compensation Act.	_____	_____
3. + All owned, hired, or non-owned automotive equipment used in connection with work performed for the Owner.	_____	_____
4. ° Contractual Liability	_____	_____
5. ° Damage caused by explosion, collapse or structural injury, and damage to underground utilities.	_____	_____
6. ° Products/Completed Operations	_____	_____
7. ° Owners and Contractors Protective Liability	_____	_____
8. ° Personal Injury Liability	_____	_____
9. + Excess Liability applies excess of:	_____	_____
(a) Employers Liability	_____	_____
(b) Comprehensive General Liability	_____	_____
(c) Comprehensive Automobile Liability	_____	_____

TYPES OF POLICY	FORMS OF COVERAGE	LIMITS OF LIABILITY
Workers' Compensation	Bodily Injury	\$ _____ Statutory
Employers Liability	Bodily Injury	\$ _____ Each Accident
	Disease	\$ _____ Each Person
	Disease	\$ _____ Policy Limit
Comprehensive Auto Liability	Combined Single Limit BI/PD	\$ _____ Each Accident
Comprehensive General Liability	Bodily Injury	\$ _____ Each Occurrence
		\$ _____ Aggregate
	Property Damage	\$ _____ Each Occurrence
		\$ _____ Aggregate
	OR	
	Combined Single Limit BI/PD	\$ _____ Each Occurrence
		\$ _____ Aggregate

Excess Liability

Combined Single
Limit BI/PD

\$_____Aggregate

Other

The Insurance Company hereby agrees to deliver, within ten (10) days, two (2) copies of the above policies to the Engineer when so requested.

NOTE: Entries on this certificate are limited to the Authorized Agent or Insurance Company Representative.

Date_____

(SEAL)_ Insurance Company

Issued at _____

Authorized Representative

Insurance Agent or Company
-Send original and one copy to:

**T.Y. LIN INTERNATIONAL, INC.
201 Alhambra Circle, Suite 900
Coral Gables, Florida 33134
Attention: Francisco Alonso, P.E., Vice President**

Send two (2) copies to:

**City of West Miami
Engineering & Construction Department
901 SW 62 Ave, West Miami
Florida 33144
Attention: Juan Pena, Public Works Director**

END OF SECTION

SECTION 00660

ACKNOWLEDGEMENT OF CONFORMANCE

WITH O.S.H.A. STANDARDS

TO THE CITY OF WEST MIAMI:

We, _____, hereby acknowledge and agree that as Contractors for the construction of POTABLE WATER MAIN IMPROVEMENTS PHASE 1 SYLVANIA BOULEVARD FROM: SW 9TH STREET To: SW 57TH AVENUE and SW 58TH AVENUE FROM SW 9TH STREET TO SW 15 STREET AND SW 9 TERRACE FROM SYLVANIA BOULEVARD TO SW 58 AVENUE CITY OF WEST MIAMI, FLORIDA

, City's Bid No. 2020-06122020, within the limits of the City of West Miami, Florida, that we 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 agree to indemnify and hold harmless the City of West Miami and its Consulting Engineers against any and all legal liability or loss the City or the Engineer may incur due to _____ failure to comply with such act.

ATTEST

CONTRACTOR

BY: _____
NAME

ATTEST

DATE

END OF SECTION

SECTION 00665

TRENCH SAFETY ACT COMPLIANCE

Bidder 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 Bidder, by signing and submitting the bids, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards. The Bidder further identifies the following separate item of costs of compliance with the applicable trench safety standards as well as the methods of compliance:

Methods of Compliance

(fill in methods)

Total \$ _____

Bidder acknowledges that this cost is included in the applicable items of the Proposal and in the Grand Total Bid Price. Failure to complete the above will result in the bid being declared non-responsive.

The Bidder is, and the Owner and Engineer are not, responsible to review or assess Bidder'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". Bidder is, and the Owner and Engineer are not, responsible to determine if any safety or safety related standards apply to the project, including but not limited to, the "Trench Safety Act."

Signature of Authorized Representative (Manual)

Name of Authorized Representative (Typed or Printed)

Sworn to and subscribed before me in the State and County first mentioned above on the day of _____, 2020.

Notary Public

(Affix Seal)

My Commission Expires:

END OF SECTION

SECTION 00670

AFFIDAVIT REGARDING EQUIPMENT STORAGE AND STAGING YARD

The undersigned agrees to secure prior to construction off-site equipment storage and staging yard (lot) outside of the public right of way. The expense for this yard shall be included as part of bid item Mobilization.

The undersigned further agrees to avoid overnight storage of equipment in the public right of way. Failure to comply with this requirement shall result in a penalty in the amount of \$250 per incident plus any costs incurred by the City. Furthermore, the City reserves the right to have towed away any equipment left in the right-of way overnight at the bidder's expense. The undersigned agrees to pay any additional cost incurred to retrieve towed and impounded equipment.

By: _____ Signature of Bidder
Date _____

Printed Name of Bidder and Title

Printed Name of the Firm

Address of the Firm

The foregoing instrument was acknowledged before me the _____ day of _____,
2020, by _____
(Authorized Representative)

of _____, who is personally known to me or who
(Corporation, Partnership, etc.)

has produced _____ as identification and who did/did not take an oath.

(Signature of Notary)

Serial Number

(Print of Stamp Name of Notary)

(Expiration Date)

Notary Public - State of _____

County of _____

END OF SECTION

SECTION 00675

ACKNOWLEDGEMENT OF SUB-SOIL CONDITIONS

TO CITY OF WEST MIAMI

We _____, hereby acknowledge and agree that as Contractors for furnishing the following:

POTABLE WATER MAIN IMPROVEMENTS -- PHASE 1

within the limits of the City of West Miami, Florida, that we acknowledge that the sub-soil information provided in the Contract Documents is for informational purposes only. Further, we have verified the sub-soil conditions at the project site prior to bid, and that we are satisfied that our bid proposal adequately covers the anticipated sub-soil conditions.

ATTEST

(Contractor)

ATTEST

By: _____

Title: _____

(Date)

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS PHASE 1
SYLVANIA BOULEVARD
FROM: SW 9TH STREET To: SW 57TH AVENUE AND
SW 58TH AVENUE
FROM SW9TH STREET TO SW 15 STREET AND
SW 9 TERRACE FROM
SYLVANIA BOULEVARD TO SW 58 AVENUE
CITY OF WEST MIAMI, FLORIDA**

00700

GENERAL CONDITIONS

EJCDC C-700 Standard General Conditions of the Construction Contracts
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DOCUMENT 00700
GENERAL CONDITIONS

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.1 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda* – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement* – The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment* – The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos* – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid* – The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder* – The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements* – The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order* – A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim* – A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract* – The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
 12. *Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved

Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price* – The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times* – The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor* – The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work* – See Paragraph 11.01.A for definition.
17. *Drawings* – That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement* – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer* – The individual or entity named as such in the Agreement.
20. *Field Order* – A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements* – Sections of Division 01 of the Specifications. The General Requirements pertain to all sections of the Specifications.
22. *Hazardous Environmental Condition* – The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.
23. *Hazardous Waste* – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone* – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award* – The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed* – A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner* – The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs* – Polychlorinated biphenyls.
31. *Petroleum* – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule* – A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual* – The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material* – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Related Entity* – An officer, director, partner, employee, agent, consultant, or subcontractor.
37. *Resident Project Representative* – The authorized representative of Engineer who may be assigned to the Site or any part thereof.
38. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
39. *Schedule of Submittals* – A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
40. *Schedule of Values* – A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
42. *Site* – Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
43. *Specifications* – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
44. *Subcontractor* – An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
45. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
46. *Successful Bidder* – The Bidder submitting a responsive Bid to whom Owner makes an award.
47. *Supplementary Conditions* – That part of the Contract Documents which amends or supplements these General Conditions.
48. *Supplier* – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.
49. *Underground Facilities* – All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
50. *Unit Price Work* – Work to be paid for on the basis of unit prices.
51. *Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
52. *Work Change Directive* – A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to

be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.2 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents, or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.1 Delivery of Bonds and Evidence of Insurance

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.2 Copies of Documents

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.3 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.4 Starting the Work

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.5 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 2. a preliminary Schedule of Submittals; and
 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.6 *Preconstruction Conference*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.7 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.2 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 - 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.3 *Reporting and Resolving Discrepancies*

- A. Reporting Discrepancies
 - 1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
 - 2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or

of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.4 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 1. A Field Order;
 2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or
 3. Engineer's written interpretation or clarification.

3.5 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.6 *Electronic Data*

- A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.1 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

4.3 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s

obtaining additional exploration or tests with respect thereto and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.4 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

- a. reviewing and checking all such information and data,
- b. locating all Underground Facilities shown or indicated in the Contract Documents,
- c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.5 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.6 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawing relating to a Hazardous Environmental

Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:
1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract

Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.1 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.2 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.3 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.4 *Contractor's Liability Insurance*

- A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

- b. by any other person for any other reason;
 - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
- 1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 - 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 - 3. include completed operations insurance;
 - 4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 - 5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 - 6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 - 7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.
 - a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.5 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.6 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
 2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.7 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.8 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.9 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall

consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.1 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, 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. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor’s representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.2 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.3 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.4 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.5 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,
 - 3) it has a proven record of performance and availability of responsive service; and
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times, and

- 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;
 - b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services;

- 4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
 - C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
 - D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
 - E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
 - F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.6 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor

shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued . No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor
 - 2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer,, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.7 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.8 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.9 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on

the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. 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 place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. 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 persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

- 2. *Samples:* Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

- B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and

approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:
 - a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;
 - c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and
 - d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separates from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has

complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such

professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.1 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of

Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.2 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.3 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.1 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.2 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.3 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.4 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.5 *Lands and Easements; Reports and Tests*

- A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.6 *Insurance*

- A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.7 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.8 *Inspections, Tests, and Approvals*

- A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.9 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.1 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.2 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.3 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.4 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.5 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also

have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether the Work is fabricated, installed, or completed.

9.6 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.7 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.8 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.9 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking,

exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.1 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.2 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.3 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.4 *Notification to Surety*

- A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.5 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
 1. deny the Claim in whole or in part,

2. approve the Claim, or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.1 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, 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 Paragraph 11.01.B.
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any 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 and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.

- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
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.
4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.2 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.3 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 2. there is no corresponding adjustment with respect any other item of Work; and
 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.1 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
 1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in

cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.2 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.3 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 Notice of Defects

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.2 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.3 Tests and Inspections

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.4 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.5 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.6 *Correction or Removal of Defective Work*

- A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.7 *Correction Period*

- A. If within one year after the date of Substantial Completion (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, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.8 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to

Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.9 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after 7-day written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of 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 Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.2 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. 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 a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon

Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.
3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.3 *Contractor's Warranty of Title*

- A. 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 Owner no later than the time of payment free and clear of all Liens.

14.4 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not

consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.5 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.6 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.7 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or

receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and, will be paid by Owner to Contractor.

14.8 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner 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 Paragraph 5.01, 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 Contractor to 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.

14.9 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.1 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.2 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) a 7-day written notice of its intent to terminate the services of Contractor:
 1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),
 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims,

costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within 7 days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.3 *Owner May Terminate For Convenience*

- A. Upon a 7-day written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.4 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon a 7-day written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the

Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.1 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
 - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
 - 2. agrees with the other party to submit the Claim to another dispute resolution process, or
 - 3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.1 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. 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

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.2 *Computation of Times*

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

17.3 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.4 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.5 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.6 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTAL GENERAL CONDITIONS TO BIDDERS

SECTION 2-11.16 OF THE CODE

Bidders are advised that the provisions of §2-11.16 et seq., Code of Miami-Dade County, Responsible Wages on County Construction Contracts, will apply to any contract awarded pursuant to this bid. By submitting a bid under these provisions, a bidder agrees to comply with these provisions of the Code and to acknowledge awareness of the penalties for non-compliance. A copy of the Code may be obtained from the department issuing the specifications for this bid or online at <http://www.municode.com/resources/gateway.asp?pid=10620&sid=9>.

This Supplemental General Condition is organized with the following sections:

1. Minimum Wages; Fringe Benefits; Complaints; and Posting of Information.
2. Liability for Unpaid Wages; Liquidated Damages; Withholding
3. Payrolls, Basic Records and Reporting
4. Subcontracts
5. Complaints and Hearings; Contracts Termination and Debarment
6. Apprentices and Trainees

1. MINIMUM WAGES AND POSTING OF INFORMATION

A. Minimum Wages.

All employees working on the project must be paid the hourly rate and benefits listed in the Wages and Benefits Schedule. Payment to workers shall be made in the form of check, money order or direct deposit. Cash payments are not allowed. The rates paid shall be not less than those contained in the Wage and Benefits Schedule regardless of any contractual relationship that may exist between the contractor and the workers hired to perform under the contract. For any classification of workers, the hourly rate paid must equal the sum of the base rate and the fringe benefit rates listed for that classification in the Wage and Benefits Schedule. Paying below the base rate is not acceptable, even if the value of the fringe benefits exceed the value of the required contribution. Paying the base wage rate or above and making payments to legitimate fringe benefits providers on behalf of workers is acceptable.

Wages and benefits listed in the Wages and Benefits Schedule, previously revised every calendar quarter, will be reviewed and increased, if appropriate, once a year, on January 1st. The rates for wages and benefits to be paid for work performed under this contract and during each subsequent calendar year will be the rate in effect on January 1st of the year in which the work is performed.

B. Fringe Benefits.

The contractor, or any subcontractor under the contractor, may pay the base rate to the employee plus pay contributions to employee benefit plans; or, pay the base rate plus the benefit rate in the Wages and Benefits Schedule in the form of check, money order or direct deposit, but not cash. If the value of the fringe benefits is less than the hourly amount required in the wage schedule the difference must be paid to the employee. Payments made to health insurance companies for hospitalization and medical costs, to dental insurance companies, retirement plans, and life insurance companies are fringe benefits.

C. More than One Classification.

Workers must be paid the appropriate base rate and fringe benefits on the Wages and Benefits Schedule for the classification of work actually being performed without regard to skill. Workers performing work in more than one classification may be paid at the rate listed for each

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classification for the time they worked; however, the employer's payrolls must accurately show the time spent in each classification in which work is performed.

D. Davis-Bacon.

For any class of worker that is NOT listed in the Wages and Benefits Schedule, the minimum wage rate is the "basic hourly rate of pay" (as defined in 29 C.F.R. § 5.24) and of the fringe benefits payments for hospitalization, medical, pension and life insurance for such class under the United States Secretary of Labor's applicable Davis-Bacon Wage Schedule in effect for Miami-Dade County.

If you do not find a wage classification in the Wages and Benefits Schedule that describes the work actually being done, you must contact the Department of Business Development before using a Davis-Bacon wage rate to pay workers. Questions concerning the comparability of worker classifications or the applicability of Davis-Bacon classifications will be determined by the County.

E. Complaints by Workers.

Any complaints of underpayment by the workers should be filed with:

Penelope Townsley, Director
Department of Business Development
111 NW 1st Street, 19th Floor
Miami, Florida 33128
(305) 375-3111

Neither the contractor, nor any subcontractor on the project, may terminate an employee performing work on the contract because of such employee's filing a complaint regarding underpayment of required wage rates.

F. Posting of Wages.

The contractor and all subcontractors must permanently post the Wages and Benefits Schedule, together with a notice of the fines that may be assessed to the contractor or subcontractor, for failure to pay the required wage rates, at the site where the contract work is being performed in a prominent and accessible place where it can be easily seen by the workers. Failure to post the Wage and Benefits Schedule will be the basis of a violation.

2. LIABILITY FOR UNPAID WAGES; PENALTIES; WITHHOLDING

A. Compliance by Bidders.

In the event of underpayment of the required wage rates, the contractor shall be liable to the underpaid employee for the amount of such underpayment. In addition, the contractor shall pay a penalty in accordance with the requirements of the Code and section 2B of below. Bidders must pay all back wages and penalties on previous contracts before being awarded a new contract.

B. Penalties.

In addition to any under payment due to employees, contractors may be fined a penalty in an amount equal to 10% of the first underpayment; 20% of the amount of the second underpayment; for the third and successive underpayments, a penalty in an amount equal to 30% of the

SUPPLEMENTAL GENERAL CONDITIONS TO BIDDERS

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underpayment. A fourth violation will constitute a default of the contract and may be cause for a suspension or termination. If the required payments are not made within the specified period of time, the noncomplying contractor and principal owners thereof shall be prohibited from bidding on or participating in County contracts for a period of three (3) years.

C. Withholding Contractor Payments.

The County may stop payment of monies to the contractor necessary to pay any wages that are required and any penalties owed by the contractor or subcontractor. The withheld monies shall be given to the employee only in accordance with the provisions of Section 5, "Complaints and Hearings; Contract Termination and Debarment."

3. PAYROLL; BASIC RECORDS; REPORTING

A. Payroll Records.

The contractor, and all subcontractors, must keep accurate written records, signed under oath as true and correct, showing payment of the required wages. These records must include the name, social security number of each worker, his or her address, correct classification, per hour rates of wages paid (including rates of contributions or costs anticipated for legitimate fringe benefits), and daily and weekly number of hours worked on this project. In addition, the contractor must submit a list of all subcontractors and the payrolls of each subcontractor that include the name, social security number, address and phone number, per hour rate for wages paid (including costs of legitimate fringe benefits), and the daily and weekly number of hours worked on this project. Contractors employing apprentices or trainees under approved programs shall keep records of the registration or apprenticeship programs, the certification of trainee programs, the registration of the apprentices and trainees, and wage rates as required by the applicable programs, in accordance with the provisions of Section 6 "Apprentices and Trainees."

B. Form.

The contractor shall submit all payrolls with each request for payment. Information submitted on U.S. Department of Labor form WH-347 or on a form acceptable to the County as its equivalent, and which is signed under oath, will satisfy these requirements.

C. Inspection of Records.

The contractor or subcontractor must make these records available for inspection and copying by an authorized representative of the County, and shall allow such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the reports or make the records on which they are based available, the County may, after written notice to the contractor, cause the stoppage of payments. Also, failure to submit the reports upon request or make the records available may be reason for debarment. The prime contractor is responsible for the submission of the information required and for the maintenance of records and provisions of access to same by all subcontractors.

4. SUBCONTRACTS

The contractor must insert into any subcontracts the clauses set forth in paragraphs 1 through 6 of this Supplemental General Conditions and also a clause reminding their subcontractors to include

SUPPLEMENTAL GENERAL CONDITIONS TO BIDDERS

SECTION 2-11.16 OF THE CODE

these paragraphs in any lower tier subcontract. The Prime Contractor will be responsible for compliance by all subcontractors and their lower tier subcontractors with the clauses set forth in paragraphs 1 through 6 of this Supplemental General Conditions. In the event of non-payment or underpayment of the required wages, the Prime Contractor shall be liable to the underpaid employees of the subcontractor for the amount of each underpayment.

5. COMPLAINTS AND HEARINGS; CONTRACT TERMINATION AND DEBARMENT

A. Complaints.

Upon receipt of a written complaint or identification of a violation pertaining to an employee wage underpayment of the required overall hourly rates, the County will notify the contractor or subcontractor employing said workers of the complaint/violation. The notice shall include a brief description of the said complaint/violation, the dollar amount that the contractor or subcontractor is liable for in back wages and fines, the required corrective action(s) to be taken and the due date for payment of back wages and fines or to request a compliance meeting. Failure to comply or request a compliance meeting within the due date specified (30 days, see Administrative Order 3-24) shall constitute a waiver of the contractor's or subcontractor's right to a compliance meeting, and that such waiver shall constitute an admission of the complaint/violation.

The County may withhold from the Contractor so much accrued payments as may be considered necessary by the Contracting Officer to pay employees of the contractor or subcontractor under them for the performance of the contract work, the difference between the combined overall hourly wage rate and benefits required to be paid by the contractor to the employee on the work and the amounts received by such employee and to satisfy any fines outstanding where violations have been found. In the event of failure of such negotiations, the Prime Contractor may request the appointment of a hearing officer.

B. Hearings.

The Compliance Officer shall request the County Manager or his or her designee to appoint a Hearing Officer within fifteen (15) days of the time at which all means to resolve the complaint/violation have been exhausted. The County Manager shall attempt to appoint a hearing officer within thirty (30) days from the receipt of request.

Upon the appointment of a hearing officer the County will notify the contractor or subcontractor within five (5) days of the hearing date pertaining to said complaint. The County Manager will review the findings and recommendations of the hearing officer and decide to accept or reject the recommendations of the Administrative Hearing Officer either with or without modifications.

C. Penalties.

If the County Manager determines that the contractor or subcontractor substantially or repeatedly failed to comply, the non-complying contractor or subcontractor and the principal owners thereof shall be prohibited from bidding or otherwise participating in County contracts for the construction, alteration and/or repair, including painting or decorating, of public buildings or public works for a period of three (3) years. The County Manager may order the withheld amount equal to any underpayment remitted to the employee. In addition, the County Manager may order payment of a penalty to the County. If the required payment is not made within a reasonable period of time, the County Manager may order debarment as described above.

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A breach of the clauses contained in this Supplemental General Condition shall be deemed a breach of this contract and may be grounds for termination of the contract, and for debarment.

6. APPRENTICES AND TRAINEES

A. Apprentices.

Apprentices will be permitted to work at less than the rate listed in the Wages and Benefits Schedule for the work they perform when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau, or if a person is employed in his or her first ninety (90) days probationary employment who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a state apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

The number of apprentices shall not be greater than the ratio listed in the Wages and Benefits Schedule. Any worker listed as an apprentice on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, must be paid not less than the wage on the Wages and Benefits Schedule for the classification of work actually performed.

B. Apprentice Ratio.

If the number of apprentices working on the project, is greater than the ratio permitted, the apprentices must be paid the journeyman wage rate on the Wages and Benefits Schedule for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in the percentages of the journeyman's hourly rate) specified in the contractor's or subcontractors registered program shall be observed. Every apprentice must be paid at least the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable schedule.

C. Apprentice Fringe Benefits.

Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable apprentice classification; fringe benefits shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a state apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is provided.

D. Trainees.

The rules for trainees are similar to those of apprentices. Except as provided in 29 C.F.R. § 5.16, trainees cannot work for less than the predetermined rate listed in the Wages and Benefits Schedule unless they are registered in a program certified by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site must not be greater than permitted under the plan approved by the Employment and Training Administration.

SUPPLEMENTAL GENERAL CONDITIONS TO BIDDERS

SECTION 2-11.16 OF THE CODE

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Trainees must be paid fringe benefits in accordance with the Trainee Program. If the Trainee Program does not specify fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the administrator of the wage and hour division determines that the rate is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination, which provides for less than the full fringe benefits for apprentices.

E. Summary of Apprentices and Trainees.

Any worker who is not registered in a training plan approved by the Employment and Training Administration must be paid not less than the wage rate on the Wages and Benefits Schedule for the work actually performed without regard to skill. In addition, if the number of apprentices and trainees is in excess of the ratio permitted under the registered program, then the wages that must be paid are those listed on the Wages and Benefits Schedule for the work actually performed by the apprentices or trainees. If the Employment and Training Administration cancels approval of an apprenticeship or training program, the contractor will no longer be permitted to pay the trainees or apprenticeship rate.

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS -
- PHASE 1**

00800

SPECIAL PROVISIONS

DOCUMENT 00800
SPECIAL PROVISIONS

1. DEFINITIONS

Add the following:

- A. The term(s) "or equal" or "approved equal," shall be interpreted to mean an item or material or equipment similar to that named and which is suited to the same use and capable of performing the same function and be of the same quality as that named. Such material or equipment shall be subject to approval by the Engineer.
- B. The term Acceptance, shall be interpreted to mean that the Owner of the work is satisfied that it is fully complete and in accordance with the Contract Documents.
- C. The term Affidavit shall be interpreted as the instrument which is to be signed by the Contractor and submitted to the Owner through the Engineer, upon completion of that job, showing that all bills have been paid. It shall also mean such instrument that may be requested by the Owner incident to partial payments.
- D. The term Approval shall be interpreted as the item in question is accepted as satisfactory.
- E. The term Article, shall be interpreted as the prime subdivision of a section of these or any other referenced Specifications, the instructions to Bidders, the Special Conditions and the General Conditions.
- F. The term Materials shall be interpreted as any substance proposed to be used in connection with the construction of any structure, facility or appurtenance, or of other work under the contract.
- G. The term "Provided", as used in the Specifications upon the Drawings, shall be understood to mean "provided complete in place", that is, "furnished and installed". Where "as shown," "as indicated", "as detailed", or words of similar importance are used, it shall be understood that the references to the Drawings and/or Specifications accompanying these documents are intended unless otherwise expressly stated.
- H. The words "furnish", "furnish and", "install", and "provide" or words with similar meaning shall be interpreted unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service".
- I. The term "Supplementary Conditions" shall be interpreted to include these Special Provisions.

2. AWARD OF CONTRACT

The award of the contract, if it is awarded, will be to the lowest responsible, responsive Bidder. No Notice of Award will be given until the Owner has concluded such investigations as he deems necessary to establish the responsibility, qualifications and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the Owner within the time prescribed. The Owner reserves the right to reject the Bid of any Bidder who does not pass such investigation to the Owner's satisfaction. In analyzing Bids, the Owner may take into consideration alternates and unit prices, if requested by the Bid forms. If the Contract is awarded, the Owner will issue the Notice of Award and give the successful Bidder a contract for execution within one hundred and eighty (180) days after the opening of Bids.

Delete paragraph 2.03A and add the following:

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2.03A. The Contract time will commence on the day included in the Notice to Proceed.

3. FORFEITURE OF BID SECURITY

Failure of the successful Bidder to execute and deliver the Agreement and deliver the required Bonds and proof of insurance to the Owner within seven (7) calendar days of receipt of the Notice of Award from the Owner, shall be just cause for the Owner to annul the Notice of Award and declare the Bid and any security therefore forfeited.

4. QUALIFICATION OF SUB CONTRACTORS MATERIAL, MEN AND SUPPLIERS

Within three (3) working days of the bid opening, the Contractor will submit to the Owner and the Engineer for acceptance a list of the names of sub-contractors and such other persons and organizations (including those who are to furnish principal items of materials or equipment) proposed for those portions of the work as to which the identity of the subcontractors and other persons and organizations must be submitted as specified in the Contract Documents. Within thirty working days after receiving the list, the Engineer will notify the Contractor in writing if either the Owner or the Engineer, after due investigation, has reasonable objection to any subcontractor, person or organization on such list. The failure of the Owner or the Engineer to make objection to any subcontractor, person or organization on the list within thirty (30) days of receipt shall constitute an acceptance of such subcontractor, person or organization. Acceptance of any such subcontractor, person or organization shall not constitute a waiver of any right of the Owner or the Engineer to reject defective work, material or equipment or work material or equipment not in conformance with the requirements of the contract documents.

5. DELIVERY OF BONDS

Add to paragraph 2.01

Failure of the successful Bidder to execute the Agreement and deliver the required Bonds within seven (7) calendar days of the Notice of Award shall be just cause for the Owner to annul the award and declare the Bid and any guarantee thereof forfeited.

6. COPIES OF DOCUMENTS

Add the following to paragraph 2.02:

The Contractor will be furnished, free of charge, up to five (5) copies of the drawings and specifications in lieu of the ten (10) copies as stated.

7. CHANGE OF THE CONTRACT TIME

Add paragraph 12.04

Because this is a calendar day contract, normal rainfall, weather and climatic conditions, which may be reasonably expected, are not considered grounds for an extension of contract time.

8. PAYMENTS TO CONTRACTOR AND COMPLETION

Add the following to paragraph 14.07

The certificate of completion will not be issued nor the final payment made until ALL punch list items have been completed.

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SPECIAL PROVISIONS

9. CONTRACTOR'S LIABILITY INSURANCE

Refer to General Condition 5.04

The Contractor will, at his own expense, purchase and maintain such insurance as will protect the Owner and the Contractor from claims under workmen's compensation laws, disability benefit laws or other similar employee laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of his employees, or any person other than his employees, including claims insured by usual personal injury liability coverage; from claims for injury to or destruction of tangible property including loss of use resulting therefrom - any or all of which may arise out of or result from the Contractor's operations under the Contract Documents, whether such operations are by any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts may be legally liable. This insurance shall be written for not less than **ONE MILLION DOLLARS** (\$1,000,000.00) combined single limit per occurrence (no aggregate limitation) or as required by law, whichever is greater, and shall include contractual liability insurance. Before starting the work, the Contractor will file with the Owner and Engineer certificates of such insurance, acceptable to the Owner; these certificates shall contain a provision that the coverage afforded under the policies will not be canceled or materially changed until at least 15 days after written notice is given to the Owner and Engineer. These policies shall be written to cover the Contractor and Owner jointly.

10. OWNERS INDEMNITY

Refer to General Conditions 6.20

- A. The Contractor shall obtain, maintain and furnish to the Owner during the life of this Contract, full Owner's Protective Liability Insurance that will protect the Owner against all losses or claims, which may arise from operations under the Contract Documents.
- B. To the fullest extent permitted by law, the Contractor shall indemnify, defend, and hold harmless the Owner, the Engineer, and their officers, agents, and employees, against and from all claims and liability arising under or by reason of the Contract or any performance of the Work, but not from the sole negligence or willful misconduct of the Owner and/or the Engineer. Such indemnification by the Contractor shall include but not be limited to the following:
 - 1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the Contractor or its agents in the performance of the Work, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the Contractor or its agents.
 - 2. Liability or claims arising directly or indirectly from or based on the violation of any law, ordinance, regulation, order, or decree, whether by the Contractor or its agents.
 - 3. Liability or claims arising directly or indirectly from the use or manufacture by the Contractor, its agents, or the Owner in the performance of this Contract of any copyrighted composition, secret process, patented or unpatented invention, article, or appliance, unless otherwise specifically stipulated in this Contract.

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4. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the Owner or any other parties by the Contractor or its agents.
 5. Liabilities or claims adding directly or indirectly from the willful misconduct of the Contractor or its agents.
 6. Liabilities or claims arising directly or indirectly from any breach of the obligations assumed herein by the Contractor.
- C. The Contractor shall reimburse the Owner, and the Engineer for all costs and expenses, (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals and court costs) incurred by said Owner, and the Engineer in enforcing the provisions of this Paragraph.
- D. The indemnification obligation under this Paragraph shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the Contractor or any such subcontractor or other person or organization under worker's compensation acts, disability benefit acts, or other employees benefit acts.

11. PROPERTY INSURANCE

Refer to General Conditions 5.06

- A. The Contractor shall, at his own expense, obtain and maintain property insurance and furnish to the Owner during the life of this Contract the full insurable value of the project. This insurance shall include the interests of the Owner, the Contractor and Subcontractors in the work shall insure against the perils of Fire, Extended Coverage, Vandalism and Malicious Mischief.
- B. The Owner and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance provided under this Article, except such rights as they may have to the proceeds of such insurance. The Contractor shall require similar waivers by Subcontractors.
- C. The Bidder is alerted to the fact that the Contractor shall provide an All-Risk Builder Risk Insurance for all above ground construction on the job.

12. SALES TAX

Refer to General Conditions 6.10

The Contractor shall familiarize himself with the requirements and procedures as applicable of the State of Florida pertaining to the exemption from State Sales Tax as it may apply to the Owner.

13. INDEMNITY

Refer to General Conditions 6.20

The Bid Items for Payment and Performance Bond premium and consideration for indemnification to Owner and Engineer are included in the Schedule of Prices and must be completed by the Bidder in order to comply with Florida Statute 725.06.

14. OWNER'S RESPONSIBILITY

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SPECIAL PROVISIONS

Refer to General Condition 8.05

Delete the second sentence in Paragraph 8.05 of the General Conditions in its entirety.

15. SUBSTANTIAL COMPLETION

Refer to General Conditions 14.04

A, Amend the first three lines of Paragraph 14.04A of the General Conditions to read as follows: "When Contractor" considers part of the Work described as Beneficial Occupancy is ready for its intended use; Contractor shall in writing to Owner and Engineer, certify that such Work is able to be used by owner."

B. Amend Paragraph 14.04B of the General Conditions to read as follows: "Owner shall have the right to exclude Contractor from the substantially completed portion of the Work after the date of Substantial Completion, but Owner shall allow Contractor reasonable access to complete or correct items on the inspection punch list."

16. PERMITS

The Contractor will be required to obtain all required permits, including any permits from the City of West Miami, prior to the start of construction.

17. LAWS AND REGULATIONS

Refer to General Conditions 6.09

A. The Contractor shall obey all applicable Federal, State and local laws including but not limited to the ones listed below.

