CONTRACT DOCUMENTS FOR:

ITB #17-002

HALF SHELL RAW BAR
SEAWALL REPAIRS
KEY WEST HISTORIC SEAPORT

NOVEMBER 2016

CITY OF KEY WEST

MAYOR: CRAIG CATES

COMMISSIONERS:

JIMMY WEEKLEY

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ITB DOCUMENTS
Prepared by: City of Key West

CITY OF KEY WEST

CAROLINE STREET AND BAHAMA VILLAGE
COMMUNITY REDEVELOPMENT AGENCY (CRA)

KEY WEST, FLORIDA

DOCUMENTS

for

HALF SHELL RAW BAR SEAWALL REPAIRS

****

CONSISTING OF:

PROCUREMENT REQUIREMENTS
CONTRACT FORMS
CONDITIONS OF THE CONTRACT
TECHNICAL SPECIFICATIONS
SUPPLEMENTARY INFORMATION
DRAWINGS

****

KEY WEST HISTORIC SEAPORT (KWHS)

NOVEMBER 2016

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PART 1

PROCUREMENT REQUIREMENTS

INVITATION TO BID

Sealed Bids for City of Key West Caroline Street and Bahama Village Community Redevelopment Agency (CRA) **"HALF SHELL RAW BAR SEAWALL REPAIRS**," addressed to the City of Key West, will be received at the office of the City Clerk, 1300 White Street, Key West, Florida until **3:00 p.m**., local time, on the **14th day of December 2016**, and then will be publicly opened and read. Any bids received after the time and date specified will not be considered.

Please submit one (1) original bid package and two (2) electronic copies on USB drives with a single PDF file of the entire bid package. Bid package shall be enclosed in a sealed envelope, clearly marked on the outside **"ITB #17-002 HALF SHELL RAW BAR SEAWALL REPAIRS – KEY WEST HISTORIC SEAPORT"** addressed and delivered to the City Clerk at the address noted above.

The CRA is seeking BIDS from qualified individuals or firms for a seawall repair and pile driving project consisting of partial removal and replacement of wood dock (with temporary disconnection of utilities), the repair of 235 linear feet of seawall fascia with a min. 8" thick reinforced concrete casting, installation of five (5) support piles for the Half Shell restaurant overhang with improvements to the underlying stringer and joist connections, and removal of one existing timber pile supporting the restaurant overhang. All improvements must meet current codes (FBC, NEC, NFPA).

The full Invitation to Bid may be obtained from Demand Star by Onvia and The City of Key West website. Please contact Demand Star at www.demandstar.com or call 1-800-711-1712 or www.cityofkeywest-fl.gov

A **Mandatory pre-bid meeting** will be held in the conference room at the KWHS Port and Marine Services Offices, 201 William Street, Key West, Florida on **November 30, 2016 at 2:30 p.m.**

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 Bidder shall furnish documentation showing that they are in compliance with the licensing requirements of the State and the provisions of Chapter 66 Section 87 of the Code of Ordinances of the City of Key West; within 10 days following the Notice of Award and must demonstrate that he holds at a minimum, the following licenses & certificates;

A. City of Key West License, as defined in Code of Ordinances, Chapter 66, enabling the Contractor to perform the work stated herein.
B. City of Key West Business Tax License Receipt

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 CRA 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 specified under this Contract. Upon request, the Bidder shall submit such information as deemed necessary by the CRA to evaluate the Bidder's qualifications.

The CRA hereby notifies all Bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprise will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, gender, religion, age, disability, marital status or national origin in consideration for this award.

For information concerning the proposed work please contact Karen Olson, Deputy Port and Marine Services Director by email at kolson@cityofkeywest-fl.gov. Verbal communications, per the City's "Cone of Silence" ordinance are not allowed.

As stated above at the time of the BID submittal the Bidder must provide satisfactory documentation of State Licenses. The Bidder shall furnish documentation showing that he is in compliance with the licensing requirements of County, and City licenses as would be required within ten days of the award. 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 Proposal in question. The CRA may reject BID for any and/or all of the following reasons: (1) for budgetary reasons, (2) if the proposer misstates or conceals a material fact in its bid, (3) if the proposal does not strictly conform to the law or is non-responsive to the bid requirements, (4) if the proposal is conditional, or (5) if a change of circumstances occurs making the purpose of the proposal unnecessary to the CRA, (6) if such rejection is in the best interest of the CRA. The CRA may also waive any minor formalities or irregularities in any proposal.

The CRA retains the right to award bid to the bidder that best meet the needs of the City.

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

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

Should there be any doubt as to the meaning or intent of said Contract Documents, the Bidder should request of the Deputy Port and Marine Services Director, in writing (at least **8** calendar 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 Bids, or indicate receipt of all Addenda. The Owner will not be responsible for any other explanation or interpretations of said Documents.

2. SCOPE OF SERVICES

A general description of the work to be done is contained in the Scope of Services section.

3. REQUIRED QUALIFICATIONS

The prospective Proposers must meet the statutorily prescribed requirements before award of Contract by the CITY. Proposers must hold or obtain all licenses and/or certificates as required by the State and Local Statutes in order to bid and perform the work specified herein. Additionally all proposers must meet the minimum qualifications as described in Required Qualifications section.

4. BIDDER'S UNDERSTANDING

Each Proposer must inform himself of the conditions relating to the execution of the work and make himself thoroughly familiar with all the Contract Documents. Failure to do so will not relieve the successful Proposer of his obligation to enter into a Contract and complete the contemplated work in strict accordance with the Contract Documents.

Each Proposer shall inform himself of, and the Proposer 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, permits, fees, and similar subjects.

5. TYPE OF BID

LUMP SUM

The Proposal for the work is to be submitted on a lump sum basis. All items required to complete the work specified or shown on the Drawings but not included in the Proposal shall be considered incidental to those set forth in the Proposal. Payment to the Contractor will be made on the measurement of the work actually performed by the Contractor, as specified in the Contract Documents.

The Bidder further proposes to accept as full payment for the Work proposed herein, the amounts computed under the provisions of the Contract Documents and based on the following lump sum amounts. The Bidder agrees that the lump sums include all allowances for overhead and profit for each type and unit of work called for in these Contract Documents.

6. PREPARATION OF BIDS

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 both words and figures where required. No changes shall be made in the phraseology of the forms. Written amounts shall govern in case of discrepancy between the amounts stated in writing and the amounts stated in figures. In case of discrepancy between unit prices and extended totals, unit prices shall prevail.

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 BID for work contemplated; all Bids in which such Bidder is interested will be rejected.

B. SIGNATURE

The Bidder shall sign his BID in the blank space provided therefor. 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 prior to opening of Bids or submitted with the Bid otherwise the Bid will be regarded as not properly authorized.

C. 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 his experience record showing his experience and expertise in marine construction and related work. Such experience record shall provide at least five current or recent projects of similar work, not more than 5 years old within the State Florida and preferably Monroe County. 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.

The bidder shall submit with his bid a list of items to be performed by his own labor and that performed by subcontractors or others.

D. ATTACHMENTS

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

1. Anti-Kickback Affidavit
2. Public Entity Crimes Form
3. City of Key West Indemnification Form
4. Equal Benefits for Domestic Partners Affidavit
5. Cone of Silence
6. Local Vender Certification

E. CITY OF KEY WEST LICENSE REQUIRED

Contractor is required to have a Certified or Registered General Contractors City of Key West license. License fees not to exceed $410.00. License shall be obtained within ten (10) days of Notice of Award.

7. STATE AND LOCAL SALES AND USE TAXES

Unless the Supplementary Conditions contains a statement that the CITY 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 quoted 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 BID

All BIDS must be submitted no 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 **submit one (1) ORIGINAL bid package and two (2) FLASH DRIVES containing a single PDF file of the entire bid package.**

Each Bid must be submitted in a sealed envelope, 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 BID

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. AWARD OF CONTRACT

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

Within 90 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 an acceptable Performance Bond, Payment Bond, 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 120 days after the opening of Bids. Bidders will guarantee their Bid price(s) for up to 120 calendar days after Bid opening.

The CITY reserves the right to accept or reject any or all Bids and to waive any formalities and irregularities in said Bids.

11. EXECUTION OF CONTRACT

The successful Bidder shall, within 10 working days after receiving Notice of Award, sign and deliver to the Owner a Contract in the form hereto attached together with the insurance certificate and 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.

12. 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 only be allowed in accordance with the

provisions stated in the General Conditions. Time allowed for completion of the work authorized is stated in Bid.

When the Contractor receives a Notice to Proceed, he shall commence work as soon as possible and shall complete all work within the number of calendar days stipulated in the Contract.

The term of this contract will be **90** calendar days.

13. PUBLIC RECORDS REQUIREMENTS

In addition to other contract requirements provided by law, each public agency contract for services must include a provision that requires the contractor to comply with public records laws, specifically to (a) keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service; (b) provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency. If a contractor does not comply with a public records request, the public agency shall enforce the contract provisions in accordance with the contract.

14. PERMITS AND FEES

The Bidder awarded this project shall procure and pay all permits and licenses, charges, and fees, and give notices necessary and incidental to the due and lawful prosecution of the work, the cost of which shall be included in the fee received for the work, except where separately agreed.

15. 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 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.

BID FORM

To: City of Key West, Florida

Address: 3126 Flagler Avenue, Key West, Florida 33040

Project Title: **HALF SHELL RAW BAR SEAWALL REPAIRS**

Project No.: **ITB #17-002**

Bidder's person to contact for additional information on this Bid:

Company Name: _____

Contact Name & Telephone #: _____

Email Address: _____

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, that he has personally inspected the Project, 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 Proposal.

The Bidder further agrees that the Owner may “non-perform” the work in the event that the low bid is in excess of available funding. Non-performance will be determined prior to Notice of Award.

The intent of the Bid Documents is to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents, as being required to produce the intended result shall be supplied, whether or not specifically called for in the Contract Documents.

CONTRACT EXECUTION

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 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. See Supplementary Conditions for all coverage requirements.

Type of Insurance	Limits	Comments
Commercial General Liability	$1,000,000	The proposers may have these coverages combined in 1 policy
Watercraft Liability	$1,000,000	
Business Automobile Liability	$1,000,000	
Workers' Compensation	Statutory	
Employers Liability	$1,000,000/$1,000,000/$1,000,000	
USL&H and Jones Act Coverage	$1,000,000	

START OF CONSTRUCTION AND CONTRACT COMPLETION TIME

The Bidder agrees to begin work within fourteen (14) calendar days after the date of the Notice to Proceed and to fully complete all work under this contract within ninety (90) calendar days, including construction of the foundation and assembly of the structure.

LIQUIDATED DAMAGES

In the event the Bidder is awarded the Contract and fails to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Contract Documents, liquidated damages shall be paid to the Owner at the rate of $750.00 per day for all work awarded until the work has been satisfactorily completed as provided by the Contract Documents. Sundays and legal holidays shall be excluded in determining days in default.

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 No's. _____, _____, _____, _____. (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.

LUMP SUM WORK ITEMS

The Bidder further proposes to accept as full payment for the Work proposed herein the amounts computed under the provisions of the Contract Documents and based on the following lump sum amounts.

The Bidder agrees that the lump sums 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.

BID SCHEDULE

HALF SHELL RAW BAR SEAWALL REPAIRS

LUMP SUM BID PRICE
Bidder will complete the Work in accordance with the Contract Documents for a fixed fee price.

1. Mobilization, General Conditions, Permit Fees and Demobilization

1 LS $_____

2. Temporary demolition and replacement of existing wood deck and utilities that would interfere with seawall repairs (includes all labor, equipment and disposal for a complete product)

1 LS $_____

3. Concrete seawall fascia repair and cast-in-place concrete layer with GFRP reinforcement and formwork (includes all labor, equipment and material for a complete, functional product)

1 LS $_____

4. Installation of timber piles and all connections to existing restaurant overhang timber accessories throughout the existing wood decking (includes all labor, equipment and material for a complete, functional product)

1 LS $_____

5. Installation of timber accessories connecting the new seawall to existing wood decking (includes all labor, equipment and material for a complete, functional product)

1 LS $_____

6. General Allowance (only to be used with CITY's written directive)

1 LS $**15,000.00**

TOTAL OF ALL EXTENDED LINE ITEMS LISTED ABOVE:

Total of lump sum items 1 - 6 $_____

_____Dollars & _____Cents
(amount written in words)

NOTE: THE TOTAL BID WILL BE THE BASIS OF EVALUATING LOW BIDDER AND BASIS OF AWARD

CONTRACTOR'S PROJECTED OPERATIONS LOAD AND COST ESTIMATE

List items to be performed by Contractor's own forces and the estimated total cost of these items. (Use additional sheets if necessary.)

SUBCONTRACTORS

The Bidder further proposes that the following subcontracting firms or businesses will be awarded subcontracts for the following portions of the work in the event that the Bidder is awarded the Contract:

_____
Portion of Work

_____
Name

_____, _____, _____, _____
Street City State Zip

_____
Portion of Work

_____
Name

_____, _____, _____, _____
Street City State Zip

_____
Portion of Work

_____
Name

_____, _____, _____, _____
Street City State Zip

_____
Portion of Work

_____
Name

_____, _____, _____, _____
Street City State Zip

SURETY

_____whose address is

_____, _____, _____, _____
Street City State Zip

_____ _____
Phone Resident Agent

BIDDER

The name of the Bidder submitting this Bid is _____

_____doing business at

_____, _____, _____, _____
Street City State Zip

_____
email address

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:

Name	Title
_____	_____
_____	_____
_____	_____
_____	_____

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

EXPERIENCE OF BIDDER

The Bidder states that he is an experienced Contractor and has completed similar projects within the last five (5) years.

(List similar projects, with types, names of owners, construction costs, Engineers, and references with phone numbers. Use additional sheets if necessary.)

* * * * * *

FLORIDA BID BOND

BOND NO. _____

AMOUNT: $_____

KNOW ALL MEN BY THESE PRESENTS, that _____

_____

hereinafter called the PRINCIPAL, and _____

_____

a corporation duly organized under the laws of the State of _____

having its principal place of business at _____

_____in the State of _____,

and authorized to do business in the State of Florida, as SURETY, are held and firmly bound unto

_____

hereinafter CITY OF KEY WEST called the 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 present.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the PRINCIPAL is herewith submitting his or its Bid Proposal for Seawall Repairs, said Bid Proposal, by reference thereto, being hereby made a part hereof.

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 CITY), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the Proposal and the detailed Specifications, entitled:

ITB #17-002 HALF SHELL RAW BAR SEAWALL REPAIRS

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 CITY 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 10 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 base bid, satisfactory to the CITY, 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 _____, 2016.

By_____
PRINCIPAL

_____
SURETY

By _____
Attorney-In-Fact

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 _____20___.

NOTARY PUBLIC, State of Florida at Large

My Commission Expires:

* * * * * *

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 _____day of _____ , 20___.

My commission expires:

_____
NOTARY PUBLIC

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.

VENDOR: _____ SEAL:

_____
Address

_____
Signature

_____
Print Name

_____
Title

DATE: _____

EQUAL BENEFITS FOR DOMESTIC PARTNERS AFFIDAVIT

STATE OF _____)

: SS

COUNTY OF _____)

I, the undersigned hereby duly sworn, depose and say that the firm of _____

_____

provides benefits to domestic partners of its employees on the same basis as it provides benefits to employees' spouses, per City of Key West Code of Ordinances Sec. 2-799.

By:_____

Sworn and subscribed before me this _____ day of _____ 20 _____.

NOTARY PUBLIC, State of Florida at Large

My Commission Expires:

* * * * * *

CONE OF SILENCE AFFIDAVIT

STATE OF _____)

: SS

COUNTY OF _____)

I, the undersigned hereby duly sworn, depose and say that all owner(s), partners, officers, directors, employees and agents representing the firm of _____ have read and understand the limitations and procedures regarding communications concerning City of Key West Code of Ordinances Sec. 2-773 Cone of Silence.

By: _____

Sworn and subscribed before me this

_____ day of _____ 20_____.

_____

NOTARY PUBLIC, State of _____ at Large

My Commission Expires: _____

* * * * * *

LOCAL VENDOR CERTIFICATION
PURSUANT TO CITY OF KEY WEST CODE OF ORDINANCES 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 Code od Ordinances Section 2-798
- Qualifies as a local vendor pursuant to Code od Ordinances 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 filled in black ink. ☐

3. Total and unit Prices added correctly. ☐

4. Addenda acknowledged. ☐

5. Subcontractors are named as indicated in the Bid. ☐

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 days after receiving a Notice of Award. ☐

11. Bid submitted intact with the volume containing the Bidding Requirements, Contract Forms and Conditions of the Contract, one (1) original, two (2) USB drives. ☐

12. Bid Documents submitted in sealed envelope and addressed and labeled in conformance with the instructions in the Invitation to Bid. ☐

13. Anti-kickback Affidavit; Public Entity Crime Form; City of Key West Indemnification Equal Benefits for Domestic Partners Affidavit; Local Vendor Certification; ☐

PART 2

CONTRACT FORMS

CONTRACT AGREEMENT

This Contract, made and entered into _____ day of _____ 20___, by and between the City of Key West, hereinafter called the "Owner", and _____, 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 **ITB #17-002 HALF SHELL RAW BAR SEAWALL REPAIRS – KEY WEST HISTORIC SEAPORT** Key West, Florida to the extent of the Bid made by the Contractor, dated the _____ day of _____ , 20_____, all in full compliance with the Contract Documents referred to herein.

The PROCUREMENT REQUIREMENTS, including the signed copy of the BID FORM, the CONTRACT FORMS, the CONDITIONS OF THE CONTRACT, SPECIFICATIONS, DRAWINGS and/or SUPPLEMENTAL INFORMATION (if any), are hereby referred to and by reference made 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 **ninety (90)** calendar days 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.

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 dates specified in the paragraphs above, plus any extensions thereof allowed, in accordance with Article 58 of the General Conditions.

In the event the Contractor fails to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Contract Documents, liquidated damages shall be paid at a rate of $750.00 per day. Sundays and legal holidays shall be included in determining days in default.

This contract will automatically expire upon completion of the project. Contractors warranty obligations remain in effect.

IN WITNESS WHEREOF, we, the parties hereto, each herewith subscribe the same this

_____ day of _____, A.D., 20_____.

CITY OF KEY WEST

Signature:_____

Printed:_____

Title: _____

CONTRACTOR

Signature:_____

Printed:_____

Title: _____

APPROVED AS TO FORM

_____

Attorney for Owner

* * * * * *

FLORIDA PERFORMANCE BOND

BOND NO._____

AMOUNT: $_____

KNOW ALL MEN BY THESE PRESENTS, that in accordance with Florida Statutes Section

255.05 _____

with offices at _____

hereinafter called the CONTRACTOR (Principal), and

_____

with offices at_____

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,** hereinafter called the CITY (Obligee), in the sum of:

_____DOLLARS ($_____), lawful money of the United States of America, for the payment of which, well and truly be made to the CITY, the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:
WHEREAS, the CONTRACTOR has executed and entered into a certain Contract hereto attached, with the CITY, dated _____, 20__, to furnish at his own cost, charges, and expense all the necessary materials, equipment, and/or labor in strict and express accordance with said Contract and the Contract Documents as defined therein, all of which is made a part of said Contract by certain terms and conditions in said Contract more particularly mentioned, which Contract, consisting of the various Contract Documents is made a part of this Bond as fully and completely as if said Contract Documents were set forth herein;

NOW THEREFORE, the conditions of this obligation are such that if the above bounden CONTRACTOR:

1. Shall in all respects comply with the terms and conditions of said Contract and his obligation there under, including the Contract Documents (which include the scope of work and conditions as prepared by the CITY, invitation to bid, instructions to bidders, the CONTRACTOR'S bid as accepted by the above CITY, the bid and contract performance and payment bonds (Not required as part of this contract), and all addenda, if any, issued prior to the opening of bids), being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying PRINCIPAL with labor, materials, or supplies, used directly or indirectly by PRINCIPAL in the prosecution of the work provided for in the contract; and

3. Pays CITY all losses, costs, expenses, damages, attorney's fees, including appellate proceedings, injury or loss of whatever kind and however arising including, without limitation, delay damages to which said CITY may be subject by reason of any wrongdoing, misconduct, want of care or skill, negligence, failure of performance, breach, failure to petition within the prescribed time, or default, including patent infringements, on the part of said CONTRACTOR, his agents or employees, in the execution or performance of said Contract; and

4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this obligation shall be void; otherwise, to remain in full force and effect for the term of said Contract.

AND, the said Surety for value received, hereby stipulates and agrees that no change involving any extension of time, or addition to the terms of the Contract Documents, or to the work to be performed, or materials to be furnished there under shall affect said obligation of said Surety on this Bond, and the said Surety does hereby waive notice of any such changes, extension of time, alterations, or additions of the terms of the Contract Documents, or to the work.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

IN WITNESS WHEREOF, the above parties bonded together have executed this instrument

this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____

(SEAL)

ATTEST

SURETY

By: _____

(SEAL)

ATTEST

FLORIDA PAYMENT BOND

BOND NO._____

AMOUNT: $_____

KNOW ALL MEN BY THESE PRESENTS, that in accordance with Florida Statutes Section

255.05,_____

with offices at_____
hereinafter called the CONTRACTOR, (Principal), and

_____

with offices at _____

a corporation duly organized and existing under and by virtue of the laws of the State of _____

_____ , hereinafter called the SURETY, and authorized to transact business within the State of Florida, as SURETY, are held and firmly bound unto CITY OF KEY WEST**,** hereinafter called the City (Obligee), in the sum of:

_____DOLLARS (_____), lawful money of the United States of America, for the payment of which, well and truly be made to the CITY, and the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract for

ITB #17-002 HALF SHELL RAW BAR SEAWALL REPAIRS attached hereto, with

the CITY, dated_____

_____, 20__, to furnish at his own cost, charges, and expense the necessary materials, equipment, and/or labor in strict and express accordance with said Contract and the plans, drawings (if any), and specifications prepared by the CITY, all of which is made a part of said Contract by certain terms and conditions in said Contract more particularly mentioned, which Contract, consisting of the various Contract Documents specifically mentioned herein and relative hereto, is made a part of this Bond as fully and completely as if said Contract Documents were set forth herein.

NOW THEREFORE, the conditions of this obligation are such that if the above bounden CONTRACTOR shall in all respects comply with the terms and conditions of said Contract and his obligation thereunder, including the Contract Documents ,which include Scope of work and conditions prepared by the CITY, invitation to bid, instructions to bidders, the

CONTRACTOR'S bid as accepted by the CITY, the bid and contract and payment bonds (Not required as part of this contract), and all addenda, if any, issued prior to the opening of bids), and further that if said CONTRACTOR shall promptly make payments to all persons supplying materials, equipment, and/or labor, used directly or indirectly by said CONTRACTOR or subcontractors in the prosecution of the work for said contract is accordance with Florida Statutes, Section 255.05 or Section 713.23, then this obligation shall be void; otherwise to remain in full force and effect for the term of said contract, including and all guarantee periods as specifically mentioned in said Contract Documents.

AND, the said SURETY for value received, hereby stipulates and agrees that no change involving any extension of time, or addition to the terms of the Contract or to the work to be performed, or materials to be furnished thereunder, or in the Contract Documents and specifications accompanying the said contract shall affect said obligation of said SURETY on this Bond, and the said SURETY does hereby waive notice of any such changes, extension of time, alternations, or additions of the terms of the Contract, or to the work, to the Contract Documents, or to the specifications.

Claimant shall give written notice to the CONTRACTOR and the SURETY as required by Section 255.05 or Section 713.23, Florida Statutes. Any action instituted against the CONTRACTOR or SURETY under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2) or Section 713.23, Florida Statutes.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument

this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By:_____

(SEAL)

ATTEST

SURETY

By:_____

(SEAL)

ATTEST

LICENSE REQUIREMENT AND COST

License required for this Project. Contractor must be general contractor or building contractor.

Cost Not To Exceed $410.00.

CITY OF KEY WEST BUSINESS LICENSE TAX RECEIPT

A City of Key West Business License Tax Receipt is required for this project. Contractor must be general contractor, building contractor or engineering contractor. Cost not to exceed $410.00.

City of Key West Business License Tax Receipt may be found on the city website.

http://www.keywestcity.com/egov/docs/1162843921181.htm

PART 3

CONDITIONS OF CONTRACT

GENERAL CONDITIONS

Article

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1. AS APPROVED
2. AS SHOWN, AND AS INDICATED
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4. CONTRACT DOCUMENTS
5. CONTRACTOR
6. CONTRACT COMPLETION
7. DAYS
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11. OR EQUAL
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13. PLANS
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19. DISCREPANCIES AND OMISSIONS
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21. EXAMINATION AND VERIFICATION OF CONTRACT DOCUMENTS
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* * * * * * *

DEFINITIONS

Whenever in the Contract Documents the following terms are used, the intent and meaning shall be interpreted as follows:

1. AS APPROVED

The words "as approved", unless otherwise qualified, shall be understood to be followed by the words "by the ENGINEER for conformance with the Contract Document".

2. AS SHOWN, AND AS INDICATED

The words "as shown" and "as Indicated" shall be understood to be followed by the words "on the Drawings".

3. BIDDER

The person or persons, partnership, firm, or corporation submitting a Bid for the work contemplated.

4. CONTRACT DOCUMENTS

The "Contract Documents" consist of the Bidding Requirements, Contract Forms, Conditions of the Contract, Specifications, Drawings, all modifications thereof incorporated into the Documents before their execution, Change Orders, and all other requirements incorporated by specific reference thereto. These form the Contract.

5. CONTRACTOR

The person or persons, partnership, firm, or corporation who enters into the Contract awarded him by the OWNER.

6. CONTRACT COMPLETION

The "Contract Completion" is the date the OWNER accepts the entire work as being in compliance with the Contract Documents, or formally waives nonconforming work to extent of nonconformity, and issues the final payment in accordance with the requirements set forth in Article, "Final Payment" of these General Conditions.

7. DAYS

Unless otherwise specifically stated, the term "days" will be understood to mean calendar days. Business day or working day means any day other than Saturday, Sunday, or legal holiday.

8. DRAWINGS

The term "Drawings" refers to the official Drawings, profiles, cross sections, elevations, details, and other working drawings and supplementary drawings, or reproductions thereof, signed by the ENGINEER, which shows the location, character, dimensions, and details of the work to be performed. Drawings may either be bound in the same book as the balance of the Contract Documents, or bound in separate sets, and are a part of the Contract Documents, regardless of the method of binding.

9. ENGINEER

The person or organization identified as such in the Contract Documents. The Term "ENGINEER" means ENGINEER or his authorized representative.

10. NOTICE

The term "notice" or the requirement to notify, as used in the Contract Documents or applicable state or federal statutes, shall signify a written communication delivered in person or by registered mail to the individual, or to a member of the firm, or to an officer of the corporation for whom it is intended. Certified or registered mail shall be addressed to the last business address known to him who gives the notice.

11. OR EQUAL

The term "or equal" shall be understood to indicate that the "equal" product is equivalent to or better than the product named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the project design requirements will be made by the ENGINEER. Such equal products shall not be purchased or installed by the CONTRACTOR without written authorization.

12. OWNER

The person, organization, or public body identified as such in the Contract Documents.

13. PLANS (See Drawings)

14. SPECIFICATIONS

The term "Specifications" refers to those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction

systems, standards, and workmanship as applied to the work and certain
administrative details applicable thereto. Where standard specifications, such as those of ASTM, AASHTO, etc., have been referred to, the applicable portions of such standard specifications shall become a part of these Contract Documents. If referenced specifications conflict with specifications contained herein, the requirements contained herein shall prevail.

15. NOTICE TO PROCEED

A written notices given by the OWNER to the CONTRACTOR (with a copy to the ENGINEER) fixing the date on which the Contract time will commence to run and on which the CONTRACTOR shall start to perform his obligation under the Contract Documents. The Notice to Proceed will be given within 30 days following the execution of the Contract by the OWNER.

16. SUBSTANTIAL COMPLETION

"Substantial Completion" shall be that degree of completion of the Project or a defined portion of the Project, as evidenced by the ENGINEER's written notice of Substantial Completion, sufficient to provide the OWNER, at his discretion, the full-time use of the Project or defined portion of the Project for the purposes for which it was intended. "Substantial Completion" of an operating facility shall be that degree of completion that has provided a minimum of 7 continuous days of successful, trouble-free, operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the ENGINEER. All equipment contained in the work, plus all other components necessary to enable the OWNER to operate the facility in a manner that was intended, shall be complete on the substantial completion date.

