

# CONTRACT DOCUMENTS

PREPARED FOR

## CITY OF KEY WEST



FOR THE CONSTRUCTION OF

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## CAROLINE STREET IMPROVEMENTS

### ITB # 15-007

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Allen E. Perez, P.E.  
1010 Kennedy Drive, Suite 201  
Key West, Fl. 33040  
305-293-9440

Bid Documents - May 2015

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## **INVITATION TO BID (ITB)**

Sealed bids for the City of Key West Caroline Street and Bahama Village Redevelopment Agency (City) **CAROLINE STREET IMPROVEMENTS**, addressed to the City of Key West, will be received at the Office of the City Clerk, City of Key West, 3126 Flagler Ave., Key West FL, 33040 until 3:00 pm local time, June 24, 2015 and then will be publicly opened and read. Any bids received after the time and date specified, as determined by the precise time the package is stamped "Received by the City Clerk," will not be considered.

**Please submit One (1) original and one (1) USB Drive, with one single PDF file of the entire bid package.** Bid package is to be enclosed in a sealed envelope, clearly marked on the outside "**ITB 15-007: CAROLINE STREET IMPROVEMENTS**" addressed and delivered to the City Clerk at the address noted above.

The project proposes the re-construction of the road, sidewalks, lighting, landscaping, irrigation, raised intersections, cross walks, storm sewer, storm inlets, etc. along Caroline Street between Elizabeth and Grinnell Streets. The project also includes the replacement of the storm outfall pipe along Margaret Street.

Drawings and Specifications may be obtained from Demand Star by Onvia. Please contact Demand Star at [www.demandstar.com](http://www.demandstar.com) , City of Key West at [www.cityofkeywest-fl.gov](http://www.cityofkeywest-fl.gov) or call 1-800-711-1712.

A **mandatory site visit** is scheduled for this project at the intersection at 800 Caroline Street on Monday June 8, 2015 at 9:00am.

**EACH BID MUST BE SUBMITTED ON THE PRESCRIBED FORM AND ACCOMPANIED BY BID SECURITY AS PRESCRIBED IN THE INSTRUCTIONS TO BIDDERS, PAYABLE TO THE CITY OF KEY WEST, FLORIDA, IN AN AMOUNT NOT LESS THAN FIVE (5) PERCENT OF THE AMOUNT BID.**

**THE BIDDER MUST BE A LICENSED CONTRACTOR BY THE STATE OF FLORIDA AND SUBMIT PROOF OF SUCH WITH THE BID.**

The successful Bidder will be required to furnish the necessary additional bond(s) for the faithful performance of the Contract, as prescribed in the Bidding Documents.

All bid bonds, contract bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or Insurance Company having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of Florida. Further, the said Surety or Insurance Company shall be duly licensed and qualified to do business in the State of Florida.

Before a Contract will be awarded for the work contemplated herein, the CITY will conduct such investigation as is necessary to determine the performance record and ability of the apparent low Bidder to perform the size and type of work as specified under this Contract. Upon request, the Bidder shall submit such information as deemed necessary by the CITY to evaluate the Bidder's qualifications.

For information concerning the proposed work, or for appointment to visit the site of the proposed work, contact the designated Engineer by the General Services and Utilities Department of the City of Key West:

Gary Volenec, P.E.  
City of Key West  
3140 Flagler Ave.  
Key West, FL 33040  
[gvolenect@cityofkeywest-fl.gov](mailto:gvolenect@cityofkeywest-fl.gov)

As stated above at the time of the bid submittal the Bidder must provide satisfactory documentation of State Licenses. The successful Bidder must also be able to satisfy the City Attorney as to such insurance coverage and legal requirements as may be demanded by the Bid in question.

The City may reject bids for any and/or all of the following reasons: (1) for budgetary reasons, (2) if the bidder misstates or conceals a material fact in its bid, (3) if the bid does not strictly conform to the law or is non-responsive to the bid requirements, (4) if the bid is conditional, or (5) if a change of circumstances occurs making the purpose of the bid unnecessary to the City. The City may also waive any minor formalities or irregularities in any bid, (6) if such waiver is in the best interest of the City, or (7) if, in the opinion of the City, any or all of the submitted and/or verified qualifications fail to meet the standards set forth in these ITB documents, taken as a whole.

## **INSTRUCTIONS TO BIDDERS**

### 1. CONTRACT DOCUMENTS

#### A. FORMAT

The Contract Documents are divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the Specification sections into work performed by the various building trades, work by separate subcontractors, or work required for separate facilities in the Project.

#### B. DOCUMENT INTERPRETATION

The separate sections contained within these Contract Documents are intended to be mutually cooperative and to provide all details reasonably required for the execution of the proposed work.

Should there be any doubt as to the meaning or intent of said Contract Documents, the Bidder should request of the Engineer, in writing (at least 6 working days prior to bid opening) an interpretation thereof. Any interpretation or change in said Contract Documents will be made only in writing, in the form of Addenda to the Documents which will be furnished to all registered holders of Contract Documents. Bidders shall submit with their Bid, or indicate receipt of, all Addenda. The Owner will not be responsible for any other explanation or interpretations of said Documents.

#### C. DRAWINGS & SPECIFICATIONS

Drawings and details are separate from these specifications.

### 2. GENERAL DESCRIPTION OF THE PROJECT

A general description of the work to be done is contained in the Invitation to Bid. The scope is specified in applicable parts of these Contract Documents.

### 3. QUALIFICATION OF CONTRACTORS

The prospective Bidders must meet the statutorily prescribed requirements before award of Contract by the Owner. At the time of submission, Contractor must hold a current State of Florida contractor's license.

Bidders must hold or obtain all licenses or certificates required by federal, state, or local statutes, or regulations in order to bid and perform the work specified herein.

4. BIDDER'S UNDERSTANDING

Each Bidder must inform themselves of the conditions relating to the execution of the work, and it is assumed that he will inspect the site and make himself thoroughly familiar with all the Contract Documents. Failure to do so will not relieve the successful Bidder of his obligation to enter into a Contract and complete the contemplated work in strict accordance with the Contract Documents. It shall be the Bidder's obligation to verify for himself and to his complete satisfaction all information concerning site and subsurface conditions.

The Owner will make available to prospective Bidders upon request and at the office of the Engineer, prior to bid opening, any information that he may have as to subsurface conditions and surface topography at the worksite, including such existing geotechnical reports as are available.

Information derived from inspection of topographic maps, geotechnical reports, or from Drawings showing location of utilities and structures will not in any way relieve the Contractor from any risk, or from properly examining the Site and making such additional investigations as he may elect, or from properly fulfilling all the terms of the Contract Documents.

Each Bidder shall inform themselves of, and the Bidder awarded a Contract shall comply with, federal, state, and local laws, statutes, and ordinances relative to the execution of the work. This requirement includes, but is not limited to, applicable regulations concerning minimum wage rates, nondiscrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, burning and nonburning requirements, permits, fees, and similar subjects.

5. TYPE OF PROPOSAL

A. LUMP SUM

Bidders shall submit a Lump Sum Bid as set forth in the Bid Form.

The Lump Sum Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

6. PREPARATION OF PROPOSALS

A. GENERAL

All blank spaces in the Bid form must be filled in for all schedules and associated parts, as required, preferably in BLACK ink. All price information shall be clearly shown in figures where required. No changes shall be made in the phraseology of the forms.

Any Bid shall be deemed informal which contains omissions, erasures, alterations, or additions of any kind, or prices uncalled for, or in which any of the prices are obviously unbalanced, or which in any manner shall fail to conform to the conditions of the published Invitation to Bid.

Only one Bid from any individual, firm, partnership, or corporation, under the same or different names, will be considered. Should it appear to the Owner that any Bidder is interested in more than one Quote for work contemplated, all Bids in which such Bidder is interested will be rejected.

B. DESCRIPTION OF SUPPLIERS

The manufacturer name, trade name, brand name, or catalog number used in the Specifications is for the purpose of describing and establishing equipment that has been presented for this Project. The Bidder shall submit catalog cuts and applicable warranties for all materials and products proposed on this Project.

C. SIGNATURE

The Bidder shall sign his Bid in the blank space provided therefore. If Bidder is a corporation, the legal name of the corporation shall be set forth above, together with the signature of the officer or officers authorized to sign Contracts on behalf of the corporation. If Bidder is a partnership, the true name of the firm shall be set forth above, together with the signature of the partner or partners authorized to sign Contracts in behalf of the partnership. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a notarized power-of-attorney must be on file with the Owner or submitted with the Bid, otherwise the Bid will be regarded as not properly authorized.

D. SPECIAL BIDDING REQUIREMENTS

The Bidder's attention is brought to the hiring practices and licenses and permits of the City of Key West. These are defined in the addition to Article 39, Ordinances, Permits and Licenses, as set forth in the Supplementary Conditions.

The Bidder shall submit with his Bid experience records showing his experience and expertise in construction similar to this project. Contractor experience record shall provide at least two current or recent projects of similar work, preferably within Florida or the southeastern United States. For each project, the following information shall be provided:

1. Description and location of work.
2. Contract amount.
3. Dates work was performed.
4. Owner.
5. Name of Owner's contact person and phone number.
6. Engineer.
7. Name of Engineer's contact person and phone number.

E. ATTACHMENTS

Bidder shall complete and submit the following forms with this bid:

1. Anti Kickback Affidavit.
2. Public Entity Crimes.
3. Key West Indemnification Form.
4. Non-Collusion Declaration and Compliance with 49 CFR §29.
5. Affidavit of Compliance with Domestic Partners Ord. 2-799.
6. Affidavit of Compliance with Cone of Silence Ord. 2-773.
7. Local Vendor Certification (if applicable).

F. PUBLIC ENTITY CRIMES

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.”

G. ANTI-KICKBACK AFFIDAVIT

The Bidder shall submit a signed and notarized Anti-Kickback Affidavit with Bid on the form provided herein.

7. STATE AND LOCAL SALES AND USE TAXES

Unless the Supplementary Conditions contains a statement that the Owner is exempt from state sales tax on materials incorporated into the work due to the qualification of the work under this Contract, all state and local sales and use taxes, as required by the laws and statutes of the state and its political subdivisions, shall be paid by the Contractor. Prices specified in the Bid shall include all nonexempt sales and use taxes, unless provision is made in the Bid form to separately itemize the tax.

8. SUBMISSION OF PROPOSALS

All bids must be submitted not later than the time prescribed, at the place, and in the manner set forth in the Invitation to Bid. Bids must be made on the Bid forms provided herewith. The Bidder shall submit one (1) original and **ONE (1) ELECTRONIC COPY ON A USB DRIVE WITH A SINGLE PDF FILE OF THE FULL PROPOSAL** and all required bonds, attachments, and forms.

Each bid must be submitted in two sealed envelopes one within the other, so marked as to indicate the Bidder's name and its contents without being opened, and addressed in conformance with the instructions in the Invitation to Bid.

9. MODIFICATION OR WITHDRAWAL OF PROPOSALS

Prior to the time and date designated for receipt of Bids, any Bid submitted may be withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder or by telegram. If by telegram, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids. No Bid may be withdrawn after the time scheduled for opening of bids, unless the time specified in paragraph Award of Contract of these Instructions to Bidders shall have elapsed.

10. BID SECURITY

BIDS must be accompanied by cash, a certified check, or cashier's check drawn on a bank in good standing, or a bid bond issued by a Surety authorized to issue such bonds in the state where the work is located, in the amount of five (5) percent of the total amount of the Proposal submitted. This bid security shall be given as a guarantee that the Bidder will not withdraw his BID for a period of sixty (60) days after bid opening, and that if awarded the Contract, the successful Bidder will execute the attached Contract and furnish properly executed Performance and Payment Bonds, each in the full amount of the Contract price within the time specified. Agent and Surety phone numbers must be provided.

The Attorney-in-Fact who executes this bond in behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond. Where State Statute requires, certification by a resident agent shall also be provided.

If the Bidder elects to furnish a Bid Bond, he shall use the Bid Bond form bound herewith, or one conforming substantially thereto in form and content.

11. RETURN OF BID SECURITY

Within 15 days after the award of the Contract, the CITY will return the bid securities to all Bidders who's BIDS are not to be further considered in awarding the Contract. Retained bid securities will be held until the Contract has been finally executed, after which all bid securities, other than Bidders' bonds and any guarantees, which have been forfeited, will be returned to the respective Bidders whose Proposals they accompanied.

12. AWARD OF CONTRACT

The award will be made under one Contract by the Owner on the basis of the Base Bid from the lowest, responsive, qualified, responsible Bidder. The Owner may award entire Bid or selected line items based on the City's best interest and available funds at time of Award.

Within 60 calendar days after the opening of Bids, the Owner will accept one of the Bids or will act in accordance with the following paragraphs. The acceptance of the Bid will be by written notice of award, mailed to the office designated in the Bid, or delivered to the Bidder's representative. In the event of failure of the lowest responsive, responsible Bidder to sign the Contract and provide acceptable insurance certificate(s) and evidence of holding required licenses and certificates, the Owner may award the Contract to the next lowest responsive, responsible Bidder. Such award, if made, will be made within 75 days after the opening of Bids.

The Owner reserves the right to accept or reject any or all Bids, and to waive any informalities and irregularities in said Bids.

13. EXECUTION OF CONTRACT

The successful Bidder shall, within 14 calendar days after receiving Notice of Award, sign and deliver to the Owner a Contract in the form hereto attached, together with the insurance certificate examples of the bonds as required in the Contract Documents and evidence of holding required licenses and certificates. Within 10 working days after receiving the signed Contract from the successful Bidder, the Owner's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.

14. CONTRACT BONDS

A. PERFORMANCE AND PAYMENT BONDS

The successful Bidder shall file with the CITY, at the time of delivery of the signed Contract, a Performance Bond and Payment Bond on the form bound herewith, each in the full amount of the Contract price in accordance with the requirements of Florida Statutes Section 255.05 or 713.23, as applicable, as security for the faithful performance of the Contract and the payment of all persons supplying labor and materials for the construction of the work, and to cover all guarantees against defective workmanship or materials, or both, during the warranty period following the date of final acceptance of the work by the CITY. The Surety furnishing this bond shall have a sound financial standing and a record of service satisfactory to the CITY, shall be authorized to do business in the State of Florida, and shall be listed on the current U.S. Department of Treasury Circular Number 570, or amendments thereto in the Federal Register, of acceptable Sureties for federal projects.

B. POWER-OF-ATTORNEY

The Attorney-in-Fact (Resident Agent) who executes this Performance and Payment Bond in behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond.

All Contracts, Performance and Payment Bonds, and respective powers-of-attorney will have the same date.

15. FAILURE TO EXECUTE CONTRACT

The Bidder who has a Contract awarded to him and who fails to promptly and properly execute the Contract shall forfeit the bid security that accompanied his Bid, and the bid security shall be retained as liquidated damages by the Owner, and it is agreed that this said sum is a fair estimate of the amount of damages the Owner will sustain in case the Bidder fails to enter into a Contract. Bid security deposited in the form of cash, a certified check, or cashier's check shall be subject to the same requirement as a Bid Bond.

16. PERFORMANCE OF WORK BY CONTRACTOR

The Contractor shall perform on the site and with his own organization, labor equivalent to at least 40 percent of the total amount of the work to be performed under this Contract and materials. If, during the progress of the work hereunder, the Contractor requests a reduction of such percentage, and the Engineer determines that it would be to the client's advantage, the percentage of the labor required to be performed by the Contractor's own organization may be reduced; PROVIDED prior written approval of such reduction is obtained by the contractor from the Engineer.

17. TIME OF COMPLETION

The time of completion of the work to be performed under this Contract is the essence of the Contract. Delays and extensions of time may be allowed in accordance with the provisions stated in the General Conditions. The time allowed for the completion of the work is 270 consecutive calendar days beginning upon issuance of the Notice to Proceed, as stated in both the Agreement and the Notice to Proceed documents.

**END OF SECTION**

NOTE TO BIDDER: Use preferably BLACK ink for completing this Bid form.

**BID FORM**

To: The City of Key West

Address: 3126 Flagler Ave, Key West, Florida 33040

Project Title: **Caroline Street Improvements**

City of Key West Project No.: ( **ITB 15-007** )

Bidder's contact for additional information on this Bid:

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

**BIDDER'S DECLARATION AND UNDERSTANDING**

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the Owner, and that the Bid is made without any connection or collusion with any person submitting another Bid on this Contract.

The Bidder further declares that he has carefully examined the Contract Documents for the construction of the project, that he has personally inspected the site, that he has satisfied himself as to the quantities involved, including materials and equipment, and conditions of work involved, including the fact that the description of the quantities of work and materials, as included herein, is brief and is intended only to indicate the general nature of the Work and to identify the said quantities with the detailed requirements of the Contract Documents, and that this Bid is made according to the provisions and under the terms of the Contract Documents, which Documents are hereby made a part of this Bid.

The Bidder further agrees, as evidenced by signing the Bid, that if awarded a Contract, the Florida Trench Safety Act and applicable trench safety standards will be complied with.

**CONTRACT EXECUTION AND BONDS**

The Bidder agrees that if this Bid is accepted, he will, within 10 days, not including Sundays and legal holidays, after Notice of Award, sign the Contract in the form annexed hereto, and will at that time, deliver to the Owner evidence of holding required licenses and certificates, and will, to the extent of his Bid, furnish all machinery, tools, apparatus, and other means of construction and do the Work and furnish all the materials necessary to complete all work as specified or indicated in the Contract Documents.

## CERTIFICATES OF INSURANCE

Bidder agrees to furnish the Owner, before commencing the Work under this Contract, the certificates of insurance as specified in these Documents.

## START OF CONSTRUCTION AND CONTRACT COMPLETION TIMES

The Bidder agrees to begin work within 10 calendar days after the date of the Notice to Proceed and to achieve Final Completion within 270 calendar days from the date when the Contract Times commence to run as provided in paragraph 2.03.A of the General Conditions.

## LIQUIDATED DAMAGES

In the event the Bidder is awarded the Contract, Owner and Bidder recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in paragraph Start of Construction and Contract Completion Times above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. Owner and Bidder also recognize the delays, expense, and difficulties involved in proving in a legal or other dispute resolution proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Bidder agree that as liquidated damages for delay (but not as a penalty) Bidder shall pay Owner **\$500** per day for each day that expires after the time specified for final completion.

Owner will recover such liquidated damages by deducting the amount owed from the final payment or any retainage held by Owner.

## ADDENDA

The Bidder hereby acknowledges that he has received Addenda Nos. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, (Bidder shall insert No. of each Addendum received) and agrees that all addenda issued are hereby made part of the Contract Documents, and the Bidder further agrees that his Bid(s) includes all impacts resulting from said addenda.

## SALES AND USE TAXES

The Bidder agrees that all federal, state, and local sales and use taxes are included in the stated Bid Prices for the Work. Cash allowances DO NOT include any sales and use tax. Equipment allowance includes taxes as shown in Equipment Suppliers' Bid.

PUBLIC ENTITY CRIMES

“A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.”

LUMP SUM WORK

The Bidder further proposes to accept as full payment for the Work proposed herein the amounts computed under the provisions of the Contract Documents. For lump sum bid items, it is expressly understood that the amounts are independent of the exact quantities involved. The Bidder agrees that the amounts for lump sum work represent a true measure of labor and materials required to perform the work, including all allowances for overhead and profit for each type of work called for in these Contract Documents. The amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.

UNFORSEEN CONDITION AND CONTINGENCY ALLOWANCE

Bidder further agrees that the amount shown is an estimated amount to be included in the Total Base Bid for unforeseen conditions and conflicts. Bidder further acknowledges that payment will be based on actual costs as determined in conformance with the Contract Documents and/or unit prices provided in the Bid Form and as authorized by Change Order. The Owner will negotiate with the Contractor how each allowance will be spent prior to performing the work.

KEYS ENERGY ALLOWANCE

Bidder further agrees that the amount shown is an estimated amount to be included in the Total Base Bid for cost associated with KEYS Energy service and impact fees. Bidder further acknowledges that payment will be based on actual costs as determined by KEYS Energy Service.

PERMIT ALLOWANCE

Bidder further agrees tht the amount shown is an estimated amount to be included in the Total Base Bid for the Permit required by the City of Key West and any Regulatory Agency Permit(s). Bidder acknowledges that payment will be based on actual cost for the permit(s).

<b>Unforeseen Conditions Contingency Allowance</b>	<b>\$ 250,000.00</b>
<b>Building Permit Allowance</b>	<b>\$ 10,000.00</b>
<b>Keys Energy Service Allowance</b>	<b>\$ 15,000.00</b>

## BID SCHEDULE OF VALUES

<i><b>Item No.</b></i>	<i><b>Description</b></i>	<i><b>Lump Sum Price</b></i>
1	<b>Bonds</b>	
2	<b>Mobilization/Field/Envir/Constr</b>	
3	<b>Trench Excavation, Backfill, and Storm Pipe</b>	
4	<b>Pavement Reconstruction</b>	
5	<b>Temporary Striping - 20 Mils</b>	
6	<b>Final Striping - 70 Mils Thermoplastic</b>	
7	<b>Concrete</b>	
8	<b>Catch Basins and Inlets</b>	
9	<b>Removal and Disposal of Existing Structures</b>	
10	<b>Storm Manhole</b>	
11	<b>Adjustments and Connections</b>	
12	<b>Triple Chamber Baffle Box</b>	
13	<b>Abandon Existing Storm Pipe</b>	
14	<b>Brick Pavers</b>	
15	<b>Sanitary Sewer Service Removal and Replacement</b>	
16	<b>Tidflex Valve</b>	
17	<b>Florida Trench Safety Act Compliance</b>	
18	<b>Dewatering</b>	

**Total of Bid Breakdown Prices**      \$ \_\_\_\_\_

The Bidder agrees to accept as full payment for the Work proposed under this Project, as herein specified and as shown on the Drawings, the following Total Base Bid amount:

\_\_\_\_\_ Dollars  
(Amount written in words has precedence)

And \_\_\_\_\_ Cents

**TOTAL BID (Base + Allowance)**      \$ \_\_\_\_\_

ADD ALTERNATE – Parking Lot

1. Furnish materials, labor, and equipment to construct a transit bus parking lot adjacent to the City parking garage at 922 Caroline Street as shown in the drawings.

\$ \_\_\_\_\_ Lump Sum

DEDUCTIVE ALTERNATE

1. Furnish materials, labor, and equipment to construct raised asphalt intersections in lieu of brick pavers on concrete.

Lump Sum for three (3) intersections      \$ \_\_\_\_\_

UNIT PRICE ITEMS

The following unit prices are provided to support unforeseen conditions and contingency allowance use:

1. Removal and offsite disposal of unsuitable soils: \$ \_\_\_\_\_ per CY
2. Removal, temporary stockpile, and offsite disposal of petroleum impacted soil:  
\$ \_\_\_\_\_ per TON
3. Cutting and capping out of service fuel line if in conflict with storm or sanitary sewer: \$ \_\_\_\_\_ EACH
4. Soft digs – utility locates: \$ \_\_\_\_\_ EACH



**Bidder**

The name of the Bidder submitting this Bid is \_\_\_\_\_

\_\_\_\_\_ doing business at

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

which is the address to which all communications concerned with this Bid and with the Contract shall be sent.

The names of the principal officers of the corporation submitting this Bid, or of the partnership, or of all persons interested in this Bid as principals are as follows:

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

**If Sole Proprietor or Partnership**

IN WITNESS hereto the undersigned has set his (its) hand this \_\_\_ day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
Title

**If Corporation**

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this \_\_\_\_ day of 20.

(SEAL)

\_\_\_\_\_  
Name of Corporation

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

Title: \_\_\_\_\_

Attest: \_\_\_\_\_

Secretary

**END OF SECTION**

**FLORIDA BID BOND**

BOND NO. \_\_\_\_\_

AMOUNT: \$ \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_

hereinafter called the Contractor (Principal), and \_\_\_\_\_

a corporation duly organized and existing under and by virtue of the laws of the State of Florida, hereinafter called the Surety, and authorized to transact business within the State of Florida, as Surety, are held and firmly bound unto The City of Key West as Owner

(Obligee), in the sum of: \_\_\_\_\_

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_), for the payment for which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the Principal is herewith submitting his or its Bid Proposal for **ITB 15-007 CAROLINE STREET IMPROVEMENTS**.

WHEREAS, the Principal contemplates submitting or has submitted a bid to the Obligee for the furnishing of all labor, materials (except those to be specifically furnished by the Owner), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the Proposal and the detailed Drawings and Specifications, entitled:

\_\_\_\_\_ WHEREAS, it was a condition precedent to the submission of said bid that a cashier's check, certified check, or bid bond in the amount of 5 percent of the base bid be submitted with said bid as a guarantee that the Bidder would, if awarded the Contract, enter into a written Contract with the Owner for the performance of said Contract, within 10 working days after written notice having been given of the award of the Contract.

NOW, THEREFORE, the conditions of this obligation are such that if the Principal within 14 consecutive calendar days after written notice of such acceptance, enters into a written Contract with the Obligee and furnishes the Performance and Payment Bonds, each in an amount equal to 100 percent of the awarded base bid, satisfactory to the Owner, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the Obligee and the Surety herein agrees to pay said sum immediately upon demand of the Obligee in good and lawful money of the United States of America, as liquidated damages for failure thereof of said Principal.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 2015

\_\_\_\_\_  
Principal

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

\_\_\_\_\_  
Surety

By: \_\_\_\_\_  
Attorney-In-Fact

**END OF SECTION**

**ANTI-KICKBACK AFFIDAVIT**

STATE OF \_\_\_\_\_ )  
: SS  
COUNTY OF \_\_\_\_\_ )

I, the undersigned hereby duly sworn, depose and say that no portion of the sum herein bid will be paid to any employees of the City of Key West as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

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

Sworn and subscribed before me this  
\_\_\_\_ day of \_\_\_\_\_, 2015

\_\_\_\_\_  
NOTARY PUBLIC, State of Florida  
at Large

My Commission Expires: \_\_\_\_\_

**END OF SECTION**

**SWORN STATEMENT UNDER SECTION 287.133(3)(A)  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

*THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER  
AUTHORIZED TO ADMINISTER OATHS.*

1. This sworn statement is submitted with Bid or Proposal for \_\_\_\_\_

2. This sworn statement is submitted by \_\_\_\_\_  
(name of entity submitting sworn statement)

whose business address is \_\_\_\_\_

\_\_\_\_\_ and (if applicable) its Federal Employer

Identification Number (FEIN) is \_\_\_\_\_

(If the entity has no FEIN, include the Social Security Number of the individual signing this

sworn statement \_\_\_\_\_

3. My name is \_\_\_\_\_  
(please print name of individual signing)

and my relationship to the entity named above is \_\_\_\_\_

4. I understand that a “public entity crime” as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any bid or contract for goods or services to be provided to any public or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.

5. I understand that “convicted” or “conviction” as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an “affiliate” as defined in Paragraph 287.133(1)(a), Florida Statutes, means

1. A predecessor or successor of a person convicted of a public entity crime; or

2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies).

\_\_\_\_ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

\_\_\_\_ There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_ The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
(date)

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

\_\_\_\_\_ who, after first being sworn by me, affixed his/her  
(name of individual signing)

signature in the space provided above on this \_\_\_\_ of \_\_\_\_\_, 2015.

My commission expires:

\_\_\_\_\_  
NOTARY PUBLIC

**CONTRACTOR Insurance/Indemnity Requirements**

**Insurance**

**CONTRACTOR** is to secure, pay for, and file with the City of Key West, prior to commencing any work under the Contract, all certificates for Workers' Compensation, Public Liability, and Property Damage Liability Insurance and such other insurance coverages as may be required by specifications and addenda thereto, in at least the following minimum amounts with specification amounts to prevail if greater than minimum amounts indicated. Notwithstanding any other provision of the Contract, the **CONTRACTOR** shall provide the minimum limits of liability insurance coverages as follows:

Auto Liability	\$1,000,000	Combined Single Limit
General Liability	\$2,000,000	Aggregate (Per Project)
	\$2,000,000	Products Aggregate
	\$1,000,000	Any One Occurrence
	\$1,000,000	Personal Injury
	\$ 300,000	Fire Damage/Legal
<b>Additional Umbrella Liability</b>	\$0	Occurrence/Aggregate

**CONTRACTOR** shall furnish an original Certificate of Insurance indicating, and such policy providing coverage to, City of Key West named as "Additional Insured" on **PRIMARY** and **NON CONTRIBUTORY** basis utilizing an ISO standard endorsement at **least as broad as CG 2010 (11/85) or its Equivalent, (COMBINATION OF CG 20 10 07 04 and CG 20 37 07 04, providing coverage for completed operations is acceptable)** INCLUDING A "**Waiver of Subrogation**" clause in favor of City of Key West on all policies. **CONTRACTOR** will maintain the General Liability and Umbrella Liability insurance coverages summarized above with coverage continuing in full force including the "additional insured" endorsement until at least 3 years beyond completion and delivery of the work contracted herein.

Notwithstanding any other provision of the Contract, the **CONTRACTOR** shall maintain complete Workers' Compensation coverage for each and every employee, principal, officer, representative, or agent of the **CONTRACTOR** who is performing any labor, services, or material under the Contract. Further, **CONTRACTOR** shall additionally maintain the following minimum limits of coverage:

Bodily Injury Each Accident	\$1,000,000
Bodily Injury by Disease Each Employee	\$1,000,000
Bodily Injury by Disease Policy Limit	\$1,000,000

If the work is being done on or near a navigable waterway, **CONTRACTOR's** Workers' Compensation policy shall be endorsed to provide **USL&H Act (WC 00 01 06 A)** and **Jones Act (WC 00 02 01 A)** coverage if specified by the City of Key West. **CONTRACTOR** shall provide the City of Key West with a Certificate of Insurance verifying compliance with the workman's compensation coverage as set forth herein and shall provide as often as required by the City of Key West such certification which shall also show the insurance company, policy number, effective and expiration date, and the limits of workman's compensation coverage under each policy.

**CONTRACTOR's** insurance policies shall be endorsed to give 30 days' written notice to the City of Key West in the event of cancellation or material change, using form CG 0 24, or its equivalent.

Certificates of Insurance submitted to the City of Key West will not be accepted without copies of the endorsements being requested. This includes additional insured endorsements, cancellation/material change notice endorsements, and waivers of subrogation. Copies of USL&H Act and Jones Act endorsements will also be required if necessary. **PLEASE ADVISE YOUR INSURANCE AGENT ACCORDINGLY.**

**CONTRACTOR** will comply with any and all safety regulations required by any agency or regulatory body including but not limited to OSHA. **CONTRACTOR** will notify City of Key West immediately by telephone at (305) 809-3811 of any accident or injury to anyone that occurs on the jobsite and is related to any of the work being performed by the **CONTRACTOR**.

**CITY OF KEY WEST INDEMNIFICATION FORM**

**CITY OF KEY WEST INDEMNIFICATION FORM**

To the fullest extent permitted by law, the CONTRACTOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents and employees \*(herein called the "indemnitees") from liabilities, damages, losses and costs, including but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its Subcontractors or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONTRACTOR's insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR under Workers' Compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONTRACTOR or of any third party to whom CONTRACTOR may subcontract a part or all of the Work. This indemnification shall continue beyond the date of completion of the work.

CONTRACTOR: \_\_\_\_\_

SEAL:

\_\_\_\_\_  
Address

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

DATE: \_\_\_\_\_



POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY  
CG 20 10 07 04

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – SCHEDULED PERSON OR  
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

**A. Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

**B. With respect to the insurance** afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY  
CG 20 37 07 04

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

<b>Name Of Additional Insured Person(s) Or Organization(s):</b>	<b>Location And Description Of Completed Operations</b>
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

Section II – Who is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**EARLIER NOTICE OF CANCELLATION  
PROVIDED BY US**

Number of Days Notice 30

For any statutorily permitted reason other than nonpayment of premium, the number of days required for notice of cancellation is increased to the number of days shown in the Schedule above.

If this policy is cancelled by us we will send the Named Insured and any party listed in the following schedule notice of cancellation based on the number of days notice shown above.

**Schedule**

**Name of Person or Organization**

**Mailing Address**

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY  
CG 24 04 05 09

## WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

### SCHEDULE

Name Of Person Or Organization:

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph 8. Transfer Of Rights Of Recovery Against Others To Us of Section IV – Conditions:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

**WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT**

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement  
Insured

Effective Policy No.

Endorsement No.  
Premium

Insurance Company

Countersigned by \_\_\_\_\_

WC 00 03 13  
(Ed. 4-84)



**LONGSHORE AND HARBOR WORKERS' COMPENSATION ACT COVERAGE ENDORSEMENT**

This endorsement applies only to work subject to the Longshore and Harbor Workers' Compensation Act in a state shown in the Schedule. The policy applies to that work as though that state were listed in Item 3.A. of the Information Page.

General Section C. **Workers' Compensation Law** is replaced by the following:

**C. Workers' Compensation Law**

Workers' Compensation Law means the workers or workmen's compensation law and occupational disease law of each state or territory named in Item 3.A. of the Information Page and the Longshore and Harbor Workers' Compensation Act (33 USC Sections 901-950). It includes any amendments to those laws that are in effect during the policy period. It does not include any other federal workers or workmen's compensation law, other federal occupational disease law or the provisions of any law that provide nonoccupational disability benefits.

Part Two (Employers Liability Insurance), C. Exclusions., exclusion 8, does not apply to work subject to the Longshore and Harbor Workers' Compensation Act.

This endorsement does not apply to work subject to the Defense Base Act, the Outer Continental Shelf Lands Act, or the Nonappropriated Fund Instrumentalities Act.

## Schedule

**State****Longshore and Harbor Workers'  
Compensation Act Coverage Percentage**

The rates for classifications with code numbers not followed by the letter "F" are rates for work not ordinarily subject to the Longshore and Harbor Workers' Compensation Act. If this policy covers work under such classifications, and if the work is subject to the Longshore and Harbor Workers' Compensation Act, those non-F classification rates will be increased by the Longshore and Harbor Workers' Compensation Act Coverage Percentage shown in the Schedule.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement  
Insured

Effective Policy No.

Endorsement No.  
Premium

Insurance Company

Countersigned by \_\_\_\_\_

WC 00 01 06 A  
(Ed. 4-92)

**MARITIME COVERAGE ENDORSEMENT**

This endorsement changes how insurance provided by Part Two (Employers Liability Insurance) applies to bodily injury to a master or member of the crew of any vessel.

**A. How This Insurance Applies** is replaced by the following:**A. How This Insurance Applies**

This insurance applies to bodily injury by accident or bodily injury by disease. Bodily injury includes resulting death.

1. The bodily injury must arise out of and in the course of the injured employee's employment by you.
2. The employment must be necessary or incidental to work described in Item 1 of the Schedule of the Maritime Coverage Endorsement.
3. The bodily injury must occur in the territorial limits of, or in the operation of a vessel sailing directly between the ports of, the continental United States of America, Alaska, Hawaii or Canada.
4. Bodily injury by accident must occur during the policy period.
5. Bodily injury by disease must be caused or aggravated by the conditions of your employment. The employee's last day of last exposure to the conditions causing or aggravating such bodily injury by disease must occur during the policy period.
6. If you are sued, the original suit and any related legal actions for damages for bodily injury by accident or by disease must be brought in the United States of America, its territories or possessions, or Canada.

**C. Exclusions** is changed by removing exclusion 10 and by adding exclusions 13 and 14.

This insurance does not cover:

13. bodily injury covered by a Protection and Indemnity Policy or similar policy issued to you or for your benefit. This exclusion applies even if the other policy does not apply because of another insurance clause, deductible or limitation of liability clause, or any similar clause.
14. your duty to provide transportation, wages, maintenance and cure. This exclusion does not apply if a premium entry is shown in Item 2 of the Schedule.

**D. We Will Defend** is changed by adding the following statement:

We will treat a suit or other action in rem against a vessel owned or chartered by you as a suit against you.

**G. Limits of Liability**

Our liability to pay for damages is limited. Our limits of liability are shown in the Schedule. They apply as explained below.

1. **Bodily Injury by Accident.** The limit shown for "bodily injury by accident—each accident" is the most we will pay for all damages covered by this insurance because of bodily injury to one or more employees in any one accident.  
A disease is not bodily injury by accident unless it results directly from bodily injury by accident.
2. **Bodily Injury by Disease.** The limit shown for "bodily injury by disease—aggregate" is the most we will pay for all damages covered by this insurance because of bodily injury by disease to one or more employees. The limit applies separately to bodily injury by disease arising out of work in each state shown in Item 3.A. of the Information Page. Bodily injury by disease will be deemed to occur in the state of the vessel's home port.  
Bodily injury by disease does not include disease that results directly from a bodily injury by accident.
3. We will not pay any claims for damages after we have paid the applicable limit of our liability under this insurance.

**9-7-12 Navigable waterway addendum**

City of Key West confirms that the scope of services specified in the Contract, requires work on or near a navigable waterway. Waterway description: \_\_\_\_\_

Therefore the following coverages will indeed be required as specified in the contract documents.

**Workers Compensation / Employer Liability**

\_\_\_\_\_ USL&H Coverage (Longshore and Harbor Workers' Compensation Act)  
Endorsement WC 00 01 06 A

\_\_\_\_\_ Jones Act Coverage\*  
Endorsement WC 00 02 01 A

**Marine Third Party Liability**

\_\_\_\_\_ Protection & Indemnity                      \$1,000,000 limit

\*Jones Act (Crew) coverage may be provided under the P& I policy, if  
\_\_\_\_\_ is using an OWNED vessel during the course of the work.

**LOCAL VENDOR CERTIFICATION PURSUANT TO CKW ORDINANCE 09-22  
SECTION 2-798**

The undersigned, as a duly authorized representative of the vendor listed herein, certifies to the best of his/her knowledge and belief, that the vendor meets the definition of a "Local Business." For purposes of this section, "local business" shall mean a business which:

- a. Principle address as registered with the FL Department of State located within 30 miles of the boundaries of the city, listed with the chief licensing official as having a business tax receipt with its principle address within 30 miles of the boundaries of the city for at least one year immediately prior to the issuance of the solicitation.
- b. Maintains a workforce of at least 50 percent of its employees from the city or within 30 miles of its boundaries.
- c. Having paid all current license taxes and any other fees due the city at least 24 hours prior to the publication of the call for bids or request for proposals.
  - Not a local vendor pursuant to Ordinance 09-22 Section 2-798
  - Qualifies as a local vendor pursuant to Ordinance 09-22 Section 2-798

If you qualify, please complete the following in support of the self certification & submit copies of your County and City business licenses. Failure to provide the information requested will result in denial of certification as a local business.

Business Name \_\_\_\_\_ Phone: \_\_\_\_\_  
Current Local Address: \_\_\_\_\_ Fax: \_\_\_\_\_  
(P.O Box numbers may not be used to establish status)  
Length of time at this address \_\_\_\_\_

\_\_\_\_\_  
Signature of Authorized Representative \_\_\_\_\_ Date

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.  
By \_\_\_\_\_, of \_\_\_\_\_  
(Name of officer or agent, title of officer or agent) Name of corporation acknowledging)  
or has produced \_\_\_\_\_ as identification  
(type of identification)

\_\_\_\_\_  
Signature of Notary  
\_\_\_\_\_  
Print, Type or Stamp Name of Notary  
\_\_\_\_\_  
Title or Rank

Return Completed form with  
Supporting documents to:  
City of Key West Purchasing

## BIDDER'S CHECKLIST

(Note: The purpose of this checklist is to serve as a reminder of major items to be addressed in submitting a bid and is not intended to be all inclusive. It does not alleviate the Bidder from the responsibility of becoming familiar with all aspects of the Contract Documents and proper completion and submission of his bid.)