B. The Contractor shall comply with Executive Order No. 11246, entitled "Equal Opportunity Employment," as amended by Executive Order No. 11275, and as supplemented in Department of Labor Regulations (No. 41 CFR, Chapter 60).

C, The Copeland "Anti-Kickback" Act (18 U.S.C. Section 874), as supplemented in U.S. Department of Labor Regulations (29 CFR, Chapter 60).

D. All applicable standards, orders or regulations issued pursuant to the Clean Air Act of 1970 (40 U.S.C. Section 1857 et. seq.) as amended and the Federal Water Pollution Control Act (33 USC. Section 1251 et seq.) as amended.

E. The Florida State Statute 446.101 Apprentice and Training Employment Regulations.

F. Florida Industrial Code No. 8C as amended and especially 8C-29 (CB-1958), Florida Department of Commerce, Bureau of Workmen's Compensation.

18. REVIEW OF APPLICATIONS FOR PROGRESS PAYMENTS

Refer to General Conditions 14.02

Owner shall, within thirty (30) days of presentation to him of the Application for Payment with Engineer's recommendation pay Contractor the amount recommended. This is in lieu of ten (10) days.

19. PARTIAL AND FINAL PAYMENT PROCEDURES

Refer to General Conditions 14.07

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- A. If the work progresses according to this Contract, the Contractor will be paid each month, ninety percent (90%) of the value of the work completed during the preceding month. For the purpose of preparing a monthly estimate for partial payment, the Contractor will make an approximate estimate of the value of all work done as of the last day of each calendar month, and will deduct ten percent (10%) thereof and all previous payments and charges, and the balance will be paid by the Owner to the Contractor on or about thirty (30) days after the submittal to the Owner along with partial releases of lien from all subcontractors and suppliers. The Owner's Engineer shall review, revise and correct, if necessary, and then approve the estimate for partial payment before it is submitted to the Owner. The ten percent (10%), which is deducted each month, is reserved by the Owner as a partial guaranty to it of the faithful execution of this Contract. As a consideration of such payment of ninety percent (90%), the Owner shall have the right to enter upon and put into proper service any or all parts of the work which may be in condition for use; however, such use shall neither be construed as the final acceptance nor the commencement of the one year guarantee bond period for any or all parts of the work, unless final acceptance is made for the complete project at that time. No claim or charge is to be made by the Contractor for such use, nor is such use to be construed as an acceptance by the Owner of any part of the work so used.
- B. Upon receipt of written notice from the Contractor that the work has been completed in conformity with the Drawings and Specifications and any approved changes thereto, the Owner's Engineer shall promptly examine the work and, making such tests as he may deem proper and using all of the care and judgment normally exercised in the examination of completed work by a properly qualified and experienced professional engineer, shall satisfy himself that the Contractor's statement appears to be correct. He shall then inform the Owner in writing that he has examined the work and that it appears to conform to the Contract Drawings Specifications and any approved Change Orders and that therefore he recommends acceptance and final payment to the Contractor. However, it is agreed by the Owner and the Contractor that such statement by the Owner's Engineer does not in any way relieve the Contractor from his responsibility to deliver a completed job in good and workmanlike condition, and does not render the Engineer or the Owner liable for any faulty work done or materials used by the Contractor.
- C. The Owner's Engineer will then make a final estimate of the value of all work done and will deduct therefrom all previous payments which have been made. The Owner's Engineer will report such estimate to the Owner together with his recommendation as to the acceptance of the work or his findings as to any deficiencies therein. Such recommendation as to the acceptance of the work by the Owner's Engineer will be made to his best knowledge and behalf. After receipt and acceptance by the Owner of the properly executed Affidavit and the Release of Lien and within sixty (60) days after approval of the Engineer's estimate and recommendation by the Owner, the amount of the estimate, less any charges or damages herein provided for, will be paid. Upon such final payment, the Owner shall be released by the Contractor from all liability whatever growing out of this Contract, except for the balance, if any, of such amount as may have been retained to cover charges, claims or damages, as specified; and if the Owner is satisfied that no such charges, claims or damages exist or will arise, no such amount will be retained. All prior estimates are subject to correction in the final estimate.

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- D. Each request for a partial payment shall be submitted on an Application for Payment Form shown on Pages 00800-31 & 32, which shall be accompanied by an executed copy of the Certification of Contractor shown on Page 00800-33.
- E. Measurement and payment for work items for which direct payment is provided will be achieved as required by the Technical Specifications. When no direct payment for work or materials is required in General Conditions, the Special Conditions, the Proposal, the sections of the Technical Specifications or in other parts of the Contract Documents or shown, indicated or noted on the Drawings, compensation therefore shall be included in the Contract Unit or Lump Sum Prices for the several pay items under this Contract and shown and listed in the Proposal.
- F. When the work has been completed, the Contractor shall execute a Final Release of Lien and an Affidavit declaring that all bills have been paid in full.
- G. These documents will be furnished to the Owner in a form similar to those, which appear on Pages 00800-34 and 00800-35.

20. FORUM/VENUE

In the event of any dispute and/or legal action arising from the interpretation and/or the performance of any of the documents and/or contracts in this Manual, Owner and Contractor hereby agree that the proper forum for resolving these disputes and/or legal actions shall be the courts in Miami-Dade County, Florida.

21. ATTORNEY'S FEES

In the event of any dispute and/or legal action arising from an interpretation and/or the performance of any of the documents and/or contracts in this Manual, Owner and Contractor hereby agree that the prevailing party shall be awarded reasonable attorney's fees and costs, including but not limited to, the cost of paralegals, accountants and attorney's fees and costs of appellate proceedings, if applicable.

22. INDEMNIFICATION AND HOLD HARMLESS

Notwithstanding anything to the contrary in this Supplementary Condition, the general conditions and/or any other documents in this Manual, and in consideration of the sum of \$10.00 paid by Owner to Contractor, the Contractor hereby agrees to indemnify and hold Owner harmless from any costs, expenses, damages and/or liability to the Owner arising from Contractor's Work.

23. EXPRESS WARRANTIES

Notwithstanding any provisions to the contrary under this Supplemental Conditions, the general conditions and/or any other document in this Manual, Contractor expressly warrants all labor and materials used in the Work for a period of one (1) year from the date Final Payment (unless a longer period is specified in Technical Specifications) is received by the Contractor.

24. PROHIBITED MATERIALS

Pursuant to Chapter 83-174, Laws of Florida, the use of asbestos or asbestos-based materials is strictly prohibited.

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25. NO DAMAGES FOR DELAY

Delete paragraph 12.03B in its entirety

No payment, compensation, increase in contract price or adjustment of any kind (other than the extension of time provided for) shall be made to the Contractor for damages because of hindrances, disruptions or delays from any cause whatsoever in the progress of the work, including, but not limited to, hindrances, disruptions or delays caused by acts of the owner, other contractors, subcontractors, suppliers, material-men, architects and/or engineers whether such hindrances, disruptions or delays be avoidable or unavoidable. The Contractor agrees that he will make no claim for compensation, damages or mitigation of liquidated damages for any such delays, or acceleration in the work, and will accept in full satisfaction for such delays, disruptions, hindrances or acceleration in the work said extension of time.

26. COOPERATION OF CONTRACTOR

In the event that the Engineer must contact the Contractor to perform emergency repair work to correct hazardous or unsafe conditions or problems relating to public health or welfare as a result of or associated with the project construction, the Contractor shall provide the name and twenty-four (24) hours telephone number of the jobsuperintendent.

In addition, the Contractor shall provide a toll free telephone number to his business office for use during business hours of 7AM to 7PM, Monday to Friday.

27. PAYMENT ITEMS

Any work not specifically mentioned in the payment items listed in the Proposal, but indicated on the Plans and/or Specifications, shall be considered as incidental to one or more of the payment Items, and no claim for additional compensation will be allowed, and it shall be assumed that the cost therefore is included in the prices bid for the various items in the Contract. The Bidder shall not add to the listed Items nor combine any of the Items.

28. UNDERGROUND GAS PIPELINES

The Florida Legislature recently passed legislation (CS-645) pertaining to the protection of underground gas pipelines and related facilities. This legislation requires, in part, that persons making excavations in public or private streets obtain information on the location of underground gas pipelines and provide notice of intent to excavate.

Further provisions of this legislation include: Requiring the marking of underground gas pipelines by the owner upon notice of intent to excavate; prohibiting the issuance of excavation permits unless such notice has been given; requiring notice of damage to or dislocation of underground gas pipelines by the excavator; providing for emergency excavation without notice; and prescribing liability of excavator for negligence.

29. CONSTRUCTION SCHEDULE

Prior to the beginning of any work under this Contract, the Contractor shall meet with the various utility companies concerned and the City of West Miami Engineer. The purpose of this meeting is to coordinate all aspects of the work to be accomplished under this Contract.

The Contractor shall submit a detailed sequence of construction to the City. Scheduling of all work shall be as approved by the City Engineer.

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30. STORAGE SITE

There is no City property in this area available for use as a storage yard for this improvement. The Contractor shall provide his own storage site.

31. SIDEWALK AND CURB AND GUTTER CONSTRUCTION

The Construction of concrete sidewalk shall be separate and distinct from the construction of concrete curb and gutter. "No monolithic pour of concrete for sidewalk and curb or curb and gutter combined shall be allowed. Extruded curb or curb and gutter shall not be allowed." Payment for sidewalk replacement will be made under applicable bid items.

32. SUITABLE EXTRA BACKFILL MATERIAL

The cost of suitable extra backfill, if required, will be considered, as incidental to the construction and no extra compensation will be allowed.

33. DISPOSAL OF MATERIAL

Surplus excavated material, debris and any other disposable material shall be removed from the site and disposal as appropriate at the Contractor expenses unless otherwise directed by the Engineer. The Contractor shall be responsible for the disposal of all used materials, materials of excavation and debris in a legal and environmental acceptable manner.

34. FENCING AROUND EXCAVATION

At the close of the workday, holidays, and weekdays, the Contractor shall either:

- a. Refill all open excavation, or
- b. Cover open excavation with steel plates capable of supporting vehicular traffic (H-20 Loading).

In addition, the Contractor shall install a fence (min. 4 ft height) around the perimeter of all excavations. An adequate number of fence posts shall be installed to maintain the fence in an upright and taut position. The City Engineer must approve any variance from this requirement. All cost for this requirement shall be considered incidental to the work and no additional compensation will be allowed.

35. PROVIDING ACCESS TO RESIDENCES AND BUSINESS ESTABLISHMENTS

During construction of the improvement, safe access shall be provided by the Contractor to the entrance of all residences and business establishments. Methods to be used shall be determined by the Contractor with the approval of the Engineer. All costs for providing this access shall be included in other parts of the work and no additional compensation will be allowed. The use of private property is prohibited unless the Contractor obtains written authorization from the property owner(s), and may have special conditions or requirements. It is the responsibility of the Contractor to provide the City Engineer, prior to the use of private property with a signed release before entering the property. The Contractor must document all existing conditions of the private property with video film prior to and after use.

36. TRAFFIC CONTROL

The Traffic Section of the City of West Miami Department of Police and the Department of Public Works will control traffic during construction. Traffic shall be maintained at all times

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where directed by the City Engineer. A traffic permit from the Department of Police will be required.

Sufficient lights, barricades and traffic signs shall be provided, placed and maintained by the Contractor at all times in order to properly safeguard traffic and the public. Traffic shall be maintained at all times, where directed by the City Engineer. In the event that any street must be closed to traffic or detoured, it shall be closed or detoured only after approval of the Department of Police and the Department of Public Works of the City of West Miami, and after notifying the Miami-Dade County Fire Department.

The following additional requirements will also be enforced:

All traffic control devices used on local street construction shall conform to the standards and specifications of Miami-Dade Traffic Division.

All necessary detours, including erection of signs and keeping all detour streets clean of any obstacles that may restrict the continuous flow of traffic.

On all streets, at least one (1) lane shall be available for vehicular traffic at all times. Steel plates or bridging capable of supporting H-20 loading and temporary asphalt pavement shall be used where necessary to comply with these requirements.

37. CERTIFICATE OF COMPETENCY AND LICENSES REQUIRED

As a prerequisite to the submission of a Bid, the Bidder shall hold a valid Certificate of Competency or State Contractor's Certificate of Registration, in the appropriate trade required for the work, including a valid Miami-Dade County General Engineering Contractor License issued by the appropriate board of Miami-Dade County. The County-Municipal Occupational License issued by Miami-Dade County is based upon a Certificate of Competency from the Miami-Dade County Board of Contractors Examiners. Bidders not already approved by this Board may have difficulty in obtaining a License because of the time requirements.

If you are interested, we suggest an early investigation into this requirement. Details may be obtained from:

MIAMI-DADE COUNTY
PUBLIC WORKS DEPARTMENT
111 N.W. 1st STREET, 16th Floor
Miami, Florida 33128 / Telephone: (305) 375-2705

38. DESCRIPTION OF PROPOSAL

The proposal has been broken up into various bid items for convenience in evaluating bids, and administering the contract. The price quoted for each proposal item shall include all costs for labor, materials, and equipment necessary to construct the improvements in accordance with the Specifications and/or Plans. Items of work not specifically mentioned but necessary to create a finished and complete work product shall be assumed to be a part of one or more Proposal Items and shall be furnished and the price therefore is included in such item or items.

A Contract will be awarded for the Total Bid only. No separate awards shall be made for the individual bid sections, if any, or for individual proposal items. TOTAL BID is the sum of the Bid Items.

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The Contractor shall perform the Services described in the Proposal, plans and Specifications. The Services included but are not limited to the services outlined in the Proposal herein and services may be required to bring a complete and quality work product at not extra cost to the City. The work shall be performed in a sound, economical, efficient and professional manner and within the time and manner required in the Specification and Contract Documents.

The Contractor shall perform the work in close coordination with the City Engineer.

The Contractor shall provide all constructing services comprising the work and shall be fully responsible for all the services performed. The City's review and approval of the work will relate only to overall compliance with the general requirements of the work and whenever the term "Approval by the City" or like term is used in this work, the phraseology shall in no way relieve the Contractor from any duties or responsibilities.

The Contractor shall, in the performance of the work, comply with all Federal, State and Local codes, Ordinances and Regulations pertaining to the work.

39. ROADWAY GRADING

Not Used.

40. CLEANING EXISTING STORM SEWERS

Where the plans or specifications call for cleaning an existing storm system, the entire extent of the existing storm structures shall be thoroughly cleaned of all sand, rock and other deleterious materials. The cost of this cleaning shall be included in the bid price of the new construction and no additional compensation will be allowed. The Contractor is encouraged to visit the project site prior to submitting a bid proposal.

Once the connection to an existing storm sewer structure has occurred, the structure and the storm sewer system shall be thoroughly cleaned. The cost of this cleaning shall be included in the bid price of the new construction and no additional compensation will be allowed. The water necessary to pressure clean the storm sewer system shall be obtained by the Contractor at their expense. The Contractor shall obtain a water account and meter from the City of West Miami.

All cleaning shall be accomplished to the satisfaction of the Engineer before the new structures will be accepted as completed for purposes of payment.

41. RESPONSIBILITY OF THE CONTRACTOR

The Contractor shall schedule his work in such a manner and provide the proper supervision so as to cause the minimum of conflict or delay to the work of utility companies working within the area. The Contractor will be held responsible for any delay in time and/or damage to existing structures, foundations, utilities, or other existing features because of omission or neglect by himself or his employees. Any property damage by his operations shall be replaced to its original condition at no extra cost to the City. The City Engineer will be the mediator in all such cases wherein the contractors or the utility companies are in dispute concerning lost time or property damages.

The Contractor shall abide by these judgments and decisions in all cases. If the Contractor's performance of this contract is delayed by acts of the City or other subcontractors, suppliers and contractors, material-men, architects and/or engineers, the contractor may request an extension of time from the City in writing within twenty (20) days

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of the event by which the delay occurred, but the Contractor shall not be entitled to an increase in the contract price or claims or damages because of the delay or because of any acceleration in its work.

42. SUPERVISION

It is neither the City intention nor responsibility to coordinate the many activities of the Contractor necessary to complete a project. The City responsibility is to see that the project is carried on in accordance with the Plans and Specifications. In many of our past jobs we have experienced difficulty because of the lack of adequate superintendents.

THE CONTRACTOR IS HEREBY ALERTED, AS PART OF THIS CONTRACT DOCUMENTS, THAT A COMPETENT SUPERINTENDENT SHALL BE IN RESPONSIBLE CHARGE OF THE JOB AT ALL TIMES AND THAT ALL WORK SHALL BE DOCUMENTED IN A DAILY DIARY.

43. PIPE FINISHING

All pipes entering catch basins, manholes or junction boxes shall be cut flush with the inside face of the structure and finished in a neat workmanlike manner. In addition to this, all aluminum pipe shall have all field cuts ground smooth so as not to leave burrs or rough edges at and within joints and shall be ground flush with inside face of structure.

44. SETTLEMENT OF TRENCH BACKFILL AND/OR ADJACENT GROUND

If the trench backfill and/or adjacent ground settles or depressions should occur during or after the construction of a drainage structure, and in the opinion of the Engineer the settlement or depression could be the result of a structural failure, improper pipe joint, or improper backfill, then the Contractor shall uncover the structure or pipe as directed by the City Engineer so it can be examined to determine the cause of failure. The Contractor shall make all necessary repairs, backfill the excavated area and restore the surface to the satisfaction of the City Engineer.

All costs for this work, including the case where the settlement or depression was not the result of a structural failure or improper pipe joint shall be considered incidental to the general work and no additional compensation will be allowed.

45. UNDERGROUND UTILITIES NOTIFICATION CENTER

The Contractor is alerted that underground utilities exist in the vicinity of the proposed work and that he should notify the Utility Notification Center for Location at telephone number 1-800-432-4770 at least forty-eight (48) hours prior to digging for utilities verification in the field. In addition to this, the Contractor shall notify the Florida Power and Light Company for verification of their utilities.

46. CLEAN-UP OF CONSTRUCTION AREA

Upon completion of construction, the project site shall be cleaned to the satisfaction of the City Engineer. All trash and other construction debris shall be removed from the job site on a daily basis at no additional expense to the City.

47. PERMITS AND FEES

Refer to Section 01740 of the Technical Specifications.

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SPECIAL PROVISIONS

48. DEFACING OF NEW AND EXISTING CONCRETE AND PAVEMENT

It shall be the Contractor's responsibility to preserve the condition of existing and newly constructed concrete sidewalk, curb and/or gutter and pavement. Any damaged pavement or concrete defaced with sticks, nails, footprints, etc., shall be replaced at the Contractor's expense.

49. REWORKING EXISTING DRAINAGE STRUCTURES

Not Used.

50. SURVEY WORK

The Contractor will retain or employ a Professional Land Surveyor to layout all storm sewer construction and provide final measurements.

At the project pre-construction meeting, to be attended by the Contractor's Surveyor or survey representative, the representative will be provided a packet of information, showing the format used by the Public Works Department. The Contractor is advised that the survey work, including required final measurements, shall be according to Public Works Standards and are an integral part of the project. The project will not be considered complete until the City Engineer approves the final measurements.

Layout is to be under the supervision of the Professional Land Surveyor. The centerline of catch basins and an offset line parallel with the centerline of the pipe will be marked by nails and discs at intervals of no more than 50 feet. Distances between manholes or structures will be accurate within 0.10 foot and elevations of the offset points will be determined with an accuracy of ± 0.03 foot.

Offset points are to be painted with good quality traffic paint with the distance from the catch basin and the low invert. This information is to be shown in the approved field book and on a cut sheet form provided by the City Engineer. All cut sheets are to be delivered to the City Engineer only.

The final measurements will include accurate horizontal and vertical location of all construction. This includes, but is not limited to grate, invert and bottom elevations of catch basins or structures and size and type of all piping.

The Surveyor works for the Contractor but shall be available on a full time basis to answer any questions the City Engineer may have. All costs for survey work shall be considered incidental to the general work and no additional compensation will be allowed.

51. PRE-CAST STRUCTURES

The Contractor shall submit detailed shop drawings of pre-cast structures for approval by the Engineer prior to pouring of the structures.

Pre-cast structures shall be placed to proper grade and shall not be used as a tamper for compaction or to lower or adjust the elevation of the structure.

Any pre-cast structures that are mishandled or dropped from heights greater than 6 inches shall be subject to being removed from the project and rejected at the Engineer's discretion.

52. REMOVAL OF EXISTING STORM SEWER MAINS AND CATCH BASINS

Not Used.

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SPECIAL PROVISIONS

53. SURFACE RESTORATION

Pavement, sidewalk, curb and gutter replacement in this project will be permanent. The Contractor shall remove and replace only the amount of pavement, sidewalk, curb and gutter necessary to accomplish pipeline construction or as shown on the Plans.

Payment for the replacement of all type of pavement, sidewalk, curb and gutter over excavations shall be included in the various items in the Bid Form.

No additional compensation will be allowed for restoration of pavement, sidewalk, curb and gutter, driveways and sod damaged by the Contractor's construction and construction activities other than these indicated on the Plans or for restoration required by the contract documents.

54. DUST PREVENTION

The Contractor is required to perform its work in such a manner as to prevent dust caused by the work. All cost for dust prevention shall be included in other parts of the work.

The City of West Miami intends to enforce this section and if necessary, will limit the number of manhole and or valve boxes sections adjusted prior to resurfacing. The City Engineer shall have the authority to require the Contractor to remove the dust from the street by mechanical means after the temporary patch has been placed, increase the frequency of water spraying and reroute equipment bringing in backfill and/or removing excess material or supplies necessary for construction.

55. ASPHALT PRIME COAT COVER SAND

Cover sand for limerock base prime coat shall be hot asphalt coated prior to application.

56. ASPHALTIC CONCRETE DESIGN MIX

The asphaltic concrete surface course shall be Type "S-III", as submitted by the local asphalt suppliers and approved by the City Engineer.

Asphaltic concrete mix for surface courses shall meet the requirements of Florida Department of Transportation Specifications for Type "S-III", Asphaltic Concrete, Section 331-1 through Section 331-5.

All new design mixes shall be submitted for approval to the City Engineer.

57. ASPHALTIC CONCRETE PAVEMENT

Prior to placing the asphaltic concrete surface course, the existing street surfaces shall be thoroughly cleaned. All utility castings shall be adjusted to the new surface elevation, if necessary, by their respective owners, except storm and sanitary sewer manhole covers and gratings, which shall be adjusted by the Contractor. The pavement edges shall be cleared of all encroaching vegetation, loose sand, rock and all other foreign matter, and the edges shall be patched as necessary to bring the pavement to a uniform width. All surface failures, which have resulted in potholes, shall be patched in an approved manner unless, in the opinion of the Engineer, the damage areas are of insignificant depth and can be satisfactorily filled and compacted in the normal operation of applying and compacting the surface course.

A bituminous tack coat shall be applied to the existing pavement surface prior to placing the new surface.

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The Contractor shall overlay street surfaces identified by the Engineer with 1-inch thick for City streets. Type "S-III" Asphaltic Concrete mixture as supplied by the local asphalt plants shall be approved by the City Engineer.

Asphaltic concrete mix for surface courses shall meet the requirements of Florida Department of Transportation Specifications for Type "S-III", Asphaltic Concrete, Section 331-1 through Section 331-5.

All new design mixes shall be submitted for approval to the City Engineer.

58. FINAL RESURFACING

No more than twenty (20) calendar days (excluding inclement weather) shall elapse from the time that a street is opened for pipe line excavation until time the final asphaltic surface course is constructed. Failure to comply with this requirement will result in the issuance of a stop order on all work until such time that the final asphaltic surface course is completed.

59. PAVEMENT MARKINGS AND SIGNAGE

All pavement marking and signage material and method of installation shall conform to the latest edition of the Manual of Uniform Traffic Control Devices and to Sections 710 and 711 of the Florida Department of Transportation's Standard Specifications for Road and Bridge Construction. All costs for restoration of existing pavement markings and signs shall be included in one or more of the bid items and no additional compensation shall be allowed.

60. SIDEWALK REPLACEMENT PROCEDURES

Prior to the start of construction, the Contractor and City Engineer will identify locations for sidewalk replacement as specified on the plans and specifications.

The Contractor shall furnish all labor, materials, equipment, tools and related work required to complete the sidewalk replacement work described below, and in accordance with the contract documents and specifications:

1. If applicable, remove all roots to a depth of twelve (12) inches below the bottom of the sidewalk and prune trees endangered by extensive root pruning. (Limb pruning shall be accomplished prior to root pruning). All pruning shall be accomplished by an experienced landscape Contractor.
2. Replace and reset water meter boxes uplifted or broken within sidewalks that are to be replaced.
3. Restore private property, including sod, blocks, bricks, tile, concrete, etc., to transition to the new sidewalk elevation or to repair damage that occurred during the sidewalk replacement work.
4. Restore all parkways and all sprinkler systems or water connections broken or disturbed during the sidewalk replacement work.
5. Replace driveway approaches, in kind, within public right of way, that have been uplifted by tree roots.
6. Saw cut flags of sidewalk before removal to prevent damage to adjacent flags.
7. Flags of sidewalk that are not included in this contract for replacement that are damaged by the Contractor's operation and/or negligence are to be replaced at the Contractor's expense.

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8. Fill all form holes when forms are removed from new sidewalk or curb and gutter. The Engineer must approve filler material.
9. Any utilities that are damaged by the Contractor's operation and that were properly located and marked by the respective utility companies, or are detectable from the surface such as services from meters and valves, shall be repaired or replaced at the Contractor's expense. (See Section 72 of the Special Provisions.)
10. The Contractor shall schedule removal of driveway or sidewalk to minimize disruption of property owner's access to his property.
11. The amount of open area (where sidewalk has been removed but not repaired) shall be limited to an area less than or equal to the amount of sidewalk the Contractor can pour in three (3) calendar days or one (1) side of one (1) block, whichever is shorter.
12. Concrete for driveway sidewalk shall be poured within one (1) day of the existing sidewalk removal. The Contractor may saw cut and crack existing driveway sidewalk but leave it in place until removal, if the driveway is still satisfactory for vehicular use.
13. All costs for sidewalk replacement work shall be considered incidental in the general work and no additional compensation will be allowed.

61. SANITARY SEWER LATERAL REPLACEMENT

Sanitary sewer laterals in conflict with the proposed Construction shall be relayed where possible between the right of way line and the mainline sewer. An initial finding must first be made by the City Engineer to determine if the lateral can be adjusted to a higher or lower elevation. If the lateral can be adjusted, then the Contractor shall relay the lateral from the private property connection to the mainline sewer. This relaying shall include adjustments to cleanouts and fittings in the vicinity of the property line on private property with approved adapters and fittings. All costs for sanitary sewer lateral replacement shall be considered incidental to the general work and no additional compensation will be allowed.

62. TYPE II CEMENT

All concrete and masonry work in conjunction with all the work under this Contract, excluding sidewalk, curb and gutter and concrete encasements, shall be accomplished with Type II Cement, unless otherwise called for specifically in the Plans.

63. SAFETY

The Contractor is alerted that the State of Florida has adopted the "Trench Safety Act" for the purpose of incorporating current OSHA trench safety standards into municipal construction projects. The basic safety requirements are as follows:

Excavating and Trenching

- a. Before opening any excavation, efforts shall be made (including utility company contact) to determine if there are underground utility installations in the area, and they shall be located and supported during the excavation operations.
- b. The walls and faces of trenches 5 feet or more deep and all excavations in which employees are exposed to danger from moving ground or cave-in shall be guarded by a shoring system, sloping of the ground, or some other equivalent means.

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- c. In excavations which employees may be required to enter, excavated or other material shall be effectively stored and retained at least 2 feet or more from the edge of the excavation.
- d. Daily inspections of excavations shall be made by a competent person. If evidence of possible cave-ins or slides is apparent, all work in the excavation shall cease until the necessary precautions have been taken to safeguard the employees.
- e. Trenches 4 feet deep or more shall have adequate means of exit such as ladders or steps, located so as to require no more than 25 feet of lateral travel.

Head Protection

- a. Head protection equipment (helmets) shall be worn in areas where there is a possible danger of head injuries from impact, flying objects or electrical shock and burns.
- b. Helmets for protection against impact and penetration of falling and flying objects shall meet the requirements of ANSI Z89.1-1969
- c. Helmets for protection against electrical shock and burns meet the requirements of ANSI Z89.2-1971.

The cost of compliance with the Trench Safety Act is included in the unit price bid items for structures, pipe and/or exfiltration drain.

64. ACCEPTANCE OF WORK AND FINAL PAYMENT

Inspectors will do periodical and final inspections. The presence or absence of an inspector shall not lessen the responsibility of the Contractor to properly perform the work. The City Engineer shall determine the amount quality, fitness and acceptability of the work and materials to be paid for.

65. MAINTENANCE OF LANDSCAPING

Existing trees on private property and in the public right of way are to be protected. Trimming of trees will not be allowed without prior approval from the Engineer and the Public Works Director. The services of a licensed landscape contractor shall be retained for any trimming required due to construction activities and for all planting and transplanting of trees shown on the Plans.

Landscaping and Structures existing on private property adjacent to the proposed work are to be maintained and any replacement shall be of equal or better quality. Cost for maintenance of landscaping and replacement of existing sod shall be considered, as incidental of the job and no additional compensation will be allowed.

66. TRANSPLANTING EXISTING TREES AND PALMS

Existing trees shown on the Plan to be relocated shall be root pruned. In preparation for moving, a minimum of six (6) weeks and a maximum of twelve (12) weeks prior to installation shall occur. Ball sizes shall be as specified in Grades and Standards, for Nursery Plants - Part II Palms and Trees, Charles S. Bush, Department of Agriculture.

Trees shall be braced in three (3) directions with clean sound 2- x 4-foot lumber. Stakes shall be driven at the base of each brace to prevent slippage. Bracing may be nailed to the

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2- x 4-foot blocking about tree trunk. Blocking however shall be banded at two (2) places, not nailed.

No guarantee and no root guard will be required for transplanted trees; however, they shall be planted and maintained according to the highest nursery standards.

In the event that transplanted trees die before acceptance of the contract, they shall be removed and the resulting holes filled and sodded.

It is required that tree relocation be done by a competent landscape company or nursery knowledgeable and experienced in this type of work to insure a successful transplanting job.

67. SOD, TREE, SHRUB AND TREE STUMP REMOVAL AND TRIMMING

Sod, trees, shrubs, tree stumps, etc., to be removed due to new construction are the responsibility of the Contractor.

The cost of shrub removal, tree trimming, and sod restoration shall be incidental to the project and no additional compensation shall be allowed.

68. PROTECTION OF EXISTING UTILITY POLES

The Contractor shall ensure that the existing utility poles are properly protected during installation of the pipes and structures and shall coordinate with the utility pole owner any safeguards necessary to protect the utility pole including bracing of the pole during construction, if necessary.

All costs for the protection of the utility poles and any cost for the temporary bracing by the utility pole owner shall be the responsibility of the Contractor and shall be considered incidental to and included in the various items in the bid form. No additional compensation for this service shall be considered or allowed.

69. MOBILIZATION

The cost of mobilization shall be included in the applicable bid item in the Proposal.

70. ADJUSTMENTS BEHIND PROPERTY LINES

Adjustments to approach walks and driveways on private property shall be made at a slope no greater than 1:12. Adjustments to existing ground on private property shall be sodded and made at a slope no greater than 1:3. All adjustments of driveways and walks shall be of a matching type.

71. MATERIALS OF EXCAVATION

Materials of excavation shall include all materials encountered. Any unforeseen obstacles or debris encountered shall be removed and will be considered, as incidental to construction and additional compensation will not be allowed.

72. EXISTING UNDERGROUND STRUCTURES

The Contractor shall contact the various utility companies to obtain the location of the existing underground utilities prior to beginning any excavation work.

Caution shall be exercised by the Contractor in grading operations as some existing underground utilities have a minor cover. The Contractor shall be responsible for replacing

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any underground facility broken or dislocated during construction for which sufficient underground information has been provided by the utility companies.

Any existing underground utilities, such as but not limited to sanitary sewer lines, laterals or storm sewer lines damaged during construction shall be repaired at the Contractor's expense.

73. COMMENCEMENT OF WORK

Prior to the start of any work under this Contract, the Contractor shall meet with representatives of the Department of Public Works and the various utility companies to coordinate the work.

It has been the City's experience on previous projects that problems related with building access, drainage and dust control were created due to inadequate construction scheduling. These problems were further aggravated when work on partially constructed streets remained idle for excessive periods of time.

All work shall proceed in an orderly, progressive fashion and in a manner and sequence that will minimize drainage and dust control problems and insure the least possible inconvenience to traffic and property owners in the project area.