17. WORK

The word "work" within these Contract Documents shall include all material, labor, tools, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the Contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure. As used herein, "provide" shall be understood to mean "furnish and install, complete in-place ".

<u>CONTRACT DOCUMENTS</u>

18. INTENT OF CONTRACT DOCUMENTS

The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Documents is to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning.

Reference to standard specifications, manuals, or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect on the first published date of the Invitation to Bid, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any ENGINEER's consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of Article LIMITATIONS ON ENGINEER'S RESPONSIBILITIES.

19. DISCREPANCIES AND OMISSIONS

Any discrepancies or omissions found in the Contract Documents shall be reported to the ENGINEER immediately. The ENGINEER will clarify discrepancies or omissions, in writing, within a reasonable time.

In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

A. CONTRACT
B. BID
C. SUPPLEMENTARY CONDITIONS
D. INVITATION TO BID
E. INSTRUCTIONS TO BIDDERS
F. GENERAL CONDITIONS
G. SPECIFICATIONS

H. DRAWINGS

Addenda shall take precedence over all sections referenced therein. Figure dimensions on Drawings shall take precedence over scale dimensions. Detailed Drawings shall take precedence over general Drawings.

20. CHANGES IN THE WORK

The OWNER, without notice to the Sureties and without invalidating the Contract, may order changes in the work within the general scope of the Contract by altering, adding to, or deducting from the work, the Contract being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, except as specifically adjusted at the time of ordering such change.

In giving instructions, the ENGINEER may order minor changes in the work not involving extra cost and not inconsistent with the purposes of the Project, but otherwise, except in an emergency endangering life and property, additions or deductions from the work shall be performed only in pursuance of an approved Change Order from the OWNER, countersigned by the ENGINEER.

If the work is reduced by alterations, such action shall not constitute a claim for damages based on loss of anticipated profits.

21. EXAMINATION AND VERIFICATION OF CONTRACT DOCUMENTS

The CONTRACTOR shall thoroughly examine and become familiar with all of the various parts of these Contract Documents and determine the nature and location of the work, the general and local conditions, and all other matters, which can in any way affect the work under this Contract. Failure to make an examination necessary for this determination shall not release the CONTRACTOR from the obligations of this Contract. No verbal agreement or conversation with any officer, agent, or employee of the OWNER or with the ENGINEER either before or after the execution of this Contract shall affect or modify any of the terms or obligations herein contained.

22. DOCUMENTS TO BE KEPT ON THE JOBSITE

The CONTRACTOR shall keep one copy of the Contract Documents on the job- site, in good order, available to the ENGINEER and to his representatives.

The CONTRACTOR shall maintain on a daily basis at the jobsite, and make available to the ENGINEER on request, one current record set of the Drawings which have been accurately marked to indicate all modifications in the completed work that differ from the design information shown on the Drawings. Upon Substantial completion of the work, the CONTRACTOR shall give the ENGINEER one complete set of these marked up record Drawings.

23. ADDITIONAL CONTRACT DOCUMENTS

Copies of Contract Documents or Drawings may be obtained on request from the ENGINEER and by paying the actual cost of reproducing the Contract Documents or Drawings.

24. OWNERSHIP OF CONTRACT DOCUMENTS

All portions of the Contract Documents, and copies thereof furnished by the ENGINEER are instruments of service for this Project. They are not to be used on other work and are to be returned to the ENGINEER on request at the completion of the work. Any reuse of these materials without specific written verification or adaptation by the ENGINEER will be at the risk of the user and without liability or legal expense to the ENGINEER. Such user shall hold the ENGINEER harmless from any and all damages, including reasonable attorneys' fees, from any and all claims arising from any such reuse. Any such verification and adaptation shall entitle the ENGINEER to further compensation at rates to be agreed upon by the user and the ENGINEER.

<u>THE ENGINEER</u>

25. AUTHORITY OF THE ENGINEER

The ENGINEER will be the OWNER's representative during the construction period. His authority and responsibility will be limited to the provisions set forth in these Contract Documents. The ENGINEER will have the Authority to reject work that does not conform to the Contract Documents. However, neither the ENGINEER's authority to act under this provision, nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any SUBCONTRACTOR, their respective Sureties, any of their agents or employees, or any other person performing any of the work.

26. DUTIES AND RESPONSIBILITIES OF THE ENGINEER

The ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the work and to determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. He will not make comprehensive or continuous review or observation to check quality or quantity of the work, and he will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work. Visits and observations made by the ENGINEER shall not relieve the CONTRACTOR of his obligation to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

The ENGINEER will make recommendations to the OWNER, in writing, on all claims of the OWNER or the CONTRACTOR arising from interpretation or execution of the Contract Documents. Such recommendations will be of factual and/or technical nature, and will not include the legal interpretation of the Contract Documents. Any necessary legal interpretation of the Contract Document will be made by the OWNER. Such recommendation shall be necessary before the CONTRACTOR can receive additional money under the terms of the Contract. Changes in work ordered by the ENGINEER shall be made in compliance with Article CHANGES IN THE WORK.

One or more project representatives may be assigned to observe the work. It is understood that such project representatives shall have the authority to issue notice of nonconformance and make decisions within the limitations of the authority of the ENGINEER. The CONTRACTOR shall furnish all reasonable assistance required by the ENGINEER or project representatives for proper observation of the work. The above-mentioned project representatives shall not relieve the CONTRACTOR of his obligations to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

27. LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the work in accordance with the Contract Documents.

ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any SUBCONTRACTOR, any supplier, or of any other person or organization performing or furnishing any of the work.

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory", or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of this Article.

28. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to expiration of the warranty period shall be removed and replaced by work which shall conform to the provisions of the Contract Documents. Any material condemned or rejected shall be removed at once from the project site.

Failure on the part of the ENGINEER to condemn or reject bad or inferior work or to note nonconforming materials or equipment on CONTRACTOR submittals shall not be construed to imply acceptance of such work. The OWNER shall reserve and retain all of its rights and remedies at law against the CONTRACTOR and its Surety for correction of any and all latent defects discovered after the guarantee period.

29. LINES AND GRADES

Lines and grades shall be established as provided in the supplementary conditions. All stakes, marks, and other reference information shall be carefully preserved by the CONTRACTOR, and in case of their careless or unnecessary destruction or removal by him or his employees, such stakes, marks, and other information shall be replaced at the CONTRACTOR's expense.

30. SUBMITTALS

After checking and verifying all field measurements and after complying with applicable procedures specified in Division I, GENERAL REQUIREMENTS, CONTRACTOR shall submit to ENGINEER, in accordance with the schedule for submittals for review, shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment), which shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submittal. All submittals shall be identified as ENGINEER may require. The data shown shall be complete with respect to quantities, dimensions specified, performance and design criteria, materials, and similar data to enable ENGINEER to review the information. CONTRACTOR shall also submit to ENGINEER for review, with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples shall have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended.

Before submission of each submittal, CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each submittal with other submittals and with the requirements of the work and the Contract Documents.

At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the submittal may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each shop drawing submitted to ENGINEER for review and approval of each variation.

ENGINEER will review submittals with reasonable promptness, but ENGINEER's review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences, or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions. 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. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

ENGINEER's review of submittals shall not relieve CONTRACTOR from the responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated therein or accompanying the shop drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the shop drawings or from responsibility for having complied with the provisions herein.

Where a shop drawing or sample is required by the specifications, any related work performed prior to ENGINEER's review and approval of the pertinent submission shall be at the sole expense and responsibility of the CONTRACTOR.

31. DETAIL DRAWINGS AND INSTRUCTIONS

The ENGINEER will furnish, with reasonable promptness, additional instructions by means of Drawings or otherwise, if, in the ENGINEER's opinion, such are required for the proper execution of the work. All such Drawings and instructions will be consistent with the Contract Documents, true developments thereof, and reasonably inferable there from.

THE CONTRACTOR AND HIS EMPLOYEES

32. CONTRACTOR, AN INDEPENDENT AGENT

The CONTRACTOR shall independently perform all work under this Contract and shall not be considered as an agent of the OWNER or of the ENGINEER, nor shall the CONTRACTOR's SUBCONTRACTOR's or employees be subagents of the OWNER or of the ENGINEER.

33. SUBCONTRACTING

Unless modified in the Supplementary Conditions, within

10 days after the execution of the Contract, the CONTRACTOR shall submit to the ENGINEER the names of all SUBCONTRACTORS proposed for the work, including the names of any SUBCONTRACTORS that were submitted with the Bid. The CONTRACTOR shall not employ any SUBCONTRACTORS to which the OWNER may object to as lacking capability to properly perform work of the type and scope anticipated.

The CONTRACTOR is as fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relationship between any SUBCONTRACTOR and the OWNER or ENGINEER.

34. INSURANCE AND LIABILITY

A. GENERAL

The CONTRACTOR shall provide (from insurance companies acceptable to the OWNER) the insurance coverage designated hereinafter and pay all costs.

Before commencing work under this Contract, the CONTRACTOR shall furnish the OWNER with certificates of insurance specified herein showing the type, amount class of operations covered, effective dates, and date of expiration of policies, and containing substantially the following statement:

"The insurance covered by this certificate shall not be canceled or materially altered, except after 30 days' written notice has been received by the OWNER."

In case of the breach of any provision of this Article, the OWNER, at his option, may take out and maintain, at the expense of the CONTRACTOR, such insurance as the OWNER may deem proper and may deduct the cost of such insurance from any monies which may be due or become due the CONTRACTOR under this Contract.

B. CONTRACTOR AND SUBCONTRACTOR INSURANCE

The CONTRACTOR shall not commence work under this Contract until he has obtained all the insurance required hereunder and such insurance has been reviewed by the OWNER, nor shall the CONTRACTOR allow any SUBCONTRACTOR to commence work on his subcontract until insurance specified below has been obtained. Review of the insurance by the OWNER shall not relieve or decrease the liability of the CONTRACTOR hereunder.

C. COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE

The CONTRACTOR shall maintain during the life of this Contract the statutory amount of Workmen's Compensation Insurance, in addition, Employer's Liability Insurance in an amount as specified in the Supplementary Conditions, for each occurrence, for all of his employees to be engaged in work on the project under this Contract. In case any such work is subcontracted, the Contractor shall require the Subcontractor to provide similar Worker's Compensation and Employer's Liability Insurance for all of the Subcontractor's employees to be engaged in such work.

D. GENERAL LIABILITY INSURANCE (INCLUDING AUTOMOBILE)

The CONTRACTOR shall maintain during the life of this Contract such general liability, completed operations and products liability, and automobile liability insurance as will provide coverage for claims for damages for personal injury, including accidental death, as well as for claims for property damage, which may arise directly or indirectly from performance of the work under this Contract. The general liability policy shall include contractual liability assumed by the CONTRACTOR under Article **INDEMNITY.** Coverage for property damage shall be on a "broad form" basis with no exclusions for "X, C & U". The amount of insurance to be provided shall be as specified in the Supplementary Conditions.

In the event any work under this Contract is performed by a SUBCONTRACTOR, the CONTRACTOR shall be responsible for any liability directly or indirectly arising out of the work performed by the SUBCONTRACTOR, to the extent such liability is not covered by the SUBCONTRACTOR's insurance.

The OWNER and ENGINEER, their officers, agents, and employees shall be named as Additional Insured's on the CONTRACTOR's and any SUBCONTRACTOR's general liability and automobile liability insurance policies for any claims arising out of work performed under this Contract.

E. BUILDERS RISK ALL RISK INSURANCE

Unless otherwise modified in the Supplementary

Conditions, the CONTRACTOR shall secure and maintain during the life of this Contract, Builders Risk All Risk Insurance coverage in an amount equal to the full value of the facilities/ work performed under this Contract/ construction. Such insurance shall include coverage for earthquake, landslide, flood, collapse, loss due to the results of faulty workmanship or design, and all other normally covered risks, and shall provide for losses to be paid to the CONTRACTOR, OWNER, and ENGINEER as their interests may appear.

The OWNER and ENGINEER, their officers, agents, and employees shall be named as additional insured's on the CONTRACTOR's and any SUBCONTRACTOR's Builders Risk All Risk insurance policies for any claims arising out of work performed under this Contract.

This insurance shall include a waiver of subrogation as to the ENGINEER, the OWNER, the CONTRACTOR, and their respective officers, agents, employees and SUBCONTRACTORS.

F. NO PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the provisions hereof in exercising any authority granted by the Contract, there will be no personal liability upon any public official.

35. INDEMNITY

To the maximum extent permitted by law, the Contractor shall indemnify and defend the Owner and the Engineer, and their officers, employees, agents, and sub-consultants, from all claims and losses, including attorney's fees and litigation costs arising out of property losses or health, safety, personal injury, or death claims by the Contractor, its subcontractors of any tier, and their employees, agents, or invitees regardless of the fault, breach of Contract, or negligence of the Owner or Engineer, excepting only such claims or losses that have been adjudicated to have been caused solely by the negligence of the Owner or the Engineer and regardless of whether or not the Contractor is or can be named a party in a litigation.

36. EXCLUSION OF CONTRACTOR CLAIMS

In performing its obligations, the ENGINEER and its consultants may cause expense for the CONTRACTOR or its SUBCONTRACTORs and equipment or material suppliers. However, those parties and their sureties shall maintain no direct action against the ENGINEER, its officers, employees, agents, and consultants for any claim arising out of, in connection with, or resulting from the engineering services performed or required to be performed.

37. TAXES AND CHARGES

The CONTRACTOR shall withhold and pay any and all sales and use taxes and all withholding taxes, whether State or Federal, and pay all Social Security charges and also all State Unemployment Compensation charges, and pay or cause to be withheld, as the case may be, any and all taxes, charges, or fees or sums whatsoever, which are now or may hereafter be required to be paid or withheld under any laws.

38. REQUIREMENTS OF STATE LAW FOR PUBLIC WORKS PROJECTS

When the Contract Documents concern public works of the state or any county, municipality, or political subdivision created by its laws, the applicable statutes shall apply. All parties to this Contract shall determine the contents of all applicable statutes and comply with their provisions throughout the performance of the Contract.

39. CODES, ORDINANCES, PERMITS AND LICENSES

The CONTRACTOR shall keep himself fully informed of all local codes and ordinances, as well as state and federal laws, which in any manner affect the work herein specified. The CONTRACTOR shall at all times comply with said codes and ordinances, laws, and regulations, and protect and indemnify the OWNER, the ENGINEER and their respective employees, and its officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations. All permits, licenses and inspection fees necessary for prosecution and completion of the work shall be secured and paid for by the CONTRACTOR, unless otherwise specified.

40. SUPERINTENDENCE

The CONTRACTOR shall keep at the project site, competent supervisory personnel. The CONTRACTOR shall designate, in writing, before starting work, a project superintendent who shall be an employee of the CONTRACTOR and shall have complete authority to represent and to act for the CONTRACTOR. ENGINEER shall be notified in writing prior to any change in superintendent assignment. The CONTRACTOR shall give efficient supervision to the work, using his best skill and attention. The CONTRACTOR shall be solely

responsible for all construction means, methods, techniques, and procedures, and for providing adequate safety precautions and coordinating all portions of the work under the Contract. It is specifically understood and agreed that the ENGINEER, its employees and agents, shall not have control or charge of and shall not be responsible for the construction means, methods, techniques, procedures, or for providing adequate safety precautions in connection with the work under Contract.

41. RECEPTION OF ENGINEER'S COMMUNICATIONS

The superintendent shall receive for the CONTRACTOR all communications from the ENGINEER. Communications of major importance will be confirmed in writing upon request from the CONTRACTOR.

The ENGINEER may schedule project meetings for the purposes of discussing and resolving matters concerning the various elements of the work. Time and place for these meetings and the names of persons required to be present shall be as determined by the ENGINEER. CONTRACTOR shall comply with these attendance requirements and shall also require his SUBCONTRACTORS to comply.

42. SAFETY

The CONTRACTOR shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The CONTRACTOR's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

The CONTRACTOR shall develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The CONTRACTOR shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

The duty of the ENGINEER to conduct construction review of the work does not include review or approval of the adequacy of the CONTRACTOR's safety program, safety supervisor, or any safety measures taken in, on, or near the construction site.

The CONTRACTOR, as a part of his safety program, shall maintain at his office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the aforementioned authorities, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the jobsite.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the ENGINEER and the OWNER. 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 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 ENGINEER, giving full details of the claim.

43. PROTECTION OF WORK AND PROPERTY

The CONTRACTOR shall at all times safely guard and protect from damage the OWNER's property, adjacent property, and his own work from injury or loss in connection with this Contract. All facilities required for protection by federal, state, or municipal laws and regulations and local conditions must be provided and maintained.

The CONTRACTOR shall protect his work and materials from damage due to the nature of the work, the elements, carelessness of other CONTRACTORS, or from any cause whatever until the completion and acceptance of the work. All loss or damages arising out of the nature of the work to be done under these Contract Documents, or from any unforeseen obstruction or defects which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the CONTRACTOR.

44. RESPONSIBILITY OF CONTRACTOR TO ACT IN AN EMERGENCY

In case of an emergency which threatens loss or injury of property, and/or safety of life, the CONTRACTOR shall act, without previous instructions from the OWNER or

ENGINEER, as the situation may warrant. The CONTRACTOR shall notify the ENGINEER thereof immediately thereafter. Any claim for compensation by the CONTRACTOR, together with substantiating documents in regard to expense, shall be submitted to the OWNER through the ENGINEER and the amount of compensation shall be determined by agreement.

45. MATERIALS AND APPLIANCES

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, heat, light, fuel, power, transportation, construction equipment and machinery, appliances, telephone, sanitary facilities, temporary facilities and other facilities and incidentals necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

In selecting and/or approving equipment for installation in the Project, the OWNER and ENGINEER assume no responsibility for injury or claims resulting from failure of the equipment to comply with applicable federal, state, and local safety codes or requirements, or the safety requirements of a recognized agency, or failure due to faulty design concepts, or defective workmanship and materials.

46. CONTRACTORS' AND MANUFACTURERS' COMPLIANCE WITH STATE SAFETY, OSHA, AND OTHER CODE REQUIREMENTS

The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items required by the state and federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the work subject to such safety regulations shall be fabricated, furnished, and installed (including OWNER-furnished equipment) in compliance with these requirements. CONTRACTORS and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. CONTRACTORS shall notify all equipment suppliers and SUBCONTRACTORS of the provisions of this Article.

47. SUBSTITUTION OF MATERIALS

Except for OWNER-selected equipment items, and items where no substitution is clearly specified, whenever any material, article, device, product, fixture, form, type of construction, or process is indicated or specified by patent or proprietary name, by name of manufacturer, or by catalog number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the material or process desired. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable in design, and shall be deemed to be followed by the words "or equal". The CONTRACTOR may, in such cases, submit complete data to the ENGINEER for consideration of another material, type, or process that shall be substantially equal in every respect to that so indicated or specified. Substitute materials shall not be used unless approved in writing. The ENGINEER will be the sole judge of the substituted article or material.

48. TESTS, SAMPLES, AND OBSERVATIONS

The CONTRACTOR shall furnish, without extra charge, the necessary test pieces and samples, including facilities and labor for obtaining the same, as requested by the ENGINEER. When required, the CONTRACTOR shall furnish certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.

The OWNER, ENGINEER, and authorized government agents, and their representatives shall at all times be provided safe access to the work wherever it is in preparation or progress, and the CONTRACTOR shall provide facilities for such access and for observations, including maintenance of temporary and permanent access.

If the Specifications, laws, ordinances, or any public authority require any work, to be specially tested or approved, the CONTRACTOR shall give timely notice of its readiness for observations. If any work should be covered up without approval or consent of the ENGINEER, it shall, if required by the ENGINEER, be uncovered for examination at the CONTRACTOR's expense.

Reexamination of questioned work may be ordered by the ENGINEER, and, if so ordered, the work shall be uncovered by the CONTRACTOR. If such work is found to be in accordance with the Contract Documents, the OWNER will pay the cost of uncovering, exposure, observation, inspection, testing and reconstruction. If such work is found to be not in accordance with the

Contract Documents, the CONTRACTOR shall correct the defective work, and the cost of reexamination and correction of the defective work shall be paid by the CONTRACTOR.

49. ROYALTIES AND PATENTS

The CONTRACTOR shall pay all royalty and licenses fees, unless otherwise specified. The CONTRACTOR shall defend all suits or claims for infringement of any patent rights and shall save the OWNER and the ENGINEER harmless from any and all loss, including reasonable attorneys' fees, on account thereof.

50. CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

If the work should be stopped under an order of any court or other public authority for a period of more than 3 months, through no act or fault of the CONTRACTOR, its SUBCONTRACTORS, or respective employees or if the ENGINEER should fail to make recommendation for payment to the OWNER or return payment request to CONTRACTOR for revision within 30 days after it is due, or if the OWNER should fail to pay the CONTRACTOR within 30 days after time specified in Article PARTIAL PAYMENTS, any sum recommended by the ENGINEER, then the CONTRACTOR may, upon 15 days' written notice to the OWNER and the ENGINEER, stop work or terminate this Contract and recover from the OWNER payment for all acceptable work performed and reasonable termination expenses, unless said default has been remedied.

51. CORRECTION OF DEFECTIVE WORK DURING WARRANTY PERIOD

The CONTRACTOR hereby agrees to make, at his own expense, all repairs or replacements necessitated by defects in materials or workmanship, provided under terms of this Contract, and pay for any damage to other works resulting from such defects, which become evident within 2 years after the date of final acceptance of the work or within 2 years after the date of substantial completion established by the ENGINEER for specified items of equipment, or within such longer period as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. Un-remedied defects identified for correction during the warranty period but remaining after its expiration shall be considered as part of the obligations of the warranty. Defects in material, workmanship, or equipment which are remedied as a result of obligations of the warranty shall subject the remedied portion of the work to an extended warranty period of 2 years after the defect has been remedied.

The CONTRACTOR further assumes responsibility for a similar guarantee for all work and materials provided by SUBCONTRACTORS or manufacturers of packaged equipment components. The effective date for the start of the guarantee or warranty period for equipment qualifying as substantially complete is defined in Article SUBSTANTIAL COMPLETION, AND Article SUBSTANTIAL COMPLETION DATE, in these General Conditions.

The CONTRACTOR also agrees to hold the OWNER and the ENGINEER harmless from liability of any kind arising from damage due to said defects. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order for same from the OWNER. If the CONTRACTOR fails to make the repairs and replacements promptly, or in an emergency where delay would cause serious risk, or loss, or damage, the OWNER may have the defective work corrected or the rejected work removed and replaced, and the CONTRACTOR and his Surety shall be liable for the cost thereof.

<u>PROGRESS OF THE WORK</u>

52. BEGINNING OF THE WORK

Following execution of the Contract, the CONTRACTOR shall meet with the OWNER and ENGINEER relative to his arrangements for prosecuting the work.

53. SCHEDULES AND PROGRESS REPORTS

Prior to starting the construction, the CONTRACTOR shall prepare and submit to the ENGINEER, a progress schedule showing the dates on which each part or division of the work is expected to be started and finished, and a preliminary schedule for submittals. The progress schedule for submittals shall be brought up to date and submitted to the ENGINEER at the end of each month or at such other times the ENGINEER may request.

The CONTRACTOR shall forward to the ENGINEER, at the end of each month, an itemized report of the delivery status of major and critical items of purchased equipment and material, including shop drawings and the status of shop and field fabricated work. These progress reports shall indicate the date of the purchase order, the current percentage of completion, estimated delivery, and cause of delay, if any.

If the completion of any part of the work or the delivery of materials is behind the submitted progress schedule, the CONTRACTOR shall submit in writing a plan acceptable to the OWNER and ENGINEER for bringing the work up to schedule.

The OWNER shall have the right to withhold progress payments for the work if the CONTRACTOR fails to update and submit the progress schedule and reports as specified.

54. PROSECUTION OF THE WORK

It is expressly understood and agreed that the time of beginning, rate of progress, and time of completion of the work are the essence of this Contract. The work shall be prosecuted at such time, and in or on such part or parts of the Project as may be required, to complete the Project as contemplated in the Contract Documents and the progress schedule.

If the CONTRACTOR desires to carry on work at night or outside the regular hours, he shall give timely notice to the ENGINEER to allow satisfactory arrangements to be made for observing the work in progress.

55. OWNER'S RIGHT TO RETAIN IMPERFECT WORK

If any part or portion of the work completed under this Contract shall prove defective and not in accordance with the Drawings and Specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance as to make the work dangerous or unsuitable, or if the removal of such work will create conditions which are dangerous or undesirable, the OWNER shall have the right and authority to retain such work but will make such deductions in the final payment therefore as may be just and reasonable.

56. OWNER'S RIGHT TO DO WORK

Should the CONTRACTOR neglect to prosecute the work in conformance with the Contract Documents or neglect or refuse at his own cost to remove and replace work rejected by the ENGINEER, then the OWNER may notify the Surety of the condition, and after 10 days' written notice to the CONTRACTOR and the Surety, or without notice if an emergency or danger to the work or public exists, and without prejudice to any other right which the OWNER may have under Contract, or otherwise, take over that portion of the work which has been improperly or non-timely executed, and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the CONTRACTOR.

57. OWNER'S RIGHT TO TRANSFER EMPLOYMENT

If the CONTRACTOR should abandon the work or if he should persistently or repeatedly refuse or should fail to make prompt payment to SUBCONTRACTORS for material or labor, or to persistently disregard laws, ordinances, or to prosecute the work in conformance with the Contract Documents, or otherwise be guilty of a substantial violation of any provision of the Contract or any laws or ordinance, then the OWNER may, without prejudice to any other right or remedy, and after giving the CONTRACTOR and Surety 10 days' written notice, transfer the employment for said work from the CONTRACTOR to the Surety. Upon receipt of such notice, such Surety shall enter upon the premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the work included under this Contract and employ by Contract or otherwise, any qualified person or persons to finish the work and provide the materials therefore, in accordance with the Contract Documents, without termination of the continuing full force and effect of this Contract. In case of such transfer of employment to such Surety, the Surety shall be paid in its own name on estimates according to the terms hereof without any right of the CONTRACTOR to make any claim for the same or any part thereof.

If, after the furnishing of said written notice to the Surety, the CONTRACTOR and the Surety still fail to make reasonable progress on the performance of the work, the

OWNER may terminate the employment of the CONTRACTOR and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method he may deem expedient and charge the cost thereof to the CONTRACTOR and the Surety. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the expense of completing the Contract, including compensation for additional managerial and administrative services, shall exceed such unpaid balance, the CONTRACTOR and the Surety shall pay the difference to the OWNER.

58. DELAYS AND EXTENSION OF TIME

If the CONTRACTOR is delayed in the progress of the work by any act or neglect of the OWNER or the ENGINEER, or by any separate CONTRACTOR employed by the OWNER, or by strikes, lockouts, fire, adverse weather conditions not reasonably anticipated, or acts of Nature, and if the CONTRACTOR, within 48 hours of the start of the occurrence, gives written notice to the OWNER of the cause of the potential delay and estimate of the possible time extension involved, and within 10 days after the cause of the delay has been remedied, the CONTRACTOR gives written notice to the OWNER of any actual time extension requested as a result of the aforementioned occurrence, then the Contract time may be extended by change order for such reasonable time as the ENGINEER determines. It is agreed that no claim shall be made or allowed for any damages, loss, or expense which may arise out of any delay caused by the above referenced acts or occurrences other than claims for the appropriate extension of time.

No extension of time will be granted to the CONTRACTOR for delays occurring to parts of the work that have no measurable impact on the completion of the total work under this Contract. No extension of time will be considered for weather conditions reasonably anticipated for the area in which the work is being performed. Reasonably anticipated weather conditions will be based on official records of monthly precipitation and other historical data. Adverse weather conditions, if determined to be of a severity that would impact progress of the work, may be considered as cause for an extension of Contract completion time.

Delays in delivery of equipment or material purchased by the CONTRACTOR or his SUBCONTRACTORS, including OWNER-selected equipment shall not be considered as a just cause for delay, unless the OWNER determines that for good cause the delay is beyond the control of the CONTRACTOR. The CONTRACTOR shall be fully responsible for the timely ordering, scheduling, expediting, delivery, and installation of all equipment and materials.

Within a reasonable period after the Contractor submits to the Owner a written request for an extension of time, the Engineer will present his written opinion to the Owner as to whether an extension of time is justified, and, if so, his recommendation as to the number of days for time extension. The Owner will make the final decision on all requests for extension of time.