1. All Contract Documents thoroughly read and understood. [ ]
2. All blank spaces in Bid Form filled in, using black ink. [ ]
3. Total and unit prices added correctly. [ ]
4. Addenda acknowledged (if applicable). [ ]
5. Subcontractors (if applicable) are named as indicated in the Proposal. [ ]
6. Experience record included. [ ]
7. Bid signed by authorized officer. [ ]
8. Bid Bond completed and executed, including power-of-attorney dated the same date as Bid Bond. [ ]
9. Bidder familiar with federal, state, and local laws, ordinances, rules and regulations affecting performance of the work. [ ]
10. Bidder, if successful, able to obtain and/or demonstrate possession of required licenses and certificates within (10) ten calendar days after receiving a Notice of Award. [ ]
11. Bid submitted intact with the volume containing the Bidding Requirements, Contract Forms, Conditions of the Contract, one (1) original and one (1) USB drive, containing a single complete PDF file. [ ]
12. Bid Documents submitted in sealed envelope and addressed and labeled in conformance with the instructions in the Invitation to Bid. [ ]
13. Bidder must provide satisfactory documentation of State Licenses [ ]
14. Anti-Kickback Affidavit. [ ]
15. Public Entity Crimes. [ ]
16. Local Vendor Certification. [ ]
17. Disclosure of Lobbying Activities. [ ]
18. Non-Collusion Declaration and Compliance. [ ]
19. Suspension and Debarment Certification. [ ]
20. Affidavit of Compliance 2-799 Equal Benefits for Domestic Partners [ ]
21. Affidavit of Compliance 2-773 Cone of Silence [ ]
22. City of Key West Indemnification Form [ ]

## SUSPENSION AND DEBARMENT CERTIFICATION

### CERTIFICATION REGARDING DEBARMENTS, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER FEDERALLY FUNDED TRANSACTIONS

1. The undersigned hereby certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. The undersigned also certifies that it and its principals:

(a) Have not within a three-year period preceding this certification been convicted of or had a civil judgment rendered

against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

(b) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 2.(a) of this Certification; and

(c) Have not within a three-year period preceding this certification had one or more public transactions (Federal, State or local) terminated for cause or default.

3. Where the undersigned is unable to certify to any of the statements in this certification, an explanation shall be attached to this certification.

Dated this \_\_\_\_\_ day of, 2015.

By \_\_\_\_\_

Authorized Signature/Contractor

\_\_\_\_\_  
Typed Name/Title

\_\_\_\_\_  
Contractor's Firm Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
Building, Suite Number

\_\_\_\_\_  
City/State/Zip Code

\_\_\_\_\_  
Area Code/Telephone Number

## City of Key West Ordinance

### **Sec. 2-799. - Requirements for city contractors to provide equal benefits for domestic partners.**

(a)

*Definitions.* For purposes of this section only, the following definitions shall apply:

(1)

*Benefits* means the following plan, program or policy provided or offered by a contractor to its employees as part of the employer's total compensation package: sick leave, bereavement leave, family medical leave, and health benefits.

(2)

*Bid* shall mean a competitive bid procedure established by the city through the issuance of an invitation to bid, request for proposals, request for qualifications, or request for letters of interest.

(3)

*Cash equivalent* means the amount of money paid to an employee with a domestic partner in lieu of providing benefits to the employee's domestic partner. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee for his or her spouse.

The cash equivalent of the following benefits apply:

a.

For bereavement leave, cash payment for the number of days that would be allowed as paid time off for the death of a spouse. Cash payment would be in the form of the wages of the domestic partner employee for the number of days allowed.

b.

For health benefits, the cost to the contractor of the contractor's share of the single monthly premiums that are being paid for the domestic partner employee, to be paid on a regular basis while the domestic partner employee maintains such insurance in force for himself or herself.

c.

For family medical leave, cash payment for the number of days that would be allowed as time off for an employee to care for a spouse who has a serious health condition. Cash payment would be in the form of the wages of the domestic partner employee for the number of days allowed.

(4) *Contract* means any written agreement, purchase order, standing order or similar instrument entered into pursuant to the award of a bid whereby the city is committed to expend or does expend funds in return for work, labor, professional services, consulting services, supplies, equipment, materials, construction, construction-related services or any combination of the foregoing.

(5) *Contractor* means any person or persons, sole proprietorship, partnership, joint venture, corporation, or other form of doing business, that is awarded a bid and enters into a covered contract with the city, and which maintains five or more full-time employees.

(6) *Covered contract* means a contract between the city and a contractor awarded subsequent to the date when this section becomes effective valued at over \$20,000.00.

(7) *Domestic partner* shall mean any two adults of the same or different sex, who have registered as domestic partners with a governmental body pursuant to state or local law authorizing such registration, or with an internal registry maintained by the employer of at least one of the domestic partners. A contractor may institute an internal registry to allow for the provision of equal benefits to employees with domestic partners who do not register their partnerships pursuant to a governmental body authorizing such registration, or who are located in a jurisdiction where no such governmental domestic partnership registry exists. A contractor that institutes such registry shall not impose criteria for registration that are more stringent than those required for domestic partnership registration by the City of Key West pursuant to chapter 38, article V, of the Key West Code of Ordinances.

(8) *Equal benefits* means the equality of benefits between employees with spouses and employees with domestic partners, and/or between spouses of employees and domestic partners of employees.

(b)

*Equal benefits requirements.*

(1) Except where otherwise exempt or prohibited by law, a contractor awarded a covered contract pursuant to a bid process shall provide

benefits to domestic partners of its employees on the same basis as it provides benefits to employees' spouses.

- (2) All bid requests for covered contracts which are issued on or after the effective date of this section shall include the requirement to provide equal benefits in the procurement specifications in accordance with this section.
- (3) The city shall not enter into any covered contract unless the contractor certifies that such contractor does not discriminate in the provision of benefits between employees with domestic partners and employees with spouses and/or between the domestic partners and spouses of such employees.
- (4) Such certification shall be in writing and shall be signed by an authorized officer of the contractor and delivered, along with a description of the contractor's employee benefits plan, to the city's procurement director prior to entering into such covered contract.
- (5) The city manager or his/her designee shall reject a contractor's certification of compliance if he/she determines that such contractor discriminates in the provision of benefits or if the city manager or designee determines that the certification was created, or is being used for the purpose of evading the requirements of this section.
- (6) The contractor shall provide the city manager or his/her designee, access to its records for the purpose of audits and/or investigations to ascertain compliance with the provisions of this section, and upon request shall provide evidence that the contractor is in compliance with the provisions of this section upon each new bid, contract renewal, or when the city manager has received a complaint or has reason to believe the contractor may not be in compliance with the provisions of this section. This shall include, but not be limited to, providing the city manager or his/her designee with certified copies of all of the contractor's records pertaining to its benefits policies and its employment policies and practices.
- (7) The contractor may not set up or use its contracting entity for the purpose of evading the requirements imposed by this section.

(c)

*Mandatory contract provisions pertaining to equal benefits.* Unless otherwise exempt, every covered contract shall contain language that obligates the contractor to comply with the applicable provisions of this section. The language shall include provisions for the following:

(1)

During the performance of the covered contract, the contractor certifies and represents that it will comply with this section.

(2)

The failure of the contractor to comply with this section will be deemed to be a material breach of the covered contract.

(3)

If the contractor fails to comply with this section, the city may terminate the covered contract and all monies due or to become due under the covered contract may be retained by the city. The city may also pursue any and all other remedies at law or in equity for any breach.

(4)

If the city manager or his designee determines that a contractor has set up or used its contracting entity for the purpose of evading the requirements of this section, the city may terminate the covered contract.

(d)

*Enforcement.* If the contractor fails to comply with the provisions of this section:

(1)

The failure to comply may be deemed to be a material breach of the covered contract; or The city may terminate the covered contract; or

(2)

Monies due or to become due under the covered contract may be retained by the city until compliance is achieved; or

(3)

The city may also pursue any and all other remedies at law or in equity for any breach.

(4)

Failure to comply with this section may also subject the contractor to the procedures set forth in division 5 [sic] of this article, entitled "Debarment of contractors from city work."

(e)

*Exceptions and waivers.* The provisions of this section shall not apply where:

- (1) The contractor does not provide benefits to employees' spouses.
- (2) The contractor is a religious organization, association, society or any nonprofit charitable or educational institution or organization operated, supervised or controlled by or in conjunction with a religious organization, association or society.
- (3) The contractor is a governmental entity.
- (4) The sale or lease of city property.
- (5) The provision of this section would violate grant requirement, the laws, rules or regulations of federal or state law (for example, the acquisition services procured pursuant to F.S. § 287.055 known as the "Consultants' Competitive Negotiation Act").
- (6) Provided that the contractor does not discriminate in the provision of benefits, a contractor may also comply with this section by providing an employee with the cash equivalent of such benefits, if the city manager or his/her designee determines that either:
  - (a) The contractor has made a reasonable yet unsuccessful effort to provide equal benefits. The contractor shall provide the city manager or his/her designee with sufficient proof of such inability to provide such benefit or benefits which shall include the measures taken to provide such benefit or benefits and the cash equivalent proposed, along with its certificate of compliance, as is required under this section.
- (7) The city commission waives compliance of this section in the best interest of the city, including, but not limited to, the following circumstances:

- a. The covered contract is necessary to respond to an emergency.
- b. Where only one bid response is received.
- c. Where more than one bid response is received, but the bids demonstrate that none of the bidders can comply with the requirements of this section.

(f)

*City's authority to cancel contract.* Nothing in this section shall be construed to limit the city's authority to cancel or terminate a contract, deny or withdraw approval to perform a subcontract or provide supplies, issue a nonresponsibility finding, issue a nonresponsiveness finding, deny a person or entity prequalification, or otherwise deny a person or entity city business.

(g)

*Timing of application.* This section shall be applicable only to covered contracts awarded pursuant to bids which are after the date when this section becomes effective.

(Ord. No. 12-05, § 1, 2-22-2012)1, 2-22-2012)

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To:

City of Key West  
3140 Flagler Ave.  
Key West, FL 33040

RE: Equal Benefits Compliance Declaration  
Reference: City of Key West Ordinance 2-799

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

Pursuant to City Ordinance Section 2-799, Requirements for City Contractors to Provide Equal Benefits for Domestic Partners, \_\_\_\_\_ makes the following declaration:

\_\_\_\_\_ makes all benefits available on an equal basis to its employees with spouses and its employees with domestic partners, and to the spouses and domestic partners of employees, in all locations where work on the contracts with the City of Key West is performed, except where Federal Law dictates otherwise. Benefits affected by such regulations include, but may not be limited to, family medical leave, Flexible Spending Accounts, and Health Savings Accounts. Further, the IRS dictates which of these benefits may be taxable.

Please contact \_\_\_\_\_ at \_\_\_\_\_ with any questions regarding this declaration.

I declare under penalty of perjury under the laws of the State of Florida that the foregoing is true and correct and that I am authorized to bind this entity contractually.

\_\_\_\_\_  
*Signature of Authorized Person*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Printed Name of Authorized Person*

ORDINANCE NO. 13-11

AN ORDINANCE OF THE CITY OF KEY WEST, FLORIDA,  
AMENDING CHAPTER 2 OF THE CODE OF ORDINANCES  
ENTITLED "ADMINISTRATION" BY ADDING SECTIONS 2-  
773, "CONE OF SILENCE" TO PROVIDE FOR LIMITATIONS  
AND PROCEDURES REGARDING COMMUNICATIONS  
CONCERNING CITY ISSUED COMPETITIVE SOLICITATIONS;  
PROVIDING PENALTIES FOR VIOLATIONS; PROVIDING FOR  
SEVERABILITY; PROVIDING FOR REPEAL OF  
INCONSISTENT PROVISIONS; PROVIDING FOR AN  
EFFECTIVE DATE

WHEREAS, the City of Key West finds that that transparency,  
fairness and integrity in the competitive solicitation process is best  
served by limiting potential bidders, proposers or service providers  
from communicating with City officials, employees or selection  
committee members; and

WHEREAS, an amendment to add 'cone of silence' provisions to the  
Code of Ordinances will promote the welfare of the citizens and  
visitors of the City of Key West.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF KEY WEST, FLORIDA:

Section 1: That Section 2-773 of the Code of Ordinances is hereby added as follows\*:

Sec. 2-773. Cone of silence.

(a) Definitions. For purposes of this section, reference to one gender shall include the other, use of the plural shall include the singular, and use of the singular shall include the plural. The following definitions apply unless the context in which the word or phrase is used requires a different definition:

(1) Competitive Solicitation means a formal process by the City of Key West relating to the acquisition of goods or services, which process is intended to provide an equal and open opportunity to qualified persons and entities to be selected to provide the goods or services. Competitive Solicitation shall include request for proposals ("RFP"), request for qualifications ("RFQ"), request for letters of interest ("RFLI"), invitation to bid ("ITB") or any other advertised solicitation.

(2) Cone of Silence means a period of time during which there is a prohibition on communication regarding a particular Competitive Solicitation.

(3) Evaluation or Selection Committee means a group of persons appointed or designated by the City to evaluate, rank, select,

---

\*(Coding: Added language is underlined; deleted language is ~~struck through~~.)

or make a recommendation regarding a Vendor or the Vendor's response to the Competitive Solicitation. A member of such a committee shall be deemed a city official for the purposes of subsection (c) below.

(4) Vendor means a person or entity that has entered into or that desires to enter into a contract with the City of Key West or that seeks an award from the City to provide goods, perform a service, render an opinion or advice, or make a recommendation related to a Competitive Solicitation for compensation or other consideration.

(5) Vendor's Representative means an owner, individual, employee, partner, officer, or member of the board of directors of a Vendor, or a consultant, lobbyist, or actual or potential subcontractor or sub consultant who acts at the behest of a Vendor in communicating regarding a Competitive Solicitation.

(b) Prohibited Communications.

A Code of Silence shall be in effect during the course of a Competitive Solicitation and prohibit:

(1) Any communication regarding a particular Competitive Solicitation between a potential Vendor or Vendor's Representative and the City's administrative staff including, but not limited to, the city manager and his or her staff;

(2) Any communication regarding a particular Competitive Solicitation between a potential Vendor or Vendor's Representative and the Mayor, City Commissioners, or their respective staff;

(3) Any communication regarding a particular Competitive Solicitation between a potential Vendor or Vendor's Representative and any member of a City evaluation and/or selection committee therefore; and

(4) Any communication regarding a particular Competitive Solicitation between the Mayor, City Commissioners, or their respective staff, and a member of a City evaluation and/or selection committee therefore.

(c) Permitted Communications

Notwithstanding the foregoing, nothing contained herein shall prohibit:

(1) Communication between members of the public who are not Vendors or a Vendor's representative and any city employee, official or member of the City Commission;

(2) Communications in writing at any time with any city employee, official or member of the City Commission, unless specifically prohibited by the applicable Competitive Solicitation.

(A) However, any written communication must be filed with the City Clerk. Any City employee, official or member of the City Commission receiving or making any written communication must immediately file it with the City Clerk.

(B) The City Clerk shall include all written communication as part of the agenda item when publishing information related to a particular Competitive Solicitation;

(3) Oral communications at duly noticed pre-bid conferences;

(4) Oral presentations before publically noticed evaluation and/or selection committees;

(5) Contract discussions during any duly noticed public meeting;

(6) Public presentations made to the City Commission or advisory body thereof during any duly noticed public meeting;

(7) Contract negotiations with city staff following the award of a Competitive Solicitation by the City Commission; or

(8) Purchases exempt from the competitive process pursuant to section 2-797 of these Code of Ordinances;

(d) Procedure

(1) The Cone of Silence shall be imposed upon each Competitive Solicitation at the time of Public Notice of such solicitation as provided by section 2-826 of this Code. Public notice of the Cone of Silence shall be included in the notice of the Competitive Solicitation. The city manager shall issue a written notice of the release of each Competitive Solicitation to the affected departments, with a copy thereof to each Commission member, and shall include in any public solicitation for goods and services a statement disclosing the requirements of this ordinance.

(2) The Cone of Silence shall terminate at the time the City Commission or other authorized body makes final award or gives final approval of a contract, rejects all bids or responses to the

Competitive Solicitation, or takes other action which ends the Competitive Solicitation.

(3) Any City employee, official or member of the City Commission that is approached concerning a Competitive Solicitation while the Cone of Silence is in effect shall notify such individual of the prohibitions contained in this section. While the Cone of Silence is in effect, any City employee, official or member of the City Commission who is the recipient of any oral communication by a potential Vendor or Vendor's Representative in violation of this section shall create a written record of the event. The record shall indicate the date of such communication, the persons with whom such communication occurred, and a general summation of the communication.

(e) Violations/penalties and procedures.

(1) A sworn complaint alleging a violation of this ordinance may be filed with the City Attorney's office. In each such instance, an initial investigation shall be performed to determine the existence of a violation. If a violation is found to exist, the penalties and process shall be as provided in section 1-15 of this Code.

(2) In addition to the penalties described herein and otherwise provided by law, a violation of this ordinance shall render the Competitive Solicitation void at the discretion of the City Commission.

(3) Any person who violates a provision of this section shall be prohibited from serving on a City of Key West advisory board, evaluation and/or selection committee.

(4) In addition to any other penalty provided by law, violation of any provision of this ordinance by a City of Key West employee shall subject said employee to disciplinary action up to and including dismissal.

(5) If a Vendor is determined to have violated the provisions of this section on two more occasions it shall constitute evidence under City Code section 2-834 that the Vendor is not properly qualified to carry out the obligations or to complete the work contemplated by any new Competitive Solicitation. The City's Purchasing Agent shall also commence any available debarment from city work proceeding that may be available upon a finding of two or more violations by a Vendor of this section.

Section 2: If any section, provision, clause, phrase, or application of this Ordinance is held invalid or unconstitutional for any reason by any court of competent jurisdiction, the remaining provisions of this Ordinance shall be deemed severable therefrom and shall be construed as reasonable and necessary to achieve the lawful purposes of this Ordinance.

Section 3: All Ordinances or parts of Ordinances of said City in conflict with the provisions of this Ordinance are hereby superseded to the extent of such conflict.

Section 4: This Ordinance shall go into effect immediately upon its passage and adoption and authentication by the signature of the presiding officer and the Clerk of the Commission.

Read and passed on first reading at a regular meeting held this day of June 4, 2013.

Read and passed on final reading at a regular meeting held this day of June 18, 2013.

Authenticated by the presiding officer and Clerk of the Commission on 19 day of June, 2013.

Filed with the Clerk June 19, 2013.

ATTEST

Cheryl Smith  
CHERYL SMITH, CITY CLERK

Craig Cates  
CRAIG CATES, MAYOR

To:

City of Key West  
3140 Flagler Ave.  
Key West, FL 33040

RE: Cone of Silence Compliance Declaration  
Reference: City of Key West Ordinance 2-773

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

Pursuant to City Ordinance Section 2-773, "Cone of Silence,"  
\_\_\_\_\_ makes the following declaration:

\_\_\_\_\_ will abide by the above ordinance's requirements in full, and specifically will make no contact, verbal or written, with City Staff, the Mayor, Commissioners related to this solicitation except as specifically allowed by the ordinance.

Please contact \_\_\_\_\_ at \_\_\_\_\_ with any questions regarding this declaration.

I declare under penalty of perjury under the laws of the State of Florida that the foregoing is true and correct and that I am authorized to bind this entity contractually.

\_\_\_\_\_  
*Signature of Authorized Person*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Printed Name of Authorized Person*

# PART 2

---

## CONTRACT DOCUMENTS

## AGREEMENT

This Agreement, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2015,

by and between the **City of Key West Caroline Street and Bahama Village Community Redevelopment Agency**, hereinafter called the "**Owner**," and

<**contractor**>, hereinafter called the "**Contractor**";

WITNESSETH:

The Contractor, in consideration of the sum to be paid him by the Owner and of the covenants and agreements herein contained, hereby agrees at his own proper cost and expense to do all the work and furnish all the materials, tools, labor, and all appliances, machinery, and appurtenances for Construction of **CAROLINE STREET IMPROVEMENTS**, to the extent of the Bid made by the Contractor, dated the <DAY> day of <MONTH>, 2015, all in full compliance with the Contract Documents referred to herein.

The BIDDING REQUIREMENTS, including the signed copy of the Request for Quote including the Bid Form, the CONTRACT FORMS, the CONDITIONS OF THE CONTRACT, the SPECIFICATIONS, and the DRAWINGS, which consist of Detailed Drawings for "**CAROLINE STREET IMPROVEMENTS**" are hereby referred to and by reference made a part of this Contract as fully and completely as if the same were fully set forth herein and are mutually cooperative therewith.

In consideration of the performance of the work as set forth in these Contract Documents, the Owner agrees to pay to the Contractor the amount bid in the Bid as adjusted in accordance with the Contract Documents, or as otherwise herein provided, and to make such payments in the manner and at the times provided in the Contract Documents.

The Contractor agrees to complete the work within the time specified and to accept as full payment hereunder the amounts computed as determined by the Contract Documents and based on the said Bid.

The Contractor agrees to remedy all defects appearing in the work or developing in the materials furnished and the workmanship performed under this Contract during the warranty period after the date of final acceptance of the work by the Owner, and further agrees to indemnify and save the Owner harmless from any costs encountered in remedying such defects.

It is agreed that the Project, based upon the Bid, shall be totally completed and ready for final payment and acceptance within 270 consecutive calendar days from the date the Notice to Proceed is issued.

Liquidated Damages: The Contractor recognizes that time is of the essence and that the Owner will suffer financial loss if the Work is not completed within the times specified in

paragraph above, plus any extensions thereof allowed in accordance with Article 12, of the General Conditions.

Owner and Contractor also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by the Owner, if the Work is not completed on time. Accordingly, instead of requiring any such proof, the Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay the Owner **\$500** for each calendar day that expires after the time specified for final completion.

IN WITNESS WHEREOF, we, the parties hereto, each herewith subscribe the same this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 2015.

**CITY OF KEY WEST**

Owner: \_\_\_\_\_

By: \_\_\_\_\_ Jim Scholl \_\_\_\_\_

Title: \_\_\_\_\_ City Manager \_\_\_\_\_

Contractor: \_\_\_\_\_

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

Title: \_\_\_\_\_

Approved as to Form

\_\_\_\_\_  
Attorney for Owner

**END OF SECTION**



City of Key West  
P.O. Box 1409  
Key West, FL 33041

## Notice of Award

Date:

Project Number: **CS 1101**  
**ITB 15-007**

Owner: City of Key West  
Company: <CONTRACTOR>  
Address: <ADDRESS>  
<->  
<->

Project Name: **CAROLINE STREET IMPROVEMENTS (ITB 15-007)**

To Whom it May Concern:

You are hereby notified of the City of Key West's intent to award to <contractor> the contract for **Caroline Street Improvements** pursuant to City of Key West City Manager's award order of \_\_\_\_\_, 2015. The award amount is \$ \_\_\_\_\_.

Enclosed please find three copies of the Contract Documents for your execution. Please complete the necessary pages, affixing signatures, notary and / or corporate seals, etc. where necessary and return to this office by \_\_\_\_\_, **2015**.

The following items must be received prior to issuance of the Notice to Proceed:

1. The Certificate of Insurance must be attached to the documents; one original and two copies are acceptable.

Sincerely,

James Bouquet, P.E.  
Director of Engineering

cc: Cheri Smith, City Clerk  
Project File

**CERTIFICATE OF FINAL COMPLETION**

**Project:** CAROLINE STREET IMPROVEMENTS

**Project No.:** CS 1101

**Date of Issuance:** \_\_\_\_\_

**City:** City of Key West

**Contractor** \_\_\_\_\_ **Engineer** \_\_\_\_\_

~~~~~  
This Certificate of Completion applies to all Work under the Contract Documents.  
~~~~~

The Work to which this Certificate applies has been inspected by authorized representatives of CITY and ENGINEER, and that Work is hereby declared to be complete in accordance with the Contract Documents on

\_\_\_\_\_  
DATE OF COMPLETION

**Executed by ENGINEER on** \_\_\_\_\_ , (Date)

\_\_\_\_\_  
ENGINEER By: \_\_\_\_\_  
Authorized Signature

~~~~~  
**CONTRACTOR accepts this Certificate of Completion on** \_\_\_\_\_ , (Date)

\_\_\_\_\_  
CONTRACTOR By: \_\_\_\_\_  
Authorized Signature

~~~~~  
**CITY accepts this Certificate of Completion on** \_\_\_\_\_ , (Date)

\_\_\_\_\_  
ENGINEER By: \_\_\_\_\_  
Authorized Signature

**NOTICE TO PROCEED**

Date: \_\_\_\_\_, 2015

Project No: CS 1101  
ITB 15-007

Contractor: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project: **CAROLINE STREET IMPROVEMENTS**

Project No.: **CS 1101**

You are hereby notified to commence work on \_\_\_\_\_ for the **CAROLINE STREET IMPROVEMENTS** and all related work, as designated by the City in accordance with the Contract made with the City of Key West on the \_\_\_\_ day of \_\_\_\_\_, 2015. The amount of time to complete the work is 270 consecutive calendar days and should be fully completed on or before \_\_\_\_\_, 2015.

Sincerely,

\_\_\_\_\_

Project Manager

Receipt of this NOTICE TO PROCEED is hereby acknowledged this, the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

CONTRACTOR: \_\_\_\_\_

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

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

Please return one (1) copy of this signed notice to:

City Clerk  
City of Key West  
3126 Flagler Ave.  
Key West, FL 33040

**PAYMENT APPLICATION AND CERTIFICATE**

Date: \_\_\_\_\_

Application No.: \_\_\_\_\_ of \_\_\_\_\_  
Period From: \_\_\_\_\_ to \_\_\_\_\_, 20\_\_.

Sheet: \_\_\_\_\_ of \_\_\_\_\_

Project: **CAROLINE STREET IMPROVEMENTS**

Project No.: **CS 1101**

Contractor: \_\_\_\_\_

Original Contract Sum \$ \_\_\_\_\_

Contract Modifications Approved in Previous Applications

Additions \$ \_\_\_\_\_ Deductions: \$ \_\_\_\_\_

Contract Modifications Approved this Period (List Contract Modifications Nos.\_\_\_\_)

Additions \$ \_\_\_\_\_ Deductions: \$ \_\_\_\_\_

- 1. Net Change by Contract Modifications (sum of lines 2 and 3) \$ \_\_\_\_\_
- 2. Revised Contract Amount (Sum of Lines 1 and 4) \$ \_\_\_\_\_
- 3. Total Value of Work to Date (Estimate Attached) \$ \_\_\_\_\_
- 4. Percent Project Complete (Line 6 / Line 5 x 100) = \_\_\_\_\_ %
- 5. Total Materials on Hand (Listing Attached) \$ \_\_\_\_\_
- 6. Subtotal – Work Completed and Stored (Sum of Lines 6 and 8) \$ \_\_\_\_\_
- 7. Total Retainage (10% x Line 9) \$ \_\_\_\_\_
- 8. Total Earned to Date, Less Retainage (Line 9 less Line 10) \$ \_\_\_\_\_
- 9. Less Previous Certificates for Payments (item 11 from  
Previous Application) \$ \_\_\_\_\_
- 10. Current Payment Due (Line 11 less Line 12) \$ \_\_\_\_\_
- 11. Amount paid to Subcontractors Previous Pay Application \$ \_\_\_\_\_

The undersigned Contractor certifies that the Work covered by this Application for Payment has been completed in accordance with the Contract Documents that the current payment shown herein is now due, and that title for all Work, materials, and equipment covered in this Application will pass to the CITY free and clear of all liens at the time of payment.

\_\_\_\_\_  
Contractor By Date

I hereby acknowledge that the material and labor involved on the above estimate is correct to the best of my knowledge, information and belief, and payment on same is due Contractor.

\_\_\_\_\_  
CA Manager Date

\_\_\_\_\_  
Project Manager Date

CITY OF KEY WEST

Construction Compliance Certification with Specifications and Plans

Project Number

PO Number

Date

Monthly

Final

\_\_\_\_\_

Prime Contractor for the above referenced contract hereby verifies based on personnel knowledge or reasonable investigation and good faith belief, all Quality Control functions and Quality Control sampling and test results are in substantial compliance with the pertinent specification requirements for this project The represents work completed between \_\_\_\_\_ and \_\_\_\_\_. Exceptions are listed

below.

(add addition sheets as required)

Item No.

Exception:

A false statement or omission made in connection with this certification is sufficient cause for suspension, revocation, or denial of qualification to bid, and a determination of non-responsibility, and may subject the person and /or entity making the false statement to any civil and criminal penalties available pursuant to applicable State and Federal Law.

Contractor: \_\_\_\_\_ date; \_\_\_\_\_

State of Florida

County of:

Sworn to and subscribed before me this \_\_\_\_\_ day

of \_\_\_\_\_,

By \_\_\_\_\_

(print name of person signing certification)

Notary Public

Commission Expires

**Certificate of Final Payment**

Date:  
Page: 1 of 2

Payment Application No. \_\_\_\_\_

Period From: \_\_\_\_\_ to \_\_\_\_\_

Project: **CAROLINE STREET IMPROVEMENTS**

Project No.: **CS 1101**

Contractor: \_\_\_\_\_

I Hereby Acknowledge that this contract has been completed in substantial compliance with the items of the agreement, Specifications and Plans, as-builts, work change directives and field orders. I, therefore, request acceptance of the work and processing of this final estimate as showing the total amount of money due in compliance with the terms of the Contract.

I \_\_\_\_\_ certify to the Owner that the Contractor met the Grant requirements provided in the contract documents

Contractor: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

With the acceptance of this final payment, we, the Contractor, release the Owner and the Engineer and their agents, from all claims and liability to us, the Contractor, for all things done or furnished in connection with the Work, and every act of the Owner and others relating to, or arising, out of the Work.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

Sworn and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

NOTARY PUBLIC, State of Florida at Large

My Commission Expires:

ACCEPTED BY:

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Date

Owner

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

\_\_\_\_\_  
Date

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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AMERICAN COUNCIL OF ENGINEERING COMPANIES

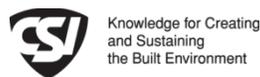
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AMERICAN SOCIETY OF CIVIL ENGINEERS

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The Associated General Contractors of America



Construction Specifications Institute

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## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

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#### 1.01 *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 1 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.

## 1.02 *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

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2.01 *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.

2.02 *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.

2.03 *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.

2.04 *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.

2.05 *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.

2.06 *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.

### 2.07 *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

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### 3.01 *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.

### 3.02 *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.

### 3.03 *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).

#### 3.04 *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.

#### 3.05 *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.

#### 3.06 *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

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#### 4.01 *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.

#### 4.02 *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.

#### 4.03 *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.

#### 4.04 *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.

#### 4.05 *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.

#### 4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings 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

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### 5.01 *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.

### 5.02 *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.

### 5.03 *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.

### 5.04 *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.

#### 5.05 *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.

#### 5.06 *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.

#### 5.07 *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.

#### 5.08 *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.

#### 5.09 *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

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#### 6.01 *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.

#### 6.02 *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.

#### 6.03 *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.

#### 6.04 *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.

#### 6.05 *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.

#### 6.06 *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 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.

#### 6.07 *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.

#### 6.08 *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.

#### 6.09 *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 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 separate 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

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7.01 *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.

#### 7.02 *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.

#### 7.03 *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

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#### 8.01 *Communications to Contractor*

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

#### 8.02 *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.

#### 8.03 *Furnish Data*

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

#### 8.04 *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.

#### 8.05 *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.

#### 8.06 *Insurance*

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

#### 8.07 *Change Orders*

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

#### 8.08 *Inspections, Tests, and Approvals*

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

#### 8.09 *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

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9.01 *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.

9.02 *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.

9.03 *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.

9.04 *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.

9.05 *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 or not the Work is fabricated, installed, or completed.

9.06 *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.

#### 9.07 *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.

#### 9.08 *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 believe 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.

#### 9.09 *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

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#### 10.01 *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.

#### 10.02 *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.

#### 10.03 *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.

#### 10.04 *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.

#### 10.05 *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

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### 11.01 *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.

## 11.02 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.

#### 11.03 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

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### 12.01 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.

#### 12.02 *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.

#### 12.03 *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

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#### 13.01 *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.

#### 13.02 *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.

### 13.03 *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.

### 13.04 *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.

### 13.05 *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.

### 13.06 *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.

### 13.07 *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.

### 13.08 *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 therefore as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

### 13.09 *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 seven days 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

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### 14.01 *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.

### 14.02 *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.

#### 14.03 *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.

#### 14.04 *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 seven 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.

#### 14.05 *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.

#### 14.06 *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.

#### 14.07 *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.

#### 14.08 *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.

#### 14.09 *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

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### 15.01 *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.

### 15.02 *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 ) seven days 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 seven 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.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days 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.

15.04 *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 seven days 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, seven 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

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16.01 *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

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17.01 *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.

#### 17.02 *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.

#### 17.03 *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.

#### 17.04 *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.

#### 17.05 *Controlling Law*

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

#### 17.06 *Headings*

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

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## SUPPLEMENTARY CONDITIONS

### REVISIONS AND ADDITIONS TO THE GENERAL CONDITIONS

The General Conditions are hereby revised as follows:

#### ARTICLE 1.01.A.30 "Owner"

Add the following:

Wherever in these Documents the word "Owner" appears, it shall be understood to mean the City of Key West whose address is 3140 Flagler Street, Key West, Florida 33040.

SC-1.01.A.45. Supplement paragraph 1.01.A.45 of the General Conditions as follows:

Substantial Completion is further defined as (i) that degree of completion of the Project's operating facilities or systems sufficient to provide Owner the full time, uninterrupted, and continuous beneficial operation of the Work; and (ii) all required functional, performance and acceptance or startup testing has been successfully demonstrated for all components, devices, equipment, and instrumentation and control to the satisfaction of Engineer in accordance with the requirements of the Specifications.

SC-1.01.A.53. Add a new paragraph immediately following paragraph 1.01.A.52 of the General Conditions as follows:

1.01.A.53. *Specialist*—The term Specialist refers to a person, partnership, firm, or corporation of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workers skilled in either (as applicable) manufacturing or fabricating items required by the Contract Documents, or otherwise performing Work required by the Contract Documents. Where the Specifications require the installation by a Specialist, that term shall also be deemed to mean either the manufacturer of the item, a person, partnership, firm, or corporation licensed by the manufacturer, or a person, partnership, firm, or corporation who will perform the Work under the manufacturer's direct supervision.

SC-2.03.A. Delete the third sentence of paragraph 2.03.A *Commencement of Contract Times: Notice to Proceed* of the General Conditions in its entirety.

ARTICLE 2.01 "DELIVERY OF BONDS AND EVIDENCE OF INSURANCE"

Replace Paragraph B with the following:

- B. Evidence of Insurance: Before any Work at the Site is started, Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which Owner or any additional insured may reasonably request) which Contractor is required to purchase and maintain in accordance with Article 5.

ARTICLE 5.03 "CERTIFICATES OF INSURANCE"

Delete Article 5.03.B in its entirety.

ARTICLE 5.04 "CONTRACTOR'S LIABILITY INSURANCE"

Delete Article 5.04 in its entirety and insert the following:

- A. CONTRACTOR is to secure, pay for, and file with the City of Key West, prior to commencing any work under the Contract, all certificates for Workers' Compensation, Public Liability, and Property Damage Liability Insurance and such other insurance coverages as may be required by specifications and addenda thereto, in at least the following minimum amounts with specification amounts to prevail if greater than minimum amounts indicated. Notwithstanding any other provision of the Contract, the CONTRACTOR shall provide the minimum limits of liability insurance coverages as follows:

Auto Liability	\$1,000,000	Combined Single Limit
General Liability	\$2,000,000	Aggregate (Per Project)
	\$2,000,000	Products Aggregate
	\$1,000,000	Any One Occurrence
	\$1,000,000	Personal Injury
	\$ 300,000	Fire Damage/Legal
Additional Umbrella Liability	\$0	Occurrence/Aggregate

- B. CONTRACTOR shall furnish an original Certificate of Insurance indicating, and such policy providing coverage to, City of Key West named as "Additional Insured" on PRIMARY and NON CONTRIBUTORY basis utilizing an ISO standard endorsement at least as broad as CG 2010 (11/85) or its Equivalent, (COMBINATION OF CG 20 10 07 04 and CG 20 37 07 04. providing coverage for completed operations is acceptable) INCLUDING A "Waiver of Subrogation" clause in favor of City of Key West on all policies. CONTRACTOR will maintain the General Liability and Umbrella Liability Insurance coverages summarized above with coverage continuing in full force including the "additional insured" endorsement until at least 3 years beyond completion and delivery of the work contracted herein.

C. Notwithstanding any other provision of the Contract, the CONTRACTOR shall maintain complete Workers' Compensation coverage for each and every employee, principal, officer, representative, or agent of the CONTRACTOR who is performing any labor, services, or material under the Contract. Further, CONTRACTOR shall additionally maintain the following minimum limits of coverage:

Bodily Injury Each Accident	\$	\$1,000,000
Bodily Injury by Disease Each Employee		\$1,000,000
Bodily Injury by Disease Policy Limit		\$1,000,000

- D. If the work is being done on or near a navigable waterway, CONTRACTOR's Workers' Compensation policy shall be endorsed to provide USL&H Act (WC 00 01 06 A) and Jones Act (WC 00 02 01 A) coverage if specified by the City of Key West. CONTRACTOR shall provide the City of Key West with a Certificate of Insurance verifying compliance with the workman's compensation coverage as set forth herein and shall provide as often as required by the City of Key West such certification which shall also show the insurance company, policy number, effective and expiration date, and the limits of workman's compensation coverage under each policy.
- E. CONTRACTOR's insurance policies shall be endorsed to give 30 days' written notice to the City of Key West in the event of cancellation or material change, using form CG 0 24, or its equivalent.
- F. Certificates of Insurance submitted to the City of Key West will not be accepted without copies of the endorsements being requested. This includes additional insured endorsements, cancellation/material change notice endorsements, and waivers of subrogation. Copies of USL&H Act and Jones Act endorsements will also be required if necessary. PLEASE ADVISE YOUR INSURANCE AGENT ACCORDINGLY.
- G. CONTRACTOR will comply with any and all safety regulations required by any agency or regulatory body including but not limited to OSHA. CONTRACTOR will notify City of Key West immediately by telephone at (305) 809-3811 of any accident or injury to anyone that occurs on the jobsite and is related to any of the work being performed by the CONTRACTOR.
- H. It shall be the responsibility of the Contractor to ensure that all subcontractors comply with the same insurance requirements as is required of Contractor
- I. Certificates of Insurance meeting the required insurance provisions shall be forwarded to Engineer, Owner's and Risk Management

J. SURETY AND INSURER QUALIFICATIONS - All bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or insurance company, having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of Florida. Further, the said Surety or insurance company shall be duly licensed and qualified to do business in the State of Florida.

ARTICLE 5.05 “OWNER’S LIABILITY INSURANCE”

Delete Article 5.05 in its entirety.

ARTICLE 5.06 “PROPERTY INSURANCE”

Delete Article 5.06 in its entirety.

ARTICLE 5.07 “WAIVER OF RIGHTS”

Delete Article 5.07 in its entirety.

ARTICLE 5.08 “RECEIPT AND APPLICATION OF INSURANCE PROCEEDS”

Delete Article 5.08 in its entirety.

ARTICLE 5.09 “ACCEPTANCE OF BONDS AND INSURANCE, OPTION TO REPLACE”

Replace Paragraph A with the following:

5.09.A If the Owner has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the Contractor in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the Owner shall so notify the Contractor in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Contractor shall provide to Owner such additional information in respect of insurance provided as the other may reasonably request. If Contractor does not purchase or maintain all of the bonds and insurance required of the Contractor by the Contract Documents, the Owner shall notify the Contractor 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 Owner may elect to obtain equivalent bonds or insurance to protect the Owner's interests at the expense of the Contractor who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

ARTICLE 5.10 "PARTIAL UTILIZATION, ACKNOWLEDGEMENT OF PROPERTY INSURER"

Delete Article 5.10 in its entirety.