74. COORDINATION WITH SEPARATE CONTRACTORS

Prior to the beginning of any work under this contract, the Contractor shall meet with the various utility companies concerned, and the City of West Miami Engineer. The purpose of this meeting is to coordinate all aspects of the work to be accomplished under this Contract.

The Contractor shall coordinate his work to cooperate fully with the other contractors, and all utility companies working in the area.

The Contractor shall schedule his work in such manner and provide proper supervision so as to cause a minimum amount of conflict or delay to other contractors and utility companies.

The Contractor shall submit a detailed sequence of construction to the City. Scheduling of all work shall be as approved by the Engineer.

The Contractor will be held responsible for any delay in time and/or damage to existing structures, foundation, utilities or other existing features because of omission or neglect by himself or his employees. Any property damaged by his operations shall be replaced or repaired to its original condition at no extra cost to the City. The City of West Miami Engineer will be the mediator in all such cases wherein the Contractor or the utility companies are in dispute concerning lost time or property damages. The Contractor shall abide by these judgments and decisions in all cases.

75. SUBCONTRACTORS

Names of all subcontractors and their current County-Municipal License Numbers shall be listed on the proposal in the spaces provided. No change in subcontractors, as listed shall be allowed without written permission of the Engineer. Subcontractors shall hold a valid License at the time of executing a Contract.

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76. SITE INSPECTION

The Contractor shall examine all sites of work, inform himself in regard to all conditions pertaining to the place where the work is to be done, and fully satisfy himself relative to the work to be performed prior to submitting the bid.

77. LIMITS OF CONSTRUCTION

The Limits of Construction for this project encompasses the area shown on the drawings.

78. OWNER'S CONTINGENCY

To provide a fund for contingent work described below, the Contractor shall include in his Proposal under the appropriate Owner's Contingency Bid Item, the sum of **Twenty Thousand Dollars (\$ 20,000.00)**. This fund shall be used to pay for the following when not provided for on the Plans, in the Specifications, or in another Item of the Proposal:

- a) The adjustment, removal, or reconstruction of any City-owned structures, not shown on the Plans nor specifically mentioned in the Specifications.
- b) Other unforeseen surface or underground adjustments or additional work not included on the Plans or in the Specifications.

The amount of such construction adjustments, services and/or work, are rough estimates only and shall be done only as directed by the City, who shall approve all charges which will be paid for from the funds set forth for in the Owner's Contingency. All construction adjustments, and/or extra work that is done by the Contractor without previous written approval by the City, shall be considered incidental to the job and the City will not be liable for extra compensation. Any portion of said Contingency remaining after all authorized payments have been made will be withheld from Contract payments.

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NOTICE TO BIDDERS/PROSPECTIVE CONTRACTOR(S)

Attention is called to the fact that no less than the minimum salaries and wages as set forth in the Contract Documents must be paid on this project and that the Contractor must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex or national origin.

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U.S. Department of Labor (Davis-Bacon)

General Decision Number FL96044

Miami Dade County

Construction Type:

Municipal-Drainage

Laborers

Concrete Workers & Finishers

Fence Erectors

Power Equipment Operators

Surveyors

Pipe Installers

Electricians

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SPECIAL PROVISIONS

NOTICE OF REQUIREMENTS FOR CLEAN AIR AND WATER

1. (Applicable if the bid or offer exceeds \$100,000, or the contracting officer has determined that orders under and indefinite quantity contract in any year will exceed \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act (42 U.S.C. 1857c-8 (c)(1) or the Federal Water Pollution Act (33 U.S.C. 1319(c) and is listed by EPA, or is not otherwise exempt.)
2. The bidder or offeror certifies as follows:
 - a. Any facility to be utilized in the performance of this proposed contract has (), has not (), been listed on the Environmental Protection agency List of Violating Facilities.
 - b. He will promptly notify the contracting officer, prior to award, of the receipt of any communication from the Director, Office of Federal Activities, and Environmental Protection Agency, indicating that any facility, which he proposes to use for the performance of the contract, is under consideration to be listed on the EPA List of Violating Facilities.
 - c. He will include substantially this certification, including this paragraph (c) in every nonexempt subcontract.

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Date: _____

APPLICATION FOR PAYMENT NO. _____

Project No. _____

To: _____(OWNER)

From: _____(CONTRACTOR)

Contract for: _____

For Work accomplished through the date of _____, 20____

SUMMARY OF CONTRACT AMOUNTS

- | | | |
|----|---|-----------------|
| 1. | Original Contract Price: | \$ _____ |
| 2. | Change Orders No. through | \$ _____ |
| 3. | Contract Price with all approved Change Orders: | \$ _____ |
| 4. | Work completed to date: | \$ _____ |
| 5. | Less (10%) Retainage: | \$ _____ |
| 6. | Amount due to date: | \$ _____ |
| 7. | Less previous payments (or applications): | \$ _____ |
| 8. | AMOUNT DUE THIS APPLICATION: | \$ _____ |

Note: This application must be accompanied with the Certification of Contractor Form and worksheet for complete items as shown on page 00800-33.

Accompanying Documentation:

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated: _____, _____

By: _____
(Project Manager)

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SPECIAL PROVISIONS

APPLICATION FOR PAYMENT NO. _____
Contractor's Schedule of Completed Work Items

Project: _____ Sheet _____ of _____

Owner's Contract No.: _____ Engineer's Project No.: _____

For work accomplished through the date of: _____, 20_____

Item No.	Description	ORIGINAL CONTRACT QUANTITIES				WORK COMPLETED	
		Quantity	Unit	Unit Price	Amount	Quantity	Amount
	Totals (Original Contract)				\$ _____		\$ _____
	Change Order No. 1:				\$ _____		\$ _____
	Change Order No. 2:				\$ _____		\$ _____
	PROJECT TOTAL:				\$ _____		\$ _____

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SPECIAL PROVISIONS

**CERTIFICATION OF CONTRACTOR
(APPLICATION FOR PAYMENT)**

According to the best of my knowledge and belief, I certify that all items and amounts shown on Application for Payment No. _____ are correct, that all work has been performed and/or materials supplied in full accordance with the terms and conditions of this Contract, dated _____, 20____ between _____ (Owner) and _____(Contractor);

I further certify that all just and lawful bills against the undersigned and his subcontractors and suppliers for labor, material and equipment employed in the performance of this Contract have been paid in full accordance with their terms and conditions; that all taxes imposed by Chapter 212, Florida Statutes (Sales and Use Tax Act), as amended, have been paid and discharged; and that there are no Vendor's, Mechanic's or other Liens or rights to liens or conditional sales contracts which should be satisfied or discharged before such payment is made.

Date: _____ Contractor _____

STATE OF FLORIDA

COUNTY OF _____

Personally, appeared before me this _____ day of _____, _____
_____ known (or made known)

to me as the _____

(Owner) (Partner) (Corporate Officer) – Give Title of _____

Contractor(s) who subscribed and swore to the above instrument in my presence.

Notary Public – (Type Name)
State of Florida-at-Large
My Commission Expires: _____

The Contractor shall execute this Certificate and attach it to each Application for Payment.

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SPECIAL PROVISIONS

AFFIDAVIT

STATE OF FLORIDA

COUNTY OF _____

Before me, the undersigned authority, authorized to administer oaths and take acknowledgements, personally appeared _____, who, after being first duly sworn, upon oath deposes and says that all lienors contracting directly with, or directly employed by (him, them, it) and that all taxes imposed by Chapter 212, Florida Statutes (Sales and Use Tax Act) as amended, have been paid and discharged, and that all bill, wages, fees, claims and other charges incurred by _____ in connection with the construction of _____ have been paid in full.

SIGNED: _____

By: _____

WITNESSES:

SWORN AND SUBSCRIBED TO BEFORE ME THIS _____ day _____, 20____ AD.

Notary Public – (Type Name)
State of Florida-at-Large
My Commission Expires: _____

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SPECIAL PROVISIONS

FINAL RELEASE OF LIEN

KNOW ALL MEN BY THESE PRESENTS, that _____ for and in consideration of the sum of _____ Dollars (\$ _____) paid to _____ by the _____, receipt of which is hereby acknowledged, does hereby release and quitclaim to the City of West Miami, the Owner, its successors or assigns, all liens, lien rights, claims or demands of any kind whatsoever which _____ now has (have) or might have against the property, building, and/or _____ for any incidental expense for the construction of: _____ thereon or in otherwise improving said property situated as above described.

IN WITNESS WHEREOF _____ have (has) hereunto set _____ hand and seal _____ this _____ day of _____, 20____, A.D.

WITNESSES:

SWORN AND SUBSCRIBED TO BEFORE ME THIS _____ day _____, 20____ AD.

Notary Public – (Type Name)
State of Florida-at-Large
My Commission Expires: _____

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS -
- PHASE 1**

00801

TECHNICAL SPECIFICATIONS

DIVISION 01

GENERAL REQUIREMENTS

DOCUMENT 00801
TECHNICAL SPECIFICATIONS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The following Specifications establish the City of West Miami (City) requirements for the construction of storm sewer drainage collection, exfiltration trenches, and paving, grading and utilities. The referenced Sections do not purport to cover all materials or installation procedures, which may be required. However, it is the intent of the City to obtain a complete and working installation under this project, and any items of labor, equipment or materials, which may reasonably be assumed as necessary to accomplish this end, shall be supplied whether or not they are specifically shown on the Plans or stated herein.

DIVISION 01 - GENERAL	
SECTION	DESCRIPTION
01010	Summary of Work
01011	Site Conditions
01015	Index of Drawings
01016	Safety Requirements and Protection of Property
01025	Measurement and Payment
01031	Grades, Lines and Levels
01050	Field Engineering
01090	References
01100	Special Project Procedures
01120	Sequence of Construction
01152	Applications for Payment
01200	Project Meetings
01310	Construction Schedules
01340	Shop Drawings, Working Drawings and Samples
01410	Project Testing Laboratory Services
01505	Control of Work
01510	Mobilizations
01581	Project Signs
01600	Material and Equipment
01700	Contract Closeout
01720	Project Record Documents
01730	Warranties and Bonds
01740	Permits
01750	Maintenance of Traffic and Public Streets
DIVISION 2 - SITE WORK	
SECTION	DESCRIPTION
02315	Trenching and Backfilling for Piping System
02630	Storm Drainage
02745	Pavement Removal and Replacement
02765	Pavement Markings and Traffic Signs
02900	Landscaping

DOCUMENT 00801
TECHNICAL SPECIFICATIONS

DIVISION 03 - CONCRETE	
SECTION	DESCRIPTION
03100	Concrete Formwork
03200	Concrete Reinforcement
03300	Cast-in-Place Concrete
03375	Flowable Fill
DIVISION 05 - METALS	
SECTION	DESCRIPTION
05550	Castings

- B. The City shall be the principal agency for any notification, approval, and acceptance of this project. In addition to the above listed Sections, other references are made in the plans and these specifications.

1.2 QUALITY ASSURANCE

- A. All material and installation shall be in accordance with the Specifications contained herein and as stated in the plans. The material and installation for this project shall be in full compliance with all applicable standards listed in Reference Standards.

1.3 PROJECT APPROVAL

- A. The approval of the City shall be secured before commencement of any construction related activity.

1.4 SPECIAL CONDITIONS

- A. The work shall proceed in accordance with following specification sections:
1. Section 01050 "Field Engineering."
 2. Section 01011 "Site Conditions."
- B. The Contractor shall provide all temporary signing, striping, detouring, barricading, fencing, signals, and competent flaggers, as required in accordance with the minimum requirements of the latest Manual of Uniform Traffic Control Devices, Chapter VI, whenever and wherever needed for pursuance of the project, and/or as directed by the Director of Public Works. The Contractor shall also coordinate these operations with the City Public Works Department and Miami-Dade Department of Transportation, or the Florida Department of Transportation as necessary.

1.5 PERMITS, INSPECTIONS AND FEES

- A. The Contractor shall obtain and pay for all permits and fees in accordance with Section 01740 "Permits." For information regarding reimbursement of required permit fees, see Section 01740.

DOCUMENT 00801
TECHNICAL SPECIFICATIONS

- B. Inspection by City personnel is required in addition to, not in lieu of, municipal, County, and City inspections. No facility will be accepted until it has passed all inspections.

1.6 PRE-CONSTRUCTION CONFERENCE

- A. Before commencement of the work, the Contractor shall attend a "Pre-construction Conference."

1.7 SUBMITTALS

- A. The Contractor shall furnish As-Builts and Project Record Documents in accordance with Section 01720 "Project Record Documents."
- B. Where the Specifications require test certification or certification that certain products or material furnished are as specified, the Contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01010
SUMMARY OF WORK

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work Included: This Section describes the project in general and provides an overview of the extent of the work to be performed under this Contract. Detailed requirements and extent of work is stated in the applicable Specification sections and shown on the Contract Drawings. The Contractor shall, except as otherwise specifically stated herein or in any applicable parts of the Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, testing, and completion of the work under this Contract.
- B. Summary of Work: The work included in this project consists of the installation of approximately 280 lf of drainage pipe and 850 lf of exfiltration trench, catch basins, pavement demolition and restoration, new concrete sidewalk and other appurtenant work.

1.2 SPECIFICATIONS

- A. The Specifications included in these Contract Documents establish the minimum performance and quality requirements for materials and equipment together with the minimum standards for quality of workmanship and appearance. Generally, there has been no attempt to separate the Specification sections into groups for the work of separate subcontractors, or for work to be performed by the various trades. Should there be any question as to the interpretation of any particular Specification section or part of Specification section, such question should be directed to the Engineer prior to the submittal of a proposal for the work under this Contract.
- B. The installation and piping work shown on the Drawings is intended to be comprehensive and descriptive, not an exact and complete representation of the actual finished work. Installed piping shall include fittings, joints, supports, nuts, bolts, and all other accessories required to provide complete and satisfactory piping systems as specified, even though some items may not be specifically shown on the Drawings.

1.3 REASONABLY IMPLIED PARTS OF THE WORK SHALL BE DONE THOUGH ABSENT FROM SPECIFICATIONS

- A. Any part of the work which is not mentioned in the Specifications but is shown on the Drawings, or any part not shown on the Drawings but described in the Specifications, or any part not shown on the Drawings nor described in the Specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make each installation satisfactorily and legally operable, shall be performed by the Contractor as incidental work without extra cost to the City, as if fully described in the Specifications and shown on the Drawings, and the expense thereof shall be included in the applicable unit prices or lump sum bid for the work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01011
SITE CONDITIONS

PART 1 GENERAL

1.1 SITE INVESTIGATION AND REPRESENTATION

- A. The Contractor acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, the conformation and conditions at the ground, the type of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.
- B. The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the City or included in these Contract Documents. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for properly estimating the difficulty or cost thereof under this Contract.

1.2 INFORMATION ON SITE CONDITIONS

- A. All information obtained by the City regarding the site conditions, topography, subsurface information, ground water elevations, existing construction of site facilities as applicable, and similar data will be available for inspection at the office of the Engineer upon request. Such information is offered as supplementary information only. Neither the Engineer nor the City assumes any responsibility for the completeness or for the Contractor's interpretation of such supplementary information. Prior to bidding and after written approval from the City, bidder may make his own survey investigations to satisfy himself with site conditions at his own cost.

1.3 SUBSURFACE INFORMATION

- A. Subsurface investigations, including test borings, have been made to indicate subsurface conditions at particular locations. All information regarding subsurface conditions and all available soil samples recovered from test borings at the project site that the City may have, may be examined by all prospective bidders prior to the receipt of proposals. Appointment for the examination of such information or soil samples shall be made with the City.

1.4 BIDDERS SUBSURFACE INVESTIGATION

- A. Prospective bidders are invited, at their own expense, to make such additional subsurface investigation, by boring or test hole excavation, as may be desirable, provided, however, that such work be scheduled by appointment with the Engineer.

1.5 EXISTING UTILITIES

- A. Known utilities and structures adjacent to or encountered in the work are shown on the Drawings. The locations shown are taken from existing records and the best

information available from existing plans; however, it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the City or the Engineer for their accuracy or completeness. No request for additional compensation or Contract time resulting from encountering utilities not shown will be considered. The Contractor shall explore sufficiently ahead of the Work to allow time for any necessary adjustments. The Contractor must coordinate all utility locations through "Sunshine State One Call of Florida, Inc."

1.6 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

- A. Where the Contractor's operation could cause damage or inconvenience to railway, telephone, fiber optic, television, electrical power, oil, gas, water, sewer, or irrigation systems, the Contractor shall make all arrangements necessary for the protection of these utilities and services or any other known utilities.
- B. Notify all utility companies that are affected by the construction operation at least 48 hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for all existing underground utilities and utility poles where necessary.
- C. The Contractor and his subcontractors shall be solely and directly responsible to the owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.
- D. Neither the City nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.
- E. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no event shall interruption of any utility service be allowed unless granted by the owner of the utility.
- F. In the event water service lines that interfere with trenching are encountered, the Contractor may, by obtaining prior approval of the water utility, cut the service, dig through, and restore the service with similar and equal materials including testing and sterilizing, all at the Contractor's expense and as approved by the Engineer.
- G. Replace, with material approved by the Engineer, any and all other laterals, existing utilities or structures removed or relocated during construction as provided for in these Contract Documents and as approved by the Engineer.
- H. Replace with material approved by the Engineer, at Contractor's expense, any existing utilities damaged during construction.

1.7 INTERFERING STRUCTURES

- A. Take necessary precautions to prevent damage to existing structures whether on the surface, above ground, or underground. An attempt has been made to show major structures on the Drawings. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and is presented as a guide. The Contractor is solely responsible for field verification of all locations.

1.8 FIELD RELOCATION

- A. During the process of construction, it is expected that minor relocations of the work may be necessary. Such relocations shall be made only by the direction of the Engineer. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor fails to notify the Engineer when an existing structure is encountered, and shall proceed with the work despite this interference, the Contractor does so at his own risk.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01015
INDEX OF DRAWINGS

PART 1 GENERAL

1.1 CONTRACT DRAWINGS

- A. Drawings dated March 17, 2020 and any subsequent revision thereto introduced by Addenda prior to Bid, showing the work of the Contract are hereby made a part of the Contract Documents and are listed as follows:

Sheet Description – POTABLE WATER MAIN IMPROVEMENTS -- PHASE 1

	Cover Sheet
P-1	General Notes, Legends and Abbreviations
P-2	General Plan Water
P-3	Summation of Quantities
P-4	General Details
SU-1 toSU-45	Topographic Survey
P-5 to P-16	Plans and Profiles for 8" WM
P-17 to P-36	Service Connection Plan

- B. Due to the possibility of typing errors or omissions, the above list shall not be considered as necessarily complete. Perform all work shown on all sheets of the Drawings, as specified herein or necessary for a complete functional installation and no extra compensation will be made due to the omission or incorrect listing of a Drawing in this Section.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01016
SAFETY REQUIREMENTS AND PROTECTION OF PROPERTY

PART 1 GENERAL

1.1 CONTRACTOR'S RESPONSIBILITY FOR SAFETY

- A. Conduct whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during the Contract period. This requirement shall apply continuously and not be limited to normal working hours.
- B. Neither the Professional activities of the Design Professional, nor the presence of the Design Professional nor his or her employees and sub-consultants at a construction site, shall relieve the Contractor and any other entity of their obligations, duties and responsibilities including but not limited to, construction means, methods, sequence techniques or procedures necessary for performing, superintending, or coordinating all portions of the Work of construction in accordance with the Contract Documents and any health and safety precautions required by any regulatory agencies.

1.2 FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS

- A. Safety provisions shall conform to the Federal and State Departments of Labor Occupational Safety and Health Act (OSHA), and all other applicable Federal, State, County, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirements shall be followed. Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

1.3 SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

- A. The Contractor shall at all times provide proper facilities for safe access to the Work by authorized government officials.

1.4 CONSTRUCTION SAFETY PROGRAM

- A. Develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor's Manual of Safety Practices outlining the firm's policies on field safety procedures for employees shall be submitted to the Engineer for review before Notice-to-Proceed will be issued. The Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.
- B. Certain products specified in these specifications contain warnings by the manufacturers that under certain conditions, if instructions for use are not followed, a hazardous condition may exist. It is the Contractor's responsibility to instruct his workmen in the safe use of the product, or any product substitution.
- C. The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the

Contractor's Safety Supervisor, the safety program, or any safety measures taken in, on, or near the construction site.

1.5 SAFETY EQUIPMENT

- A. As part of the safety program, maintain at an office or other well-known place at the jobsite, safety equipment applicable to the Work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and establish the procedure for the immediate relocation to a hospital or a doctor's care of any person who may be injured on the jobsite.
- B. Perform all necessary work to protect all personnel and the general public from hazards, including, but not limited to, surface irregularities or unramped grade changes, and trenches or excavations. Furnish barricades, lanterns, and proper signs to safeguard all persons and work.
- C. The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, logging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.
- D. During construction, construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railings, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards. All such barriers shall have adequate warning lights as necessary, or required, for safety.
- E. There shall be no oil dripping from equipment or oil spills.

1.6 STORAGE OF HAZARDOUS MATERIALS

- A. The Contractor is hereby cautioned that he cannot store any environmentally hazardous materials such as solvents, greases, lubricants or any other type of chemical substances at the site. The Contractor shall be allowed to keep only such materials at the site for immediate use.
- B. The materials shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags and remnants of the materials in a manner approved by the Department of Environmental Resources Management (DERM) at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM and the Contractor shall be subject to all penalties and fines as required by State, City and County regulations.

1.7 ACCIDENT REPORTS

- A. If death, serious injuries, or serious damages are caused, report the accident immediately by telephone or messenger to the Engineer. In addition, the Contractor must promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- B. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, promptly report the facts in writing to the Engineer, giving full details of the claim.

1.8 TRAFFIC SAFETY AND ACCESS TO PROPERTY

- A. Comply with all rules and regulations of the city, state, and county authorities regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by express permission of the City. Conduct the work so as to assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved barricades, signs, and lights where necessary for the safety of the public. The convenience of the general public and residents and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.
- B. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over. Temporary access driveways must be provided where required. Cleanup operations shall follow immediately behind backfilling and the worksite shall be kept in an orderly condition at all times.
- C. Supply Flagmen and Guards, or Police when they are required by regulation, or when deemed necessary for safety. Uniform Flagmen and Guards shall be furnished with approved orange wearing apparel and other regulation traffic control devices.

1.9 FIRE PREVENTION AND PROTECTION

- A. Perform all work in fire-safe manner. Furnish and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No.241) shall be followed.

1.10 JOINT SURVEY TO ESTABLISH AUTHENTICITY OF POSSIBLE DAMAGE CLAIMS

- A. The Contractor shall maintain vertical and horizontal survey control points on all structures and improvements, located in the vicinity of the work prior to beginning work, and shall periodically check the points for movements with copies provided to the Engineer, of the survey notes for each survey and a copy of the layout of the survey control points.
- B. After the contract is awarded and before commencement of work, perform a thorough examination of existing buildings, structures, and other improvements in the vicinity of the work, as applicable, which might be damaged by his operations.
- C. Examinations of existing structures, buildings, and other improvements in the vicinity of the work shall be done by the Contractor. The scope of the examination shall include cracks in the structures, settlement, leakage, and similar conditions. The City assumes no responsibility for pre-existing conditions of the structure.
- D. Records in triplicate of all observations shall be prepared by the Contractor, photographs shall be taken by the Contractor signed and dated, with descriptive information and in the manner specified above. One (1) signed copy of every document and photograph will kept on file in the office of the Engineer.
- E. The above records are intended to be used as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations and

are for the protection of the Contractor and the City, and will be a means of determining whether and to what extent damage, resulting from the Contractor's operations, occurred during the Contract work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 GENERAL

- A. The Contractor shall receive and accept the compensation as provided in the Proposal, the Contract, General Conditions and Special Provisions as full payment for furnishing all labor, materials, tools and equipment, for performing all operations necessary to complete the work under this Contract, and also in full payment for all loss or damages arising from the nature of the Work, or from the action of the elements or from unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the City.
- B. The prices stated in the Proposal include full compensation for overhead and profit, all costs and expenses for taxes, materials, labor, equipment, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, materials, commissions, transportation charges and expenses, patent fees and royalties, bond, insurance, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Contract Drawings and specified herein. In addition, the Contractor shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each Item.
- C. It is the intent of the City to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonable be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.2 PAYMENT ITEMS

Item A-1, Clearing and Grubbing, including demolition, removal, and disposal of all obstructions: Lump sum for removal and disposal of existing sod, pavement, concrete sidewalk, driveways, curb and gutter, drainage structures and pipes, miscellaneous concrete, rocks, vegetation, trees and debris to be disposed of in legal areas provided by the contractor. Lump sum also includes miscellaneous earthwork, the relocation and removal of pull boxes, and saw cutting. All other costs incurred to commence and terminate Clearing and Grubbing shall be considered incidental and necessary as part of the lump sum amount. Payment will be on the lump sum unit bid price.

Item A-2 through A-4, 6" Yellow, 6" White, and 24" White Thermoplastic Traffic Stripe Solid: Linear feet for furnishing and applying 6" Yellow, 6" White, and 24" White Thermoplastic Traffic Stripe Solid for the limits defined by Details on the Plans and/or the Standard Details appended hereto. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for complete Thermoplastic Traffic Striping. Payment will be based on the number of linear feet of 6" Yellow, 6" White, or 24" White Thermoplastic Traffic Stripe Solid times the unit bid price.

Item B-1, Asphalt Milling (1-inch Average): Square Yards for milling the existing asphaltic concrete surface course an average of 1-inch within the limits defined by Details on the Plans and/or the Standard Details appended hereto. Greater widths are at the Contractors option and expense. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for a complete milling of the existing asphaltic concrete surface. The cost of removal and disposal of milled material for this project shall be included in this item. Payment will be based on the number of square yards of milled asphalt times the unit bid price.

Item B-2, Asphaltic Concrete Type S-III Resurfacing (100 lbs/sy average): Square Yards for furnishing and constructing Type S-III Asphaltic Concrete overlay course at an average of 100 lbs/sy, for permanent paving resurfacing within the limits defined by Details on the Plans and/or the Standard Details appended hereto (includes restoration of Asphaltic Concrete driveways). Greater widths are at the Contractors option and expense. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for preparing and transporting mixture, tack coat application, placing, compacting and testing for a complete Type S-III Asphaltic Concrete overlay course including labor and equipment to adjust all valve boxes, catch basins, and manholes within the overlay limits and the furnishing and installing of all stripes, marking, signs, RPM's, directional arrows, and stop bars as may be necessary to replace the existing ones. Payment will be based on the number of square yards of Asphaltic Concrete Type S-III times the unit bid price.

Items B-3 and B-4, Limerock Base, 8" thick and 6" thick: Square Yards for furnishing and constructing 8" and 6" thick Limerock Base, for permanent roadway base within the limits defined by the construction plans, details on the plans, and/or the Standard Details appended hereto (includes restoration of driveways). Greater widths are at the Contractors option and expense. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for preparing and transporting limerock, including compacting and testing for a complete limerock base. Payment will be based on the number of square yards of Limerock Base, 8" thick and 6" thick times the unit bid price.

Items B-5 and B-6, Concrete Sidewalk, 4" Thick and 6" thick: Square Yards for new 4" thick and 6" thick Concrete Sidewalk within the limits defined by details, on the plans, and/or the standard details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor, and equipment required to construct the sidewalks and shall include but not be limited to proper sub-grade preparation, tie-ins to existing features (driveways and sidewalks), filling of trash holes or other depressions so as to provide a level grade, and ADA compliant pedestrian ramps. Payment will be based on the number of Square Yards of Concrete Sidewalk times the unit bid price.

Items C-1 and C-2, 18-inch, and 24-inch HDPE Storm Sewer Pipe: Linear Feet for furnishing and installing HDPE Storm Sewer Pipes at any depth of cut within the limits defined by Details on the Plans and/or the Standard Details appended hereto. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for the complete installation of the pipe and fittings, ready for service, and shall include exploratory excavation; any sheeting, shoring or bracing; excavation; dewatering; disposing of excess or unsuitable fill material; transportation and handling costs; placing the pipe into position in the trench; cutting and installing plugs; furnishing joint materials including lubricant; protecting existing utilities along the route of the main; making all connections within the lines themselves; cleaning and testing; placing and compacting backfill (including rock bed); installing additional suitable backfill material, if required; providing a compacted subgrade for limerock base placement; temporary paving; replacing water and sanitary sewer laterals, trees, shrubs, mail boxes, fences, walls, sprinkler systems, and all other similar items as required or necessary, to original locations and to equal or better than original

conditions; and all other appurtenant and miscellaneous items and work. Included in the unit cost are all survey, submittals, and shop drawing work; all loading, unloading, and transport costs ditch side. Payment will be based on the number of linear feet of HDPE Storm Sewer Pipe for Items C-1 and C-2 times the unit bid price.

Item C-3, 24-inch HDPE French Drain: Linear Feet for furnishing and installing 24-inch HDPE French Drain systems including the perforated and solid pipes at any depth of cut within the limits defined by Details on the Plans and/or the Standard Details appended hereto. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for the complete installation of the pipe, filter fabric, ballast rock and fittings, ready for service, and shall include exploratory excavation; any sheeting, shoring or bracing; excavation; dewatering; disposing of excess or unsuitable fill material; transportation and handling costs; placing the pipe into position in the trench; cutting and installing plugs; furnishing joint materials including lubricant; furnishing and placing ballast rock and filter material; protecting existing utilities along the route of the main; making all connections within the lines themselves; cleaning and testing; placing and compacting backfill (including rock bed); installing additional suitable backfill material, if required; providing a compacted subgrade for limerock base placement; temporary paving; replacing water and sanitary sewer laterals, trees, shrubs, mail boxes, fences, walls, sprinkler systems, and all other similar items as required or necessary, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work. Included in the unit cost are all survey, submittals, and shop drawing work; all loading, unloading, and transport costs ditch side. Payment will be based on the number of linear feet of 24-inch HDPE French Drain times the unit bid price.

Items C-4 through C-6, Catch Basins w/ 3' Round Type P Structure Bottoms (<10'), 4' Round Type P Structure Bottoms (<10'), and 5' Round Type J Structures Bottoms (<10'): Each for the furnishing and installing of Catch Basins with Type P Structure Bottoms and Type J Structure Bottoms in accordance with FDOT Standard Index 200 and 201 at any depth of cut within the limits defined by Details on the Plans and/or the Standard Details appended hereto. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for the complete installation of the ditch bottom inlets, ready for service, and shall include exploratory excavation; any sheeting, shoring or bracing; excavation; dewatering; disposing of excess or unsuitable fill material; transportation and handling costs; placing the structures in the trench; all rims, grate castings, and anchors as required; protecting existing utilities; making all pipe connections; cleaning and testing; placing and compacting backfill (including rock bed); installing additional suitable backfill material, if required; providing a compacted subgrade for limerock base placement; temporary paving; replacing water and sanitary sewer laterals, trees, shrubs, mail boxes, fences, walls, sprinkler systems, and all other similar items as required or necessary, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work. Included in the unit cost are all survey, submittals, and shop drawing work; all loading, unloading, and transport costs. Payment will be based on the number of Catch Basins w/ 3' Round Type P Structure Bottoms (<10'), 4' Round Type P Structure Bottoms (<10'), and 5' Round Type J Structures Bottoms (<10') for Item C-4 through C-6 times the unit bid price.

Item C-7, Manhole w/ 4' Round Type P Structure Bottom (<10'): Each for the furnishing and installing of Manholes Type P in accordance with FDOT Standard Index 200 and 201 at any depth of cut within the limits defined by Details on the Plans and/or the Standard Details appended hereto. The price bid shall be full compensation for furnishing all necessary labor, materials, tools, and equipment and for performing all work required for the complete installation of the manholes, ready for service, and shall include exploratory excavation; any sheeting, shoring or bracing; excavation; dewatering; disposing of excess or unsuitable fill material; transportation and handling costs; placing the structures in the trench; all rims, manhole covers, and anchors as required; protecting existing utilities; making all pipe

connections; cleaning and testing; placing and compacting backfill (including rock bed); installing additional suitable backfill material, if required; providing a compacted subgrade for limerock base placement; temporary paving; replacing water and sanitary sewer laterals, trees, shrubs, mail boxes, fences, walls, sprinkler systems, and all other similar items as required or necessary, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work. Included in the unit cost are all survey, submittals, and shop drawing work; all loading, unloading, and transport costs. Payment will be based on the number of Manholes w/ 4' Round Type P Structure Bottoms for item C-7 times the unit bid price.