59. DIFFERING SITE CONDITIONS

The CONTRACTOR shall promptly, and before the conditions are disturbed, give a written notice to the OWNER and ENGINEER of:

A. Subsurface or latent physical conditions at the site which differ materially from those indicated in this contract,

B. Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The ENGINEER will investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this Contract, whether or not changed as a result of the conditions, and equitable adjustment shall be made under this Article and the Contract modified in writing accordingly.

No request by the CONTRACTOR for an equitable adjustment to the Contract under this Article will be allowed, unless the CONTRACTOR has given the written notice required; provided that the time prescribed above for giving written notice may be extended by the OWNER.

No request by the CONTRACTOR for an equitable adjustment to the Contract for differing site conditions will be allowed if made after final payment under this Contract.

60. LIQUIDATED DAMAGES

Should the CONTRACTOR fail to complete the work, or any part thereof, in the time agreed upon in the Contract

or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the CONTRACTOR shall reimburse the OWNER for the additional expense and damage for each calendar day, Sundays and legal holidays included, that the Contract remains uncompleted after the Contract completion date. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per-diem rate, as stipulated in the Bid. The said amount is hereby agreed upon as a reasonable estimate of the costs which may be accrued by the OWNER after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The OWNER shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectible from the CONTRACTOR or Surety.

61. OTHER CONTRACTS

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

If any part of the work under this Contract depends for proper execution or results upon the work of any other CONTRACTOR, utility service company or OWNER, the CONTRACTOR shall inspect and promptly report to the ENGINEER in writing any patent or apparent defects to deficiencies in such work that render it unsuitable for such proper execution and results. The CONTRACTOR's failure to so report shall constitute and acceptance of the work by others as being fit and proper for integration with work under this Contract, except for latent or non-apparent defects and deficiencies in the work.

62. USE OF PREMISES

The CONTRACTOR shall confine his equipment, the storage of materials and the operation of his workers to limits shown on the Drawings or indicated by law, ordinances, permits, or directions of the ENGINEER, and shall not unreasonably encumber the premises with his materials. The CONTRACTOR shall provide, at his own expense, the necessary rights-of-way and access to the work, which may be required outside the limits of the OWNER's property and shall furnish the ENGINEER copies of permits and agreements for use of the property outside that provided by the OWNER.

The CONTRACTOR shall not load nor permit any part of the 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.

63. SUBSTANTIAL COMPLETION DATE

The ENGINEER may issue a written notice of substantial completion for the purpose of establishing the starting date for specific equipment guarantees, and to establish the date that the OWNER will assume the responsibility for the cost of operating such equipment. Said notice shall not be considered as final acceptance of any portion of the work or relieve the CONTRACTOR from completing the remaining work within the specified time and in full compliance with the Contract Documents. See SUBSTANTIAL COMPLETION under DEFINITIONS of these General Conditions.

64. PERFORMANCE TESTING

Operating equipment and systems shall be performance tested in the presence of the ENGINEER to demonstrate compliance with the specified requirements. Performance testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the ENGINEER. Schedule such testing with the ENGINEER at least one week in advance of the planned date for testing.

65. OWNER'S USE OF PORTIONS OF THE WORK

Following issuance of the written notice of Substantial Completion, the OWNER may initiate operation of the facility. Such use shall not be considered as final acceptance of any portion of the work, nor shall such use be considered as cause for an extension of the Contract completion time, unless authorized by a Change Order issued by the OWNER.

66. CUTTING AND PATCHING

The CONTRACTOR shall do all cutting, fitting, or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other CONTRACTORS shown upon or reasonably implied by the Drawings.

67. CLEANING UP

The CONTRACTOR shall, at all times, keep property on

which work is in progress and the adjacent property free from accumulations of waste material or rubbish caused by employees or by the work. Upon completion of the construction, the CONTRACTOR shall remove all temporary structures, rubbish, and waste materials resulting from his operations.

PAYMENT

68. PAYMENT FOR CHANGE ORDERS

The OWNER's request for quotations on alterations to the work shall not be considered authorization to proceed with the work prior to the issuance of a formal Change Order, nor shall such a request justify any delay in existing work. Quotations for alterations to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and profit. OWNER may require detailed cost data in order to substantiate the reasonableness of the proposed costs.

Any compensation paid in conjunction with the terms of a Change Order shall comprise total compensation due the CONTRACTOR for the work or alteration defined in the Change Order. By signing the Change Order, the CONTRACTOR acknowledges that the stipulated compensation includes payment for the work or alteration plus all payment for the interruption of schedules, extended overhead, delay, or any other impact claim or ripple effect, and by such signing specifically waives any reservation or claim for additional compensation in respect to the subject Change Order.

At the OWNER's option, payment or credit for any alterations covered by a Change Order shall be determined by one or a combination of the methods set forth in A, B, or C below, as applicable:

A. UNIT PRICES

Those unit prices stipulated in the Bid shall be utilized where they are applicable. In the event the Change Order results in a change in the original quantity that is materially and significantly different from the original bid quantity, a new unit price shall be negotiated upon demand of either party. Unit prices for new items included in the Change Order shall be negotiated and mutually agreed upon.

B. LUMP SUM

A total lump sum for the work negotiated and mutually acceptable to the CONTRACTOR and the OWNER.

Lump sum quotations for modifications to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and profit, all calculated as specified under "C" below.

C. COST REIMBURSEMENT WORK

The term "cost reimbursement" shall be understood to mean that payment for the work will be made on a time and expense basis, that is, on an accounting of the CONTRACTOR's forces, materials, equipment, and other items of cost as required and used to do the work.

If the method of payment cannot be agreed upon prior to the beginning of the work, and the OWNER directs by written Change Order that the work be done on a cost reimbursement basis, then the CONTRACTOR shall furnish labor, and furnish and install equipment and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual cost of the following:

1. Labor including foremen for those hours they are assigned and participating in the cost reimbursement work (actual payroll cost, including wages, fringe benefits as established by negotiated labor agreements, labor insurance, and labor taxes as established by law). No other fixed labor burdens will be considered, unless approved in writing by the OWNER.
2. Material delivered and used on the designated work, including sales tax, if paid by the CONTRACTOR or his SUBCONTRACTOR.
3. Rental or equivalent rental cost of equipment, including necessary transportation for items having a value in excess of $100.

   Rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances shall not exceed the current rental rates prevailing in the locality. The rentals allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, and renewals, and no further allowances will be made for those items, unless specific agreement

to that effect is made.

4. Additional bond, as required and approved by the OWNER.
5. Additional insurance (other than labor insurance) as required and approved by the OWNER.

In addition to items 1 through 5 above, an added fixed fee for general overhead and profit shall be negotiated and allowed for the CONTRACTOR (or approved SUBCONTRACTOR) actually executing the Cost Reimbursement work.

An additional fixed fee shall be negotiated and allowed the CONTRACTOR for the administrative handling of portions of the work that are executed by an approved SUBCONTRACTOR. No additional fixed fee will be allowed for the administrative handling of work executed by a SUBCONTRACTOR of a SUBCONTRACTOR, unless by written permission from the OWNER.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, profit, and any other general expense. The CONTRACTOR's records shall make clear distinction between the direct costs of work paid for on a cost reimbursement basis and the costs of other work. The CONTRACTOR shall furnish the ENGINEER report sheets in duplicate of each day's cost reimbursement work no later than the working day following the performance of said work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the CONTRACTOR, SUBCONTRACTOR or other forces. The daily report sheets shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendors' invoices. Such invoices shall be submitted with the daily report sheets, or, if not available, they shall be submitted with subsequent daily report sheets. Said daily report sheets shall be signed by the CONTRACTOR or his authorized agent.

The OWNER reserves the right to furnish such materials and equipment as he deems expedient and the CONTRACTOR shall have no claim for profit or added fees on the cost of such materials and equipment. To receive partial payments and final payment for cost reimbursement work, the CONTRACTOR shall submit to the ENGINEER, detailed and complete documented verification of the CONTRACTOR's and any of his SUBCONTRACTORS' actual costs involved in the cost reimbursement work. Such costs shall be submitted within 30 days after said work has been performed.

69. PARTIAL PAYMENTS

A. GENERAL

Nothing in this Article shall be construed to affect the right, hereby reserved, to reject the whole or any part of the aforesaid work, should such work be later found not to comply with the provisions of the Contract Documents. All estimated quantities of work for which partial payments have been made are subject to review and correction on the final estimate. Payment by the OWNER and acceptance by the CONTRACTOR of partial payments based on periodic estimates of quantities of work performed shall not, in any way, constitute acceptance of the estimated quantities used as a basis for computing the amounts of the partial payments.

B. ESTIMATE

At least 30 days before each progress payment falls due, as specified in the Supplementary Conditions, the CONTRACTOR shall submit to the ENGINEER a detailed estimate of the amount earned during the preceding month for the separate portions of the work, and request payment. As used in this Article, the words "amount earned" means the value, on the date of the estimate for partial payment, of the work completed in accordance with the Contract Documents, and the value of approved materials delivered to the project site suitable stored and protected prior to incorporation into the work.

ENGINEER will, within 7 days after receipt of each request for payment, either indicate in writing a recommendation of payment and present the request to OWNER, or return the request to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may, within 7 days, make the necessary corrections and resubmit the request.

ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such an extent as may be necessary in ENGINEER's opinion to protect the OWNER from loss because:

1. The work is defective, or completed work has been damaged requiring correction or replacement;

2. Written claims have been made against OWNER or Liens have been filed in connection with the work;

3. The Contract Price has been reduced because of Change Orders;

4. OWNER has been required to correct defective work or complete the work in accordance with Article OWNER'S RIGHT TO DO WORK;

5. Of CONTRACTOR's unsatisfactory prosecution of the work in accordance with the Contract Documents; or

6. CONTRACTOR's failure to make payment to SUBCONTRACTORS or for labor, materials, or equipment.

C. DEDUCTION FROM ESTIMATE

Unless modified in the Supplementary Conditions, deductions from the estimate will be as described below:

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. When the work is 50 percent complete, the OWNER may reduce the retainage to 5 percent of the dollar value of all work satisfactorily completed to date provided the CONTRACTOR is making satisfactory progress and there is no specific cause for a greater retainage. The OWNER may reinstate the retainage up to 10 percent if the OWNER determines, at his discretion, that the CONTRACTOR is not making satisfactory progress or where there is other specific cause for such withholding.

D. QUALIFICATION FOR PARTIAL PAYMENT FOR MATERIALS DELIVERED

Unless modified in the Supplementary Conditions, qualification for partial payment for materials delivered but not yet incorporated into the work shall be as described below:

1. Materials, as used herein, shall be considered to be those items which are fabricated and manufactured material and equipment. No consideration shall be given to individual purchases of less than $200 for any one item.

2. To receive partial payment for materials delivered to the site, but not incorporated in the work, it shall be necessary for the CONTRACTOR to include a list of such materials on the Partial Payment Request. At his sole discretion, the ENGINEER may approve items for which partial payment is to be made. Partial payment shall be based on the CONTRACTOR's actual cost for the materials as evidenced by invoices from the supplier. Proper storage and protection shall be provided by the CONTRACTOR, and as approved by the ENGINEER. Final payment shall be made only for materials actually incorporated in the work and, upon acceptance of the work, all materials remaining for which advance payments had been made shall revert to the CONTRACTOR, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the work.

3. 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 at the time of payment free and clear of all liens, claims, security interests, and encumbrances.

4. If requested by the ENGINEER, the CONTRACTOR shall provide, with subsequent pay requests, invoices receipted by the supplier showing payment in full has been made.

E. PAYMENT

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 9 days prior to the scheduled day for payment will not be processed or paid until the following month.

70. CLAIMS FOR EXTRA WORK

In any case where the CONTRACTOR deems additional time or compensation will become due him under this Contract for circumstances other than those defined in Article DELAYS AND EXTENSION OF TIME, the CONTRACTOR shall notify the ENGINEER, in writing, of his intention to make claim for such time or compensation before he begins the work on which he bases the claim, in order that such matters may be settled, if possible, or other appropriate action taken. The notice of claim shall be in duplicate, in writing, and shall state the circumstances and the reasons for the claim, but need not state the amount. If such notification is not given or if the ENGINEER is not afforded proper facilities by the CONTRACTOR for keeping strict account of actual cost, then the CONTRACTOR hereby agrees to waive the claim for such additional time or compensation. Such notice by the CONTRACTOR, and fact that the ENGINEER has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

No extension of time will be granted to the CONTRACTOR for delays resulting from extra work that have no measurable impact on the completion of the total Work under this Contract. Claims for additional time or compensation shall be made in itemized detail and submitted, in writing, to the OWNER and ENGINEER within 10 days following completion of that portion of the work for which the CONTRACTOR bases his claim. Failure to make the claim for additional compensation in the manner and within the time specified above shall constitute waiver of that claim. In case the claim is found to be just, it shall be allowed and paid for as provided in Article PAYMENT FOR CHANGE ORDERS.

71. RELEASE OF LIENS OR CLAIMS

The CONTRACTOR shall indemnify and hold harmless the OWNER from all claims for labor and materials furnished under this Contract. Prior to the final payment, the CONTRACTOR shall furnish to the OWNER, as part of his final payment request, a certification that all of the CONTRACTOR's obligations on the Project have been satisfied and that all monetary claims and indebtedness have been paid. The CONTRACTOR shall furnish complete and legal effective releases or waivers, satisfactory to the OWNER, of all liens arising out of or filed in connection with the work.

72. FINAL PAYMENT

Upon completion of all the work under this Contract, the CONTRACTOR shall notify the ENGINEER, in writing, that he has completed his part of the Contract and shall request final payment. Upon receipt of such notice the ENGINEER will inspect and, if acceptable, submit to the OWNER his recommendation as to acceptance of the completed work and as to the final estimate of the amount due the CONTRACTOR. Upon approval of this final estimate by the OWNER and compliance by the CONTRACTOR with provisions in Article RELEASE OF LIENS OR CLAIMS, and other provisions as may be applicable, the OWNER shall pay to the CONTRACTOR all monies due him under the provisions of these Contract Documents.

73. NO WAIVER OF RIGHTS

Neither the inspection by the OWNER, through the ENGINEER or any of his employees, nor any order by the OWNER for payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the OWNER or ENGINEER, nor any extension of time, nor any possession taken by the OWNER or its employees, shall operate as a waiver of any provision of this Contract, or any power herein reserved to the OWNER, or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach. Acceptance or final payment shall not be final and conclusive with regards to latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the OWNER's rights under the warranty.

74. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the CONTRACTOR of the final payment shall release the OWNER and the ENGINEER, as representatives of the OWNER, from all claims and all liability to 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 except claims previously made in writing and still unsettled. No payment, however, final or otherwise, shall operate to release the CONTRACTOR or his Sureties from obligations under this Contract and the Performance Bond, Payment Bond, and other bonds and warranties, as herein provided.

SUPPLEMENTARY CONDITIONS

The General Conditions are hereby revised as follows:

ARTICLE 9 "ENGINEER"

Add the following:

Wherever in these Documents the word "Engineer" appears, it shall be understood to mean the City of Key West, Port & Marine Services Director or authorized representatives.

ARTICLE 12 "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 3126 Flagler Avenue, Key West, Florida 33040.

ARTICLE 32 "CONTRACTOR, AN INDEPENDENT AGENT"

Add the following:

Assignment of any part or the whole of this Contract shall be subject to review and approval of the City Commission.

ARTICLE 34 “INSURANCE AND LIABILITY”

Delete Article 34 Sections A, B, C and D and replace with the following:

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 coverage 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	$-,000,000	Occurrence / Aggregate

CONTRACTOR shall furnish an original Certificate of Insurance indicating, and such policy providing coverage to, City of Key West named as an additional insured on a 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

The City of Key West confirms that the scope of services specified in the Contract requires work on or near a navigable waterway. Water description: Key West Historic Seaport. Therefore the CONTRACTOR's workers' compensation policy shall be endorsed to provide the following:

- Workers Compensation/Employer Liability
  USL&H Coverage (Longshore and Harbor Workers' Compensation Act) Endorsement WC 000106A
- Jones Act Coverage* Endorsement WC 000201A
- Marine Third Party Liability
  Protection & Indemnity $2,000,000 Limit

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

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 02 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 any accident or injury to anyone that occurs on the jobsite and is related to any of the work being performed by the CONTRACTOR.

Add the following Section:

G. 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 35 "INDEMNITY"

Delete Article 35 in its entirety and replace with the following:

INDEMNITY

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.

ARTICLE 39 "CODES, ORDINANCES, PERMITS, AND LICENSES"

Add the following:

A. NOISE ORDINANCE

City of Key West has a noise ordinance that allows working hours between 8:00 AM to 7:00 PM, Monday through Friday. No work should be performed during weekends or City Holidays, State Holidays and National Holidays. Any construction operations outside these hours and these days will require a variance from the City of Key West Commission.

B. "LICENSES"

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 18 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. City of Key West, General Contractor License.
2. Holds a valid occupational license issued by the City of Key West.

ARTICLE 42 "SAFETY"

Add the following sub article:

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 43 "PROTECTION OF WORK AND PROPERTY"

Add the following Article:

HISTORIC PRESERVATION

The Contractor shall comply with Florida's Archives and Historic Act (Florida Statutes, Chapter 267) and the regulations of the local historic preservation board as applicable and protect against the potential loss or destruction of significant historical or archaeological data, sites, and properties in connection with the project.

ARTICLE 45 "MATERIALS AND APPLIANCES"

Add the following to the end of the first paragraph:

At contract completion, no equipment purchased by the contractor shall be transferred to state or local ownership.

ARTICLE 57 “OWNERS RIGHT TO TRANSFER EMPLOYMENT”

Add the following Article:

TERMINATION FOR CONVENIENCE AND RIGHT OF SUSPENSION

A. Owner shall have the right to terminate this Contract without cause by written notice of Termination to the Contractor. In the event of such termination for convenience, the Contractor’s recovery against the Owner shall be limited to that portion of the Contract amount earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred. Contractor shall not be entitled to any other or further recovery against the Owner, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.

B. Owner shall have the right to suspend all or any portions of the Work upon giving the Contractor prior written notice of such suspension. If all or any portion of the Work is so suspended, the Contractor shall be entitled to reasonable costs, expenses and time extension associated with the suspension.

ARTICLE 60 "LIQUIDATED DAMAGES"

Delete Article "LIQUIDATED DAMAGES" in its entirety and substitute the following:

LIQUIDATED DAMAGES

Should the Contractor fail to complete the work or any part thereof in the time agreed upon in the Contract Documents or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the Contractor shall reimburse the

Owner for the additional expense and damage for each calendar day, Sundays and legal holidays included, that project outlined in Contract Documents remains uncompleted after the completion date. Liquidated damages shall be assessed. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per diem rate as stipulated in the Proposal. The said amount is hereby agreed upon as a reasonable estimate of the costs which may be accrued by the Owner after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty but as liquidated damages, which have accrued against the Contractor. The Owner shall have the right to deduct such damages from any amount due or that may become due the Contractor or the amount of such damages shall be due and collectible from the Contractor or Surety.

ARTICLE 69 "PARTIAL PAYMENTS"

Delete the first paragraph of Article "PARTIAL PAYMENTS" and substitute the following:

No more than once each month the Contractor shall submit to the Engineer a detailed estimate of the amount earned during the preceding month for the separate portions of the work and request payment. As used in this Article the words "amount earned" means the value, on the date of the estimate, for partial payment of the work completed in accordance with the Contract Documents and the value of approved materials delivered to the project site suitably stored and protected prior to incorporation into the work.

Add the following:

Payment will be made by the Owner to the Contractor within 40 days receipt of the written recommendation of payment from the Engineer.

Delete Sub-Article C "DEDUCTION FROM ESTIMATE" in its entirety and substitute the following:

DEDUCTION FROM ESTIMATE

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.

Delete Sub-Article E "PAYMENT" in its entirety and substitute the following:

PAYMENT

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.

ARTICLE 72 "FINAL PAYMENT”

Add the following;

A. Acceptance and Final Payment.

Whenever the Contractor has completely performed the work provided for under the Contract and the Engineer has performed a final inspection and made final acceptance and subject to the terms of the Engineer will prepare a final estimate showing the value of the work as soon as the Engineer makes the necessary measurements and computations. The Engineer will correct all prior estimates and payments in the final estimate and payment. The OWNER will pay the estimate, less any sums that the OWNER may have deducted or retained under the provisions of the Contract, as soon as practicable after final acceptance of the work, provided the Contractor has met the requirements of (1) through (6) below.

1 The Contractor has agreed in writing to accept the balance due or refund the overpayment, as determined by the OWNER, as full settlement of his account under the Contract and of all claims in connection therewith, or the Contractor, accepted the balance due or refunded the overpayment, as determined by the OWNER, with the stipulation that his acceptance of such payment or the making of such refund does not constitute any bar, admission, or estoppel, or have any effect as to those payments in dispute or the subject of a pending claim between the Contractor and the OWNER. To receive payment based on a FINAL PAYMENT CERTIIFCATE, The Contractor further agrees, by submitting a FINAL PAYMENT CERTIFICATE that any pending or future arbitration claim or suit is limited to those particulars, including the itemized amounts, defined in the original FINAL PAYMENT CERTIFICATE , and that he will commence with any such arbitration claim or suit within 15 calendar days from and after the time of final PAYMENT of the work and that his failure to file a formal claim within this period constitutes his full acceptance of the Engineer’s final estimate and payment. The overpayment refund check from the Contractor, if required, will be considered a part of any Acceptance Letter executed.

2 The Contractor has properly maintained the project, as specified hereinbefore.

3 The Contractor has furnished a sworn affidavit to the effect that the Contractor has paid all bills and no suits are pending (other than those exceptions listed, if any) in connection with work performed under the Contract and that the Contractor has not offered or made any gift or gratuity to, or made any financial transaction of any nature with, any employee of the OWNER in the performance of the Contract.

4 The surety on the contract bond consents, by completion of their portion of the affidavit and surety release subsequent to the Contractor’s completion of his portion, to final payment to the Contractor and agrees that the making of such payment does not relieve the surety of any of its obligations under the bond.

5 The Contractor has furnished all required mill tests and analysis reports to the Engineer.

6 The Contractor has furnished as-built drawings in AutoCad and Adobe PDF, in accordance with all supplied data collections and files to be compatible with Esri ArcGIS 10.2.2 Software. The current computing environment consists of:

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

Interfaces and Integrations

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PART 4

SPECIFICATIONS

Part 4 – Specifications

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Specifications listed above were prepared by:

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SECTION 01 00 1

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 GENERAL

A. The Work under this Contract shall be performed by the Contractor as required by the City. Work will be authorized in the form of a Notice to Proceed issued to the Contractor. The Contractor shall complete all Work in the Contract within the number of calendar days stipulated in the Contract, unless an extension in the time of completion is granted by the City. Upon completion of the Work and compliance with applicable provisions in the Contract Documents, the Contractor will receive final payment for all Work done.

B. Contractor's Duties:
   1. In addition to provisions stipulated in other portions of the Contract Documents, Contractor shall secure permits as necessary for proper execution and completion of the work.

   2. Contractor shall be totally responsible for all permits required and shall ensure that construction complies with all applicable local, state, and federal codes.

   3. Provide an experienced, qualified, and competent Superintendent to oversee the Work. Superintendent shall be expected to remain for the duration of the Project.

1.02 MOBILIZATION AND DEMOBILIZATION

CONTRACTOR shall be responsible for mobilization and demobilization of labor, materials and equipment. Payment for mobilization and demobilization will be included in the lump sum price indicated in the BID.

1.03 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 with the City.
C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.
E. Contractor shall provide drinking water for construction personnel.
F. Contractor shall provide waste solutions for construction personnel.

1.04 FINISHING OF SITE AND STORAGE AREAS

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.

PART 2 - TEMPORARY CONSTRUCTION UTILITIES AND FACILITIES

2.1 TEMPORARY WATER

CONTRACTOR shall make his own arrangements to obtain suitable water and shall pay all costs.

2.2 SANITARY FACILITIES

CONTRACTOR shall provide and maintain sanitary facilities for his employees and his subcontractors' employees that will comply with the regulations of local and state departments of health, and as directed by the City.

2.3 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, materials shall be placed on wooden platforms or other hard, clean surfaces, not on the ground.

PART 3 - PRESERVATION, RESTORATION, AND CLEANUP

3.1 SITE RESTORATION AND CLEANUP

At all times during the work keep the premises clean and orderly. Upon completion of the day's work, repair all damage caused by equipment and leave the project clean and free of rubbish or excess materials of any kind.

Stockpile excavated materials in a manner that will cause the least damage to the area and near shore waters.

Upon completion of the Work, all areas used by the Contractor shall be cleared of temporary structures, rubbish, and waste materials, and properly graded to finished surface similar to the original surface, free-draining and free from holes, ruts, rough spots, leaving the area like original condition.

SECTION 01 11 00

SUMMARY OF WORK
08/15

PART 1 GENERAL

1.1 SUBMITTALS

CITY approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the CITY.

SD-01 Preconstruction Submittals
Salvage Plan; G

1.2 WORK COVERED BY CONTRACT DOCUMENTS

1.2.1 Project Description

The work includes the construction of new 8” thick (minimum) concrete fascia on the entire 245 linear foot section of the existing seawall located immediately water ward of the Half Shell Raw Bar Restaurant. Work also involves the installation of a new timber header and five (5) timber piles to support the Half Shell Bar overhang and all of the incidental work related to this effort.

Incidental work includes the temporary removal, storage and re-installation of the two wood decking sections that tie-in to the seawall cap on both sides of the restaurant. This decking should be removed, stored and re-installed after the concrete fascia has been constructed. NOTE: This decking connects to the upland sidewalks on the north and south sides of the restaurant to the marina and at least one these access points will need to be maintained at all times to allow marina users to access their vessels. At no time shall both access points be closed.

Incidental work will also include the removal of two of the existing restaurant overhang piles after the new piles have been installed, leveling of the overhang once the new fascia has been installed, and the temporary relocation of any electrical or water utilities that may be discovered during the construction. Depending on the method of construction selected by the contractor, several existing lamp posts may also need to be temporarily removed, stored and reinstalled as well.

Any existing utilities discovered along the wall and/or under the piers shall be protected as necessary, and/or temporarily disconnected and reconnected during construction.

1.2.2 Location

The work is located at the Half Shell Raw Bar, at 231 Margaret Street in the city of Key West, Florida. The exact location is shown on the cover page of the construction plans.

1.3 OCCUPANCY OF PREMISES

Building(s) will be occupied during performance of work under this Contract. Pile driving shall be coordinated with the CITY and the Half Shell Raw Bar restaurant manager.

Before work is started, arrange with the CITY a sequence of procedure, means of access, space for storage of materials and equipment, and use of approaches, corridors, and stairways.

1.4 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements":

a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.

b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the CITY. At the completion of operations, existing work must be in a condition equal to or better than that which existed before new work started.

1.5 LOCATION OF UNDERGROUND UTILITIES

Obtain digging permits prior to start of excavation, and comply with Installation requirements for locating and marking underground utilities. Contact local utility locating service a minimum of 48 hours prior to excavating, to mark utilities, and within sufficient time required if work occurs on a Monday or after a Holiday. Verify existing utility locations indicated on contract drawings, within area of work.

Identify and mark all other utilities not managed and located by the local utility companies. It may be necessary to scan the construction site with Ground Penetrating Radar (GPR), electromagnetic, or sonic equipment, and mark the surface of the ground, pier deck or paved surface where existing underground utilities or utilities encased in pier structures are discovered. Verify the elevations of existing piping, utilities, and any type of underground or encased obstruction not indicated, or specified to be removed, that is indicated or discovered during scanning, in locations to be traversed by piping, ducts, and other work to be conducted or installed. Verify elevations before installing new work closer than nearest manhole or other structure at which an adjustment in grade can be made.

1.5.1 Notification Prior to Excavation

Notify the CITY at least 15 days prior to starting excavation work.

1.6 SALVAGE MATERIAL AND EQUIPMENT

Items designated by the CITY to be salvaged remain the property of the CITY. Segregate, itemize, deliver and off-load the salvaged property at the CITY designated storage area located within 10 miles of the construction site.

Provide a salvage plan, listing material and equipment to be salvaged, and their storage location. Maintain property control records for material or equipment designated as salvage. Use a system of property control that is approved by the CITY. Store and protect salvaged materials and equipment until disposition by the CITY.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section –

SECTION 01 22 00.00 10

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM A615/A615M	(2015a; E 2015) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C127	(2015) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C128	(2015) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate

1.2 SUBMITTALS

CITY approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the CITY.