SECTION 6 "CONTRACTOR'S RESPONSIBILITIES"

6.03. Add the following new paragraphs immediately after Paragraph 6.03.C:

6.03.D. Domestic Products:

6.03.D.1. Contractor agrees to use materials, supplies, and products manufactured, mined, processed, or produced in the United States or its territories, if products are available at reasonable and competitive prices and are not contrary to any sole source specification. If Agreement to use domestic products is breached and domestic products are not used, there shall be a downward adjustment in Contract price equal to any realized savings or benefits to Contractor.

6.03.D.2. Contractor agrees to use steel produced within the United States when specifications require the use of steel and do not limit its supply to a sole source specification. Owner has right to waive this requirement in the event of national emergency, national strike, or other cause. If Agreement to use domestic steel is breached and domestic steel is not used, there shall be a downward adjustment in Contract price equal to any realized savings or benefits to Contractor.

ARTICLE 6.09 "LAWS AND REGULATIONS"

Add the following:

The Contractor shall comply with the City of Key West Noise Ordinance and shall limit their working schedule to 8:00am through 7:00pm Monday through Friday.

ARTICLE 6.09 "LAWS AND REGULATIONS"

Add the following Subarticles:

Within 10 days of Notice of Award, the successful Bidder must represent that he holds all applicable state, county, and City of Key West licenses and permits required to do business as a contractor with respect to the work described in the Contract Documents.

Further, the successful Bidder must, within 10 days of Notice of Award, furnish documentation showing that, as a minimum, he has complied with the provisions of Chapter 91 of the Code of Ordinances of the City of Key West in order to enter into the Agreement contained in the Contract Documents.

Specifically, within 10 days after Notice of Award, the successful Bidder must demonstrate that he holds, as a minimum, the following licenses and certificates:

1. All licenses or certificates required by federal, state, or local statutes or regulations.
2. State of Florida Contractor's License.

#### ARTICLE 6.13 "SAFETY AND PROTECTION"

Add the following Subarticle:

##### OCCUPATIONAL SAFETY AND HEALTH

The Contractor shall observe and comply with all applicable local, state, and federal occupational safety and health regulations during the prosecution of work under this Contract. In addition, full compliance by the Contractor with the U.S. Department of Labor's Occupational Safety and Health Standards, as established in Public Law 91-596, will be required under the terms of this Contract.

#### ARTICLE 6.20 "INDEMNIFICATION"

Add the following:

The obligation of the Contractor under this Article shall be limited to the contractual liability as specified in the Supplementary Conditions, Article Insurance and Liability.

ADD ARTICLE 6.22 "SUSPENSION AND DEBARMENT" immediately following Article 6.21 and containing the following:

##### **CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION – LOWER TIER COVERED TRANSACTIONS**

**Note:** This certification/clause has been extracted from Appendix B to 40 CFR Part 32 and is applicable to all goods and services (including construction) contracts and subcontracts with a price equaling or exceeding \$25,000 and in all solicitations for such contracts and subcontracts.

Instructions for Certification:

1. By signing and submitting this Proposal, the prospective lower tier participant is providing the certification set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or

agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this Proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms “covered transaction,” “debarred,” “suspended,” “ineligible,” “lower tier covered transaction,” “participant,” “person,” “primary covered transaction,” “principal,” “proposal,” and “voluntarily excluded,” as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this Proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this Proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this Proposal that it will include this clause titled “Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions,” without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

## ARTICLE 14 "PAYMENTS TO CONTRACTOR AND COMPLETION"

Add the following to the end of Subarticle 14.02.B.1:

Add the following subarticles:

14.02.B1.1 The Owner will deduct from the estimate, and retain as part security, 10 percent of the amount earned for work satisfactorily completed. A deduction and retainage of 10 percent will be made on the estimated amount earned for approved items of material delivered to and properly stored at the jobsite but not incorporated into the work.

14.02.B1.2 After deducting the retainage and the amount of all previous partial payments made to the Contractor from the amount earned, the amount due will be made payable to the Contractor. Recommendations for payment received by the Owner less than 40 days prior to the scheduled day for payment will not be processed or paid until the following month.

**END OF SECTION**

# PART 3

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# GENERAL REQUIREMENTS

## PART 1.0 PROJECT DESCRIPTION

### 1.1 GENERAL

- A. To determine the full scope of the project or any particular part of the project, coordinate the applicable information in the several parts of these Contract Documents.
- B. The following additional information, though not all-inclusive, is given to assist contractors in their evaluation of the work required to meet the project objectives.
- C. The work is likely to be influenced by the tides. The tides can have an effect on the timing and work schedule. No extra claims shall be made for the tides or for other natural causes.
- D. The CONTRACTOR shall be responsible for providing a licensed surveyor registered in the State of Florida. Surveyor shall verify all benchmarks used during survey.

### 1.2 STANDARD SPECIFICATIONS

- A. Portions of The Florida Department of Transportation Standard Specifications for Road and Bridge Construction and their Roadway and Traffic Design Standards, hereinafter referred to as either the Standard or FDOT Specifications, are referred to herein and amended, in part, and the same 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. Such reference shall mean the current edition, including all supplements. In case of a conflict in the requirements of the Standard Specifications and the requirements stated herein, the requirements herein shall prevail.

## PART 2.0 SEQUENCE OF OPERATIONS

### 2.1 SCHEDULING

- A. 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 OWNER's representative to develop an approved work schedule which will permit the facilities to function normally as practical. It may be necessary to do certain parts of the construction work outside normal working hours in order to avoid undesirable conditions. The CONTRACTOR shall do this work at such times and at no additional cost to the OWNER. Do not make connections between existing work and new work until necessary inspection and tests have been completed on the new work and it is found to conform in all respects to the requirements of the Contract Documents.
- B. No work shall be started until the CONTRACTOR has received approved shop drawings, established material/delivery dates for all equipment, and received approval of the construction schedule from the Owner. The CONTRACTOR shall have sufficient

manpower, equipment, and material to complete the project. No work shall commence without express consent of the OWNER.

C. Year 2015-2016

<u>Date</u>	<u>Notes</u>	<u>Event</u>
July 4-5	No Work	Independence Day
July 10-12	No Work	Mel Fisher Days
August 7-10	No Work	Lobster Fest
August 30-Sep 1	No Work	Labor Day
Sep 18-21	No Work	Key West Poker Run
Oct. 19-26	No Work	Fantasy Fest
Nov. 7-9	No Work	Super Boat Races
Nov. 27-29	No Work	Thanksgiving
Dec. 6	No Work	Holiday Parade
Dec. 25-27	No Work	Christmas
Dec. 28-Jan 1	No Work	New Year's Eve and Day
Jan. 19	No Work	Martin Luther King Events
Jan. 20-25	No Work	Quantum Key West Race/Food and Wine
Feb. 21-22	No Work	Old Island Days
March 14	No Work	St. Patrick's Day Bar Stroll
May 22	No Work	Cuban/American Heritage Festival
May 23-25	No Work	Memorial Day

2.2 COORDINATION

- A. Contractors shall cooperate in the coordination of their separate activities in a manner that will provide the least interference with the Owner's operations and other contractors and utility companies working in the area, and in the interfacing and connection of the separate elements of the overall project work.
- B. If any difficulty or dispute should arise in the accomplishment of the above, the problem shall be brought immediately to the attention of the OWNER.
- C. All contractors working on the site are subject to this requirement for cooperation and all shall abide by the OWNER's decision in resolving project coordination problems without additional cost to the OWNER.

2.3 SHUTDOWN OF EXISTING OPERATIONS OR UTILITIES

- A. The CONTRACTOR's work shall not result in the interruption of sewage, water, or solid waste service to any customers.
- B. Connections to existing services or utilities, or other work that requires the temporary shutdown of any existing operations or utilities shall be planned in detail with appropriate scheduling of the work and coordinated with the OWNER or ENGINEER. Advance notice shall be given in order that the OWNER or ENGINEER may witness the shutdown, tie-in, and startup. The temporary shutdown must be approved by the OWNER. All tie in and bypass operations shall be the responsibility of the CONTRACTOR and are considered incidental to the cost of construction and provided at no additional cost to the OWNER.

- C. All materials and equipment (including emergency equipment) necessary to expedite the tie-in shall be on hand prior to the shutdown of existing services or utilities.

#### 2.4 OPERATION OF EXISTING SYSTEM PROHIBITED

- A. At no time undertake to close off any utility lines or open valves or take any other action which would affect the operation of the existing system, except as specifically required by the Drawings and Specifications and after approval is granted by the OWNER. CONTRACTOR shall request approval 5 working days in advance of the time that interruption of the existing system is required. FKAA water valves can be operated only by FKAA personnel.

#### 2.5 PROGRESS OF CONSTRUCTION

- A. The work shall proceed in a systematic manner so that a minimum of inconvenience will result to the public in the course of construction. Backfill trenches so no section of properly laid pipe is left uncovered longer than is absolutely necessary. The safety conditions of open excavations shall be the CONTRACTOR's responsibility. Completely backfill and clean up after each section of pipe has been inspected and approved.
- B. Clean up construction debris, excess excavation, and excess materials immediately following the final backfilling.

### PART 3.0 SITE CONDITIONS

#### 3.1 SITE INVESTIGATION AND REPRESENTATION

- A. The CONTRACTOR acknowledges satisfaction as to the general nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, availability of labor, water, electric power, roads, and uncertainties of weather, or similar physical conditions, the character of equipment and facilities needed 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. Failure by the CONTRACTOR to become acquainted with the physical conditions and all the available information will not relieve the CONTRACTOR from responsibility for properly estimating the difficulty or cost of successfully performing the work.
- C. The CONTRACTOR warrants that as a result of examination and investigation of all the aforesaid data, the CONTRACTOR can perform the work in a good and workmanlike manner and to the satisfaction of the OWNER. The OWNER assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this Contract, unless (1) such representations are expressly stated in the Contract, and (2) the Contract expressly provides that the responsibility therefore is assumed by the OWNER.

#### 3.2 INFORMATION ON SITE CONDITIONS

- A. General: Any information obtained by the ENGINEER regarding site conditions, subsurface information, groundwater 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 OWNER assumes any responsibility for the completeness or interpretation of such supplementary information. Geotechnical data is provided in Appendix A.

### 3.3 UTILITIES

- A. The CONTRACTOR shall be responsible for determining, at his cost, the locations of all utilities shown identified on the 100% Construction Documents within the project area, and shall be responsible for contacting each utility for location and notification prior to commencing work.
- B. The contractor shall comply with The Underground Facility Damage Prevention and Safety Act, Chapter 556, Florida Statutes. Call the toll-free number, 811 and (800) 432-4770 for locates as it applies.

### 3.4 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

- A. Where the CONTRACTOR's operations could cause damage or inconvenience to utilities, telephone, television, power, water, or sewer systems, the operations shall be suspended until all arrangements necessary for the protection of these utilities and services have been made by the CONTRACTOR with the owner of the utility affected.
- B. Notify all utility offices which are affected by the construction operation at least 48 hours in advance. Under no circumstances 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.
- C. The CONTRACTOR 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 OWNER or ENGINEER nor their 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 case shall interruption of any water or utility service be allowed to exist outside working hours unless prior approval is granted.
- F. In the event the CONTRACTOR encounters water service lines that interfere with trenching, he may, by obtaining prior approval of the property owner, Florida Keys Aqueduct Authority, or Fire Department as applicable, and the OWNER, cut the service,

dig through, and restore the service with similar and equal materials at the CONTRACTOR's expense.

- G. The CONTRACTOR shall replace, at his own expense, all existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract documents or ordered by the OWNER.

### 3.5 INTERFERING STRUCTURES

- A. Take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground.
- B. Protect underground and aboveground existing structures from damage, whether or not they lie within the limits of the easements obtained by the OWNER. Where such existing fences, gates, sheds, buildings, or any other structure must be removed in order to properly carry out the construction, or are damaged during construction, restore to their original condition to the satisfaction of the property owner involved at the CONTRACTOR's own expense. Notify the OWNER of any damaged underground structure, and make repairs or replacements before backfilling.
- C. Without additional compensation, the CONTRACTOR may remove and replace in a condition as good as or better than original, such small miscellaneous structures as fences, mailboxes, and signposts that interfere with the CONTRACTOR's operations.

### 3.6 FIELD RELOCATION

- A. During the progress of construction, it is expected that minor relocations of the work will be necessary. Such relocations shall be made only by direction of the ENGINEER. If existing structures are encountered which prevent the construction, and which are not properly shown on any Contract Drawings, notify the ENGINEER before continuing with the construction in order that the ENGINEER may make such field revisions as necessary to avoid conflict with the existing structures. If the CONTRACTOR shall fail to so notify the ENGINEER when an existing structure is encountered, and shall proceed with the construction despite this interference, he shall do so at his own risk.

### 3.7 EASEMENTS

- A. Where portions of the work are located on public or private property, easements and permits will be obtained by the OWNER, except as otherwise noted in these Specifications. Easements will provide for the use of property for construction purposes to the extent indicated on the easements. Copies of these easements and permits are available upon request to the OWNER. It shall be the CONTRACTOR's responsibility to determine the adequacy of the easement obtained in every case and to abide by all requirements and provisions of the easement. The CONTRACTOR shall confine his construction operations to within the easement limits or street right-of-way limits or make special arrangements with the property owners or appropriate public agency for the additional area required. Any damage to property, either inside or outside the limits of the easements provided by the OWNER or street rights-of-way, shall be the

responsibility of the CONTRACTOR as specified herein. The CONTRACTOR shall remove, protect, and replace all fences or other items encountered on public or private property. Before final payment will be authorized by the OWNER, the CONTRACTOR will be required to furnish the OWNER with written releases from property owners or public agencies where side agreements or special easements have been made by the CONTRACTOR or where the CONTRACTOR's operations, for any reason, have not been kept within the construction right-of-way obtained by the OWNER or the street right-of-way.

- B. It is anticipated that the required easements and permits will be obtained before construction is started. However, should the procurement of any easement or permit be delayed, the CONTRACTOR shall schedule and perform the work around these areas until such a time as the easement or permit has been secured.

### 3.8 PROTECTED VEGETATION

- A. Trees and shrubs are regulated and protected. All trimming and pruning shall be done in accordance with County guidelines. This work will be considered incidental to the Project costs. CONTRACTOR shall obtain such guidelines and gain approvals before commencing work.

## PART 4.0 TEMPORARY CONSTRUCTION UTILITIES AND FACILITIES

### 4.1 TEMPORARY WATER

- A. The CONTRACTOR shall make arrangements to obtain suitable water and shall pay all costs.

### 4.2 TEMPORARY ELECTRIC POWER

- A. The CONTRACTOR shall make arrangements to obtain and pay for electrical power used until final acceptance by the OWNER.

### 4.3 SAFETY REQUIREMENTS FOR TEMPORARY ELECTRIC POWER

- A. Temporary electric power installation shall meet the construction safety requirements of OSHA, state and other governing agencies.

### 4.4 SANITARY FACILITIES

- A. The CONTRACTOR shall provide and maintain sanitary facilities for his employees and his subcontractors that will comply with the regulations of the local and state departments of health and as directed by the OWNER.

### 4.5 STORAGE OF MATERIALS

- A. Materials shall be so stored as to ensure the preservation of their quality and fitness for the work. When considered necessary they shall be placed on wooden platforms or other hard, clean surfaces, and not on the ground. Stored materials shall be located so as to

facilitate prompt inspection. Private property shall not be used for storage purposes without the written permission of the OWNER or lessee.

- B. Delicate instruments and materials subject to vandalism shall be placed under locked cover and, if necessary, provided with temperature control as recommended by the manufacturer.

## PART 5.0 SAFETY AND CONVENIENCE

### 5.1 SAFETY EQUIPMENT

- A. The CONTRACTOR shall do all work necessary to protect the general public from hazards, including, but not limited to, surface irregularities or unramped grade changes in pedestrian sidewalk or walkway, and trenches or excavations in roadway. Barricades, lanterns, and proper signs shall be furnished in sufficient amount to safeguard the public and the work. All barricades and signs shall be clean and serviceable, in the opinion of the OWNER.
- B. During construction, the CONTRACTOR shall construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railing, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards in streets, sidewalks, floors, roofs, and walkways. All such barriers shall have adequate warning lights as necessary, or required, for safety. All lights shall be regularly maintained, and in a fully operational state at all times.

### 5.2 ACCIDENT REPORTS

- A. 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. If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the OWNER.
- B. If a claim is made by anyone against the contractor or any subcontractor on account of any accident, the CONTRACTOR shall promptly report the facts in writing to the OWNER, giving full details of the claim.

### 5.3 SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

- A. Authorized representatives of the state, federal, or local governmental agencies, shall at all times have safe access to the work, and the CONTRACTOR shall provide proper facilities for such access and inspection.

### 5.4 TRAFFIC MAINTENANCE AND SAFETY

- A. Provide traffic maintenance plans to be approved by the City and the Engineer.
- B. Comply with all rules and regulations of the state, county, and city 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 OWNER. 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 signs, barricades, and lights where necessary for the safety of the public. The convenience of the general public and residents adjacent to the project, and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.

- C. Where traffic will pass over trenches after they are backfilled and before they are paved, the top of the trench shall be maintained in a condition 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.
- D. When signalmen and guards are required by regulation or when deemed necessary for safety, they shall be furnished with approved orange wearing apparel and other regulation traffic-control devices in accordance with FDOT provisions. Signalmen will be provided with "Stop and Go" paddles; flags are unacceptable.

#### 5.5 TRAFFIC CONTROL

- A. Traffic control on all city, county and state highway rights-of-way shall meet the requirements of the current edition (including all amendments) of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, as well as FDOT standard details for maintenance of traffic, in accordance with the Manual for Uniform Traffic Control and Safe Practices.
- B. The CONTRACTOR shall provide at no cost to the OWNER a Maintenance of Traffic Plan, including 11 x 17-inch engineered drawings of his intended maintenance of traffic scheme, to the agency having jurisdiction for review and approval. This shall include barrier details, barricade type, and location. Two copies of the plan with drawings shall be submitted to the OWNER and ENGINEER prior to initiation of construction.

#### 5.6 PROTECTION OF PROPERTY

- A. Protect stored materials located adjacent to the proposed work. Notify property owners affected by the construction at least 48 hours in advance of the time construction begins. During construction operations, construct and maintain such facilities as may be required to provide access by all property owners to their property. No person shall be cut off from access to his residence or place of business for a period exceeding 8 hours, unless the CONTRACTOR has made special arrangements with the affected persons.
- B. The CONTRACTOR shall identify and isolate his work zone in such a manner as to exclude all personnel not employed by him, the ENGINEER, and the OWNER.

#### 5.7 FIRE PREVENTION AND PROTECTION

- A. The CONTRACTOR shall perform all work in a fire-safe manner. He shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient

fires. The CONTRACTOR shall comply with applicable federal, state, and local 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.

#### 5.8 ACCESS FOR POLICE, FIRE, AND POSTAL SERVICE

- A. Notify the fire department and police department before closing any street or portion thereof. No closing shall be made without the OWNER's approval. Notify said departments when the streets are again passable for emergency vehicles. Do not block off emergency vehicle access to consecutive arterial crossings or dead-end streets, in excess of 300 linear feet, without special written permission from the fire department. Conduct operations with the least interference to fire equipment access, and at no time prevent such access.
- B. The CONTRACTOR shall leave a night emergency telephone number or numbers with the police department, the ENGINEER, and the OWNER, so that contact may be made easily at all times in case of barricade and flare trouble or other emergencies.
- C. Maintain postal service facilities in accordance with the requirements of the U.S. Postal Service. Move mailboxes to temporary locations designated by the U. S. Postal Service, and at the completion of the work in each area, replace them in their original location and in a condition satisfactory to the U.S. Postal Service.

### PART 6.0 PRESERVATION, RESTORATION, AND CLEANUP

#### 6.1 SITE RESTORATION AND CLEANUP

- A. At all times during the work, keep the premises clean and orderly, and upon completion of the work, repair all damage caused by equipment and leave the project free of rubbish or excess materials of any kind.
- B. Remove excavated materials daily; do not stockpile material on private property, or on state, county, or city rights-of-way. Remove all excavated materials from grassed and planted areas, and leave these surfaces in a condition equivalent to their original condition. Replace top soil areas as specified raked and graded to conform to their original contours.
- C. All existing storm drainage systems shall be protected and shall properly drain. Restore storm existing systems culverts broken or damaged to their original condition and location as an incidental cost of construction.
- D. Upon completion of pipe laying and backfilling operations, hand-rake and drag all former grassed and planted areas, leaving all disturbed areas free from rocks, gravel, clay, or any other foreign material. The finished surface shall conform to the original surface, and shall be free-draining and free from holes, ruts, rough spots, or other surface features detrimental to a seeded area.

## 6.2 FINISHING OF SITE, BORROW, AND STORAGE AREAS

- A. Upon completion of the project, all areas used by the CONTRACTOR shall be properly cleared of all temporary structures, rubbish, and waste materials and properly graded to drain and blend in with the abutting property. Areas used for the deposit of waste materials shall be finished to properly drain and blend with the surrounding terrain.

## 6.3 STREET CLEANUP DURING CONSTRUCTION

- A. The contractor shall on a daily basis thoroughly clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation. Sidewalks, unless under construction, shall be kept clear of material, and available for pedestrian use at all times.

## 6.4 DUST PREVENTION

- A. Give all unpaved streets, roads, detours, haul roads or disturbed areas used in the construction area an approved dust-preventive treatment or periodically water to prevent dust. Applicable environmental regulations for dust prevention shall be strictly enforced.

## 6.5 PRESERVATION OF INLETS

- A. Existing inlets in the area shall be protected with appropriate best management practices and shall be periodically cleaned and kept free of siltation.

## PART 7.0 SUBMITTALS DURING CONSTRUCTION

### 7.1 GENERAL

- A. Requirements in this section are in addition to any specific requirements for submittals specified in other sections of these Contract Documents.
- B. The City is requesting that all supplied data collections, as built, drawings, and files to be compatible with esri ArcGIS 10.2.2 Software. As these are the solutions that work within its current computing environment. If there are any questions or concerns on whether your files meet this request, please contact the City GIS department at (305) 809-3721.

The current computing environment consists of:

- Microsoft SQL Server
- Windows 7/Server 2008
- ESRI GIS Platform

The City uses a number of software applications critical to its core operation and mission. The proposed mobile asset data collection solution will need to interface or integrate with these existing platforms.

- Arc Collector
- ArcGIS Online

- ArcMap 10.2

B. Shop Drawings:

1. Shop drawings, as defined herein, consist of all drawings, diagrams, illustrations, schedules, and other data as defined below which are specifically prepared by or for CONTRACTOR to illustrate some portion of the work; and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams, and other information prepared by a manufacturer and submitted by Contract to illustrate material or equipment for distinct portions of the work.
2. Contents: Each of the shop drawing submittals shall be complete in all respects for equipment, controls, accessories, and associated appurtenances, and shall include, as a minimum, the following:
  - a. Complete manufacturer's specifications, including materials, description, and paint system.
  - b. Required technical information, data, samples, and calculations that are required.
  - c. Required construction procedures and equipment that are required.
  - d. Requirements for storage and protection prior to installation.
  - e. A copy of the manufacturer's certification on all material installed, providing for the warranty period to commence on the date of final acceptance by the OWNER.
3. Submittal of incomplete or unchecked shop drawings will not be acceptable. Shop drawing submittals which do not clearly show CONTRACTOR's review stamp or specific written indication of CONTRACTOR's review will be returned to CONTRACTOR for resubmission.
4. Submittal of shop drawings not required under these Contract Documents will be returned to CONTRACTOR unreviewed and unstamped by ENGINEER.

7.2 RECORD DRAWINGS

- A. The CONTRACTOR shall maintain a complete set of record drawings to show any items which differ from those shown on Drawings. Such Drawings shall be updated daily and submitted each month with the partial pay request. Final record drawings will be required before final payment can be made. Final record drawings shall be signed and sealed by a Professional Engineer and/or Surveyor currently licensed in the State of Florida. Record drawing file format shall be compatible with the City's GIS system. Contact Nick Osterhoudt at (305) 809-3721 for system and file requirements.
- B. The CONTRACTOR shall keep the OWNER and ENGINEER apprised on a weekly basis, by providing Drawing mark-ups of the items that differ.

7.3 Additional Submittal requirements

1. Shop drawings and other submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at times convenient to the ENGINEER and at the Contractor's expense, based on the Engineer's then prevailing rates (minimum \$50.00 per

additional review). The CONTRACTOR shall reimburse the OWNER for all such fees invoiced to the OWNER by the ENGINEER. Re-submittals are required until approved.

2. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle CONTRACTOR to extension of the Contract Time.

END OF SECTION

## SUMMARY OF WORK

### PART 1 - GENERAL:

#### 1.1 DESCRIPTION

- A. Work Included: The general construction and furnishing of all materials, equipment and labor for the construction of the road, sidewalks, lighting, landscaping, irrigation, raised intersections, and cross walks; including but not limited to; triple chamber treatment boxes, storm sewer pipe, catch basins with inlets, concrete /asphalt pavement removal & replacement, earthwork, dewatering, silt removal boxes for approved dewatering discharges, utility adjustments, utility conflict boxes, tide valves, environmental protection, site restoration, sidewalk improvements, site clean-up, and all necessary appurtenances and record drawings, surveys, well testing, and incidental work to provide a complete and serviceable project identified as:

#### CAROLINE STREET IMPROVEMENTS

- B. Related requirements in other parts of the Contract Documents: General Conditions of the Contract for Construction.
- C. Contractor's Duties:
1. In addition to provisions stipulated in other portions of the Contract Documents, the Contractor shall:
    - a. Secure permits as necessary for proper execution and completion of the work.
    - b. Give required notices.
- D. The Contractor shall be totally responsible for all permits required and shall ensure that construction complies with all applicable local, state, and federal codes.
- E. Provide an experienced, qualified, and competent Superintendent to oversee the Work and perform quality assurance inspections. Prior to starting construction, the proposed Superintendent's qualifications shall be submitted in writing to the City for approval. The approved Superintendent shall be expected to remain for the duration of the Project, unless the City or Engineer deem him/her inadequate and requests his/her removal or the Contractor cannot continue his services to the Project for a reason or reasons that shall be communicated in writing to the City.
- F. A replacement Superintendent shall be required to follow the same approval process as required for the original. The Superintendent shall provide to the City

Inspector Construction Reports for each day of construction, the reports shall be in English, legible, and signed. Contractor shall provide PDF copies monthly. Reports shall include quantity control checks done daily

- G. It shall be the Contractor's responsibility to request approval for entrance to the site for work on Saturdays, Sundays, holiday, and weekday hours other than 7:00 am until 7:00 PM. No construction can commence before 8:00 AM on weekdays.
- H. The Contractor shall provide material safety data sheets (2 copies) for chemicals, paints, coatings and materials used on-site prior to initiation of work.
- I. The Contractor shall submit a site Safety and Health Plan as per OSHA 1910.120.

#### 1.2 CONTRACTOR'S USE OF PREMISES

- A. Work shall be scheduled as to not interfere with on-going area activities.
- B. Coordinate use of premises and requirements for security under direction of City.
- C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.
- D. Obtain and pay for the use of additional storage or work areas needed for operation.
- E. Contractor shall provide drinking water and toilet facilities for construction personnel; The City will not provide.

#### 1.3 MAINTENANCE OF EXISTING UTILITIES OPERATION

- A. Provide at least three weeks notice prior to interruption of utility services for temporary or permanent connections.
- B. Keep interruption of utility services, and utility outages during disconnection, moving, and reconnection to a minimum.
- C. Keys Energy shall be notified two weeks in advance in writing by the contractor for any KEYS support equipment required by the Contractor during any excavation. (e.g., Power poles next to excavations requiring support, etc.) No additional payment will be paid for this coordination.

END OF SECTION

## PAYMENT PROCEDURES

### PART 1 GENERAL

#### 1.1 GENERAL

- A. The CONTRACTOR shall receive and accept the compensation as provided in the BID and the Contract in full payment for performing all operations necessary to complete the work as a Lump Sum Contract, and also in full payment for all loss or damages arising from the nature of the work, until the final acceptance by the OWNER.
- B. Prices stated in the BID include all costs and expenses for performing and completing the work as ordered and as shown on Contract Drawings, details, technical specifications, and specified herein.
- C. The CONTRACTOR'S attention is called to the fact that the quotations for various items of work are intended to establish a total price for completing the work in its entirety. Should the CONTRACTOR feel that the cost for an item has not been established in the BID, or this section, he shall include the cost for that work in an applicable BID item, so that this bid reflects his total Unit Prices and Aggregate Sums for completing the work in its entirety. It is the intent of this Contract that the CONTRACTOR provide a completed operating system, and any item required to accomplish this shall be included to establish a total cost.
- D. The quantities for payment under this Contract shall be determined by actual measurement of completed items, in-place, and ready for service and accepted by the OWNER, in accordance with the applicable method of payment therefore contained herein. The CONTRACTOR shall designate and provide a representative to be present at, to witness, and to assist in the making of field measurement of payment.

#### 1.2 MEASUREMENT-GENERAL

- A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.
- B. Whenever pay quantities of material are determined by weight, the material shall be weighed on scales furnished by CONTRACTOR and certified accurate by the state agency responsible. A weight or load slip shall be obtained from the weigher and delivered to the OWNER'S representative at the point of delivery of the material.

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

<u>Item</u>	<u>Method of Measurement</u>
CY	Cubic Yard: Field Measure by ENGINEER within the limits specified or shown
EA	Each: Field Count by ENGINEER
LF	Linear Foot: Field Measure by ENGINEER
LS	Lump Sum: Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard
LS	Lump Sum

1.3 PAYMENT

- A. General: Progress payments will be made monthly on the date established at the preconstruction meeting.
- B. Payment for all Work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual

items except as itemized herein as unit price items or lump sum.

#### 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 OWNER.
6. Material remaining on hand after completion of Work.

#### 1.5 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings are acceptable to ENGINEER and materials are properly stored at a site as agreed to by the OWNER.

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

### **PART 2 DESCRIPTION OF BID SCHEDULE OF VALUES**

#### **2.1 BID SCHEDULE OF VALUES**

A. Bonds, Item No.1:

Paid on request with copy of invoice provided to City.

B. Mobilization / Demobilization, General & Supplementary Conditions Environmental and Erosion Control , MOT, Certified AutoCAD as-Built, Grant Requirements- Item No.2:

1. Payment for these Items will be made on a lump sum basis as stated.
  - a.) Mobilization 25 percent following providing pre-construction videos of project site and initiation of construction, remaining balance paid based on percentage complete on each following pay application.
  - b.) Demobilization / Contract Close out paid on completion of final punch.

- c.) General & Supplementary Conditions including environmental and erosion control; paid on Mobilization 25 percent, remaining balance paid based on percentage complete on each following pay application.
- d.) MOT; paid on Mobilization 25 percent, remaining balance paid based on percentage complete on each following pay application. Item shall not be paid if MOT signs are not in good repair and lighted at all times.
- e.) Certified AutoCAD AS-Builts/ Surveyor; paid on completion of as-builts following acceptance by the engineer and city.

Note: The CONTRACTOR'S lump sum prices shall include full compensation for all BID Items No.1 and 2; including mobilization, demobilization, cleanup, bonds, insurance, permits, including Maintenance of Traffic, all conditions listed in General & Supplementary Conditions, producing certified AutoCAD As-Builts, and health and safety provisions. It shall include all notes for construction noted on the drawings not otherwise provided for in unit bid prices. It shall include all temporary facilities required by the CONTRACTOR for the duration of construction including the movement of all equipment and materials to and from the site and acceptable cleanup of the project area upon completion of the work. It shall include the complete cost of pre-construction videos of project site.

C. Trench Excavation, Backfill and Storm Pipe – Item No.3:

1. The lump sum shall constitute full payment for the pipe, in-place, including but not limited to, removal and proper disposal of old pipe, cleaning, and inspection, backfill material for pipe bedding and pipe zone, backfill material to fill the difference of the existing and new pipe invert elevations, compaction testing, and all other work specified.
2. No separate payment will be made for preparation of right-of-way, disposal of waste material, removal of obstructions, pavement, curb and sidewalk removal, replacement of damaged storm sewer pipe and structures, water distribution service, shoring, sheeting and bracing of trenches, control and removal of ground water, location of excavated materials, brick removal, or temporary trench pavement, removal and disposal of existing pipe, bypass pumping, traffic control, but will be considered incidental and all costs thereof shall be included in the unit prices stated in the Proposal.
3. Contractor shall perform Lamping of all the installed stormwater pipes prior to establishing flow to the associated gravity injection well. No Final payment for the pipe installation shall be made until lamping is complete. The contractor shall supply all the equipment necessary for the lamping (i.e. lamps, ladders).

4. Payment shall include in this line item for the final acceptance and final structure to structure inspection by the ENGINEER of the storm sewers system, completely flush or clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, and other foreign material from the storm sewers system at or near the closest downstream manhole. If necessary, use mechanical rodding equipment to remove accumulated mud, silt, and all other deposits from the storm sewer system at no additional cost to the OWNER.
- D. Pavement Reconstruction - Item No. 4:
1. Pavement reconstruction payment and pavement replacement over trenches will be based on the lump sum price as stated in the BID. Field measurements of areas will be made by the CONTRACTOR, City Inspector and reviewed with the ENGINEER. Payment shall include all labor and materials for milling (dust control), new base preparation and material, testing, geotextile installation, asphalt placement, traffic control, adjusting utility control boxes, and inlet tops.
  2. Asphalt shall be as noted in the drawings and installed as per the standard specifications and drawings.
- E. Temp Striping 20 MILS – Item No. 5:
1. Asphalt temporary striping shall be based on the lump sum price as stated in the Proposal. Payment shall include all labor and materials for placement of, painting traffic stripes and markings. Contractor shall use FDOT Sections 710; 711; 713 for the application of Striping. Asphalt temporary striping shall be installed within 24 hours of paving. Asphalt temporary striping shall be maintained by the contractor until the installation of the Asphalt final striping.
- F. Final Striping 70 MILS Thermoplastic -Item No. 6:
1. Asphalt final striping shall be based on the lump sum price as stated in the BID. Field measurements of areas will be made by the CONTRACTOR and reviewed with the City Inspector. Payment shall include all labor and materials for placement of the thermo-plastic at 70 MILS; painting traffic stripes and markings. Contractor shall use FDOT Section 710; 711; 713 for the application of Final Striping.
- G. Concrete – Item No. 7:
1. Payment for work necessary to construct sidewalks, curbs and gutters, and concrete boxes replacement will be included in the lump sum price stated in the BID. Payments shall include excavation, backfill, removal and

disposal of existing related concrete-asphalt items, and all labor and materials to complete the work. Cost shall include new base as per the details and specification requirements.

H. Catch Basins and Inlets – Item No. 8:

1. Payment for work necessary to construct and install inlet boxes will be included in the lump sum price stated in the BID for inlet boxes in the respective depth increments. Payments shall include excavation and backfill and all labor and materials to complete the work including the required number of connections of the new storm pipe to the inlet. Cost shall include modification of the box as required meeting the existing and or new road elevation. See detail in attachments. Contractor shall ensure modifications do not void any manufacture warranties.
2. Payment will include compensation for a complete inlet, including concrete apron, base, frame, grate, extensions, channels, removal and disposal of existing inlet boxes, connections to new incoming pipes, flowable fill, Flexible Bollards, and for over excavating and placing the compacted 6-inch layer of base rock under concrete base. All grates shall be H20 Traffic rated. Cost shall include modifying the gate top to match new or existing road elevations as per the detail. Contractor shall provide written certification that the method used does not void any warranties.

I. Removal and Disposal of Existing Inlets/Manholes – Item No. 9:

1. Payment will include compensation for removal and disposal of existing manhole and/or inlets, cutting and capping incoming pipes, backfill, temporary pavement, and traffic control. This pay item is specific to inlets and manholes which are to be removed and not replaced. The cost for removing existing structures being replaced with new structures shall be included in the cost of the new structures.

J. Storm Manhole - Item No. 10:

1. Payment for work necessary to construct manholes will be included in the lump sum price stated in the BID for manholes. Payment shall include excavation and backfill and all labor and materials to complete the work including the required number of connections of the new storm-sewer pipe to the manhole and removal of existing manhole.
2. Payment will include compensation for a complete manhole including base, frame and cover, ring extensions, benches, channels, removal and disposal of existing manhole, connections to new storm sewer, and incoming pipes, temporary pavement, and for over excavating and placing

the compacted 6-inch layer of base rock under concrete-base.

K. Adjustments and Connections - Item No. 11:

1. Payment for relocations shall be at the lump sum price stated in the BID. Payment shall include all excavation and backfill, cutting and removing existing pipe, providing up to 75 feet of new pipe, six 45-degree fittings, up to two solid sleeve couplings, restrained joints, disinfection, and temporary pavement restoration, complete. Payment will only be made for the relocation of water mains 4 inches in diameter and larger. Water mains relocations smaller than 4 inches in diameter shall be considered incidental to the installation of the new pipes and structures and relocated at the sole cost of the CONTRACTOR
2. Payment for connection to existing storm system connection as stated in the BID and in accordance with the drawings. Payment will constitute full compensation for all work and materials required to make each connection include ADS "T" and ring and cover and all related material, complete.

L. Triple Chamber Baffle Box– Item No. 12:

1. Payment for work necessary to construct and install triple chamber baffle boxes will be included in the lump sum price stated in the Proposal. Payments shall include excavation and backfill and all labor and materials to complete the work including the required number of connections of the new storm pipe to the structure, and equipment required to install structure. All internal metal components shall be stainless steel 316.
2. Payment will include compensation for a complete baffle box, including base, frames, grates, extensions, connections to new incoming pipes, skimmers, screens, hydrocarbon boom, turbulence deflectors, well screen, hatches, manhole covers, in-lets as indicated, flowable fill, and for over excavating and placing the compacted 6-inch layer of base rock under the concrete base.
3. Epoxy Coated Rebar is not required to be used in the pre-cast structures. The rebar must be oxidation free. A submittal from the pre-cast company that the rebar is oxidation free is required.

M. Abandon Existing Storm Pipe - Item No. 13:

1. Payment will include compensation for cutting and capping and grout of existing storm pipe, backfill, temporary pavement, and traffic control. This pay item is specific to storm pipes which are not being replaced or

removed. The cost for removing existing storm pipe being replaced with new pipe shall be included in the cost of the new pipe.

O. Brick Pavers – Item No. 14:

1. Payment will include compensation for cutting and replacement of the existing brick pavers, back fill and surface restoration of the disturbed area. The cost for removing existing brick pavers being replaced with new ones shall be included in the cost of the new brick pavers.
2. Payment will include compensation for new brick pavers over a concrete base at raised intersections.

P. Sanitary Sewer Service Removal and Replacement - Item No. 15:

Includes all labor, materials, and equipment to temporarily remove and dispose of sanitary sewer service connections and the replacement of the sewer service connection and cleanout boxes per City standards.

Q. Backwater Tideflex Valve - Item No. 16:

Includes all labor, materials, and equipment necessary to install backwater tideflex valves in the stormwater lines with all appurtenances.

R. Florida Trench Safety Act - Item No. 17:

Payment for complying with the State of Florida Trench Safety Act (TSA) for work items associated with the installation of the pipe will be paid for at the lump sum price stated in the proposal.

S. Dewatering - Item No. 18:

Item includes dewatering for trenches and excavations for structures, including mobilization and operation of the equipment for the duration of the activity.

2.2 Allowance

- A. Allowances shall be used only at the discretion of and as ordered by the OWNER for such items: unforeseen conditions, unforeseeable conflicts between existing elements of work and the proposed work, and any associated work requested by the OWNER including all labor, materials, and services for modifications or extra work to complete the project that was not anticipated in this Contract.

- B. Any portion of this allowance that remains after all authorized payments have been made will be withheld from contract payments and will remain with the OWNER.

Prices shall include all notes for construction noted on the drawings and technical specifications not otherwise noted above. It shall include all temporary facilities required by the CONTRACTOR for the duration of construction including the movement of all equipment to and from the site and acceptable cleanup of the project area upon completion of the work. It shall include the complete cost of pre-construction videos of project site.