Item D-1, Project Sign: Each for furnishing and installing project signs as described in section 01581 of the project specifications. Payment will be based on the number of project signs times the unit bid price

Item D-2, Maintenance of Traffic: Lump Sum for furnishing traffic control including but not limited to flag persons, cones, markers, signs, lighting, flagmen, flags, temporary pavement and other control devices for directing traffic and maintaining safety, and other aids for the duration of project. Included in this bid item is the payment for off duty Law Enforcement Officers to control and direct traffic. Since this item is bid as a lump sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer. In addition to all MOT devices required to conform to FDOT Standards, the MUTCD and the City of West Miami Standards and Specifications, an additional 100 (ED) Type II barricades and 50 (ED) temporary construction signs are to be included in the Maintenance of Traffic pay item for the specific use as directed by the Engineer.

Item D-3, Dust Control: Lump Sum for furnishing measures to provide dust control for everyday of the project duration. The Lump Sum price shall include furnishing of the water truck, water, and other approved methods of dust control. Payment will be on the lump sum unit bid price.

Item D-4, Performance and Payment Bond: Payment will be on the lump sum unit bid price for the Performance and Payment Bond.

Item D-5, Owner's Contingency: Shall only be for items added to the scope, in writing by the Owner. The Contractor shall include in his proposal under item D-5, the Owner's Contingency sum of Twenty Thousand Dollars (\$20,000.00).

1.3 PAYMENT

- A. General: Progress payments will be made monthly on the date established in the General Conditions.
- B. Payment for all Work shown or specified in the Contract Documents as included in the Contract unit and lump sum prices.

1.4 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- A. Payment will not be made for following:
 - 1. Loading, hauling, and disposing of rejected material.
 - 2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
 - 3. Rejected loads of material, including material rejected after it has been placed by reason of failure of CONTRACTOR to conform to provisions of Contract Documents.

- 4 Material not unloaded from transporting vehicle.
- 5 Defective Work not accepted by City.
- 6 Material remaining on hand after completion of Work.

1.5 PARTIAL PAYMENT FOR STORED MATERIALS ANDEQUIPMENT

- A. Partial Payment: Partial payments will be made in accordance with the General Conditions. Will be made only for materials incorporated in Work; remaining materials, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.6 FINAL APPLICATION FOR PAYMENT

- A. Prior to submitting final application, make acceptable delivery of required documents, and other requirements as specified in Section 01700 "Contract Closeout."
- B. Final payment shall be subject to the conditions and requirements included in the General Conditions and all others included in the Contract.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01031
GRADES, LINES AND LEVELS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. This work of this Section comprises the establishing of grades, lines and levels.

1.2 RELATED WORK

- A. Section 01720 "Project Record Documents."

PART 2 PRODUCTS

2.1 MATERIALS

- A. Furnish all stakes, templates and other materials necessary for establishing and maintaining of the lines and grades necessary for control and construction of the Work and all incidental labor necessary for the prosecution of the Work.

PART 3 EXECUTION

3.1 LAYOUT OF THE WORK

- A. The Contractor, through the services of a Florida Registered Land Surveyor, shall establish the line and benchmarks and other reference points for the installation of the pipeline or structure.
- B. For pipelines, this will consist of establishing all points of bend (but not necessarily bevel pipe unless in close proximity to other facilities), valves, tees, crosses and other stations not more than 100 feet apart along the proposed centerline of the pipe, or along a stationed offset line as shown on the Plans, marked by a nail in a metal cap if in pavement, with the station painted nearby or by a nail in the top of a wooden stake driven flush with the ground with the station marked on a flag stake nearby, if not in pavement.
- C. For structures, this will consist of base lines, stakes at corners, centers and center lines, auxiliary lines and a bench mark from which to establish the elevations.
- D. The Contractor shall supply the City Inspector with a copy of the Registered Land Surveyor's layout of the Work immediately upon its availability to his own forces.
- E. The Contractor shall make his equipment and men available to the Inspector for spot checking the accuracy of the Work. The Inspector shall require the Work to be brought within the tolerances specified elsewhere before backfill is placed or the construction is otherwise hidden.

3.2 RECORD DRAWINGS

- A. During the entire construction operation, the Contractor shall retain the services of a

State of Florida Registered Land Surveyor who shall maintain records of the installation, including all deviations from the plans and specifications by obtaining "As-built" dimensions and elevations.

- B. The surveyor shall therefore prepare record as-built drawings showing correctly and accurately all changes and deviations made during construction, including approved construction variances to reflect the Work as it was actually constructed.
- C. "As-Built" drawings shall be submitted to the City on a monthly basis. Refer to Section 01720 "Project Record Documents" for City's Criteria for developing record as-built drawings.

END OF SECTION

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide and pay for field engineering services required for Project as follows:
 - 1. Civil, structural, mechanical, electrical or other professional engineering services specified, or required to execute the Contractor's construction methods.
 - 2. Land surveying required lying out the work.
- B. The Contractor shall retain the services of a registered land surveyor licensed in the State of Florida for the line and grade layout.

1.2 RELATED WORK

- A. Section 01720 "Project Record Drawings."

1.3 QUALIFICATIONS OF PROFESSIONAL

- A. Qualified Engineer or Registered Land Surveyor, acceptable to City and Engineer.
- B. Registered Professional Engineer of the specialty required for the specific service on the Project, currently licensed in the State of Florida.

1.4 RECORDS

- A. Maintain a complete, accurate log of all control and survey work as it progresses.
- B. Monthly, submit certified as-built information at the same scale as the Engineer's line drawings indicating elevations and stations of the pipelines at 100-foot increments, at rapid changes in grade, and where design elevations are given. Engineer will review as-built information from the Contractor, monthly.

1.5 SUBMITTALS

- A. Submit name and address of registered land surveyor to the Engineer.
- B. On request of the Engineer, submit documentation to verify accuracy of field engineering work.
- C. Submit certificate signed by registered engineer or surveyor certifying that elevations and locations are in conformance or non-conformance, with Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01090
REFERENCES

PART 1 GENERAL

1.1 GENERAL

- A. 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 that the Work is advertised for 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.
- B. 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 assignments shall not be interpreted 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. The final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

1.2 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 the following documents to the extent that the provisions of such documents are not in conflict with the requirements of these Specifications nor the applicable codes.
- B. References herein to "Building Code" or FBC shall mean the Florida Building Code. The latest edition of the code as approved and used at the local agency having jurisdiction, shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto.
- C. In case of conflicts between codes, reference standards, drawings and other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Engineer for clarifications 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 portion of those referenced codes, standards, and specifications listed herein; except, that wherever references to "Standard Specifications" are made, the provisions therein for measurement and payment shall not apply.

- 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 hereto.

1.3 TRADE NAMES AND ALTERNATIVES

- A. For convenience in designation in the Contract Documents, materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer and its catalog information. The use of alternative material, which is equal in quality and of the required characteristics for the purpose intended, will be permitted, subject to the following requirements:
 - 1. The burden of proof as to the quality and suitability of such alternative equipment, products, or other materials shall be upon the Contractor.
 - 2. The Engineer will be the sole judge as to the comparative quality and suitability of such alternative equipment, products, or other materials and its decisions shall be final.
- B. Whenever in the Contract Documents the name or the name and address of the manufacturer or distributor is given for a product or other material, or if any other source of a product or material is indicated therefore, such information is given for the convenience of the Contractor only, and no limit, restriction, or direction is indicated or intended thereby, nor is the accuracy or reliability of such information guaranteed. It shall be the responsibility of the Contractor to determine the accurate identity and location of any such manufacturer, distributor, or other source of any product or material called for in the Contract Documents.
- C. The Contractor may offer any material, process, or equipment, which it considers equivalent to that indicated. Unless otherwise authorized in writing by the Engineer, the substantiation of offers of equivalency must be submitted within sixty (60) days after execution of the Agreement. The Contractor, at its sole expense, shall furnish data concerning items it has offered as equivalent to those specified. The Contractor shall have the material as required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the items will fulfill its intended function. Installation and use of a substitute item shall not be made until accepted by the Engineer. If a substitute offered by the Contractor is found to be not equal to the specified material, the Contractor shall furnish and install the specified material.
- D. The Contractor's attention is further directed to the requirement that failure to submit data substantiating a request for the substitution of an "or equal" item within said 60-day period after the execution of the Agreement, shall be deemed to mean that the Contractor intends to furnish one (1) of the specific brand-named products named in the specification, and the Contractor does hereby waive all rights to offer or use substitute products in each such case. Wherever a proposed substitute product has not been submitted within said 60-day period, or wherever the submission of a proposed substitute product fails to meet the requirements of the specifications and an acceptable resubmittal is not received by the Engineer within said 60-day period, the Contractor shall furnish only one (1) of the products originally-named in the Contract Documents.

1.4 ABBREVIATION

- 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 acronyms or abbreviation only. As a guide to the user of these specifications, the following acronyms and abbreviations, which may appear in these specifications, shall have the meanings indicated herein.

1.5 ABBREVIATIONS AND ACRONYMS

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of the State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
ACPPA	American Concrete Pressure Pipe Association
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGC	Associated General Contractors
AGMA	American Gear Manufacturer's Association
AHAM	Association of Home Appliance Manufacturers
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 Movement and Control Association
ANS	American Nuclear Society
ANSI	American national Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural 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
ASPE	American Society of Plumbing Engineers
ASQC	American Society for Quality Control
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
BBC	Basic Building Code, Building Officials and Code Administrators International
BHMA	Builders Hardware Manufacturers Association
CBM	Certified Ballast Manufacturers

CEMA	Conveyors Equipment Manufacturers Association
CGA	Compressed Gas Association
CLPCA	California Lathing and Plastering Contractors Association
CLFMI	Chain Link Fence Manufacturers Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DCDMA	Diamond Core Drill Manufacturers Association
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
HI	Hydraulic Institute
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturers Association
MPTA	Mechanical Power Transmission Association
MTI	Marine Testing Institute
NAAM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NGLI	National Grease Lubricating Institute
NMA	National Microfilm Association
NRCA	National Roofing Contractors Association
NWMA	National Woodwork Manufacturers Association
NWWA	National Water Well Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PDI	Plumbing and Drainage Institute
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturers Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SBC	Southern Building Code Congress International, Inc. (SBCCI)
SIS	Swedish Standards Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SPR	Simplified Practice Recommendation
SSBC	Southern Standard Building Code, Southern Building Code Congress

SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WIC	Woodwork Institute of California
WPCF	Water Pollution Control Federation
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01100
SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.1 EXISTING SITE

- A. All pipes, sewers, drains and other pipe, cables, or conduits, and all other obstructions, whether or not shown, shall be temporarily removed from, or supported during excavation. It is intended that wherever piping systems or utilities such as water, waste water, air, chemical, electrical or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the Drawings. The Contractor shall be held responsible for any damage to such installations and shall restore them at his own expense to service promptly as soon as the work has progressed past the point involved. Approximate locations of known installations in the vicinity of new work are shown, but must be verified on the field by the Contractor, who shall uncover them carefully, by hand, prior to commencement of the work. Any discrepancies or differences shall be brought to the attention of the engineer in order that changes may be made. These conditions are supplemental to general requirements elsewhere in these specifications. Submit to the Engineer the proposed method of construction around these existing installations.

1.2 LAND FOR CONSTRUCTION PURPOSES

- A. The Contractor shall make his own arrangements for storage of materials and equipment in locations off the construction site. Submit to the engineer for approval, proposed plan and layout for all temporary sanitary facilities, offices, temporary water service and distribution, and temporary power service and distribution, located at the job site.
- B. Prior to commencing any preparation remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, sprinkler systems, sod and all other existing installations. If these installations shall be restored to their initial conditions.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. Prior to commencement of construction, a pre-construction conference with the Engineer will be held to discuss and approve the previously reviewed Contractor's construction progress schedule, proposed sequence of construction and proposed construction methods relative to existing facilities and to establish procedures for avoiding flooding due to construction, for handling shop drawings and other submissions and to establish a working understanding between the parties as to the Project. Refer to Section 01310 "Construction Schedules" for additional requirements and reviews of Construction Schedule before the pre-construction conference.
- B. In some cases, the pre-construction conference may be held after the start work date stated in the written Notice-to-Proceed. This may be due to difficulty in coordination of all parties concerned, or other similar reasons. Such delays, will not relieve the Contractor of any responsibilities hereunder, and will not be an acceptable reason for him to request additional work completion time beyond that provided since he can be obtaining permits, mobilizing his equipment and forces, ordering materials, performing minor work, or other work if approved by the Engineer, during the interim period.

- C. Prior to the preconstruction conference, the Contractor shall prepare the construction schedule, as described in Section 01120 "Sequence of Construction" and Section 01310 "Construction Schedules" of the Specifications and provide copies of same to others in attendance.
- D. The construction schedule shall include the place of beginning, the proposed order of progression, together with the estimated times for beginning and completing the various items of work. In addition, the Contractor shall prepare on electronic media, a Critical Path Method (CPM) with emphasis made to "construction time and completion."
- E. Include in the construction progress schedule data showing chronologically all operations contemplated and necessary for the completion of the Project within the agreed time and schedules of shop drawings, submissions and material delivery dates to be incorporated into each phase of the work.
- F. Include a detailed description of the construction methods proposed and to be performed with a minimum interruption of the operation of the existing facility. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize any conflict with facility operation. In addition, the Contractor is required to cooperate in order to minimize the disruption of activities of other contractors. The Contractor shall not commence construction operations until the required information has been approved. After approval, no deviation there from shall be made without prior written approval from the City.
- G. In addition to the necessity for minimizing any conflict with present drainage operations, the attention of the Contractor is called to the fact that the work to be done under this Contract is only a part of a program of expansion. Additional Contracts for construction of other projects may be in progress. All contractors will be required to cooperate in the joining of their work.
- H. The Engineer will discuss requirements of such matters as Project supervision and inspection progress schedules and reports, insurance, safety, and other items pertinent to the Project.

1.4 SAFETY REQUIREMENTS

- A. Comply with all applicable provisions of the Occupational Safety and Health Act (OSHA). The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for his review before Notice to Proceed will be issued.
- B. Conduct operations in such a manner, utilizing warning devices, such as traffic cones, barricades and warning lights, that traffic, pedestrians and City personnel are given adequate warning of hazards of the work site as may be deemed necessary by the City and/or the Engineer.
- C. Certain products specified in these Specifications contain warnings by the manufacturer that under certain conditions, if instructions for use of the product are not followed, a hazardous condition may develop. It is the Contractor's responsibility to instruct his workmen in the safe use of the product, or any product substitution.
- D. Do not store any environmentally hazardous materials such as solvents, greases, lubricants or any other type of chemical substances at the site. The Contractor is

permitted to keep such materials at the site as for immediate use only. Store and handle the materials in a safe manner and upon their use immediately dispose of the cans, containers, rags and remnants of the materials in a manner approved by the Department of Environmental Resources Management (DERM) at the Contractor's expense. Do not store empty containers at the site. In case of any violation, the Engineer will report such a violation to DERM and the Contractor shall be subject to all the penalties and fines established by State and County regulations.

- E. For trench and other excavations in excess of 5 feet in depth, the Contractor shall comply with the provisions of the State of Florida "Trench Safety Act."
- F. The Contractor shall familiarize himself with the "Underground Facility Damage Prevention and Safety Act", Florida Statute 556. The Contractor shall contact the Sunshine State One Call Center, at 1-800-432-4770. forty-eight (48) hours prior to any excavation. Failure to become familiar with the obligations and the penalties set forth herein.
- G. All open excavations made in the earth shall be performed in compliance with the State of Florida Trench Safety Act, OSHA29 CFR 1926.650, Subpart P (Chapter 90-96, Laws of Florida). The Contractor shall appoint a "competent person", who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

1.5 COORDINATION WITH OTHER CONTRACTORS

- A. The following shall apply to this Contract:
 - 1. The City reserves the right to enter upon, and to use, any and all portions of the work performed hereunder (or under its other Contracts), whether completed or not as may be required.
 - 2. In no event will the Contractor be permitted to block the work area of other Contractors with his equipment and/or materials, unless otherwise permitted by the Engineer.
 - 3. Construct Project in an orderly and progressive fashion as specified in Section 01120 "Sequence of Construction," so that other contractors can continue their work, also in an orderly and progressive manner as planned.
 - 4. Be responsible for coordinating the work with that of other contractors, and for cooperating with them, and with the City, to the fullest extent.
- B. The Engineer will act as mediator in all cases of conflict and dispute involving the Work, or scheduling of the Work, under the various Contracts, and his decision concerning the disposition of each such conflict or dispute shall be final and binding on all parties involved.

1.6 ELEVATIONS OF EXISTING INSTALLATIONS

- A. The elevations of existing installations, including piping, equipment, etc., shown on the Contract Drawings are approximate. Be responsible for verifying the accuracy of these elevations prior to commencement of any work, which is to be connected to the existing installation and immediately bring to the attention of the Engineer any and all discrepancies discovered.
- B. Do not proceed with the work affected until permission is received in writing from the Engineer indicating all modifications required, if any.

1.7 CONNECTIONS TO EXISTING PIPING

- A. Perform in such a manner that no damage and minimal interruption is caused to existing installations. Any damage caused to existing installations shall be repaired or replaced by the Contractor at no additional cost to the City.
- B. Coordinate operations with the Engineer and notify the City at least seven (7) days in advance of any activity, which may interfere with the existing drainage system. Only the Operations and Maintenance Supervisor of the facility can authorize a partial drainage system shutdowns and the Contractor shall, under no circumstances, interfere with any component without the City's authorization and supervision.

1.8 MATERIALS AND EQUIPMENT FURNISHED BY THE CITY

- A. No materials to be supplied by City.
- B. Potable water used in the construction will be metered by the City. This water will be supplied from the most convenient source through the existing piping. Failure of the Contractor to meter the water, or providing others with water, could result in his being fined and/or a citation being issued against him in accordance with the rules and regulations. The Contractor can obtain the meter through proper application and payment of deposit fee. The deposit fee will be refunded to the Contractor upon return of the meter in a sound satisfactory condition. The largest meter available is 2 inches NPS.
- C. All piping, fittings, valves and equipment, including pumps and power, required for handling the water shall be furnished by the Contractor. Care shall be exercised in the use of the water and provision shall be made to protect the water supply from contamination by installing an approved backflow prevention and indiscriminate use by unauthorized persons. The Contractor shall use only potable water.
- D. Under no circumstance shall the Contractor utilize a water source, including existing piping, until such source or piping has been approved for use by the Engineer.
- E. The City will not furnish electric power for this Project. All electrical driven equipment, including de-watering pumps and electrical welders, shall be served by the temporary electrical service to be provided by the Contractor. The Contractor shall supply extension cords, ground fault circuit interrupters, and safety equipment necessary to protect his workmen.
- F. All other materials required to complete this Project shall be furnished and installed by the Contractor, whether or not shown on the Drawings or specifically mentioned in the Specifications. The Contractor shall not reuse any of the material removed from existing pipeline systems.

1.9 MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR

- A. In addition to the detailed specifications for materials and equipment herein, the following general requirements shall apply for all materials and equipment furnished under the Contract.
- B. All material and equipment furnished by the Contractor for incorporation into the Project shall be new and of recent domestic manufacture, 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.

- C. All fittings and components shall, wherever possible be standard stock articles of well known domestic manufacturers. Where the Drawings and Specifications designate the products of a particular manufacturer, the product specified has been found suitable for the intended use, but unless otherwise provided, articles or products of similar characteristics may be offered for the approval of the Engineer. Complete descriptive data shall be furnished in quintuplicate regarding all materials furnished by the Contractor, consisting of dimension drawings, catalog references and other information necessary to clearly identify and evaluate each article. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense.
- D. Unless otherwise specified or noted on the Contract Drawings, all steel bolts, nuts, washers and other miscellaneous ferrous metal items (except ductile iron, cast iron or stainless steel) furnished by the Contractor shall be hot-dip galvanized in accord with ASTM A123, Zinc (Hot-Dip Galvanized) Coatings for Iron and Steel Products, or ASTM A153, Zinc Coating (Hot-Dip) on Iron and Steel Hardware. Where the word galvanized or its abbreviation is used on the Contract Drawings or in the Specifications, it shall mean hot-dip galvanized. Fabricated items shall be hot-dip galvanized after fabrication. Internal threads shall be tapped or re-tapped after galvanizing.
- E. The Contractor shall care for and protect against loss or damage all material to be incorporated in the construction, for the duration of the Contract, and shall repair or replace any damaged or lost materials. He shall be relieved of such responsibility only upon final acceptance of all the work by the Engineer.
- F. All valves, piping, structural steel and miscellaneous materials and equipment shall be stored on blocks or racks. As far as possible, no materials or equipment shall be stored so that it is in direct contact with the ground. All metal shall be thoroughly cleaned before being placed in the work.
- G. The Contractor, at his expense, shall be responsible for the electrical equipment and materials, pumps, blowers, and motors which Contractor shall store out of the weather and off the ground, protected from dust, dirt and moisture, including the provision of electric heaters and other protective measures as may be required by the City and/or Manufacturer.
- H. To insure satisfactory and successful final painting of materials and equipment to be furnished, it is essential that the paints applied in the shop and in the field be mutually compatible. To this end, the Contractor shall require that the shop paint applied to the materials and equipment be compatible with the paint proposed to be used in the field, or shall determine what shop paints have been used and select field paints compatible therewith, all as approved by the Engineer.

1.10 SITE CLEANLINESS

- A. **Dust Abatement:** The Contractor shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The Contractor shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the Engineer. The cost for this work will be included for payment under Item No. A-5.

- B. Rubbish Control: During the progress of the work, the Contractor shall keep the site of the work and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the work site, and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.
- C. Sanitation:
 - 1. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.
 - 2. Sanitary and Other Organic Wastes: The Contractor shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.

1.11 SALVAGE

- A. Any existing equipment or material, including but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as salvage by the Engineer or City and if so shall be carefully removed, if necessary, and delivered to the City by a location directed by the City. The Contractor at a suitable location, as directed by the City, shall dispose of any equipment or material not worthy of salvaging.

1.12 RELOCATIONS

- A. The Contractor shall be responsible for the relocation of structures, including but not limited to light poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. The cost of all such relocations shall be included in the bid for the project and shall not result in any additional cost to the City.

1.13 WARRANTIES

- A. All equipment supplied under these Specifications shall be warranted by the Contractor and the equipment manufacturers for a period of one (1) year, unless a longer period is specified in the technical specifications, in which case the longer period shall apply. Warranty period shall commence on the date of City acceptance or beneficial occupancy.
- B. The equipment shall be warranted free from defects in workmanship, design and materials. If any part of the equipment should fail during the warranty period, it shall be replaced in kind and the unit(s) restored to service at no additional cost to the City. In the event of Contractor's failure to perform warranty work promptly, the City reserves the right to perform the work and the Contractor shall be liable to the City for the cost thereof.
- C. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allowed.

D. All warranties and bonds shall be submitted prior to the issuance of final payment.

1.14 HURRICANE PREPAREDNESS PLAN

A. Within thirty (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.

B. In the event of inclement weather, or whenever Engineer shall direct; Contractor will cause Subcontractors to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any portion of Work or materials shall have been damaged or injured due to failure on the part of Contractor or any Subcontractor to so protect the Work, such Work and materials shall be removed and replaced at the expense of the Contractor.

1.15 MINIMIZATION OF DISRUPTIONS

A. Continuous, unobstructed, safe, and adequate vehicular access shall be provided. Safe and adequate pedestrian crossings at intervals not exceeding 300 feet shall be provided. The Contractor shall cooperate with parties involved in the removal of trash and garbage to maintain existing schedules for such services.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01120
SEQUENCE OF CONSTRUCTION

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Before commencement of any work, in compliance with the requirements of Section 01310 "Construction Schedules," submit to the Engineer for approval a detailed sequence of construction, clearly showing the interrelationship and the interdependency of work activities with one another.
- B. The work of this project is to be performed on the site of an existing and adjacent roadway. Identify and properly schedule all partial traffic that may be necessary for the completion of the interconnections. Coordinate and agree to such schedules with the City Inspector.
- C. Coordinate sequence of construction with progress schedule to ensure timely performance of the work and project completion within the specified construction time.
- D. Special Instructions:
 - 1. It is the intent of the City to construct this Project with as little disturbance and annoyance to the neighbors and traffic impact as possible.
- E. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the Project until its acceptance by the City.
- F. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.
- G. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

1.2 SEQUENCE OF WORK

- A. General Considerations: The Contractor shall provide a job specific description of the sequence of the work corresponding to the job requirements.
- B. Plan the work and carry it out with minimum interference to the operation of the existing facilities. Prior to starting the work, confer with the Engineer to develop an approved work schedule, which will permit the facilities to function as normally as practical. It may be necessary to do certain parts of the construction work at times outside normal

working hours in order to avoid conflicting conditions. The Contractor shall do this work at such times and at no additional cost to the City. The Contractor shall notify the Engineer three (3) days prior to the commencement of construction.

C. The sequence of work shall be as follows:

1. Preliminary Phase: Coordination with the City, other contractors and other entities for which construction is required to insure that the existing system is not affected.
 - a. Clear and grub the site, removing all debris, rubbish, and unsuitable materials as necessary to prepare site.
 - b. Protect the trees along the construction path.
 - c. Remove pavement to the limits shown on the plans as required for installation of drainage structures and pipelines.
 - d. Remove all unsuitable soil.
 - e. Construct drainage structures.
 - f. Install drainage pipe and exfiltration trench.
 - g. Backfill and construct temporary pavement restoration.
 - h. Complete final pavement and swale restoration.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01152
APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to the Engineer in accordance with the schedule established by Conditions of the Contract and Agreement between City and Contractor.

1.2 RELATED REQUIREMENTS

- A. Agreement between City and Contractor consisting of an approved payment schedule by the City of West Miami Director of Public Works.
- B. Conditions of the Contract: Progress Payments, Retainer, Final Payment and Record Documents.

1.3 FORMAT AND DATA REQUIRED

- A. Submit applications typed on forms provided by the City, Application for Payment, with itemized data typed on 8½- x 14-inch white paper and continuation sheets.

1.4 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form:
 - 1. Fill in required information, including that for Work or Change Orders executed prior to date of submittal of application.
 - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
 - 3. Execute certification with signature of a responsible officer of Contractor's firm.
- B. Continuation Sheets:
 - 1. Fill in total list of scheduled component items of work, with item number and scheduled dollar value for each item.
 - 2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
 - a. Round off values to nearest dollar, or as specified.
 - 3. List each Work or Change Order Number, and description, as for an original component item or work.
 - 4. Payment for Material and Equipment stored, but not incorporated into the Work, will not be allowed.

1.5 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the City or the Engineer requires substantiating data; Contractor shall submit suitable information, with a cover letter identifying:
 - 1. Project.
 - 2. Application number and date.
 - 3. Detailed list of enclosures.

4. For stored products:
 - a. Item number and identification as shown on application.
 - b. Description of specific material.
- B. Submit one (1) copy of data cover letter for each copy of application.
- C. As a prerequisite for payment, Contractor is to submit a "Surety Acknowledgment of Payment Request" letter showing amount of progress payment, which the Contractor is requesting.
- D. The Contractor shall maintain an updated set of drawings to be used as record drawings in accordance with Section 01720 "Project Record Documents." As a prerequisite for monthly progress payments, the Contractor shall exhibit the updated record drawings for review by the Engineer.

1.6 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01700 "Contract Closeout."

1.7 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to the Engineer at the times stipulated in the Agreement.
- B. Number: Five (5) copies of each Application.
- C. When the Engineer finds Application properly completed and correct, he will transmit certificate of payment to City, with copy to Contractor.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01200
PROJECT MEETINGS

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. The Engineer shall schedule and administer pre-construction meeting and specially called meetings throughout the progress of work. The Engineer will:
 - 1. Prepare agenda for meetings.
 - 2. Make physical arrangements for meetings.
 - 3. Preside at meetings.
 - 4. Record the minutes; include significant proceedings and decisions.
 - 5. Reproduce and distribute copies of minutes within five (5) working days after each meeting.
 - a. To participants in the meeting.
 - b. To parties affected by decisions made at the meeting.
- B. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. The Contractor shall attend meetings to ascertain that work is executed consistent with Contract Documents and construction schedules.

1.2 RELATED REQUIREMENTS

- A. Section 01310 "Construction Schedules."

1.3 PRECONSTRUCTION MEETING

- A. Schedule a pre-construction meeting no later than fifteen (15) days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties designated by the City.
- C. Attendance:
 - 1. City's Representative.
 - 2. Engineer and his Professional Consultants.
 - 3. Resident Project Representative.
 - 4. Contractor's Superintendent.
 - 5. Major Subcontractors.
 - 6. Major Suppliers.
 - 7. Utilities.
 - 8. Others as appropriate.
- D. Suggested Agenda:
 - 1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected Construction Schedule.

2. Critical work sequencing/critical path scheduling.
3. Major equipment deliveries and priorities.
4. Project Coordination.
 - a. Designation of responsible personnel.
5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payments.
6. Adequacy of Distribution of Contract Documents.
7. Procedures for maintaining Record Documents.
8. Use of Premises:
 - a. Office, Work and Storage Areas.
 - b. City's Requirements.
9. Construction facilities, controls and construction aids.
10. Temporary Utilities.

1.4 PROGRESS MEETINGS

- A. Hold called meetings as required by progress of the work.
- B. Location of the meetings: Project field office of the Contractor or Engineer.
- C. Attendance:
 1. Engineer and his professional consultants as needed.
 2. Contractor's Superintendent.
 3. Subcontractors as appropriate to the agenda.
 4. Suppliers as appropriate to the agenda.
 5. Others as appropriate.
- D. Suggested Agenda:
 1. Review, approval of minutes of previous meeting.
 2. Review of work progress since previous meeting.
 3. Field observations, problems, and conflicts.
 4. Problems, which impede Construction Schedule.
 5. Review of off site fabrication, delivery schedule.
 6. Corrective measures and procedures to regain projected schedule.
 7. Revisions to Construction Schedule.
 8. Progress, schedule, during succeeding work period.
 9. Coordination of schedules.
 10. Review submittal schedules; expedite as required.
 11. Maintenance of quality standards.
 12. Pending changes and substitutions.
 13. Review proposed changes for:
 - a. Effect on Construction Schedule and on a completion date.
 - b. Effect on other contracts of the Project.
 14. Other business.

15. Construction schedule.
16. Critical/long lead items.

- E. The Contractor is to attend progress meetings and is to study previous meeting minutes and current agenda items, in order to be prepared to discuss pertinent topics such as deliveries of materials and equipment, progress of work, etc.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01310
CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Promptly after Award of the Contract and within ten (10) days after the effective date of the Agreement, prepare and submit to the Engineer estimated construction progress schedules for the work, with sub schedules of related activities, which are essential to its progress.
- B. Submit revised progress schedules on a monthly basis.
- C. No partial payments shall be approved by the Engineer until there is an approved construction progress schedule on hand.
- D. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor's schedule.

1.2 RELATED REQUIREMENTS

- A. Document 00700 "General Conditions."
- B. Section 01200 "Project Meetings."
- C. Section 01340 "Shop Drawings, Working Drawings and Samples."

1.3 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal barchart.
 - 1. Provide separate horizontal bar for each trade or operation within each structure or item.
 - 2. Horizontal Time Scale: In weeks from start of construction and identify the first workday of each month.
 - 3. Scale and Spacing: To allow space for notations and future revisions.
 - 4. Minimum Sheet Size: 24 inches x 36 inches.
- B. Format of Listings: The chronological order of the start of each item of work for each structure.
- C. Identification of Listings: By major specification, section numbers as applicable and structure.

1.4 CONTENT OF SCHEDULES

- A. Construction Progress Schedule:
 - 1. Show the complete sequence of construction by activity.

2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a 2-week increment scale. Specifically list, but not limited to:
 - a. Shop Drawing Submittal.
 - b. Site Clearing.
 - c. Pipeline Work.
 - d. Concrete Work.
 - e. Install Structures.
 - f. Landscaping.
 - g. Testing.
 - h. Startup.
 - i. Record Drawings.
 - j. Restoration.
 3. Show projected percentage of completion for each item, as of the first of each month.
 4. Show projected dollar cash flow requirements for each month of construction.
- B. Submittals Schedule for Shop Drawings, and Samples in accordance with Section 01340. Show:
1. The dates for Contractor's submittals.
 2. The date's submittals will be required for owner furnished products, if applicable.
 3. The dates approved submittals will be required from the Engineer.
- C. A list of all long lead items (equipment, materials, etc.).

1.5 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
1. Major changes in scope.
 2. Activities modified since previous submission.
 3. Revised projections of progress and completion.
 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
1. Problem areas, anticipated delays, and the impact on the schedule.
 2. Corrective action recommended, and its effect.
 3. The effect of changes on schedules of other prime contractors.