SD-03 Product Data

1.3 SINGLE JOB PAYMENT ITEMS

Payment items for the work of this contract for which contract job payments will be made are listed in the SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular job or unit price payment item, are included in the listed job item most closely associated with the work involved. The job price and payment made for each item listed constitutes full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.3.1 Mobilization, General Conditions, Permit Fees and Demobilization

1.3.1.1 Payment

Payment will be made for costs associated with mobilization and demobilization, as defined in Special Clause PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

1.3.1.2 Unit of Measure

Unit of measure: Lump Sum.

1.3.2 Temporary demolition and replacement of existing wood deck and utilities that would interfere with seawall repairs

1.3.2.1 Payment

Payment will be made for costs associated with operations necessary for the temporary demolition and replacement of existing wood deck and utilities that would interfere with seawall repairs.

1.3.2.2 Unit of Measure

Unit of measure: Lump Sum.

1.3.3 Concrete seawall fascia repair and cast-in-place concrete layer with steel reinforcement and formwork

1.3.3.1 Payment

Payment will be made for costs associated with operations necessary for the construction of the concrete seawall fascia repair and cast-in-place concrete layer with steel reinforcement and formwork.

1.3.3.2 Unit of Measure

Unit of measure: Lump Sum.

1.3.4 Installation of timber piles and all connections to existing restaurant overhang timber accessories throughout the existing wood decking

1.3.4.1 Payment

Payment will be made for costs associated with operations necessary for the installation of timber piles and all connections to existing restaurant overhang timber accessories throughout the existing wood decking.

1.3.4.2 Unit of Measure

Unit of Measure: Lump Sum.

1.3.5 Installation of timber accessories connecting the new seawall to existing wood decking

1.3.5.1 Payment

Payment will be made for costs associated with operations necessary for the installation of timber accessories connecting the new seawall to existing wood decking

1.3.5.2 Unit of Measure

Unit of Measure: Lump Sum.

1.4 UNIT PRICE PAYMENT ITEMS

The unit price and payment made for each item constitutes full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 CONTRACT COST BREAKDOWN

The Contractor must furnish within 30 days after the date of Notice to Proceed, and prior to the submission of its first partial payment estimate, a breakdown of its single job pay item or items which will be reviewed by the CITY as to propriety of distribution of the total cost to the various accounts. Any unbalanced items as between early and late payment items or other discrepancies will be revised by the CITY to agree with a reasonable cost of the work included in the various items. This contract cost breakdown will then be utilized as the basis for progress payments to the Contractor.

-- End of Section --

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by Submittal Description (SD) numbers and titles as follows:

SD-01 Preconstruction Submittals

Submittals which are required prior to construction
Certificates of insurance
Surety bonds
List of proposed Subcontractors
List of proposed products
Construction progress schedule
Submittal register
Health and safety plan
Work plan
Quality Control (QC) plan
Environmental protection plan

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Fabricated or unfabricated physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

Submittals required for Guiding Principle Validation (GPV) or Third Party Certification (TPC).

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

1.1.2 Approving Authority

Office or designated person authorized to approve submittal.

1.1.3 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.2 SUBMITTALS

CITY approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the CITY.

SD-01 Preconstruction Submittals

1.3 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the CITY is not required on information only submittals. The CITY reserves the right to require the Contractor

to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the CITY from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the CITY laboratory or for check testing by the CITY in those instances where the technical specifications so prescribe.

1.4 VARIATIONS

Variations from contract requirements require both Designer of Record (DOR) and CITY approval pursuant to contract Clause FAR 52.236-21 and will be considered where advantageous to CITY.

1.4.1 Considering Variations

Discussion with CITY prior to submission, after consulting with the DOR, will help ensure functional and quality requirements are met and minimize rejections and re-submittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

Specifically point out variations from contract requirements in transmittal letters. Failure to point out deviations may result in the CITY requiring rejection and removal of such work at no additional cost to the CITY.

1.4.2 Proposing Variations

When proposing variation, deliver written request to the CITY, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to CITY, including the DOR's written analysis and approval. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

1.4.3 Warranting that Variations are Compatible

When delivering a variation for approval, Contractor, including its Designer(s) of Record, warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.4.4 Review Schedule Extension

In addition to normal submittal review period, a period of ten [10] working days will be allowed for consideration by the CITY of submittals with variations.

1.5 SCHEDULING

Schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Include certifications to be submitted with the pertinent drawings at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential resubmittal of requirements.

b. Submittals called for by the contract documents will be listed on the register. If a submittal is called for but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the CITY does not relieve the Contractor of supplying submittals required by the contract documents but which have been omitted from the register or marked "N/A."

c. Re-submit register and annotate monthly by the Contractor with actual submission and approval dates. When all items on the register have been fully approved, no further re-submittal is required.

d. Carefully control procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.6 CITY APPROVING AUTHORITY

When approving authority is the CITY, the CITY will:

a. Note date on which submittal was received.

b. Review submittals for approval within scheduling period specified and only for conformance with project design concepts and compliance with contract documents.

c. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with markings appropriate for action indicated.

Upon completion of review of submittals requiring CITY approval, stamp and date submittals. Two (2) copies of the submittal will be retained by the CITY and Two (2) copies of the submittal will be returned to the Contractor.

1.6.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

a. Submittals marked "approved" or "accepted" authorize the Contractor to proceed with the work covered.

b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize the Contractor to proceed with the work covered provided he takes no exception to the corrections.

c. Submittals marked "not approved" or "disapproved," or "revise and resubmit," indicate noncompliance with the contract requirements or design concept, or that submittal is incomplete. Resubmit with appropriate changes. No work shall proceed for this item until resubmittal is approved.

d. Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

1.7 DISAPPROVED SUBMITTALS

Make corrections required by the CITY. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications; notice as required under the FAR clause entitled CHANGES, is to be given to the CITY. Contractor is responsible for the dimensions and design of connection details and construction of work. Failure to point out deviations may result in the CITY requiring rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and submission of the submittals in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.8 APPROVED SUBMITTALS

The CITY's approval or acceptance of submittals is not to be construed as a complete check, and indicates only that the submittal is in general conformance with the intent of the project.

Approval or acceptance will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for.

After submittals have been approved or accepted by the CITY, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM E1971	(2005; R 2011) Stewardship for the Cleaning of Commercial and Institutional Buildings

GREEN SEAL (GS)

GS-37	(2012) Cleaning Products for Industrial and Institutional Use

U.S. ARMY CORPS OF ENGINEERS (USACE)

ERDC/ITL TR-12-1	(2015) A/E/C Graphics Standard, Release 2.0
ERDC/ITL TR-12-6	(2015) A/E/C CAD Standard - Release 6.0

U.S. DEPARTMENT OF DEFENSE (DOD)

FC 1-300-09N	(2014) Navy and Marine Corps Design Procedures
UFC 1-300-08	(2009, with Change 2) Criteria for Transfer and Acceptance of DoD Real Property

1.2 DEFINITIONS

1.2.1 As-Built Drawings

As-built drawings are developed and maintained by the Contractor and depict actual conditions, including deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to Contractor submitted Requests for Information; direction from the CITY; designs which are the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout

construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

1.2.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.3 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

1.3.1 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse shall be at the sole risk of the Contractor and without liability or legal exposure to the CITY. The Contractor must make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the CITY, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the CITY harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The CITY makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the CITY and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.4 SUBMITTALS

CITY approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the CITY. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Closeout Submittals

As-Built Drawings; G

PART 3 EXECUTION

2.1 AS-BUILT DRAWINGS

2.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where items(s) were relocated and change related details. These working as-built markup prints must be neat, legible and accurate as follows:

a. Use base colors of red, green, and blue. Color code for changes as follows:

   (1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.

   (2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.

   (3) Additions (Green) - Added items, lettering in notes and leaders.

b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.

c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.

d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.

e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.

f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

g. For deletions, cross out all features, data and captions that relate to that revision.

h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.

i. Indicate one of the following when attaching a print or sketch to a markup print:

1) Add an entire drawing to contract drawings

2) Change the contract drawing to show

3) Provided for reference only to further detail the initial design.

j. Incorporate all shop and fabrication drawings into the markup drawings.

2.1.2 As-Built Drawings Content

Show on the as-built drawings, but not limited to, the following information:

a. The actual location, kinds and sizes of all utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.

b. The location and dimensions of any changes within the building structure.

c. Layout and schematic drawings of electrical circuits and piping.

d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

e. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

g. Changes or Revisions which result from the final inspection.

h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.

i. If borrow material for this project is from sources on CITY property, or if CITY property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.

j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

k. Changes in location of equipment and architectural features.

j. Modifications (include within change order price the cost to change working as-built markup drawings to reflect modifications).

l. Actual location of anchors, construction and control joints, etc., in concrete.

m. Unusual or uncharted obstructions that are encountered in the contract work area during construction.

n. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

2.2 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. [Clean][Replace] filters of operating equipment. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site. Preform a “swim-thru” after construction to confirm that all materials that may have been dropped into the water during construction have been removed.

-- End of Section --

SECTION 26 00 00.00 20

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D709	(2013) Laminated Thermosetting Materials

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 100	(2000; Archived) The Authoritative Dictionary of IEEE Standards Terms
IEEE C2	(2012; Errata 1 2012; INT 1-4 2012; Errata 2 2013; INT 5-7 2013; INT 8-10 2014; INT 11 2015) National Electrical Safety Code
IEEE C57.12.28	(2014) Standard for Pad-Mounted Equipment - Enclosure Integrity
IEEE C57.12.29	(2014) Standard for Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250	(2014) Enclosures for Electrical Equipment (1000 Volts Maximum)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2014; AMD 1 2013; Errata 1 2013; AMD 2 2013; Errata 2 2013; AMD 3 2014; Errata 3-4 2014; AMD 4-6 2014) National Electrical Code

1.2 RELATED REQUIREMENTS

This section applies to existing electrical connections providing power from the upland to the existing dock facility.

1.3 DEFINITIONS

a. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, shall be as defined in IEEE 100.

b. The technical sections referred to herein are those specification sections that describe products, installation procedures, and equipment operations and that refer to this section for detailed description of submittal types.

c. The technical paragraphs referred to herein are those paragraphs in PART 2 - PRODUCTS and PART 3 - EXECUTION of the technical sections that describe products, systems, installation procedures, equipment, and test methods.

1.4 ELECTRICAL CHARACTERISTICS

This section will require field verification to match existing characteristics. Final connections to the power distribution system at the existing substation shall be made by the Contractor as directed by the CITY, or by the CITY.

1.5 ADDITIONAL SUBMITTALS INFORMATION

Submittals required in other sections that refer to this section must conform to the following additional requirements as applicable.

1.5.1 Shop Drawings (SD-02)

Include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.

1.5.2 Product Data (SD-03)

Submittal shall include performance and characteristic curves.

1.6 QUALITY ASSURANCE

1.6.1 Regulatory Requirements

In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the CITY. Equipment, materials, installation, and workmanship shall be in

accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.6.2 Standard Products

Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in the technical section.

1.6.2.1 Alternative Qualifications

Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.

1.6.2.2 Material and Equipment Manufacturing Date

Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

1.7 WARRANTY

The equipment items shall be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.8 POSTED OPERATING INSTRUCTIONS

Provide for each system and principal item of equipment as specified in the technical sections for use by operation and maintenance personnel. The operating instructions shall include the following:

a. Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.

b. Start up, proper adjustment, operating, lubrication, and shutdown procedures.

c. Safety precautions.

d. The procedure in the event of equipment failure.

e. Other items of instruction as recommended by the manufacturer of each system or item of equipment.

Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions where directed. For operating instructions exposed to the weather, provide weather-resistant materials or weatherproof enclosures. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

1.9 MANUFACTURER'S NAMEPLATE

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

1.10 FIELD FABRICATED NAMEPLATES

ASTM D709. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified in the technical sections or as indicated on the drawings. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be one by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

1.11 WARNING SIGNS

Provide warning signs for the enclosures of electrical equipment including substations, pad-mounted transformers, pad-mounted switches, generators, and switchgear having a nominal rating exceeding 600 volts.

a. When the enclosure integrity of such equipment is specified to be in accordance with IEEE C57.12.28 or IEEE C57.12.29, such as for pad-mounted transformers and pad-mounted SF6 switches, provide self-adhesive warning signs on the outside of the high voltage compartment door(s). Sign shall be a decal and shall have nominal dimensions of 7 by 10 inches with the legend "DANGER HIGH VOLTAGE" printed in two lines of nominal 2 inch high letters. The word "DANGER" shall be in white letters on a red background and the words "HIGH VOLTAGE" shall be in black letters on a white background. Decal shall be Panduit No. PPSO710D72 or approved equal.

b. When such equipment is guarded by a fence, mount signs on the fence. Provide metal signs having nominal dimensions of 14 by 10 inches with the legend "DANGER HIGH VOLTAGE KEEP OUT" printed in three lines of nominal 3 inch high white letters on a red and black field.

1.12 ELECTRICAL REQUIREMENTS

Electrical installations shall conform to IEEE C2, NFPA 70, and requirements specified herein.

1.13 INSTRUCTION TO CITY PERSONNEL

Where specified in the technical sections, furnish the services of competent instructors to give full instruction to designated CITY personnel in the adjustment, operation, and maintenance of the specified systems and equipment, including pertinent safety requirements as required. Instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the CITY for regular operation. The number of man-days (8 hours per day) of instruction furnished shall be as specified in the individual section.

PART 2 PRODUCTS

2.1 FACTORY APPLIED FINISH

Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA 250 corrosion-resistance test.

PART 3 EXECUTION

3.1 FIELD APPLIED PAINTING

Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Painting shall be as specified by the CITY.

3.2 FIELD FABRICATED NAMEPLATE MOUNTING

Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

3.3 WARNING SIGN MOUNTING

Provide the number of signs required to be readable from each accessible side, but space the signs a maximum of 30 feet apart.

-- End of Section --

SECTION 31 62 19.13

WOOD MARINE PILES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)

AWPA A1	(2015) Standard Methods for Analysis of Creosote and Oil-Type Preservatives
AWPA A4	(2011) Standard Methods for Sampling Wood Preservatives
AWPA A5	(2015) Standard Methods for Analysis of Oil-Borne Preservatives
AWPA A6	(2015) Standard Method for the Determination of Oil-Type Preservatives from Small Samples
AWPA A8	(1990) Qualitative Recovery of Creosote or Creosote Solution from Freshly Treated Piles, Poles, or Timber (Squeeze Method)
AWPA A9	(2013) Standard Method for Analysis of Treated Wood and Treating Solutions by X-Ray Spectroscopy
AWPA C1	(2003) All Timber Products - Preservative Treatment by Pressure Processes
AWPA C3	(2003) Piles - Preservative Treatment by Pressure Processes
AWPA M2	(2015) Standard for Inspection of Treated Wood Products
AWPA M4	(2015) Standard for the Care of Preservative-Treated Wood Products
AWPA M6	(2013) Brands Used on Preservative Treated Materials

ASTM INTERNATIONAL (ASTM)

ASTM A1011/A1011M	(2015) Standard Specification for Steel, Sheet, and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability and Ultra-High Strength
ASTM D25	(2012) Round Timber Piles

ASTM D390	(1992; R 1999) Coal-Tar Creosote for the Preservative Treatment of Piles, Poles and Timbers for Marine, Land, and Fresh Water Use
ASTM D450/D450M	(2007; E 2013; R 2013) Coal-Tar Pitch Used in Roofing, Dampproofing, and Waterproofing

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 171	Certification of Pesticide Applicators

WESTERN WOOD PRESERVERS INSTITUTE (WWPI)

WWPI Mgt Practices	(1996; R 2011) Best Management Practices for the Use of Treated Wood in Aquatic Environments

1.2 SUBMITTALS

CITY approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Piles; G

Pile driving equipment; G

Submit complete descriptions of pile driving equipment, including hammers, leads, driving helmets, cushion blocks, driving blocks, collars, extractors, and other appurtenances for approval prior to commencement of work.

Pile caps; G

Pile shoes; G

Jetting equipment; G

Spudding equipment; G

Predrilling equipment; G

Spliced piles; G

The splice design for piles shall be submitted for approval prior to use in the work.

SD-04 Samples

Test piles; G

If approved after test completion, include properly located test piles in finished work.

SD-06 Test Reports

Preservative treated piles; G

A certified test assay analysis from an approved testing organization attesting that the piles to be used in the work have been given the preservative treatment required by these specifications shall be submitted prior to commencement of the work.

SD-07 Certificates

MSDS and CIS; G

SD-11 Closeout Submittals

Job piles driving records; G

Submit pile driving records within 15 calendar days after completion of driving.

1.3 QUALITY ASSURANCE

1.3.1 Preservative Treated Piles - Timber

The Contractor shall be responsible for the quality of treated wood products. The Contractor shall provide the CITY's Representative with the inspection report of an independent inspection agency, approved by the CITY that offered products comply with applicable AWPA standards. Identify treatment on each piece by the quality mark of an agency accredited by the Board of Review of the American Lumber Standard Committee. Inspect all preservative-treated wood visually to ensure there are no excessive residual materials or preservative deposits. Materials shall be clean and dry or it will be rejected because of environmental concerns.

1.3.2 MSDS and CIS

Provide Materials and Safety Data Sheets (MSDS) and Consumer Information Sheets (CIS) associated with timber pile preservative treatment. Contractor shall comply with all safety precautions indicated on MSDS and CIS.

1.3.3 Pesticide Applicators

Provide certifications for all individuals (applicators) who will be working with creosote products on site. All applicators shall be certified by the State or Environmental Protection Agency (EPA) (under the provisions of 40 CFR 171) to use wood preservatives, and have completed an approved EPA training program on the use of creosote products.

1.3.4 Best Management Practices (BMPs)

The producer of the treated wood products shall provide certification that Best Management Practices (BMPs) for the use of Treated Wood in Aquatic Environments were utilized including a written description and appropriate documentation of the BMPs utilized.

1.4 DELIVERY, STORAGE, AND HANDLING

Handle and store piles in accordance with AWPA M4. Comply with paragraph entitled "MSDS and CIS." Special care shall be taken in supporting piles to prevent the including of excessive bending stresses in the piles. Piles shall be carefully handled without dropping, breaking of outer fibers, and penetrating the surface with tools. Peaveys, cant hooks, pikes, and other pointed tools shall not be used in handling treated piles.

1.5 BASIS OF BIDS

1.5.1 For Bearing Piles

Base bids on the number, circumference, and length of piles from tip to cutoff as indicated. Test piles shall be 5 feet longer than bid length piles. From the data obtained as a result of driving the test piles specified herein, the CITY will determine and list for the Contractor the calculated minimum pile tip elevations, the driving resistance for piles, or both. The information will be given to the Contractor no later than 10 days after receipt of complete test pile data. The list shall be used as the basis for ordering piles. The Contractor shall not order production piles prior to receipt of the above information from the CITY. Should the total number of piles or number of each length vary from that specified as the basis for bidding, the contract price will be adjusted in accordance with Contract Clause entitled "Changes." Adjustment in contract price will not be made for cutting off piles, for any portion of a pile remaining above the cutoff elevation, or for broken, damaged, or rejected piles.

1.6 PILE PRICES

1.6.1 Round Timber Piles, Vertical

1.6.1.1 Payment

Payment for each acceptably driven pile will be made at the applicable contract price per Lump Sum. Payment for piles driven in lengths as required will be made at the applicable basic contract lump sum pricing.

1.6.1.2 Measurement

Payment will be Lump Sum for five (5) timber piles.

1.6.1.3 Unit of Measure

Unit of measure: Lump Sum

1.6.2

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Piles

Provide Douglas fir or Southern pine clean-peeled, treated piles conforming to ASTM D25 and other requirements as specified. Piles shall be in one piece of the length as shown. Splices will not be permitted. Each treated pile shall be branded by the producer, in accordance with AWPA M6. Pile circumferences shall be as follows:

a. Bearing Piles: Minimum butt circumference measured at 3 feet from the butt end shall be as indicated.

2.1.1.1 Spliced Piles

Spliced piles will not be accepted unless approved by the CITY.

2.1.2 Preservative Treatment

Treat piles by the full-cell pressure process in accordance with AWPA C1 and AWPA C3 to the retention and penetration for marine piling and produce in accordance with WWPI Mgt Practices, as follows:

a. Bearing Piles: Waterborne preservative for marine piles (ACA - Ammoniacal Copper Arsenate, ACZA - Ammoniacal Copper Zinc Arsenate, CCA - Chromated Copper Arsenate).

2.1.3 Creosote

Creosote not accepted.

2.1.4 Coal-Tar Pitch

Coal-tar pitch for brush treatment of piles shall conform to ASTM D450/D450M, Type A.

2.1.5 Pile Shoes

ASTM A1011/A1011M. Steel boot or welded-plate point shoe especially fabricated for pile driving. Shoes shall be the product of a manufacturer regularly engaged in the manufacture of pile fittings. Welding procedures shall be in accordance with a nationally recognized welding code. Provide size to fit pile tip. Fabricate boot type of 3/16 inch carbon steel fully welded, with at least three straps, each with three 3/16 inch nail holes. Fabricate welded-plate point type of four 3/16 inch or 1/4 inch steel plates, fully welded and sized to adequately cover full pointed area of pile; provide each plate with one 3/16 inch or one 1/4 inch nail hole. The length of the joints formed by the intersection of the sides shall not be less than one half of the height of the shoe. Shoes shall be cleaned and painted with at least one coat of paint. The color and paint shall be the manufacturer's standard. Provide on the point of each pile.

2.1.6 Pile Caps

Provide conical shaped cap.

2.2 TESTS, INSPECTIONS, AND VERIFICATIONS

2.2.1 Inspection of Piles

The Contractor shall provide the necessary facilities for the proper inspection of each pile. Piles to be preservative treated will be inspected prior to treatment. Piles will be inspected at the shipping point or at the work site if so decided. Pile inspection at the shipping point will not be performed for less than 100 piles in one locality. Piles with specified variations in characteristics shall be placed in separate lots for inspection. Piles shall be so marked or segregated into marked lots that there will be no possibility of error in assignment after they have been inspected. Piles damaged after inspection may be subsequently rejected if damage is deemed sufficient for rejection. All rejected piles shall be removed as directed.

2.2.2 Inspection of the Preservative Treatment Process

Inspection of the preservative treatment process will be in accordance with AWPA M2. The Contractor shall notify the CITY where preservative treatment will be done not less than 15 days prior to the start of the treatment and shall provide the necessary facilities for the proper inspection of the treatment process. Allow the CITY unlimited access to the plant and inspection privileges for each facet of the treating process.

2.2.3 Sampling and Testing

Sampling and testing shall be performed by an approved testing organization adequately equipped to perform such services.

2.2.3.1 Sampling

Representative samples of preservatives for testing shall be obtained from storage containers using the methods described in AWPA A4. The recovery of creosote and creosote solution and oil-borne preservatives from piles for testing shall be in accordance with the methods described in AWPA A8 and AWPA A6, respectively. The analysis of wood treated with waterborne preservatives shall be done in accordance with AWPA A9.

2.2.3.2 Testing

Creosote and creosote solutions, waterborne preservatives, and oil-borne preservatives shall be tested for conformance to AWPA A1, AWPA A9, and AWPA A5, respectively. The net retention and the penetration of preservatives in piles shall be determined as specified in AWPA M2 and the additional requirements listed. The determination of the net retention of waterborne preservatives in piles which have received the dual treatment of waterborne preservatives and

creosote or creosote solutions shall be made after the extraction of the creosote or creosote solutions.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Pile Driving Equipment

Pile driving equipment shall meet the following requirements.

3.1.1.1 Pile Driving Hammers

Pile driving hammers shall be steam, air or diesel drip, single-action, double-acting, differential-acting. The use of vibratory hammers is dependent upon satisfactory driving and load testing of piles. The size or capacity of hammers shall be as recommended by the manufacturer for the pile weights and solid formation to be penetrated. The pile hammer shall be of sufficient weight and energy to install the specified pile without damage into the soils expected to be encountered. The maximum driving energy of hammers shall be 12,000 foot-pounds for piles for any length. Test piles shall be driven with the same size and type hammer, operating with the same effective energy and efficiency as that to be used in driving job piles. Diesel powered hammers shall be operated at the rate recommended by the manufacturer throughout the entire driving period. Sufficient pressure shall be maintained at the hammer so that:

a. For double-acting hammers, the number of blows per minute during and at the completion of driving of a pile is equal approximately to that at which the hammer is rated;

b. For single-acting hammers, there is a full upward stroke of the ram; and,

c. For differential-type hammers, there is a slight rise of the hammer base during each upward stroke.

3.1.1.2 Leads

Leads are required and shall be fixed at the top and adjustable at the bottom. Swinging leads may be allowed if site conditions merit their use and are approved.

3.1.1.3 Driving Cap or Helmet and Cushion Block

Driving cap or helmet shall be an approved design and shall be capable of protecting pile heads, minimizing energy absorption, and transmitting hammer energy uniformly and consistently to piles. Place driving helmet or cap and cushion block combination between top of pile and the ram. Driving cap shall fit snugly on the top of piles and shall employ a cushion block to prevent impact damage to piles. The cushion block may be a solid or laminated softwood block with the grain parallel to the pile axis and enclosed in a close-fitting steel housing. The thickness of

the block shall be suitable for the length of pile to be driven and the character of subsurface material to be encountered. Generally, thicker blocks are required for longer piles and softer subsurface material. If block is damaged, split, highly compressed, charred or burned, or has become spongy or deteriorated, replace with new block. Under no circumstances will the use of small wood blocks, wood chips, rope, or other material permitting excessive loss of hammer energy be permitted.

3.1.1.4 Pile Collars

Collars or bands for protecting pile butts against splitting, brooming, and other damage while being driven shall be of an approved design.

3.1.1.5 Jetting Equipment

Jetting equipment shall have not less than two removable or fixed, water or combination air-water type jets. Equipment shall be designed so that the discharge volume and pressure are sufficient to freely erode the material under and adjacent to the piles.

3.1.2 Bearing Piles

Inspect piles when delivered and when in the leads immediately before driving. Cut piles at cutoff grade with pneumatic tools by sawing or other approved method. Where cutoff is below existing mudline elevation, complete excavation, sheeting and dewatering before pile is driven to cutoff elevation.

3.1.2.1 Driving Piles

Drive job piles with same hammer, cushion, or cap block, and using the same operating conditions as test piles. No piling shall be driven within 100 feet of concrete which is less than 7 days old unless otherwise authorized. A complete and accurate record of the driving of piles shall be compiled by the Contractor for submission to the CITY. When driving long piles of high slenderness ratio, special precautions shall be taken to ensure against overstressing and leading away from a plumb or true position. During driving, pile driving hammers shall be operated at all times at the rate and conditions recommended by the hammer manufacturer. Each pile shall be driven continuously and without interruption to the calculated tip elevation. Deviation from this procedure will be permitted only in case the driving is stopped by causes which reasonably could not have been anticipated. The controlling penetration per blow will be determined by the CITY. Piles shall be driven to the full penetration required where practicable to do so without damage to the piles. If found impracticable to drive any pile to the depth required, such pile shall be cut off and abandoned or pulled as directed. Driving of piles beyond the point of refusal, as indicated by excessive bonding of the hammer or kicking of the pile, or a blow count of greater than twice the blow count required to produce the safe bearing capacity shall not be attempted. Piles which have uplifted after driving shall be redriven to grade after conclusion of driving in that general area. The maximum permissible penetration per blow for the last 20 blows will be established by the CITY. When the penetration per blow of any pile during the final blows exceeds that permitted or it is found that a pile is not of sufficient length

to give the capacity specified, and the pile has been driven to its full depth, the Contractor shall pull the pile and furnish and drive a longer pile or take other corrective measures as directed by the CITY. The use of followers or splices shall not be permitted except where specially authorized. After driving is completed, all piles shall be "headed" or cut off normal at the cutoff elevation. Headed treated piles, including those to be capped with concrete, shall be given two heavy coats of hot creosote, followed by the application of a heavy coat of coal-tar pitch. Piles driven in locations where they are constantly subject to water spray shall be given this treatment immediately after they are cut off and before the cutoff surface has been wetted. Cutoffs shall become the property of the Contractor and shall be removed at his expense.

3.1.2.2 Tolerances in Driving Bearing Piles

Piles shall be accurately placed in the correct location and alignments both laterally and longitudinally and to the vertical or batter lines as shown. At cutoff elevation, butts shall be within 4 inches laterally of the location indicated. Manipulation to move piles into position will be permitted only within the aforementioned tolerance to return the pile to the design location. However, piles shall not be manipulated more than 1.5 percent of the exposed length above the mudline surface. A variation of not more than 0.25 inch per foot of pile length from the vertical for plumb piles or more than 0.50 inch per foot of pile length from the required angle for batter piles will be permitted. The correct relative position of group piles shall be maintained by the use of templates or by other approved means. Inspect piles for heave. Piles shall be driven to the depths as directed. Redrive heaved piles to the required tip elevation. Remove and replace with new piles those damaged, misplaced, driven below the design cutoff, or driven out of alignment, or provide additional piles, driven as directed at no additional cost to the CITY.