### 2.3 Unit Price Items

The following are unit price items to support unforeseen conditions and contingency allowance use:

1. Removal and offsite disposal of unsuitable soils.
2. Removal, temporary stockpile, and offsite disposal of petroleum impacted soil.
3. Cutting and capping out of service fuel line if in conflict with storm or sanitary sewer.
4. Soft digs – utility locates.

### 2.4 Bid Alternates

#### ADD ALTERNATE – Parking Lot

Furnish materials, labor, and equipment to construct a transit bus parking lot adjacent to the City parking garage at 922 Caroline Street as shown in the drawings.

#### DEDUCTIVE ALTERNATE

Furnish materials, labor, and equipment to construct raised asphalt intersections in lieu of brick pavers on concrete.

END OF SECTION

## SUBMITTALS

### PART 1

#### 1.01 GENERAL

- A. Inquiries: Direct to ENGINEER regarding procedure, purpose, or extent of Submittal.
- B. Submittal Submission Procedures: As provided in General Conditions, as specified herein, and as may otherwise be established during the preconstruction conference.
- C. OWNER's Authorization: At any time, OWNER may authorize changes to procedures and requirements for Submittals, as necessary to accomplish specific purpose of each Submittal. Such authorization will be by Field Order or Work Change Directive.
- D. Timeliness: Make submissions in accordance with requirements of individual Specification sections, as shown on the current accepted schedule of Submittals submissions, and in such sequence as to cause no delay in Work or in work of other contractors.
- E. Identification of Submittals:
  - 1. Complete, sign, and transmit with each Submittal package, one Transmittal of CONTRACTOR's Submittal Form attached at the end of this section.
  - 2. Identify each Submittal with numbering and tracking system reviewed by ENGINEER:
    - a. Sequentially number each Submittal.
    - b. Resubmission of a Submittal will have original number with sequential alphabetic suffix.
  - 3. Show date of submission and dates of previous submissions.
  - 4. Show Project title and OWNER's contract identification and contract number.
  - 5. Show names of CONTRACTOR, Subcontractor or Supplier, and manufacturer as appropriate.
  - 6. Identify, as applicable, Contract Document section and paragraph to which Submittal applies.
  - 7. Clearly identify revisions from previous submissions.

F. Incomplete Submittal Submissions:

1. At ENGINEER's sole discretion, ENGINEER will either (i) return the entire Submittal for CONTRACTOR's revision/correction and resubmission, or (ii) retain portions of the Submittal and request submission/resubmission of specified items or as noted thereon.
2. Submittals which do not clearly bear CONTRACTOR's specific written indication of CONTRACTOR review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required under Contract Documents, will be returned to CONTRACTOR unreviewed for resubmission in accordance with Contract Documents.
3. Delays, resequencing or other impact to Work resulting from CONTRACTOR's submission of unchecked or unreviewed, incomplete, inaccurate or erroneous, or nonconforming Submittals, which will require CONTRACTOR's resubmission of a Submittal for ENGINEER's review, shall not constitute a basis of claim for adjustment in Contract Price or Contract Times.

F. Non-specified Submissions: Submissions not required under these Contract Documents and not shown on schedule of Submittals submissions will not be reviewed and will be returned to CONTRACTOR.

G. Transmit Submittals in accordance with current accepted schedule of Submittal submissions, and deliver as follows:

1. Submittals to: Engineering Department of the City of Key West.

H. Disposition of Submittals, Except Shop Drawings and Samples: As specified herein for administrative Submittals. ENGINEER will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:

1. Reviewed and Reviewed as Noted:
  - a. Reference the General Conditions for intent.
  - b. CONTRACTOR may proceed to perform Submittal related Work.
  - c. One copy sent to Resident Project Representative.
  - d. One copy for ENGINEER's file.
  - e. Two copies returned to CONTRACTOR, one for onsite records.

2. Revise and Resubmit (Revise/Correct or Develop Replacement and Resubmit):
    - a. Revise/correct in accordance with ENGINEER's comments and resubmit.
    - b. One copy to ENGINEER's file.
    - c. One copy returned to CONTRACTOR appropriately annotated.
    - d. Remaining copy will be destroyed.
- I. ENGINEER's Review: ENGINEER will act upon CONTRACTOR's Submittal and transmit response to CONTRACTOR not later than 30 days after receipt, unless: (i) specified otherwise or (ii) accepted by ENGINEER as set forth in Paragraph ENGINEER's Duties below and identified on current accepted schedule of Submittals submissions. Re-submittals will be subject to the same review time.
- J. ENGINEER's Duties:
1. Review Submittals with reasonable promptness and in accordance with current accepted schedule of Submittals submissions.
    - a. No extension of Contract Times will be allowed due to ENGINEER's review of Submittals, unless all of following criteria are met:
      - 1) CONTRACTOR has notified ENGINEER in writing that timely review of Submittal in question is critical to progress of Work, and has received ENGINEER's written acceptance to reflect such on schedule of Submittals submissions and progress schedule. Written agreement by the ENGINEER to reduce the above Submittal review time will be made only for unusual and CONTRACTOR-justified reasons. Acceptance of a progress schedule containing Submittal review times less than specified above or less than agreed to in writing by ENGINEER will not constitute ENGINEER's acceptance of the review times.
      - 2) ENGINEER has failed to review and return first submission of a Submittal within agreed time indicated on current accepted schedule of Submittal submissions or, if no time is indicated thereon, within 30 days.

- 3) CONTRACTOR demonstrates that delay in progress of Work is directly attributable to ENGINEER's failure to return Submittal within time indicated and accepted by ENGINEER.
- b. No extension of Contract Times will be allowed due to delays in progress of Work caused by rejection and subsequent resubmission of Submittals, including multiple resubmissions.
    2. Review, return for correction, reject, or accept or approve Submittals submissions only as set forth in applicable, paragraphs of General Conditions.
    3. Stamp and indicate requirements for resubmission and acceptance or approval of Submittal submission.
    4. Return Submittals to CONTRACTOR for distribution or revision and resubmission.
    5. Transmit to CONTRACTOR without review Submittal submissions received directly from Subcontractors, Suppliers, Manufacturers, and non-required submissions from CONTRACTOR.

## 1.02 ADMINISTRATIVE SUBMITTALS

- A. Description: Submittals required by Contract Documents that are not Shop Drawings or Samples, or that does not reflect quality of product or method of construction. Administrative Submittals may include, but will not be limited to those Submittals identified below.
- B. Copies: Submit four. PDF documents may be submitted.
- C. Schedules:
  1. General: Reference the General Conditions and Supplemental Conditions.
  2. Schedule of Submittals Submissions:
    - a. Prepare and submit as required, preliminary Submittals submissions list grouped by Contract Document article/paragraph number or Specification section number, with identification, numbering and tracking system as specified under Paragraph Identification of Submittals and as approved by ENGINEER.

- b. Include in Submittal list only these following required submissions:
  - 1) Shop Drawings and Samples.
  - 2) Certificates of inspection.
  - 3) Test reports.
  - 4) Operation and Maintenance manuals.
  - 5) Record documents.
  - 6) Specifically required certificates, warranties, and service agreements.
  - 7) Listing of Specifications and products for which substitutes or "or-equals" will be proposed.
  
- c. Identify items for which CONTRACTOR anticipates proposing substitute or "or-equal" products or methods.
  
- d. Coordinate with progress schedule and, utilizing Submittals list, prepare schedule of Submittals submissions to show for each clearly identified Submittal, at a minimum, the following:
  - 1) Estimated submission date to ENGINEER.
  - 2) Specifically requested and clearly identified review time if shorter than that set forth herein for ENGINEER, with justification for such request and critical dates Submittals will be needed from ENGINEER.
  - 3) For first 6-month period from the date the Contract Times commence, the estimated Submittal submission date shall be week, month, and year; for Submittals submissions beyond 6-month time period, show closest month and year.
  
- e. Submit to ENGINEER monthly (i) updated Submittals list if changes have occurred, otherwise submit a written communication confirming; existing list, and (ii) adjusted schedule of Submittals submissions reflecting Submittal submission activity planned for forthcoming 6-month time period and beyond. Coordinate with progress schedule updates.

D. Submittals Required by Laws and Regulations and Governing Agencies:

- 1. Submit promptly notifications, reports, certifications, payrolls, and

- otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
2. Transmit to ENGINEER for OWNER's records one copy of correspondence and transmittals (to include enclosures and attachments) between CONTRACTOR and governing agency.

### 1.03 SHOP DRAWINGS

- A. Description: Reference the General Conditions.
- B. Excessive Shop Drawing Review: Review of the first submission and two resubmissions of Shop Drawings will be performed by ENGINEER at no cost to CONTRACTOR. Subsequent additional resubmissions of that Shop Drawing will be reviewed by ENGINEER, however, ENGINEER will document work hours and other expenses required to perform such additional review(s). OWNER shall deduct these costs from Contractor's contract for reimbursement to the ENGINEER.
- C. Copies: Submit four and one reproducible (total of five).
- D. Submit Shop Drawings to ENGINEER in accordance with the General Conditions and as specifically required by individual Specification sections for equipment and materials to be furnished under these Contract Documents.
- E. Identify and Indicate:
  1. Pertinent Drawing sheet(s) and detail number(s), products, units and assemblies, and system or equipment identification or tag numbers.
  2. Critical field dimensions and relationships to other critical features of Work.
    - a. Each deviation or variation from Contract Documents.
- F. Resubmissions: Clearly identify each correction or change made.
- G. Foreign Manufacturers: When proposed, include following additional information:
  1. Names and addresses of at least two companies closest to Project that maintain technical service representatives.
  2. Complete inventory of spare parts and accessories for each piece of equipment.

#### H. Preparation:

1. Format: Whenever possible, schedule for and combine Shop Drawings required for submission in each Specification section into a single Submittal package.
  2. Present in a clear and thorough manner and of sufficient detail to show kind, size, arrangement, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to sheet and detail, and schedule or room numbers shown on Drawings.
  3. Minimum Sheet Size: 8-1/2 inches by 11 inches; preferred maximum: 11 inches by 17 inches.
  4. Piping Systems: Drawn to scale.
  5. Product Data: Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, dimensions and clearances required, wiring or piping diagrams and controls, and external connections, anchorages, and supports required.
  6. Equipment and Component Titles: Identical to title shown on Drawings.
  7. Manufacturer's standard schematic drawings and diagrams as follows:
    - a. Modify to delete information that is not applicable to Work.
    - b. Supplement standard information to provide information specifically applicable to Work.
- I. Disposition: ENGINEER will review, mark, and stamp Shop Drawings as appropriate and distribute marked-up copies as noted.
1. **Reviewed as Submitted (for incorporation in Work):**
    - a. One copies sent to OWNER.
    - b. One copy sent to Resident Project Representative.
    - c. One copy retained in ENGINEER's file.
    - d. Two copies will be returned to CONTRACTOR appropriately annotated.
      - 1) One copy to be kept on file as record document at CONTRACTOR's office at site.
      - 2) Remaining copies for CONTRACTOR's office file, Subcontractors, or Suppliers.
    - e. CONTRACTOR may begin to implement (i) activities to incorporate specific products or (ii) construction method covered by Shop Drawing as shown on approved Shop Drawing.
  2. **Reviewed as Noted (for incorporation in Work):**
    - a. One copies sent to OWNER.

- b. One copy sent to Resident Project Representative.
- c. One copy retained in ENGINEER's file.
- d. Two copies will be returned to CONTRACTOR appropriately annotated.
  - 1) One copy to be kept on file as a record document at CONTRACTOR's office at the site.
  - 2) Remaining copies for CONTRACTOR's office file, Subcontractors, or Suppliers.
- e. CONTRACTOR may begin to implement (i) activities to incorporate product(s) or (ii) construction method covered by Shop Drawing and in accordance with ENGINEER's notations on Shop Drawing.
- f. Copies of Submittal data in operation and maintenance manuals shall be revised according to exceptions as noted.

3. **Revise and Resubmit:**

- a. Revise/Correct and Resubmit or Develop Replacement and Submit:
  - 1) One copy sent to Resident Project Representative.
  - 2) One copy retained in ENGINEER' S file.
  - 3) Three copies will be returned to CONTRACTOR appropriately annotated.
  - 4) Remaining copies, if any, will be destroyed.
  - 5) CONTRACTOR is responsible to revise, correct, and to resubmit Shop Drawing (in same manner and quantity as specified for original submission).
- b. Shop Drawing is not approved.

4. **Reviewed Incomplete:**

- a. Complete and Submit or Resubmit Missing Portion(s):
  - 1) ENGINEER will retain copies of incomplete Submittal and transmit a written list of deficiencies.
  - 2) CONTRACTOR shall submit specified item(s) to correct the incomplete Submittal.
- b. Shop Drawing is not approved.

5. **Additional Submittal requirements**

- a. Shop drawings and other submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at times convenient to the ENGINEER and at the Contractor's expense, based on the Engineer's then prevailing rates (minimum \$50.00 per additional review). The CONTRACTOR shall reimburse the OWNER for all such fees invoiced to the OWNER by the ENGINEER. Re-submittals are required until approved.

- b. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle CONTRACTOR to extension of the Contract Time.

#### 1.04 SAMPLES

- A. Copies: Submit two, unless otherwise specified in individual Specification section or in sufficient quantity and of size to enable examination as required and to establish quality or equality thereof.
- B. Reference: Meet requirements of General Conditions and as otherwise specifically specified in Contract Documents.
- C. Procedure: Submit in accordance with accepted schedule of Submittal submissions so as not to delay Work and with sufficient time to allow examination.
- D. CONTRACTOR: Responsible for safe and proper delivery of Samples and to prepay cartage charges. Submit additional Samples as may be required.
- E. Identification: Clearly indicate Specification section, source, location, date taken, by whom, certification as required and other appropriate information to facilitate ENGINEER's review.
- F. Disposition: One Sample will be retained by ENGINEER and one Sample will be returned to CONTRACTOR as practical.

#### 1.05 QUALITY CONTROL SUBMITTALS

##### A. Certificates:

- 1. Manufacturer's Certificate of Compliance:
  - a. Within individual Specification sections or where products are specified to a recognized standard or code, submit prior to shipment of product or material to the site.
  - b. ENGINEER may permit use of certain materials or assemblies prior to sampling and testing if accompanied by accepted certification of compliance.
  - c. Signed by product manufacturer certifying that materials, manufacture, and product specified conforms to or exceeds specified requirements and intent for which product will be used. Submit supporting reference data, affidavits, and certifications as appropriate.

- d. May reflect recent or previous test results on material or product, but must be acceptable to ENGINEER.
  2. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in the individual Specification sections.
- B. Operation and Maintenance Manual: Required for all equipment,
- C. Statements of Qualification: Evidence of qualification, certification, or registration. As required in these Contract Documents to verify qualifications of professional land surveyors, engineers, materials testing laboratories, specialty Subcontractors, trades, specialists, consultants, installers, and other professionals.
- D. Field Samples: Provide as required by individual Specifications and as may be required by ENGINEER during progress of Work.
- E. Written Test Reports of Each Test and Inspection: As a minimum, include the following:
1. Date of test and date issued, Project title and number, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
  2. Date and time of sampling or inspection and record of temperature and weather conditions.
  3. Identification of product and Specification section, location of Sample, test or inspection in the Project, type of inspection or test with referenced standard or code, certified results of test.
  4. Compliance with Contract Documents, and identifying corrective action necessary to bring materials and equipment into compliance.
  5. Provide an interpretation of test results, when requested by ENGINEER.

#### **PART 4 PAYMENT**

- A. Payment for the work section will be incidental

END OF SECTION

## **TESTING AND INSPECTION SERVICES**

### **PART 1- GENERAL**

#### **1.1 WORK INCLUDED**

- A. The CONTRACTOR shall employ and pay for the services of a qualified commercial independent testing laboratory acceptable to the ENGINEER and the OWNER to perform specified services.
- B. Inspection, sampling, and testing is required for:
  - 1. Trench excavation and backfill.
  - 2. Paving and surfacing.
  - 3. Additional quality checks as required by the OWNER not to exceed the Allowance amount included in the GMP except as allowed by Owner Approved Change Order(s).
- C. Employment of a testing laboratory shall in no way relieve the CONTRACTOR of his obligation to perform work in accordance with the Contract.

### **PART 2- PRODUCTS**

#### **2.1 SUBMITTALS**

- A. Submit six copies of reports of inspections and tests to ENGINEER promptly upon completion of inspections and tests, including:
  - 1. Date issued.
  - 2. Project title and OWNER's job number.
  - 3. Testing laboratory name and address.
  - 4. Name and signature of inspector.
  - 5. Date of inspection or sampling.
  - 6. Record of temperature and weather.
  - 7. Date of test.
  - 8. Location of inspection or test.

9. Identification of product and specification section.
  10. Type of inspection or test.
  11. Observations regarding compliance with the Contract Documents.
- B. This report shall be signed and sealed by a registered professional engineer licensed in the State of Florida, and qualified to perform such services.

### PART 3- EXECUTION

#### 3.1 LABORATORY DUTIES - LIMITATIONS OF AUTHORITY

- A. Cooperate with the ENGINEER; provide qualified personnel promptly on notice.
- B. Perform specified inspections, sampling, and testing of materials and methods of construction:
  1. Comply with specified standards; ASTM, other recognized standards, authorized and as specified.
  2. Ascertain compliance with requirements of Contract Documents.
- C. Notify the ENGINEER immediately of irregularities or deficiencies of work which are observed during performance of services.

#### 3.2 ON SITE TESTING

- A. On site testing must be performed by certified staff, by state approved agencies and must be approved by a Professional Engineer licensed in the State of Florida.

#### 3.3 SUMMARY OF TESTING

<b>Type</b>	<b>Frequency</b>	<b>Responsibility</b>	<b>Comments</b>
Asphalt Density	2 per block	Contractor	As required by Engineer
Concrete	Every 72 CYDS	Contractor	Batch ticket has to be from Batch Computer machine
Trench Compaction Test	Per section 31 23 00	Contractor	
Sub base Compaction Test	Every 300 feet of roadwork	Contractor	
Base Compaction Test	One test per lift for every 300 feet of roadwork	Contractor	
Hydrostatic Test	Every new pipe and structure	Contractor	
Deflection Test	Every Pipe or as required by the Engineer	Contractor	Contractor to supply equipment for test
Lamping Test	Every Pipe or as required by the Engineer	Contractor with City Inspector	Contractor to supply equipment for test

**PART 4 PAYMENT**

- A. Payment for the work in this section will be incidental.

END OF SECTION

## **ELECTRICAL WORK**

### Part 1 GENERAL PROVISIONS

- A. General Provisions: General Mechanical Provisions Sections is application in full hereto. The General and Special Conditions, Division II, Sections E and F of these specifications shall apply to and form a part of this Section as if written in full herein.
- B. Qualification of Bidders: Subcontractor for this section must have installed at least 3 similar type and size jobs, and electrical contracting shall be his primary business.
- C. Work Under Other Sections: Painting conduits, equipment, etc. (except wood backboards). Refer to Par. "Equipment Connections" regarding controls, control circuits, starts, etc.
- D. Codes, Permits, and Inspections: Comply with applicable laws of the community, with latest edition of NEC where not in conflict with those laws, and with the service rules of the local utility company. Obtain and pay for all permits and fees required. After completions of the work, submit certificates of final inspection and approval from the local electrical inspector, certifying that the installation complies with all regulations governing same.
- E. Materials and Workmanship: All materials shall be new, UL listed where a standard has been established. Execute all work so as to present a neat and workmanlike appearance when completed.
- F. Drawing and Specifications: Consider as complementary each to the other. What is called for by one shall be as binding as if called for by both. Where conflicts occur, secure clarification from Architect in advance of bidding; otherwise provide the more expensive quality or quantity. Follow figures in preference to scale dimensions; verify all dimensions and existing conditions.
- G. Conflicts, Coordination, and Changes: In the event that interferences or conflicts develop, the Architect shall decide which equipment shall be relocated regardless of which was installed in the interest of avoiding such conflicts, the electrical sub-contractor who is using common space such as mechanical rooms, chases, ceiling space, etc., shall coordinate his work with other trades and other parts of his own work. If, during this construction, it is discovered that necessary or desirable changes should be made, advise the Architect and secure his decision in writing.
- H. Definitions: For this project, the following terms and definitions shall replace those in the National Electrical Code:

Accessible - (As applied to wiring methods) Capable of being removed without damaging the building structure or finish of the building.

Concealed - (As applied to wiring method) Hidden from view. May be accessible by removal of panels. Items in the walls, in the cavity between

finished ceiling and structure, below slabs, etc. are considered concealed.

- Exposed - (As applied to wiring methods) On or attached to the surface (usually within sight). Items attached to walls, structural ceiling, suspended in sight, etc. are considered exposed.
- I. Cutting, Chasing, and patching: Where possible all work shall be built in as the job progresses. Where this is not possible, secure approval and do necessary cutting, chasing, etc. required. Patching shall restore disturbed surfaces to original condition.
- J. Visit to Site: Before submitting a bid, visit the site and ascertain all existing conditions. Make sure adjustments in work as are required by actual conditions encountered.
- K. Demolition: Remove items in renovated areas as shown or noted. Where existing electrical work is interrupted by removal of other electrical work, provide all wiring, conduit, etc. required to maintain these items in operation. Exact extent of demolition shall be as directed by Architect. All devices in remaining walls that are not covered by sheetrock shall have a black cover plate installed.
- L. Manufacturer's Drawings and Date: Follow procedure outlined in Sections 1. Submit for approval within 20 days of award all items as indicated below. Because items must be coordinated one with another, partial submittals will not be considered. Where one manufacturer is named, equal products by another will be accepted unless stated otherwise. Only manufacturers with local, active, ethical and reliable representation in specifier's area will be considered.

Submit a complete list of material proposed; include all items, even if exactly as specified. Submit manufacturer's data (and samples upon request) for all items where substitutions are desired. All substituted items shall indicate the differences in that specified from that submitted.

Submit shop drawings for the lighting fixtures, lamps, ballast, and panelboards (including those exactly as specified). Before the submittals are reviewed by the engineer, there shall be a stamp or letter attached indicating the submittals were reviewed and in compliance with plans and specifications, signed by the electrical contractor. Faxed copies of submittal data will not be accepted. All data shall be readable and complete with catalog numbers, highlighted accessories and options, and detailed information to describe portions of catalog numbers.

- M. C.A.D. Drawings Requests: Electrical drawings produced by Computer Aided Design will only be available from the project manager. The accuracy of the electronic files shall be the responsibility of the person placing the request due to addenda items, change orders, etc. that may not be incorporated in the files. The drawings are only available for shop drawing and as-built document preparation. Written permission by the Engineer is required for uses other than that stated.

- N. Testing: Upon completion of the work, conduct a thorough test in the Architect's presence, and demonstrate that all systems are in perfect working conditions.
- O. Demonstrations: By on-off, start-stop operation, demonstrate to the Owner or his representative, the use, working, resetting and adjusting of each and every system. Include hands-on instructions to the Owner for the testing of exit lights, emergency battery lighting systems, smoke detectors, etc. that must be performed and periodically per codes. Submit statement initiated by the Owner that such demonstration has been made.
- P. Warranty: Warrant the entire electrical system in proper working order. Replace, without additional charge, all work or material which may develop defects from ordinary wear and tear (damage resulting from improper handling excepted) within a period of one year from date of final acceptance.
- Q. Conduit Routing: Exact routing of all conduits shall be as indicated and shall be approved by Architect. No penetrations of four hour rated partitions will be allowed unless a written letter from local authority having jurisdiction is provided. Route conduits below grade or slab.
- R. Record Drawings: Provide in detail, as set forth under General and Supplemental Conditions a complete set of drawings with actual electrical work installed on project. Keep an accurate record of changes made during construction. Transfer these changes to a set of reproducible copies of original contract drawings which the Architect will sell to Contractor at printing cost. Electronic files (AutoCAD format) of drawings may be issued at the cost to reimburse for time and shipping or producing files. When work is completed, submit corrected reproducible drawings on film media to project manager for record.
- S. Substitutions: Shall be as per Paragraph B-5, Instructions to Bidders.

## Part 2. Products

### 2.1 SERVICE

- A. General: Secondary service served from a utility company pole mounted. Refer to 'Power Riser Diagram' for details. Contractor shall furnish and install conduit for riser up power pole as directed by local utility company. Metering equipment will be secured to power pole. Prior to submitting bid, electrical contractor shall coordinate his/her requirements with the local utility.
- B. Characteristics of Service: 120/240 volt, 60 cycle, 1 phase, 3 wire, connected with a grounded solid neutral.
- C. Contractor shall pay all costs and provide all materials necessary to supply a new service to the building. Coordinate for utility requirements.

## 2.2 GROUNDING

- A. General: Ground the various conductive materials in the building per NEC Article 250.
- B. Equipment Ground: All con-current-carrying metal parts of the wiring system (including conduit, outlet boxes, cabinets, motor frames, etc.) shall be connected to ground via equipment grounding system. A grounding conductor (copper with green insulation except where bare copper is used) shall be installed. Conduit ground is not acceptable. Provide bonding jumpers at flexible conduit connections, expansion joints, service equipment enclosure, and all other places where required for electrical continuity.

## 2.3 POWER DISTRIBUTION SYSTEM

- A. Type of Wiring: Install wiring in approved raceways with conductors of the types and sizes as shown and specified herein; where no types of sizes are shown, meet NEC requirements.
- B. Feeder Circuits: Provide a complete system of wiring from main service equipment to the various load centers, panels and other locations, as indicated.
- C. Branch Circuits: From panels and load centers extend a complete system of wiring to all fixtures, motors, devices and other equipment. Lighting circuits shall supply lighting outlets only, except as shown otherwise. Secure approval of any departure from the circuit arrangement as shown.
- D. Indication on Drawing: Numerals shown on “homeruns” and by the outlet indicate the circuit arrangement, but this is not intended to show the exact connection to the numbered circuits in the panelboard. Crossmarks on branch circuit runs indicate the number of conductors required. Employ multi-wire circuits. Connect circuits to panelboards to give an evenly balanced load to the supplying feeder, based on normal usage of the connected equipment. Only one “phase” conductor, of the multi-conductor circuit is to be connected to each phase in the panelboard to avoid overloading of the neutral conductor of the circuit.

## 2.4 RACEWAYS

- A. Applications: Raceways shall be as follows:

Where subject to moisture or mechanical injury – rigid conduit.

In concrete or solid masonry – rigid conduit.

Above furred space or in cells of hollow masonry – EMT.

Buried in earth or porous fill – rigid conduit painted with two coats of asphaltum paint (1” and larger may be plastic with ground wire except elbows and vertical runs)

Exposed in unfinished areas (Boiler, Electrical, Mechanical Rooms) – rigid conduit or EMT.

Motor and vibrating equipment connections – flexible conduit.

- A. NOTE: The use of Romex cable is not allowed on this project. MC cable may only be used above an accessible ceiling where it is used for light fixture connections between j-box and fixture or between fixtures. The total length shall not exceed 10' in length.
- B. Rigid Conduit Material: Rigid, thickwall, zinc coated conduit by Pittsburg, National, Republic, GE, Triangle, Youngstown, or approved equal. Fittings shall be threaded type by Thomas & Betts, Killark, Crouse-Hinds, or Appleton. Right and left couplings shall not be used; conduit couplings of the Erikson type shall be used at location requiring such joints.
- C. Electrical Metallic Tubing (EMT) Material: Tubing shall be zinc coated by one of manufacturers named for rigid conduit. Fittings shall be steel, raintight, compression or set screw type as manufactured by Thomas & Betts, Tomic Steel City, Appleton or approved equal.
- D. Flexible Conduit at Motor or Equipment Connections: Provide neoprene jacketed liquid-tight flexible conduit (with ground conductor) equal to Anaconda Sealtite. At fixture connections provide flexible steel conduit by one of manufacturers named for rigid conduit.
- E. Flexible Conduit: Where existing conditions will not allow or will make very difficult the installation of rigid or EMT conduit, it will be permissible to run zinc-coated steel flexible metal conduit. This condition will not allow MC cable use. Provide with ground conductor.
- F. Plastic Conduit Material: Carlon type 40 heavy wall rigid PC-Duit (Polyvinyl-chloride), or approved equal by Kraley or Southwestern with matching elbows, fittings, etc. Provide ground conductor. Change to rigid conduit for elbows up through slab or above grade.
- G. Conduit Sizes: Comply with NEC, Chapter 9. Minimum size 3/4 inch.
- H. Cast Metal Conduit Fittings: As manufactured by Appleton, Crouse-Hinds, Killark or approved equal, and of the form and type applicable to the installation.
- I. Layout: Install all conduit concealed except in equipment rooms and where exposed runs are specifically indicated. Keep runs at least 6 inches from flues, hot water pipes and other heat sources. Eliminate trapped runs insofar as possible. Do not run conduit in cavity of exterior walls.

Generally follow the conduit layout shown on the drawings. However, the layout is diagrammatic only and must be adjusted for structural conditions, built-in equipment and other causes. Off-sets are not indicated and must be furnished as required.

Run concealed conduits in direct line with long sweep bends and offsets where practicable. Install whether exposed or concealed conduit with runs parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings, with right-angle turns consisting of cast metal fittings or symmetrical bends. Where conduits are indicated exposed overhead, runs down to wall outlets shall be concealed in wall, generally unless approved by Architect, all conduit shall be run overhead above the ceiling.

- J. Installation: Securely fasten conduits to all sheet metal outlets, cabinets, junction and pull boxes with locknuts and bushings taking care to see that stout mechanical and solid electrical connections are obtained. Thread rigid conduit so that ends meet couplings, cut ends square, ream smooth and drawn up tight. Cap conduit ends to keep out water and trash during construction.

Avoid field made bends where possible, but where necessary, use a proper hickey or conduit-bending machine. Make no bends with radius less than six times the conduit diameter, nor more than 90 degrees. Make changes in direction with pull boxes, symmetrical bends and cast-metal fittings. Replace crushed and deformed conduits.

- K. Support and Anchoring: All conduits, concealed or exposed, shall be supported and substantially fastened to not more than eight feet. Support with approved types of galvanized wall brackets, ceilings trapeze, clamps, or other approved devices. Attach supporting devices with screws, bolts, expansion sleeves or other workmanlike means appropriate to the surface. In stud walls, secure to studs as required so that conduit is immovable.

- L. Empty Conduit: Provide #14 galvanized fish wire with 14 inch free ends

- M. Terminated Conduit: Provide bushing on ends where auxiliary system conduit raceways is stubbed out into an attic space, adjacent to back board, etc.

- N. Pull Boxes: Galvanized sheet metal screw-cover type as produced by B & C Metal Stamping Company. Provide as required to avoid excessive runs or bends between outlets (generally not over three 90 degree bends per run between boxes). Label all junction box and pull box covers to indicate contents (F.A., Panel & Circuit Number, I.C., etc.).

- O. Installations in Concrete: At slabs on grade, run conduit 2" and smaller in slab if approved by Structural Engineer or Architect. Run larger conduits below slab. Where adequate support cannot be obtained by wiring to reinforced steel, obtain support with solid iron stakes (which may be driven through membrane) cut off flush with slab after

pouring. At turn-ups of adjacent runs of exposed conduit, obtain alignment by wiring members to a temporary horizontal member.

- P. Expansion Joints: Where conduits pass through or across building expansion joints, provide hot-dipped galv. expansion fittings with bonding jumpers.

## 2.5 OUTLET BOXES

- A. General: Except as noted, boxes shall be standard cold rolled steel galvanized or sherardized at least 1-1/2" deep, of metal at least 1/16" thick; sized to accommodate devices and conductors per NEC Article 370; product of Appleton, National, Steel City or approved equal. Empty Conduit: Provide #14 galvanized fish wire with 14 inch free ends
- B. Ceiling and Wall Bracket Outlets: 4" octagonal boxes with plaster rings appropriate for finish surface.
- C. Typical Boxes (For Switches, Receptacles & Auxiliary Systems): 4" square boxes ganged as required. Furnish with : 1" plaster rings where employed in plaster, 1" tile covers where used in ceramic tile, 1" plaster rings where sit in exposed concrete, and as otherwise appropriate for surface and construction.
- D. Boxes in Exposed (Or Thin Coated Plastered) Masonry: Where conduit connections permit, employ solid flush-type, square cornered, masonry boxes with turned-in device holders; otherwise employ typical box with 1-2" square cut tile cover.
- E. Boxes Used With Exposed Conduit: 4" square utility boxes. Label covers with permanent marker indicating contents (Panel/Circuit Number, etc.).
- F. Exterior Boxes: Galvanized cast metal boxes, Crouse-Hinds, Type FS or FD as appropriate. Make weatherproof with gasketed covers. Equal products by Appleton, Killark, Russell & Stoll, or approved equal will be accepted.
- G. Boxes Used with Recessed Lighting Fixtures: Provide a 4" square box with blank cover adjacent to each fixture group. Generally attach to underside of structure above, in accessible location, to accommodate a 4' to 6' flexible conduit connection to each fixture or fixture run.
- H. Boxes in Dry-Wall Construction: Sectional type switch boxes at least 2- 2' deep may be used instead of typical box (but not where dry wall finish is applied over masonry back-up and not where multi-gang devices occur).

- I. Mounting and Supports: Boxes which are not imbedded in masonry or concrete shall be fastened to the structure in a manner specified for conduits.
- J. Locations: The drawings indicate approximate locations only; determine the exact location at the building in view of all structural and architectural conditions. Obtain Architect's verification of final locations. No outlets shall be mounted back-to-back in rated walls. Stagger boxes as required on opposite sides of studs, on separate studs, separate CMU blocks, etc. as required.

Where outlets at different levels are shown adjacent, install in one vertical line where possible. At counters adjust heights to avoid conflicts with splash backs, upper cabinets and other equipment.

Locate switch outlets on the lock side of door and so that first switch in a single or gang installation is approximately 6" to 10' from the door jam. Avoid conflict with wainscot caps by adjusting height slightly up or down as directed.

- K. Mounting Heights: Unless noted or directed otherwise, locate outlet centers above the finished floor as follows:

Switches, generally 4' – 0"

Receptacles, generally 1' – 6'

Thermostats 3' – 10" (A.D.A. Requirement)

## 2.6 CONDUCTORS

- A. Material: Copper with not less than 98% conductivity; solid type THHN for No. 10 and smaller and stranded THWN for No. 8 and larger; 600 volt insulation. Product GE, Triangle, Southwire, Anaconda, Rome, General Cable or approved equal, with manufacturer's name, type insulation, and conductor size imprinted on jacket at regular intervals.
- B. Sizes: AWG sizes as noted. None smaller than #12. Where branch circuit runs exceed 90 feet in length, increase to next larger size.
- C. Installation: Do not pull conductors until conduit run is complete and the building has been closed to the weather. Use only U/L approved lubricant to facilitate pulling of conductors.
- D. Joints: For solid conductors, make joints with solderless type connectors (ideal, "Wing-Nut", Buchanan "B-Cap" or approved equal). Make taps or splices of stranded conductors with T & B compression "C" or "Lock-tit" connectors, and cover with

Okoweld or Scotch #33 Electrical Tape so that the insulation is equal to the conductor insulation. Fixture outlets shall have a loop or end not less than eight inches long left for connection to splices and taps only in junction boxes and wireways.

- E. Color Coding: Follow NEC Section 210-5. Use white conductors for neutral conductors; where it is not practicable to provide a white conductor as a neutral in a feeder, the conductor shall be identified in switches, panels, junction boxes, and other fittings, with white tape or white paint. Equipment grounds shall be green.

## 2.7 PANELS AND SAFETY SWITCHES

- A. Safety Switches: Provide for all motors and other equipment as indicated or required by Code, NEMA heavy duty type quick make quick-break, in NEMA-1 general purpose enclosure with interlocking covers. Provide with fuses as indicated. Where exposed to the weather or moisture, furnish NEMA-3R enclosures. Switches for motor circuits shall be horsepower related. Switches shall accept only Class R Fuses. Provide with padlocks where accessible to public.

Non-fused single-phase motor disconnect switches may be wall switches as specified under Wiring Devices.

- B. Panel: Deadfront, UL labeled, single door type with flush combination pull, catch and lock. All locks keyed alike. Interiors factory assembled. Back boxes shall be galvanized and have a 20" minimum width. Fronts shall have standard gray factory finish. Panels used for service equipment shall be UL labeled for that use. Equal equipment manufactured by Square D, Siemens, GE, Cutler-Hammer or approved equal will be accepted' all panels and cabinets shall be by the same manufacturer. Panels shall have metal directory holders welded to door, flush metal latches and concealed trim clamps. No back-fed main breakers or sub-feed breakers are allowed except where approved prior to bid or noted on schedule. The main breakers shall be located at top or bottom of busbars depending on direction of feed.

The number and rating of circuit breakers and future spaces shall be as scheduled. Branch breakers in panels shall be numbered vertically so that consecutive numbers are connected to consecutive phases. See notes at bottom of schedule.

- C. Future Panel Circuits: Stub out three empty conduits for each flush mounted panelboard to an accessible location above lay-in ceiling (or attic) and to crawl space if available. Where "space only" is indicated, provided all copper work and make provisions for mounting circuit breakers are added, no additional parts or changes to the structure or bus work are required.
- D. Circuit Breakers: Circuit breakers shall be bolted-in-place molded case breakers. Two and three pole breakers shall have common trip action and be interchangeable with single

pole breakers. Breakers indicated GFI shall have integral ground fault protection with test switch.

- E. Identification: All panels shall have permanent circuit markers. A typewritten directory card showing equipment and areas controlled shall be provided in holder on inside door. Panels without covers shall have nameplates mounted beside each breaker.
- F. Mounting: Mount lighting panels with center of top switch or circuit 6'-0" above the floor maximum. Carefully align covers which occur side by side in finished areas.

Protect from plastering and masonry operation with temporary cardboard covers.

- G. Coordination and Size Requirements: If the power distribution equipment is larger than that shown, then it is the responsibility of the contractor to modify the electrical space to incorporate the equipment and the modified layout must be acceptable to the engineer. Otherwise, another manufacturer of the equipment shall be used.

## 2.8 LIGHTING FIXTURES

- A. General: Furnish fixtures complete with lamps. All units UL labeled. Ballasts and internal wiring factory installed. Catalog numbers shown are for basic units; furnish complete with flexible connections, trim and other appurtenances necessary to the installation. Coordinate frames and fixtures with ceiling construction in each room before ordering.
- B. Substitutions: Reference to a specific manufacturer's product is made only to establish a standard of quality and design and to give a general description of the basic type desired. Substitutions will be subject to the approval of the Engineer. Substitutions must be submitted to the engineer 10 days prior to submitting bid.
- C. Coordination: Contractor shall verify voltage of fixtures with the circuits to be connected to and coordinate fixture trims with ceilings in each area prior to placing an order.
- D. Lamps: Type and size as schedule, GE, Osram, Philips or Venture. Incandescent lamps shall be rated for 130 volts. Fluorescent lamps shall be bi-pen, rapid-start, of color indicated. HID lamps shall be coated type where installed in downlights. Fixtures with open bottoms shall have safety type lamps designed for open applications. All lamps shall meet the National Energy Policy Act of 1992.
- E. Installation: Lay out work as shown, and to provide attractive and efficient arrangement; coordinate with work of other trades. Provide adequate and substantial supports for all

fixtures. Prior to final inspection clean fixtures and lamps with a soft cloth or sponge and detergent (not soap) solution.