1.6 SUBMISSIONS

- A. Submit initial schedules to the Engineer within ten (10) days after the effective date of the Agreement.
1. The Engineer will review schedules and return review copy within twenty-one (21) days after receipt.
 2. If required, resubmit within seven (7) days after return of review copy.

- B. Submit five (5) copies of revised monthly progress schedules with that month's application for payment.

1.7 DISTRIBUTION

- A. Distribute copies of reviewed schedules to:
 - 1. Engineer (2 Copies).
 - 2. Job Site File.
 - 3. Subcontractors.
 - 4. Other Concerned Parties.
 - 5. Owner (2 Copies).
- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedule.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01340
SHOP DRAWINGS, WORKING DRAWINGS AND SAMPLES

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. The Contractor shall submit to the Engineer for review, such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this article called data), and material samples (hereinafter in this article called samples) as are required for the proper control of work, including but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.
- B. The Contractor shall submit ten (10) copies of shop drawings or other data to the Engineer.
- C. Within thirty (30) calendar days after the effective date of the Agreement, and prior to any construction activity, the Contractor shall submit to the Engineer a complete list of preliminary data for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specific items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.
- D. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and Engineer. This log should include the following items:
 - 1. Submittal-Description and Number assigned.
 - 2. Date to Engineer.
 - 3. Date returned to Contractor (from Engineer).
 - 4. Status of Submittal (Approved/Resubmit/Rejected).
 - 5. Date of Resubmittal and Return (as applicable).
 - 6. Date material released (for fabrication).
 - 7. Projected date of fabrication.
 - 8. Projected date of delivery to site.
 - 9. Status of O & M submittal.

1.2 RELATED REQUIREMENTS

- A. Document 00700 "General Conditions."
- B. Section 01310 "Construction Schedules."
- C. Section 01600 "Material and Equipment."
- D. Section 01720 "Project Record Documents."
- E. Designate in the construction schedule or in a separate coordinated schedule, the dates for submission and the dates that reviewed Shop Drawings, Working Drawings and Samples will be needed.

1.3 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the Contractor to check all drawings, data and samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of the Drawings and data shall bear Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents.
- B. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance and Specifications.
- C. The Contractor shall furnish the Engineer a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.
- D. The Contractor shall not begin any of the work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the Engineer approved.
- E. The Contractor shall submit to the Engineer all drawings and schedules sufficiently in advance of construction requirements to provide no less than twenty-one (21) calendar days for checking and appropriate action from the time the Engineer receives them.
- F. The Contractor shall submit five (5) copies of descriptive or product data submittals to complement shop drawings for the Engineer plus the number of copies, which the Contractor requires. The Engineer will retain five (5) sets. All blueprint shop drawings shall be submitted with one (1) set of reproducible and four (4) sets of print. The Engineer will review the drawings and return to the Contractor the set of marked-up drawings with appropriate review comments.
- G. The Contractor shall be responsible for and bear all cost of damages, which may result from the ordering of any material or from proceeding with any part of work prior to the review by Engineer of the necessary Shop Drawings.

1.4 ENGINEER'S REVIEW OF SHOP DRAWINGS

- A. The Engineer's review of drawings, data and samples submitted by the Contractor will cover only general conformity to the Specifications, external connections, and dimensions, which affect the installation. The Engineer's review an exception if any, will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown.
- B. The review of drawings and schedules will be general, and shall not be construed:
 - 1. As permitting any departure from the Contract requirements;
 - 2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials.

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
- C. If the drawings or schedule as submitted describe variations per subparagraph (1.5.C), and show a departure from the Contract requirements which Engineers finds to be in the interest of the Owner and to be minor as not to involve a change in the Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.
- D. When reviewed by the Engineer, each of the Shop Drawings will be identified as having received such review being so stamped and dated. Shop Drawings with required corrections shown will be returned to the Contractor for revision and resubmittal.
- E. Resubmittals will be handled in the same manner as the first submittals. On resubmittals, the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall make any corrections required by the Engineer.
- F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.
- G. The Engineer will review a submittal/resubmittal a maximum of three (3) times after which cost of review will be borne by the Contractor. The cost of engineering shall be equal to the Engineer's charges to the Owner under the terms of the Engineer's agreement with the Owner.
- H. When the Shop Drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.
- I. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor.

1.5 SHOP DRAWINGS

- A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for material and equipment, which become an integral part of the Project. These drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data, shall be considered only as supportive to required Shop Drawings as defined above.
- B. Drawings and schedules shall be checked and coordinated with work of all trades involved, before they are submitted for review by the Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the Contractor for resubmission.
- C. Each Shop Drawing shall have a blank area 3½ by 3½ inches, located adjacent to the title block. The title block shall display the following:

1. Number and title of the drawing.
 2. Date of drawing or revision.
 3. Name of project building or facility.
 4. Name of contractor and subcontractor submitting drawing.
 5. Clear identification of contents and location of work.
 6. Specification title and number.
- D. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings have been reviewed.
- E. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent data.
- F. For all mechanical equipment furnished, the Contractor shall provide a list including the equipment name, address and telephone number of the manufacturer's representative and service company so that service and spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted along with each shop drawing submittal.
- G. All manufacturers or equipment supplier who proposes to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five (5) installations where identical equipment has been installed and has been in operation for a period of at least one (1) year.
- H. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.
- I. Before final payment is made, the Contractor shall furnish to Engineer two (2) sets of record shop drawings all clearly revised, complete and up to date showing the permanent construction as actually made for all reinforcing and structural steel, miscellaneous metals, process and mechanical equipment, yard piping and instrumentation system.

1.6 CONTENT

- A. All submittals shall be accompanied by a transmittal letter containing the Contractor's name and address; project address; ER number; date; the number of each shop drawings and data submitted; and notification of deviations, if applicable.
- B. Shop drawings shall be submitted to the City for materials and equipment to be furnished, except as otherwise specified herein. Shop drawings shall be of such character that they may be used as fabrication drawings. Unless otherwise directed by the City, shop drawings shall be submitted for items as, but not limited to; pipe, pipe fittings, joints or gaskets, pipe laying schedules; precast concrete structures; manhole frame and covers; and restrained joints in pipe and fittings. Shop drawings shall be complete, and each shall be identified by the name of the manufacturer,

model, type or class, governing standards, and similar information necessary to clearly demonstrate to the City that the item is in accordance with the Specifications. The City reserves the right to require shop drawings for any item if it deems it necessary in order to substantiate conformance with the Specifications.

1.7 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's plans for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and false-work; for underpinning; and for such other work as may be required for construction, but does not become an integral part of the project.
- B. Copies of working drawings as noted in subparagraph 1.6A above, shall be submitted to the Engineer where required by the Contract Documents or requested by the Engineer, and shall be submitted at least thirty (30) calendar days (unless otherwise specified by the Engineer) in advance of their being required for work.
- C. Working drawings shall be signed by a Registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculation or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such work, working drawings must have been reviewed without specific exceptions by the Engineer, which review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. Therefore, the Contractor assumes all risks of error; the Owner and Engineer shall have no responsibility.

1.8 SAMPLES

- A. The Contractor shall furnish, for the approval of the Engineer, samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until approved by the Engineer.
- B. Samples shall be of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of the product, with integrally related parts and attachment devices.
 - 2. Full range of color, texture and pattern.
 - 3. A minimum of two (2) samples of each item shall be submitted.
- C. Each sample shall have a label indicating
 - 1. Name of Project.
 - 2. Name of Contractor and Subcontractor.
 - 3. Material or Equipment Represented.
 - 4. Place of Origin.
 - 5. Name of Producer and Brand (if any).
 - 6. Location in Project.

(Samples of finished materials shall have additional marking that will identify them under the finished schedules.)

- D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required in subparagraph 1.8B above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.
- E. Approved samples not destroyed in testing shall be sent to the Engineer or stored at the site of the work. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples. Samples, which failed testing or were not approved samples, will be returned to the Contractor at his expense, if so requested at time of submission.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01410
PROJECT TESTING LABORATORY SERVICES

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Owner provided Project Testing Laboratory Services to perform all Quality Assurance Testing.
- B. Contractor provided testing facilities to perform all Quality Control Testing.

1.2 ITEMS TO BE TESTED

- A. Compaction of backfill materials.
- B. Bituminous Pavements.
- C. Structural Portland Cement Concrete

1.3 REFERENCES

- A. ASTM C1077 Standard Practice for Laboratories Testing Concrete and Concrete Aggregates and Criteria for Laboratory Evaluation.
- B. ASTM D3666 Practice for Evaluating and Qualifying Agencies Testing and Inspecting Bituminous Paving Materials.
- C. ASTM D3740 Practice for Evaluation of Agencies Engaged in testing and/or Inspection on Soil and Rock as used in Engineering Design and Construction.
- D. ASTM E329 Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as used in Construction.

1.4 SELECTION AND PAYMENT

- A. Testing shall be conducted by an approved testing laboratory certified in the State of Florida and paid for by the contractor as part of the overall project cost.

1.5 LABORATORY REPORTS

- A. After each inspection and test the Project Testing Laboratory will forward copies of all reports directly to Owner and Engineer.

1.6 LIMITS ON PROJECT TESTING LABORATORY AUTHORITY

- A. Project Testing Laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.
- B. Project Testing Laboratory may not approve or accept any portion of the work.
- C. Project Testing Laboratory may not assume any duties of the Architect/Engineer, the

Field Representative or the Contractor.

- D. Project Testing Laboratory has no authority to stop work.

1.7 CONTRACTOR RESPONSIBILITIES

- A. Make available to Project Testing Laboratory at designated location adequate samples of materials proposed to be used that require testing, together with proposed mix designs.
- B. Cooperate with laboratory personnel and provide access to work.
- C. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, and for storage and curing of test samples.
- D. Notify the Field Representative, Owner and laboratory forty-eight (48) hours prior to expected time for operations requiring inspection and testing services.
- E. Costs of all quality assurance testing, except for retesting due to failure, will be paid by Owner. Failed tests will be retested at Contractor's expense.
- F. Cost of all Quality Control Testing and retesting of failed Quality Assurance tests will be paid for by the Contractor.
- G. Arrange with Project Testing Laboratory and pay for additional samples and tests required by Contractor beyond specified requirements.

1.8 RETESTING

- A. The Owner retains the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The Engineer shall have the right to reject material which, when retested, does not meet the requirements of the Contract Documents.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01505
CONTROL OF WORK

PART 1 GENERAL

1.1 QUALITY OF WORK

- A. The Contractor shall furnish personnel and equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the time stipulated in the Proposal. If at any time such personnel appear to the Engineer to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character or increase the personnel and equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.2 PRIVATE LAND

- A. The Contractor shall not enter or occupy private land outside of easements, except by written permission of its Owner.

1.3 SIDEWALK LOCATIONS

- A. Sidewalks shall be located substantially as indicated on the Drawings, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

1.4 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access to private property during construction shall be removed when no longer required. If the work becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures.
- B. The Contractor shall take precautions to prevent injury to the public. All excavated material, equipment, or other obstacles, which could be dangerous to the public, shall be well lit at night.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any work under this Contract shall cooperate with the Contractor and his subcontractors or trades, and shall assist in incorporating the work of other trades where necessary or required.
- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

3.2 PROTECTION OF CONSTRUCTION ANDEQUIPMENT

- A. All newly constructed work shall be carefully protected from injury in any way. No wheeling, walking, or placing of heavy loads on it shall be allowed and all portions injured shall be reconstructed by the Contractor at his own expense.
- B. All structures shall be protected in a manner approved by the Engineer. Should any parts of the structures become heaved, cracked or otherwise damaged, all such damaged portions of the work shall be completely repaired and made good by the Contractor at his own expense and to the satisfaction of the Engineer. If, in the final inspection of the work, any defects, faults or omissions are found, the Contractor shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the Contractor shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the guarantee period described in the contract.
- C. Further, the Contractor shall take all necessary precaution to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the Owner.

END OF SECTION

SECTION 01510
MOBILIZATION

PART 1 GENERAL

1.1 DESCRIPTION

- A. The work specified in this Section consists of the preparatory work and operations in mobilizing for beginning work on the Project, including, but not limited to, the following:
1. The costs of any required insurance, and any other preconstruction expense necessary for the start of the work, excluding the cost of payment and performance bonds and the cost of construction materials.
 2. The costs of operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site.
 3. The costs for the establishment of temporary offices, shops, buildings, construction identification signs, safety equipment and first aid supplies, sanitary and other facilities, as required by the Contract Documents, and any Federal, State and/or local laws and regulations.

PART 2 METHOD OF MEASUREMENT

- 2.1 Not Used

PART 3 BASIS OF PAYMENT

- 3.1 Cost of Mobilization as described above shall be incidental to the overall project cost.

END OF SECTION

SECTION 01581
PROJECT SIGNS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Project Signs.
- B. Installation.
- C. Maintenance.
- D. Removal.

1.2 QUALITY ASSURANCE

- A. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.3 REGULATORY REQUIREMENTS

- A. Conform to the Florida Building Code.

1.4 PAYMENT PROCEDURE

- A. Cost of furnishing, installing, maintaining and removal to be included under bid item D-1, Project Sign.

PART 2 PRODUCTS

2.1 PROJECT SIGN

- A. Provide project sign, Project Sign Drawing, constructed to the following specifications. A sketch showing content will be provided at the prebid conference.
 - 1. Material:
 - a. Construct signs of 4-foot x 8-foot x $\frac{3}{4}$ -inch marine plywood, newly painted and lettered according to Project Sign Drawing.
 - b. Lumber shall be B or Better Southern pine, pressure-preservative treated with pentachlorophenol.
 - c. Nails shall be aluminum or galvanized steel.
 - d. The entire signboard and supports shall be given one (1) coat of exterior alkyd primer and two (2) coats of exterior alkyd enamel paint.
 - e. Paint and letter signs with professional outdoor sign painting standards as to lay out, symmetry, proportion, clarity, neatness and use of weather resistant color and materials.
 - f. Paint shall be high quality gloss enamel.
 - g. Finish colors to be in conformance with City standards.
 - h. Paint for the background to be white and letters to be black.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Place the signs at conspicuous locations on the job site where directed by the Engineer.
- B. Build supports and framing on secure foundation, rigidly braced and framed to resist wind loads.
- C. Install the sign surface plumb and level, with butt joints. Anchor securely.
- D. Paint exposed surfaces of sign, supports, and framing.

3.2 MAINTENANCE

- A. Maintain signs and supports clean. Repair deterioration and damage surfaces.

3.3 REMOVAL

- A. Remove signs, framing, supports, and foundations at the completion of project, and restore the area.

END OF SECTION

SECTION 01600
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the Work:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.
 - 3. Manufactured and Fabricated Products:
 - a. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - b. Manufacture like part of duplicate units to standard sizes and gauges, to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.2 RELATED REQUIREMENTS

- A. Section 01030 "Special Project Procedures."
- B. Section 01340 "Shop Drawings, Working Drawings and Samples."
- C. Section 01720 "Project Record Documents."
- D. Section 01740 "Warranties and Bonds."

1.3 APPROVAL OF MATERIALS

- A. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the work without prior approval of the Engineer.
- B. Within thirty (30) days after the effective date of the Agreement, the Contractor shall submit to the Engineer, data relating to materials and equipment he proposes to furnish for the work. Such data shall be in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the specifications. The data shall comply with paragraph 1.7 of this Section.
- C. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during progress of the work, the Contractor shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the

specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Owner will arrange for and pay for the tests.

- D. The Contractor shall submit data and samples sufficiently early to permit consideration and approval before materials are necessary for incorporation in the work. Any delay of approval resulting from the Contractor's failure to submit samples or data promptly shall not be used as a basis of claim against the Owner or the Engineer.
- E. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes, and surfaces, the Contractor shall provide such samples of workmanship or finish as may be required.
- F. The materials and equipment used on the work shall correspond to the approved samples or other data.

1.4 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instruction, obtain and distribute copies of such instructions to parties involved in the installation, including copies to the Engineer.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.5 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of Products in accord with construction schedules coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver Products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.
- B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

1.6 STORAGE AND PROTECTION

- A. The Contractor shall furnish a covered, weather-protected storage structure providing a clean, dry, noncorrosive environment for all mechanical equipment, valves, electrical and instrumentation equipment, and special equipment to be

incorporated into this project. Storage of equipment shall be performed to allow easy access and be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including weather/humidity protection, connection of heaters, placing of storage lubricants in equipment, blocking, or skid storage, etc. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment estimate.

- B. Store Products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weather-tight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 3. Store fabricated products above the ground on blocking or skids to prevent soiling or staining. Cover products, which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
 - 4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. All materials and equipment to be incorporated in the work shall be handled and stored by the Contractor before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.
- D. Cement, sand and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease, and to minimize rusting. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spalling to a minimum.
- E. Moving parts shall be rotated a minimum of once weekly to insure proper lubrications and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half load, and once weekly for an adequate period to insure that the equipment does not deteriorate from lack of use.
- F. All materials which, in the opinion of the Engineer, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of the work, and the Contractor shall receive no compensation for the damaged material or its removal.
- G. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored Products to assure that Products are maintained under specific conditions, and free from damage or deterioration.
- H. Protection After Installation: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.
- I. The Contractor shall be responsible for all materials, equipment, and supplies sold and delivered to the Owner under this Contract until final inspection of the work and

acceptance thereof by the Owner. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the Owner.

- J. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven (7) days after written notice to do so has been given, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and debit the cost associated with these corrections from the Contractor's Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, and engineering and any other costs associated with making the necessary corrections.

1.7 SUBSTITUTIONS AND PRODUCT OPTIONS

- A. Products List: Within thirty (30) days after the effective date of the Agreement, submit to the Engineer a complete list of major products proposed to be used, with the name of the manufacturer and the installing subcontractor.
- B. Contractor's Options:
 - 1. For Products specified only by reference standard, select any product meeting that standard.
 - 2. For Products specified by naming several products or manufacturers, select any one (1) of the products or manufacturers named, which complies with the specifications.
 - 3. For products specified by naming one or more Products or manufacturers and "or equal", Contractor must submit a request as for substitutions for any Product or manufacturer not specifically named.
- C. Substitutions:
 - 1. For a period of thirty (30) days after the effective date of the Agreement, the Engineer will consider written requests from Contractor for substitution of Products.
 - 2. Submit a separate request for each Product, supported with complete data, with drawings and samples as appropriate, including:
 - a. Comparison of the qualities of the proposed substitution with that specified
 - b. Changes required in other elements of the work because of the substitution
 - c. Effect on the construction schedule
 - d. Cost data comparing the proposed substitution with the Product specified
 - e. Any required license fees or royalties
 - f. Availability of maintenance service, and source of replacement materials
 - 3. The Engineer shall be the judge of the acceptability of the proposed substitution.
 - 4. No substitutions will be considered by the Engineer after thirty (30) days from the Contract Date.
- D. Contractor's Representation:
 - 1. A request for a substitution constitutes a representation that Contractor:

- a. Has investigated the proposed Product and determined that it is equal to or superior in all respects to that specified
 - b. Will provide the same warranties or bonds for the substitution as for the Product specified
 - c. Will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects
 - d. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
- E. The Engineer will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

1.8 SPECIAL TOOLS

- A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations and maintenance, together with instructions for their use. The Contractor shall preserve and deliver to the Owner these tools and instructions in good order no later than upon completion of the Contract.

1.9 STORAGE AND HANDLING OF EQUIPMENT ON SITE

- A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed:
- 1. Equipment shall not be shipped until approved by the Engineer. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.
 - 2. Manufacturer's storage instructions shall be carefully studied by the Contractor and reviewed with the Engineer by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.

1.10 WARRANTY

- A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01730 "Warranties and Bonds."

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the work.

1.2 RELATED REQUIREMENTS

- A. Conditions of the Contract: Fiscal provisions, legal submittals and additional administrative requirements.
- B. Section 01720 "Project Record Documents."

1.3 BENEFICIAL OCCUPANCY

- A. When the City Engineer considers work is substantially complete for beneficial use, he will submit a letter to the Contractor informing intent to take early possession of that part of the work for partial use. The written notice shall describe the City's reason for early beneficial occupancy.
- B. The Contractor shall adjust his work schedule to accommodate the City's plan to utilize the facility. The Contractor will continue the work while allowing the City full access and use of the facility.
- C. The Contractor shall not request a time extension or additional costs based upon the City's early occupancy of the site and use of the facilities. All additional costs associated with the City's early occupancy of the site shall be borne by the Contractor.

1.4 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the work is substantially complete, he shall submit to the Engineer:
 - 1. A written notice that the work or designated portion thereof is substantially complete.
 - 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion.
- C. Should the Engineer determine that the work is not substantially complete:
 - 1. The Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
 - 2. The Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the Engineer.
 - 3. The Engineer will re-inspect the work.
- D. When the Engineer finds that the work is substantially complete, he will:

1. Prepare and deliver to the City a tentative Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final payment.
2. After consideration of any objections made by the City as provided by Conditions of the Contract, and when the Engineer considers the work substantially complete, he will execute and deliver to the City and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.5 FINAL INSPECTION

- A. When the Contractor considers the work is complete, he shall submit written certification that:
 1. Contract Documents have been reviewed.
 2. Work has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the City's representative and are operational.
 5. Work is completed and ready for final inspection.
- B. The Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should the Engineer consider that the work is incomplete or defective:
 1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 2. Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certificate to the Engineer that the work is complete.
 3. The Engineer will re-inspect the work.
- D. When the Engineer finds that the work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.6 RE-INSPECTION FEES

- A. Should the Engineer perform re-inspections due to failure of the Work to comply with the claims of status of completion made by the Contractor:
 1. City will compensate the Engineer for such additional services.
 2. City will deduct the amount of such compensation from the final payment to the Contractor.

1.7 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

- A. Evidence of compliance with requirements of governing authorities.
- B. Project Record Documents: To requirements of Section 01720 "Project Record Documents."
- C. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.

1.8 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the Engineer.
- B. Statement shall reflect all adjustment to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Allowances.
 - c. Unit Prices.
 - d. Deductions for uncorrected work.
 - e. Deductions for liquidated damages.
 - f. Deductions for re-inspection payments.
 - g. Other adjustments.
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum where not previously made by Change Orders.

1.9 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Scope of Work: For contracts where the work is performed at an on-site location maintain one record copy of:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Addenda.
 - 4. Work or Change Orders and other modification of the contract.
 - 5. Engineer's written orders or instructions.
 - 6. Approved Shop Drawings, Product Data and Samples.
 - 7. Field Test records.
 - 8. Construction photographs.
- B. The records listed above are to be made available to the Engineer at all times.
- C. Related Requirements Described Elsewhere:
 - 1. Section 01340 "Shop Drawings, Product Data and Samples."
 - 2. Section 01700 "Contract Closeout."
 - 3. Warranties and Bonds.

1.2 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain documents in a clean dry, legible, condition and in good order. Do not use record documents for construction purposes.

1.3 RECORDING

- A. Label each document "PROJECT RECORD" in neat large printed letters.
- B. Record all information for pipeline projects and on-site projects concurrently with construction progress.
 - 1. Do not conceal any work until as-built information is recorded by the Contractor and the City.
 - 2. All locations for future connections or tie-ins shall be left unburied and uncovered until the City's surveying forces obtain and record the as-built information. This is in addition to the Contractor's recorded information.
 - 3. Restrained pipe, end line valves, thrust blocks need to be left uncovered for the last complete length. Inline valves and tees shall be left exposed for one (1) length on both sides plus the face end. Record the elevation, deviation from horizontal and vertical alignment and the inclination for these items.
 - 4. Maintain records of all pipeline project and on-site project deviations from Drawings and Specifications by a Florida Registered Land Surveyor.
 - 5. For Pipe Installation in All Pipeline Projects and On-site Projects: During entire construction operation retain the services of a Florida Registered Land Surveyor who shall maintain records of the installation, including all deviations from Drawings and Specifications.

6. He shall record as-built dimensions and elevations every 25 feet or portion thereof along pipeline and at every abrupt change in direction of the new line.
7. He shall record locations and elevations for each valve, fitting, service line, fire hydrant, water sampling point, and also for above ground piping and other appurtenances along the pipeline. Specific locations and elevation of equipment, the buildings and miscellaneous items installed inside them shall be recorded as applicable.
8. Contractor's Licensed Land Surveyor shall prepare as-built record drawings showing correctly and accurately the installation, embracing all changes and deviations made during construction, including all approved construction variances, to reflect the work as it was constructed.
9. Record Drawings shall be prepared on 4-mil mylar as specified hereinafter. Record Drawings and three (3) blue line copies shall be signed and sealed by the Surveyor and shall be submitted to the City for the Engineer's review within ten (10) calendar days following the completion date of successful pressure testing of all mains and appurtenances under this Contract.
10. If the Engineer determines that the Drawings are not acceptable, they will be returned to the Contractor with a cover letter noting the deficiencies and/or reasons for the disapproval. Contractor shall have ten (10) calendar days to correct all exceptions taken by the Engineer and resubmit as-built record drawings to the Engineer for final acceptance.

1.4 DRAWINGS

- A. On Site Projects: During the entire construction operation, maintain records of all deviations from the Plans and Specifications as approved by the Engineer and prepare As-Built Record Drawings showing correctly and accurately all changes and deviations made during construction to reflect the work as it was actually constructed. It is the responsibility of the Contractor to check the As-Built Record Drawings for errors and omissions prior to submittal to the City and certify in writing that the As-Built Record Drawings are correct and accurate, including the actual location of all internal piping, electrical/signal conduits in or below the concrete floor. Indicate the size, depth and voltage in each conduit.
- B. Drawings shall conform to recognized standards of drafting, shall be neat, legible and on 24- x 36-inch, 4-mil mylar. Final payment will not be made until the set of as-built record drawings and three (3) sets of blue-line prints have been approved and accepted by the Engineer.
 1. In cases where a portion of the pipeline system is put into service, the above conditions will apply for the in service portion and monthly payments will be withheld until the as-built Drawings are accepted by the Engineer.
- C. Legibly Mark to Record Actual Construction: On-site structures and site work by Contractor's License Surveyor.
 1. Depths of various elements of foundation in relation to finish first floor datum.
 2. All underground piping and ductwork with elevations and dimensions and locations of valves, pull boxes, etc. Changes in location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc.
 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure. Air conditioning ducts with locations of dampers, access doors, fans and other items needing periodic maintenance.

4. Field changes in dimensions and details.
5. Changes made by Engineer's written instructions or by Change Order.
6. Details not on original Contract Drawings.
7. Equipment and piping relocations.
8. Major architectural and structural changes in structures, including tanks.
9. Architectural schedule changes according to Contractor's records and shop drawings.
10. Record Drawings shall be prepared in AutoCad and produced on 4-mil mylar as specified hereinafter. Record Drawings, AutoCad files in electronic format, plot files, and three (3) blue line copies shall be signed and sealed by the surveyor and shall be submitted to the City for the Engineer's review.

D. Specifications and Addenda: Legibly mark each section to record:

1. Manufacturer, trade name, catalog number and Supplier of each product and item of equipment actually installed.
2. Changes made by Engineer's written instructions or by Change Order.
3. Approved Shop Drawings: Provide record copies for each process equipment, piping, electrical system and instrumentation system.

1.5 SUBMITTALS

- A. At close-out, deliver Record Documents to the Engineer for the City.
- B. Accompany submittal with transmittal letter in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. Title and number of each Record Document.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01730
WARRANTIES AND BONDS

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Compile specified warranties and bonds, as specified in the Bidding Documents and Contract Documents of these Specifications.
- B. Co-execute submittals when so specified.
- C. Review submittals to verify compliance with Contract Documents.
- D. Submit to the Engineer for review and transmittal to City.

1.2 RELATED REQUIREMENTS

- A. Instructions to Bidders: Bid Bonds.
- B. Conditions of the Contract: Performance Bond and Payment Bond.
- C. Section 01700 "Contract Closeout."

1.3 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bond, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Two (2) original signed copies are required.
- C. Table of Contents: neatly typed, in orderly sequence. Provide complete information for each item.
 - 1. Product or work item.
 - 2. Firm, with name of principal, address and telephone number.
 - 3. Scope.
 - 4. Date of beginning of Warranty, bond or service and maintenance contract.
 - 5. Duration of warranty, bond or service maintenance contract.
 - 6. Provide information for City's personnel:
 - a. Proper procedure in case of failure.
 - b. Instances, which might affect the validity of warranty or bond.
 - 7. Contractor, name of responsible principal, address and telephone number.
- D. All warranties and bonds shall be submitted prior to the issuance of final payment.

1.4 FORM OF SUBMITTALS

- A. Prepare in duplicate packets
- B. Format:

1. Size 8½ x 11 inches, punch sheets for standard 3-postbinder
 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
 - a. Title of Project.
 - b. Name of Contractor.
- C. Binders: Commercial quality, 3-post binder, with durable and cleanable plastic covers and maximum post width of 2 inches.

1.5 WARRANTY SUBMITTAL REQUIREMENTS

- A. For all major pieces of equipment, submit a 1-year warranty from the equipment manufacturer unless a longer period is specified in the Technical Specifications. The manufacturer's warranty period shall be concurrent with the Contractor's for one (1) year commencing at the time of acceptance by the City.
- B. In the event that the equipment manufacturer or supplier is unwilling to provide a specified warranty commencing at the time of City acceptance, the Contractor shall obtain from the manufacturer a 2-year (or for such other longer period as specified) warranty commencing at the time of equipment delivery to the job site. This 2-year warranty from the manufacturer shall not relieve the Contractor of the specified warranty starting at the time of City acceptance of the equipment.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01740

PERMITS

PART 1 GENERAL

1.1 GENERAL

- A. Where the City has obtained various permits for this Project, copies will be appended at the rear of the Specifications.
- B. The Contractor shall familiarize himself with, and comply with, all requirements of these permits. All other necessary permits shall be obtained by the Contractor and be paid for as specified below in 1.1.G.
- C. Unless otherwise specifically stated elsewhere in the Contract Documents, Supply Plans and Calculations for work not designed by the City that is preponderantly of a structural nature signed and sealed by a Professional Engineer registered in the State of Florida as stated in the Florida Building Code.
- D. The Contractor's particular attention is called to any Special Conditions of the permits relating to construction procedures, excavation and backfill requirements, open trench restrictions, turbidity control and all other general and special conditions, including 1:10 cement mix and pavement details. In the event any of the conditions of the permits are in conflict with the requirements of these Specifications, the more stringent conditions of the permits shall take precedence. The Contractor is to conform to all regulations of the governmental agencies having jurisdiction over this work, whether or not included in the permit.
- E. Any deviations from the Plans, Specifications or permits appended thereto must first be approved by the Engineer even if approval for the change has been given by the permitting agency.
- F. The Contractor shall assume throughout the life of the Contract all obligations and responsibilities imposed on the City or County departments as permittee of the above-mentioned permits. All expenses necessary for compliance with the regulations and requirements of each permitting agency and its permit shall be borne by the Contractor, and shall be included in his overall bid price.
- G. The cost of any fees such as impact fees, inspection fees, etc. and the cost of obtaining all required permits shall be borne by the City. The Contractor shall pay the required fees, obtain the permit(s) and then upon submission of proof of cost to the City, be reimbursed for said cost under the Allowance Account Item. This shall apply only to required permits and fees. Permits obtained or fees paid for the advantage of the Contractor or non-required permits obtained for whatever reason shall not be reimbursed. The necessity or non-necessity of a permit or fee shall be determined by the Engineer whose word shall be final. As specified in the paragraph above, all costs of compliance with the permit(s) shall be borne by the Contractor and included in his bid price.
- H. All surveying required by the Project permits shall be done by the Contractor's Florida Registered Land Surveyors. This includes staking out limits of construction.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01750
MAINTENANCE OF TRAFFIC AND PUBLIC STREETS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The Contractor shall be responsible for the maintenance of public streets and traffic control as specified hereinafter. The cost of Traffic Control shall be included for payment under bid item D-2, Maintenance of Traffic, in the Proposal.

1.2 REGULATIONS

- A. As used herein, any reference to Miami-Dade County, its departments, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over particular areas or streets, or their departments, published regulations (i.e., Manual of Uniform Traffic Control Devices (MUTCD), Florida Department of Transportation (FDOT) Roadway and Bridge Standard Index Drawing Book), permits or data. The Contractor shall abide by all applicable laws, regulations, and codes thereof pertaining to Maintenance of Traffic (MOT) on public streets, detour of traffic, traffic control and other provisions as may be required for this Project.