3.1.2.3 Records

Keep a complete and accurate driving record of each pile driven. Indicate pile location, deviations from design location, diameter, original length, mudline elevation, tip elevation, cutoff elevation, penetration in blows per foot for entire length of penetration for test piles, penetration in blows per foot for the last 10 feet for job piles, hammer data including rate of operation, make, and size, and unusual pile behavior or circumstances experienced during driving such as redriving, heaving, weaving, obstructions, jetting, spudding, predrilling, and unanticipated interruptions. Preprinted forms for recording pile driving data are attached at the end of this section. Make pile driving records available to the CITY at the job site, a minimum of 24 hours after each day of pile driving. Include in the construction records the wood species, preservative type, retention, and producer of installed treated timber.

3.1.2.4 Survey Data

After the driving of each pile group is complete and before superimposed concrete is placed, provide the CITY with an as-driven survey showing actual location and top elevation of each pile. The Contractor shall not proceed with placing concrete until the CITY has reviewed the survey and verified the safe load for the pile group driven. A survey shall be presented in such form that it gives deviation from plan location in two perpendicular directions and elevations of each pile to nearest half inch. Survey shall be prepared and certified by a licensed land surveyor.

3.1.2.5 Lengths of Job Piles

The estimated quantities of piles listed in the unit price schedule as to be furnished by the Contractor are given for bidding purposes only. The CITY will determine the actual lengths of piles required to be driven below cutoff elevation for the various locations in the work and will furnish the Contractor a quantities list which indicates lengths and locations of all piles to be placed. This determination will be made from the results of the test pile driving and test loading. The CITY will determine the number of overlength piles, if any, to be ordered to provide for variations in subsurface conditions. Where specified bearing capacities are attainable with piles of lesser length than those specified, shorter piles may be used subject to prior approval in writing. To provide for "heading" or cutting off normal after driving, piles shall be furnished in lengths at least one foot greater than the lengths specified to be below the cutoff elevations.

3.1.2.6 Framing Treated Piles

Treated piles shall not be cut to permit fitting of timbers. Piles of uniform size shall be selected for each bent. If necessary, treated filler blocks shall be used to fill out between piles and bracing. Holes for drift bolts in the tops of piles shall be drilled to a depth of 3 inches less than the penetration of drift bolts in the piles. Drill holes for drift bolts 1/8 inch smaller than bolt diameter. Drill holes for through bolts 1/16 inch larger than diameter of bolt shank. Counterbore holes for bolt heads and washers as indicated. Holes drilled into piles shall be filled with hot creosote or the same preservative used to treat the piles and when not used for bolts shall be tightly closed by a treated plug. Holes shall not be drilled or spikes shall not be driven into piles to support scaffolding.

3.1.3 Jetting of Piles

Water jets may be used in driving only when specifically authorized by the CITY. Discontinue jetting when the pile tip is approximately 5 feet above the calculated pile tip elevation. Drive pile the final 5 feet of penetration. Jetting method and equipment shall be approved by the CITY prior to commencing jetting operations.

3.1.4 Spudding of Piles

Spudding will be permitted. Discontinue driving and withdraw the spudding mandrel approximately 5 feet above the calculated pile tip elevation. Drive pile the final 5 feet of penetration to the maximum penetration per blow established by the CITY. Obtain CITY's approval of spudding equipment, prior to commencing spudding operations.

3.1.5 Predrilling of Piles

Predrilling will be permitted. Discontinue predrilling when pile tip is approximately 5 feet above the calculated pile tip elevation. Drive pile the final 5 feet of penetration [to the maximum penetration per blow established by the CITY]. [Obtain CITY's approval of predrilling equipment prior to commencing predrilling operations.]

3.2 PROTECTION

3.2.1 Protection of Piles

Square the heads and tips of piles to the driving axis. Laterally support piles during driving, but do not unduly restrain piles from rotation in the leads. Swinging leads [will] [will not] be permitted. Where pile orientation is essential, take precautionary measures to maintain the orientation during driving. [Driven batter piles of sufficient unsupported lengths to cause a measurable deflection shall have free ends secured until piles are fixed in the structure to prevent excessive bending stresses.] Handle, protect, and field treat piles in accordance with AWPA M4.

3.2.1.1 Damaged Piles

Driving of piles shall not subject them to damage. Piles which are damaged, split, broomed, or broken by reason of internal defects or by improper driving below cutoff elevation so as to impair them for the purpose intended shall be removed and replaced; a second pile may be driven adjacent thereto at the Contractor's expense. Minor damaged areas of treated piles shall be brush-coated with the same preservative used to treat the piles.

3.2.1.2 On Site Application of Wood Preservatives

All on site application of wood preservatives must be performed by a person certified through an EPA approved training program for the application of wood treatment products in accordance with 40 CFR 171, regulated under 7 U.S.C.A. Sections 136 to 136y, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). On site treatment shall also be in accordance with AWPA M4, Sections 1.5, 2.2, 2.3, and 3.1.

3.3 FIELD QUALITY CONTROL

3.3.1 Inspections

When CITY inspections result in product rejection, the Contractor shall promptly segregate and remove rejected material from the premises. The CITY may also charge the Contractor an additional cost of inspection or test when prior rejection makes reinspection or retest necessary.

-- End of Section --

SECTION 03 10 00

CONCRETE FORMWORK

PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall design and furnish all materials for concrete formwork, bracing, and supports and shall design and construct all falsework, all in accordance with the provisions of the Contract Documents.

1.02 RESPONSIBILITY

A. The design and engineering of the formwork as well as safety considerations are the responsibility of the Contractor.

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of these Specifications, all work specified herein shall conform to or exceed the requirements of the Florida Building Code and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this Section.

1. Codes and Standards

   The Building Code, as referenced herein, is the Florida Building Code (FBC).

2. Government Standards

   PS 1 U.S. Product Standard for Concrete Forms, Class I.

3. Commercial Standards

   ACI 347 Recommended Practice for Concrete Formwork.

   ACI 318R Building Code Requirements for Reinforced Concrete.

1.04 QUALITY ASSURANCE

A. The variation from established grade or lines shall not exceed 1/4 inch in 10 feet and there shall be no offsets or visible bulges or waviness in the finished surface. All tolerances shall be within the "Suggested Tolerances" specified in ACI 347. The Contractor shall grind smooth all fins and projections between formwork panels as directed by the Engineer.

B. Curved forms shall be used for curved and circular structures that are cast-in-place. Straight panels will not be acceptable for forming curved structures.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Except as otherwise expressly accepted by the Engineer, all lumber brought on the job site for use as forms, shoring, or bracing shall be new material. All forms shall be smooth surface forms and shall be of the following materials:

Footing sides -Construction grade Hem Fir or Douglas Fir
Walls -Steel or plywood panel
Columns -Steel, plywood or fiber glass Roof and floor
Slabs -Plywood
All other work -Steel panels, plywood or tongue and groove lumber

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

1. Lumber shall be Southern Pine, construction grade or better, in conformance with U.S. Product Standard PS20.
2. Plywood for concrete formwork shall be new, waterproof, synthetic resin bonded, exterior type Douglas Fir or Southern Pine plywood manufactured especially for concrete formwork and shall conform to the requirements of PS I for Concrete Forms, Class I, and shall be edge sealed. Thickness shall be as required to support concrete at the rate it is placed, but not less than 5/8-inch thick.

2.02 PREFABRICATED FORMS

A. Form materials shall be metal, wood, plywood, or other acceptable material that will not adversely affect the concrete and will facilitate placement of concrete to the shape, form, line, and grade indicated. Metal forms shall be an acceptable type that will accomplish such results. Wood forms for surfaces to be painted shall be Medium Density Overlaid plywood, MDO Ext. Grade.

2.03 FORMWORK ACCESSORIES

A. Exterior corners in concrete members shall be provided with 3/4-inch chamfers. Re-entrant corners in concrete members shall not have fillets unless otherwise shown.

B. Form ties shall be provided with a plastic cone or other suitable means for forming a conical hole to insure that the form tie may be broken off back of the face of the concrete. The maximum diameter of removable cones for rod ties, or of other

removable form-tie fasteners having a circular cross-section, shall not exceed 1-1/2 inches; and all such fasteners shall be such as to leave holes of regular shape for reaming.

C. Form ties for water-retaining structures shall have integral waterstops. Removable taper ties may be used when acceptable to the Engineer. Taper ties shall not be used to cast water retaining structural walls. At other locations, a preformed neoprene or polyurethane tapered plug sized to seat at the center of the wall shall be inserted in the hole left by the removal of the taper tie.

D. Form release agent shall be a blend of natural and synthetic chemicals that employs a chemical reaction to provide quick, easy and clean release of concrete from forms. It shall not stain the concrete and shall leave the concrete with a paintable surface. Formulation of the form release agent shall be such that it would minimize formation of "Bug Holes" in cast- in-place concrete.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The Contractor shall assume full responsibility for the adequate design of all forms, and any forms which are unsafe or inadequate in any respect shall promptly be removed from the Work and replaced at the Contractor's expense. A sufficient number of forms of each kind shall be provided to permit the required rate of progress to be maintained. The design and inspection of concrete forms and falsework, shall comply with applicable local, state and Federal regulations. Plumb and string lines shall be installed before concrete placement and shall be maintained during placement. Such lines shall be used by Contractor's personnel and by the Engineer and shall be in sufficient number and properly installed. During concrete placement, the Contractor shall continually monitor plumb and string line form positions and immediately correct deficiencies.

B. Concrete forms shall conform to the shape, lines, and dimensions of members as called for on the Drawings, and shall be substantially, free from surface defects, and sufficiently tight to prevent leakage. Forms shall be properly braced or tied together to maintain their position and shape under a load of freshly-placed concrete.

C. All forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete. Suitable and effective means shall be provided on all forms for holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation of ridges, fins, offsets, or similar surface defects in the finished concrete. Plywood, 5/8 inch

and greater in thickness, may be fastened directly to studding if the studs are spaced close enough to prevent visible deflection marks in the concrete. The forms shall be tight so as to prevent the loss of water, cement and fines during placing and vibrating of the concrete. Specifically, the bottom of wall forms that rest on concrete footings or slabs shall be provided with a gasket to prevent loss of fines and paste during placement and vibration of concrete. Such gasket may be a 1 to 1-1/2-inch diameter polyethylene rod held in position to the underside of the wall form. Adequate clean-out holes shall be provided at the bottom of each lift of forms. The size, number, and location of such clean-outs shall be as acceptable to the Engineer.

D. Concrete construction joints will not be permitted at locations other than those shown or specified, except as may be acceptable to the Engineer. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete. Pipe stubs and anchor bolts shall be set in the forms where required.

3.02 EARTH FORMS

A. All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is called for on the Drawings. Not less than 1 inch of concrete shall be added to the thickness of the concrete member as shown where concrete is permitted to be placed against trimmed ground in lieu of forms. Such permission will be granted only for members of comparatively limited height and where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing until the concrete has been placed.

3.03 FOOTINGS, SLAB EDGES AND GRADE BEAMS

A. Provide wood side forms for all footings, slab edges and grade beams.

3.04 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

3.05 INSERTS, EMBEDDED PARTS AND OPENINGS

A. Embedded Form Ties: Holes left by the removal of form tie cones shall be reamed with suitable toothed reamers so as to leave the surface of the holes clean and rough before being filled with mortar as specified for in Section 03350 entitled "Concrete Finishes". Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of

the concrete members. The use of snap-ties which cause spalling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1-inch back from the formed face or faces of the concrete.

3.06 FORM CLEANING

A. Forms may be reused only if in good condition and only if acceptable to the Engineer. Light sanding between uses will be required wherever necessary to obtain uniform surface texture on all exposed concrete surfaces. Exposed concrete surfaces are defined as surfaces which are permanently exposed to view. Unused tie rod holes in forms shall be covered with metal caps or shall be filled by other methods acceptable to the Engineer.

3.07 FORMWORK TOLERANCES

A. Formwork shall be constructed to insure that finished concrete surfaces will be in accordance with the tolerances listed in ACI 347.

1. The following construction tolerances are hereby established and apply to finished walls and slab unless otherwise shown in the Drawings:

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

3.08 FORM REMOVAL

A. Remove top forms on sloping surfaces of concrete as soon as removal operations will not allow the concrete to sag. Perform any needed repairs or treatment required on sloping surfaces at once and follow immediately with the specified curing.

B. The Contractor shall be responsible for the removal of forms and shores. Forms or shores shall not be removed before test cylinders have reached the specified

minimum 28 day comprehensive strength for the class of concrete specified in Section 03300 entitled "Cast- in-Place Concrete", nor sooner than listed below:

1. Grade beam side forms .....3 days
2. Wall forms .....3 days
3. Column forms .....3 days
4. Beam and girder side forms .....3 days
5. Beam bottoms and slab forms/shores .....14 days

3.09 MAINTENANCE OF FORMS

A. Forms shall be maintained at all times in good condition, particularly as to size, shape, strength, rigidity, tightness, and smoothness of surface. Forms, when in place, shall conform to the established alignment and grades. Before concrete is placed, the forms shall be thoroughly cleaned. The form surfaces shall be treated with a nonstaining mineral oil or other lubricant acceptable to the Engineer. Any excess lubricant shall be satisfactorily removed before placing the concrete. Where field oiling of forms is required, the Contractor shall perform the oiling at least two weeks in advance of their use. Care shall be exercised to keep oil off the surfaces of steel reinforcement and other metal items to be embedded in concrete.

-- End of Section --

SECTION 03 30 00

CAST -IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall furnish all materials for concrete in accordance with the provisions of this Section and shall form, mix, place, cure, repair, finish, and do all other work as required to produce finished concrete, all in accordance with the requirements of the Contract Documents.

B. The requirements in this section shall apply to the following types of concrete:

1. Class A Concrete: Normal weight concrete used at all locations, unless otherwise noted.
2. Class B Concrete: Normal weight concrete with pea-rock aggregate. Class B concrete shall be used only at locations indicated on the Drawings.
3. Class C Concrete: Normal weight concrete used in electrical/ instrumentation ductbanks, pipe encasements and sidewalks.
4. Tremie concrete: Concrete indicated to be placed underwater.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of these Specifications, all work specified herein shall conform to or exceed the requirements of the Florida Building Code (FBC) and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this Section.

B. Codes and Standards

1. The Building Code, as referenced herein, shall be the Florida Building Code.

C. Federal Specifications

1. UU-B-790A (Int. Amd. 1) Building Paper, Vegetable Fiber (Kraft, Waterproofed, Water Repellant and Fire Resistant).

D. Commercial Standards

ACI 214.1 R-81	Recommended Practice for Evaluation of Strength Test Results of Concrete.
AC1318R	Building Code Requirements for Reinforced Concrete.
ACI 301	Specifications for Structural Concrete for Buildings.
ACI 315R	Details and Detailing of Concrete Reinforcement.
ACI 347R	Recommended Practice for Concrete Formwork.
ASTM C 31	Methods of Making and Curing Concrete Test Specimens in the Field.
ASTM C 33	Specification for Concrete Aggregates.
ASTM C 39	Test Method for Compressive Strength of Cylindrical Concrete Specimens.

ASTM C 94	Specification for Ready-Mixed Concrete.
ASTM C 114	Method for Chemical Analysis of Hydraulic Cement.
ASTM C 136	Method for Sieve Analysis of Fine and Coarse Aggregate.
ASTM C 143	Test Method for Slump of Portland Cement Concrete.
ASTM C 150	Specification for Portland Cement.
ASTM C 156	Test Method for Water Retention by Concrete Curing Materials.
ASTM C 157	Test Method for Length Change of Hardened Cement Mortar and Concrete.
ASTM C 192	Method of Making and Curing Concrete Test Specimens in the Laboratory.
ASTM C 260	Specification for Air-Entraining Admixtures for Concrete.
ASTM C 494	Specification for Chemical Admixtures for Concrete.

1.03 SUBMITTALS

A. The design mix to be used shall be prepared by qualified persons and submitted for review. The design of the mix is the responsibility of the Contractor subject to the limitations of the specifications. Review processing of this submission will be required only as evidence that the mix has been designed by qualified persons and that the minimum requirements of the specifications have been met. Such review will in no way alter the responsibility of the Contractor to furnish concrete meeting the requirements of the specifications relative to strength and slump. If in the progress of the work the sources of materials change in characteristics or the Contractor requests a new source in writing, the Contractor shall, at his expense submit new test data and information for the establishment of a new design mix. Submit mix designs for all classes of concrete.

B. Where ready-mix concrete is used, the Contractor shall provide delivery tickets at the time of delivery of each load of concrete. In addition to the information required by ASTM C94, each ticket shall show the mix number, cement content and water/cement ratio.

C. Location of all proposed construction joints.

D. Manufacturer's data on all admixtures.

E. Concrete mix designs for each type of mix proposed and its intended locations.

F. A schedule of all concrete placement with volume of concrete planned to be placed each day.

G. A layout of all structures with all planned construction joint locations.

1.04 QUALITY ASSURANCE

A. Plant equipment and facilities shall meet all requirements of the Check List for Certification of Ready Mixed Concrete Production facilities of the National Ready Mixed Concrete Association and ASTM C 94.

B. Tests for compressive strength and slump of concrete will be performed as specified herein. Test for determining slump will be in accordance with the requirements of ASTM C 143.

C. The cost of all tests, will be borne by the Owner. However, the Contractor shall be charged for the cost of any additional tests and investigation on work performed which does not meet the Specifications.

D. Concrete for testing shall be supplied by the Contractor at no cost to the Owner, and the Contractor shall provide assistance to the Engineer in obtaining samples. The Contractor shall dispose of and clean up all excess material.

E. Construction Tolerances

1. The Contractor shall set and maintain concrete forms and perform finishing operations so as to ensure that the completed work is within the tolerances specified herein. Surface defects and irregularities are defined as finishes are to be distinguished from tolerances. Tolerance is the specified permissible variation from lines, grades, or dimensions shown. Where tolerances are not stated in the Specifications, permissible deviations will be in accordance with ACI 347 and Section 03100 entitled "Concrete Formwork".

1.05 FIELD SAMPLES

A. Field Compression Tests

1. Compression test specimens shall be taken during construction from the first placement of each class of concrete specified herein and at intervals thereafter as selected by the Engineer to insure continued compliance with these Specifications. At least one set of test specimens shall be made for each 50 yards of concrete placed. Each set of test specimens shall be a minimum of 5 cylinders.
2. Compression test specimens for concrete shall be made in accordance with ASTM C 31. Specimens shall be 6-inch diameter by 12-inch high cylinders.
3. Compression test shall be performed in accordance with ASTM C 39. One cylinder tested at three days, one test cylinders will be tested at 7 days and 2 at 28 days. The remaining cylinder will be held to verify test results, if needed.

B. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 318, Chapter 5 "Concrete Quality Mixing and Placing", and as specified herein.
2. If any concrete fails to meet these requirements, immediate corrective action shall be taken to increase the compressive strength for all subsequent batches of the type of concrete affected.
3. All concrete which fails to meet the ACI requirements and these specifications, is subject to removal and replacement at the cost of the Contractor.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

A. Materials shall be delivered, stored, and handled so as to prevent damage by water or breakage. Only one brand of cement shall be used. Cement reclaimed from cleaning bags or leaking containers shall not be used. All cement shall be used in the sequence of receipt of shipments.

B. All materials furnished and stored for the work shall comply with the requirements of ACI 301, as applicable.

C. Materials for concrete shall conform to the following requirements:

1. Cement shall be standard brand portland cement conforming to ASTM C 150 for Type II. Portland cement shall contain not more than 0.60 percent alkalies. The term "alkalies" referred to herein is defined as the sum of the percentage of sodium oxide and 0.658 times the percentage of potassium oxide (Na20 + 0.658 K2O). These oxides shall be determined in accordance with ASTM C 114. A single brand of cement shall be used throughout the Work, and prior to its use, the brand shall be acceptable to the Engineer. The cement shall be suitably protected from exposure to moisture until used. Cement that has become lumpy shall not be used. Sacked cement shall be stored in such a manner so as to permit access for inspection and sampling. Certified mill test reports for each shipment of cement to be used shall be submitted to the Engineer if requested regarding compliance with these Specifications.

2. Water shall be potable, clean, and free from objectionable quantities of silty organic matter, alkali, salts and other impurities. The water shall be considered potable, for the purposes of this Section only, if it meets the requirements of the local governmental agencies.

3. Aggregates shall be obtained from pits acceptable to the Engineer, shall be non-reactive, and shall conform to the Florida Building Code (FBC) and ASTM C 33. Maximum size of coarse aggregate shall be as specified in Article 2.04, Paragraph B of this Section. Lightweight sand for fine aggregate will not be permitted.

a. Coarse aggregates shall consist of clean, hard, durable gravel, crushed gravel, crushed rock or a combination thereof. The coarse aggregates shall be prepared and handled in two or more size groups for combined aggregates with a maximum size not greater than 1 inch. When the aggregates are proportioned for each batch of concrete the two size groups shall be combined.

b. Fine aggregates shall be manufactured sand that is hard and durable.

c. Combined aggregates shall be well graded from coarse to fine sizes, and shall be uniformly graded between screen sizes to produce a concrete that has optimum workability and consolidation characteristics. Where a trial batch is required for a mix design, the

final combined aggregate gradations will be established during the trial batch process.

d. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C 289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0.

e. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C 40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

f. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C 131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.

g. When tested in accordance with "Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate" (ASTM C 88), the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using sodium sulfate.

4. All cement, admixtures, sealers, and form release agents used in or on the concrete or mortar shall conform to NSF International (NSF) standard 61-2001 and Addendum 1.0-2001 to NSF Standard 61-2001.

5. Aggregate used in the concrete or mortar shall be clean (i.e. free of excess clay, silt, mica, organic matter, chemical salts and coated grains) and shall be essentially free of those metals and radionuclides regulated under applicable primary drinking water standards.

2.02 ADMIXTURES

A. Air-entraining agent meeting the requirements of ASTM C 260, shall be used. Sufficient air-entraining agent shall be used to provide a total air content of 3 to 5 percent.

B. Admixtures shall be required at the Engineer's discretion or, if not required, may be added at the Contractor's option to control the set, effect water reduction, and increase workability. In either case, the addition of an admixture shall be at the Contractor's expense. The use of an admixture shall be subject to acceptance by the Engineer. Concrete containing an admixture shall be first placed at a location determined by the Engineer. If the use of an admixture is producing an inferior end result, the Contractor shall discontinue use of the admixture. Admixtures specified herein shall conform to the requirements of ASTM C 494. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used. Admixtures shall contain no free chloride ions, be non-toxic after 30 days, and shall be compatible with and made by the same manufacturer as the air entraining admixture.

1. Set controlling admixture shall be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently over 80 degrees Fahrenheit, a set retarding admixture such

as Sika Chemical Corporation's Plastiment, Master Builder's Pozzolith 200R or equal shall be used. Where the air temperature at the time of placement is expected to be consistently under 40 degrees Fahrenheit, a set accelerating admixture such as Sika Chemical Corporation's Plastocrete 161 FL, Master Builder's Pozzolith 50C, or equal shall be used.

2. Low range water reducer shall be added to all structural concrete, and shall conform to ASTM C 494, Type A. It shall be either a hydroxylated carboxylic acid type or a dydroxylated polymer type. The quantity of admixture used and the method of mixing shall be in accordance with the manufacturer's instructions and recommendations.
3. Water reducing and retarding admixture shall be in conformance with ASTM C 494 Type D free of chlorides, "MB-HC" by Master Builders, "WRDA-79" by Grace or equal.
4. High range water reducer shall be sulfonated polymer conforming to ASTM C 494, Type For G.
5. If the high range water reducing agent is added to the concrete at the batch plant, it shall be second generation type, Daracem 100, as manufactured by W.R. Grace & Co., Pozzolity 430R, as manufactured by Master Builders; or equal. High range water reducer shall be added to the concrete after all other ingredients have been mixed and initial slump has been verified.
6. If the high range water reducer is added to the concrete at the job site, it shall be used in conjunction with a low range water reducer and shall be Pozzolith 400N and Pozzolith MBL82, as manufactured by Master Builders; WRDA 19 and WRDA 79, as manufactured by W.R. Grace & Co., or equal. Concrete shall have a slump of 3 inches. 1/2 inch prior to adding the high range water reducing admixture at the job site. The high range water reducing admixture shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the job site system.
7. Concrete shall be mixed at mixing speed for a minimum of 30 mixer revolutions after the addition of the high range water reducer.
8. The Contractor shall submit certification from each admixture manufacturer that all admixtures utilized in the design mix are compatible with one another and properly proportioned.
9. Prohibited Admixtures: Calcium chloride, thiocyanate or admixtures containing more than 0.05 percent chloride ions are not permitted.
10. Certification: Written conformance to the above mentioned requirements and the chloride ion content of the admixture will be required from the admixture manufacturer prior to Mix design review by the Engineer.
11. For Class A, Class B and Class C Concrete, no flyash may be added.

2.03 ACCESSORIES

A. Epoxy adhesives shall be the following products for the applications specified to be used in strict accordance with manufacturer's recommendations.

1. For bonding freshly-mixed, plastic concrete to hardened concrete, Sikadur 32 Hi-Mod, LPL Epoxy Adhesive, as manufactured by Sika Chemical Corporation; Concresive 1001-LPL, as manufactured by Adhesive Engineering Company; or equal.
2. For bonding hardened concrete or masonry to steel, Colma-Our Gel, Sikadur Hi-Mod Gel, or equal.
3. Epoxy grouting of vertical and horizontal dowels in existing concrete: A two-component structural epoxy gel such as Rawl/Sika Foil-Fast Epoxy Injection Gel, Sikadur injection gel as manufactured by Sika Chemical Corp., EPCON G5 or approved equal. Place with pneumatic or manual injection gun.

2.04 CONCRETE MIX

A. Concrete shall be composed of cement, admixtures, aggregates and water. These materials shall be of the qualities specified. The exact proportions in which these materials are to be used for different parts of the work will be determined by the Contractor. In general, the mix shall be designed to produce a concrete capable of being deposited so as to obtain maximum density and minimum shrinkage and, where deposited in forms, to have good consolidation properties and maximum smoothness of surface. Mix designs with more than 41 percent of sand of the total weight of fine and coarse aggregate shall not be used for Class A Concrete. The aggregate gradations shall be formulated to provide fresh concrete that will not promote rock pockets around reinforcing steel or embedded items. The proportions shall be changed whenever necessary or desirable to meet the required results at no additional cost to the Owner. All changes shall be subject to review by the Engineer.

B. The proportions of cement, aggregates, admixtures and water used in the concrete shall be based on tests of grading and moisture content of materials, slump of concrete mixture, strength of concrete and the following factors:

1. Class A Concrete (All cast-in-place, tremied concrete and precast concrete unless otherwise noted).

Minimum cementitous materials content, per cubic yard	without flyash added: 611 lbs.
Maximum water-cementitous materials ratio, by weight	0.40
Slump range	3 inches to 4 inches with water reducing admixture 3-inch maximum before addition of high range water reducing admixture. 8-inch maximum after addition of high range water reducing admixture
Coarse Aggregate	#57 per ASTM C33

Compressive strength at 28 days F'c -	5,500 psi
Air Content	3% ± 1 %

2. Class B Concrete (At locations shown on the Drawings or specified herein).

Minimum cementitous materials content, per cubic yard	517 lbs.
Maximum water-cementitous materials ratio, by weight	0.50
Slump, maximum	5 inches
Compressive strength at 28 days - F'c	3,000 psi
Coarse Aggregate	Pearock
Air Content	3% ± 1%

3. Class C Concrete (Sidewalks)

Minimum cementitous materials content, per cubic yard	500 lbs.
Maximum water-cementitous materials ratio, by weight	0.55
Slump, maximum	5 inches
Compressive strength at 28 days - F'c	3,000 psi
Compressive strength at 28 days – F'c (Sidewalk only)	2,500 psi
Coarse Aggregate	#57 per ASTM C33
Air Content	2 ½ % ± 5 ½ %

C. All Class A concrete, unless noted otherwise on the Drawings, shall be air entrained concrete and contain the high range water-reducing admixture (superplasticizer). A water reducing admixture may be added to the mix at the Contractor's option.