## 2.9 WIRING DEVICES

- A. General: Manufacturers and catalog numbers listed are used to establish style, type and quality. Equal devices by Hubbell, Leviton, Bryant, Eagle and P&S will be accepted. All devices shall have plaster ears.
- B. Installation: Unless otherwise noted install wall devices vertically, so that all devices of any given height will align exactly. Plates must be plumb and true with all four edge contacting wall surface. Mount receptacles with grounding terminals down. Do not install devices until plastering or other type wall covering has been completed; install ahead of painting work, but protect from paint spatter.
- C. Wall Switches: 120/277v, 20a, flush enclosed, quiet type switches. Color to be selected by Architect. Hubbell Specification Grade, 1221, 1222, 1223, 1224 series as required. Provide similar 20a and 30a switches as indicated.
- D. Duplex Receptacles (General Purpose): 125v/15a, flush duplex bakelite receptacles with side and back wiring, grounding terminal and breakoff fins for converting to 2-circuit use, Hubbell 5262. Color to match wall switches. Where a 20 amp circuit feeds only one receptacle, that receptacle shall be rated 20 amps (Hubbell 5362). Where indicated GFI, provide duplex receptacle with integral ground fault protection and test switch. Where indicated WP, provide GFI protected duplex receptacle in cast box with cast plates and lift cover.
- E. Device Plates: Type appropriate for device of nylon or lexan with minimum of 0.03 inch wall thickness. Device plate colors shall be selected by architect from standard colors. Provide single plate or proper gang where more than one device occurs. Furnish blank plates on outlets for future use. At exposed conduit fittings or boxes employ galvanized steel utility box manufacturer.

## 2.10 MISCELLANEOUS ITEMS

- A. Nameplates: Provide 1" x 3" laminated phenolic nameplates (with .75" high white letters on black) on disconnect switches, panels, terminal, controllers, pullboxes, etc. Furnish list for approval. Apply with contact bond adhesive.

END OF SECTION

# TRENCH EXCAVATION AND FILL

## PART 1 – GENERAL

### 1.01 SUMMARY

- A. Section Includes: Requirements for excavation, and backfilling of trenches.
- B. Lump Sum Prices
  - 1. Trenching and Backfilling
    - a. Trenching and backfilling for Work included in this project is included in the lump sum cost for work installed, unless otherwise stated herein, and the lump sum price for work includes trenching and backfilling in whatever nature of material may be encountered. No additional allowance to the lump sum price proposal by the Contractor for the project or any part thereof will be allowed on any claim for extra compensation because of trenching, backfilling, or trenching and backfilling being of a nature different from that contemplated by Contractor.
    - b. The Contractor is charged with the responsibility of actually investigating and examining the site of the project before preparing his proposal and satisfying himself in this respect.

### 1.02 REFERENCES

- A. General: References to standards, specifications, manuals, or codes of any technical society, organization or association, or to the Laws or Regulations of any government authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of proposals (or, on the Effective Date of the Agreement if there were no proposals), except as may be otherwise specifically stated in the Contract Documents.
- B. ANSI/ASTM Standards
  - 1. ANSI/ASTM C33 Concrete Aggregates
  - 2. ANSI/ASTM D1557 Test Method for Laboratory Compaction Characteristics of Soil  
(AASHTO T-180) Using Modified Effort (56,000 ft.-lbf/ft<sup>3</sup>)(2,700 kN-m/m<sup>3</sup>)
- C. ASTM Standards
  - 1. ASTM D1556 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
  - 2. ASTM D2487 Classification of Soils for Engineering Purposes

3. ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Method (Shallow Depth)
4. ASTM D2937 Test Method for Density of Soil in Place by the Drive-Cylinder Method

F. Florida Department of Transportation (FDOT) Standards

1. Standard Specifications for Road and Bridge Construction

G. State of Florida

1. Florida Trench Safety Act (90-96, Laws of Florida)

H. Occupational Safety and Health Administration

1. Excavation Safety Standards, 29 C.F.R.s.1926.650 Subpart P.

1.03 DEFINITIONS

A. General: Soil classifications presented in this Article are applicable to natural soils and processed materials.

B. ASTM D2487 Unified Soil Classification System (USCS)

1. Class I: Angular, one-quarter inch (1/4") to one and one-half inch (1-1/2") graded stone, including a number of fill materials that have regional significance such as coral, slag, cinders, crushed shells and crushed stone.
2. Class II: Coarse sands and gravels with maximum particle size of one and one-half inches (1-1/2"), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. The following soil types are included in this class:
  - a. GW (well-graded gravel)
  - b. GP (pea gravel or crushed stone mixed with sand)
  - c. SW (well-graded sand)
  - d. SP (poorly graded sands and gravelly sands with little or no fines)
3. Class III: Fine sand and clayey (clay filled) gravels, including fine sands, sand-clay mixture and gravel-clay mixtures. The following soil types are included in this class:
  - a. GM (silty gravels)
  - b. GC (clayey gravels)
  - c. SM (silty sands)
  - d. SC (clayey sands)

4. Class IV: Silt, silty clays and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. The following soil types are included in this class:
    - a. CH (Inorganic clays of high plasticity)
    - b. CL (Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays)
    - c. MH (inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts)
    - d. ML (Inorganic silts, very fine sands, rock flour, silty or clayey fine sands)
  5. Class V: This class includes the following organic soils as well as soils containing frozen earth, debris, rocks larger than one and one-half inches (1-1/2") in diameter and other foreign materials:
    - a. OL (Organic silts and organic silty clays of low plasticity)
    - b. OH (Organic clays of medium to high plasticity)
    - c. PT (Peat, muck, and other highly organic soils)
- C. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.
- D. Optimum Moisture: Percentage of water in a specific material at maximum density.
- E. Rock: A natural aggregate of mineral particles connected by strong and permanent cohesive forces. Rock includes:
1. Limestone, lime rock, sandstone, dolomite, granite marble, lava, and coral.
  2. Boulders 1/3 cubic yard or more in volume.
  3. Material which by actual demonstration cannot, in the Engineer's opinion, be reasonably excavated with a backhoe or 3/4 cubic yard capacity power shovel equipped with two rippers, or similarly approved equipment and which is, in fact, systematically drilled and blasted or broken by power operated hand tools. Engineer may waive demonstration requirement if material encountered is well-defined rock.
- F. Deleterious Materials: Household and construction debris, organic debris, peat and organic soils,
- 1.04 SYSTEM DESCRIPTION
- A. Perform excavation required to construct underground piping systems to lines and grades shown on the Drawings.
  - B. Provide, place, and compact pipe bedding and haunching as shown on the Drawings and specified in this Section.

- C. Provide, place, and compact initial fill as shown on the Drawings and specified in this Section.
- D. Provide, place, and compact final fill as shown on the Drawings and specified in this Section.
- E. Place, compact, and test fill as specified in this Section.
- F. Dispose of unsuitable and excess excavated material as specified in this Section.
- G. Grade final fill to elevations, lines, slopes, depths and cross-sections shown on the Drawings. Where no change in finish grade is indicated, grade final fill to elevations, lines, slopes, depths and cross-sections that existed prior to start of construction.

#### 1.05 QUALITY ASSURANCE

- A. General: Trenching and backfilling shall be performed by company with not less than five years of documented experience in underground utility construction.
- B. Soils Testing
  - 1. Contractor will employ and pay for services of an independent testing agency to perform specified testing and inspection.
  - 2. Schedule trenching and backfilling to permit a reasonable time for testing before placing succeeding lifts of installing pipe.
  - 3. Keep testing laboratory informed of structural earthwork progress.
- C. General Monitoring: Trenching and backfilling shall be monitored on a periodic basis by the independent testing laboratory for general compliance with the intent of these specifications.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall be responsible for delivery, storage, and handling of fill material from off-site sources.
- B. Comply with requirements of Federal, State, and County authorities regulating shipment of products.
- C. Contractor shall be responsible for storage and handling of on-site excavated suitable fill material.
- D. Do not allow fill material from off-site sources or on-site excavated suitable fill material to be mixed with unsuitable material.

- E. Do not allow stored fill material from off-site sources to be mixed with stored on-site excavated suitable fill material.
- F. Protect stored fill materials so that the composition of materials is not altered and materials are not otherwise degraded or contaminated.
- G. Prevent erosion of soil and fill materials and sedimentation of waterways, open drainage ways and storm and sanitary sewers due to construction activities, by complying with Section 015713 Temporary Erosion and Sedimentation Control.

#### 1.07 PROJECT/SITE CONDITIONS

##### A. Regulatory Requirements

1. Conform to Federal and State regulatory requirements for excavations.
2. Obtain excavation permit prior to starting trenching and backfilling. Conform to requirements of excavation permit.
3. Provide barricades, warning signs, and lights as required by law, regulation, or law and regulation.

##### B. Excavation Protection

1. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.
2. Grade top perimeter of trench to prevent surface water run off into trench.

##### C. Protection of Adjacent Improvements

1. Underpin adjacent structures and utilities, including utility services, which may be damaged by excavation work.
2. Repair damaged structures, utilities, or structures and utilities at no additional cost to the Owner.

##### D. Protection of Benchmarks, Monuments, and Other Reference Points

1. Maintain benchmarks, monuments, and other reference points.
2. Retain a Registered Land Surveyor who shall establish, for any benchmarks, monuments, and other reference points that might be disturbed by structural earthwork, references that will not be disturbed.
3. Registered Land Surveyor shall replace benchmarks, monuments, and other reference points removed or otherwise disturbed.

##### E. Geotechnical Data

1. Geotechnical data prepared for this project are available for review by the Contractor. Refer to Appendix A.
2. Date and recommendations in the subsurface investigation report have been used by the Engineer in the preparation of the Drawings and Specifications.
3. Geotechnical Data made available to the Contractor by the Owner, the Engineer, or the Geotechnical Consultant are not guaranteed as to accuracy or completeness. Geotechnical Data made available to the Contractor by the Owner, the Engineer, or the Geotechnical Consultant are not part of the Contract Documents. If Geotechnical Data made available to the Contractor by the Owner, the Engineer, or the Geotechnical Consultant are used by the Contractor, the Contractor shall assume all risks resulting from actual conditions differing from conditions set out in the Geotechnical Data.

F. Unanticipated Conditions

1. Notify Engineer of unexpected subsurface conditions and discontinue work in affected area until notified by Engineer to resume work.
2. Take emergency measures as required to protect persons and improvements.

## PART 2 – PRODUCTS

### 2.01 SOURCE FOR BEDDING AND FILL MATERIALS

- A. Use excavated materials that meet the requirements specified in this Section.
- B. Furnish and install imported material if excavated material does meet the requirements of this Section.
- C. Excess excavated material that meets the requirements of this Section shall be stored at the project site until backfilling is completed. Do not remove excess excavated material that meets the requirements of this Section from the project site until backfilling is completed.

### 2.02 BEDDING

- A. Crushed Stone Bedding: Imported, graded stone meeting the requirements of Class I soil with maximum particle size equal to one-half inch (1/2").
  1. Size range and resulting high void ration of crushed stone bedding material makes it suitable for use to dewater trenches during pipe installation.
  2. The permeable characteristic of crushed stone dictates that use of crushed stone bedding material be limited to locations where pipe support will not be lost by

migration of fine grained natural material from trench walls and bottom or migration of other embedment materials into crushed stone bedding material.

3. When migration of fine grained natural material into crushed stone bedding is possible, minimum size range of crushed stone bedding shall be reduced to finer than one-quarter inch (1/4"), and gradation shall be selected to limit the size of the voids.
4. An alternative to modifying the gradation is to use a geotextile fabric as a barrier to migration to fines.)

B. Coarse Sand and Gravel Bedding: Coarse sands and gravels meeting the requirements of Class II soil with maximum particle size equal to three-quarter inch (3/4") and with less than five percent fines.

1. Coarse-grained soils with less than 12 percent but more than five percent fines may be used for coarse sand and gravel bedding if approved by the Engineer.
2. Gradation of coarse sand and gravel bedding material influences density and pipe support strength of coarse sand and gravel when bedding material is loosely placed. Gradation of coarse sand and gravel bedding material may be critical to the pipe support and stability of the foundation and embedment, if the material is imported and is not native to the trench excavation. Gradation other than well graded, such as uniformly graded or gap graded, may permit loss of support by migration into void spaces of a finer grained natural material from the trench wall and bottom.
3. When migration of fine grained natural material into coarse sand and gravel bedding is possible, adjust gradation of bedding material to limit size of voids so there is no migration of fines from trench walls or trench bottom into bedding material.
4. An alternative to modifying the gradation is to use a geotextile fabric as a barrier to migration of fines.

## 2.03 HAUNCHING

- A. Haunching material shall be on-site or imported non-cohesive, non-plastic material free of debris and gravel larger than one-half inch in diameter.
- B. Haunching materials shall be Class I or Class II soils as defined in this Section.

## 2.04 SELECT FILL

- A. Select fill shall be on-site or imported non-cohesive, non-plastic material free of debris and gravel larger than one-half inch in diameter.

- B. Select initial and final fill materials shall be Class I or Class II soils as defined in this Section.

## 2.05 COMMON FILL

- A. Common fill shall be on-site or imported non-cohesive, non-plastic material, free of debris and rocks larger than six inches in diameter.
- B. Common initial fill materials shall be Class I, Class II, or Class III soils as defined in this Section.
- C. Common final fill materials shall be Class I, Class II, Class III or acceptable dry, native Class IV soils as defined in this Section.

## PART 3 – EXECUTION

### 3.01 INSPECTION OF SOURCE FOR BEDDING AND FILL MATERIALS

- A. Verify approval of full or limited use of stockpiled fill.

### 3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Prior to trenching, cut or score pavement to straight edges, six inches outside each edge of the proposed trench. Do not damage pavement not removed.

### 3.03 EXCAVATION

- A. Dewater trenches as specified in Section 02240 Dewatering.
- B. Excavate trench so that piping can be installed to alignment and depth shown on the Drawings and as specified.
- C. Trench width shall be ample to permit piping to be laid and jointed properly. Minimum trench width shall be at least three feet, six inches or eight inches greater than the largest outside diameter of the pipe or bell, whichever is greater.
- D. If sheeting is used, sheeting may be removed provided removal can be accomplished without disturbing bedding, pipe or alignment. Should Engineer determine that removal of sheeting will damage pipe, sheeting shall be left in place at no additional cost to the Owner. If left in place, cut sheeting off two feet above top of pipe and leave sheeting in place below cut. Any damage to pipe bedding, pipe, or alignment caused by removal of sheeting shall be cause for rejection of the affected portion of the Work.
- E. Open no more than 100 feet of trench ahead of pipe laying operations at one time unless a greater length of trench is approved by the Engineer.

### 3.04 TRENCH BOTTOM

- A. Excavate trench to elevation required for pipe material.
  - 1. For piping that does not require bedding below bottom of pipe, excavate trench to bottom of pipe.
  - 2. For piping that requires bedding below bottom of pipe, excavate trench to bottom of bedding below pipe.
- B. Soil surface at trench bottom shall provide a firm, stable and uniform support for pipe. Soil surface at trench bottom shall be free of any protrusions which may cause point loading on any portion of pipe or bell.
- C. Do not over-excavate trench bottom if trench bottom material is stable undisturbed soil of the follow types:
  - 1. Class II soil including types GW, GP, SW and SP.
  - 2. Class III soil including types GM, GC, SM and SC.
  - 3. Class IV soil including types CL and ML.
- D. Do not bed pipe on solid rock, boulders, hardpan, unsuitable soils, organic material, or other materials that are not suitable for trench bottom. Remove soils and other materials that are not suitable materials for trench bottom. Remove soils and other materials that are not suitable materials for trench bottom to six inches under pipe, minimum.
  - 1. Remove wet, yielding, or mucky soils. Remove the following soils:
    - a. Type CH and Type MH Class IV soils.
    - b. All Class V soils.
  - 2. Remove organic material including roots, mulch, or other vegetable matter, which in the opinion of the Engineer, will result in unsatisfactory foundation conditions.
  - 3. Remove soils containing cobbles, boulders or stones larger than one and one-half inches (1-1/2") in diameter.
  - 4. Remove ledge rock and hardpan. Remove rock and hardpan to provide bedding width 24 inches wider than pipe.
  - 5. Remove soils containing rubbish, trash, or other foreign materials.
- E. Replace ledge rock, hard pan, boulders, unsuitable soils, and soil containing material that is not suitable for trench bottom.
  - 1. Over-excavation Replacement for Piping that Does Not Require Bedding below Bottom of Pipe

- a. If trench is over-excavated more than six inches below the bottom of the pipe, but less than twelve inches below the bottom of the pipe, fill and compact over-excavation with acceptable Class I, II or III soil as defined in this Section.
  - b. If trench is over-excavated more than twelve inches below bottom of pipe, fill and compact over-excavation with crushed stone bedding.
2. Over-excavation Replacement for Piping that Requires Bedding below Bottom of Pipe: Fill and compact over-excavation to bottom of bedding with Class I soil as defined in this Section.

### 3.05 BEDDING

- A. General: Properly bed pipelines, conduits and appurtenances as shown on Drawings and as specified in this Section.
- B. Bedding for PVC Pipe: Place and compact crushed stone bedding from a minimum of 1/4 diameter of pipe below invert of pipe to bottom of pipe.
- C. Bedding for Ductile Iron Pipe
  1. If trench bottom at bottom of pipe is Class I, Class II, Class III or acceptable dry, native Class IV soils as defined in this Section, bed pipe on trench bottom.
  2. If trench bottom is not acceptable for bedding, place crushed stone bedding or coarse sand and gravel bedding from a minimum of 1/4 diameter of pipe below invert of pipe up to bottom of pipe.
- D. Preparation of Trench Bottom for Piping and Conditions that Do Not Require Bedding below Bottom of Pipe
  1. Compact trench bottom as required to achieve density specified for bedding, haunching, and backfill. Minimum compaction for trench bottom shall be 90% of Modified Proctor Maximum Dry density (ASTM D1557).
  2. Bring trench bottom to grade prior to installation of pipe, fittings, and valves. Bring trench bottom to grade along entire length of pipe.
- E. Preparation of Trench Bottom for Piping or Conditions that Require Bedding below Bottom of Pipe
  1. Excavate trench bottom and place bedding material, so that bedding grade is correct following compaction of bedding.
  2. Uniformly compact bedding. Use hand or mechanical tamping to compact bedding material.

3. Compact bedding material as required to achieve density specified for haunching and backfill. Minimum compaction of bedding material shall be 95% of Modified Proctor Maximum Dry density (ASTM D1557).
4. Bring bedding material to grade prior to installation of pipe, fittings, and valves. Bring bedding material to grade along entire length of pipe.

### 3.06 HAUNCHING

- A. Haunching for PVC Pipe: Place crushed stone bedding material from top of bedding to spring line (centerline) of pipe.
- B. Haunching for Ductile Iron Pipe
  1. If trench bottom at bottom of pipe is Class I, Class II, Class III or acceptable dry, native Class IV soils as defined in this Section, place haunching material from trench bottom to spring line (centerline) of pipe.
  2. If trench bottom is not acceptable for bedding, place crushed stone bedding or coarse sand and gravel bedding material from top of bedding up to 1/8 diameter of pipe. Place haunching material from top of crushed stone bedding or coarse sand bedding material to spring line (centerline) of pipe.
- C. Piping Support: Support piping during placement and compaction of haunching.
- D. Placing Haunching Material
  1. Do not place haunching over porous, wet, or spongy trench bottom or bedding material.
  2. Hand place haunching material.
  3. Place haunching evenly along both sides of pipe, fittings, and valves so that equal load is maintained along both sides of pipe, fittings, and valves.
  4. Work haunching under pipe, fittings, and valves so that there are no voids in fill and so that pipe, fittings, and valves are properly supported.
  5. Place haunching so that piping materials, coatings, and encasement are not damaged.
- E. Haunching Material Compaction
  1. Compact haunching material
  2. Compact haunching so that pipe, fittings, and valves are properly supported.
  3. Compact haunching as required to achieve density specified for backfill material.

4. Minimum compaction of haunching shall be 95% of Modified Proctor Maximum Dry density (ASTM D1557).

### 3.07 INITIAL BACKFILL

- A. Initial backfill shall extend from the top of haunching to one foot above top of pipe. Placement of initial backfill may be either by hand or mechanical means.
- B. Initial fill in trenches wholly or partially beneath paved areas as follows shall be select initial fill:
  1. Public streets, roads, and parking areas.
  2. Institutional roads, drives, and parking areas.
  3. Commercial roads, drives, and parking areas.
- C. Initial fill in trenches beneath unimproved areas, lawns, landscaping, private drives, and private parking areas shall be common initial fill unless otherwise shown on the Drawings.
- D. Keep initial backfill free from debris, rocks, clods, and other items larger than one-half inch (1/2").
- E. Do not compact initial fill directly over pipe, fittings, or valves until adequate cover has been provided to prevent damage to pipe, fitting, or valve. Adequate cover will depend on piping materials and type of compaction equipment used. Adequate cover shall be as accepted by the Engineer.
- F. Minimum compaction of initial fill shall be 95% of Modified Proctor Maximum Dry density (ASTM D1557).

### 3.08 FINAL BACKFILL

- A. Backfill trenches to contours and elevations shown on drawings, or to match existing grade if finish grade is not changed.
- B. Final backfill in trenches wholly or partially beneath paved areas as follows shall be select initial fill:
  1. Public streets, roads, and parking areas.
  2. Institutional roads, drives, and parking areas.
  3. Commercial roads, drives, and parking areas.
- C. Final backfill in trenches beneath unimproved areas, lawns, landscaping, private drives, and private parking areas shall be common initial fill unless otherwise shown on the Drawings.

- D. Backfill trench systematically, as early as possible, to allow maximum time for natural settlement.
- E. Place and compact select fill material in continuous layers not exceeding 6 inches in depth. Minimum compaction of select fill shall be 98% of Modified Proctor Maximum Dry density (ASTM D1557). Compaction of select fill shall be by small portable plate compactor or other approved method.
- F. Place and compact common fill material in continuous layers not exceeding 12 inches in depth. Minimum compaction of common fill shall be 95% of Modified Proctor Maximum Dry density (ASTM D1557). Compaction of common fill shall be by mechanical means or other approved methods.

### 3.09 COMPACTION

#### A. Compaction Equipment

1. Compaction shall be accomplished by use of appropriate compaction equipment.
2. Compact each lift by repeated passes of appropriate compaction equipment.
3. Select and operate compaction equipment so that pipe and structures are not damaged by compaction operation.

#### B. Moisture Control

1. Control moisture content of soil during compaction as required to achieve specified compaction.
2. Moisture content of fill and backfill material shall be within plus or minus 2% of optimum moisture content during compaction of fill and backfill material.
3. If necessary, add water or allow material to dry until the proper moisture content for the specified compaction is obtained.

#### C. Compaction Testing

1. Test compaction of bedding, haunching, initial backfill, and final backfill as specified in this Section.
2. Test each compacted soil layer, in place, prior to placement of succeeding layers.

### 3.10 TESTING

- A. Retain a laboratory approved by Engineer to make field density tests and Proctor Tests as specified below.
  1. Contractor shall pay the cost of initial density test(s).
  2. Contractor shall pay cost for any additional testing required as a result of failure of any initial test.



## DEWATERING

### PART 1 – GENERAL

#### 1.01 SUMMARY

- A. Section Includes: Requirements for dewatering excavations and trenches.

Unless specifically authorized by the Owner, all pipe, and structures shall be installed "in the dry". The contractor shall dewater trench excavation as required for the proper execution of the work, using one or more of the following approved methods: well point system, and or pumps with silt box and filtering system.

Contractor shall design and provide a 920 GPM ground water treatment system plan comprised of the following:

- A large settling tank (silt box) with baffles for the removal of large solids and free product
- Sock Bag filters shall be attached to the discharge hose into the settling tank and sewer manholes for the removal of suspended solids. Contractor responsible for determining number of discharge hose's required from the settling tank to the manhole to maintain adequate flow.

Well point systems must be efficient enough to lower the water level in advance of the excavation and maintain it continuously in order that the trench bottom and sides shall remain firm and reasonably dry. The well points shall be designed especially for this type of service, and the pumping unit used shall be capable of maintaining a high vacuum, and at the same time, of handling large volumes of air as well as of water.

Pumps shall be capable of handling the water the contractor need removed to perform the work. Sock filters shall be provided on the pump discharge at the silt box and manhole discharge. Filter cloth draped in manhole shall not be used except for temporary basis of less than 4 hours. Silt boxes shall be capable of handling the water the contractor needs removed to perform the work. Silt box discharged into the sewer systems shall have filter socks on the discharge hose. The contractor shall provide multiple discharge hose with filtering sock if required to remove the water from the silt box. Silt boxes shall be cleaned daily. Socks shall be replaced as needed. Sock(s) with holes or cuts shall be replaced immediately.

The Contractor shall be responsible for disposing into the city sewer system of all water resulting from trench dewatering operations, and shall dispose of the water without damage or undue inconvenience to the work, the surrounding area, or the general public. He shall not dam, divert, or cause water to flow in excess in existing gutters, pavements or other structures: and to do this he may be required to conduct the water to a suitable place of discharge may be determined by the Owner.

The contractor shall not dewater into the permitted stormwater gravity injection well at the project site.

The contractor shall be responsible for payment to the city for the clean up of the sewers system and any repairs that are determined to have been caused by the project dewatering.

### 1.03 SUBMITTALS

A. General: As specified in:

1. General Conditions;
2. Division 1;

B. Submit copy of dewatering permit prior to installing dewatering system, or systems.

C. Submit dewatering plan, or plans, prior to installing dewatering system, or systems.

1. Contractor is responsible for the de-watering plan; should the contractor require additional de-watering requirement this shall be done at no additional cost to the owner.
2. Dewatering shall be done to the cities sewer system.

### 1.04 QUALITY ASSURANCE

A. Regulatory Requirements

1. Obtain Dewatering Permit from South Florida Water Management District prior to dewatering of any areas. Make application and arrangements and pay fees and charges for dewatering and disposal of discharge from dewatering
2. Submit copy of dewatering permit.
3. Comply with requirements of dewatering permit. Meet regulatory requirements relative to dewatering and disposal of discharge water from dewatering.

### 1.05 PROJECT/SITE CONDITIONS

A. Noise Limitations.

1. Dewatering systems and equipment shall comply with ordinances regulating noise.
2. Provide “residential” mufflers on engines.
3. Provide sound attenuating enclosures over dewatering system equipment if necessary to meet noise limit requirements of ordinances and regulations.

4. Do not shut off dewatering systems to meet noise limitations during non-work hours. Provide sound attenuating measures to meet noise limit requirements.
5. Provide sound attenuating equipment, devices, and measures at no additional cost to the Owner.
6. Modify dewatering system, or systems, as required to comply with ordinances regulating noise.

B. Damage Prevention

1. Dewatering shall not cause settlement of existing or new structures. Repair or replace structures damaged by settlement caused by dewatering. Repair or replace structures at no additional cost to the Owner.
2. Discharge from dewatering systems shall not cause erosion of turf or soil. Replace turf damaged by dewatering discharge. Replace soil displaced by dewatering discharge. Replace turf and soil at no additional cost to the Owner.
3. Discharge from dewatering systems shall not damage landscaping. Replace landscaping damaged by dewatering discharge. Replace landscaping at no additional cost the Owner.
4. Modify dewatering system, or systems, as required to eliminate conditions that cause damage.

C. Access

1. Dewatering systems and dewatering system operations shall not prevent emergency access or prevent persons living in the vicinity of construction from completing their normal daily pursuits.
2. Provide temporary access over dewatering system piping for vehicular and pedestrian traffic.

## PART 2 – PRODUCTS

### 2.01 DEWATERING SYSTEMS

- A. Contractor shall be responsible for the sizing and selection of dewatering systems, dewatering equipment, dewatering system piping, and appurtenances.

## PART 3 – EXECUTION

### 3.01 GROUNDWATER

- A. Contractor shall be responsible for evaluating and determining groundwater conditions.

### 3.02 DEWATERING PLAN

- A. Contractor shall prepare and submit dewatering plan for each dewatering system
- B. Ground water plan shall include the following:
  - 1. Groundwater data and assumptions relating to groundwater conditions.
  - 2. Description of proposed dewatering system with drawings, diagrams, and system component data as applicable.
  - 3. Proposed measures to insure dewatering system reliability.
  - 4. Description of discharge water disposal methods.
  - 5. Identification and location of private water supply wells, public water supply wells, lakes, and ponds that may be affected by dewatering.
  - 6. Anticipated affect upon private water supply wells, public water supply wells, lakes, and ponds that may be impacted by dewatering. Proposed measures to ameliorate effects of dewatering upon private water supply wells, public water supply wells, lakes, and ponds.
  - 7. Other data pertinent to the dewatering system.

### 3.03 DEWATERING SYSTEMS

- A. Provide, operate, and maintain dewatering systems including well points, wells, chemical grouting, water tight sheeting, ground freezing, tremie wall, or any other technology as may be necessary to accomplish dewatering in a safe and proper manner.
- B. Provide dewatering systems that control groundwater level in conformance with the requirements of this Section. Provide dewatering systems that lower groundwater to level shown, specified, or shown and specified in advance of excavation. Provide dewatering systems that continuously maintain groundwater level at, or below, level shown, specified, or shown and specified until backfilling and compaction have been completed to level shown, specified, or shown and specified.
- C. Provide automatic starting devices, standby pumps, and other equipment and controls required to provide continuous dewatering in the event of an outage of dewatering pump or other dewatering system component.
- D. Provide headers, suction piping, and discharge piping as required to convey water from well points, dewatering wells, and caissons to dewatering system discharge point designated in permit and accepted dewatering plan.
- E. Modify dewatering system during the course of construction as conditions that affect dewatering change.

### 3.04 DEWATERING OPEN EXCAVATIONS

- A. Lower groundwater to level shown, specified, or shown and specified in advance of excavation. Provide monitoring wells or other means to measure groundwater level prior to starting excavation.
- B. Dewater excavation from outside the limits of excavation. Dewater excavation from below the bottom of excavation. Do not dewater excavation from sumps within excavation.
- C. Dewatering measures shall provide the following:
  - 1. Prevent instability of excavation due to groundwater.
  - 2. Prevent the disturbance of subgrade bearing materials due to groundwater.
  - 3. Keep excavation free from standing water and running water.
  - 4. Prevent tanks, pipes, and other structures from being displaced by hydrostatic pressures.
- D. Do not install or operate dewatering systems that allow movement of soil through excavation or excavation subgrade.
- E. Do not install or operate dewatering systems that allow movement of soil from beneath existing or previously installed structures or pipes.

### 3.05 DEWATERING TRENCHES

- A. Lower groundwater to level shown, specified, or shown and specified in advance of excavation. Provide monitoring wells or other means to measure groundwater level prior to starting excavation.
- B. Dewater trench from outside the limits of trench. Dewater trench from below the excavated trench bottom. Do not dewater trench from sumps within trench.
- C. Dewater trench to a minimum level of 24 inches below excavated trench bottom. Maintain water level a minimum of 24 inches below excavated trench bottom until backfill meets the following requirements:
  - 1. Backfilling and compaction have progressed as to a depth that installed piping will not be displaced by hydrostatic pressure.
  - 2. Backfilling and compaction have been completed above natural water table to a level that remaining backfill can be placed and compacted as specified in Section 31 23 00 Excavation and Fill.
- D. Dewatering measures shall provide the following:

1. Prevent instability of trench due to groundwater.
  2. Prevent the disturbance of subgrade bearing materials due to groundwater.
  3. Keep trench free from standing water and running water.
  4. Prevent tanks, pipes, and other structures from being displaced by hydrostatic pressures.
- E. Do not install or operate dewatering systems that allow movement of soil through trench or trench subgrade.
- F. Do not install or operate dewatering systems that allow movement of soil from beneath existing or previously installed structures or pipes.

### 3.06 SURFACE WATER CONTROL

- A. Do not allow surface runoff to flow into excavations and trenches.
1. Grade top perimeter of excavation to prevent surface water run-off to flow into excavation.
  2. Grade sides and ends of trench to prevent surface water run-off to flow into trench.
- B. Do not allow storm water to puddle or pond on construction site except in designated storm water retention areas. Grade construction areas so that storm water drains to storm water system.
- C. Do not allow storm water to flow off construction site except through permitted discharge structures and through permitted storm water pipes, conduits, and channels.
- D. Do not allow storm water to flow into or through stored fill and backfill materials.

### 3.07 DEWATERING DISCHARGE CONTROL

- A. Discharge water from dewatering system to storm drain systems in accordance with dewatering permit and as specified in this Section. Provide silting basins and other discharge treatment systems in accordance with dewatering permit and to meet discharge permit requirements.
- B. Do not allow discharge from dewatering system to puddle or pond on construction site except in areas designated and approved to receive discharge from dewatering system.
- C. Do not allow to discharge from dewatering system to flow off construction site except through permitted discharge structures and through pipes, conduits, and channels that have been designated and approved for discharge flow from dewatering systems.

- E. Do not use sanitary sewers for disposal of water from water control systems. Do not use sanitary sewer system under construction as conduit to remove ground water from trench.
- F. Do not use storm sewer under construction as conduit to remove ground water from trench. Do not use new storm water system for dewatering system discharge unless new storm water system has been approved for dewatering system discharge.
- G. Do not discharge water containing settleable solids into storm sewers.
- H. Do not contaminate or disturb the environment of properties adjacent to the Work.
- I. Do not contaminate streams or other surface waters.
- J. Provide temporary facilities and controls for dewatering system discharge. Temporary facilities and controls shall be appropriate to the project, including, but not limited to:
  - 1. Silting basin, or basins, of adequate size.
  - 2. Filters.
  - 3. Coagulants.
  - 4. Screens.
- H. Discharge onto pavement shall not damage pavement.

### 3.08 DEWATERING SYSTEM REMOVAL AND CLEANUP

- A. Completely remove dewatering systems installed for construction.
- B. Plug and seal dewatering wells after dewatering operations are concluded. Plug and seal dewatering wells in accordance with permit requirements.
- C. Remove and dispose of solids, including sand, mud, and other material, discharged from dewatering systems.

### 3.09 GENERAL ADDITIONAL REQUIREMENTS

- A. Contractor shall design and provide a ground water treatment system plan comprised of the following:
  - A large settling tank (silt box) with baffles for the removal of large solids and free product
  - Sock Bag filters shall be attached to the discharge hose into the sewer manholes for the removal of suspended solids. Contractor responsible for determining number of discharge hose's required from the settling tank to the manhole to maintain adequate flow.

- B. Well point systems must be efficient enough to lower the water level in advance of the excavation and maintain it continuously in order that the trench bottom and sides shall remain firm and reasonably dry. The well points shall be designed especially for this type of service, and the pumping unit used shall be capable of maintaining a high vacuum, and at the same time, of handling large volumes of air as well as of water. Pumps shall be capable of handling the water the contractor need removed to perform the work. Sock filters shall be provided on the pump discharge at the silt box and manhole discharge. Filter cloth draped in manhole shall not be used except for temporary basis of less than 4 hours.
- C. Silt boxes shall be capable of handling the water the contractor needs removed to perform the work. Silt box discharged into the sewer systems shall have filter socks on the discharge hose. The contractor shall provide multiple discharge hose with filtering sock if required to remove the water from the silt box. Silt boxes shall be cleaned daily. Socks shall be replaced as needed. Sock(s) with holes or cuts shall be replaced immediately. He shall not dam, divert, or cause water to flow in excess in existing gutters, pavements or other structures: and to do this he may be required to conduct the water to a suitable place of discharge may be determined by the Owner.
- D. The contractor shall not dewater into the permitted stormwater gravity injection well at the project site.

END OF SECTION

# EROSION AND SEDIMENTATION CONTROLS

## PART 1 – GENERAL

### 1.01 SUMMARY

- A. Section Includes: Requirements for erosion and sedimentation control.

### 1.02 DEFINITIONS

- A. The phrase "DOT Specifications" shall refer to the most current Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

### 1.03 SYSTEM DESCRIPTION

- A. Obtain permits required by regulatory authorities having jurisdiction and required by the Owner for installation, maintenance, and removal of erosion and sedimentation control measures.
- B. Furnish and install erosion and sedimentation control measures.
- C. Provide labor, equipment, and services required to maintain erosion and sedimentation control measures.
- D. Remove erosion and sedimentation control measures that are not a permanent part of Work.

### 1.04 SUBMITTALS

- A. General: As specified in:
  - 1. Division 1;
  - 2. This Section
- B. Submit copy of Erosion Control Plan prior to installing erosion and sedimentation control measures.
- C. Submit erosion and sedimentation control plan approved by State, local, or State and local authorities.

### 1.05 PROJECT/SITE CONDITIONS

- A. Regulatory Requirements
  - 1. Dewatering
    - a. Comply with requirements of permits for erosion and sedimentation control.

2. Stormwater Pollution Prevention Plan
  - a. Prepare "Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb Five or More Acres of Land". Submit application and pay fee for review and approval of Notice.
  - b. Obtain response to Notice prior to starting construction.
  - c. Comply with requirements of Stormwater Pollution Prevention Plan and Generic Permit for Stormwater Discharge from Construction Activities that Disturb Five or More Acres, including modifications, addenda, and additions by Federal, State, and County regulatory authorities having jurisdiction.

## PART 2 – PRODUCTS

### 2.01 MATERIALS FOR EROSION AND SEDIMENT CONTROL

- A. Filter Fabric
  1. Filter Fabric Material: Nylon, polyester, propylene or ethylene yarn with ultraviolet ray inhibitors and stabilizers conforming to Section 985 of the DOT Specifications.
  2. Filter Fabric Flow: 0.3 gallons per foot per minute, minimum.
- B. Sediment Fence Posts
  1. Post Material: Pine
  2. Post Diameter: four inches
  3. Post Length: Four feet, minimum.

## PART 3 – EXECUTION

### 3.01 EROSION CONTROL PLAN

- A. Excavation method shall be selected by the Contractor, unless otherwise shown on the Drawings or required by local regulations
- B. Contractor shall be responsible for erosion and sedimentation control.
- C. Prepare and submit an Erosion Control Plan based upon the proposed excavation method.
- D. Erosion Control Plan shall be reviewed and accepted by the Engineer prior to commencement of any land disrupting activities. Erosion Control Plan shall be reviewed and accepted by State, local, or State and local authorities having jurisdiction

over erosion and sedimentation control prior commencement of any land disrupting activities.

- E. Submit erosion and sedimentation control plan approved by State, local, or State and local authorities.

### 3.02 LOCATION

- A. The type of sedimentation and erosion control (SEC) devices to be employed on the project will depend on location and adjoining features of the land at that location.
- B. Construct SEC devices in accordance with approved Erosion Control Plan.

### 3.03 SEDIMENT FENCE CONSTRUCTION

- A. Locate sediment fence down-slope from source of sediment. Extend sediment fence around source of sediment so that all run-off from source of sediment flows through sediment fence.
- B. Set posts down-slope of fabric.
- C. Bury toe of fence approximately eight inches deep.
- D. When joints are necessary, securely fasten fabric at support post with overlap to next post.

### 3.04 SILTATION AND BANK EROSION

- A. Take adequate precautions to minimize siltation and bank erosion in ditches, in discharging well point systems, or during other construction activities.

END OF SECTION

# ASPHALT PAVING

## PART 1 – GENERAL

### 1.01 SUMMARY

- A. Section Includes: This section covers the work necessary for the construction of the Asphalt / Pavement.

1. Type SP- 9.5..... 9.5 mm
2. Type SP- 12.5 ..... 12.5 mm

### 1.02 REFERENCES; FDOT LOCAL AGENCY SPECIFICATIONS (LAP) AND STANDARD SPECIFICATIONS / LOCAL AGENCY SPECIFICATIONS

- A. The term "Standard Specifications" is used; such reference shall mean the most current edition of Florida Department of Transportation Standard Specification for Road and Bridge Construction and LAP Specifications. The Standard Specifications shall be considered as part of this section of the Specifications; below are Listed references for the contractor's convenience; the contractor shall be responsible for obtaining and incorporation in the contract all of the Standard Specification's and the most current revisions that apply to this contract scope of work. The contractor shall document in his daily reports the required Standard Specifications that are used.