1.3 MAINTENANCE OF TRAFFIC (MOT)

- A. The Contractor shall be fully responsible for the MOT on public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control, and other provisions, throughout the Project, as required by the Department of Public Works, Traffic Engineering Division (Traffic Division) or FDOT and the above noted standards. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the Miami-Dade Public Works Manual and the above noted standards. A street shall neither be completely blocked nor blocked more than one-half ($\frac{1}{2}$) at any time, keeping the other one-half ($\frac{1}{2}$) open for traffic without specific approval.
- B. If required by the Engineer, Traffic Division or FDOT or as otherwise authorized by the Engineer, the Contractor shall make arrangements for the employment of uniformed off-duty policemen to maintain and regulate the flow of traffic through the work area. The number of men required and the number of hours on duty necessary for the maintenance and regulation of traffic flow shall be provided by the Contractor.
- C. The Contractor shall provide all barricades with warning lights, necessary arrow boards and signs, to warn motorists of the work throughout the Project. Adequate approved devices shall be erected and maintained by the Contractor to detour traffic.
- D. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times. The Contractor shall provide necessary access to all adjacent property during construction.
- E. The Contractor shall be responsible for the provision, installation and maintenance of all MOT and safety devices, in accordance with specifications outlined in the Miami-Dade Public Works Manual and the above noted standards. In addition, the Contractor shall be responsible for providing the Engineer with MOT plans for lane closures and/or

detours for approval. These plans (sketches) shall be produced by an individual employed by the Contractor and certified as "Work Zone Traffic Safety Supervisor" by the International Municipal Signal Association.

- F. Where excavations are to be made in the vicinity of signalized intersections, attention is directed to the fact that vehicle loop detectors may have been embedded in the pavement. Verify these locations by inspecting the site of the work and by contacting the Sunshine State One-Call Center (1-800-432-4770), forty-eight (48) hours prior to any excavation. Any loop detector which is damaged, whether shown on the Plans or not, shall be repaired or replaced to the satisfaction of the Traffic Division.
- G. Where applicable, the Contractor shall notify the Traffic Division twenty-four (24) hours in advance of the construction date or forty-eight (48) hours in advance of construction within any signalized intersection.
- H. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed and the swale or median areas restored to their previous condition.
- I. Pavement markings damaged during construction shall be remarked, as required by the Traffic Division.
- J. Commercial Properties: Access to Commercial Property shall not be blocked during the time such properties are open for business.
- K. Residential Properties: Access to Residential Property shall not be blocked

1.4 MAINTENANCE OF TRAFFIC FOR BYPASS PUMPING

- A. The Contractor shall take appropriate steps to ensure that all temporary pumps, piping and hoses are protected from vehicular traffic and pedestrian traffic.

1.5 LANE CLOSURES

- A. Where construction of the project shall involve lane closures public streets, the following shall apply:
 - 1. Lane closures require a Lane Closure Permit, obtained two (2) weeks prior to planned construction, with a minimum 48-hour prior notice to local police and emergency departments (some police jurisdictions may require considerably more notice). Lane closures of a one (1) day or less duration will generally not be approved for major collector streets or for arterial streets during the hours of 7am to 9am and 4pm to 6pm during weekdays.

1.6 ADDITIONAL REQUIREMENTS

- A. All open trenches and holes adjacent to roadways or walkways shall be properly marked and barricaded to assure the safety of both pedestrians and vehicular traffic.
- B. No trenches or holes near walkways, in roadways or their shoulders are to be left open during night-time hours. Trenches shall be backfilled or covered with steel plates.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS -
- PHASE 1**

00801

TECHNICAL SPECIFICATIONS

DIVISION 02

SITE CONSTRUCTION

SECTION 02315
TRENCHING AND BACKFILLING FOR PIPINGSYSTEMS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. The work included under this Section consists of excavating, backfilling and compaction as required for the construction of the piping systems, below ground structures and pump station as specified herein.
- B. All excavations shall be executed in accordance with the Building Code, The State of Florida Trench Safety Act (TSA), OSHA requirements and all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770), forty-eight (48) hours prior to any excavation.

PART 2 PRODUCTS

2.1 BACKFILL MATERIAL

- A. Except where a 1:10 cement/sand or flowable fill concrete mix is required, granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements:
 - 1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D 423.
 - 2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D 424.
 - 3. Not more than 10 percent of weight shall be finer than 74 micron (No. 200) U.S. Standard Sieve.
- B. Fill material containing limerock shall have sufficient fine aggregates to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill. Backfill material placed within 1-foot of piping and appurtenances or in the upper 6-inches of all backfill and fills shall not contain any stones or rocks larger than 2-inch in diameter.
- C. Debris, broken paving or broken concrete shall not be used.
- D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suited in the opinion of the Engineer. If sufficient suitable backfill material, including select backfill material, below, is not available from the site, additional material shall be furnished at the Contractor's expense.

2.2 SELECT BACKFILL MATERIAL

- A. Select backfill material specified in these specifications or required by the Plans shall meet all the general requirements for backfill material set forth above, and, in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill material may be material resulting from excavation, if suitable in the opinion of the Engineer of Record, carefully selected to comply with these requirements.

2.3 BEDDING MATERIAL

A. Pipe bedding material shall consist of one of the following types of material, utilized in accordance with "Installation of Pipe Bedding," below.

1. Select Backfill material shall be as specified in 2.2 above.
2. Pearock shall be used for small diameter (less than 24 inches) pipe bedding (except copper pipe) as shown on the Standard Details. 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. The pearock shall conform to the requirements of ASTM C 33, Size Number 8, and be graded within the following limits:

U.S. Sieve Size	Percent Finer by Weight
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

3. Crushed stone shall be used for bedding of 24-inch and larger diameter pipe and/or manholes as shown on the Standard Details. Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4-inch rock) and be graded within the following limits:

U.S. Sieve Size	Percent Finer by Weight
1 1/2-inch	100
1-inch	95 to 100
1/2-inch	25 to 100
No. 4	0 to 10
No. 8	0 to 5

4. Sand for bedding Copper Pipe shall be dry screened sand. 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.
5. Lime rock screenings, sand or other fine material shall not be used for bedding.

B. All pipe bedding material shall be new. Existing pipe bedding material may not be used.

2.4 BACKFILL UNDER MANHOLES AND METER VAULTS

A. Any excavation below the levels required for the proper construction of structures, manholes or meter vaults shall be filled with Class C concrete. The use of earth, rock, sand or other materials for this purpose will not be permitted.

PART 3 EXECUTION

3.1 CLEARING

A. The Contractor shall perform all clearing necessary for the proper installation of all piping and appurtenances in the locations shown in the Drawings.

- B. Plantings, shrubbery, trees, utility poles or structures subject to damage resulting from the excavation shall be transplanted, relocated, braced, shored, or otherwise protected and preserved as directed by the Engineer. Injury or damage to the referenced items shall be restored at no cost to the Department.

3.2 EXCAVATION

- A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Drawings, or as directed. All excavations shall be made by open cut.
- B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the TSA. Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.
- C. For structures, the Contractor shall maintain the bottom of the excavation firm and dry, and maintain an elevation of the water 1 foot below the concrete to be placed, by use of pumps, tremie or other acceptable method. Excavation for the structures shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation, sheeting, or shoring, of not less than 2 feet.
- D. Excavation and removal of suitable or unsuitable material for structures shall be carried down to a depth of at least 12-inches below the bottom elevation of each footing or slab. After the area has been excavated, if in the opinion of the Engineer, soil conditions are not suitable to support the loads to be carried, he may order the excavation to continue an additional 2 feet deeper or to such lesser depth as may expose a suitable foundation material. All such excavations and removal of unsuitable material and subsequent backfilling and compaction to the required grade shall be considered as a normal part of the work and no extra compensation will be made. If the soil is still unsuitable after the additional excavation as described above, the Engineer may order excavation to additional depths as may be required. Such additional depth of excavation, removal of unsuitable material and subsequent compacted backfill shall be performed if ordered in writing by the Engineer; payment for this extra work will be under the appropriate allowance item provided by the City in the proposals.
- E. Where wood sheeting or certain designs of steel sheeting are used, the Department may require the sheeting to be cut off at a level 2 feet above the top of the installed pipe and that portion below that 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 removal of sheeting shall be cause for rejection of the affected portion of the work. Not more than 100 feet of trench shall be opened ahead of pipe laying operations at one (1) time unless a greater length of open trench is approved by the Engineer.
- F. In areas where trench widths are not limited by right of way 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 suitable angle of repose of the excavated material, but only from a point 1 foot above the crown of the pipe.

- G. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting, except where specifically called for on the Plans to install sheeting. Where a moveable shield or trench box is used in place of sheeting and shoring, the trench shall be opened immediately ahead of the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe, and backfilling and compaction.
- H. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.
- I. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks and they shall not be placed on private property. In congested areas, such materials as cannot be stored adjacent to the trench or used immediately as backfill shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.
- J. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Material unsuitable for use in backfill shall be removed promptly and disposed of by the Contractor.
- K. Excavation for pipes and piping appurtenances:
 - 1. The Contractor shall remove and replace, where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, structures, roadways, sidewalks, curbs and similar items or structures in the way of the pipeline and shall make all excavation necessary for the pipelines to the lines and grades shown on the Plans.
 - 2. Weeded area shall be restored, as specified herein. Where pavements or sidewalks are cut they shall be cut by means of a mechanical pavement saw to form true and straight edges, which shall in general be either parallel or at right angles with the centerline of the pipe.
 - 3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Department.
 - 4. Pipe trenches shall be excavated to a width within the limits of 12 inches above the top of the pipe to 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 6 inches to 12 inches. All pipe trenches shall be excavated to a level 6 inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.
 - 5. 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. Manhole excavations shall be carried to sufficient depth to permit their construction on the undisturbed bottom of the excavation.
 - 6. If, in the opinion of the Engineer, the soil at that depth is unsatisfactory as foundation material because it contains unsuitable marl, muck, organic matter, or other unsuitable material, the excavation shall be continued 2 feet deeper,

except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. If the soil is still unsuitable after the additional excavation as prescribed above, the trench bottom shall be excavated further in 1-foot increments in accordance with "Trench Overcut," herein.
8. Selected backfill shall then be placed and compacted in 6-inch layers up to the level of the pipe bedding material.
9. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the Department that he be allowed to exceed the 12-inch maximum clearance, specifying the clear distance desired. The decision of the Engineer in this regard shall be final.
10. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.
11. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

3.3 TRENCH STABILIZATION

- A. Trench bottoms, which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes, shall be stabilized. In no event shall pipe be installed when such conditions exist. The Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation.

3.4 TRENCH OVERCUT

- A. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, and the Engineer authorizes overcut, the pipe trench shall be excavated further in 1-foot depth increments until either a suitable foundation material is found, or the Contractor is directed by the Engineer to stop trench overcut operation and begin backfilling. In no case will trench overcut be more than 6 feet in depth (i.e., to a point 8.5 feet below the bottom of the pipe.)
 1. Select backfill, as defined above, shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.5 REMOVAL OF WATER

- A. It is a basic requirement of these Specifications that excavation shall be free from water before pipe or structures are installed. However, it is realized that in certain sections of the work this cannot be accomplished economically and the Contractor may request permission from the Engineer to use the "Alternate Method of Construction" defined below.
- B. The Contractor shall provide all necessary pumps, underdrains, well point systems, and other means for removing water from trenches and other parts of the work including structures. The Contractor shall continue dewatering operations until the backfill has progressed to a sufficient height over the pipe to prevent flotation or movement of the pipe in the trench, so that the backfill is above the natural water level.

- C. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right of way or into any existing drainage structure or facility. Fees for obtaining these permits shall be paid in accordance with Section 01740 "Permits."
- D. Any water, which accumulates in the excavations for structures, shall be removed promptly by means satisfactory to the Engineer, in such a manner as to not create a nuisance to adjacent property or public thoroughfare.
- E. 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, or to cause interference with the use of the same by public. The Contractor shall submit to the Engineer for approval, proposed methods of handling trench water and/or segregated solids and fines, including locations at which these materials will be disposed. Approval shall be received before starting the excavation.
- F. The Contractor is cautioned that the City, County or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting, or limiting, the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches.
- G. Pumps and engines for dewatering systems shall be operated with mufflers and a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his discharge system.

3.6 INSTALLATION OF BACKFILL

- A. Backfilling of pipe trenches will not be allowed until the work has been approved by the Engineer, pressure tested if required, and the Engineer indicates that backfilling may proceed. Any work which is covered or concealed without the knowledge and consent of the Engineer shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing if previously authorized by the Engineer.
- B. The Contractor shall backfill all trenches and other excavations made in the process of installing the pipe. He shall maintain the surface of the backfill free from major irregularities and potholes. Backfill, up to a point at least one foot above the pipe shall be select backfill material not exceeding 2 inches in diameter.
- C. Select backfill material shall be placed under and around the pipe to one foot above the crown in 6-inch layers. Each layer shall be thoroughly compacted to at least 95 percent of maximum density as defined by AASHTO Standard No. T-180, "Moisture-Density Relations of Soils using a 10-lb. (4.54 kg.) Rammer and an 18-in. (457 mm) Drop." The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Engineer. Particular attention and care shall be exercised in obtaining thorough support for the branch of all service connection fittings. Care shall be taken to preserve the alignment and gradient of the installed pipe.
- D. Backfilling and compacting of material lying above a point 1 foot above the crown of the pipe and below the pavement base or the surface of the ground, if out of pavement, shall be accomplished in layers not exceeding 6 inches in thickness. Each layer shall

be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 95 percent of maximum density as determined by AASHTO Specification T-180 or such greater density as may be required by the governing authority over the area in which the work is performed. A testing laboratory, designated by the Engineer, will make periodic field tests to determine the density being obtained in each lift, or layer, or the backfill. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompactd in a manner approved by the Engineer, and then retested. The reworking, recompactd and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

- E. The Contractor shall exercise proper care to insure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the natural water table if the "Alternate Method of Construction" is utilized.
- F. Backfill shall in general be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after the laying of the pipe.
- G. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.
- H. Suitable material in excess of all backfill requirements and all unsuitable material shall be removed from the work and disposed of by the Contractor.
- I. Within paved areas of trench excavation, the base and surfacing shall be reconstructed as specified under Section 02745 "Pavement Removal and Replacement."
- J. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½ inch, except as otherwise directed by the Engineer. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one (1) grade will have to be used at any one (1) location.

3.7 INSTALLATION OF PIPE BEDDING

- A. As described above, all pipe trenches shall be excavated to a level 6 inches below the outside bottom of the proposed pipe barrel. The resulting excavation shall be backfilled with approved pipe bedding material, up to the level of the lower one third ($\frac{1}{3}$) 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.
 - 1. Select Backfill material may be utilized where the excavated trench bottom is above water.

2. Pearrock, as specified above, shall be used for small diameter (less than 24 inches) pipe bedding (except copper pipe), whenever the excavated trench bottom is at or below water, unless otherwise approved by the City. It may also be used above water in lieu of select backfill material.
 3. Crushed stone, as specified above, shall be used for bedding of 24 inches and larger diameter pipe and/or manholes, under the same conditions as pea rock in 2. above, unless otherwise approved by the City.
 4. Sand bedding for copper pipe shall be dry screened sand.
- B. Any excavation below the levels required for installation of the pipe bedding shall be backfilled with bedding material, as approved by the Engineer, tamped, compacted and shaped to provide proper support for the proposed pipe.

3.8 COMPACTION AND DENSITIES

- A. Methods of control and testing of backfill construction to be employed in this work are:
1. Maximum density of the material in trenches shall be determined by AASHTO Designation T 180.
 2. Field density of the backfill material in place shall be determined by AASHTO Designation T 238.
- B. Laboratory and field density tests, which, in the opinion of the Engineer are necessary to establish compliance with the compaction requirements of these specifications, will be conducted by an approved testing laboratory certified in the State of Florida and paid for by the contractor as part of the overall project cost. Tests will be made at depths and locations selected by the Engineer. The number of test locations is to be no less than one per exfiltration trench location.
- 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.

3.9 ALTERNATE METHOD OF CONSTRUCTION

- A. General:
1. A combination of conditions in the substrata, water table, or method of disposal may be encountered during the course of the work, which make 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 to dewater the excavation have been employed without success, the Contractor, with the concurrence of the Engineer may elect to employ the following alternate method of construction. The concurrence of the Engineer 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 Engineer shall determine.
 2. 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 his basic responsibility for satisfactory completion of the work.
 3. Subject to all of the requirements stated hereinabove, including written approval of the Engineer, 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.

- B. Removal of Water: The installation of pipe, manholes and appurtenances under water will be permitted and the requirements of "Removal of Water" will be waived.
- C. Excavation:
 - 1. Excavation of pipe trenches to the level of the bottom of the proposed pipe bedding shall be performed in accordance with subsection 3.2, Excavation, herein.
- D. Concrete Pipe and Manhole Bedding: The pipe trench or manhole excavation shall be backfilled to receive the pipe or manhole with limerock bedding material up to the level of the lower one-third ($\frac{1}{3}$) of the proposed pipe barrel, or to the outside bottom of the proposed manhole as applicable. This bedding for manhole shall be tamped and compacted to provide proper bedding for the pipe or manhole, as also specified herein. Bedding material for pipe shall be tamped and graded to provide proper bedding for the outside bottom of the pipe barrel up to the level of the springline of the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fitting. The bedding material shall be as referenced in subsection 2.3, above. Under no circumstances will material other than limerock bedding material be considered satisfactory for use as bedding material for underwater construction.
- E. Backfill:
 - 1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Backfill", except that select backfill material or pipe bedding material shall be used to backfill around the pipe and to a level 1 foot above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.
 - 2. If the Alternate Method of Construction is used, all backfill material, including limerock bedding material, shall be carefully lifted into the trench and released to fall freely therein when the bucket or container is at or just above water level. Under no circumstances shall backfill material be dumped or pushed into trenches containing water. Below the existing water level, backfill material shall be carefully rammed into place in uniform layers. Above the water level, backfill material shall be placed and compacted as specified in "Backfill" and "Compaction and Densities."

3.10 RESTORATION OF EXISTING SURFACES

- A. Paved and grassed areas disturbed by the operations required under this Section shall be restored as indicated on the Drawings and/or specified herein.

END OF SECTION\

SECTION 02745
PAVEMENT REMOVAL AND REPLACEMENT

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work included under this Section covers the furnishing of all labor, equipment and material required for cutting, removing, protecting, constructing, replacing or stabilizing all existing roadways, driveways and pavements of the various types encountered, removed or damaged under this project.
- B. All existing utility castings, including valves boxes, junction boxes, manholes, handholes, pull boxes, inlets and similar structures in the areas of trench restoration, pavement replacement and pavement overlay shall be adjusted by the Contractor to bring them flush with the surface of the finished work.
- C. Payment for pavement restoration will be made only where such base courses or surface courses are encountered within the limits defined in the pavement repair details shown on the Plans and/or in the City of West Miami Department of Public Works.

1.2 QUALITY CONTROL

- A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. 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 project as through reproduced herein in their entirety.
- B. All equipment necessary for construction shall be on the job site in first class working condition.

1.3 DAMAGE BY CONTRACTOR

- A. The Contractor shall protect from damage by construction operations, all pavements, including all base courses and surface courses, within the work area.
- B. Any base course or surface course beyond the limits described in 1.01-C, above, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the Department, and to the satisfaction of the governing authority having jurisdiction over the work area at no additional cost to the Department.
- C. Any damage to adjacent lanes of pavement will require the Contractor to resurface the entire lane width for a length, as approved by the Department. When the damage amounts to 25 percent or more in any one (1) block (approximately 600 feet), the Contractor shall resurface the entire width of the lane in which the damage occurred for the entire block at no additional cost to the Department.
- D. The Contractor is hereby notified that wherever the line for repaving for trenches extends one foot into the edge of the existing paving, he shall repave to this edge only.

Full lane paving will not be required. Additional damage to the pavement beyond this line caused by the Contractor's operation will require that he repave the full width, at the Contractor's expense.

- E. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City and to the Engineer.
- F. No payment shall be made for pavement restoration, which falls outside the above described limits and is required for other appurtenant items. The cost for such work shall be included in the price bid for the applicable item.

PART 2 PRODUCTS

2.1 MATERIAL, GENERAL

- A. Limerock Base: The limerock base shall consist of either one or two courses limerock obtained from local sources where the overburden was removed from the pits prior to mining operations. The limerock, Section 200 and Section 911 for Miami Oolitic limerock, the FDOT specifications with a maximum size of the aggregate to be 1½ inches.
- B. Prime Coat and Tack Coat shall comply with the requirements of Section 300 DOT Specifications.
- C. Asphaltic Concrete: The materials and construction of the asphaltic concrete patch and surface courses shall be Type S-III Asphaltic Concrete conforming to Sections 330, 331 and 916 of the DOT Specifications.
- D. Sand cover material shall be clean and non-plastic, and shall be composed of hard durable grains, free from loam, roots, silt, clay, or rock particles and other deleterious substances. Local sand meeting such requirements may be used. Sand shall be subject to approval by the Department.
- E. Concrete Base: The materials and construction of the Portland cement concrete base shall be conforming to Section 345 of the DOT Specifications.

2.2 BITUMINOUS PAVING MATERIAL

- A. Asphalt cement for asphaltic concrete mixes shall be Viscosity Grade RS-5, homogeneous, free from water and shall meet the requirements of DOT Specifications, Section 916-4. Unless otherwise specified, the Contractor shall supply all test samples required. For friction courses, in addition to meeting the above requirements, the bituminous material shall contain 0.5 percent of a heat-stable, anti-stripping additive from an approved source.
 - 1. Asphaltic Concrete - Type S-III Mix shall meet the requirements of DOT Specifications for Type S-III Asphaltic Concrete, Sections 330, 331 and 916 of DOT Specifications.

2. Emulsified Asphalt for Slurry Seal Coat shall be of the slow-setting, mixing type and shall be homogeneous, meeting the requirements of the Asphalt Institute, Grade SS-1 or SS-1h.
3. Liquid Asphalt for Prime and Tack Coat: shall meet the requirements of DOT Specifications.
4. Liquid Asphalt for Sand and Asphalt Paving shall be asphalt cement, emulsified asphalt, Grade RS-2 (anionic) conforming to the requirements of DOT Specifications 916-4.
5. Mineral Aggregate for Slurry Seal Coat shall consist of screened sand or limestone screenings or gray granite screenings or a mixture of sand and screenings plus not less than 3 percent, by weight, of Type I or Type II Portland cement.

PART 3 EXECUTION

3.1 INSTALLATION, GENERAL

- A. Permanent pavement repair shall be in accordance with the details shown on the Plans and/or in the Standard Details herein, with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor at his expense.
- B. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the Department of Public Works, Traffic Engineering Division, or other authority having jurisdiction over the work area.
- C. All equipment necessary for construction shall be on the job site in first class working condition. Spilling or dropping of petroleum products is prohibited and all defective equipment shall be removed or replaced immediately. The Contractor shall be subject to all DERM (Department of Environmental Resources Management) regulations and clean up requirements.
- D. The percentages of maximum density for subgrade and limerock base specified herein are minimal. Greater percentages of maximum density shall be obtained, if so required, by the governing authority having jurisdiction over the work location.
- E. Asphaltic concrete mixtures shall be obtained only from plants, which comply with the requirements of DOT Specifications, Section 320 as applicable, using materials specified herein, and producing the specified mixture. General construction requirements for all hot bituminous mixtures specified herein shall conform to DOT Specifications, Section 330, as applicable.
- F. Asphaltic concrete shall be laid only where the surface to be covered is intact, firm, cured and dry, and only when weather conditions are suitable. The temperature of the mixture at the time of spreading shall be within limits of DOT Specifications or within 25 deg of the temperature set by the Engineer. No mixture shall be spread when the air temperature is less than 40 deg F or when the spreading cannot be finished and compacted during daylight hours.

- G. Any mixture caught in transit by a sudden rain may be laid at the Contractor's risk, if the base is in suitable condition. Under no circumstances shall asphaltic material be placed while rain is falling, or when there is water on the area to be paved.
- H. Subgrade: Roadway subgrades shall be stabilized to the minimum depth shown on the Drawings to a Limerock Bearing Ratio of not less than 40. Stabilizing shall be Type B as defined in Section 160 of the DOT Specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, course limerock screenings, or any other stabilizing material acceptable to the City. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subgrade will have a LBR of not less than 40. 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.
- I. At least three (3) 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 City.
- J. Limerock Base: The limerock base shall be constructed in accordance with Sections 200 and 911 of the DOT Specifications, to the thickness and width indicated on the Drawings.
- K. 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 8 inches.
- L. 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. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98 percent maximum density as determined in more than one course, the density shall be obtained in each lift of the base.
- M. 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.
- N. 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.
- O. 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 rescarifying, reshaping, adding base material where necessary and recompacting.
- P. 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.

- Q. Asphaltic Concrete: The spreading, compacting and jointing the wearing surface shall be in accordance with Sections 330 and 331 of the DOT Specifications to the thickness indicated on the Drawings.

3.2 TEMPORARY PAVING

- A. Prior to commencing excavation, the asphalt surface shall be sawcut within the limits of the allowable trench width. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City, temporary paving shall be placed within twenty-four (24) hours after the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70 conforming to the requirements of DOT Specifications, Section 916-2. The sand shall conform to the requirements of DOT Specifications, Section 902 for fine aggregate.
- B. No payment shall be made for temporary paving work and the cost for such work shall be included in the price bid for the item Maintenance of Traffic.
- C. The cold mix is to be installed one (1) block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with his excavation work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City and the municipal agency permitting the work to allow greater lengths than 1,200 feet. Permitting agencies may reduce the allowable limits in their permit, or for other unforeseen right-of-way conditions.
- D. Prior to completion of the work and within a maximum of thirty (30) calendar days, the Contractor shall remove the 1-inch of cold mix and surplus backfill. He shall replace it with the specified compacted limerock base course and asphaltic within the specified working limits. Municipal agencies permitting this work may accelerate the time for removal of the cold mix, at their discretion.
- E. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within thirty (30) days. In replacing the temporary paving with permanent pavement, all work shall be completed in sections compatible with specified traffic maintenance procedures.
- F. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement, to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed over properly compacted limerock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of Type I paving restoration.
- G. Sand seal on the limerock base course will not be permitted in lieu of temporary paving.

- H. Unless otherwise approved by the City, temporary paving, shall be placed within twenty-four (24) hours following the completion of backfilling.

3.3 TYPE I PAVING REPAIR (Limerock Base and Asphaltic Concrete Surface)

- A. Type I paving repairs shall be made with an 8-inch thick compacted limerock base and a minimum 1-inch-thick asphaltic concrete surface, as detailed in the Standard Details.
- B. The backfill previously placed and compacted shall be excavated to the required depth below the existing road surface and the existing paving shall be cut back beyond all excavations, using an abrasive disc saw to trim the edges to straight and true lines, minimum width for the limerock base shall be equal to the trench width plus 2 feet. 8 inches of limerock base shall be placed in two (2) layers; each layer compacted to not less than 98 percent density in accordance with Section 200 of DOT Specifications. During rolling, the base shall be wetted down, as necessary, to secure the greatest possible compaction. After rolling, the entire surface of the base shall be thoroughly scarified to a depth of not less than 3 inches and shaped to conform to and be parallel with the existing surface, then watered and rolled again. Rolling and watering shall continue until the entire depth of the base is bonded and compacted into an unyielding mass.
- C. If at any time the subgrade material becomes mixed with the limerock base course materials, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean rock, which shall be watered and rolled until satisfactorily compacted.
- D. After the limerock base course has been properly prepared and is dry and ready to receive the wearing surface, a tack coat of emulsified asphalt (Grade RS 2), shall be applied at a rate of 0.10 gal/sq yd, and immediately followed by the asphaltic concrete. The tack coat shall be applied to the entire limerock base uniformly, and shall thoroughly coat all surfaced. Care shall be taken to tack coat and bond the edge of surrounding pavement. The tack coat shall not advance ahead of the paving by more than 300 feet in business or residential areas unless otherwise approved by the Engineer.
- E. The asphaltic concrete shall be plant mixed, using the best grade of local aggregates of approved size and gradation and mixed with an approved binder and conforming the either the DOT Specifications, Type S-III Asphaltic Concrete, Sections 330, 331 and 916.
- F. Where the width of the repair permits, the asphaltic concrete plant mix material shall be placed by means of an approved mechanical spreader and finisher. The mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than 8 tons. The compacted asphaltic concrete mixture shall not be, in any case, less than one inch in thickness. Rolling shall proceed as closely behind the spreader as possible and all material shall be completely compacted the same day it is placed. The minimum width of the wearing surface shall be the same as the base.

3.4 TYPE V PAVING REPAIRS (Asphaltic Concrete Wearing Surface Overlay)

- A. Type V paving repairs shall be made where noted on the Plans and/or as ordered by the Engineer. Type V paving repair is usually in addition to required Type I or Type II paving repairs. Since the quantity of Type V repairs that may be required is usually unknown until Contract pavement restoration work begins, Type V repairs may be

established in the Proposal on a contingent basis. A Contingent Item may or may not be used at the option of the City, and any provisions contained within the Contract Documents for quantity overruns will not be applicable.

- B. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal 1-inch thick asphaltic concrete, meeting the material requirements of Type I repairs, as specified hereinabove. As used herein, "overlay" shall mean Type V paving repairs. A special wearing surface may be substituted, if required.
- C. In general, the overlay shall be applied in a full lane width or widths, after the permanent paving repairs over the trench have been made.
- D. All longitudinal and transverse asphalt replacement overlay wearing surfaces shall butt into adjacent existing asphalt wearing surfaces in full lane asphaltic pavement restoration. The finish elevation of the new full lane overlay shall meet existing elevations adjacent to the new work.
- E. The existing asphaltic concrete surface shall be saw-cut for its full depth or 1-inch minimum, and then stripped back for at least 2 feet into the area to be overlaid to a second cut which shall also be in clean straight lines. The second, or interior, cut edge shall be rolled with a tandem roller weighing not less than 8 tons before the overlay is applied. The stripped area shall be used to provide a smooth transition or "feather" area between the overlay and the existing pavement. Before placing the overlay, all cut edges and the surface of the stripped area shall be tack coated with emulsified asphalt as specified herein below.
- F. If the Contractor requests in writing to "feather" the longitudinal edge, and if written permission is granted to "feather" the asphalt by the City and the local municipality, a sanded mix of 70-30 type shall be used. "Feathering" shall begin 18 inches from the tapered edge.
- G. Prior to installing a full lane width overlay over existing asphaltic pavement the trench and shoulders over the pipe shall be sawcut and filled with asphaltic concrete to the required depth, terminating flush with the existing adjacent asphalt in accordance with the municipality having jurisdiction over the work for Types I or II. Type V overlay will be installed as detailed above.
- H. When a minor amount of asphalt surface will remain, generally with large pipe installations, after the pipe has been installed and the required longitudinal saw cutting of the asphaltic pavement completed, the Contractor may request permission to remove all the asphalt in the lane, by saw cutting the asphalt adjacent to the existing lane, then placing the Type V overlay flush with the adjacent asphalt. This would require that the Type I or II finish elevation be lowered 1 inch to allow for the Type V overlay.
- I. Before the overlay is applied, existing surfaces shall be swept clean of all dirt and debris, using a power driven broom if warranted by the size of the location to be overlaid and/or as ordered by the City. Pavement edges shall be cleared of all encroaching vegetation, loose sand, rock and all other foreign matter. When the existing surface is thoroughly clean, a tack coat of Emulsified Asphalt Grade RS-2 (anionic) shall be applied at the rate of approximately 0.10 gal/sq yd, immediately followed by the asphaltic concrete overlay.

- J. Machine-laid overlay shall be placed by means of an approved mechanical spreader and finisher, and the mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than 8 tons.
- K. The compacted overlay shall be thicker as required to produce a smooth uniform surface free of any irregularities, but shall not be less than 1 inch in thickness. Existing depressed areas in the asphaltic pavement, which could collect water after a rainfall, shall be corrected before placing the asphaltic overlay. Rolling shall proceed as close behind the spreading of the asphaltic overlay as possible, and all materials shall be completely compacted the same day it is placed.