D. The mix proportions used shall be changed subject to the limitation specified herein, whenever such change is necessary or desirable to secure the required strength, density, workability, and surface finish and the Contractor shall be entitled to no additional compensation because of such changes.

2.05 CONSISTENCY

A. The quantity of water entering into a batch of concrete shall be just sufficient, with a normal mixing period, to produce a concrete which can be worked properly into place without segregation, and which can be compacted by the vibratory methods herein specified to give the desired density, impermeability and smoothness of surface. The quantity of water shall be changed as necessary, with variations in the nature or moisture content of the aggregates, to maintain uniform production of a desired consistency. The consistency of the concrete in successive batches shall be determined by slump tests in accordance with ASTM C 143. Slumps shall be 4 inches ± 1 inch measured at the form. Slump with high range water reducers shall be 6 inches ± 1 inch at the form.

2.06 READY-MIXED CONCRETE

A. Ready-mixed concrete shall be used meeting the requirements as to materials, batching, mixing, transporting, and placing as specified herein and in accordance with ASTM C 94.

B. Ready-mixed concrete shall be delivered to the site of the work, and discharge shall be completed within one and one-half hour after the addition of the cement to the aggregates or before the drum has been revolved 250 revolutions, whichever is first. Upon delivery from the truck concrete temperature shall not exceed 90 degrees Fahrenheit.

C. Truck mixers shall be equipped with electrically-actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resettable, recording type. The counters shall be actuated at the time of starting mixers at mixing speeds.

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

PART 3 - EXECUTION

3.01 PROPORTIONING AND MIXING

A. Proportioning of the concrete mix shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301; provided, that the maximum slump for any concrete shall not exceed the limits specified in this Section of the Specifications.

B. Mixing of concrete shall conform to the requirements of Chapter 7 of ACI 301 Specifications.

C. Retempering of concrete or mortar which has partially hardened will not be permitted.

3.02 PREPARATION

A. Earth surfaces shall be thoroughly wetted by sprinkling, prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. A vapor barrier specified in Section 07190 entitled "Vapor Barrier" shall be placed. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

B. No concrete shall be placed until the reinforcement steel and formwork have been erected in a manner acceptable to the Engineer. The Contractor shall notify the Engineer not less than two working days prior to Concrete Placement, allowing one day for review and any corrective measures which are required.

C. Joints in Concrete

1. Concrete surfaces upon or against which concrete is to be placed shall be given a roughened surface for good bond and a bonding agent shall be placed.
2. After the surfaces have been prepared all approximately horizontal construction joints shall be covered with a layer of mortar approximately one-inch thick. The mortar shall have the same proportions of cement and sand as the regular concrete mixture. The water-cement ratio of the mortar in place shall not exceed that of the concrete to be placed upon it, and the consistency of the mortar shall be suitable for placing and working in the manner hereinafter specified. The mortar shall be spread uniformly and shall be worked thoroughly into all irregularities of the surface. Wire brooms shall be used where possible to scrub the mortar into the surface. Concrete shall be placed immediately upon the fresh mortar.

D. Placing Interruptions

1. When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means, that will secure proper union with subsequent work; provided that construction joints shall be made only where acceptable to the Engineer. Cold joints will be sufficient cause for rejection of the work.

A. Embedded Items

1. No concrete shall be placed until all formwork, installation of parts to be embedded, reinforcing steel, and preparation of surfaces involved in the placing have been completed and accepted by the Engineer at least four hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from concrete previously placed shall be cleaned of all such grout before the surrounding or adjacent concrete is placed.

2. All inserts or other embedded items shall conform to the requirements herein.

B. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms where shown on the Drawings or by shop drawings and shall be acceptable to the Engineer before any concrete is placed. Accuracy of placement is the responsibility of the Contractor.

G. All anchor bolts called for on the drawings shall be cast-in-place in the concrete. Drilled, impact, adhesive or other types of anchors shall not be substituted for anchor bolts unless otherwise shown on the Drawings. Anchor bolts shall conform to the requirements set forth in Section 05500 entitled "Miscellaneous Fabrications."

H. Casting New Concrete Against Old

1. Where concrete is to be cast against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by sand-blasting (exposing aggregate) to an amplitude of ¼" prior to the application of an epoxy bonding agent.

I. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No concrete shall be deposited underwater, except where shown on the Drawings to be placed by the tremie method, nor shall the Contractor allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, will be subject to the review of the Engineer.

J. Corrosion Protection

1. Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2 inches clearance between said items and any part of the concrete reinforcement. Securing such items in position by wiring or welding them to the reinforcement will not be permitted.

2. Openings for pipes, inserts for pipe hangers and brackets, and the setting of anchors shall, where practicable, be provided for during the placing of concrete.

3. Anchor bolts shall be accurately set, and shall be maintained in position by templates while being embedded in concrete.

4. The surfaces of all metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.03 PLACING CONCRETE

A. Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this Section.

C. Non-Conforming Work or Materials

1. Concrete which upon or before placing is found not to conform to the requirements specified herein shall be rejected and immediately removed from the Work. Concrete which is not placed in accordance with these Specifications, or which is of inferior quality, shall be removed and replaced by and at the expense of the Contractor.

D. Unauthorized Placement

1. No concrete shall be placed except in the presence of duly authorized representative of the Engineer. The Contractor shall notify the Engineer at least 24 hours in advance of placement of any concrete.

E. Placement in Wall Forms

1. Concrete shall not be dropped through reinforcement steel or into any deep form, whether reinforcement is present or not, causing separation of the coarse aggregate from the mortar on account of repeatedly hitting rods or the sides of the form as it falls, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, some means such as the use of hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4 feet below the ends of ducts, chutes, or buggies.

2. Concrete shall be uniformly distributed during the process of depositing and in no case after depositing shall any portion be displaced in the forms more than 6 feet in horizontal direction. Concrete in forms shall be deposited in uniform horizontal layers not deeper than 2 feet; and care shall be taken to avoid inclined layers or inclined construction joints except where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in forms shall not exceed 5 feet of vertical rise per hour.

F. Casting New Concrete Against Old

1. An epoxy adhesive bonding agent shall be applied to set surfaces of construction joints according to the manufacturer's written recommendations.

G. Conveyor Belts and Chutes

1. All ends of chutes, hopper gates, and all other points of concrete discharge throughout the Contractor's conveying, hoisting and placing system shall be so designed and arranged that concrete passing from them will not fall separated into whatever receptacle immediately receives it. Conveyor belts, if used, shall be of a type acceptable to the Engineer. Chutes longer than 50 feet will not be permitted. Minimum slopes of chutes shall be such that concrete of the specified consistency will readily flow in them. If a conveyor belt is used, it shall be wiped clean by a device operated in such a manner that none of the mortar adhering to the belt will be wasted. All conveyor belts and chutes shall be covered. Sufficient illumination shall be provided in the interior of all forms so that the concrete at the places of deposit is visible from the deck or runway.

H. Placement in Slabs

1. Concrete placed in sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the pour. As the work progresses, the concrete shall be vibrated and carefully worked around the slab reinforcement, and the surface of the slab shall be screeded in an up-slope direction.

I. Temperature of Concrete

1. The temperature of concrete when it is being placed shall be not more than 90 degrees F. Concrete ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, from falling below the specified minimum temperature. If concrete is placed when the weather is such that the temperature of the concrete would exceed 90 degrees Fahrenheit, the Contractor shall employ effective means, such as precooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete, as it is placed, below 90 degrees F. The Contractor shall be entitled to no additional compensation on account of the foregoing requirements. During summer months concrete pours shall be scheduled in the morning or early part of the day when temperatures are cooler.

J. Pumping Equipment

1. Pumping equipment and procedures if used shall conform to the recommendations contained in the report of ACI Committee 304 on Placing Concrete by Pumping Methods, ACI 304.2R. The specified slump shall be measured at the point of discharge. The loss of slump in pumping shall not exceed 1-1/2 inches.

K. The order of placing concrete in all parts of the work shall be acceptable to the Engineer. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints shown on the Drawings. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least 7 days before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the 2 adjacent wall panels have cured at least 14 days.

L. The surface of the concrete shall be level whenever a run of concrete is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least 3/4-inch thick shall be tacked to the forms on these surfaces. The concrete shall be carried about 1/2-inch above the underside of the strip. About one hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be leveled with a trowel and ailiaitance shall be removed.

M. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement. Vibrators shall be high speed power vibrators (8000 to 10,000 rpm) of an immersion type in sufficient number and with (at least one) standby units as required.

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

O. Concrete in walls shall be internally vibrated and at the same time, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly as specified. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the results herein specified within 15 minutes after concrete of the prescribed consistency is placed in the

forms. The vibrating head shall be kept from contact with the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.04 CONCRETE FINISHING

A. Concrete finishes are specified in Section 03350 entitled "Concrete Finishes".

3.05 CURING AND PROTECTION

A. Curing is specified in Section 03370 entitled "Concrete Curing".

3.06 PLACING CONCRETE UNDER PRESSURE (PUMPING)

A. Where concrete is conveyed and placed by mechanically applied pressure, the equipment shall have the capacity for the operation. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. To obtain the least line resistance, the layout of the pipeline system shall contain a minimum number of bends with no change in pipe size. If two sizes of pipe must be used, the smaller diameter should be used at the pump end and the larger at the discharge end. When pumping is completed, the concrete remaining in the pipelines, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients.
B. No aluminum parts shall be in contact with the concrete during the entire placing of concrete under pressure at any time.
C. Prior to placing concrete under pressure, the Contractor shall submit the concrete mix design together with test results from a recognized testing laboratory proving the proposed mix meets all requirements. In addition, at the Contractor's option, an actual pumping test under field conditions may be performed prior to use of the accepted mix. This test requires a duplication of anticipated site conditions from beginning to end. The batching and truck mixing shall be the same as will be used; the same pump and operator shall be present and the pipe and pipe layouts will reflect the maximum height and distance contemplated.
D. If the pumped concrete does not produce satisfactory end results, the Contractor shall discontinue the Pumping operation and proceed with the placing of concrete using conventional methods.
E. The pumping equipment must have two cylinders and be designed to operate with one cylinder only in case the other one is not functioning. In lieu of this requirement, the Contractor may have a standby pump on the site during pumping.
F. The minimum diameter of the hose (conduits) shall be four inches.
G. Pumping equipment and hoses (conduits) that are not functioning properly shall be replaced.

3.07 ORDER OF PLACING CONCRETE

A. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints shown on the Drawings and maximum lengths as indicated on Drawings. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall be have cured at least seven days before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the two adjacent wall panels have cured at least 14 days.

B. The surface of the concrete shall be level whenever a run of concrete is stopped.

3.08 DEFECTIVE CONCRETE

A. As soon as forms are removed, all exposed surfaces shall be carefully examined and any irregularities shall be immediately rubbed or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until reviewed by the Engineer. In no case will extensive patching of honeycombed concrete be permitted. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall have them repaired as specified herein. Concrete containing extensive voids, holes, honeycombing, or similar depression defects, shall be completely removed and replaced. All repairs and replacements herein specified shall be promptly executed by the Contractor at its own expense.

B. Defective surfaces to be repaired as specified in Article 3.06, Paragraph A of this Section, shall be cut back from trueline a minimum depth of 1/2 inch over the entire area. Feathered edges will not be permitted. Where chipping or cutting tools are not required in order to deepen the area properly, the surface shall be prepared for bonding by the removal of all laitance or soft material, and not less than 1/32-inch depth of the surface film from all hard portions. The material used for repair proposed shall consist of a mixture of one sack of cement to 3 cubic feet of sand. For exposed walls, the cement shall contain such a proportion of Atlas white portland cement as is required to make the color of the patch match the color of the surrounding concrete.

C. Holes left by tie-rod cones shall be repaired in an acceptable manner with dry-packed cement grout or premixed patching material as accepted by the Engineer.

D. All repairs shall be built up and shaped in such a manner that the completed work will conform to the requirements of Article 3.04 or 3.06 of this Section, as applicable, using acceptable methods which will not disturb the bond, cause sagging, or cause horizontal fractures. Surfaces of said repairs shall receive the same kind and amount of curing treatment as required for the concrete in the repaired section.

E. Prior to backfilling, all cracks that may have developed shall be "vee'd" and filled with sealant conforming to the requirements of Section 03290 entitled, " Joints in Concrete". This repair method shall be done on the faces of members in contact with fill.

3.09 CARE AND REPAIR OF CONCRETE

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

3.10 CONCRETE SEALER

A. Contractor shall apply to the top surface of all finished concrete floor slabs and equipment pads a sealer specified in Section 09850 entitled "Painting".

- End of Section

PART 5

SUPPLEMENTAL INFORMATION

Florida Department of Environmental Protection

South District Branch Office
2796 Overseas Highway, Suite 221
Marathon, Florida 33050
SouthDistrict@dep.state.fl.us

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

June 22, 2016

City of Key West
c/o Doug Bradshaw
201 William Street
Key West, FL 33040
dbradshaw@cityofkeywest-fl.gov

File No.: 44-0137939-014-EE; 015-EE, Monroe County

Dear Applicant:

On May 23, 2016, we received your request for verification of exemption to perform the following activities:

> Repair an existing seawall and install 4 pilings at an existing deck within the Key West Bight, Class III Waters, Section 31, Township 67 South, Range 25 East, Monroe County.

Activities located in Monroe County are not eligible for federal authorization under the State Programmatic General Permit. Separate federal authorization may be required. This letter does not relieve you from the responsibility of obtaining other federal, state, or local authorizations that may be required for the activity.

1. Regulatory Review – VERIFIED

Based on the information submitted, the Department has verified that the seawall repair activity, as proposed, is exempt under Chapter 62-330.051(12)(a), Florida Administrative Code, from the need to obtain a regulatory permit under Part IV of Chapter 373 of the Florida Statutes.

Based on the information submitted, the Department has determined that the piling installation activity, as proposed, is exempt under Section 373.406(6) of the Florida Statutes, from the need to obtain a regulatory permit under Part IV of Chapter 373 of the Florida Statutes. This determination is made because the activity, in consideration of its type, size, nature, location, use and operation, is expected to have only minimal or insignificant individual or cumulative adverse impacts on the water resources.

This exemption verification is based on the information you provided the Department and the statutes and rules in effect when the information was submitted. This verification may not be valid if site conditions materially change, the project design is modified, or the statutes or rules governing the exempt activity are amended. In the event you need to re-verify the exempt status for the activity, a new request and verification fee will be required. Any substantial modifications to the project design should be submitted to the Department for review, as changes may result in a permit being required.

2. Proprietary Review - GRANTED

The Department acts as staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) and issues certain authorizations for the use of sovereign submerged lands. The Department has the authority to review activities on sovereign submerged lands under Chapters 253 and 258 of the Florida Statutes, and Chapters 18-18, 18-20, and 18-21, Florida Administrative Code, as applicable.

The activities appear to be located on sovereign submerged lands owned by the Board of Trustees. The activities are not exempt from the need to obtain the applicable proprietary authorization. As staff to the Board of Trustees, the Department has reviewed the activities described above, and has determined that the activities qualify for a letter of consent under Rule 18-21.005(1)(c), Florida Administrative Code, and Section 253.77 of the Florida Statutes to construct and use the activities on the specified sovereign submerged lands and as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein.

During this term of this Letter of consent you shall maintain satisfactory evidence of sufficient upland interest as required by paragraph 18-21.004(3)(b), Florida Administrative Code. If such interest is terminated or the Board of Trustees determines that such interest did not exist on the date of issuance of this Letter of Consent, this Letter of Consent may be terminated by the Board of Trustees at its sole option. If the Board of Trustees terminates this Letter of Consent, you agree not to assert a claim or defense against the Board of Trustees arising out of this Letter of Consent.

Special Consent Conditions

1. The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.

2. Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization

will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.

3. Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.

4. All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.

5. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

General Conditions for Authorizations for Activities
All authorizations granted by rule or in writing under Rule 18-21.005, F.A.C., except those for geophysical testing, shall be subject to the general conditions as set forth in paragraphs (a) through (i) below. The general conditions shall be part of all authorizations under this chapter, shall be binding upon the grantee, and shall be enforceable under Chapter 253 or 258, Part II, F.S.

(a) Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the sovereignty submerged land unless cured to the satisfaction of the Board.

(b) Authorizations convey no title to sovereignty submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.

(c) Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, F.A.C.

(d) Structures or activities shall be constructed and used to avoid or minimize adverse impacts to sovereignty submerged lands and resources.

(e) Construction, use, or operation of the structure or activity shall not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.

(f) Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.

(g) Structures or activities shall not create a navigational hazard.

(h) Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.

Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities.

Additional Information

Please retain this letter. The activities may be inspected by authorized state personnel in the future to ensure compliance with appropriate statutes and administrative codes. If the activities are not in compliance, you may be subject to penalties under Chapter 373, F.S., and Chapter 18-14, F.A.C.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rule 28-106.201, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, any email address, any facsimile number, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000 or by email to Agency_clerk@dep.state.fl.us. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline for filing a petition for

an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when the order is filed with the Clerk of the Department.

Judicial Review

Any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, M.S. 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

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Thank you for applying to the Submerged Lands and Environmental Resource Permit Program. If you have any questions regarding this matter, please contact Liz Yongue by telephone at (305) 289-7079 or by e-mail at Elizabeth.Yongue@dep.state.fl.us. When referring to this project, please reference the file number listed above.

Executed in Monroe County, Florida

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Sincerely,

Megan Mills
Permitting Program Administrator
South District

Enclosures:
11 Project drawings
62-330.051(12)(a), F.A.C./403.813(1)(e), F.S.
373.406(6), F.S.

Copies furnished to:
U.S. Army Corps of Engineers, Miami Field Office (seappls@usace.army.mil)
Stuart McGahee, Tetra Tech, Inc. (stuart.mcgahee@tetratech.com)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document and authorization to use sovereignty submerged lands, including all copies, was mailed before the close of business on June 22, 2016, to the above listed person(s).

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated Department clerk, receipt of which is hereby acknowledged.

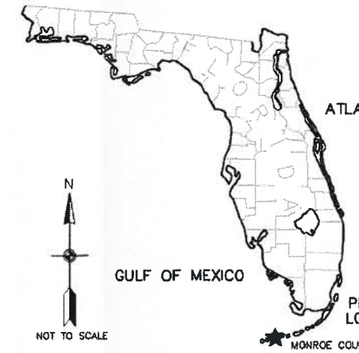
Marie Vidrine
Clerk

June 22, 2016
Date

CITY OF KEY WEST
HALF SHELL RAW BAR

SEAWALL REPAIR

EXEMPT
File Number:
44-0137939-014/



PROJECT LOCATION

VICINITY MAP

HALF SHELL RAW BAR SEAWALL, KEY WEST, FLORIDA

Received Electronically
05/23/2016
South District

INDEX OF SHEETS

SHEET #	TITLE	LATEST UPDATE	REV.
G-001	COVER SHEET AND VICINITY MAP	5/12/2016	0
1 OF 1	AVIROM TOPOGRAPHIC SURVEY	5/12/2016	0
G-002	HALF SHELL RAW BAR LOCATION AND ACCESS	5/12/2016	0
G-003	VICINITY MAP AND DIRECTIONS TO SITE	5/12/2016	0
G-004	USDA/NRCS SOIL MAP	5/12/2016	0
C-001	EXISTING CONDITIONS SURVEY	5/12/2016	0
C-002	CONSTRUCTION PLAN	5/12/2016	0
C-003	SEAWALL CROSS-SECTIONS	5/12/2016	0
C-004	SEAWALL CROSS-SECTIONS	5/12/2016	0
C-005	SEAWALL CROSS-SECTIONS	5/12/2016	0
C-006	SEAWALL CROSS-SECTIONS	5/12/2016	0

FOR PERMITTING
NOT FOR CONSTRUCTION

STUART E. McGAHEE
LICENSE
No. 57536
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Mark	Description	Date	Appr.
-	-	-	-

Designed by: S. McGAHEE
Drawn by: F. MARTINEZ
Checked By: --
Reviewed By: --
Design file no: HALFSHELL_AERIAL.dwg
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 114
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

COVER SHEET AND VICINITY MAP

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
G-001
Sheet 1 of –

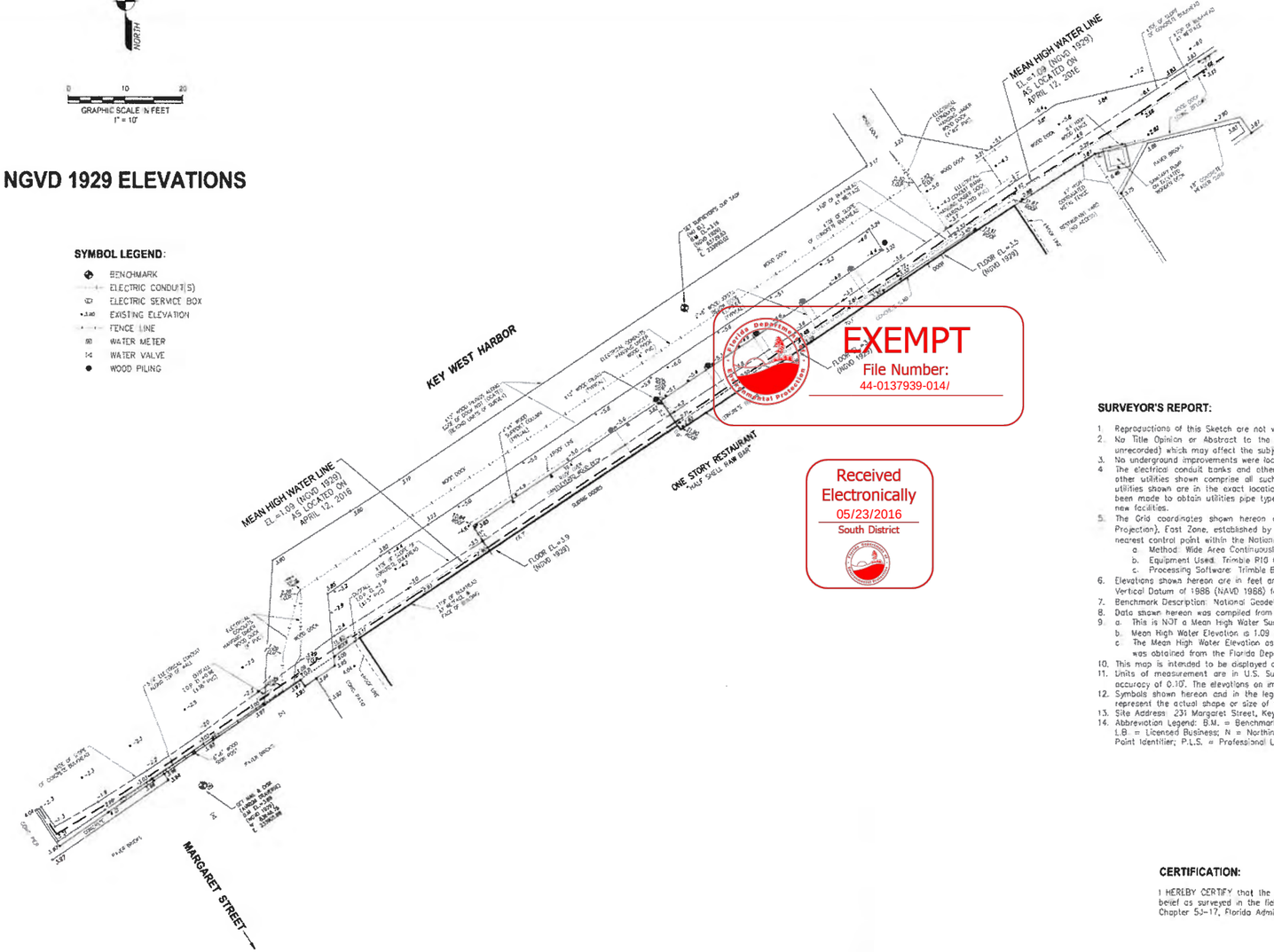
NORTH

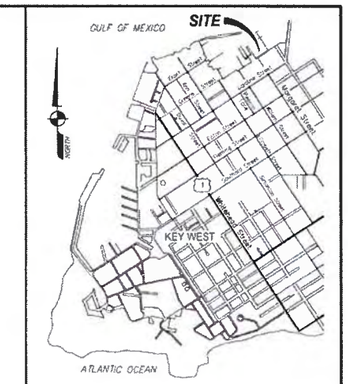
0 10 20
GRAPHIC SCALE IN FEET
1" = 10'

NGVD 1929 ELEVATIONS

SYMBOL LEGEND:

- BENCHMARK
- ELECTRIC CONDUIT(S)
- ELECTRIC SERVICE BOX
- 3.40 EXISTING ELEVATION
- FENCE LINE
- WATER METER
- WATER VALVE
- WOOD PILING





LOCATION SKETCH
(NOT TO SCALE)

EXEMPT
File Number:
44-0137939-014/

Received
Electronically
05/23/2016
South District

SURVEYOR'S REPORT:

1. Reproductions of this Sketch are not valid without the signature and the original raised seal of a Florida licensed surveyor and mapper.
2. No Title Opinion or Abstract to the subject property has been provided. It is possible that there are Deeds, Easements, or other instruments (recorded or unrecorded) which may affect the subject property. No search of the Public Records has been made by the Surveyor.
3. No underground improvements were located.
4. The electrical conduit banks and other utilities shown have been located from field survey information. The surveyor makes no guaranties that the electrical and other utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the electrical and other utilities shown are in the exact location indicated although he does certify that they are located accurately as possible from information available. Every effort has been made to obtain utilities pipe type and size, as shown. It is the responsibility of the end user to verify the invert and pipe size dimensions prior to design of new facilities.
5. The Grid coordinates shown hereon are based on the North American Datum of 1927, of the Florida State Plane Coordinate System (Transverse Mercator Projection), East Zone, established by a Real-Time Kinematic Survey (RTK) GPS Control Survey which is certified to a 2 centimeter local accuracy, relative to the nearest control point within the National Geodetic Survey (NGS) Geodetic Control Network.
   a. Method: Wide Area Continuously Operation GPS Reference Station Network.
   b. Equipment Used: Trimble R10 GNSS, Serial Number 5413460373 (Dual Frequency Receiver)
   c. Processing Software: Trimble Business Center, Version 3.51
6. Elevations shown hereon are in feet and based on the National Geodetic Vertical Datum of 1929 (NGVD 1929). To convert NGVD 1929 elevations to North American Vertical Datum of 1988 (NAVD 1988) for this site, the model value of (-)1.34 must be added algebraically to the NGVD 1929 height.
7. Benchmark Description: National Geodetic Survey Station Designation "872 4580 TIDAL 25" (PID AA0004). Elevation=5.11 (NGVD 1929). Elevation=3.77 (NAVD 1988).
8. Data shown hereon was compiled from instrument(s) of record and does not constitute a Boundary Survey.
9. a. This is NOT a Mean High Water Survey in accord with Chapter 177, Part II Florida Statutes.
   b. Mean High Water Elevation is 1.09 feet, NGVD 1929 (-0.25 feet, NAVD 1988), as located on April 12, 2016, and is shown for informational purposes only.
   c. The Mean High Water Elevation as shown hereon was established by extending the tidal datum shown at Mean High Water Interpolation Point No. 3260, which was obtained from the Florida Department of Environmental Protection Web Site, http://www.labins.org
10. This map is intended to be displayed at a scale of 1:120 (1"=10').
11. Units of measurement are in U.S. Survey Feet and decimal parts thereof. Well identified features in this survey were field measured to a horizontal positional accuracy of 0.10'. The elevations on impervious surfaces were field measured to 0.05' and on ground surfaces to 0.1'.
12. Symbols shown hereon and in the legend may have been enlarged for clarity. These symbols have been plotted at the center of the field location and may not represent the actual shape or size of the feature.
13. Site Address: 231 Margaret Street, Key West, FL 33040
14. Abbreviation Legend: B.M. = Benchmark; CONC. = Concrete; E = Easting; EL. = Elevation; F.B. = Field Book; GPS = Global Positioning System; ID. = Identification; L.B. = Licensed Business; N = Northing; NAD = North American Datum; NAVD = North American Vertical Datum; NGVD = National Geodetic Vertical Datum; PID = Point Identifier; P.L.S. = Professional Land Surveyor; PVC = Polyvinyl-Chloride Pipe; RTK = Real-Time Kinematic; T.O.P. = Top of Pipe.