- B. Reference(s):

1. SECTION 334 HOT MIX ASPHALT FOR LOCAL AGENCIES
2. SECTION 120 EARTHWORK AND RELATED OPERATIONS FOR LOCAL AGENCIES
3. SECTION 710 PAINTED PAVEMENT MARKINGS
4. SECTION 711 THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS
5. 911 LIMEROCK MATERIAL FOR BASE AND STABILIZED BASE
6. SECTION 971 TRAFFIC MARKING MATERIALS

- C. Any reference of the "FDOT", "Agency" "Engineer" "Local Agency" in the LAP SPECS, and "Standard Specifications" shall be considered to be the Owner (City of Key West) for this contract. LAP SPECS are available at:

<http://www.dot.state.fl.us/specificationsoffice/Implemented/LAP/LapSpecs/Default.shtm>

### 1.03 DEFINITIONS

- A. The phrase "FDOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

### 1.04 SYSTEM DESCRIPTION

- A. Furnish and install asphaltic concrete pavement as shown on the Drawings and specified in this Section. Furnish and install asphaltic concrete pavement in accordance with the lines, grades and typical section as indicated on the Drawings.
- B. Furnish and install new asphaltic concrete pavement required to complete the paving work.
- C. Furnish and install asphaltic concrete topping as indicated on the Drawings.
- D. Repair asphaltic concrete pavement damaged as a result of completing Work and damaged by construction operations.

#### 1.05 SUBMITTALS

- A. General: As specified in:
  - 1. Division 1;
  - 2. This Section
- B. Submit proposed formula for asphaltic concrete paving prior to starting pavement work.

#### 1.06 QUALITY ASSURANCE

- A. FDOT Specifications referred to in this Section are made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as through reproduced herein in their entirety.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. General
  - 1. Product Delivery: As specified in Section 01650 Product Delivery Requirements.
  - 2. Product Storage and Handling: As specified in Section 01660 Product Storage and Handling.
- B. Asphaltic Concrete Pavement Materials: Delivery, storage, and handling of asphaltic concrete pavement materials shall meet the requirements of FDOT LAP / Specifications.

#### 1.08 PROJECT/SITE CONDITIONS

- A. Environmental Requirements
  - 1. Do not place base, prime coat, tack coat, or asphaltic concrete when rain is falling or when there is water on the surface to be covered.
  - 2. Monitor climatic conditions and anticipate conditions producing rainfall.
  - 3. Remove and replace materials damaged by rainfall or standing water.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

- A. Lime Rock Base: Lime Rock base shall be in accordance with Section 911 of the FDOT Specifications.
- B. Soil-Cement Base: Soil Cement base shall be in accordance with Section 270 of the FDOT Specifications.
- C. Prime Coat: Material used for prime coat shall be cut-back Asphalt Grade RC-70 conforming to Sections 300 and 916 of the FDOT Specifications for prime to be used on Miami Oolite formation lime rock.
- D. Tack Coat: Material used for tack coat shall be Emulsified Asphalt Grade RS-2 conforming to Sections 300 and 916 of the FDOT Specifications. All areas to be paved shall receive a final tack coat that provides a uniform finish for new and existing paving.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Subgrade
  - 1. Stabilize roadway subgrades 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 FDOT Specifications. Stabilization may require addition and thorough mixing in of crushed limerock, course limerock screenings, or any other stabilizing material acceptable to the Engineer. Apply stabilizing material in such quantity that, after mixing and blending, the subgrade will have a LBR of not less than 40. Mix, blend, or mix and blend stabilizing material into subgrade material by plowing, scarifying, disking, harrowing, blading and mixing with rotary tillers until mixed materials are of uniform bearing value throughout width and depth of layer being processed.
  - 2. Make not less than three density determinations on each day's final compaction operations on each course. Make density determinations at more frequent intervals if deemed necessary by the Engineer.
- B. Base
  - 1. Construct Base in accordance with Section 230 of the FDOT Specifications, to the thickness and width indicated on the Drawings.
  - 2. After spreading of the base material is completed, scarify entire surface and shape surface to produce the exact grade and cross section after compaction. For double

course base, extend scarifying to a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 8 inches.

3. When the material does not have the proper moisture content to insure the required density, wetting or drying shall be required.
  - a. If the material is deficient in moisture, add and uniformly mix in water by disking the base course to the full depth of the base course.
  - b. If the material contains an excess of moisture, allow the material to dry to proper moisture content before compacting material.
4. As soon as proper conditions of moisture are attained, compact material 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.
5. During final compacting operations, if blading of any areas is necessary to obtain true grade and cross section, complete compacting operations for such areas prior to making density determination on finished base.
6. Unless otherwise directed by the Engineer, "hard-plane" the surface 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. Materials planed from the base shall be removed from base area.
7. 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, remove such cracks or checks by rescarifying, reshaping, adding base material where necessary and recompacting, at no additional cost to the Owner.
8. If at any time the subgrade material shall become mixed with the base course material, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material. Shape and compact clean base material as specified in this Article. Remove, replace, shape, and compact material at no additional cost to the Owner.

C. Prime Coat: Apply prime coat at a rate of 0.15 gallons per square yard, and perform the Work in accordance with Section 300 of the FDOT Specifications.

D. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard, and perform the Work in accordance with Section 300 of the FDOT Specifications.

E. Asphaltic Concrete: Spreading, compact, and joint the wearing surface in accordance with Sections 330, 332, 333 of the FDOT Specifications to the thickness indicated on the Drawings.

### 3.02 PAVEMENT REPAIR

- A. Repair damage to pavement as a result of Work under this Contract. Repair damage to pavement in a manner satisfactory to the Engineer and at no additional cost to the Owner. Pavement repair shall include preparation of the subgrade, placing and compacting of the limerock base, priming of the base, and placing and maintaining of surface treatment, as specified in this Section.
- B. Width of repairs shall extend at least 12 inches beyond the limit of damage. Edge of pavement to be left in place shall be cut to a true edge with a saw or other acceptable method that provides a clean edge to abut repair. Line of the repair shall be reasonably uniform with no unnecessary irregularities.

END OF SECTION

## UNIT CONCRETE PAVERS

### PART I - GENERAL

- 1.1 DESCRIPTION: Work includes the furnishing and placement of sand setting bed, unit concrete pavers and other work necessary to accomplish the paving work as shown and specified.
- 1.2 SAMPLES: Before proceeding with laying of pavers, lay down a sample 4 foot square area of pavers that is representative of the finished paving appearance and obtain Owner approval of joints, coursing, and the distribution of the paver color range. Make adjustments requested.
- 1.3 SUBMITTALS:
  - A. Submit sufficient unit pavers to show color range (4 minimum) selected by the Owner.
  - B. Bearing Value and Density tests.
- 1.4 PROTECTION OF ADJACENT FACILITIES:
  - A. Conduct paving work to minimize interference with adjacent street, walks and other adjacent occupied or used facilities.

### PART II - PRODUCTS

- 2.1 UNIT CONCRETE PAVERS:
  - A. Unit pavers shall meet ASTM C 936, "Standard Specification for Solid Interlocking Concrete Paving Units." Requirements include an average compressive strength of 8000 psi and average absorption no greater than 5%.
  - B. Provide unit pavers (2 3/8" x 4" x 7 7/8").
- 2.2 CONCRETE BASE COURSE: Conform to the drawings and details.
- 2.2 BEDDING SAND: Use sand conforming to ASTM C33 commonly known as manufactured concrete sand, Mason sand, waste screening or stone dust are not acceptable.
  - 2.3 JOINT SAND: Clean, dry #00 white silica sand, commonly known as manufactured sand blasting material.

## PART III - EXECUTION

3.1 **JOB CONDITIONS:** Begin paving work only after all trees, new walls and walks adjacent to the paving have been installed.

### 3.2 STABILIZED SUB-GRADE:

A. The minimum acceptable density of the subgrade compaction is 95% of Standard Proctor Density as specified in ASTM D 698.

3.3 **PLACING AND SCREEDING BEDDING SAND:** Spread and screed bedding sand to the thickness specified. Screed and smooth the sand with a straight and true strike board. Do not disturb sand after sand is screeded.

### 3.4 PLACING CONCRETE PAVERS

A. Place pavers in pattern shown with joints of approximately 1/8 inch. Maintain straight joint lines. Do not install pavers that are cracked or chipped. Cut pavers with masonry saw only to fill gaps along the edge of pavement or where different patterns intersect. Wherever possible, limit the size of the cut paver to 1/3 of the paver dimension. If gaps are 3/8 inches or less, fill gaps with sand.

B. After an area of pavers is placed, compact pavers with a vibrating plate compactor capable of exerting 3,000 to 5,000 pounds of centrifugal compaction force and operate at 75-95 hertz. Make two passes across the pavers to compact the bedding sand, to the seat the paver in it and to force the bedding sand into the joints at the bottom of the pavers.

C. Sweep dry joint sand into the joints and compact pavers again until joints are full. Apply joint sand only when pavers are dry. After compaction, the top of the pavers should be 1/8" to 1/4" above the final elevations to compensate for possible minor settlement.

D. At the end of each day, fill joints and compact all pavers within three feet of an unrestrained edge or laying face. Remove excess sand. If there is a threat of rain, apply a waterproof cover to the remaining uncompacted edge.

E. Final surface elevation shall not vary more than 3/8" under a 10 foot straightedge.

END OF SECTION

## PAVEMENT MARKINGS

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. This section specifies the pavement traffic painting, marking, striping, and signing shown on the plans or called for in the test of the specifications.

#### 1.02 GENERAL

- A. In general, all pavement traffic painting, marking, striping, and signing shall comply with the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 1991, latest revision, hereafter referenced "FDOTSPEC" and the Manual of Uniform Traffic Control Devices, U.S. Department of Transportation Federal Highway Administration, 1971 or latest revision, hereafter referenced as "MUTCD."

#### 1.03 SIGN PANELS AND POSTS

- A. Sign panels shall be aluminum. All sign posts shall be frangible aluminum and shall have a standard extruded aluminum sign bracket clamped to the post 12 inches below grade. Bracket size shall match post diameter.

#### 1.04 SIGN BLANKS AND FACES

- A. Regulatory and Warning signs as defined in the MUTCD shall be "High Intensity" reflectorized grade.
- B. Street Name and Guide signs as defined in the MUTCD shall be "Standard reflectorized grade."
- C. The Contractor shall submit documentation from the sign supplier which identifies the reflector grade of each sign. All materials shall meet the requirements of FDOTSPEC.

#### 1.05 SIGN HARDWARE

- A. The signs shall be attached to the posts with vandal-resistant nuts and carriage bolts with washers. Vandal-resistant nuts shall be Tufnut, Tamper-Pruf, Vandal-Pruf, or approved equal. The nuts and bolts shall be manufactured from high strength aluminum. Button head bolts shall not be used.

1.06 PAVEMENT STRIPING AND PAINTING

- A. Temporary Painting Traffic Stripes. Temporary Painted pavement striping shall conform to FDOTSPEC, Section 710. (For use on-site)
- B. Final Thermoplastic Striping & Marking. Final Thermoplastic pavement striping shall be reflective and shall conform to FDOTSPEC, Section 711. (For use within the rights-of-way)

1.07 REFLECTIVE PAVEMENT MARKERS

- A. Reflective pavement markers and their installation shall conform to FDOTSPEC, Section 706.

1.08 BASIS OF PAYMENT

- A. Payment for pavement marking, striping, and signing shall be on a lump sum basis in accordance with the accepted proposal. Such payment shall constitute full compensation for furnishing all labor, materials, and equipment necessary to complete the construction in accordance with the plans and specifications. The Owner reserves the right to add to or deduct from the scope of the work, and such additions or deductions will be made at the unit price established in the proposal. The said additions or deductions shall not exceed twenty-five percent (25%) of the base bid of the successful bidder or bidders unless otherwise noted.

PART 2 – PRODUCTS

PART 3 - EXECUTION

END OF SECTION

## ORNAMENTAL FENCE

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the ornamental aluminum fence system defined herein.

#### 1.02 RELATED WORK

Section 31 00 00 - Earthwork

#### 1.03 SYSTEM DESCRIPTION

The manufacturer shall supply a total fence system of Echelon II® standard picket space. The system shall include all components (i.e., panels, posts, gates and hardware) required.

#### 1.04 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

#### 1.05 REFERENCES

- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- ASTM D523 - Test Method for Specular Gloss
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.

- ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

#### 1.06 SUBMITTAL

The manufacturer's literature and shop drawings shall be submitted prior to installation.

#### 1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

#### 1.08 PRODUCT WARRANTY

A. All structural fence components (i.e. rails, pickets, and posts) shall be warranted within specified limitations, by the manufacturer for a period of 20 years from date of original purchase. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering or corroding.

### PART 2 - MATERIALS

#### 2.01 MANUFACTURER

The fence system shall conform to Echelon II style manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma.

#### 2.02 FABRICATION

A. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.

B. The manufactured fence system shall be capable of meeting the vertical load, horizontal load, and infill performance requirements for Industrial weight fences under ASTM F2408.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

All new installation shall be laid out by the contractor in accordance with the construction plans.

#### 3.02 INSTALLATION

Fence post shall be spaced according to Table 3, plus or minus ¼". For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be

set in concrete footers having a minimum depth of 36". The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.

### 3.03 FENCE INSTALLATION MAINTENANCE

When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces; 1) Remove all metal shavings from cut area. 2) Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry. 3) Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufactures' warranty.

### 3.04 CLEANING

The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

END OF SECTION

## IRRIGATION SYSTEM

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. Provide labor, materials, equipment, and services to complete the irrigation work as required for a complete, operating system and as specified herein.
  
- B. The completed and proper construction of the irrigation system including, but not limited to:
  - 1. All piping, including mains, laterals, fittings, sleeves, connections to existing laterals, tees, risers, and swing joints.
  - 2. All control, gate, globe, pressure reducing, air relief, quick coupling and other valves; including valve boxes, markers, connections, operators and other accessories.
  - 3. Complete automatic control system, including controllers, water conservation equipment, control wiring, and grounding.
  - 4. Complete distribution system including sprinkler heads and bubbler heads; including proper nozzles as called for herein and all other appurtenances and accessories for proper operation.
  - 5. Pump station, city water meter and irrigation flow meter back-up source, and backflow preventer.
  - 6. All excavation, site work, relocation or replacement of utilities, backfill and restoration of all disturbed areas.
  - 7. Providing a complete and operable system for the irrigation of all landscaping on the project site.
  - 8. Adjusting head locations, and any other system components to comply with the requirements of landscaping as actually installed.
  - 9. Supply, deliver, store and protect all equipment and materials including

pipe and fittings, sprinkler heads, valves, controllers, wire, and other component parts necessary for the installation of a fully automatic irrigation system.

## 1.02 QUALITY ASSURANCE

- A. Applicable ANSI, ASTM, FED. SPEC. Standards and Specifications, and applicable building codes and other public agencies having jurisdiction upon the Work.
- B. Construct the system in accordance with local codes, ordinances and laws, and manufacturer's instructions.
- C. Disruption, destruction, or disturbance of existing plant, trees, shrubs, turf, underground utilities or any structure shall be completely restored at Contractor's expense.
- D. Prevent foreign materials, such as, concrete, mortar mix, limerock, soil, grease, oils, etc. from mixing with native soil except as specified herein.
- E. Obtain permits and pay required fees to governmental agencies having jurisdiction over the Work. Inspections required by local ordinances or codes shall be arranged as required.
- F. Work shall be guaranteed for one year from date of acceptance against all defects in materials, equipment and workmanship. Repairs, if required, shall be done promptly.
- G. Restore all disturbed areas resulted from construction activity. Restoration of disturbed areas shall match existing.

## 1.03 SUBMITTALS

- A. Provide a full shop drawing submittal with zones for turf and beds incorporating sprinkler heads and bubbler heads. Include controls, sensors and other components for a fully operational system. Submittal shall be signed and sealed by a Florida registered engineer.
- B. Provide catalog cut sheets of products specified or required. The cut sheets shall list manufacturer's name, catalog name, and catalog number as well as size, type, and illustration of product to be supplied. Do not begin construction and installation until products proposed for use are approved.
- C. Provide manufacturer's warranties as applicable.
- D. Prepare "As-Built" drawings on reproducible bases which show deviations from the

contract drawings. The "As-built" drawings shall also indicate and show approved substitutions of size, material and manufacturer's name and catalog number. Two copies of the drawings and one electronic file shall be submitted before final acceptance of Work.

## PART 2 - PRODUCTS

### 2.01 PVC PIPE

- A. PVC pipe shall be virgin, high impact, polyvinyl chloride pipe which shall be continuously and permanently marked with the manufacturer's name, material, size, and schedule or type. Pipe shall conform to U.S. Department of Commerce Commercial Standard CS 207-60 or latest revision. Material shall conform to all requirements of Commercial Standard (CS,256-63) or latest revision.
- B. Main line, sleeves, and supply and discharge headers shall be SCH 40 PVC conforming to ASTM D, 1785.

### 2.02 GALVANIZED PIPE

- A. Pipe installed above grade for the pump station and backflow preventer and elsewhere, if applicable, shall be galvanized painted steel conforming to ASTM A.120 Schedule 40.

### 2.03 FITTINGS

- A. PVC fittings shall be SCH 40, Type 1, and must be of domestic manufacturer. Fittings shall be identified according to pressure rating or schedule.
- B. Galvanized fittings shall be malleable iron screwed fittings conformed to ANSI B 16.3.

### 2.04 SWING JOINTS AND RISERS

- A. Bubblers shall be installed on flexible swing joints consisting of thick-walled poly pipe and insert elbows.

### 2.05 SPRINKLER HEADS

- A. All sprinkler heads shall be as manufactured by Toro, Hunter, Rainbird, or approved equal. The manufacturer shall guarantee all sprinklers and components for not less than one year from installation, warranty against all defects in normal material and

workmanship.

B. Bubbler heads shall be adjustable flow type capable (flow rates from zero to 2 GPM).

## 2.06 ELECTRICAL VALVES

### A. Series and Manufacturer

1. Rainbird Manufacturer
2. PEB Series Diaphragm Valves

Electrically activated remote control valve (size as required) shall be of plastic construction with stainless steel trim, normally closed with manual bled plug and manual control (cross handle on 1-1/2" and 2" models; screwdriver adjustment on 1" model). Solenoid shall be 3.5 watt, 24 volt A.C. with waterproof molded coil and removable from valve without running coil and twisting wire. Diaphragm shall be of rubber material. Tir-Act solenoid porting shall prevent a continuous flow of water through the ports during operation. Inlet port to solenoid shall be filtered with self-flushing stainless steel screen, removable from outside of valve body for maintenance. All parts shall be serviceable without removing valve from the line. Valve shall have no external plumbing or tubing and may be installed at any angle without affecting valve operation.

## 2.07 VALVE BOXES

- A. Valve boxes for electric and manual valves shall be Brooks concrete type or approved equal, designed for installation with irrigation systems. Each valve box shall be large enough to provide at least two inches of clearance around all valve parts. The word "irrigation" shall be imprinted in the valve box cover. Covers for valve boxes shall have an anti-theft locking mechanism.

## 2.08 AUTOMATIC CONTROLLER

### A. Series and manufacturer

1. Rainbird Manufacturer
2. ESP Series

- B. The sprinkler controller shall provide for complete automatic operation of the sprinkler system and shall be wall mounted type. Controller shall have a station capacity as noted. Each station shall have an independent time control. Minor timing adjustments shall be made from the face of the controller with no disassembly

necessary. Controller shall provide for rapid advance between stations. Stations may be programmed to be omitted. Controller shall provide for manual operation when particular stations require special irrigation. Controller shall provide variable day cycles for every day, every other day, every third day, etc.

- C. All station wiring shall be color-coded with a section indicator key printed and visible at the connection point.
- D. There shall be fused circuit protection to prevent damage due to excessive voltage surges. A pump start circuit which can also be used to control a master valve shall be included in each unit. Each controller shall have U.L. approval.
- E. The casing of each controller shall be a metal locking, weatherproof cabinet. Operation instructions shall be printed on the inside door of each controller for easy access when programming. Section location chart shall also be placed inside cabinet door.

## 2.09 CONTROL WIRE

- A. Electrical control and ground wire shall be irrigation control cable. Wiring to be used for connecting the automatic remote control valves to each automatic controller shall be Type "U.F.", 600 volt, solid copper, single conductor wire with PVC insulation and bear U.L. approval for direct underground burial feeder cable.
- B. Insulation shall be 4/64" thick minimum covering of an approved thermoplastic compound for positive waterproof protection of sizes AWG size 118 through and including AWG size 10. AWG size 8 through AWG size 00 shall be insulated with 5/64" of the approved thermoplastic compound.
- C. Verification of wire types and installation procedures shall be checked with and made to conform to local codes. Wires shall be color coded and have different color or stripes for each zone control wire between controller and valve.

## 2.10 PUMP STATION (IF REQUIRED)

- A. Pump station shall be a pre-fabricated type with a capacity of 40 GPM @ 92 FT.HD. for a 10' lift. Station shall be manufactured by Hoover Pump or approved equal.
- B. Basic components of the station shall include: (1) a self-priming pump with the capacity noted; (2) a 2 HP motor selected to match on site electric; (3) isolation and check valves; (4) automatic controller; (5) rain sensor; (6) filter; (7) fiberglass enclosure, and (8) control panel including starter, high and low pressure shut-off, and low voltage and phase protection.

## 2.11 BACKFLOW PREVENTER

- A. The backflow preventer shall be a pressure vacuum type manufactured by Febco or approved equal.

## 2.12 GATE VALVES

- A. Gate valves shall be 150 lb. brass with non-rising stem, and shall be manufactured by Nibco or approved equal.

## 2.13 PAINT

- A. Exterior alkyd enamel, flat black or approved equal shall be used on above ground PVC risers and other designated irrigation equipment. CONTRACTOR shall provide paint sample to CONSULTANT for approval prior to execution of painting.

## 2.14 RAIN SENSOR

- A. Rain Sensor shall be Rain Bird RSD-BEx, or approved equal.
- B. Install this shut off device per Florida Statutes 373.62 and field verify that the device is operating correctly.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Layout mainline and headers and perform line adjustments and site modifications prior to excavation.
- B. Locate valves to assure ease of access for maintenance and so there is no physical interference with other elements of the project. Align valves parallel to each other in manifold system. Locate valves to be least susceptible to damage by vehicles.
- C. Furnish temporary support, adequate protection and maintenance of underground and surface utilities, structures, drains, sewers, and other obstructions encountered in the progress of the Work.
- D. Where the grade or alignment of the pipe is obstructed by existing utility structures such as conduit, ducts, pipe branch connections to sewer mains, main drains, water services, etc., the obstruction shall be permanently supported, relocated, removed, or

reconstructed by the CONTRACTOR in cooperation with the Owner of such utility. No deviation from the required line or grade shall be made without the written approval.

### 3.02 PIPE INSTALLATION

- A. Excavation shall be unclassified and shall include materials encountered in the excavation of trenches for pipe installation. The trench shall be of sufficient width and depth for installation of the pipe as indicated herein and cause minimum disturbance to existing conditions. Directional bore under existing pavement and sidewalks rather than cut and restore. No pavement shall be cut without written approval.
- B. Pipe shall be delivered and stored on the job site with suitable protection against any damage to pipe and fittings.
- C. Trenches shall be made wide enough to allow a minimum of six (6) inches between parallel pipe lines. Trenches for pipe lines shall be made of sufficient depths to provide the minimum cover from finish grade as follows:
  - 1. 18" minimum cover over main lines.
  - 2. 18" minimum cover over all sleeved lines routed under pavement.
  - 3. 8" minimum cover over all headers routed in landscaped areas.
  - 4. Allow for sufficient width of excavating and working in trenches made in soft soil.
- D. Pipe and fittings shall be carefully inspected before installation in the trench. Rocks over 1" diameter and unsuitable bearing material shall be removed from trench.
  - 1. Solvent welded joints shall be made only on clean, dry, square cut, smooth pipe sections. The fitting shall be "dry" tested for proper size before solvent is applied. The assembly shall proceed in strict accordance with recommended procedures furnished by the manufacturer.
  - 2. Solvent welded pipe sections shall be "snaked" from side to side in the trench to prevent joint rupture due to thermal contraction.
  - 3. Pipe openings shall be plugged during construction to prevent entrance of foreign material.

- E. Pipe to be installed under roadways, sidewalks, or other hardscape areas shall be placed in a SCH 40 PVC sleeve which has an inside diameter of not less than one inch larger than the outside diameter of the pipe or the combined outside diameter of pipes installed. Extend sleeve at least 36" beyond edge of pavement and stabilize for construction. Verify locations with other contractors and notify CONSULTANT or OWNER'S representative immediately of any conflicts.
- F. Backfill shall be carefully placed to avoid pipe dislocation. Backfill material shall be free of rocks, stumps, roots and other unsuitable material. Backfill shall be placed in six inch (6") lifts and shall be thoroughly compacted, except in areas to receive trees and shrubs. Backfill under pavement or sidewalks shall be compacted to 98% of maximum A.A.S.H.O. T-180 density. The surface of backfilled trenches shall be even with the surrounding ground surface.

### 3.03 SPRINKLER HEAD INSTALLATION

- A. A bubbler shall be installed at each tree. Each bubbler shall be installed on a flexible swing joint consisting of thick-walled poly pipe and insert elbows.

### 3.04 CONTROLLER

- A. Controller shall be installed following the recommendations of the manufacturer of the equipment. The location of controller shall be approved by the City before installation. Controller shall be a component of the pump station.
- B. Controller shall be properly grounded for protection from lightning.

### 3.05 CONTROL WIRE

- A. Control wires shall be installed at least fifteen inches below finish grade, and laid to the side of the main line. Provide looped slack at valves and snake wires in bundles at ten foot (10') intervals.
- B. No underground splices shall be made except at electric valves in valve boxes. Solder splices and coat with elastomeric waterproof cement. Wrap with electrical tape and coat again with elastomeric waterproof cement.
- C. All wire passing under existing or future paving or construction shall be encased in SCH 40 PVC conduit extending at least twenty-four inches (24") beyond edges of paving and stabilized for construction. Installation procedures shall conform to all local codes.
- D. Wire shall be color coded to facilitate troubleshooting.

### 3.06 AUTOMATIC VALVES

- A. Each automatic valve shall be installed in a valve box and shall be arranged for easy adjustment. Valve boxes shall be installed flush with grade and shall contain a minimum of one cubic foot of coarse gravel under the valve itself. CONTRACTOR shall insure percolation through the box. Valve boxes shall be located and installed to deter vandalism.

### 3.07 PUMP STATION (IF REQUIRED)

- A. The pump station shall be installed in accordance with manufacturer's instructions.
- B. Pump station shall be mounted on and anchored to a 6" thick reinforced concrete slab sized to accommodate the station and associated equipment.
- C. The pump shall be activated by the automatic controller.

### 3.08 BACKFLOW PREVENTER

- A. The backflow preventer shall be installed in accordance with local codes to meet requirements for cross connection control.
- B. The backflow preventer shall be located to be concealed from view.

### 3.10 RAIN SENSOR

- A. A Rain sensor shall be installed in the system to conserve water. Rain sensor shall be installed in accordance with local codes and manufacturer's instructions. The rain sensor shall be a component of the pump station.

### 3.11 GATE VALVES

- A. Gate valves shall be installed in accordance with local codes and arranged in valve box for easy adjustment and removal. Gate valves shall be installed on the main line and upstream of each solenoid valve.

### 3.12 VALVE BOXES

- A. Valve boxes shall be installed so the top of the box is at finished grade and parallel to adjacent boxes, curbs, walks. Each valve box cover shall be equipped with an anti-theft mechanism. Valve boxes shall be installed to deter vandalism and damage by vehicular traffic.

- B. Proper drainage material shall be provided per box.

### 3.13 TESTING AND INSPECTION

- A. Cleaning and Pressure Testing: Flush irrigation system with water to clear lines of foreign materials after system assembly is complete prior to installation of sprinkler heads. Cap and plug outlets and fill lines with water. Pressurize assembly to 100 P.S.I. System shall hold at 100 P.S.I. for one hour with no loss in pressure. Joints, tees, elbows, caps and connections shall be left uncovered during this test. Main line sections of solid unbroken pipe should be buried at intervals adequate to secure stabilization of pipe runs when pressurized. If necessary, repair leaks and retest assembly until satisfactory. Install sprinkler heads after approval of test results of complete assembly, less sprinkler heads.
- B. Make repairs, replacements, adjustments, and reconstruction required to pass inspections and test.
- C. Final inspection shall be made when the complete system is in place, operable and all repairs, additions, adjustments and other work is complete. Demonstrate the proper operation of the system, show the system's conformance with the plans and specifications, and demonstrate that the irrigation system gives proper and adequate coverage of landscaped areas.
- D. Make further repairs, corrections and adjustments to eliminate any deficiencies which may be discovered after acceptance.

### 3.14 WARRANTY

- A. Warranty the landscape irrigation system for a period of one and one half (1 1/2) years after the written final acceptance.
- B. Enforce manufacturer's and supplier's warranties. Malfunctions, deficiencies, breaks, damages, disrepair or other disorder due to materials, workmanship, or installation shall be immediately and properly corrected.
- C. Make full and immediate restoration of damages caused by system malfunction.

**END OF SECTION**

# LANDSCAPING

## PART 1 – GENERAL

### 1.01 SUMMARY

- A. Section Includes: The work consists of furnishing, planting, watering, fertilizing, mulching, pruning and transplanting and initial maintenance of all plants of the species, size and quality in the locations indicated on Drawings and the installation of soil, soil amendments, fine grading, fertilizer, planting soil and top dressing in areas indicated on Drawings.

### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM D 2487-85 Standard Testing Method for Classification of Soil for Engineering Purposes.
- B. “Grades and Standards for Nursery Plants”, by the Florida State Department of Agriculture, latest edition.
- C. “Approved Planting Practices” by the American Association of Nurserymen.
- D. “Hortus”, by L.H. Bailey, Second Edition.
- E. “Manual of Cultivated Plants” by L.H. Bailey.
- F. “Standard Plant Names” by the American Joint Committee on Horticultural Nomenclature.”

### 1.03 QUALITY ASSURANCE

- A. Contract Landscape work to a single firm specializing in landscape contracting. Landscape Contractor must show proof of having successfully completed three (3) or more similar projects within the last five (5) years in Monroe County, Florida.
- B. Source Quality Control:
  - 1. General: Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.

2. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability to Landscape Architect, together with proposal for use of equivalent material.
  3. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable.
  4. Planting Soil: Before delivery of planting soil, furnish Landscape Architect with written statement giving location of properties from which planting soil is to be obtained, names and addresses of owners, depth to be stripped and crops grown during past 2 years.
  5. Trees, Shrubs and Plants: Provide trees, shrubs and plants of quality, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 2004 "American Standard for Nursery Stock." Provide healthy, vigorous stock grown in a recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions or disfigurement.
  6. Inspection: The Landscape Architect may inspect trees and shrubs either at place of growth or at site before planting for compliance with requirements for genus, species, variety, size and quality. Notify Landscape Architect prior to shipping so that nursery inspection can be scheduled. Landscape Architect retains right to further inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from project site.
  7. In the event that Landscape Architect suspects deficiencies in materials used on this project, such materials will be tested by Owner contacted testing laboratory.
    - a. Cost of Testing:
      - 1) Initial Testing: By Owner.
      - 2) Retesting: By Contractor.
    - b. Evidence of non-compliance will result in rejection of all work.
- C. Qualifications of Workers: Provide at least one person who shall be present at all times during execution of this portion of work and who shall be thoroughly familiar with type of materials being installed and best methods for their installation and who shall direct the work performed under this section.
- D. Quality Control

1. Notify the Landscape Architect at least 5 work days in advance of the following for field review:
  - a. Field inspection of trees or shrubs at place of growth.
  - b. Review of proposed tree pit locations as represented by staking.
  - c. Review upon delivery of plant materials and sod at the site to verify species, vigor, size, condition, shape, quantity in compliance with specifications and drawings.
  - d. Review of tree pit excavation and final subgrade.
  - e. Review of all backfilling for palm and tree pits.
  - f. Review of work and materials after completion of planting. This review shall be scheduled sufficiently in advance and in cooperation with the Landscape Architect so that it may be conducted within 48 hours after completion of planting.
  - g. Review after a 30-day period of maintenance upon written request by the Contractor. Request shall be received at least five (5) days before anticipated date of review.
  - h. Review for final acceptance at the end of the warranty period.

#### 1.04 DEFINITIONS

- A. Satisfactory Fill Materials: Materials classified in ASTM D2487 as CW, GP, SW and SP properly worked by Contractor to obtain optimum moisture and compaction.
- B. Unsatisfactory Materials: Materials of any classification that are determined by testing laboratory as too wet or too soft for providing a stable foundation for pavement and walks will be classified as “unsatisfactory.”
- C. The words “plant materials” or “plants” refer to and include trees, shrubs, hedge, ground cover, annuals, grass or herbaceous materials.
- D. Specimen: An exceptional, heavy, symmetrical, tightly knit plant so trained or favored in its development that its appearance is unquestionable and outstandingly superior in form, number of branches, compactness and symmetry. Specimen shall conform to the standard for “Florida Fancy” as per the State of Florida, Department of Agriculture.
- E. Ground Cover: Anything other than grass.

#### 1.05 SUBMITTALS

- A. Samples: Submit the following in accordance with conditions of Contract and Division 1 Specification Sections.

- B. Soil and Soil Amendments

1. Planting Soil Mixture: Prior to Contractor purchasing planting soil mixture Contractor shall obtain a soil test of planting soil mixture in accordance with the most current edition of Methods of Soil Analysis by the Soil Science Society of America, Inc. for particle size and soil fertility. A sample of planting soil mixture and soil test results shall be submitted to Owner and Landscape Architect.
2. Existing Soil Test: Prior to Contractor purchasing planting soil mixture and fertilizer Contractor shall obtain a soil test of existing soil on site in accordance with the most current edition of Methods of Soil Analysis by the Soil Science Society of America, Inc. for existing particle size and existing soil fertility. A sample of the existing soil and soil test results shall be submitted to Owner and Landscape Architect. Soil tests shall indicate specific types of soil and nutrient requirements for all plant material specified. Contractor shall select the appropriate soil amendments and fertilizers needed for plant material specified based on results of planting soil test and existing soil test.

C. Plant and Material Certifications:

1. Certificates of inspection as required by governmental authorities.
2. Label data substantiating that plants, trees, shrubs and planting materials comply with specified requirements.
3. Submit photographs of trees, palms and shrubs to Landscape Architect for approval.

D. Planting Schedule: Proposed planting schedule, indicating dates for each type of landscape work during normal season for such work in areas of site. Once accepted, revise dates only as approved in writing after documentation of reasons for delays.

E. Maintenance Schedule: Proposed maintenance schedule, indicating dates for maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing after documentation for reasons for delays.

F. Contract Closeout Submittals:

1. Record Drawings: Provide blueprint with red line markings indicating changes made to the planting system layout during installation.
2. Manual: Deliver one copy giving complete instructions regarding maintenance of materials, complete nomenclature of items used and a copy of the guarantee issued to Landscape Architect and Owner upon conditional acceptance of installation.

## 1.06 DELIVERY, STORAGE AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
- B. Trees, Palms and Shrubs: Provide freshly dug palms and provide container grown trees, shrubs and small palms. Do not prune prior to delivery unless otherwise approved by Landscape Architect. Do not bend or bind-tie trees or shrubs in such manner as to damage bark break branches or destroy natural shape. Provide protective covering during delivery. Do not drop balled and burlapped stock during delivery.
- C. Deliver trees, palms and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture.
- D. Do not remove container-grown stock from containers until planting time.
- E. Immediately remove from the site materials which do not comply with the provisions of this Section of these Specifications.
- F. Replacements: In the event of damage or rejection, immediately make repairs and replacements necessary to the acceptance of Landscape Architect at no additional cost to Owner.
- G. Plants shall not be planted on job until they have been inspected at receiving site and accepted by the Landscape Architect.
- H. Legible identification tags shall be attached to at least one plant of each species. Packages, boxes or bunches of plants shall also be identified with a similar tag. Plants which show improper handling, bruised trunks, broken branches or root balls or arrive on site in an unsatisfactory condition will be rejected.
- I. Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread and label with number to assure symmetry in planting.
- J. Shipment and Delivery: Acceptance of plant material will be given by the Landscape Architect and Owner only after the material is planted and after meeting all of the incidental requirements prescribed herein and on the plans.

#### 1.07 JOB CONDITIONS

- A. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
- B. Excavation: When conditions detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions or obstructions, notify Landscape Architect before planting.

#### 1.08 SEQUENCING

- A. Notify the Landscape Architect a minimum of 5 work days in advance of delivery of plant material.
- B. Construction Review: In addition to other progress construction reviews, the Contractor shall schedule and facilitate the following related reviews giving notice to the Landscape Architect at least 5 work days in advance.
  - 1. Field inspection of trees, palms and shrubs at place of growth.
  - 2. Review of proposed tree pit locations as represented by staking.
  - 3. Review upon delivery of plant materials at the site to verify species, vigor, size, condition, shape, quantity in compliance with specifications and drawings.
  - 4. Review of tree pit excavation and final subgrade.
  - 5. Review of all backfilling for palm and tree pits as well as the placement of the planting soil.
  - 6. Review of work and materials after completion of planting for conditional acceptance. This review shall be scheduled sufficiently in advance and in cooperation with the Landscape Architect so that it may be conducted within 48 hours after completion of planting.
  - 7. Review after a 30-day period of maintenance upon written request by the Contractor. Request shall be received at least five days before anticipated date of review.
  - 8. Review for final acceptance at the end of the warranty period.

#### 1.09 WARRANTY

- A. Irrigate the newly planted trees, palms, shrubs and ground cover until plant material is covered by fully operational electric irrigation. Irrigation shall occur in sufficient quantity to insure the orderly establishment of the plant material.
- B. Warranty plants for one year after conditional acceptance by the Landscape Architect and Owner. Any planting that fails or dies within that period shall be replaced and replanted immediately without expense to Owner, provided that the Contractor shall not be held responsible for losses beyond his control arising from

“Acts of Providence”; acts of vandalism; or loss arising from documented neglect on the part of Owner to properly care for planting after acceptance.

- C. Make periodic reviews of the planting at no extra cost to Owner during the warranty period to determine what changes, if any, should be made in Owner maintenance program. Proposed changes shall be submitted, in writing, to Owner and, jointly by copy, to the Landscape Architect.
- D. At conclusion of the one year warranty period, the Landscape Architect shall make a construction review to determine the condition of planting. Plants that have died or, in the opinion of the Landscape Architect, are in an unhealthy or badly impaired condition for reasons other than vandalism, “Acts of Providence”, or documented neglect by Owner, shall be replaced by the Contractor as soon as possible, except that replacement will not be required in any season definitely unfavorable for the kinds of plants involved.
- E. Before final acceptance, at the end of the warranty period, remove guying and saucers. Install mulch around trees formerly with saucers. Bracing of palms shall remain in place for one year unless the removal is directed by Landscape Architect.

#### 1.10 MAINTENANCE

- A. Maintain all planting, starting at the time of planting and continuing for 365 calendar days after planting is complete and conditional acceptance by the Landscape Architect and Owner.
- B. Maintain and protect all plants including incidental materials until end of maintenance period.
- C. Plant Maintenance:
  - 1. Maintenance shall begin immediately after each plant is planted and shall continue until the completion of the 365 day maintenance period. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and protected for the period of time stated above.
  - 2. Settled plants shall be reset to proper grade position, planting saucer rested and dead material removed. Guys shall be tightened and repaired.
  - 3. Defective work shall be corrected as soon as possible after it becomes apparent and weather and season permit. Upon completion of planting, the Contractor shall remove from the site excess soil and debris, and repair all damage to structures resulting from planting operations.
- D. General Maintenance:

1. Maintenance shall include all watering, weeding, fertilizing, cultivating, spraying, adjustment of guying, staking and pruning necessary to keep plant material in a healthy vigorous growing condition and to keep planted area neat and attractive.
  2. Provide all equipment and means for proper application of water to those planted areas not provided with an irrigation system.
  3. Planting areas shall be kept weed free with manual removal or an herbicide program until final acceptance is incurred.
- E. Replacements:
1. At the end of the maintenance period, plant material shall be in a healthy growing condition.
  2. During maintenance period immediately replace any plants showing weakness and probability of failure with a new healthy plant of the same type and size, without additional cost to Owner.
- F. Extension of Maintenance Period: Continue maintenance period, at no additional cost to Owner, for additional thirty days after previously noted deficiencies have been corrected. Warranty period shall commence upon acceptance of replaced plant material.
- G. The Contractor shall conclude maintenance (exclusive of replacement within warranty period) upon written acceptance of the Landscape Architect at the end of the maintenance period or, as provided for above, at the end of the extended maintenance period.
- H. Protection:
1. Irrigate the newly planted trees, palms, shrubs and groundcover until final acceptance is issued.
  2. Irrigation will occur in sufficient quantity to insure the orderly establishment of the trees, palms, shrubs and groundcover.
  3. Planting area shall be kept weed free by manual removal or by an herbicide program until final acceptance is issued.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Planting Soil: An evenly blended mixture of 50% fresh water sand and 50% inland glades muck shall be used for trees and shrubs and 70% fresh water sand and 30% inland glades muck shall be used for palms. Fresh water sand and inland glades muck shall be thoroughly mixed with amendments based on soil analysis provided by Contractor.