3.5 ASPHALT COLD MILLING

- A. The Contractor shall perform asphalt cold milling where called for on the Plans or as required for a complete installation, when approved or requested by the City. Cold milling shall be done using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the City and governing agency having jurisdiction at the location of the pavement milling operation. All charges for maintenance of traffic, transportation of personnel, equipment and other mobilization charges shall be considered as incidental to the cold milling operation.
- B. Cold asphalt milling shall be provided to improve the rideability of the finished pavement, lower the finished grade adjacent to an existing curb prior to resurfacing or to completely remove existing pavement. The overall length of the milling machine (excluding the conveyor) shall be a minimum of 18 feet, and having a minimum cutting width of 6 feet. The milling operation shall be operated to effectively minimize the amount of dust being emitted from the machine. Prewetting of the pavement may be required. In areas where milling is to be performed around City utility structures such as manholes, valve boxes etc., proper caution shall be taken as not to damage any of the structures. Saw cutting of the concrete surrounding the structure and using a pick or other means so as not to disturb the structure shall be employed to prevent any damage. Prior to opening an area which has been milled to traffic, the pavement shall be thoroughly swept with a power broom or other approved equipment to remove to the greatest extent practicable, the fine material which will dust under traffic. This operation shall be conducted in a manner so as to minimize the potential for creating a traffic hazard and to minimize air pollution.
- C. The milling operation shall be continuous so as to complete each site without any delays. The City Inspector shall coordinate all milling operations.
- D. Traffic maintenance charges shall include the installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Public Works Manual. In addition, the Contractor shall provide all barricades, flashing warning lights and/or arrow boards necessary to maintain safety and warn motorists of the construction.

3.6 REPAIR OF DAMAGE PAVEMENT

- A. All damage to pavement by the Contractor as a result of Work under this project shall comply with "DAMAGE BY CONTRACTOR", above, and shall be repaired in a manner satisfactory to the City. The 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.

- B. The width of all repairs within the work area shall extend at least 12 inches beyond the limit of the damage. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the work area shall be approved by the governing agencies having jurisdiction over the work prior to commencing the work.

END OF SECTION

SECTION 02765
PAVEMENT MARKINGS AND TRAFFIC SIGNS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. This section consists of pavement markings and traffic signs on the Drawings, specified herein and as required for a complete installation.

1.2 QUALITY ASSURANCE

- A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. 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.
- B. Pavement markings for this Project shall conform to the DOT for Road and Bridge Construction, latest edition. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced in kind to the satisfaction of the City, Traffic Engineering Division, or other authority having jurisdiction over the work area.

1.3 CERTIFICATION

- A. The Contractor shall furnish the manufacturer's certification that all signs furnished conform to these specifications and shall replace or repair at his expense all signs that fail to meet this requirement.

PART 2 PRODUCTS

2.1 PAVEMENT MARKING

- A. Paint for pavement strips shall be as specified in Part 3, Execution.

2.2 REFLECTIVE MARKERS

- A. Reflective markers shall be installed in the pavement in accordance with the requirements of OSHA, DOT and City Public Works.

2.3 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 a 0.0002-inch-thick minimum anodic coating 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 the requirements of OSHA, DOT and Miami-Dade Public Works.

PART 3 EXECUTION

3.1 TRAFFIC PAINT

- A. This type of pavement painting shall be used where no thermoplastic paint is required or as temporary paint during the time required for paving "cure" prior to application of thermoplastic paint markings.
- B. Traffic paint used for this work shall conform to the requirements of Section 971-12 of the DOT Specifications for Road and Bridge Construction, or, at the Contractor's option, fast dry traffic paint, as specified in DOT Specifications, Section 971-13, may be used.
- C. The colors of the paint shall be yellow or white, as existed before the construction.
- D. All equipment shall be of a type and design, which will readily produce the required uniformity of application of the stripes, both as to thickness of coating and alignment. The paint machine shall be of the spray type capable of spraying the paint to the required "spread" without thinning of the paint. The paint tank shall be equipped with a mechanical agitator. The nozzle shall have cut-off valves, which will apply broken or "skip" lines automatically. Each nozzle shall also be provided with suitable line guides, either metallic shrouds or air blasts.
- E. Painting shall be done only during daylight hours and, as far as practicable, shall be terminated in time to permit sufficient drying by sunset. No paint shall be applied when moisture is present on the surface to be painted or when the air temperature is below 40 deg F. Painting shall not be done when winds are sufficient to cause spray dust.
- F. The surface, which is to be painted, shall be cleaned by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied. Any vegetation or soil shall be removed from the pavement before edge striping is begun.
- G. The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint will be allowed at any time. Before the start of each day's work, the paint container, the connections, and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.
- H. The traffic stripe shall be of the specified width, with clean, true edges and without sharp breaks in the alignment. A uniform coating of paint shall be obtained and the finished stripe shall contain no light spots or paint skips. Any stripes, which do not have a uniform, satisfactory appearance, both day and night, shall be corrected.
- I. All newly painted stripes, including edge stripes, shall be protected until the paint is sufficiently dry to permit vehicles to cross the stripe without damage from the tires. While the centerline stripes are being painted, all traffic shall be routed away from the

painting operations and the newly painted stripe. When necessary, a pilot car shall be used to protect the painting operations from traffic interference.

- J. Any portions of the stripes damaged by passing traffic or from other causes shall be repainted.
- K. Paint for temporary pavement markings shall also be used where thermoplastic markings are to be applied after the asphaltic concrete has "cured." The cure time shall be based on thermoplastic manufacturer's recommendations. However, in accordance with FDOT requirements, asphalt shall have been in place for thirty (30) days before application of thermoplastic stripe.

3.2 THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

- A. Thermoplastic pavement markings, including stripes, pavement messages, stop bars, directional arrows, reflective pavement markers and other miscellaneous items, shall be replaced as existed before the repair was made. The thermoplastic compound shall be extruded or sprayed onto the pavement surface in a molten state by mechanical means, with surface application of glass spheres, when required. Upon cooling to ambient pavement temperature, the compound shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation.
- B. The colors of the compound shall be white or yellow, as existed before the construction.
- C. Where thermoplastic markings are to be applied to concrete pavement, a sealing primer, as specified in DOT Specifications Section 711-2.2, shall be applied in advance of the placing of the stripes.
- D. The thermoplastic shall be applied to the pavement utilizing either extrusion or spray application equipment. The application equipment shall be so constructed as to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die or gun shall be so constructed as to prevent accumulation and clogging. The equipment shall be constructed so that all mixing and conveying parts up to and including the shaping die or gun, maintain the material at the plastic temperature with heat transfer oil or electrical element controlled heat. Direct fire heat transfer will not be allowed.
- E. The application equipment shall be so constructed as to insure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off square stripe ends and shall provide a method of applying "skip" lines. The use of pans, aprons, or similar appliances, which the die overruns, will not be permitted.
- F. Glass spheres applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.
- G. Special kettle(s) shall be provided for melting and heating the thermoplastic material. The kettle(s) shall be equipped with automatic thermostatic control devices to provide uniform temperature control and prevent overheating of the material. The applicator and kettle(s) shall be equipped and arranged as to satisfy the requirements of the National Fire Underwriters, the State of Florida, Miami-Dade County and any municipal authority applicable to where the work is being done.
- H. Applicators shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The applicator equipment to be

used on roadway installations shall consist of either hand equipment or truck-mounted units depending on the type of marking required.

- I. The hand applicator equipment shall be insulated, have sufficient capacity to hold 150lbs of molten material, and be sufficiently maneuverable to install crosswalks; lane, edge and center lines; arrows and legends.
- J. The truck mounted unit for lane, edge and center lines shall consist of a mobile self-contained unit carrying its own material capable of operating at a minimum speed of five miles per hour while installing striping.
- K. Application time, weather limitations and surface preparation shall be in accordance with DOT Sections 710-4, 710-5 and 710-8. In accordance with DOT requirements, asphalt shall have been in place for thirty (30) days before application of thermoplastic stripe.
- L. The material, when formed into traffic stripes or other markings, shall be readily renewable by placing an overlay of new material directly over an old line of compatible material in such a manner that no splitting or separation takes place.
- M. The application temperature shall be within the range specified by the manufacturer of the thermoplastic compound being used.
- N. All pavement edge lines, gore, island and diagonal strip markings, bike lane symbols and messages, wherever located, shall have a minimum thickness of 0.060 inch at the edges and a maximum thickness of 0.120 inch at the center. A minimum average film thickness of 0.060 inch shall be maintained. All lane lines, center lines, transverse markings (except shoulder markings) and pavement markings within traffic wearing area (such as dotted turning guide lines) shall have a minimum thickness of 0.090 inch at the edges and a maximum thickness of 0.188 inch at the center. A minimum average film thickness of 0.090 shall be maintained. All thickness measurements shall be an average in any 3-foot length.
- O. The glass sphere top coating shall be applied by a type of glass sphere dispenser or gun which will embed the spheres into the line surface to at least one-half ($\frac{1}{2}$) their diameter. The glass sphere top coating shall not incur more than a 10 percent loss during the first thirty (30) days of traffic exposure.
- P. Reflective pavement markers shall be installed as they existed before the construction. They shall be replaced with the appropriate color or colors and oriented in the correct direction as specified in Section 706 of DOT Specifications. Paving markings for this Project shall conform to the DOT Specifications for Road and Bridge Construction, as revised by the governing agency.

3.3 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.

END OF SECTION

SECTION 02900
LANDSCAPING

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work included in this Section includes tree removal, tree relocations, furnishing and planting trees, plants and grass of the species, sizes and quality specified, protection of existing Oak trees, fertilizing, watering, maintaining plants, guarantee and obtaining all permits from municipalities having jurisdiction over this work.
- B. Trees and plants, if applicable, are shown on the survey and indicate the common and botanical names, the quantities and sizes of plants to be located within the construction limits. Existing Oak trees in conflict shall be protected and if required realign the pipe's path as ordered by the Engineer; other plants in conflicts shall be relocated or replaced.
- C. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf with well developed root systems free of disease and insects, pests, eggs or larvae. No plants will be accepted unless healthy and showing satisfactory foliage conditions.

1.2 SOLID SOD AND GRASS SUBMITTAL

- A. Submittal shall be submitted to the Engineer for approval prior to installation.

PART 2 PRODUCTS

2.1 GRASSING, SOLID SOD AND SEED

- A. General:
 - 1. Solid sod shall be planted in the unpaved areas abutting the structures and extending to the limits shown on the Plans.
 - 2. When solid sod is to be placed adjacent to or in close proximity to existing sod or grass, the Contractor is to use similar sod or grass and obtain approval from the Engineer prior to installation. In public areas and right of ways the Contractor is also required to comply with Governmental Agency requirements and provide the Department with written approval of said agency prior to installation of grass and sod.
- B. Materials:
 - 1. Solid Sod:
 - a. Solid sod shall be certified bitter blue St. Augustine Floratam. The sod shall be firm touch texture having a compact growth of grass with good root development. It shall contain no weeds or other objectionable vegetation.
 - b. The soil embedded in the sod shall be good clean earth, free from stones and other debris. The sod shall be free from fungus, vermin and other diseases. The sod and soil shall be approximately 2 inches thick.
 - c. Before being cut and lifted, the sod shall have been mowed at least three (3) times with a lawn mower, with the final mowing not more than seven

(7) days before the sod is cut. The sod shall be cut into uniform dimensions approximately 12 X 24 inches. Abutting joints shall be free of open spaces with a tamped or rolled surface so that there are no joint openings.

2. Topsoil: Soil utilized for planting grasses shall be a mixture of pulverized 50 percent rock free siliceous sand and 50 percent clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps or other impurities or debris. All soil shall be delivered in a loose friable condition. Topsoil may be "unsuitable top soil" removed during the course of other work hereunder, if approved by the Engineer of Record. Topsoil shall be free of undesirable plants and seeds. Any such plants sprouting from areas of recent topsoil application shall be presumed to have originated in the topsoil and shall be eradicated from the area by the Contractor at his expense. Means of eradication shall be submitted to the Engineer for approval.
3. Planting of Grassing:
 - a. Solid Sod: Unless otherwise directed by the Engineer, four inches of topsoil shall be placed. The ground area shall be saturated with water. Sod shall be placed on the graded and watered ground firmly butted on all sides by sod without leaving holes, slots, or depressions. Sod shall be top dressed with soil (herein before specified) where required to bring all fill to voids and provide a uniform grass matt if approved by the Engineer. Soil shall firmly abut all structures to which it surrounds or contacts. Immediately after the grassing process, the entire grassed or mulched area shall be rolled thoroughly with a cultipacker traffic approved roller, or other 1,000-lb roller. At least two (2) trips over the entire area will be required.
4. Fertilizing Grassing:
 - a. Commercial fertilizers shall comply with all Federal, State and County fertilizer laws.
 - b. The numeral designations for fertilizer indicate the minimum percentage (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water soluble potash, contained in the fertilizer.
 - c. Designations may be approved specifically for a particular project and if liquid fertilizer other than that of chemical designation 8-8-8 is used, the total nitrogen content shall not exceed 12 percent.
 - d. At the Contractor's option liquid or dry fertilizer may be used. All grass shall be fertilized and watered in during the planting operation using the application rate and method directed by the manufacturer of the fertilizer used.
5. Guarantee and Maintenance of Grassing:
 - a. Guarantee:
 - 1) The Contractor shall guarantee all grasses and sod for a period of six (6) months from the date of acceptance of the completed overall project from the Contractor.
 - 2) The Contractor shall guarantee that the grasses and sod are alive, free of disease and have a healthy appearance at the end of the guarantee period.
 - 3) During the guarantee period, the Contractor shall replace any grass, which is diseased, dead or visually unsightly within three (3) days when requested in writing.

a. Maintenance:

- 1) The Contractor shall maintain all grass and sod guaranteed above for the period of the guarantee. Such maintenance shall include filling, leveling, and repairing eroded areas, replanting areas where the establishment of the grass does not develop satisfactorily, and watering as required. In no case shall such maintenance be less than three (3) weeks for watering and six (6) weeks for remaining maintenance care.
- 2) The maintenance of the grass and sod shall include, regular mowing, one application of approved dry or liquid fertilizer to the grasses guaranteed above. The fertilizer shall be applied and watered in as directed by the manufacturer. The time of fertilizing shall be approved.
- 3) The Contractor shall be required under the maintenance of the guaranteed grasses and sod to safeguard and take all possible precautions against damage from the elements and other possible damage. The Contractor shall be required to clean up the effected landscape area during the maintenance period due to any such event. The Contractor shall not be responsible to replace grasses properly protected under this item of the specifications, damaged by the events beyond his control.

2.2 PLANTS AND TREES:(If required by relocation and if shown on the drawings)

A. Grade Standards and Quality:

1. Quality of all plants shall be at least equal to that defined as No. 1 by the State Plant Board of Florida in Grades and Standards for Nursery Plants, Part I, 1963 Revised Edition, and Part II, Palms and Trees.
2. All plants shall be 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.
3. No plants will be accepted unless they are healthy and show satisfactory foliage conditions.
4. All plants shall conform to the measurements specified or indicated on the Drawings except that up to 10 percent of undersized plants in any one (1) variety or grade may be used provided there are sufficient oversized plants to make the average equal to or above specified grade. Plants larger than specified may be used if approved by the Engineer, but use of such plants shall not increase the Contract price. The spread of roots or ball of earth for larger plants shall be increased in proportion to the size of the plant.

B. Plant Designation: With reference to method of cultivation, root system status, etc., plants for landscaping shall be classified under the following designations:

1. Balled and Burlapped:
 - a. Plants so classified shall be dug with firm natural root balls of earth, of sufficient diameter and depth to include most of the fibrous roots. The root ball of these plants shall be properly wrapped with burlap sack material and remain protected and moist until they are planted. Plants whose burlapped balls have cracked or become sagging, or plants showing scars from rope and cable marks or other improper handling are not acceptable. All balled and burlapped plants which cannot be

planted immediately upon delivery shall be set on the ground and shall be well protected with soil, wet moss, or other acceptable material. The plants shall be set with the burlap cover intact and with the burlap showing, until inspection. At final inspection, the burlap may be cut away to ground level and completely covered with soil.

- b. It is required that, balled and burlapped materials, 12 inches or more in caliper, shall be root-pruned at least forty-five (45) days before being dug and such fact shall be certified on accompanying invoices. Where, in the opinion of the Engineer following his inspection of the grower's stock, adequate root pruning is being obtained by the grower's general cultivating practices, he may consider such fact as meeting this requirement.
2. Wire Balled and Burlapped:
 - a. Plants grown in soil of a loose texture which does not readily adhere to the root system shall have sound hog wire placed around the burlapped ball before the plant is removed from the excavation. The wire shall be looped and tensioned until the burlapped ball is substantially packaged so as to prevent loosening of the soil around the roots during handling.
 - b. Wire balled and burlapped plants shall otherwise comply with the requirements for balled and burlapped plants described in 1. above.
 3. Container Grown Plants:
 - a. Container grown plants shall have been grown in a container large enough and for sufficient time for the root system to have developed well enough to hold its soil together firm and whole. No plants shall be loose in the container. Plants which have become pot bound or for which the top system is too large for the size of the container, will not be acceptable.
 - b. All containers with vertical sides shall be cut and opened fully, in a manner such as will not damage the root system. Container grown plants shall not be removed from the container until immediately before planting, when all due care shall be taken to prevent damage to the root system.
 4. Bare-Root Plants: No bare-root plants shall be used unless specifically required by the Engineer or called for on the Plans.
 5. Palms:
 - a. Palm species shall have the roots adequately wrapped before transplanting except when they are container grown. Burlapping will not be required if the palm is carefully dug from marl or heavy soil that it adheres to the roots and retains its shape without crumbling. During transporting and after arrival, root balls of palm shall be carefully protected from the wind and exposure to the sun. After delivery to the job site, if palm is not planted within twenty-four (24) hours, the root ball shall be covered with a moist material.
 - b. All moving of Sabal, coconut and royal palms shall be in accordance with Heavy Trunk Palms, as described in "Florida Grades and Standards for Nursery Plants, Part II."
 6. Rooted Cuttings: Cuttings shall be kept moist at all times. They shall be rooted in a medium other than wood shavings and have at least four (4) root tips of 2 inches or longer.

C. Transportation and Inspection:

1. Plant transportation shall comply with all Federal and State regulations therefore and, upon delivery at the site, all plants shall be inspected for conformity to specifications and for handling damage. Rejected plants shall be removed immediately from the site by the Contractor.
2. Foliage trees when moved in full leaf shall be treated with "Wilt Pruf" or "Plantguard" as they are loaded at their growing site. This material shall be applied to the entire tree with a fine spray at a dilution of one (1) part "Wilt Pruf" or "Plantguard" to fifteen (15) parts of water.
3. Trees, which have to be transported in excess of 10 miles to reach the job site, shall be covered with a 70 percent shade-cloth tarp or equal in order to prevent wind burn.
4. Immediately following the delivery and inspection at the job, all plants with exposed roots shall be heeled-in moist soil or peat moss. All plants heeled-in shall be properly maintained by the Contractor until planted.
5. The balls of balled and burlap plants, must, if not immediately planted after delivery and inspection, be adequately protected by covering until removed for planting, in a manner appropriate to prevailing conditions and in accordance with accepted horticultural practices. The Contractor shall, in loading, unloading, or handling of plants, exercise utmost care to prevent injuries to the branches or roots of the plants. The solidity of the ball of balled and burlapped plants shall be carefully preserved. Handling of the plant by parts other than the ball shall be cause for rejection of such plant. Bare root plants, which have been heeled-in shall be properly handled during the distribution of planting beds.

D. Planting Materials:

1. Planting Soil: Planting soil shall be a pulverized mixture of 50 percent rock free siliceous sand and 50 percent clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps, or other impurities or debris. All soil shall be delivered in a loose friable condition.
2. Fertilizer:
 - a. Fertilizer shall be as specified in subsection 2.1-D, herein.
 - b. Fertilizer shall be selected and used as recommended by the manufacturer for each particular plant.
1. Mulch: Mulch shall be ground bark, bark peelings, peat, hay or straw.
2. Anti-Desiccant: Anti-desiccant shall be "Wilt Pruf," "Plantguard," or equal, delivered in the manufacturer's containers and used in accordance with the manufacturer's instructions.
3. Water:
 - a. Water for the irrigation of the new plantings during the progress of construction shall be provided by the Contractor in accordance with the provisions previously specified.
 - b. The Contractor shall furnish adequate watering equipment and shall continue watering to properly establish the new plantings throughout the maintenance period.
1. Wire: Wire for the bracing and guying shall be pliable No. 12 or No. 14 gauge galvanized soft steel wire.
2. Stakes and Ties: Stakes and ties shall be provided in accordance with the requirements of PART 3 EXECUTION, below.

PART 3 EXECUTION

3.1 EXCAVATION OF PLANT HOLES

- A. Plant hole excavations shall be roughly cylindrical in shape, with the sides approximately vertical. Plants shall be centered in the hole, with the trunk location as shown in the Plans.
- B. Bottoms of the holes shall be loosened at least 6-inches deeper than the required depth of excavation.
- C. Holes for balled and burlapped and wire balled and burlapped plants shall be large enough to allow at least 8-inches of backfill around the earth ball. For root balls over 18 inches in diameter, this dimension shall be increased to 12 inches.
- D. Where excess material has been excavated from the plant hole, the excavated material shall be disposed of as and where directed by the Engineer.
- E. Preparation of Ground:
 - 1. 4 inches minimum thickness of topsoil shall be placed over the areas off the right of way on which the sod is to be placed.
- F. Application of Fertilizer:
 - 1. Before applying fertilizer, the soil pH shall be brought to a minimum range of 6.0 - 7.0.
 - 2. The fertilizer shall be spread uniformly over the area to be sodded at the rate of 500lbs per acre, by a spreading device capable of uniformly distributing the material at the specified rate. Immediately after spreading, the fertilizer shall be mixed with the soil to a depth of approximately 4-inches.
 - 3. On steep slopes, where the use of a machine for spreading or mixing is not practicable, the fertilizer shall be spread by hand and raked in and thoroughly mixed with the soil to a depth of approximately 2-inches.
- G. Placing Sod:
 - 1. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools. Sod areas abutting concrete, asphalt or other applicable surfaces shall have the soil depressed at edges of the pavements so that the cut grass does not protrude over 2-inches above the adjacent property.
 - 2. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6 inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.
 - 3. On steep slopes, the Contractor shall, if so directed by the Engineer, prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.
 - 4. Sod, which has been cut for more than seventy-two (72) hours, shall not be used unless specifically authorized by the Engineer after his inspection thereof. Sod, which is not planted within twenty-four (24) hours after cutting, shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.

5. Sodding shall not be performed when weather and soil conditions are, in the Engineer of Record's opinion, unsuitable for proper results.

H. Watering:

1. The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least two (2) weeks. Thereafter, the Contractor shall apply water as needed until the sod roots and starts to grow for a minimum of sixty (60) days (or until final acceptance whichever is latest).

3.2 UNDERGROUND OBSTRUCTIONS

- A. In the event that rock, underground construction work, utility lines or obstructions out of the ordinary are encountered in any plant hole excavation, alternative locations will be selected by the Engineer.
- B. Where locations cannot be changed and the obstructions may be removed, the obstructions shall be removed to a depth of not less than 3 feet below grade and not less than 6 inches below bottom of balls or roots when plant is properly set at the required grade.

3.3 SETTING OF PLANTS

- A. 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 the plants.
- B. The backfill shall be made with planting mixture as specified hereinbefore 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 the backfilled earth. Plants shall be kept in a moistened condition for the duration of the Contract.

3.4 STAKING AND GUYING

- A. When called for on the Drawings or directed by the City, plants shall be staked in accordance with the following provisions:
 1. Small Trees: For trees and shrubs of less than 1-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 1 inch and smaller than 12-inch caliper shall be staked with a 2-inch sq stake driven 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 (2) 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 12-inch caliper and smaller than 22-inch caliper shall be staked with two (2) or more, 2-inch by 2-inch stakes, 8 feet long, set 2 feet in the ground. The tree shall be midway between the stakes and held firmly in place by two (2) strands of 12-gauge wire, applied as specified above for single stakes. Tie wires shall be tightened and kept tight by twisting.

3. Large Trees: All trees, other palm trees, larger than 22-inch caliper, shall be guyed from at least three (3) points with double strands of 12 gauge wire. Guy wires shall be anchored to 2- by 4-inch stakes, 24 inches long, driven into the ground at least 2 feet and sufficient that the top of the stake is at least 3 inches below the finished ground level. In firm rock soils, No. 4 steel reinforcing rods or 2-inch pipe may be used instead of 2 by 4s. Tie wires shall be securely fastened to the tree by means of a collar of rubber hose, or other approved material. Guy wires shall be tightened and kept tight by twisting.
4. Palm Trees: Brace palm trees with three or more 2-inch by 4-inch wood braces, toenailed to cleats which are securely banded at two (2) points to the palm, at a point at least 6-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 2-inch by 4-inch by 24-inch stake pads. In firm rocky soils, No. 4 steel reinforcing rods or 2-inch pipe is acceptable.

3.5 PRUNING

- A. 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 1-inch or more in diameter, above the ground, shall be treated with approved commercial tree paint.

3.6 MULCHING

- A. Within one (1) week after the planting, mulch material, approved by the Engineer, shall be uniformly applied to a minimum thickness of 2 inches, over the entire area of the backfilled hole or bed. The mulch shall be maintained continuously in place until the time of final inspection. Mulch is not required if other ground surface covers, such as rooted cuttings are called in the Plans.

3.7 INSPECTION

- A. On completion of the work, the Engineer of Record will inspect all planting work. The Contractor shall repair or replace all defective work, whichever is unsatisfactory to the Engineer of Record or the City. Preliminary acceptance of all plant materials will be given only after the materials are planted and after meeting all requirements prescribed herein.

3.8 MAINTENANCE

- A. Maintenance shall begin immediately after each plant is planted and shall continue until all work under this Contract has been completed and final acceptance is obtained from the City, however, the minimum period of this maintenance shall not be less than sixty (60) days even if it extends beyond final acceptance of contract. 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.
- B. Defective work shall be corrected as soon as possible after it becomes apparent. Upon completion of planting, the Contractor shall remove from the site excess soil and debris, and repair any damage to structures, etc., resulting from planting operations.

3.9 GUARANTEE

- A. The Contractor shall guarantee all planting work for a period of six (6) months after the date of final acceptance. During the guarantee period, the Contractor shall replace at no cost to the City any plant that dies or is not established within the guarantee period. Any plants missing or defective shall be furnished or replaced in a manner satisfactory to the City.

END OF SECTION

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS -
- PHASE 1**

00801

TECHNICAL SPECIFICATIONS

DIVISION 03

CONCRETE

SECTION 03100
CONCRETE FORMWORK

PART 1 GENERAL

1.1 SUMMARY

- A. The work specified in this section includes the design, engineering, construction and removal of all necessary formwork required for cast-in-place concrete as shown on the drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03200 "Concrete Reinforcement."
- B. Section 03300 "Cast in-Place Concrete."

1.3 DESIGN CRITERIA

- A. All work shall be designed, fabricated and performed in accordance with the requirements and recommendations of the applicable code and the following codes and standards. (Reference is made to the edition in force at the time these specifications are issued.)
 - 1. American Concrete Institute (ACI)
 - a. ACI 301: Specifications for structural concrete for Buildings.
 - b. ACI 318: Building Code Requirements for Structural Concrete.
 - c. ACI 347: Guide to Formwork for Concrete.
 - d. ACI SP-4: Formwork for Concrete.
 - 2. National Forest Products Association (NFPA) National Design Specifications for Stress Grade Lumber and its Fastenings.
 - 3. American Plywood Association (APA): Plywood: properties.
- B. Allowable Tolerances: Maintain formwork construction tolerances complying with ACI 347. Provide camber as necessary to compensate for anticipated deflections due to weight and pressure of fresh concrete and other construction loads.

1.4 SUBMITTALS

- A. Working Drawings: Submit working drawings for shoring signed and sealed by a Professional Engineer registered in the State of Florida. The shoring drawings shall contain, as a minimum, the location, size and type of all shoring, mudsills, blocking, temporary lateral bracing and other accessories necessary to safely support and brace the structure during construction. Show also the sequence of installation, load relief and removal of all shoring. Signed and sealed, shoring shop drawings
- B. are to be submitted to the Engineer for review.
- C.
- D. Shoring is to be inspected under the supervision of the professional engineer who prepared the shoring drawings. He shall provide a field report of each inspection. Upon completion of the project, he shall submit a signed and sealed statement to

- E. the Engineer that this work was performed in accordance with his plans and specifications Formwork: Show general construction of forms including jointing, special form joints or reveals, location and pattern of form tie placement, and other items which affect exposed concrete visually. Submit formwork drawings for specific finished concrete surfaces to the Engineer as may be required.
- F. Engineer's review is for general structural applications and features only. Engineer's review of shoring in no way relieves the Contractor and his engineer of their responsibility. Design of formwork for safety, structural adequacy and efficiency is Contractor's responsibility.
- G. Product Data: Submit Manufacturer's technical specifications for joint systems and forming accessories.

1.5 JOB CONDITIONS AND COORDINATION OF TRADES

- A. General: It is the Contractor's sole responsibility to coordinate with all trades for the setting of sleeves, anchor bolts, dovetail slots, inserts, frames, flashing, reglets, pipes, ducts and other embedded items and provide all openings required for installation of other work in accordance with the Contractor's shop drawings and Contract Documents.
- B. Inspection: Engineer may inspect formwork at any time and if forms do not conform to the lines, levels, and tolerances as required in this Section, the sealed shop drawings or the Design Drawings, he may reject formwork. If formwork is rejected, the Contractor must repair or replace the rejected portion with no additional cost to the City.
- C. Approval of Reuse: Form materials and erection shall be such that finishes specified may be achieved without patches or blemishes. Forms must be thoroughly cleaned and repaired before being reused. Do not use patched forms for exposed concrete surfaces. However, forms shall not be reused without the Engineer's approval. This approval will be based on whether the same quality of concrete finish will result with reuse as has already been produced.

PART 2 MATERIALS

2.1 FORMS

- A. Forms for Finished Concrete: Unless otherwise shown or specified, construct formwork for finished concrete surfaces with plywood or metal framed plywood-faced materials acceptable to the Engineer to provide continuous, straight, and smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.
- B. Plywood Forms: U. S. Product Standard PS 1-65, Exterior Type, Grade BB, Plyform Class I or Class I or Class II, 5/8-inch minimum thickness, edge sealed and, mill-oiled, with each piece bearing the trademark of an approved inspection agency.
- C. Wood forms: Sound, good quality Douglas Fir or Southern Pine lumber, free from loose knots and otherwise suitable to facilitate finishing concrete surfaces as specified. Boards shall be seasoned and dressed to a uniform thickness.

2.2 ACCESSORIES

- A. Provide all necessary anchors, from ties, shores, construction joints, scaffolds, and bracing, as required to install forms.
- B. Construction joints, control joints, expansion joints, and water stops are to be provided where indicated on the plans. Construction joints shall be approved by the Engineer.
- C. Shoring: Shores must be of readily adjustable type so that settlement during concrete placement may be taken up at once. Conform to submittal portion of this Section.
- D. Form Ties: Commercially manufactured, adjustable-length, removable or snap-off type with carbon steel tie rods designed to prevent form deflection and to prevent sagging concrete upon removal. Provide units with a maximum cone diameter of 1¼ inches and which leaves no metal closer than 1½ inches to surface.
- E. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces, such as:
 - 1. “Nox-Crete Formcoating” by Nox-Crete.
 - 2. “Formshield” by A.C. Horn, Inc.
 - 3. “Cast-Off” by Sonneborn.
 - 4. “Magic Kote” by Symons.
 - 5. “Form Release - 80” or “Form Release - 100” by Lambert Corp.
- F. All steel forms shall be properly protected from rusting, using Form Guard TJ by Nox-Crete Chemicals, Inc., Duogard by W. R. Meadows or approved equal.

PART 3 EXECUTION

3.1 DESIGN AND ENGINEERING

- A. Design forms to include assumed values of live load, dead load, weight of moving equipment operated on form work, concrete mix, height of concrete drop, vibrator frequency, rate of placement, foundation pressures, lateral stability, and other factors pertinent to safety of structure during construction.
- B. Design structural members to support form-facing materials without deflection. Design camber into formwork as required compensating for anticipated deflections due to weight and pressures of fresh concrete and construction loads for long span members without intermediate supports.
- C. Design formwork so it will be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.
- D. Design formwork so it will be sufficiently tight to prevent leakage during concrete placement.

3.2 FORM CONSTRUCTION

- A. General: Conform to formwork recommendations contained in ACI 347. Construct formwork as required to obtain the exact size, shape, dimensions, line, level, align-

ment, location, elevation and grades, as indicated on Drawings for the finished structure.