CERTIFICATION:

I HEREBY CERTIFY that the attached Topographic Survey of the hereon described property is true and correct to the best of my knowledge and belief as surveyed in the field under my direction. I FURTHER CERTIFY that this Topographic Survey meets the Standards of Practice set forth in Chapter 5J-17, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

Date: _____

KEITH M. CHEE-A-TOW, P.L.S.
Florida Registration No. 5328
AVIROM & ASSOCIATES, INC
L.B. No. 3300

COPY

AVIROM & ASSOCIATES, INC.
SURVEYING & MAPPING
50 S.W. 2ND AVENUE, SUITE 102, BOCA RATON, FLORIDA 33432
TEL. (561) 392-2594, FAX (561) 394-7125
www.AVIROM-SURVEY.com

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REVISIONS	DATE	F.B. / PG	BY	CK'D	REVISIONS	DATE	F.B. / PG	BY	CK'D

TOPOGRAPHIC SURVEY
HALF SHELL RAW BAR
A PORTION OF
WILLIAM A. WHITEHEAD'S MAP OF KEY WEST (UNRECORDED)
SECTION 31, TOWNSHIP 68 SOUTH, RANGE 25 EAST
CITY OF KEY WEST
MONROE COUNTY, FLORIDA

JOB #	10157
SCALE	1" = 10'
DATE	04/12/2016
BY	S.A.M.
CHECKED	K.M.C.
F.B. 1797	PG 1 - 4
SHEET 1	OF 1

EXEMPT
File Number:
44-0137939-014/

Received
Electronically
05/23/2016
South District

STUART E. McGAHEE
LICENSE
No. 57536
STATE OF
FLORIDA
PROFESSIONAL
ENGINEER

Mark	Description	Date	Appr.
–		–	–

Designed by: S. MCGAHEE
Drawn By: C. MARTINEZ
Checked By: –
Reviewed By: –
Design file no: HALFSHELL_AERIAL_v1.DWG
Scale: AS SHOWN

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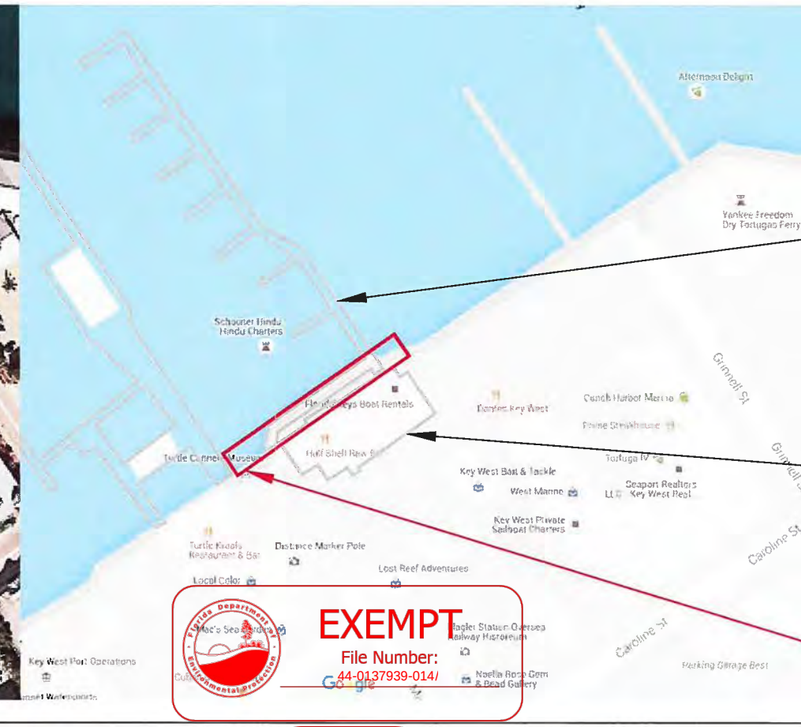
CERTIFICATE OF AUTHORIZATION
NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

HALF SHELL RAW BAR LOCATION AND ACCESS

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
G-002
Sheet 2 of –



PARCEL ID: 72082.0047
OWNER: CITY OF KEY WEST
LOCATION: 120 MARGARET ST., KEY WEST, FL
LEGAL DESCRIPTION:
SUBMERGED LANDS (A/K/A LEASED BAY BTM) 00PL WITHIN KEY WEST BIGHT)

PARCEL ID: 72082.0045
OWNER: CITY OF KEY WEST
LOCATION: 231 MARGARET ST., KEY WEST, FL
LEGAL DESCRIPTION:
KW LYING N'LY SQR 20 (HALF SHELL RAW BAR INC LEASE)

LIMITS OF CONSTRUCTION

EXEMPT
File Number: 44-0137939-014/

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05/23/2016
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GINNELL ST.

STUART E. McCAHEE LICENSE No. 57536 STATE OF FLORIDA PROFESSIONAL ENGINEER

Stuart E. McCahee
Florida PE No. 57536

Mark	Description	Date	Appr.
-	-	-	-

Designed by: S. MCCAHEE
Drawn By: J. MARTINEZ
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Reviewed By: --
Design file no: HALFSHELL_SURVEY_V2.DWG
Scale: AS SHOWN

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CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

VICINITY MAP AND DIRECTIONS TO SITE

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
G-003
Sheet 3 of --

Custom Soil Resource Report
Soil Map

PROJECT LOCATION – RELEVANT SOIL CLASSIFICATIONS: #11 & #100

EXEMPT
File Number: 44-0137939-014/

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05/23/2016
South District

Map Scale: 1:34,900 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 500 1000 2000 3000

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Monroe County, Keys Area, Florida (FL687)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Islamorada muck, tidal	9.5	0.2%
7	Udorthents-Urban land complex	272.0	6.3%
11	Urban land	1,529.2	35.2%
13	Keyvaca very gravelly loam, extremely stony	21.5	0.5%
18	Beaches	10.5	0.2%
99	Water	18.2	0.4%
100	Waters of the Atlantic Ocean	2,181.5	50.2%
Subtotals for Soil Survey Area		**4,042.3**	**93.0%**
Totals for Area of Interest		**4,345.4**	**100.0%**

11—Urban land

Map Unit Setting
National map unit symbol: vryh
Elevation: 0 to 10 feet
Mean annual precipitation: 30 to 51 inches
Mean annual air temperature: 72 to 82 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit

Description of Urban Land

Setting
Landform: Islands
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: No parent material

Properties and qualities
Slope: 0 to 1 percent
Frequency of flooding: Rare

Interpretive groups
Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Minor Components

Udorthents
Percent of map unit: 3 percent
Landform: Islands
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Beaches, tidal
Percent of map unit: 2 percent
Landform: Beaches on islands
Landform position (three-dimensional): Rise

Down slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

100—Waters of the Atlantic Ocean

Map Unit Composition
Waters of the atlantic ocean: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit

Description of Waters Of The Atlantic Ocean

Interpretive groups
Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

FOR PERMITTING
NOT FOR CONSTRUCTION

STUART E. McGAHEE LICENSE No. 57536 STATE OF FLORIDA PROFESSIONAL ENGINEER

Stuart E. McGahee
Florida PE No. 57536

Mark	Description	Date	Appr.
-	-	-	

Designed by: S. McGAHEE
Drawn By: E. MARTINEZ
Checked By: —
Reviewed By: —
Design file no: MAPSHEET_SURVEY_FLD.dwg
Scale: AS SHOWN

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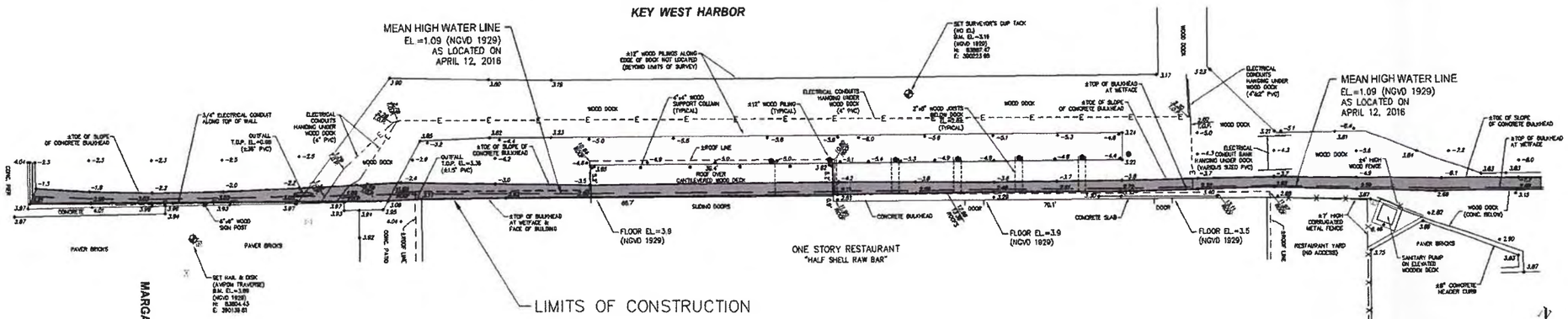
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

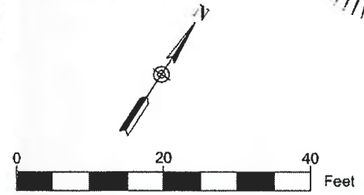
USDA/NRCS SOIL MAP

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
G-004
Sheet 4 of –



EXISTING CONDITIONS SURVEY
(WALL HIGHLIGHTED)



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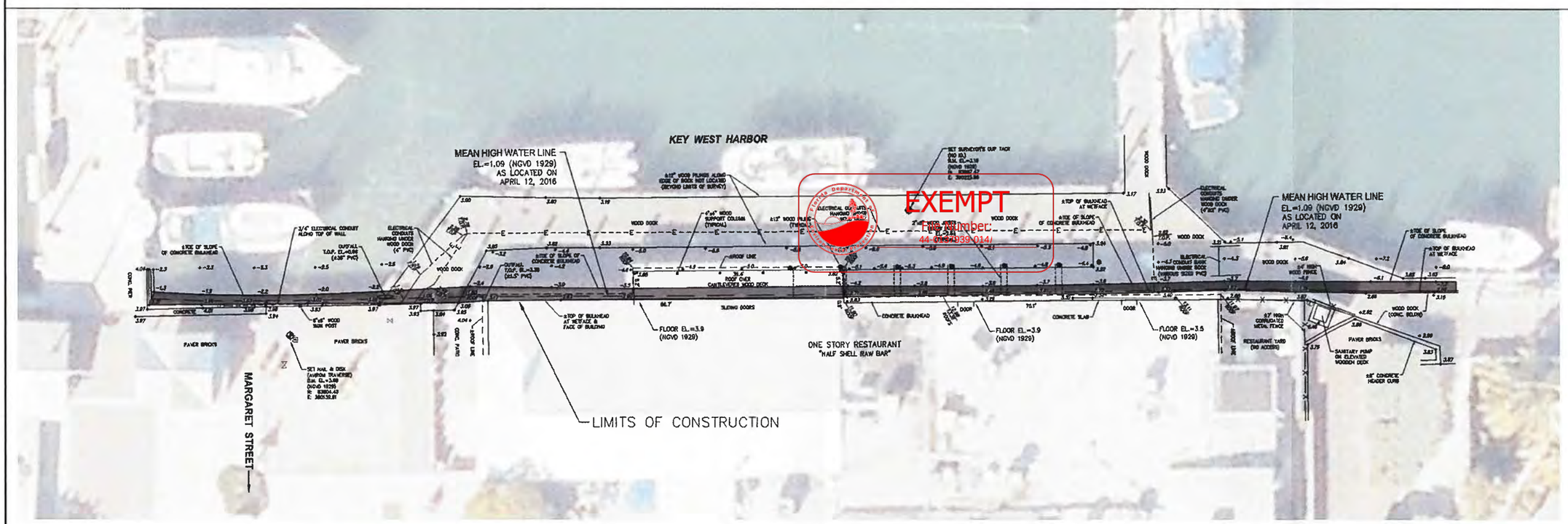

EXEMPT
Exemption Number:
44-0784039.014

EXISTING CONDITIONS SURVEY
WITH 2015 AERIAL

FOR PERMITTING
NOT FOR CONSTRUCTION

SURVEY PREPARED BY AVIROM & ASSOCIATES, INC. 12/15/2015

AVIROM & ASSOCIATES ESTABLISHED IN 1951

SEAL OF THE CITY OF KEY WEST, FLORIDA

STUART E. McGAHEE
LICENSE
No. 57536
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Stuart E. McGahee
Florida PE No. 57536

Mark	Description	Date	Appr.
–	–	–	–

Designed by: S. McGAHEE
Drawn By: J. MARTINEZ
Checked By: –
Reviewed By: –
Design file no: NAUSHELL_SURVEY_V2.DWG
Scale: AS SHOWN

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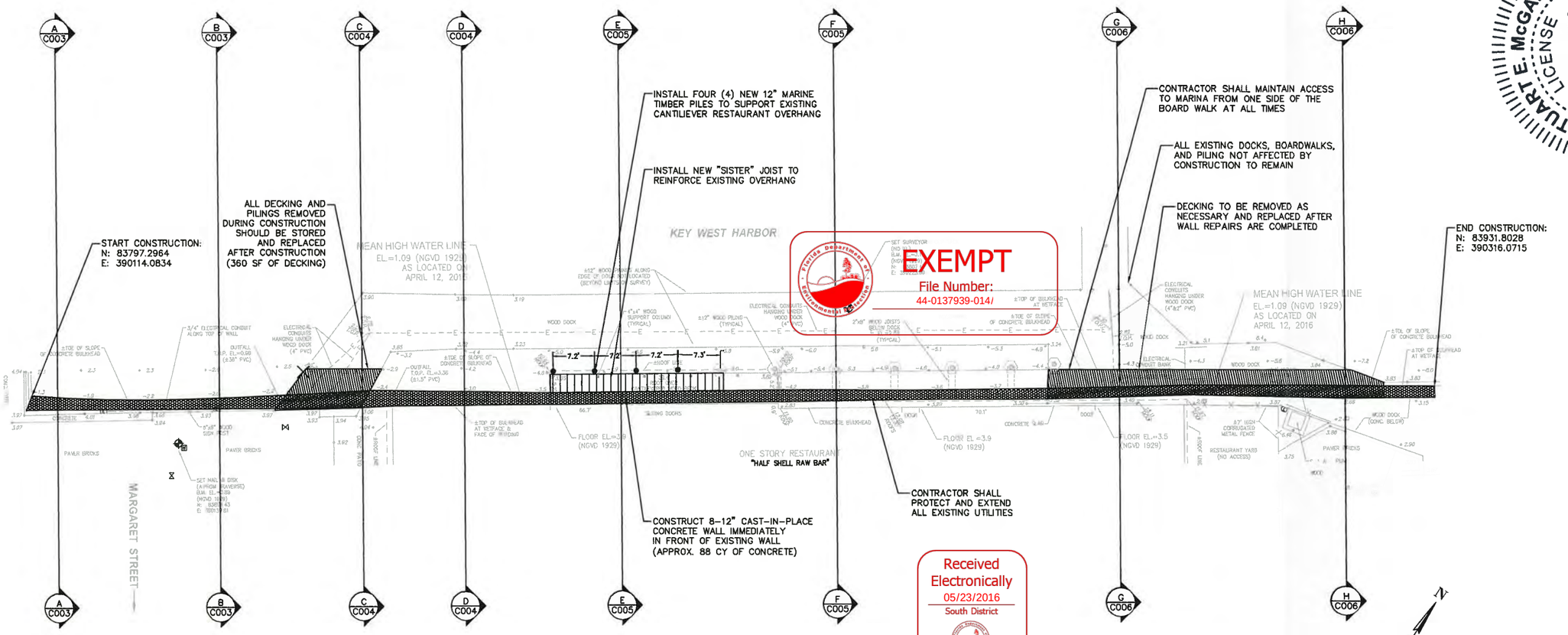
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

EXISTING CONDITIONS SURVEY

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
C-001
Sheet 5 of –



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File Number:
44-0137939-014/

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05/23/2016
South District

NOTES:

1. THE BATHYMETRY AND SURVEY DATA WAS PROVIDED BY AVIROM & ASSOCIATES, INC. AND SURVEYED ON 4/12/16.

2. ALL ELEVATIONS SHOWN ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
3. DEMOLITION ACTIVITIES FOR THIS PROJECT INCLUDE THE FOLLOWING:
   3.1. REMOVAL OF THE WOOD DECKING FROM THE EXISTING SEAWALL TO THE EXTERIOR WOOD DOCK (~600 SF)
   3.2. SALVAGE ALL DECKING – TO BE REINSTALLED AFTER SEAWALL REPAIR

4. THE SEAWALL REPAIR WILL CONSIST OF THE FOLLOWING ACTIVITIES:
   4.1. REMOVING LOOSE MATERIALS AND DELAMINATED CONCRETE
   4.2. REMOVE UTILITIES IN CONFLICT WITH THE NEW WORK WHILE PROVIDING TEMPORARY UTILITIES
   4.3. DRILL HOLES AND EPOXY DOWELS INTO THE SEAWALL ABOVE AND BELOW SEA LEVEL, AND SECURE A SINGLE LAYER OF REINFORCING BARS TO DOWELS
   4.4. INSTALL FORMWORK (AND EXTEND BELOW SEAWALL) TO FORM A 8 TO 12 INCH THICK CONCRETE FASCIA PANEL
   4.5. UPON CURING, REMOVE FORMWORK

2. FOUR WOOD PILES WILL BE INSTALLED TO SUPPORT THE RESTAURANT OVERHANG.

3. CROSS-SECTIONS OF THE DOCK ARE SHOWN ON SHEETS C-002 THROUGH C-005.

LEGEND

- NEW PILE TO BE INSTALLED
- AREA OF SEAWALL TO BE REPAIRED
- EXISTING PILE (TO REMAIN)
- EXISTING PILE (TO BE REMOVED DURING CONSTRUCTION & REPLACED)
- EXISTING DOCK (TO BE REMOVED DURING CONSTRUCTION & REPLACED)

FOR PERMITTING
NOT FOR CONSTRUCTION

SEAL OF THE CITY OF KEY WEST, FLORIDA

STUART E. McGAHEE ★ LICENSE No. 57536 ★ STATE OF FLORIDA PROFESSIONAL ENGINEER
Stuart E. McGahee
Florida PE No. 57536

Mark	Description	Date	Appr.
-	-	-	-

Designed by: S. McGAHEE
Drawn By: F. MARTINEZ
Checked By: ---
Reviewed By: ---
Design file no: INFSWFL_DESIGN_VILDNG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
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STUART, FL 34994-2936
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CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

CONSTRUCTION PLAN

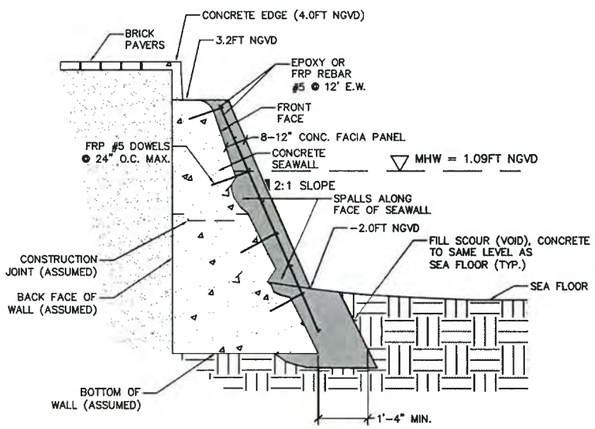
KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
C-002
Sheet 6 of –

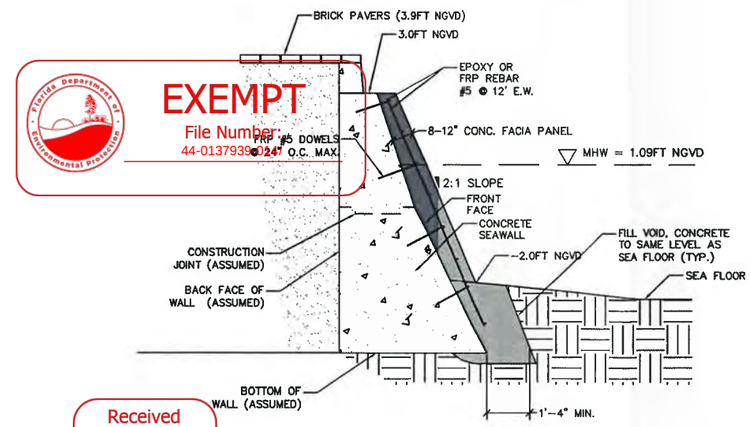
PHOTO C3-1

PHOTO C3-2

PHOTO C3-3



CROSS-SECTION A-A



CROSS-SECTION B-B

EXEMPT
File Number: 44-0137939-001
Florida Department of Environmental Protection

Received Electronically
05/23/2016
South District

0 4 8 Feet

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SEAL OF THE CITY OF KEY WEST, FLORIDA

STATE OF FLORIDA
STUART E. McGAHEE
LICENSE NO. 57536
PROFESSIONAL ENGINEER

Stuart E McGahee, Florida PE No. 57536

Mark	Description	Date	Appr.
-	-	-	-

Designed by: S. MCGAHEE
Drawn By: F. MARTINEZ
Checked By:
Reviewed By:
Design file no: HKSHELL_DESIGN_ALONG
Scale: AS SHOWN

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CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

SEAWALL CROSS-SECTIONS

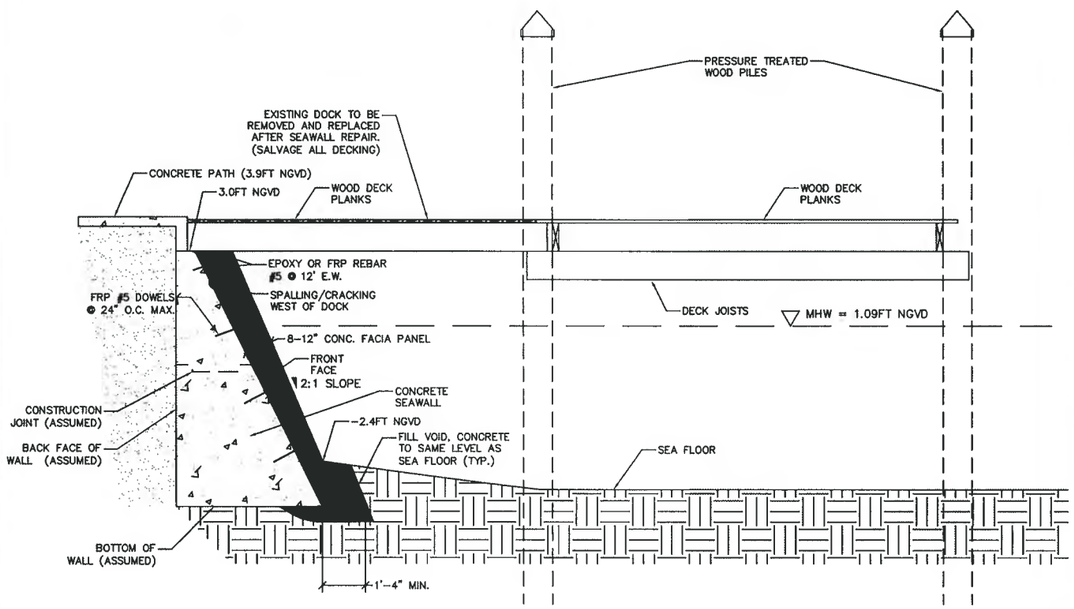
KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
C-003
Sheet 7 of --

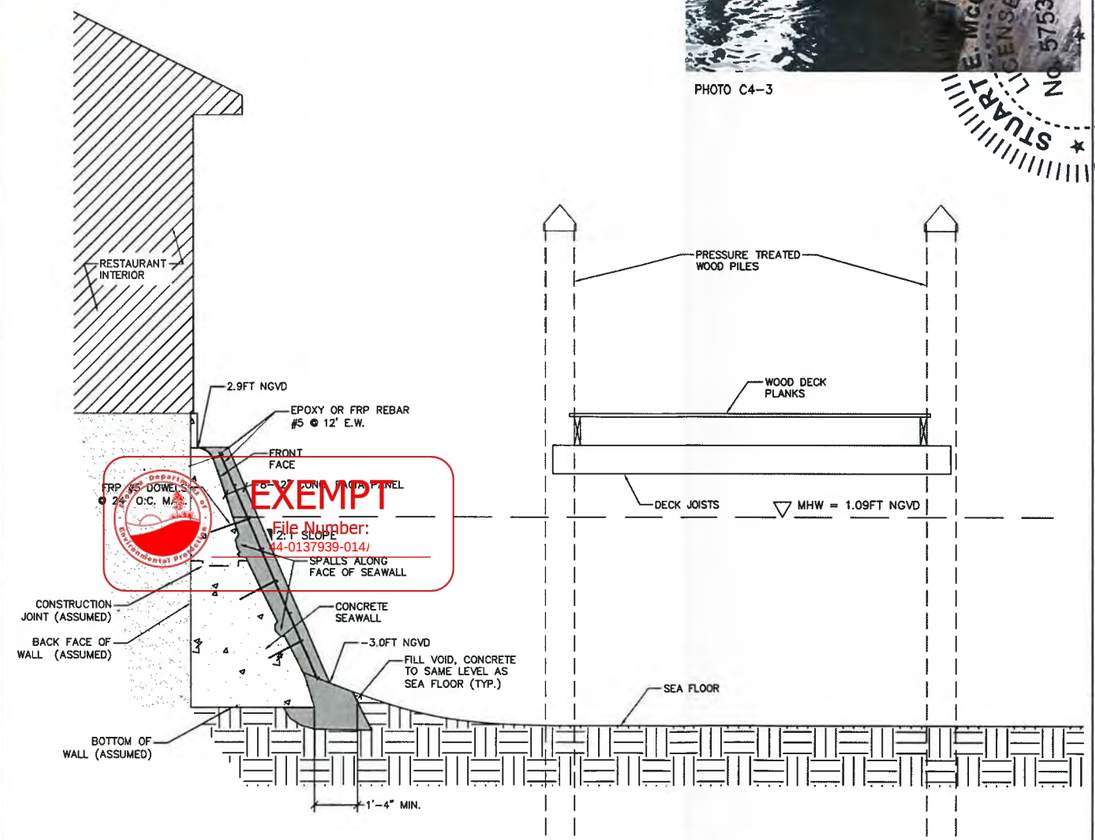
PHOTO C4–1

PHOTO C4–2

PHOTO C4–3



CROSS–SECTION C–C



CROSS–SECTION D–D

EXEMPT
File Number:
44-0137939-014/

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05/23/2016
South District

0 4 8 Feet

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SEAL OF THE CITY OF KEY WEST, FLORIDA

STATE OF FLORIDA PROFESSIONAL ENGINEER
STUART E. McGAHEE
LICENSE No. 57536
5/18/16

Stuart E McGahee
Florida PE No. 57536

Mark	Description	Date	Appr.
–	–	–	–

Designed by: S. MCGAHEE
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Checked By:
Reviewed By:
Design file no: 04(PSW)_DESIGN_MLDNG
Scale: AS SHOWN

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CERTIFICATE OF AUTHORIZATION NO. 2429

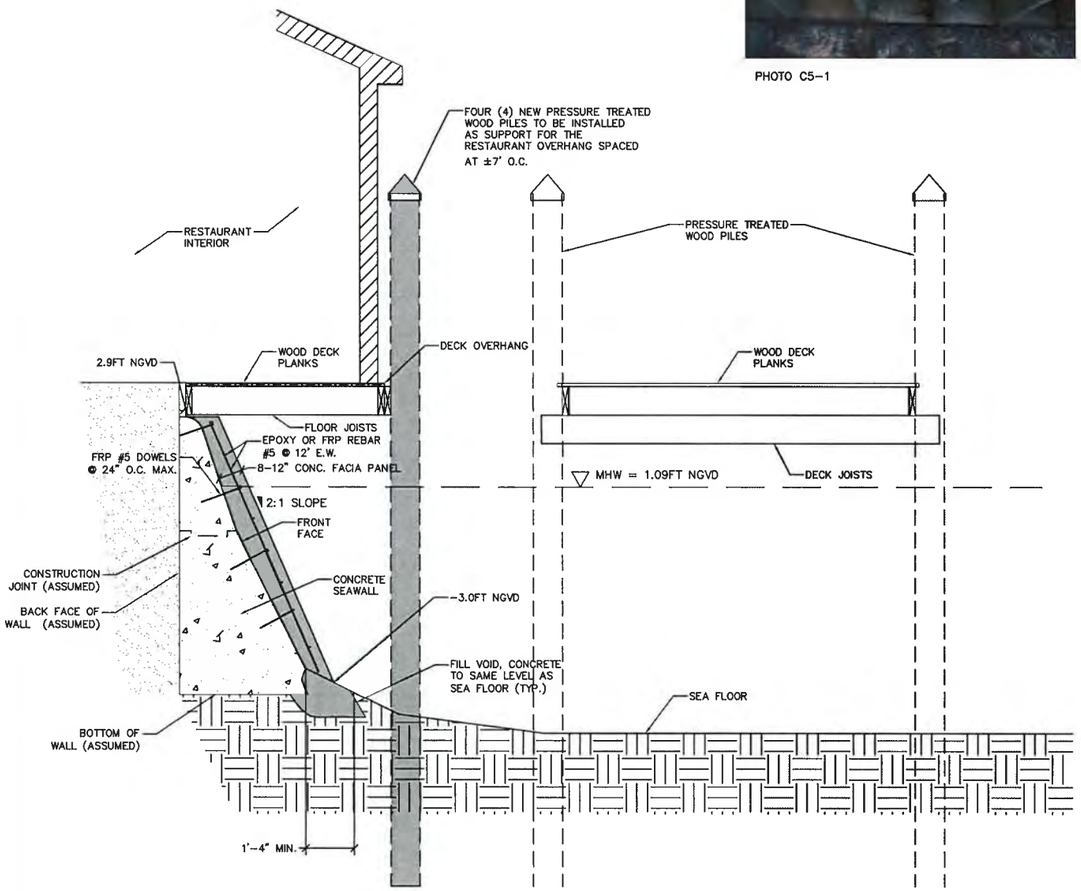
CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