1. Material shall be proportioned by volume rather than weight.
  2. Site mixing will not be acceptable.
  3. Sand shall be free of silt and sludge.
  4. Mixture shall be free of rocks greater than 2 inches in size, limbs, roots and other deleterious matter.
  5. Landscape Architect reserves the right to reject planting soil utilized at any time during the execution of work that does not meet specification.
- B. Commercial Fertilizers: Commercial grade fertilizer shall be uniform in composition, dry, free flowing and delivered to site in fully labeled, unopened containers, bearing name, trade name or trademark and warranty of producer. Contractor is responsible for specifying fertilizers needed based on plant material, existing soil analysis and planting soil analysis. Contractor is responsible for providing soil analysis. All fertilizers shall conform to applicable State and Federal laws and shall be installed according to manufacturer's recommendations.
- C. Trees, Palms & Shrubs:
1. Trees and shrubs shall be as noted on plans and as approved by Landscape Architect and Owner.
  2. Caliper measurement, height measurement, height relation to caliper, spread, root ball dimensions, and ground covers, etc. shall conform to the applicable standards above and the requirements for this project.
  3. Substitutions in plant species or sizes shall be made only after written authorization by the Landscape Architect and Owner.
  4. Materials or work may be rejected if, in the opinion of the Landscape Architect, such work does not meet the requirements of the Specifications. Rejected materials shall be promptly removed from the site by the Contractor at no expense to Owner or Landscape Architect.
- D. Pruning:
1. Plants shall not be pruned prior to delivery except as authorized by the Landscape Architect.
  2. Plants shall have been transplanted or root pruned at least once in the three years prior to the contract date.
  3. Immediately upon selection by the Contractor and acceptance by the Landscape Architect, all major field grown trees shall be completely root pruned at the nursery site and held in that condition for a period of 45 to 60 days. Plants shall not be further dug or transported without field acceptance of Landscape Architect and Owner.
  4. All tree pruning shall be in accordance with ANSI A-300 Guidelines for Tree Pruning.

- E. Tree and Palm Guys: Provide Arrow Anchor, tree guy anchoring system (TG-2) trees less than 2-1/2" caliper and TG-1 for trees greater than 2-1/2" caliper by U.S. Rigging Supply or equal approved by Landscape Architect.
- F. Large Palm Guys: Install and brace palms in a vertical position. Place a minimum of five layers of burlap around the trunk and, in turn, have a minimum of five wood battens placed vertically over it. The battens shall be retained in place by two 3/4 inch high carbon steel bands. Three wood braces, placed at a 60 degree angle equidistant around the plant shall be nailed to the battens. No nails shall be placed into the palm trunk. Three bracing pads shall be placed below grade at the bottom of each brace.
- G. Peat: Spaghnum peat moss for horticultural use.
- H. Mulch: Natural color shredded eucalyptus bark or Enviromulch free of weed. No cypress mulch shall be used and no red or other artificially colored mulch shall be used.
- I. Water: Potable water shall be provided by the Contractor. In the event of emergency or other loss of water supply, the Contractor shall be responsible for water supply.
- J. Plant Material:
  - 1. Plant species shall conform to those indicated on Drawings.
  - 2. Plant Quality:
    - a. Plants shall be freshly dug, balled and burlapped nursery grown stock or container grown nursery stock. All plants shall be free of broken, damaged root balls or root bound conditions. Plants shall be sound, healthy, vigorous, free from plant diseases, insect pests, or their eggs and shall have healthy normal root systems.
    - b. Collected plants shall not be used unless authorized in writing by the Landscape Architect.
    - c. Plant material, not otherwise specified as being Florida Fancy or "Specimen" shall be Florida No. 1 or better quality, graded in accordance with Grades and Standards for Nursery Plants, published by the State of Florida, Department of Agriculture. Plants judged to be not in accordance with said standards will be rejected.
    - d. Ground Cover
      - 1) Provide plants established and well rooted in removable containers or integral peat pots and with not less than minimum number and length of runners required by ANSI Z60.1 for the pot size shown or listed.

## **PART 3 – EXECUTION**

### **3.01 INSPECTION**

- A. Inspect work of all other trades and verify that all such work is complete to the point at which this landscape work may properly commence. Verify that planting may be completed in accordance with Contract Documents.
- B. Discrepancies:
  - 1. In the event of discrepancy, immediately notify Landscape Architect.
  - 2. Do not proceed with installation of materials or plants in areas of discrepancy until all such discrepancies have been fully resolved to the satisfaction of the Landscape Architect.
  - 3. Plans supercede tabulations, Contractor responsible for verifying all takeoffs.
- C. It shall be the Contractor's responsibility to thoroughly test the irrigation system and report any malfunctions to Owner. It shall be the Contractor's responsibility to hand water prior to completion of installation of irrigation system.

### **3.02 PREPARTION – GENERAL**

- A. Stake the proposed location of trees, palms and large shrubs to be planted.
- B. Excavate planting pits and beds, prepare subgrade.
- C. Provide plants, fertilizer and planting soil and incidental materials as specified.
- D. Place plants, backfill and guy or brace plants as required.
- E. Fine grade planting areas and complete incidental work as specified.

### **3.03 PREPARATION OF PLANTING SOIL**

- A. Before mixing, clean topsoil of roots, plants, weeds, stones, clay lumps and other extraneous materials harmful or toxic to plant growth.
- B. Mix planting soil at rates specified and as shown in plans.
- C. Remove all existing soil from all plantbeds and pits.
- D. All plant beds and pits shall be filled with planting soil.

### **3.04 PREPARTION OF PLANTING BEDS**

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- A. Loosen subgrade of planting bed areas to a minimum depth of 18” for shrubs, 6” for groundcover using a culti-mulcher or similar equipment. Remove stones measuring over 6 inches in any dimension. Remove sticks, stones, rubbish and other extraneous matter.
- B. Remove existing soil and spread planting soil mixture to minimum depth of 18” for shrubs and 6” for groundcover to meet lines, grades, and elevations shown, after light rolling and natural settlement. Work planting soil into top of loosened subgrade to create a transition layer then place remainder of the planting soil.

### 3.05 EXCAVATION FOR TREES, PALMS AND LARGE SHRUBS

- A. Excavate pits, beds, and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
  - 1. For balled and burlap (B&B), make excavations at least again as wide as the ball diameter and 36” depth, plus following allowance for setting of ball on a layer of compacted backfill:
    - a. Allow for 6 inch thick setting layer of planting soil mixture.
  - 2. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
- B. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
- C. Fill excavations for trees and shrubs with water and allow water to percolate out prior to planting.

### 3.06 PLANTING TREES, PALMS, SHRUBS AND GROUNDCOVER

- A. Set trees and shrubs on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball 10% above elevation of adjacent finished landscape grades. Set palms in same manner as tree except with top of ball at the same elevation as adjacent finished grade. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. After placing final layer of backfill watering shall occur again.
- B. Set container grown stock, as specified for balled burlapped stock, except cut containers on 2 sides with an approved can cutter. Remove bottoms of wooden boxes after partial backfilling so as not to damage root balls.

- C. Saucer top of backfill to allow for water retention.
- D. Mulch planted areas and provide not less than 3 inches thickness of mulch.
- E. Unless otherwise directed by Landscape Architect, do not cut tree leaders, or prune trees or palms. Any pruning directed by Landscape Architect must be in compliance with ANSI A-300 Guidelines for Pruning, latest version.
- F. Remove and replace excessively pruned or misformed stock resulting from improper pruning.
- G. Guy and stake trees immediately after planting, as indicated.

### 3.07 ADJUSTMENT AND CLEANING

- A. Cleaning up the Site: Upon completion of any landscape project, the Contractor must thoroughly clean up the project site. In addition to removing all equipment, unused materials, deleterious materials and surplus excavated material, the Contractor shall fine grade all disturbed areas and the areas adjacent to the new plantings to provide a neat and uniform site. All damaged or altered existing structures as a result of the landscape work shall be corrected.

### 3.08 MAINTENANCE

- A. Begin maintenance immediately after planting.
- B. Maintain trees, palms, shrubs, and other plants until final acceptance, but in no case, less than following period:
  - 1. 365 days after substantial completion of planting and conditional acceptance by Landscape Architect and Owner.
- C. Maintain trees, palms, shrubs, and other plants by pruning, cultivating, and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

### 3.09 CLEANUP AND PROTECTION

- A. During landscape work, keep pavements clean and work area in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection

during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

### 3.10 INSPECTION AND ACCEPTANCE

- A. When landscape work is completed, including maintenance, Landscape Architect will, upon request, make an inspection to determine final acceptance.
  - 1. Landscape work may be inspected for final acceptance in portions as agreeable to Landscape Architect, provided each portion of work offered for inspection is complete, including maintenance.
- B. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by Landscape Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

**END OF SECTION 02900**

## SIDEWALKS, CURBS & GUTTERS

### PART 1- GENERAL

- 1.1 WORK INCLUDED: This section covers all formed concrete work reinforced and non-reinforced as required by the Project indicated on the plans or specified by the Engineer. **The Contractor is responsible for all site work and construction supervision required to meet ADAAG/ADA specifications.**
- 1.2 SUBMITTALS DURING CONSTRUCTION:
- A. Submittal during construction shall be made as required in General Requirements.
- 1.3 SUBMITTALS REQUIRED FOR:
- A. Concrete - Submit data sheets
  - B. Granular fill - Submit data sheets
  - C. Expansion joint fillers - Submit data sheets
  - D. Traffic paint - Submit data sheets
  - E. Asphalt concrete cold patch - submit data sheets
  - F. Asphalt Hot Mix – submit data sheets
  - G. Sod - submit data sheets
  - H. Stamped and Colored concrete-submit data sheets
  - I. Detectable Warnings System:- submit data sheets
  - J. Concrete Sealer - submit data sheets

### PART 2- PRODUCTS

- 2.1 FORMS:
- A. Materials for curb forms shall be 2-inch dressed dimension lumber, fiberglass, or metal of equal strength, free from defects which would impair the appearance or structural quality of the complete curb. Where short-radius forms are required, 1-inch dressed lumber or plywood may be used. Form material for the face of the curb shall not have any horizontal joints closer than 7-inches from the top of the curb. Provide stakes and

bracing materials as required to hold forms securely in place. Metal forms shall be subject to approval by the Engineer. Forms are incidental to the Contract Price.

- B. Materials for sidewalk forms shall be 2-inch dressed lumber straight and free from defects or fiberglass or standard metal forms may be used. Where short radius forms are required, 1-inch dressed lumber is required to hold forms securely in place.

## 2.2 GRANULAR FILL:

- A. Natural sand not having any piece of material larger than 1-inch, free from dirt, clay balls, or organic material, well graded from coarse to fine, containing sufficient finer material for proper compaction and less than ten (10) percent by weight passing the No. 200 sieve. Payment shall incidental to the concrete unit Price bid.

## 2.3 EARTH FILL:

- A. Earth must be free from rocks 2-inches or larger and other foreign materials. Earth fill is incidental to contract Prices. Payment shall incidental to the concrete unit Price bid.

## 2.4 EXPANSION JOINT FILLERS:

- A. Expansion joint fillers shall conform to F.D.O.T. Standard Specifications for Road and Bridge Construction 2004. Submit complete information regarding joint fillers for approval by the Engineer. Payment shall incidental to the concrete unit Price bid.

## 2.5 CONCRETE:

- A. Concrete shall be ready-mixed conforming to ASTM C 94 and shall have a compressive strength of 3,000 psi at 28 days. All exposed aggregate concrete applications shall be comprised of 3 MM – 5 MM maximum size brown river rock aggregate. Limerock aggregate is acceptable for all other concrete applications. Submit complete information regarding mix to the Engineer for review in accordance with the requirements of the referenced ASTM Specification.

## 2.6 DETECTABLE WARNING SYSTEM:

- A. Detectable Warning Systems on walking surfaces shall be “Endicott Handicap Detectable Warning Paver” or equal with raised truncated domes and specified color and must meet federal ADAAG guidelines.

## 2.7 TRAFFIC MARKING PAINT:

- A. Traffic marking paint shall conform to F.D.O.T. Specifications Section 971. Paint for curbs shall be Pride Baker Paint brand traffic marking paint or approved equal. Paint and labor shall be incidental to contract price for replacement markings and the unit price bid for new markings.

## 2.8 ASPHALT:

- A. Cold patch asphalt. Asphalt and labor shall be incidental to the contract price for patches surrounding curbs and sidewalks.

## 2.9 ACCEPTANCE OF MATERIALS:

- A. All materials shall be subject to inspection for suitability, as the Engineer may elect, Prior to or during incorporation into the work.

## PART 3- EXECUTION

### 3.1 EXCAVATION AND BACKFILL:

- A. Cut the existing sidewalk regardless of the thickness, with an approved pavement saw or approved pavement cutter wherever sidewalk edges do not follow straight lines. Saw cutting of concrete shall be wet down to reduce air borne contamination. Remove and dispose of sidewalk at the Contractor's expense.
- B. Prior to excavation of the sidewalk the Contractor's superintendent and the Owner's Engineer or designee shall, together, walk the length of the site marking the limits of the excavation and marking any other pertinent information. Paint shall be supplied by the Contractor, incidental to the cost of the Contract.
- C. At the time of each walk through described in Section 3.1.2, each water meter box and sewer cleanout shall be inspected for structural integrity. Those which are deemed in need of replacement at that time will be supplied by the contractor at the unit price bid or the Florida Keys Aqueduct Authority. Those which meet normal structural and functional standards, and are broken by the Contractor during the construction Process shall be replaced by the Contractor at his cost.
  - 1. Sewer cleanout boxes shall be made from 100% homogenous polyethylene material having a minimum wall thickness of .550 inch, a compartment size of 12-inches by 20-inches with a clear opening of 10-inches by 17-inches. Provide knockouts or notches in each end sized to allow placement of a 6-inch PVC pipe inside the box. Vertical crush to exceed 20,000 pounds and sidewall loading to exceed 180 pounds per square inch. A flange shall encircle the top area for installation in concrete. Cleanout covers shall be cast of ductile conforming to ASTM A-536-84, grade 60-40-18. The meter box covers shall meet or exceed Federal specifications RR-F-621D for a minimum Proof load of 25,000 pounds on 9"x 9" area. All boxes and covers shall be manufactured by Mid- States Plastics, Mount Sterling, KY. Florida Master Distributor: Ferguson Water Works (561-844-3222) or approved equal.

2. Water meter boxes shall be in accordance with the latest FKAA standards and specifications.

D. As directed by the Engineer remove any unsuitable material to such a depth that the addition of the sub grade and granular fill can be placed and compacted. Unsuitable material shall consist of and not be limited to top soil, wood, root matter, stumps, trunks, roots or root systems. Excavation that cannot be accomplished without endangering present structures shall be performed with hand tools.

### 3.2 PREPARATION OF SUBGRADE:

A. Bring the areas on which curbs and sidewalks are to be constructed to required grade and compact to 95 percent ASTM D 1557 by sprinkling and rolling or mechanical tamping. As depressions occur, refill with approved material and recompact until the surface is at the proper grade.

### 3.3 PLACING GRANULAR FILL:

A. After the sub grade for sidewalks and curbs is compacted and at the Proper grade, spread 4-inches or more of granular fill. Sprinkle with water and compact to 95 percent ASTM D 1557 by rolling or other method. Top of the compacted fill shall be at the proper level to receive the concrete. Granular fill shall be used, when needed, to raise the level of grade to allow for proper thickness of concrete. After spreading fill, compact to 95 per cent.

### 3.4 SETTING FORMS:

A. Construct forms to the shape, lines, grades, and dimensions as required for proper installation or as called for on the drawings or as directed by the Engineer. Stake wood or steel forms securely in place, true to line and grade.

B. Forms on the face of the curb shall not have any horizontal joints within seven (7) inches of the top of the curb. Brace forms to prevent change of shape or movement in any direction resulting from the weight of the concrete during placement. Construct short-radius forms to exact radius. Tops of forms shall not depart from grade line more than 1/8-inch when checked with a ten-foot straightedge. Alignment of straight sections shall not vary more than 1/8-inch in ten (10) feet.

### 3.5 CURB/GUTTER CONSTRUCTION:

A. Construct curbs to line and grade of curbs and gutters removed, as shown on plans or as established or directed by the Engineer. Curbs shall conform to F.D.O.T. type "D" or "F" or as directed by the Engineer.

B. Handicap ramps shall be constructed at locations shown on the drawings or as directed by the Engineer and in conformance with legal requirements.

- C. Place preformed asphalt-impregnated expansion joints at intervals not exceeding 100 feet, at the beginning and ends of the curved portions of the curbs and at inlets.
- D. Place contraction joints in the curb at intervals not exceeding fifteen (15) feet. Contraction joints shall be of the open joint type and shall be Provided by inserting a thin, oiled steel sheet vertically into the fresh concrete to force coarse aggregate away from the joint. The steel sheet shall be inserted the full depth of the curb. Place, process, finish and cure concrete in conformance with the applicable requirements of ACI 614, and this Specification. Whenever the requirements differ, the higher shall govern. After initial set has occurred in the concrete and prior to removing the front curb form, the steel sheet shall be removed with a sawing motion. Finish top of curb with a steel trowel and finish edges with a steel edging tool.
- E. As soon as the concrete has set sufficiently to support its own weight, remove the front form and finish all exposed surfaces. Finish formed face by rubbing with a burlap sack or similar device that will produce a uniformly textured surface, free of form marks, honeycombs and other defects. All defective concrete shall be removed and replaced at the Contractor's sole expense.
- F. Upon completion of the curing period, backfill the curb with earth, free from rocks 2-inches and larger and other foreign materials. Tamp backfill firmly in place.
- G. Finished curb shall present a uniform appearance for both grade and alignment. Remove any section of curb showing abrupt changes in alignment or grade, or which is more than 1/4-inch away from its location as staked, and construct new curb in its place at the Contractor's sole expense.
- H. Upon completion of the curing period fill with asphalt any street side holes or ruts in the asphalt paving that was created by the installation of the sidewalk or the curb. When required by Engineer, saw cut, remove and replace sections as directed.
- I. Where curbs that were painted for legal traffic markings (i.e., loading zones, driveways, no parking zones) prior to construction are removed, replaced, repaired or installed. These and any newly constructed curbs and sidewalks shall be repainted by the Contractor. Painting shall be performed upon completion of the curing period, but not less than seven (7) days have elapsed since pouring the concrete. Curbs are to be painted from the inside edge of the curb to the edge of the pavement.

### 3.6 SIDEWALK CONSTRUCTION:

- A. Sidewalks shall be four-inches and driveways shall be 6 inches thick as directed by the City.
- B. Place preformed expansion joints as in the adjacent curb, where the sidewalk ends at a curb, around posts, poles, concrete buildings or walls or other objects protruding through the sidewalk, and at locations shown on the Drawings.

- C. Provide dummy joints transversely to the walks at locations opposite the contraction joints in the curb and at intervals not exceeding five (5) feet. These joints shall be 1/4-inch by 1-inch weakened plane joints. They shall be straight and at right angles to the surface of the walk.
- D. Place, process, finish, and cure concrete in conformance with the applicable requirements of ACI 614 and this Specification. Where the requirements differ, the higher shall govern.
- E. Surface finish shall be as depicted on the Landscape Drawings.
- F. Sidewalks shall be placed to slope towards the street at a maximum slope of 2% or as otherwise directed by the Engineer.
- G. Where sidewalks or curbs which were painted for legal traffic markings (i.e., loading zone, driveways, no parking zones) are removed and replaced with new curb or sidewalk or repaired, the Contractor shall be responsible to paint the new portions of the curbs or sidewalks.
- H. Upon completion of the curing period fill with asphalt, any street side holes or ruts in the asphalt paving that were created by the installation of the curbs or sidewalks.

### 3.7 GRANITE CURB RESTORATION:

- A. Granite Curb Restoration shall take place in locations as directed by the Engineer.
- B. The existing granite curb shall be removed from the ground and stored in a manner to preserve their quality and quantity as specified in the General Requirements. The Contractor shall be solely and directly responsible to the Owner for any curbing removed during the contract period.
- C. Curbing shall be reset, prior to sidewalk pour, as specified in the drawings, or as otherwise directed by the Engineer.
- D. Any pavement disturbed by curb restoration shall be repaired as specified in Section 3.5.8
- E. Curbs that were painted with legal traffic markings (i.e., loading zones, driveways) prior to removal shall be repainted as directed by the City.

END OF SECTION

## STORM PIPING

### PART 1.0 GENERAL

#### 1.1 WORK INCLUDED

- A. This section covers the work necessary for the storm sewers and appurtenances, complete.

### PART 2.0 PRODUCTS

#### 2.1 GENERAL

- A. All storm drainpipes in the project shall be ADS polyethylene or Polyvinyl Chloride (PVC)
- B. Provide ADS Pipe Adapter flexible watertight Waterstop connection with pipe adapter for ADS Corrugated HDPE Pipe to storm structures, or approved equal ADS Pipe Adapters meeting the requirements of ASTM F 2510 and ASTM C 1478 for watertight flexible connections. Rapid set mortar shall be used with potable water; ground water shall not be used.

#### 2.2 ADS POLYETHYLENE PIPE N-12 OR EQUAL

- A. This Specification covers the requirement of high-density polyethylene corrugated pipe with smooth interior for storm sewer. Nominal sizes 12, 15, 18, and 24 -inch are included.
- B. Material: Pipe and fittings shall be manufactured from high density polyethylene resin which shall meet or exceed the requirements of Type III, Category 4 of 5, Grade P33 or P34, Class C per ASTM D1248.
- C. Pipe Dimensions: the nominal size of the pipe is based on the nominal inside diameter of the pipe. The tolerance on the specified inside diameter shall be +3 percent, -1 percent, or 1/2 inch whichever is less. Lengths shall be not less than 99 percent of the stated quantity.
- D. Pipe Stiffness: The pipe shall have minimum pipe stiffness at 5 percent deflection as follows:

Diameter (Inches)	Pipe Stiffness (PSI)
12	45
15	42
18	40
24	34

- E. Tests shall be in accordance with ASTM D2412 with a minimum one-diameter sample length, a loading rate of 0.5 inch/min., and readings at 5 percent deflection.
- F. Hydraulics: The pipe shall have a minimum tested Manning's "n" value of 0.012.

### 2.3 POLYVINYL CHLORIDE (PVC) GRAVITY PIPE AND FITTING:

- A. 15 inch diameter PVC sewer pipe and under for general service shall conform to ASTM D3034, standard dimension ratio not to exceed 26.
- B. PVC fittings for 15 inch diameter pipe and under for general service shall conform to ASTM D3034, standard dimension ratio not to exceed 35.
- C. PVC pipe for watermains 12 inches and smaller shall be AWWA C900, standard dimension. Dimension ratio not to exceed 18.
- D. PVC pipe for storm and sanitary sewer pipe larger than 15 inches shall be AWWA C905, standard dimension ratio, not to exceed 26.
- E. PVC additives and fillers including but not limited to stabilizers, antioxidants, lubricants, colorants, etc. shall not exceed 10 parts by weight per 100 of PVC resin in the compound.
- F. Plastic pipe and fittings shall meet all the requirements of AWWA C900 and shall be PVC-1120 pipe, having a cell classification of 1245A or 1245B, in accordance with ASTM D1784. Pipe 4 inches and larger shall be pressure rated Class 150 (DR 18) with cast iron pipe equivalent OD in accordance with AWWA C900. Pipe shall be equipped with a push-on type joint with elastomeric gasket that meets the requirements of ASTM D3139. Pipe smaller than 4 inches shall be PVC Schedule 80, in accordance with ASTM D1785. Schedule 80 pipe and fittings shall be threaded joint.

### 2.4 PIPE JOINTS

- A. ADS POLYETHYLENE PIPE JOINTS: The pipe shall be joined by split corrugated couplings at least seven corrugations wide and exceeding the soil tightness requirements of the AASHTO Standard Specification for Highway Bridges, Section 23 (2.23.3).
- B. POLYVINYL CHLORIDE (PVC) GRAVITY PIPE JOINTS: Joints shall be rubber gasketed type complying in all respects to the physical requirements of ASTM D3212 for gravity pipes. Gaskets shall conform to ASTM F477. Furnish complete information on basic gasket polymer and results of test of physical properties. Lubricant for jointing as approved by the pipe manufacturer.

## 2.5 PIPE BEDDING AND PIPE ZONE MATERIAL

- A. Pipe bedding and pipe zone material are identical and shall be free from dirt, clay balls, and organic material and forming to size No. 57 stone gradation as specified in the Standard Specifications or similar accepted material and shall be imported at the contractor's own expense. Lime rock screenings or material resulting from trench excavation, except for lime rock that has been crushed and graded to size as specified, will not be accepted for pipe bedding materials.
- B. Imported pipe bedding and pipe zone materials specified in this Section are subject to the following requirements:
1. All tests necessary for the CONTRACTOR to locate an acceptable source of imported material shall be made by the CONTRACTOR. Certification that the material conforms to the Specification requirement along with copies of the test results from a qualified commercial testing laboratory shall be submitted to the ENGINEER for acceptance at least 10 days before the material is required for use. CONTRACTOR shall furnish all material samples the CONTRACTOR'S sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. CONTRACTOR shall due sampling of the material source in accordance with ASTM D75. Also, the CONTRACTOR shall notify the ENGINEER at least 24 hours prior to sampling. The ENGINEER may, at the ENGINEER'S option, observe the sampling procedures. Tentative acceptance of the material source shall be based on an inspection of the source by the ENGINEER, and/or the certified test results submitted by the CONTRACTOR to the ENGINEER, at the ENGINEER'S discretion. No imported materials shall be delivered to the site until the proposed source and the ENGINEER has tentatively accepted the material's tests in writing. Final acceptance will be based on tests made on samples of material taken from the completed and compacted course. The completed course is defined as a course or layer that is ready for the next layer or the next phase of construction.
  2. Gradation tests by the CONTRACTOR shall be made on samples taken at the place of production prior to shipment. Samples of the finished project for gradation testing shall be taken from each 1,500 tons of prepared materials or more often as determined by the ENGINEER, if variation in gradation is occurring, or if the material appears to depart from the Specifications. Test results shall be forwarded to the ENGINEER within 48 hours after sampling.
  3. If tests conducted by the CONTRACTOR or the ENGINEER indicate that the material does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material that does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the CONTRACTOR'S sole expense. Sampling and testing performed by the CONTRACTOR shall be done at the CONTRACTOR'S sole expense.

## **PART 3.0 EXECUTION**

### **3.1 LINE AND GRADE**

- A. Installation of the pipe shall be in accordance with the manufacturer and either AASHTO Section 30 or ASTM Recommended Practice D2321.
- B. Do not deviate from line or grade, as established by the ENGINEER, more than 1/2 inch for line and 1/4 inch for grade, provided that such variation does not result in a level or reverse sloping invert. Measure for grade at the pipe invert not at the top of the pipe because of permissible variation in pipe wall thickness.
- C. All storm sewers shall be laid using a laser accepted by the ENGINEER. The beam shall be directed through the pipe. Batter boards or instrument laying will not be permitted. The laser shall be constantly shielded from the direct sun.
- D. The CONTRACTOR shall set offset stakes or other accepted method of controlling alignment and grade for excavation of trenches and for pipe laying. The CONTRACTOR shall submit in writing his proposed method of establishing line and grade to the ENGINEER for acceptance.

### **3.2 LAYING AND JOINTING PIPE AND FITTINGS**

- A. Do not permit mud and foreign material to get into the pipe. During laying operations, do not permit debris, tools, clothing, or similar items to be placed in pipes.
- B. Pipe laying shall proceed upgrade with ends pointing in the direction of flow. After a section of pipe has been lowered into the trench, clean the ends of the pipe. Be careful in handling pipe to prevent breakage. Remove any pipe damaged and replace at the CONTRACTOR's sole expense.
- C. Make assembly of the joint in accordance with the recommendations of the manufacturer of the type of joint used. Provide all special tools and appliances required for the jointing assembly.
- D. After the joint has been made, check pipe for alignment and grade. The trench bottom shall form a continuous and uniform bearing and support for the pipe at every point between joints. Apply sufficient pressure in making the joint to assure that the joint is "home," as defined in the standard installation instructions provided by the pipe manufacturer. To assure proper pipe alignment and joint makeup, place sufficient pipe zone material to secure the pipe from movement before the next joint is installed. Pipe 21 inches and smaller shall be laid so the inside joint space does not exceed 3/8 inch in width.
- E. Take the necessary precautions required to prevent excavated or other foreign material from entering the pipe during the laying operation. At all times, when laying operations are not in progress, at the close of the day's work, or whenever the workmen are absent

from the job, close and block the open end of the last laid section of pipe to prevent entry of foreign material or creep of the gasketed joints.

- F. Take all precautions necessary to prevent the "uplift" or floating of the line prior to the completion of the backfilling operation.

### 3.3 BACKFILL AT THE PIPE ZONE

- A. The pipe zone shall be considered to include the full width of the excavated trench from the bottom of the pipe to a point 12 inches above the outside surface of the barrel of the pipe or to elevation plus 2.5 feet NGVD, whichever is higher.
- B. Pipe zone material as hereinbefore specified shall be used for the full depth of the pipe zone and for the full width of the excavated trench for all pipe.
- C. Hand place the material around the pipe in horizontal 6 inch layers and thoroughly hand tamp with accepted tamping sticks supplemented by "walking in" and slicing with a shovel. Backfill the area of the pipe zone from the horizontal centerline to a point 12 inches above the top outside surface of the barrel of the pipe with pipe zone material. Use particular attention in placing material on the underside of the pipe to provide a solid backing and to prevent lateral movement during the final backfilling procedure.
- D. DETECTION TAPE shall be used above every underground pipe.

### 3.4 MATERIALS TESTS AND INSPECTIONS

- A. Deflection Test: All PVC and ADS gravity stormwater pipes shall be tested for deflection after installation and backfill by pulling a round plug equal to 95.0 percent of pipe base inside diameter, as defined in the Appendices of ASTM D3034, through the completed pipeline. The mandrel shall be of a design that provides an accurate measure of excess deflection regardless of orientation. Mandrel testing shall be performed not less than 30 days after complete pipe installation.
- B. Lamping Test: City to perform Lamping test of all the installed stormwater pipes, prior to establishing flow to the associated gravity injection well, to verify the alignment and condition of the pipe. The lamp test shall be performed only after the contractor has completely cleaned the line to the satisfaction of the City. Should the lamp test indicate an alignment problem, the City shall be the sole judge of the need for replacement. The contractor shall supply all the equipment and labor necessary for the lamping (i.e. lamps, ladders).

### 3.5 CONNECTING TO EXISTING PIPING AND EQUIPMENT

- A. The CONTRACTOR shall verify exact location, material, alignment, joint, etc. of existing piping and prior to making the connections called out in the Drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection.

- B. At the time that a new connection is made to an existing pipeline, additional new piping, extending to and including the most convenient ne valve, shall be installed.
- C. Where necessary or required for the purpose of making connections, the CONTRACTOR shall cut existing pipe lines in a manner to provide an approved joint. Where required, he shall weld beads, flanges or provide couplings or special pieces as needed.
- D. Where connections are to be made to existing piping, or when existing piping and fittings are to be reused in the work, the pipe and fittings shall be sand blasted, cleaned and mating surfaces shall be properly prepared. CONTRACTOR may not reuse bolts, nuts, washers or gaskets, and shall instead replace with new.

### 3.6 FINAL STORM SEWERS CLEANING

- A. Prior to final acceptance and final structure to structure inspection by the ENGINEER of the storm sewers system, completely flush or clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, and other foreign material from the storm sewers system at or near the closest downstream manhole. If necessary, use mechanical rodding equipment to remove accumulated mud, silt, and all other deposits from the storm sewer system at no additional cost to the OWNER.
- B. Upon the ENGINEER's final structure to structure inspection of the storm sewers system, if foreign matter and other construction debris are still prevalent in the system, reflush and clean the sections and portions of the lines as required.

END OF SECTION

## STORM STRUCTURES

### PART 1 GENERAL

#### 1.1 WORK INCLUDED

- A. This section covers the work necessary for the catch basins and inlets complete.

### PART 2 PRODUCTS

#### 2.1 CONCRETE

- A. Concrete structures shall meet the requirements of FDOT 400; Concrete structures. All structures shall be H-20 rated.

#### 2.2 FORMS

- A. Forms shall be conformance with Section 425 of FDOT Standard Specifications for Road and Bridge Construction.

#### 2.3 REINFORCING BARS

- A. Concrete structures shall meet the requirements of FDOT 400; Concrete structures.
- B. Repair damaged epoxy coating per Article 3.5 of this Section.

#### 2.4 UNITS

- A. Inlet dimensions and details of construction shall conform to FDOT Roadway and Traffic Specifications and Design Standards.

#### 2.5 PRECAST UNITS

- A. At the opinion of the Contractor, approved pre-cast units may be substituted for cast-in-place units. Pre-cast units shall conform to ASTM C478. All pre-cast units shall have epoxy-coated reinforcing bars. Submit details of proposed units to the ENGINEER for review. Concrete risers for extensions shall be a maximum of 6 inches high and of the same quality as the sections. ENGINEER shall review risers before installation.
- B. Provide ADS Pipe Adapter flexible watertight Waterstop connection with pipe adapter for ADS Corrugated HDPE Pipe to storm structures, or approved equal ADS Pipe Adapters meeting the requirements of ASTM F 2510 and ASTM C 1478 for watertight flexible connections. Rapid set mortar shall be used with potable water; ground water shall not be used.

## 2.6 MORTAR

- A. Standard premixed mortar conforming to ASTM C387, Type S, or proportion 1 part Portland cement to 2 parts clean, well-graded sand that will pass a 1/8-inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: Hydrated lime, 10 percent diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the concrete.
- B. DO NOT USE GROUND WATER TO MIX MORTAR, arrange for and provide potable water.

## 2.7 FRAMES AND GRATINGS

- A. Cast iron frames and gratings for catch basins and storm drain inlets shall be as indicated. Bearing surfaces shall be clean and shall provide uniform contact. Castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blowholes, shrinkage, cold shuts, and all defects, and shall conform to ASTM A48, Class 30.
- B. All grates shall be H20 Traffic Rated and Galvanized coated.

## 2.8 BASE ROCK

- A. Base rock shall be crushed gravel or crushed rock, free from dirt, clay balls, and organic material, and conforming to size No. 57 gradation as specified in the Standard Specifications or similar accepted material and shall be imported, if necessary, at the Contractor's own expense. Lime rock screenings or material resulting from trench excavation, except for lime rock that has been crushed and graded to size as specified, will not be accepted for base rock.

## 2.9 PRECAST MANHOLE SECTIONS

- A. Precast manhole sections shall be minimum 48 inches in diameter, conforming to ASTM C478. Precast sections shall meet the permeability test requirements of ASTM C14. Minimum wall thickness shall be 4 inches. All manholes shall have epoxy-coated reinforcing bars. All manholes of less than 5 feet of depth shall have either flat top covers or concentric cones. Cones shall have same wall thickness and reinforcement as manhole section. Top and bottom of all sections shall be parallel. The Contractor's attention is directed to Paragraph MORTAR herein before.

## 2.10 PRECAST BASE SECTIONS AND BASES

- A. At the option of the Contractor, precast base sections or manhole bases may be used provided the Engineer approves all details of construction. Base sections shall have the base slab integral with sidewalls. Base slab shall be 6 inches thick with No. 4 epoxy-coated reinforcing bars, 8-inch centers, both directions in center of slab. Tie reinforcing steel to wall steel.

## 2.11 PRECAST BAFFLE BOX SECTIONS

- A. Precast manhole sections shall size shall be as specified on the drawings, conforming to ASTM C478. Precast sections shall meet the permeability test requirements of ASTM C14. Minimum wall thickness top, bottom, and sides shall be 8 inches. All manholes shall have epoxy-coated reinforcing bars. Reinforcing bars shall be 3” minimum from the edge. Top and bottom of all sections shall be parallel. The Contractor's attention is directed to Paragraph MORTAR herein before. Baffle Boxes shall support H20 loading.

## 2.12 MANHOLE AND BAFFLE BOX EXTENSIONS

- A. Concrete grade rings shall be H-20 rated and for extensions shall be a maximum of 6 inches high and shall be approved by Engineer before installation.
- B. HDPE adjustment rings shall be H-20 Rated and shall be approved by Engineer before installation
- C. Clay Brick and Shale Brick. This brick shall meet the requirements of AASHTO M 114, for Grade MW. and shall be approved by Engineer before installation
- D. Concrete Brick. Concrete brick shall meet the requirements of ASTM C 55 for Grade S-I, and shall be approved by Engineer before installation

In general, manhole and baffle box extensions will be used on all manholes in roads or streets or in other locations where a subsequent change in existing grade may be likely. Extensions will be limited to a maximum height of 12 inches. Finish grade for manhole covers shall conform to finished ground or street surface unless otherwise directed by the Engineer. The Contractor will be responsible for coordinating with the Engineer and Owner to determine the finish grade for manhole and baffle box covers and will make all adjustments necessary to bring manhole covers to that grade. Extensions shall lined with polypropylene and be watertight. Extensions shall meet the H-20 load rating; brick is used contractor is required to submit a shop drawing with an 18 inch concrete collar 4000 PSI 1-6 inches thick. Brick shall be installed using Rapid Set Mortar Mix or equal. This cost shall be incidental to the cost of installing the structure. Masonry unit's manufacturer shall submit six test certificates furnished to the Engineer. Such certificates shall be signed by an authorized agent of the manufacturer, and identified by project number.

## 2.13 BAFFLE BOX / MANHOLE FRAMES AND COVERS:

- A. Cast iron of size and shape detailed on the Drawings. Covers shall have the word STORM SEWER, as appropriate, in 2-inch raised letters. Castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blowholes, shrinkage, cold shuts, and all defects, and shall conform to ASTM A-48, Class 30B. Plane or grind bearing surfaces to ensure flat, true surfaces. Covers shall be true and seat within ring at all points.

## 2.14 WATERTIGHT

- A. Provide water tight manhole ring and covers, and extensions.
- B. Provide ADS Pipe Adapter flexible watertight Waterstop connection with pipe adapter for ADS Corrugated HDPE Pipe to storm structures, or approved equal ADS Pipe Adapters meeting the requirements of ASTM F 2510 and ASTM C 1478 for watertight flexible connections. Rapid set mortar shall be used with potable water; ground water shall not be used.

## 2.15 NUTRIENT SEPARATING BAFFLE BOX

- A. Nutrient Separating Baffle Box and associated cage screen, skimmer, well screen, and turbulence deflectors, shall be as manufactured by Suntree Technologies, Inc., Cocoa, Fl.
- B. Hydrocarbon boom shall be Type 4 Polymer Absorbent as specified by Suntree Technologies, Inc., Cocoa, Fl. or approved equal.
- C. Baffle boxes requiring catch basin – frames and grates shall be USF # 4160-6611 galvanized; cost shall be included in the bidder's proposal. Note; all grates are required to be galvanized.