- B. Provide for openings, pipe penetration, offsets, sinkages, keyways, recesses, re-lets, blocking, screeds, bulkheads, anchorages and inserts, and other features indicated on Drawings or required for the finished structure.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
- D. Provide runways so that moving equipment shall be supported directly on the formwork and not on reinforcing steel or bar supports. Chamfer exposed corners and edges as indicated, using wood, metal, PVD or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

3.3 CLEANING AND TIGHTENING

- A. Thoroughly clean forms and remove chips, wood, sawdust, dirt, or other debris just before concrete is to be placed.
- B. Retighten forms during or immediately after concrete placement as may be required to eliminate any leaks.
- C. Tape joints to prevent loss of cement paste before form release agent is applied to formwork.

3.4 SHORES AND SUPPORT

- A. Treat plywood, fiberboard, steel and other form materials before reinforcement is placed with an approved form coating or compound. Wipe off excess compound. Do not allow coating to contact item to be embedded in concrete. Apply in compliance with manufacturer's instructions.
- B. Comply with ACI 347 Shoring for Multistory structures and as herein specified.
- C. Extend shoring as required on shoring drawings. Provide additional shores where required to ensure the proper distribution of loads throughout structure. Provide temporary bracing throughout system to ensure stability of structure during construction.

3.5 STRIPPING

- A. It shall be the Contractor's sole responsibility to remove the forms in such a manner, which will assure complete safety of the structure. Remove shores and reshore in planned sequence in accordance with shoring drawings.
- B. Formwork not supporting concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after concrete has hardened sufficiently to maintain its integrity and not be damaged by form removal operation but not less than twenty-four (24) hours (or longer when using HEWR admixtures, all as recommended by the manufacturer of the admixture) of curing at not less than 50 deg F. Initiate and maintain curing and protection of concrete immediately after stripping of forms.
- C. Reduced stripping time for columns and walls less than 12 feet in height will be con-

sidered when requested in writing. Provide adequate concrete strength curves, temperature data and curing procedures to substantiate adequacy of concrete at age and conditions of requested stripping time.

- D. Do not remove formwork, shoring, supporting members such as beams, 1-way joist system, slabs, and other structural elements until concrete has attained age and compressive strength as recommended by ACI 347. Determine compressive strength of in place concrete by testing field-cured specimens representative of concrete location of members. Such field-cured specimens are in addition to specified testing requirements and are for the use of and the responsibility of the Contractor and shall be at no additional cost to the City.

END OF SECTION

SECTION 03200
CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SUMMARY

- A. The work specified in this section includes detailing, fabricating, furnishing and placing concrete reinforcement and accessories for cast-in-place concrete as shown on the drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01410 "Project Testing Laboratory Services."
- B. Section 03100 "Concrete Formwork."
- C. Section 03300 "Cast-in-Place Concrete."

1.3 QUALITY ASSURANCE

- A. Reference codes, specifications and standards (reference is made to the edition in force at the time these specifications are issued) are made a part of these specifications.
 - 1. CRSI: Manual of Standard Practice.
 - 2. AWS: D1.4 Structural Welding Code - Reinforcing Steel.
 - 3. ACI: SP-66 Detailing Manual.
 - 4. ACI: 318 Building Code Requirements for Structural Concrete.
 - 5. ASTM: A-615 Deformed and Plain Billet-Steel Bars for Concrete.
 - 6. Reinforcement, including the Supplementary requirements.
- B. Procedures: Refer to Section 01410 "Project Testing Laboratory Services."
- C. Source quality control of identifiable steel: Submit to laboratory, copies of mill certificates for all type, sizes and heats of reinforcing steel intended for use in work.
- D. Unidentifiable steel is not permitted.

1.4 SUBMITTALS

- A. Procedure: Submit in accordance with Conditions of Contract and Division Specification sections.
- B. Shop Drawings: Submit detailed fabrication, bending and placement drawings and schedules to the Engineer for review.
- C. Include bar schedules, stirrups spacing, diagrams of bent bars, assemblies, and any other pertinent data required for the fabrication and placement.

1.5 PRODUCT HANDLING

- A. Deliver reinforcement to the job site bundled, tagged and marked. Use durable

metal or embossed plastic tags indicating bar size, lengths, and reference information corresponding to markings shown on placement drawings.

- B. Prevent damage and accumulation of dirt or excessive rust to stored materials.

PART 2 MATERIALS

2.1 PRODUCTS

- A. Reinforcing steel: ASTM A615, Grade 60, deformed including Special Provisions.
- B. Supports for reinforcement: Bolsters, chairs, spacers and devices for spacing, supporting and fastening reinforcement in place.
- C. Use wire bar type supports complying with CRSI, Chapter 3, with plastic protected legs, unless otherwise indicated.
- D. Reinforcing Mesh: ASTM A185, Welded Steel Wire Fabric. Provide Mesh in flat sheets, not in rolls.

2.2 FABRICATION

- A. Shop bend and fabricate reinforcing bars to conform to required shapes and dimensions indicated on Drawings. Comply with fabrication tolerances of reference standards.
- B. In case of fabricating errors, do not rebend or straighten reinforcement.
- C. Make all bends cold.
- D. Provide 2 #5 tie bars in the top of all concrete beams to secure stirrups where no top steel occurs.
- E. Reinforcement with any of the following defects will not be permitted:
 - 1. Bar lengths, depths and bends exceeding specified fabrication tolerances.
 - 2. Bends or kinks not indicated on drawings or accepted shop drawings.
 - 3. Bars with reduced cross-section due to excessive rusting or other cause.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Remove loose rust and mill scale, earth, form oil, or any other materials, which may reduce or destroy bond with concrete.
- B. Position, support, and secure reinforcement against displacement by moving loads, vibration, or other concrete placement operations. Place bar supports and reinforcing bars in accordance with C.R.S.I.
- C. Locate and support reinforcement by metal chair, runners, bolsters, spacers and hangers, as required.

- D. Place reinforcement to obtain the minimum coverage for concrete protection specified on the Drawings.
- E. Arrange, space and securely tie bars and bar supports together with 16-gauge wire to hold reinforcement accurately in position during concrete placement operations.
- F. Set wire ties so that the twisted ends are directed away from exposed concrete surfaces.
- G. Provide sufficient number of supports and of strength to carry reinforcement.
- H. Do not place reinforcing bars more than 2 inches beyond the last leg of any continuous bar supports. Bar supports shall be minimum # 4 bars.
- I. Do not use reinforcing bar supports for support of runways, for concrete conveying equipment or any other construction loads.

3.2 SPLICES

- A. Standard reinforcement splices: Lap ends, placing bars in contact, and tightly wire tie. Unless indicated otherwise on Drawings, comply with requirements ACI 318 for minimum lap of spliced bars.
- B. Do not splice bars except at location shown in the drawings and shop drawings without approval of the Engineer.
- C. Welded wire fabric: Lap adjoining pieces not less than the spacing of the cross wires plus 2 inches. Lace all splices with 16-gauge wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.3 FIELD FABRICATION

- A. Do not heat, bend, or cut any reinforcing bars without prior approval of the Engineer.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. The work specified in this section includes furnishing, placing, finishing, curing and testing cast-in-place concrete as shown on the plans and as specified herein.
- B. Batch, deliver, discharge and place at project site location as required, all concrete of proper mix design for all cast-in-place concrete.
- C. Be responsible for obtaining materials for concrete, processing, storing, grading, blending, mixing, conventional in-plant quality control, batch tickets, correct and timely dispatching and similar services.
- D. Provide cooperation, coordination and consultation with representatives of testing laboratory, the Engineer, and other authorities.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01410 "Project Testing Laboratory Services."
- B. Section 03100 "Concrete Formwork."
- C. Section 03200 "Concrete Reinforcement."

1.3 SUBMITTALS

- A. Procedure: Submit in accordance with Conditions of Contract and Technical Specification sections.
- B. Product Data: Submit data for property materials and items, including admixtures, patching compounds, waterstops, joint systems, curing compounds, and others as required herein or as requested by the Engineer.
- C. Materials Certificates: Provide materials certificates in lieu of materials laboratory test reports when permitted by the Engineer. Materials certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements. Provide certification from admixture manufacturers and cement manufacturers that materials comply with specification requirements.
- D. Concrete Mix Design: Submit for each strength and type required. Include all necessary substantiating data and tests. Data to be no older than one (1) year from date of submittal.

1.4 QUALITY ASSURANCE

- A. Ready-mix concrete: Mix and deliver ready-mix concrete in accord with ASTM C94, and as specified herein.

- B. Reference specifications and standards: (reference is to the edition in force at the time these specifications are issued). Comply with the applicable standards and specifications as follows:
1. Florida Building Code.
 2. ACI-301 - Specifications for Structural Concrete for Buildings.
 3. ACI-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.
 4. ACI-305 - Hot Weather Concreting.
 5. ACI-308 – Guide to Curing Concrete.
 6. ACI-309 - Guide for Consolidation of Concrete.
 7. ACI-311 - Guide for Concrete Inspection.
 8. ACI-318 - Building Code Requirements for Structural Concrete.
- C. Allowable Tolerances: Place all work in accord with ACI 301, unless otherwise modified in these specifications.

1.5 TESTS AND INSPECTIONS

- A. Procedure: In accord with Section 01410 “Project Testing Laboratory Services.”
- B. Required Quality Control Tests:
1. Slump tests: Make one (1) slump test in accord with ASTM C143 for each set of test cylinders. Make additional tests as may be ordered by the Engineer. If concrete is pumped, take test at both the truck and at discharge end of pump.
 2. Air Tests: Make one (1) air content test in accord with ASTM C173 for every other (2nd) set of test cylinders, and additional tests as may be ordered by Architect/Engineer.
 3. Test Cylinders: Take one (1) sample of five (5) cylinders from each 50 cu yd place, or fractional part thereof, of each day's production, of each mix design. Take samples as concrete is discharged from trucks. Mark cylinders with date, sample number, and point in structure from which samples were taken. Do not take more than one (1) sample of five (5) cylinders from any point or batch of concrete or pours of 50 yds or more, space samples at 25-yd intervals. If concrete is pumped, take samples from discharge end of pump.
- C. Make, store and cure cylinders in accord with ASTM C31.
- D. Testing: Test cylinders in accord with ASTM C39. Test one (1) cylinder at age of three (3) days, one (1) cylinder at age of seven (7) days and three (3) at age of twenty-eight (28) days.
1. Exceptions: If one (1) of the first two (2) 28-day tests falls below specified strength, reserve the third (3rd) cylinder for testing at fifty-six (56) days.
- E. Provide the Engineer with test results signed and sealed by a Florida Professional Engineer.

1.6 EVALUATION AND ACCEPTANCE OF CONCRETE

- A. Conformance
1. Strength level of a standard strength test will be considered satisfactory if both the following requirements are met:

- a. The average strength of the three (3) twenty-eight (28) days (or two (2) twenty-eight (28) and one (1) fifty-six (56) days) specimens does not fall below the required $f'c$ by more than 10 percent.
 - b. The average of three (3) consecutive standard strength tests (as selected Engineer) equals or exceeds the required $f'c$.
- B. Non-Conformance
 - 1. Notify the Engineer of any concrete not in compliance with the above criteria. Non-Complying concrete may be:
 - a. Replaced.
 - b. Tested in accordance with ASTM C42 (Cored) as directed by Engineer. Minimum of three (3) cores per test. Minimum core diameter of 4 inches. Avoid reinforcing steel when coring.
 - 2. Concrete represented by core tests shall be considered structurally adequate if the average of three (3) cores is equal to at least 90 percent $f'c$ and no single core is less than 85 percent $f'c$.
 - 3. Concrete not considered adequate by core strength test shall be either of the following:
 - a. Replaced.
 - b. Load tested in accordance with ACI 318 Chapter 20 and as directed by the Engineer.
 - c. Strength evaluation by analysis and through field investigations as directed by the Engineer.
 - 4. Concrete represented by load test, which meets the requirements of ACI 318 Chapter 20 shall be considered structurally adequate.
- C. All Testing, architectural and engineering services, structural modifications, and replacements of any concrete not in compliance with the above criteria shall be at the Contractor's expense.

1.7 JOB CONDITIONS

- A. Allowable concrete temperatures:
 - 1. Hot Weather: In accordance with ACI 305, except concrete temperatures shall not exceed 90 deg F.
 - 2. Do not place concrete in exposed locations while it is raining unless adequate protection is provided.
- B. Coordination: No concrete shall be placed before conduit, sleeves, inserts, etc., are in place to the satisfaction of the Contractor, nor before forms, reinforcing and affected work of other trades have been observed by the Engineer. Embedment of conduits and pipes shall be in accordance with ACI 318.
- C. Provide no openings or sleeves in framed slabs or beams unless shown and detailed on structural drawings or accepted by the Architect/Engineer.
- D. Equipment support and openings: Equipment supports, openings, anchor bolts, pads, sleeves, etc., as shown on drawings are for general arrangement only and may require modification to suit actual purchased equipment. It is the Contractor's responsibility to coordinate such items in sufficient time to permit continuous construction.

- E. Fastening devices and other work: It is the Contractor's sole responsibility to coordinate with all trades for the setting of sleeves, anchors, dovetail slots, inserts, frames, and other embedded items and provide all openings required for the installation of other work in accordance with the Contract documents, governing codes and standards.
- F. Pumping equipment, including receiving hopper, valves, pump motor and discharge line shall be maintained in first class condition at all times. A spare unit, equal in capacity, shall be on site or available for use within one (1) hour should the pump in use fails. All auxiliary equipment such as valves, connections, and discharge lines, shall have spares on site in the event of failure. No pumps smaller than 4 inches are to be used without prior permission of the Engineer. No aluminum component that would come in contact with fresh concrete shall be used.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type II. Provide from one (1) source.
- B. Fly Ash: ASTM C618, Type C or F except loss on ignition shall not exceed 3 percent. Fly ash replacement of cement shall not exceed 20 percent (one (1) part fly ash max. to five (5) parts cement) by weight.
 - 1. Submit Manufacturer's certification that product complies with specifications.
- C. Fine aggregates: Natural quartz sand or sand manufactured from local stone aggregates conforming to ASTM C33, produced from FDOT approved sources, with fineness modulus not less than 2.4 and having a proven service record.
- D. Coarse aggregate: Clean, washed, sound, crushed natural stone products produced from FDOT approved pits. Free from salt, clay, mud, loam or other foreign matter. Conform to ASTM C33; sizes No. 67 ($\frac{3}{4}$ inch) or No. 57 (1 inch), No. 8 ($\frac{3}{8}$ inch) and No. 467 (1 $\frac{1}{2}$ inches), as specified or approved.
- E. Water: Clean and potable, free from deleterious amounts of acids, alkalis, salts and organic matter.
- F. Concrete Admixtures:
 - 1. General: Provide admixtures produced by acceptable manufacturers and used in compliance with the manufacturer's printed directions. Do not use admixtures, which have not been incorporated and tested in the accepted mixes unless otherwise authorized in writing by the Engineer.
 - 2. Air-entraining admixture: Conform to ASTM C-260. Use air-entraining admixture in all concrete, unless otherwise indicated. Add air-entraining admixture to the manufacturer's prescribed rate to result in concrete at the point of placement having air content within 3 percent to 5 percent. Do not use air entraining admixture in concrete having a design strength of 5000 psi or higher.
 - 3. Water-reducing admixture: Conform to ASTM C-494, Type A, free of chlorides, fluorides, or nitrates, except for those attributable to the water used in manufacturing. Use in all structural concrete. Provide Type D when ambient temperatures exceed 85 deg F.

4. High Range Water Reducing (HRWR) Admixture: Conform to ASTM C-494, Type F or Type G. Use where concentration of reinforcing steel hinders proper consolidation of concrete and is recommended for pumped concrete. HRWR is to be formulated from sulfonated melamine formaldehyde condensates or sulfonated naphthalene formaldehyde condensates. The admixture is to be added to the concrete mix at the job site or batch plant after initial mixing has taken place. If added at the jobsite, the addition shall be by certified technicians employed by the concrete supplier or an authorized representative of the admixture manufacturer. This admixture is in addition to and not substituted for any other admixtures specified elsewhere.
 5. Calcium Chloride: Do not use calcium chloride in concrete. Do not use any admixtures, which contribute free chloride ions to the concrete mix.
- G. Liquid Membrane-Forming Cure and Seal Compound: Conforming to ASTM C-309, Type 1, Class B. The compound shall be a clear styrene acrylate type, 30 percent solids content minimum, and have test data from an independent testing laboratory indicating to a maximum moisture loss of .030 grams/sq cm. Sodium silicate compounds are prohibited. Provide for all concrete permanently exposed to the weather and concrete slabs not receiving a cementitious or permanent topping.
1. Products: Subject to compliance with requirements, provide one (1) of the following:
 - a. Kure-N-Seal 30; Sonneborn Building Products.
 - b. Masterseal W; Master Builders.
 - c. Super Rez-Seal; Euclid Chemical Company.
 - d. Crystal Gard 0800; Lambert Corp.
 - e. ABCO Core & Seal; Nox-crete, Inc.
 - f. Nitoflor FC100; FOSROC Inc.
 2. Submit manufacturer's certification that product conforms to the requirements specified.
- H. Liquid Membrane Curing Compound: A dissipating resin type compound, conforming to ASTM C-309, Type 1 or 2. The film must chemically break down in a 4- to 6-week period after application. Apply to walks, curbs, and slabs with finishes, such as concrete toppings, which require bonding to the concrete slab. Sodium silicate compounds are prohibited.
1. Products: Subject to compliance with requirements, provide one (1) of the following:
 - a. Aqua Kure; Lambert Corp.
 - b. #64 Resin Cure-Clear; Lambert Corp.
 - c. Kurez D.R.; Euclid Chemical Company.
 - d. Kurez WB; Euclid Chemical Company.
 - e. Hydrocide Cure; Sonneborn.
 - f. Sonocure; Sonneborn.
 2. Submit manufacturer's certification that product conforms to the requirements specified.
- I. Non-Shrink Non-Metallic Grout: CRD-C 621, factory pre-mixed grout.
1. Products: Subject to compliance with requirements, provide one (1) of the following:

- a. "Masterflow 928;" Master Builders.
 - b. "Five Star Special 100;" U.S. Grout.
 - c. "Euco N-S; Euclid Chemical Co.
 - d. "Sikagrout 212;" Sika Corp.
 - e. "Conbextra HF;" Fosroc.
- J. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz/sq yd, complying with AASHTO M-182, Class 2.
- K. Moisture-Retaining Cover: One (1) of the following, complying with ASTM C-171.
- 1. Waterproof paper.
 - 2. Polyethylene film.
 - 3. Polyethylene-coated burlap.

2.2 CONCRETE MIXES

- A. It is intended that concrete for all parts of the concrete work be homogenous, and when hardened, possess the required strength, durability, watertightness, appearance, resistance to deterioration and abrasion, and other qualities as specified or required.
- B. Use ready mixed concrete complying with ASTM C-94 except as may be modified herein.
- C. Mix proportioning: Use only mixes designed by testing laboratory approved by the Engineer or designed by the producer and witnessed and tested by the testing laboratory, in accordance with ACI 318, Chapter 5, Paragraph 5.3. Provide statistical data, not more than 1-year old from date of submittal, to confirm mixes.
- D. Provide concrete, which will develop ultimate compressive strength at twenty-eight (28) days equal to that noted on the plans and listed below.
- E. Use 4000 psi concrete for any portion not otherwise noted on the plans specified elsewhere herein. Use 3000 psi concrete for tremie concrete.
- F. Chloride Ion Content for Corrosion Protection: Determine the chloride content of the component concrete materials, excluding admixtures, and provide this information to the Engineer when submitting mix design. Design mixes will not be approved when the sum of chloride content of component materials indicates that the concrete mix derived from those materials will have water soluble chloride ion content exceeding 0.1 percent for concrete exposed to the elements and 0.2 percent for the concrete protected from the elements, when percent is determined by weight of cement. When the source of any component material for the concrete is changed or when the design-mix is revised, a chloride content determination test shall be made immediately. Resubmit the revised design mix for approval by the Engineer.
- G. Design Slumps: 3 inches \pm 1 inch, except for tremie seal concrete where slump can be 7 inches + 1 inch.
- H. Pumped Concrete: 5 inches + 1 inch, - 1/2 inch.
- I. Concrete containing high range water reducer: Before addition of HRWR 2 inches \pm 1 inch after addition of HRWR 7 inches \pm 1 inch.

2.3 GRADES AND USES OF CONCRETE

- A. Provide Water/Cement ratio less than or equal to 0.44, U.O.N.
 - 1. Mix No. 1 - 4000 psi concrete @ twenty-eight (28) days.
- B. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to the city and as accepted by the Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Engineer before using in work.

2.4 CEMENT GROUT AND DRYPACK

- A. Cement Grout: Mix one (1) part Portland cement, two and a half (2½) parts fine aggregate and enough water and liquid bonding agent in a 50/50 mix for required consistency depending on use. Consistency may range from mortar consistency to a mixture that will flow under its own weight. Use for leveling, preparing setting pads of beds, for filling non-structural voids, and similar uses. Do not use for grouting under bearing plates or structural members in place.
- B. Drypack: Mix one (1) part Portland cement, two (2) parts fine aggregate and enough water and liquid bonding agent in a 50/50 mix to hydrate cement and provide a mixture that can be molded with hands into a stable ball (a stiff mix). Do not mix more than can be used in thirty (30) minutes. Use for patching tie holes and large surface defects in concrete.
- C. Non-shrink, Non-metallic Grout: For use with structural members and for pump and driver baseplate grouting.
 - 1. Description: ASTM C1107, factory-mixed and packaged, suitable for interior and exterior applications.
 - 2. Characteristics: Post-hardening, volume-adjusting, dry, hydraulic-cement grout.
 - 3. Properties: Nonstaining, noncorrosive and nongaseous.
 - 4. Design Mix: 5000 psi, 28-day compressive strength.

PART 3 EXECUTION

3.1 EXECUTION

- A. Assure that excavations and formwork are completed and that excess water has been removed from excavations.
- B. Do not place concrete until all steel reinforcements, conduits, outlet boxes, anchors, hangars, sleeves, bolts, expansion joint materials, and other embedded items are in their proper locations, and adequately secured against shifting during placement and vibrating of concrete and have been observed by the Engineer or independent testing Agency.

3.2 INSTALLATION OF EMBEDDED ITEMS

- A. General: Set and build into work anchorage devices and other embedded items re-

quired for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.

3.3 CONCRETE PLACEMENT

- A. Preplacement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moistened wood forms immediately before placing concrete where coatings are not used.
- B. General: Comply with ACI 301, ACI 304, ACI 308, ACI 318, and as herein specified.
- C. Jobsite Tempering: Place concrete within one and a half (1½) hours after introduction of water to mix. Submit time stamped batching tickets upon delivery of concrete to job site.
 - 1. Do not add water to ready-mix concrete except as provided in ASTM C94, Paragraph 11.7.
 - 2. Concrete produced with high range water reducer may only be retempered with additional high range water reducer.
- D. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints. Deposit concrete as nearly as practicable to its final location to avoid segregation. Submit details of the construction joints to the Engineer for approval prior to its use.
- E. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 - 1. Maximum height of concrete free fall is 4 feet. Columns up to 10 feet in height may be poured in one (1) lift. Concrete in columns and walls over 10 feet may be poured full height with the use of drop chutes or tremies.
 - 2. Concrete in columns and walls shall be cast at least four (4) hours (or longer where HRWR admixtures are used) before horizontal members they support are cast.
- F. Pumping: Slumps in excess of 6 inches at the pump will not be permitted, except for concrete produced with HRWR. If placing by means of pump, a specifically designed concrete mix shall be submitted to the Engineer for review. No pumps smaller than 4 inches will be permitted.
- G. Consolidation: Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.
 - 1. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at

least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

- H. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Bring slab surfaces to correct level with straight edge and strike off. Use bullfloats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 3. Maintain reinforcing in proper position during concrete placement operations.

END OF SECTION

SECTION 03375
FLOWABLE FILL

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. This Section specifies the requirements for flowable fill used for trenches, support for pipe structures, culverts, utility cuts and other works where cavities exist and where firm support is needed for pavements and structural elements. Flowable fill may also be used to fill water and sewer lines, and fuel tanks placed out of service, and at other locations where designated on the Plans.

PART 2 PRODUCTS

2.1 MATERIALS

- A. The materials used shall conform to the requirements specified in Division III of the DOT Specifications for Road and Bridge Construction, latest edition, and herein. Specific references are as follows:

1. Section 931 "Portland Cement (Types I, II or III)."
2. Section 929 "Fly Ash, Slag and other Pozzolanic Materials for Portland Cement Concrete."
3. Section 902 "Fine Aggregate (Sand)."
4. Section 923 "Water."

* Any clean sand with 100 percent passing $\frac{3}{8}$ -inch sieve and not more than 10 percent passing with 200 mesh may be used.

2.2 MIX PROPORTIONS

- A. The Contractor shall be responsible for producing a flowable mixture using these guidelines and by adjusting his mixture design as called for by circumstances or as may be directed by the Engineer of Record.
- B. Flowable fill material shall be proportioned to produce a 28-day compressive strength of approximately 50-150 psi.
- C. General mix quantities are as follows:

COMPONENTS	POUNDS PER CUBIC YARD
Cement	50-100*
Fly Ash or Granulated Blast Furnace Slag	0-600
Fine Sand	2,750 (adjust to yield 1 cubic yard of flowable fill)
Water	500 (Maximum)

* The percentage of cement may be increased above these limits only when early strength is required and future removal is unlikely.

- D. Weights for fine aggregate and water shall be adjusted according to cementitious content. The mix proportions shall be adjusted for removability, pumpability and flowability. If required, strength test data shall be provided prior to batching.

- E. If required by the Engineer of Record, the flowability can be measured by afflux time determined in accordance with ASTM C 939 and shall be thirty (30) seconds .five (5) seconds as measured on mortar passing the No. 4 sieve. The equipment required to perform this test shall be provided by the Contractor.

2.3 APPROVED MIXES OF "FLOWABLE FILL"

FDOT - APPROVED DESIGN MIXES FOR MIAMI-DADE COUNTY	
PLANT	MIX NUMBER
Tarmac - end of Tpk	06-FF-04
Florida Rock & Sand - Card Sound	06-FF-05
Rinker Princeton	06-FF-07
Rinker Downtown	06-FF-08
Rinker LeJeune	06-FF-08
Rinker Sweetwater	06-FF-08
Rinker N. Miami	06-FF-08
Dade Concrete and Pumping	06-FF-09
Job-Mix Concrete Company	06-FF-10
Job-Mix Concrete Company	06-FF-11

PART 3 EXECUTION

3.1 PRODUCTION AND PLACING

- A. Flowable fill shall be produced and delivered using concrete construction equipment. Placing flowable fill shall be done by chute, pumping or other methods approved by the Engineer of Record.

3.2 CONSTRUCTION REQUIREMENTS

- A. The flowable fill shall be placed to the designated fill line without vibration or other means of compaction. Placement shall be avoided during inclement weather, e.g., rain or ambient temperatures below 40 deg F. The Contractor shall take all necessary precautions to prevent any damages caused by the hydraulic pressure of the fill during placement prior to hardening. Also, necessary means to confine the material within the designated space shall be provided by the Contractor.

3.3 ACCEPTANCE

- A. The flowable fill shall be proportioned and placed as specified herein. In general, the strength desired is the maximum hardness that can be excavated at later date using conventional excavating equipment. No curing protection is required.
- B. The fill shall be left undisturbed until material obtains sufficient strength. Sufficient strength is 250 psi penetration resistance as measured using a hand held penetrometer. The penetrometer shall be provided by the Contractor.
- C. All flowable fill areas subject to traffic loads must have a durable riding surface.
- D. An approved type of accelerator may be approved for the placement of "Flowable Fill" in traffic areas when submitted to the City DOT approval.

END OF SECTION

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS -
- PHASE 1**

00801

TECHNICAL SPECIFICATIONS

DIVISION 05

METALS

SECTION 05550
CASTINGS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. This section specifies castings for use in this project, including manhole frames and covers, and both water and sewer valve boxes and covers. It also establishes casting requirements, including tolerances, on all castings to be furnished and installed under this project.

1.2 RELATED SECTIONS

- A. Section 01600 "Product Requirements."

1.3 REFERENCES

- A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48 "Gray Iron Castings."

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing of products specified in this section with minimum five (5) years documented experience.

PART 2 PRODUCTS

2.1 GENERAL

- A. Shop drawings shall be furnished for all castings supplied and said drawings shall include certified dimensions and weights of all components. Dimensions shall conform to City Standard Detail requirements.
- B. Finish Casting Dimensions Shall Be Held to the Following Tolerances: Up to 4 inches, .1/32 inch; 4 to 8 inches, .3/64 inch; 8 to 12 inches, .1/16 inch; 12 to 24 inches .1/8 inch; above 24 inches, add the appropriate (minimum) value from those given above to .1/8 inch. Note that this shall not affect the requirement that mating surfaces shall be machined and shall bear for their full length. Components shall be interchangeable with new and existing units without exceeding the tolerance add-up specified above.
- C. Weight of castings supplied shall not vary more than .5 percent from the certified weight supplied by the Contractor as a part of his shop drawings.
- D. The foundry's name (and if not domestically produced, foundry's name and country) shall be cast in the bottom of each lid. Body and lid or frame and cover shall be manufactured by the same foundry. Manufacture of the various components comprising one (1) set, such as for example; a valve box and lid, by different manufacturers is expressly forbidden.
- E. Note that name cast into the bottom of the lid shall be the name of the actual foundry

doing the casting. Name of an importing, purchasing or fabricating (from components) firm will not be acceptable. Methods of attaching this information other than casting are not acceptable.

- F. With the shop drawings of each component, submit the name, address and county of the foundry producing the component. Further, this foundry shall not be changed during the course of the Contract without written previous notification of and written permission from the City.
- G. Each shipment of castings provided by the Contractor shall be accompanied by a certification specifically stating that the materials of that shipment comply with all requirements of this Specification, specifically including dimensions and tolerances, materials of manufacture, weights of components, marking and foundry of origin. This certification shall be signed, dated and sealed by a registered professional engineer licensed to practice in state where the materials are cast or if not of domestic manufacture in the state where the supplying firm is located. One (1) original of this certification shall be shipped with the materials and one original shall be sent to the City. Shipments sent without the certification as required above may not be accepted.
- H. Contractor should be aware that it is the intent of the City to periodically check materials supplied for conformance to these specifications to include materials testing, dimensions and tolerances, component weights, marking, finish and fit, and such other matters as are necessary to assure supply of products meeting our requirements. Random testing of materials supplied will be at City expense if passed. Any retesting due to material not passing tests will be at the supplier's expense.

2.2 CASTINGS AND MATERIAL, GENERAL

- A. General materials used in the manufacture of the castings shall conform to ASTM Standard A48 "Gray Iron Castings." latest edition, for Class 30 iron. Manhole and valve box covers shall have a roadway type surface, machined mating surface and shall be non-rocking.
- B. Castings shall be furnished unpainted with shot blasted finish.
- C. Castings shall be as manufactured by U.S.F. Fabrication and Manufacturing Corp., Neenah Foundry, or approved equal.

2.3 MANHOLE FRAMES AND COVERS

- A. Manhole frames and covers shall be Type "A" with roadway cover, U.S.F. Fabrication Model No. 310 or approved equal. The covers shall be cast labeled "Storm Sewer".

2.4 PRESSURE MANHOLES - FRAMES AND COVERS

- A. Pressure tight frames and covers for pressure manholes shall be heavy duty, USF Model 100 and AN double cover by U.S.F. Fabrication and Manufacturing Corporation, or approved equal. Construction shall include cast iron watertight inner pressure cover, with 1/8-inch gasket, 1- by 2-inch locking bar, 3/4-inch stainless steel lock handle, and bronze bushing.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION

- A. Castings with cracks or other defects shall not be installed in the work.
- B. The use of sloped asphaltic concrete ramp rings will not be permitted.
- C. The Contractor shall provide all barricades, signs and flashing warning lights necessary to warn pedestrians and motorists of the construction along the entire route of the project.
- D. Frames and covers or valve boxes and covers shall be set accurately to grade to conform to the finished grade of the adjacent areas.
- E. Set castings level without tipping, to correct elevations.
- F. Frames and covers shall be set accurately to grade with a minimum of three (3) and a maximum of five (5) courses of brick provided as a leveling course.
- G. It shall be the Contractor's responsibility to assure that castings are set to match existing and/or proposed finish paving grades.

END OF SECTION

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS -
- PHASE 1**

00900

ADDENDA

DOCUMENT 00900

ADDENDA

(ADDENDA TO BE PLACED HERE)

END OF DOCUMENT

CITY OF WEST MIAMI

**POTABLE WATER MAIN IMPROVEMENTS
PHASE 1**

APPENDIX A

GEOTECHNICAL REPORT