SEAWALL CROSS-SECTIONS

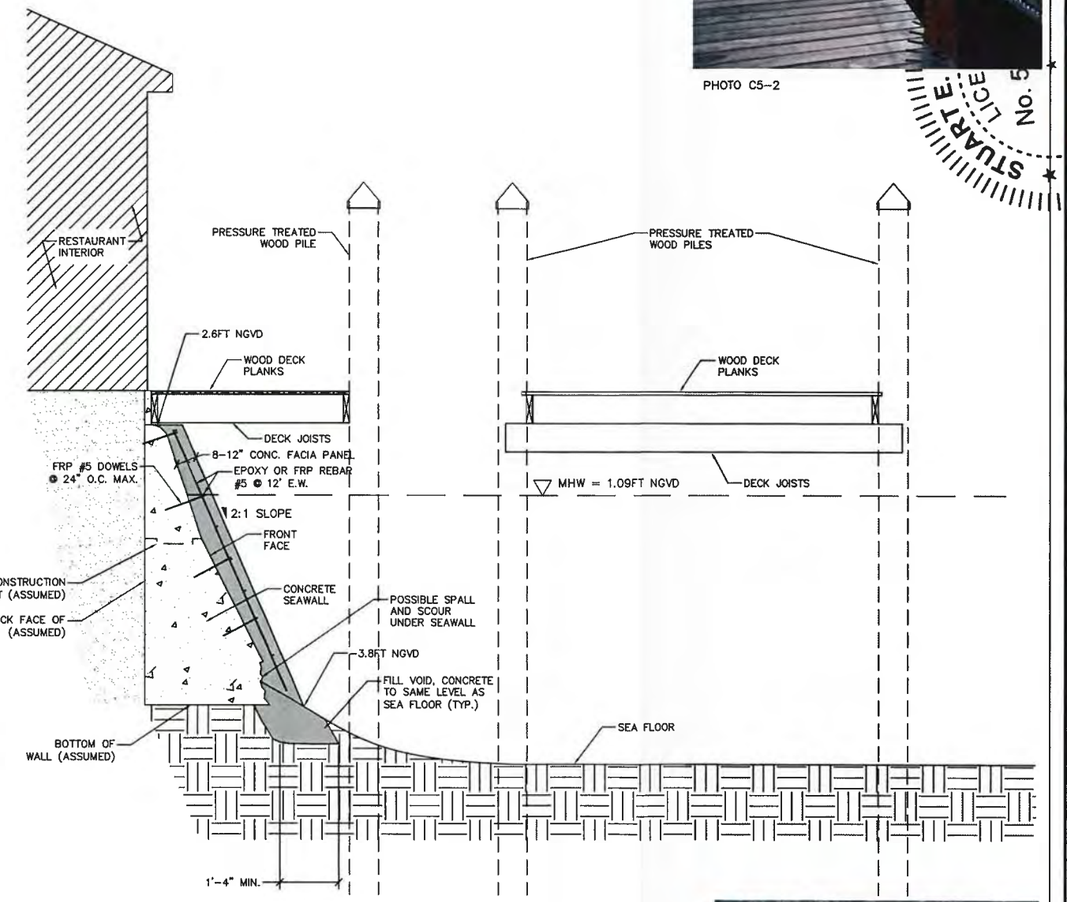
KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
C-004
Sheet 8 of –

PHOTO C5-1



CROSS-SECTION E-E



CROSS-SECTION F-F

PHOTO C5-2

PHOTO C5-3

0 4 8 Feet

EXEMPT
File Number:
44-0137939-014/

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05/23/2016
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NOT FOR CONSTRUCTION

SEAL OF THE CITY OF KEY WEST, FLORIDA

STATE OF FLORIDA
PROFESSIONAL ENGINEER
STUART E. LICE No. 57536

Stuart E McGahee
Florida PE No. 57536

Mark	Description	Date	Appr.
-	-	-	-

Designed by: S. MCGAHEE
Drawn By: F. MARTINEZ
Checked By: -
Reviewed By: -
Design file no: HALFSHELL_DESIGN_WLDNG
Scale: AS SHOWN

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CERTIFICATE OF AUTHORIZATION NO. 2429

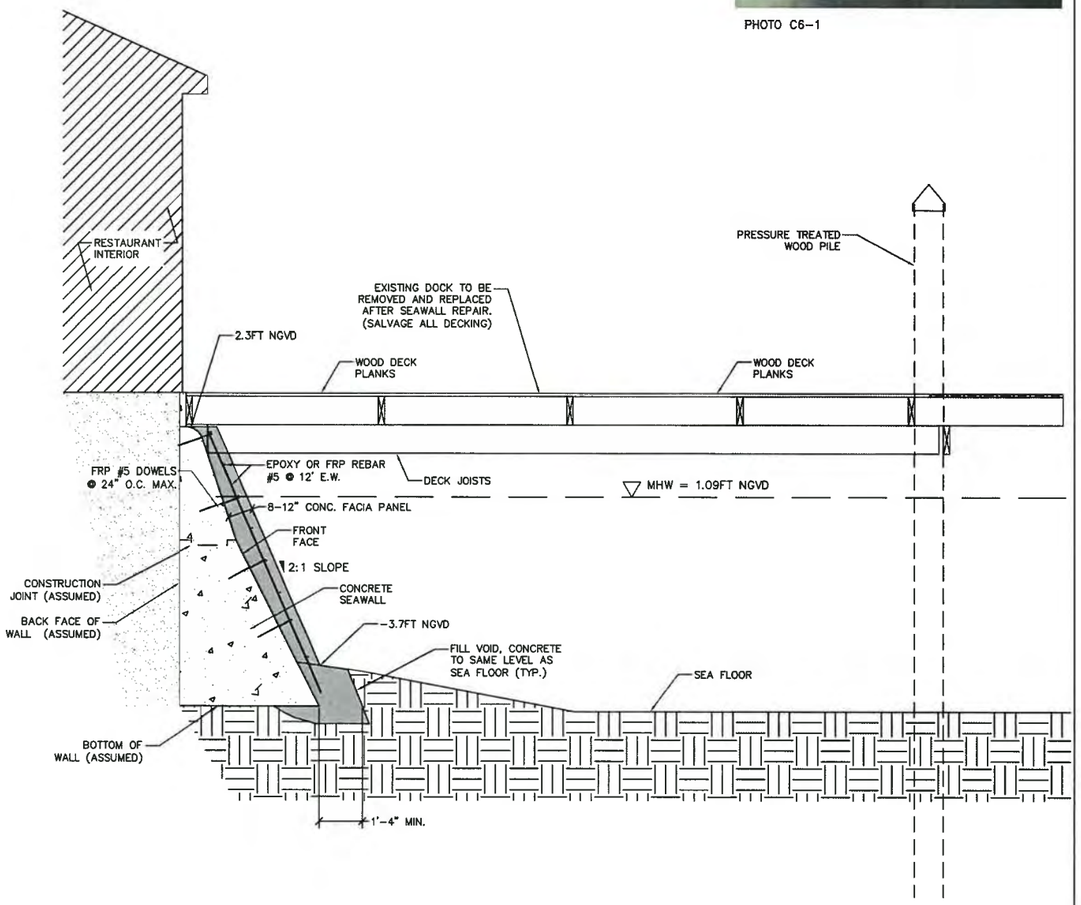
CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

SEAWALL CROSS-SECTIONS

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
C-005
Sheet 9 of -

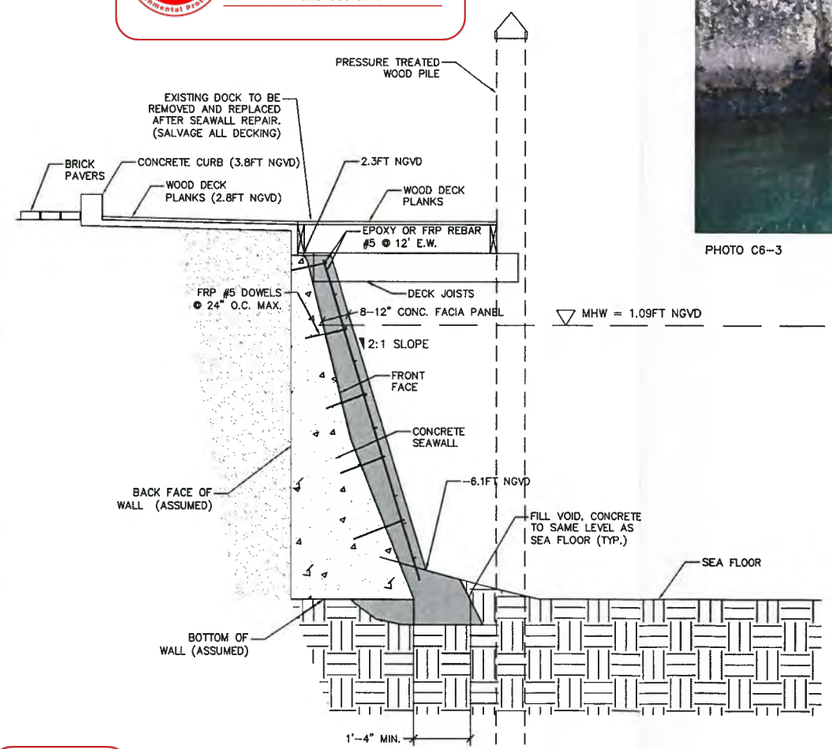
PHOTO C6–1



CROSS–SECTION G–G

PHOTO C6–2

PHOTO C6–3



CROSS–SECTION H–H

EXEMPT
File Number:
44-0137939-014/

Received Electronically
05/23/2016
South District

0 4 8 Feet

FOR PERMITTING
NOT FOR CONSTRUCTION

SEAL OF THE CITY OF KEY WEST, FLORIDA

STATE OF FLORIDA PROFESSIONAL ENGINEER
STUART E. McGAHEE
LICENSE NO. 57536

5/18/16

Stuart E McGahee
Florida PE No. 57536

Mark	Description	Date	Appr.
–	–	–	–

Designed by: S. MCGAHEE
Drawn By: F. MARTINEZ
Checked By:
Reviewed By:
Design file no: HALFSHELL_DESIGN_HALDWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 314
STUART, FL 34994–2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
HALF SHELL RAW BAR SEAWALL REPAIR

SEAWALL CROSS-SECTIONS

KEY WEST, MONROE COUNTY, FLORIDA

Sheet Reference:
C-006
Sheet 10 of –

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

F/SER31: SF

SEP 20 2016

Chief, Miami Section
Jacksonville District Corps of Engineers
Department of the Army
9900 Southwest 107th Avenue, Suite 203
Miami, Florida 33176

Dear Sir or Madam:

This letter responds to your requests for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA) for the following actions.

Project	Permit Number	Applicants	SER Number	Project Types
1	SAJ-2016-00621 (LP-GGM)	Jim Bouquet, Director of Engineering, City of Key West	SER-2016-18029	Seawall replacement
2	SAJ-2016-01564 (NW-JMH)	Doug Bradshaw, City of Key West	SER-2016-18034	Bulkhead repair and dock construction

Consultation History

Project	Date Consultation Request Received	Date Additional Information Requested	Date Consultation Initiated
1	June 23, 2016	August 5, 2016	August 9, 2016
2	June 27, 2016	August 5, 2016	August 8, 2016

We decided to batch these 2 consultations into a single analysis and response letter due to the similarities of the projects and their locations in Monroe County, Florida.

Project Location

Project	Address	Latitude/Longitude (North American Datum 1983)	Water body
1	31, 33, 35 East Quay Road, Key West, Monroe County, FL	24.551137 °N, -81.807916 °W	Truman Annex Basin, adjacent to open waters of Atlantic Ocean and Gulf of Mexico
2	231 Margaret Street, Key West, Monroe County, FL	24.551922 °N, -81.80025 °W	Key West Bight / Key West Harbor

Existing Site Conditions

1. **Jim Bouquet, Director of Engineering, City of Key West:** The National Oceanic and Atmospheric Administration (NOAA) Florida Keys National Marine Sanctuary conducted a benthic assessment and coral inventory dated May 9, 2016. The shoreline is armored with a concrete seawall forming a bulkhead above a bedrock ledge. Concrete bags have been used in the past to prevent erosion or undermining of the concrete seawall at the ledge area on one part of the seawall. The survey describes 182 concrete bags or blocks with encrusted stony coral colonies growing on them. Twelve species totaling 802 specimens of stony coral were growing on and within three feet of the proposed project, one of which was listed as Threatened under the Endangered Species Act (*Orbicella faveolata*, four colonies total). There are no shoreline mangroves in the project area. According to the assessment, the "...ledge extends out from the seawall an average of four feet to a cut drop off of a dredged harbor approximately 34 feet deep directly under the project and deeper toward the center." The bottom of the harbor is comprised of barren mud and decaying detritus with some sparse macroalgae. No seagrasses grow in the proposed footprint of the existing project area. Five existing docks owned by NOAA are located at the project site, but no repairs are proposed to those structures.

   According to the benthic assessment (dated May 9, 2016), NOAA scientists relocated a total of 171 corals to the Florida Keys National Marine Sanctuary (FKNMS) Coral Nursery, including the four colonies of the listed species. The relocation of these corals was carried out under the "Programmatic Biological Opinion on Issuance of Permits by ONMS [Office of National Marine Sanctuaries] for Scientific Research Activities Directed at *Acropora* spp. in the FKNMS" to include *Orbicella faveolata* and other listed threatened corals (see 80 FR 1616). FKNMS has re-initiated consultation on May 6, 2009, to include *Orbicella faveolata*. While this consultation is ongoing, the FKNMS may continue to issue permits for the movement of *Orbicella faveolata* for permitted research purposes, as doing so will not jeopardize the continued existence of all listed species, thus the relocations of corals will not be analyzed in this consultation.

2. **Doug Bradshaw, City of Key West:** Tetra Tech, Inc. (Tt) performed a coral inventory and benthic resource survey of the Half Shell Raw Bar bulkhead on April 26, 2016. The project area is located along the northwestern shore of Key West and lies within Key West Bight. The survey area includes a 250-foot (ft) bulkhead with an existing dock structure (partially attached) along its length. The bulkhead is a part of hardened shoreline with the marina basin that supports the Half Shell Raw Bar. Water depths ranged from 3 to 9 ft. Sediment composition along the base of the bulkhead is mainly mud/fine sand mixed with debris (concrete, rubble, pipes, etc.). A total of 752 individual coral colonies were catalogued along the 250-ft bulkhead face and 5 to 10-ft buffer: Neither mangroves nor seagrass were observed within the proposed project area or adjacent buffer zone.

   According to the benthic assessment, a total of 408 corals (406 *S. radians* and 2 *C. arbuscula*) that are less than 15 centimeters (cm) in maximum dimension are potential candidates for relocation. There are 337 corals that are less than 15 cm maximum dimension that are not recommended for relocation due to their size and morphology; these stony corals are encrusted on the bulkhead and cannot be relocated without damage. Seven coral colonies (*S. radians*) that are greater than 15 cm maximum dimension are potential candidates for relocation.

Project Descriptions

1. **Jim Bouquet, Director of Engineering, City of Key West:** The applicant proposes to replace 348 linear ft of concrete seawall with 365 linear ft of new steel sheet pile to stabilize the upland area and prevent erosion of the underlying soil. A new steel sheet pile seawall would be installed from uplands in front of, and would be spaced as closely as possible to, the existing concrete wall. Clean fill would be placed between the new wall and the old wall as needed. The concrete seawall cap would then be cast on top of the sheet pile seawall. One hundred seventy-five 25-inch (in) steel sheet piles would be installed with a vibratory hammer. Twenty-four 12-in wood piles would be installed with an impact hammer. The project is expected to take about 90 days to complete.

2. **Doug Bradshaw, City of Key West:** The applicant proposes to repair an existing bulkhead using 245 linear ft of continuous cast-in-place, 12-in- thick concrete seawall along the face of the exposed portion of the wall. The work would be performed from the water using a barge, and from the upland using a concrete pumper truck. In-water work would involve the placement of concrete form-work in front of the existing wall and the pumping of concrete into the forms. Existing decking will be temporarily removed during construction and replaced afterwards. Four new timber piles would be installed with an impact hammer to support the existing cantilever building. The project is expected to take about 60 days to complete.

Pile Installation

Project	Pile types	Number of Piles	Installation Method	Confined Space or Open Water
1	25-in-wide sheets	175	Vibratory hammer	Open water
	12-in diameter wood	24	Impact hammer	Open water
2	12-in diameter wood	4	Impact hammer	Open water

Construction Conditions
The USACE will require compliance with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006 (enclosed). Both applicants have agreed to deploy turbidity curtains, which will remain in place for the duration of all in-water activities. All work will be conducted during daylight hours.

Effects Determinations for Species the Action Agency or NMFS Believes May Be Affected by the Proposed Actions

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
Sea Turtles			
Green (North and South Atlantic distinct population segment [DPS])	T	NLAA	NLAA
Kemp's ridley	E	NLAA	NLAA
Leatherback	E	NLAA	NE
Loggerhead (Northwest Atlantic Ocean DPS)	T	NLAA	NLAA

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
Hawksbill	E	NLAA	NLAA
Fish			
Smalltooth sawfish (U.S. DPS)	E	NLAA	NLAA
E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect			

We believe the project will have no effect on leatherback sea turtles, due to the species' very specific life history strategies, which are not supported at the project site. Leatherback sea turtles have pelagic, deepwater life history, where they forage primarily on jellyfish.

Critical Habitat
Projects 1 and 2 are not located in designated critical habitat, and there are no potential routes of effect to any designated critical habitat.

Analysis of Potential Routes of Effects to Species
Effects to sea turtles and smalltooth sawfish include the risk of direct physical impact from the in-water construction machinery and pile installation. We believe the risk of injury is discountable due to the species' ability to move away from the project sites and into adjacent suitable habitat, if disturbed. Limiting construction to daylight hours only will help construction workers regularly monitor for ESA-listed species near the project areas and avoid interactions with these species. The required implementation of NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* will further reduce the risk of injury with the requirement that all work be stopped if a sea turtle or smalltooth sawfish is observed less than 50 ft from the operating or moving equipment.

Sea turtles and smalltooth sawfish may be adversely affected by being temporarily unable to use the sites due to avoidance of construction activities, related noise, and physical exclusion from areas blocked by turbidity curtains. Although sea turtles and smalltooth sawfish will be temporarily unable to access the construction areas, these effects will be insignificant, given the projects' limited footprints and construction periods (Project 1 is expected to take about 90 days and Project 2 is expected to take about 60 days). The turbidity curtains will be removed after construction, and will not appreciably block use of the areas by ESA-listed species.

Finally, we consider the potential injurious and behavioral effects of pile driving for the projects. Effects to sea turtles and smalltooth sawfish as a result of noise created by construction activities can physically injure animals in the affected areas or change animal behavior in the affected areas. Injurious effects can occur in 2 ways. First, effects can result from a single noise event exceeding the threshold for direct physical injury to animals, and these constitute an immediate adverse effect on these animals. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects prevent animals from migrating, feeding, resting, or reproducing, for example. Our evaluation of effects to listed species as a result of noise created by construction activities is based on the analysis prepared in support of the Opinion for SAJ-82.[1]

[1] NMFS. Biological Opinion on Regional General Permit SAJ-82 (SAJ-2007-01590), Florida Keys, Monroe County, Florida. June 10, 2014.

Use of an impact hammer to drive 10-in-diameter or 12-in-diameter wood piles for Projects 1 and 2 (applicable to both open water and confined spaces): Based on our noise calculations, the installation of wood or vinyl piles by impact hammer will not cause single-strike or peak-pressure injury to sea turtles or ESA-listed fish. The cumulative sound exposure level (cSEL) of multiple pile strikes over the course of a day may cause injury to ESA-listed fishes and sea turtles at a radius of up to 30 ft (9 meters [m]). Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances. Because we anticipate the animal will move away, we believe that an animal's suffering physical injury from noise is extremely unlikely to occur. Even in the unlikely event an animal does not vacate the daily cumulative injurious impact zone, the radius of that area is smaller than the 50-ft radius that will be visually monitored for listed species. Construction personnel will cease construction activities if an animal is sighted per NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions.* Thus, we believe the likelihood of any injurious cSEL effects is discountable. An animal's movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

Based on our noise calculations, impact hammer pile installation could also cause behavioral effects at radii of 151 ft (46 m) for sea turtles and 705 ft (215 m) for ESA-listed fishes. Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances. Because there is similar habitat nearby, we believe behavioral effects will be insignificant. If an individual chooses to remain within the behavioral response zone, it could be exposed to behavioral noise impacts during pile installation. Since installation will occur only during the day, these species will be able to resume normal activities during quiet periods between pile installations and at night. Therefore, we anticipate any behavioral effects will be insignificant.

Vibratory installation of metal sheet piles in open water and confined spaces in Project 1: Based on our noise calculations, installation of metal sheet piles by vibratory hammer will not result in any form of injurious noise effects. Yet, this installation method could result in behavioral effects at radii of 52 ft (16 m) for sea turtles and 243 ft (74 m) for ESA-listed fishes. Given the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances. Because there is similar habitat nearby, we believe this effect will be insignificant. If an individual chooses to remain within the behavioral response zone, it could be exposed to behavioral noise impacts during pile installation. Since installation will occur only during the day, these species will be able to resume normal activities during quiet periods between pile installations and at night. Therefore, installation of metal sheet piles by vibratory hammer will not result in any injurious noise effect, and we anticipate any behavioral effects will be insignificant.

Conclusion

Because all potential project effects to listed species were found to be discountable, insignificant, or beneficial, we conclude that the proposed action is not likely to adversely affect listed species under NMFS's purview. This concludes your consultation responsibilities under the ESA for species under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. NMFS's findings on the project's potential effects are based on the project description in this response. Any changes to the proposed action may negate the findings of this consultation and may require reinitiation of consultation with NMFS.

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

We have enclosed additional relevant information for your review. We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions on this consultation, please contact Sarah Furtak, Consultation Biologist, at (954) 262-3763, or by email at sarah.furtak@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
For Regional Administrator

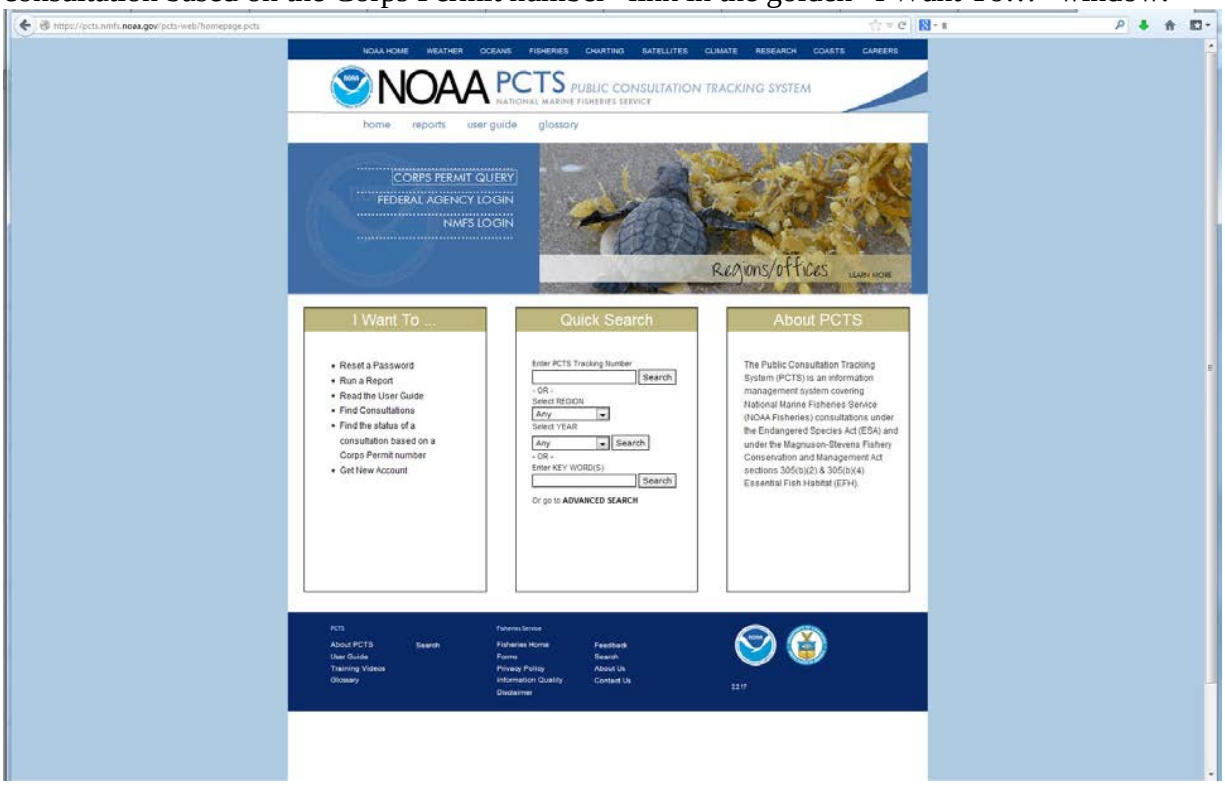
Enc.: 1. *Sea Turtle and Smalltooth Sawfish Construction Conditions* (Revised March 23, 2006)
2. *PCTS Access and Additional Considerations for ESA Section 7 Consultations* (Revised March 10, 2015)

File: 1514-22.F.4

PCTS Access and Additional Considerations for ESA Section 7 Consultations
(Revised 03-10-2015)

Public Consultation Tracking System (PCTS) Guidance: PCTS is a Web-based query system at **https://pcts.nmfs.noaa.gov/** that allows all federal agencies (e.g., U.S. Army Corps of Engineers - USACE), project managers, permit applicants, consultants, and the general public to find the current status of NMFS's Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations which are being conducted (or have been completed) pursuant to ESA Section 7 and the Magnuson-Stevens Fishery Conservation and Management Act's (MSA) Sections 305(b)2 and 305(b)(4). Basic information including access to documents is available to all.

The PCTS Home Page is shown below. For USACE-permitted projects, the easiest and quickest way to look up a project's status, or review completed ESA/EFH consultations, is to click on either the "Corps Permit Query" link (top left); or, below it, click the "Find the status of a consultation based on the Corps Permit number" link in the golden "I Want To…" window.



Then, from the "Corps District Office" list pick the appropriate USACE district. In the "Corps Permit #" box, type in the 9-digit USACE permit number identifier, with no hyphens or letters. Simply enter the year and the permit number, joined together, using preceding zeros if necessary after the year to obtain the necessary 9-digit (no more, no less) number. For example, the USACE Jacksonville District's issued permit number SAJ-2013-0235 (LP-CMW) must be typed in as 201300235 for PCTS to run a proper search and provide complete and accurate results. For querying permit applications submitted for ESA/EFH consultation by other USACE districts, the procedure is the same. For example, an inquiry on Mobile District's permit MVN201301412 is entered as 201301412 after selecting the Mobile District from the "Corps District Office" list. PCTS questions should be directed to Kelly Shotts at Kelly.Shotts@noaa.gov or (727) 551-5603.

EFH Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to Section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA Section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA Section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.

PART 6

DRAWINGS