## **PART 3 EXECUTION**

### 3.1 EXCAVATION AND BACKFILL

- A. Excavation as required to accomplish the construction. Backfill shall be as specified for the adjoining pipe trench.

### 3.2 CONSTRUCTION OF CATCH BASINS AND INLETS

- A. Construct inlets and catch basins at the locations shown and in accordance with the Drawings. Construct forms to the dimensions and elevations required. Forms shall be tight and well braced Chamfer corners of forms.
- B. Prior to placing the concrete, remove all water and debris from the forms. Moisten forms just prior to placing the concrete. Handle concrete from the transporting vehicle to the forms in a continuous manner as rapidly as practical without segregation or loss of ingredients. Immediately after placing, compact concrete with a mechanical vibrator. Limit the duration of vibration to the time necessary to produce satisfactory consolidation without causing segregation.
- C. Screed the top surface of exposed slabs and walls. When the initial water has been absorbed, float the surfaces with a wood float and lightly trowel with a steel trowel to a smooth finish free from marks or irregularities. Finish exposed edges with a steel-edging tool. Remove forms and patch any defects in the concrete with mortar mixed in the same proportions as the original concrete mix.

- D. Cure concrete by preventing the loss of moisture for a period of 7 days. Accomplish with a membrane-forming curing compound. Apply the curing compound immediately after removal of forms or finishing of the slabs. Protect concrete from damage during the 7-day curing period.

### 3.3 PLACING PRECAST UNITS

- A. Remove water from the excavation. Place a minimum of 6 inches of rock base and thoroughly compact with a mechanical vibrating or power tamper.

### 3.4 EXTENSIONS

- A. Install extensions to height determined by ENGINEER. Lay risers in mortar with sides plumb and tops to grade. Joints shall be sealed with mortar, with interior and exterior troweled smooth. Prevent mortar from drying out and cure by applying a curing compound. Extensions shall be watertight.

### 3.5 REPAIR OF DAMAGED STRUCTURES EPOXY COATING ON REINFORCING BARS

- A. Damaged STRUCTURES shall be repaired with Rapid Set Mortar Mix and REINFORCING BARS shall be repaired with epoxy coating material conforming to ASTM A775. Repair shall be done in accordance with the patching material manufacturer's recommendations.

### 3.6 INSTALLATION OF FRAMES AND GRATES

- A. Set frames and grates at elevations indicated or as determined in the field and in conformance with the Drawings.
- B. Frames may be cast in, or shall be set in mortar, they shall be H-20 rated.
- C. Frames set with brick; contractor is required to submit a shop drawing with an 18 inch concrete collar 4000 PSI 1-6 inches thick. Brick shall be installed using Rapid Set Mortar Mix or equal. This cost shall be incidental to the cost of installing the structure. Masonry unit's manufacturer shall submit six test certificates furnished to the Engineer. Such certificates shall be signed by an authorized agent of the manufacturer, and identified by project number.

### 3.7 PLACING PRECAST MANHOLE SECTIONS

- A. Section Installation:
  - 1) Thoroughly clean ends of sections to be joined.
  - 2) Thoroughly wet joint with water prior to placing mortar.
  - 3) Place mortar on groove of lower section.
  - 4) Set next section in-place.

- 5) Fill joint completely with mortar of proper consistency.
- 6) Trowel interior and exterior surfaces smooth on standard tongue-and-groove joints.
- 7) Prevent mortar from drying out and cure by applying an approved curing compound or comparable approved method.
- 8) Do not use mortar mixed for longer than 30 minutes.
- 9) Chip out and replace cracked or defective mortar.
- 10) Completed Manholes: Rigid and watertight.

B. Preformed Plastic Gaskets: Install in accordance with manufacturer's instructions and the following:

- 1) Carefully inspect precast manhole sections to be joined.
- 2) Do not use sections with chips or cracks in the tongue.
- 3) Use only pipe primer furnished by gasket manufacturer.
- 4) Install gasket material in accordance with manufacturer instructions.
- 5) Fusion weld top and bottom 2-inch minimum wide strip over each section joint, where required.
- 6) Completed Manholes: Rigid and watertight.

### 3.8 BAFFLE BOX COMPONENTS

Cage screen, turbulence deflectors, wells screen, skimmer, and hydrocarbon boom shall be installed by Suntime Technologies representative. Contact Suntime Technologies, Cocoa, Florida (321 637-7552) to coordinate installation

### 3.9 CLEANING

A. Upon completion, clean each structure of all silt, debris, and foreign matter.

END OF SECTION

August 1, 2011

Mr. Allen E. Perez, P.E.  
**Perez Engineering & Development, Inc.**  
1010 Kennedy Drive, Suite #400  
Key West, Florida 33040

Re: Geotechnical Services – Pavement Evaluation  
Caroline Street and Trumbo Road  
Key West, Florida  
**PSI Project No. 0397-327**

Dear Mr. Perez:

In response to your request and authorization, **Professional Service Industries, Inc. (PSI)** has completed in accordance with our proposal No. PO-0397-45262, dated May 18, 2011, a pavement evaluation for the subject roadways in Key West, Florida.

### **1.0 Project Understanding**

It is our understanding that the existing pavement areas along Caroline Street and Trumbo Road are planned to be repaired and overlaid. The subject roadway extends along Caroline Street between Elizabeth Street (approximately 100 feet west of the intersection of Caroline Street and Elizabeth Street) and Grinnell Street and along Trumbo Road between Grinnell Street and Whiting Avenue in Key West, Florida (approximately 4 blocks). The configuration of Caroline Street consists of a two lane roadway (one in each direction), plus, asphalt paved areas corresponding to curb side parking, whereas, Trumbo Road consists of a two-lane roadway (one in each direction). In addition to Caroline Street and Trumbo Road, the subject roadway alignment includes the following intersecting streets: Elizabeth Street, William Street, Margaret Street and Grinnell Street.

An aerial site vicinity map identifying the project limits is presented on **Sheet 1** of the **Appendix**. The project limits are presented in greater detail on **Sheets 2, 3 and 4** of the **Appendix**. As we understand, depending on the extent of the pavement distress, milling/resurfacing and reconstruction recommendations are required along the project corridor.

If any of the noted information is incorrect or has changed, please notify PSI so that we may amend the recommendations presented in this report, if appropriate.

### **2.0 Scope of Pavement Evaluations Services**

To complete these requested geotechnical services, PSI performed the following:

- Completed a detailed engineering inspection of the roadway.
- Provided subsurface drilling equipment and crew to perform a series of nine asphalt cores. A two-foot Standard Penetration Test (SPT) sample was collected below each extracted pavement core grade.

- Additionally, 15-foot SPT borings were performed at two of the core locations.
- Provided Maintenance of Traffic equipment and personnel.
- Prepared this report summarizing the results of PSI's geotechnical services, engineering evaluation and recommendations for remediation of the existing roadway.

### **3.0 Field Observations**

In general, the pavement surface appeared to be in fair structural condition but did exhibit signs of surface cracking, rutting, weathering and oxidization consistent with the normal aging process of asphaltic pavement materials. However, certain specific areas with more significant pavement distress were also observed along the roadway corridor:

1. **Caroline Street between Elizabeth Street and William Street** – along this section of the roadway we observed areas of minor alligator cracking, rutting in the wheel path and asphalt patches along the catch basin areas. Milling and resurfacing can be considered for this section of the roadway.
2. **Caroline Street between William Street and Margaret Street** – along this section of the roadway we observed longitudinal cracks, areas of minor to moderate alligator cracking and loss of asphalt (base material exposed). Milling and Resurfacing can be considered for this section of the roadway.
3. **Caroline Street between Margaret Street and Grinnell Street** – along this section of the roadway we observed several areas of moderate to severe alligator cracking, longitudinal cracks and loss of asphalt. Reconstruction should be considered for the severely distressed sections of the roadway, whereas, milling and resurfacing can be done in the remaining areas.
4. The pavement on Trumbo Road was in fairly good condition. An area of moderate alligator cracking was observed at the entrance of the Administrative and Transportation Offices at 241 Trumbo Road. Milling and Resurfacing can be considered for this portion of the roadway.
5. The sanitary sewer lines appear to be present along Caroline Street and at the intersections with Elizabeth Street, William Street, Margaret Street and Grinnell Street. The noted distress consisted of longitudinal cracks, areas of minor to moderate alligator cracking and roadway depression (i.e. trench settlement). Milling and Resurfacing can be considered for this portion of the roadway.

Photographs identifying the pavement conditions along with the corresponding extracted asphalt cores are included on **Sheets 5** through **13** of the **Appendix**.

### **4.0 Asphalt and Subsurface Conditions**

As noted previously, PSI performed a total of seven shallow SPT borings to depths of 2 feet below the extracted pavement cores. Additionally, we performed two SPT borings to depths of 15 feet along Caroline Street and Trumbo Road, below the extracted pavement cores C-6 and C-9, respectively. The approximate locations of the borings are presented on **Sheets 2, 3** and **4** of the **Appendix**.



The results of the asphalt cores and borings revealed 1-¾ to 5-¼ inches of asphaltic pavement material at the test locations, with most locations having multiple layers of asphaltic material, thus suggesting possible previous overlays. Photographs of the asphalt cores are presented on **Sheets 5 through 13** of the **Appendix**. Additionally, red brick pavers were noted to be present underneath the asphalt at a few locations (C-1, C-2 and C-5). The red brick pavers were most likely the original roadway cover which was eventually overlaid with the current asphalt cover.

Typically, the SPT borings revealed the asphalt layer to be underlain by medium dense granular fill (fine sand/limerock) stratum. Although this material is considered suitable, it does not appear to be along the lines of roadway base course material. At the core locations, the SPT borings were terminated within the fill layer. At SPT borings C-6 and C-9, the granular fill layer persisted to depths of 2 and 4 feet below grade and was in-turn underlain by very soft silt (ML) that persisted to a depth of 8 feet below grade. A strongly cemented limestone stratum was then encountered and persisted to the maximum termination depth of explorations at 15 feet below grade.

It should be noted that a 2-foot thick layer of very loose fine sand (SP) was encountered in boring C-9 at the 2 to 4 foot depth interval.

Please refer to the individual boring logs presented in the **Appendix** for details on the subsurface conditions at specific exploration locations.

The groundwater level was encountered within borings C-6 and C-9 at depths of 3.5 and 3.8 feet below grade. The groundwater was not encountered at the remaining shallow SPT boring locations. It should be noted that groundwater levels fluctuate seasonally as a function of tidal changes, rainfall and the infiltration rate of the soil. Therefore, at a time of the year different from the time of drilling, there is a possibility of a change in the recorded levels. We estimate that during the peak of the wet hydroperiod, with rainfall and recharge at a maximum, groundwater levels at the site could be one to two feet higher than those reported herein.

With tidal fluctuations, the roadway bedding material could have undergone cycles of saturated and dry conditions, which could possibly have resulted in the noted alligator cracking.

## **5.0 Evaluation and Recommendations**

Based on our review of the supplied documents and review of the collected pavement cores and subsurface conditions as presented herein, it is our professional opinion that the subsurface soils within the roadway are suitable for support of the pavement. The observed pavement distress for the most part appears to be related to settlement of the backfill over the sanitary sewer line (trench settlement) or settlement around some of the drainage inlets. The remaining cracks appear to be related to normal shrinkage of the asphaltic material as it ages and oxidizes and are not considered to be a major structural issue.

### **5.1 Milling and Resurfacing**

In general, it is our opinion that milling off the surface 1-½ inch of the existing pavement and overlaying with a new 1-½ inch FDOT SP-9.5 asphaltic material will provide a suitable new surface that will provide a service life of some 10 to 15 years with proper maintenance.

Following milling and remediation of the settled areas and prior to overlaying large cracks, ¼ inch or larger, shall be pressure cleaned out and sealed with a FDOT asphaltic crack sealer. Then the road surface shall be power broom swept, cleaned of all loose aggregates and then “tack coated” in accordance with the FDOT specifications before the planned new 1- ½ inch asphaltic overlay constructed. We recommend that FDOT SP-9.5 mix be utilized for the asphalt overlay and it be compacted to a minimum of 95% of the material’s laboratory design unit weight.

### 5.2 Re-construction – Areas of Severe Alligator Cracking

For areas showing severe alligator cracking, we recommend that the asphalt/brick pavers be milled and removed within the zone of severe cracking and 10 feet beyond its outside edges. The cleared exposed subgrade should then be scarified, following which the exposed subgrade should be compacted to a minimum of 98% of the soil’s Modified Proctor value to a depth of 12 inches.

If it appears that the exposed subgrade can not be compacted to a firm and unyielding condition, then partial excavation of the subgrade will be required. In which case, the exposed soils should be graded to provide for a new 12 inch compacted thickness aggregate base course and 1-½ new asphaltic surface course that will match the adjacent asphalt grades BEFORE milling and then the exposed soils compacted to a firm and unyielding condition and a minimum of 98% of the soil’s Modified Proctor value as tested for a minimum depth of one foot below the compacted surface.

Following completion of satisfactory subgrade compaction and new aggregate base construction as described above, a new 1-½ inch compacted thickness asphaltic surface course (FDOT SP-9.5) can be placed and compacted over the pavement replacement areas. Compaction shall be a minimum of 95% of the mix design’s laboratory design unit weight. Finished asphalt grades in the repaired areas shall match existing adjacent pavement grades so that the planned new 1-½ inch asphaltic overlay can be placed.

While the above described repairs and overlay will provide a suitable new pavement section for the anticipated traffic and loads, we wish to inform you and the City of Key West that due to the extreme weathering, oxidation and cracking that has occurred in the existing surface course, with time, many of the existing cracks, even those sealed, will reflect up through the new asphaltic surface course. These reflective cracks will not be a structural issue for the pavement, but should be periodically sealed to prevent/minimize water penetration down into the aggregate base and thus help extend the service life of this new pavement section.

Lastly, we recommend that the stormwater management system in the area be evaluated to determine if the rainwater is being disposed off adequately. Prolonged ponding of water and its seepage through the cracks in the asphalt could saturate, and over time, deteriorate the underlying base/sub-grade, resulting in premature pavement failure.

### Report Limitations

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.



The scope of investigation was intended to evaluate the conditions of the existing roadway areas for the areas requested. The analyses and recommendations submitted in this report are based upon our field observations and data obtained from the borings performed at the locations indicated. If any subsoil variations become evident during the course of this project, a reevaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered. The applicability of the report should also be reviewed in the event significant changes occur in the design, nature, or location of the proposed repairs.

The scope of PSI's services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

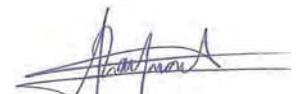
Thank you for the opportunity to be of service on this project. Should you have any questions or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,

**PROFESSIONAL SERVICE INDUSTRIES, INC.**

Certificate of Authorization No: 3684

 /For  
Dan Fulford, P.E.  
Sr. Vice President/Chief Engineer  
FL. License No. 18905

  
Valerie Raymond, P.E.  
Project Engineer  
FL License No. 72945

  
Dhuruva (Drew) Badri, P.E.  
Project Manager  
FL License No. 68718



**Appendix:**

Sheet 1:	Site Vicinity
Sheets 2, 3, 4:	Boring Location Plan
Sheet 5 through 13:	Pavement Cores Individual Boring Logs Drilling and Sampling Procedures, Field Tests and Measurements

## APPENDIX

# SITE VICINITY MAP



## APPROXIMATE SITE LOCATION

GEOTECHNICAL ENGINEERING SERVICES CAROLINE STREET AND TRUMBO ROAD KEY WEST, FLORIDA		DATE: 06/23/2011
		DRAWN CD
SHEET NO.: 1	PSI PROJ. No.: 0397-327	CHKD: DB
		 Information To Build On Engineering • Consulting • Testing

# BORING LOCATION PLAN



**Information**  
**To Build On**  
**Engineering • Consulting • Testing**

DATE: 06/23/2011

DRAWN CD

CHKD: DB

GEOTECHNICAL ENGINEERING SERVICES  
 CAROLINE STREET AND TRUMBO ROAD  
 KEY WEST, FLORIDA

PSI PROJ. No.: 0397-327

SHEET NO.: 2

# BORING LOCATION PLAN



**Information To Build On**  
**Engineering • Consulting • Testing**

DATE: 06/23/2011

DRAWN: CD

CHKD: DB

GEOTECHNICAL ENGINEERING SERVICES  
 CAROLINE STREET AND TRUMBO ROAD  
 KEY WEST, FLORIDA

PSI PROJ. No.: 0397-327

SHEET NO.: 3

# BORING LOCATION PLAN



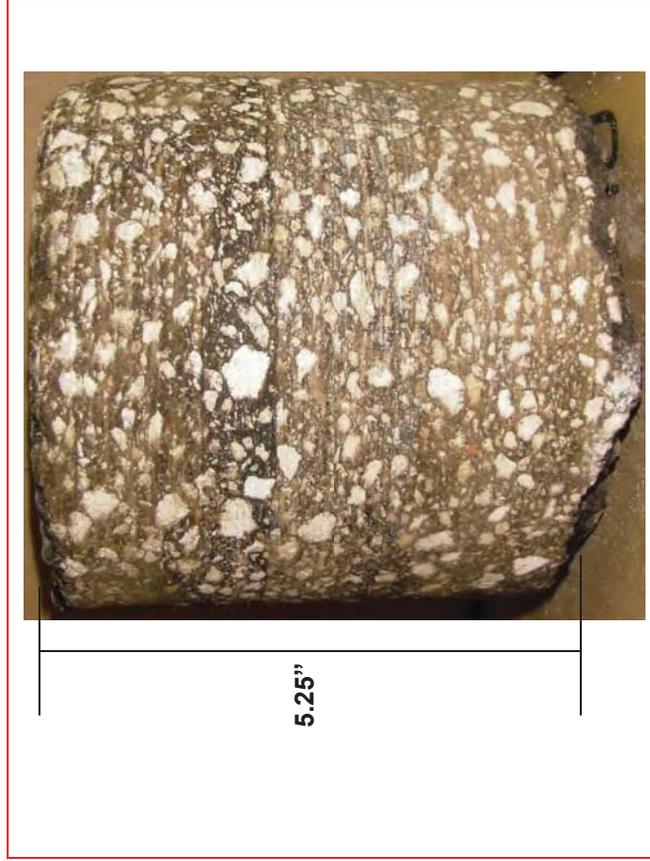
● APPROXIMATE ASPHALT CORE/SPT BORING LOCATION


  
**Information To Build On**  
 Engineering • Consulting • Testing

GEOTECHNICAL ENGINEERING SERVICES CAROLINE STREET AND TRUMBO ROAD KEY WEST, FLORIDA		DATE: 06/23/2011 DRAWN: CD CHKD: DB
SHEET NO.: 4	PSI PROJ. No.: 0397-327	

# ASPHALT CORE PHOTOGRAPHS

## CORE LENGTH C-1: 5.25"



GEOTECHNICAL ENGINEERING SERVICES  
CAROLINE STREET AND TRUMBO ROAD  
KEY WEST, FLORIDA

DATE: 06/23/2011

DRAWN CD

PSI PROJ. No.: 0397-327

CHKD: DB

SHEET NO.: 5

**[PSI]** Information  
To Build On  
Engineering • Consulting • Testing

# ASPHALT CORE PHOTOGRAPHS

## CORE LENGTH C-2: 4.00"



GEOTECHNICAL ENGINEERING SERVICES  
CAROLINE STREET AND TRUMBO ROAD  
KEY WEST, FLORIDA

DATE: 06/23/2011

DRAWN CD

SHEET NO.: 6

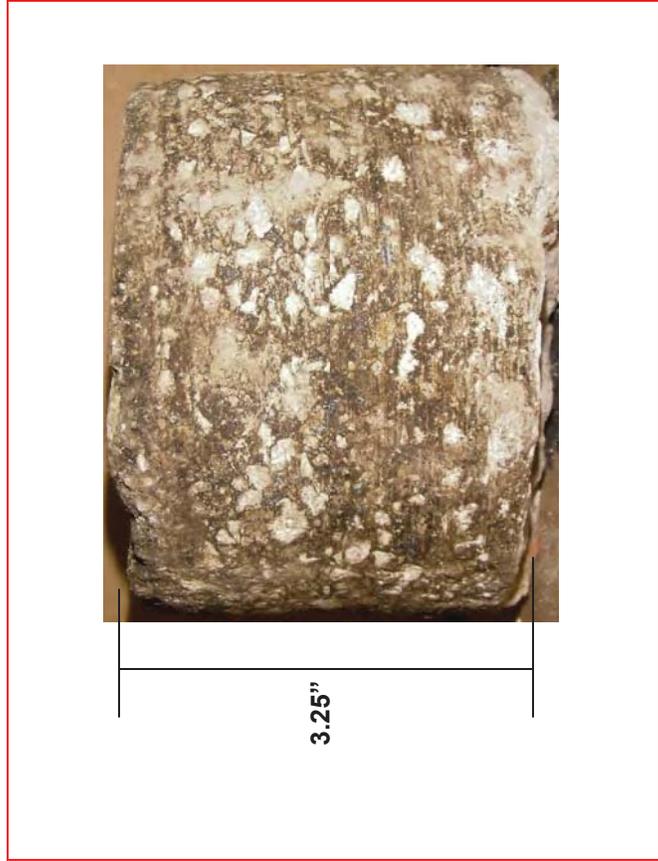
CHKD: DB

PSI PROJ. No.: 0397-327

**[PSI]** Information  
To Build On  
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# ASPHALT CORE PHOTOGRAPHS

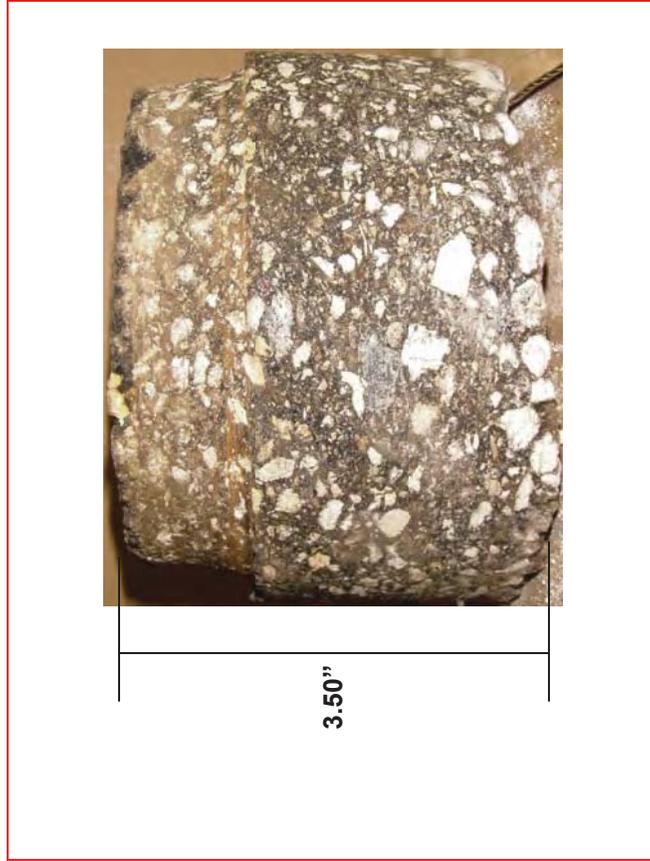
## CORE LENGTH C-3: 3.25"



GEOTECHNICAL ENGINEERING SERVICES CAROLINE STREET AND TRUMBO ROAD KEY WEST, FLORIDA	DATE: 06/23/2011	
	DRAWN CD	
SHEET NO.: 7	PSI PROJ. No.: 0397-327	CHKD: DB

# ASPHALT CORE PHOTOGRAPHS

## CORE LENGTH C-4: 3.50"



GEOTECHNICAL ENGINEERING SERVICES CAROLINE STREET AND TRUMBO ROAD KEY WEST, FLORIDA	DATE: 06/23/2011	
	DRAWN CD	
SHEET NO.: 8	PSI PROJ. No.: 0397-327	CHKD: DB

# ASPHALT CORE PHOTOGRAPHS

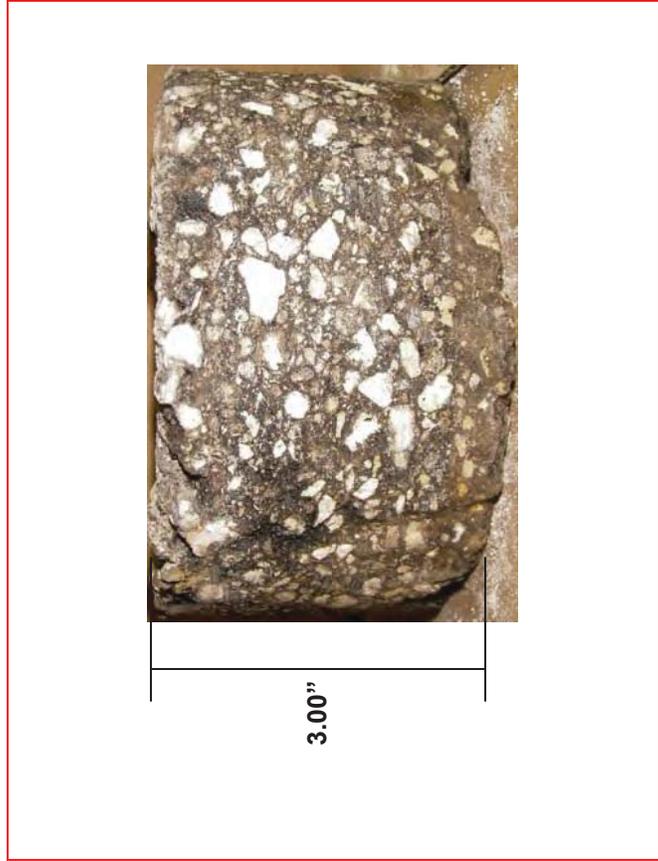
## CORE LENGTH C-5: 4.00"



GEOTECHNICAL ENGINEERING SERVICES CAROLINE STREET AND TRUMBO ROAD KEY WEST, FLORIDA	DATE: 06/23/2011	
	DRAWN CD	
SHEET NO.: 9	PSI PROJ. No.: 0397-327	CHKD: DB

# ASPHALT CORE PHOTOGRAPHS

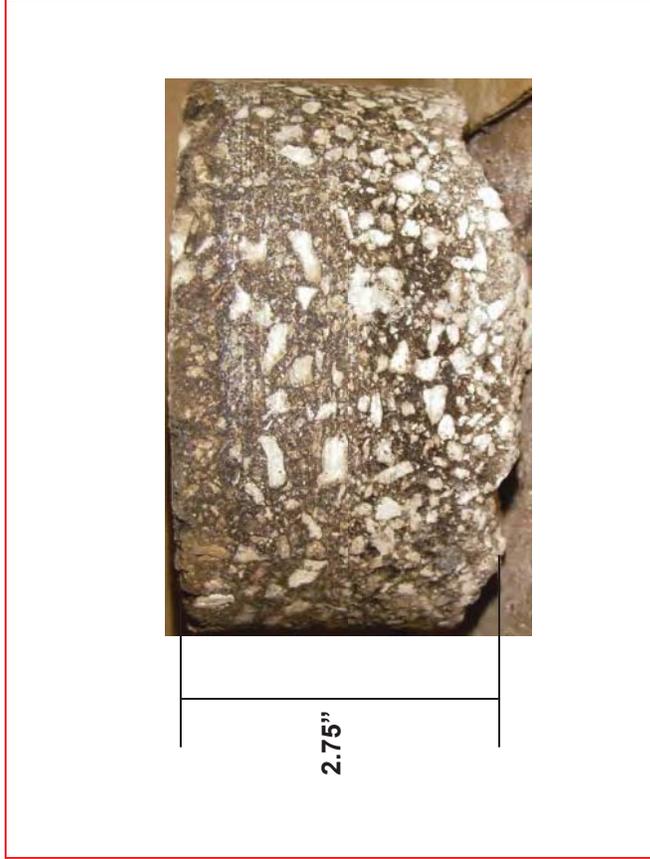
## CORE LENGTH C-6: 3.00"



GEOTECHNICAL ENGINEERING SERVICES CAROLINE STREET AND TRUMBO ROAD KEY WEST, FLORIDA		DATE: 06/23/2011
SHEET NO.: 10		DRAWN CD
PSI PROJ. No.: 0397-327		CHKD: DB

# ASPHALT CORE PHOTOGRAPHS

## CORE LENGTH C-7: 2.75"



GEOTECHNICAL ENGINEERING SERVICES  
CAROLINE STREET AND TRUMBO ROAD  
KEY WEST, FLORIDA

DATE: 06/23/2011

DRAWN CD

PSI PROJ. No.: 0397-327

CHKD: DB

SHEET NO.: 11

**[PSI]** Information  
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# ASPHALT CORE PHOTOGRAPHS

## CORE LENGTH C-8: 2.00"



GEOTECHNICAL ENGINEERING SERVICES  
CAROLINE STREET AND TRUMBO ROAD  
KEY WEST, FLORIDA

DATE: 06/23/2011

DRAWN CD

SHEET NO.: 12

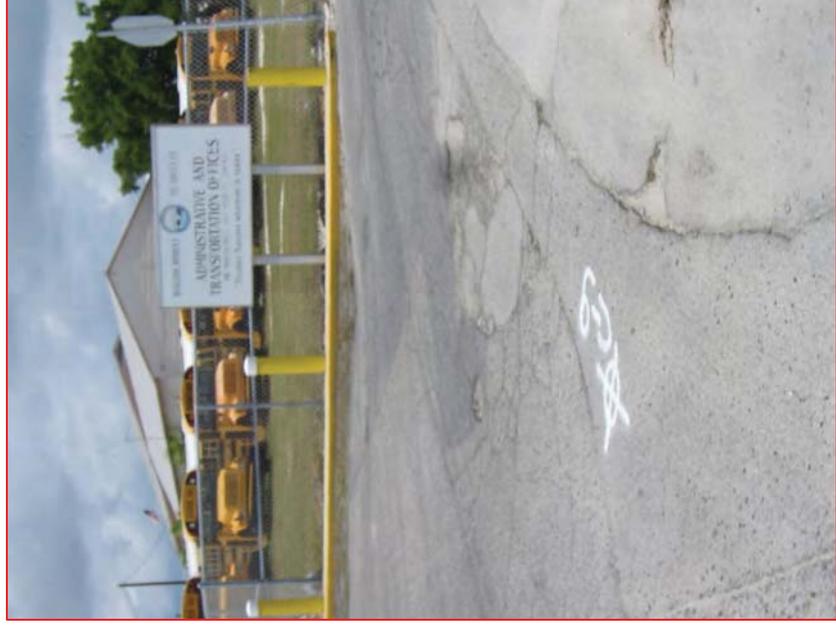
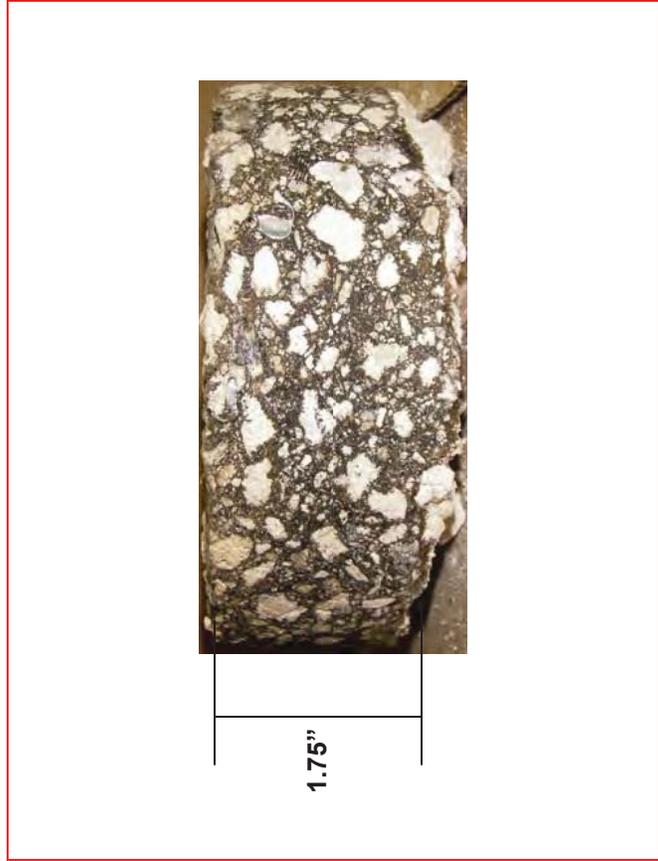
CHKD: DB

PSI PROJ. No.: 0397-327

**[PSI]** Information  
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# ASPHALT CORE PHOTOGRAPHS

## CORE LENGTH C-9: 1.75"



SHEET NO.: 13		PSI PROJ. No.: 0397-327		DATE: 06/23/2011	
				DRAWN CD	
				CHKD: DB	

GEOTECHNICAL ENGINEERING SERVICES  
CAROLINE STREET AND TRUMBO ROAD  
KEY WEST, FLORIDA

**PSI** Information  
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Professional Service Industries, Inc.  
 7950 N.W. 64th Street  
 Miami, FL 33166  
 Telephone: (305) 471-7725  
 Fax: (305) 593-1915

# LOG OF BORING C-1

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

**WATER LEVELS**  
 ▽ While Drilling N.E. feet  
 ▽ Upon Completion N.E. feet  
 ▽ Delay N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
	0			1			Asphalt						
				2			Red Brick/Paver						
				3			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	5-5-7-11 N=12				>> ⊙ >> ⊙

Completion Depth: 2.8 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone
- Auger Cutting
- Split-Spoon
- Rock Core

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.



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# LOG OF BORING C-2

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

**WATER LEVELS**  
 ▽ While Drilling N.E. feet  
 ▽ Upon Completion N.E. feet  
 ▽ Delay N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
	0			1			Asphalt						
				2			Red Brick/Paver						
				3			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	12-10-12-7 N=22				

Completion Depth: 2.7 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone
- Auger Cutting
- Split-Spoon
- Rock Core

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

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# LOG OF BORING C-3

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

**WATER LEVELS**  
 ▽ While Drilling N.E. feet  
 ▽ Upon Completion N.E. feet  
 ▽ Delay N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ©		
	0			1			Asphalt						
				2			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	10-12-10-11 N=22				

Completion Depth: 2.3 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Auger Cutting
- Split-Spoon
- Rock Core
- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.



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# LOG OF BORING C-4

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

**WATER LEVELS**  
 ▽ While Drilling N.E. feet  
 ▽ Upon Completion N.E. feet  
 ▽ Delay N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
	0			1			Asphalt						
				2			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	10-9-6-7 N=15				

Completion Depth: 2.3 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Auger Cutting
- Split-Spoon
- Rock Core
- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.



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# LOG OF BORING C-5

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

**WATER LEVELS**  
 ▽ While Drilling N.E. feet  
 ▽ Upon Completion N.E. feet  
 ▽ Delay N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
	0			1			Asphalt						
				2			Red Brick/Paver						
				3			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	11-12-8-9 N=20				

Completion Depth: 2.7 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone
- Auger Cutting
- Split-Spoon
- Rock Core

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

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# LOG OF BORING C-6

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

WATER LEVELS	
▽ While Drilling	3.5 feet
▽ Upon Completion	3.5 feet
▽ Delay	N/A

Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	STANDARD PENETRATION TEST DATA		Additional Remarks
										N in blows/ft	Moisture, %	
0	0			1			Asphalt					
				2			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	14-12-12-10 N=24			
				3	▼				8-6-5-5 N=11			
	5			4			Light Brown/Gray Sandy SILT (A-4) NM%=49 / -200%=76	ML	2-1-1-1 N=2			
				5					(WOH) N=WOH			
	10			6			Light Brown/Gray LIMESTONE with Fine Sand		10-21-24-14 N=45			
	15			7					12-14-11-12 N=25			

Completion Depth: 15.3 ft  
 Date Boring Started: 6/2/11  
 Date Boring Completed: 6/2/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Auger Cutting
- Split-Spoon
- Rock Core
- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

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# LOG OF BORING C-7

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

**WATER LEVELS**  
 ▽ While Drilling N.E. feet  
 ▽ Upon Completion N.E. feet  
 ▽ Delay N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
	0			1			Asphalt						
				2			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	9-11-11-10 N=22				

Completion Depth: 2.2 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Auger Cutting
- Split-Spoon
- Rock Core
- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

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# LOG OF BORING C-8

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

WATER LEVELS	
▽ While Drilling	N.E. feet
▽ Upon Completion	N.E. feet
▽ Delay	N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
	0			1			Asphalt						
				2			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	17-10-6-5 N=16				

Completion Depth: 2.2 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

	Shelby Tube
	Hand Auger
	Calif. Sampler
	Texas Cone
	Auger Cutting
	Split-Spoon
	Rock Core

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

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# LOG OF BORING C-9

Sheet 1 of 1

PSI Job No.: 0397-327  
 Project: CAROLINE STREET AND TRUMBO ROAD  
 Location: KEY WEST, FLORIDA

Drilling Method: 2" SPLIT BARREL  
 Sampling Method: SS  
 Hammer Type: AUTOMATIC  
 Boring Location: See Attached Plan

WATER LEVELS	
▽ While Drilling	3.8 feet
▽ Upon Completion	3.8 feet
▽ Delay	N/A

Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA		Additional Remarks
											N in blows/ft ⊙		
0	0	Asphalt		1			Asphalt						
	1	Light Brown/Gray Limerock with Fine Sand		2			Light Brown/Gray Limerock with Fine Sand (A-1-a/A-1-b)	GP	19-11-17-10 N=28				
	2	Light Brown/Gray Shelly Fine SAND		3			Light Brown/Gray Shelly Fine SAND (A-3)	SP	5-3-2-2 N=5				
	3	Light Brown/Gray Sandy SILT		4			Light Brown/Gray Sandy SILT (A-4) NM%=49 / -200%=90	WOH N=WOH					
	4			5				ML					
	5			6			Light Brown/Gray LIMESTONE with Fine Sand		3-25-25-16 N=50				
	6			7					15-13-14-12 N=27				
	7												

Completion Depth: 15.2 ft  
 Date Boring Started: 6/1/11  
 Date Boring Completed: 6/1/11  
 Logged By: P.W.  
 Drilling Contractor: PSI, Inc.

Sample Types:

- Auger Cutting
- Split-Spoon
- Rock Core
- Shelby Tube
- Hand Auger
- Calif. Sampler
- Texas Cone

Latitude:  
 Longitude:  
 Drill Rig:  
 Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

## **DRILLING AND SAMPLING PROCEDURES**

The borings were performed with a drill rig equipped with a rotary head. The drill holes were advanced by the use of a high speed rollercone bit, with bentonite drilling fluid being pumped through the drill rods to remove the cuttings and to stabilize the side walls and bottom of the hole. Representative samples were obtained by the use of split-barrel sampling procedures in general accordance with the procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D-1586).

## **FIELD TESTS AND MEASUREMENTS**

**Penetration Tests** - During the sampling procedure, Standard Penetration Tests (SPT) were performed at pre-determined intervals to obtain the standard penetration value (N) of the soil. The standard penetration value (N) is defined as the number of blows of a 140 pound hammer, falling thirty (30) inches, required to advance the split-barrel sampler one (1) foot into the soil. The sampler is lowered to the bottom of the previously cleaned drill hole and advanced by blows from the hammer. The number of blows is recorded for each of three (3) successive increments of six (6) inches penetration. The "N" value is obtained by adding the second and third incremental numbers.

**Water Level Measurements** - Water level depths were obtained during the boring operations. In relatively pervious soils, such as sandy soils, the indicated depths are usually reliable groundwater levels. Seasonal variations, tidal conditions, temperature, land-use, and recent rainfall conditions may influence the depths to the groundwater.

**Ground Surface Elevations** - Ground surface elevations at the boring locations were not provided. Therefore, all references to depth of the various strata and materials encountered are from existing grade at the time of drilling.