CITY OF KEY WEST

3126 Flagler Avenue
Key West, FL 33040

ADDENDUM NO. 1 SAILFISH PIER REPLACEMENT / ITB GB1503

This Addendum is issued as supplemental information to the bid package for clarification or amending of certain matters of both a general and a technical nature. The referenced Invitation to Bid package is hereby addended in accordance with the following items:

ITB GB1503 Contract time has been reduced to 90 days to substantial completion.

ITB Clarifications from mandatory Pre-Bid Meeting (March 9, 2016)

- Contractor shall safely maintain one way traffic adjacent to staging area at all times. This is critical for the marina residents. See page C-02 for staging area location.
- Any required builders risk insurance is the responsibility of the contractor for the duration of the work.
- A benthic survey was completed. See attached for reference.
- City of Key West will be responsible for the temporary utility connections of boats relocated to Kingfish Pier.
- The contractor and its subcontractor(s) are fully responsible for any boats damaged during relocations. All relocations shall be fully coordinated with the City Marina Manager.
- Existing mooring piles at Kingfish Pier that impact the ability to relocate boats shall be removed and disposed of by the contractor. These piles shall not be replaced.
- All questions shall be submitted in writing to Karen Olson, Deputy Port Director, by 5:00 pm on March 14th.
- Contractor is responsible for paying the City of Key West permit fee. The cost for the permit shall be included in the mobilization/demolition line item.
- Pre-construction survey is contractor's responsibility.
- All Cleats Shall be 15" hex-head (by sea dog or approved equal)
- Contractor is responsible for removal of all existing concrete spalling debris that has fallen or will fall during demolition of existing pier. Costs for removal shall be included in the demolition line item.
- Any unexpected debris encountered shall be removed by contractor. An allowance line item has been added to the Bid form.
- Attached for your information is a video of the damage to the underside of the pier.
- Boat owners are responsible for removing and securing their items from the existing pier and piles.
- Existing fire cabinets shall be removed and disposed of by the contractor.
- New fire cabinets including the hoses and fire extinguisher will be provided by the City. Contractor is responsible for connections, piping, valves, etc.
- Existing electrical and water/sewer pedestals shall remove, securely stored, and re-installed by the contractor. Contractor is responsible for connections, piping, valves, etc. Two new electrical and water-sewer pedestal are required.

ITB Questions Submitted

- Contractor to reuse existing G-cable.
- A copy of the pre-bid meeting sign-in sheet is attached.
- All piles to be coated with tar epoxy coating (exterior only) per manufacturer's specifications.
- Contractor is responsible for all on-site engineering and testing.
- City and City Engineer will be performing all inspections.
- Contractor will not be allowed to reuse existing piling location.
- Contractor will be permitted to spud barges overnight at the job site.
- May 1st, 2016 is the anticipated start date.
- Spiral welded steel pipe piles will not be allowed.

ITB Revised ITB Documents

The following Specification Page(s) have been revised and are included herein for replacement of corresponding Pages in the ITB Documents.

Page(s)	Description
00 41 13-7	Bid Form has been revised: • Line item "Mobilization" has been revised. • Line item "Demolition" has been revised. • Line item "Furnish and install Piles" has been revised. • Line item "Furnish and install Mooring Piles" has been revised. Quantity increased from 14 to 16. • "Allowance for unexpected debris to be removed by contractor" has been added • An "Alternate Bid Item" has been added.
00 21 13-8	Time of Completion Section has been revised: • "The term of this contract is 90 calendar days" has been revised.
00 72 00-16	Paragraph #5.06 "Property Insurance" has been revised: • Unless otherwise provided in the Supplementary Conditions, **Contractor** shall purchase and maintain…
General Specifications	Paragraph #2 has been deleted.
Technical Specifications	TS-4.0 Section TS-4.1has been revised: • "Dock Piling 14" or 20" (depending…)" has been revised. TS-6.0 Section TS-6.1 has been revised: • "Dock Piling will be 14" or 20" (depending…)" has been revised.

The following Plan Sheets have been revised and are included herein for replacement of the corresponding Sheets in the ITB Documents.

Sheet(s)	Description
C-05	Geometry Plan has been revised: • There are no 13" piles required.

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 1 by acknowledging Addendum in their proposal or by submitting the addendum with the bid package. Bids submitted without acknowledgement or without this Addendum may be considered non- responsive

_____ _____

Signature Name Of Business

SailFish Pier Dock Replacement
Garrison Bight Marina
Key West, Florida, Florida
Stantec Project No. 215612745

BID FORM

Bid unit prices stated in this proposal include all costs and expenses for labor, equipment, materials, contractor's overhead and profit. Unit prices for the various work items are intended to establish a total price for completing the project in its entirety. The Contractor shall include in the Bid price any work item and materials for which a separate pay item has not been included in the Bid Form. All work and incidental costs shall be included for payment under the several scheduled items of the overall contract, and no separate payment will be made therefore.

Item Description	Quantity	Units	Unit Price	Total
Base Bid				
Mobilization/staging and Demobilization, including City of Key West Permit	1	LS	$	$
Relocalization of existing boats to King Fish and return back to Sailfish Pier at end of project	1	LS	$	$
Demolition of Existing Wood and Concrete Pier and removal of all existing concrete spalling debris that has fallen or will fall from existing Pier	1	LS	$	$
Furnish and install Main Floating Pier (12'w by 40'l)	480	SF	$	$
Furnish and install Main Floating Pier (10'w by 170'l)	1700	SF	$	$
Furnish and install Finger Piers (4'wx35'l)	1400	SF	$	$
Furnish and install Piles (HSS 20.00 X 0.50) with tar epoxy coating (Exterior Only)	20	EA		
Furnish and install Mooring Piles (HSS 14.00 X 0.50) with tar epoxy coating (Exterior Only)	16	EA	$	$
Pile Collars	20	EA	$	$
Furnish and install Aluminum Access Ramp (5'wx30'l)	1	EA	$	$
Furnish and install accessories (Cleats: Main Pier/finger)	60	EA	$	$
Electrical System per Stantec Plans and Specifications	1	LS	$	$
Potable Water System per Stantec Plans and Specifications	1	LS	$	$
Sewer System per Stantec Plans and Specifications	1	LS	$	$
Fire System per Stantec Plans and Specifications	1	LS	$	$
As-builts/Product information and Warranty Certificate Binder	1	LS	$	$
Performance & Payment Bond	1	LS	$	$
Safety Act	1	LS	$	$
Allowance for unexpected debris to be removed by Contractor	1	LS	$5,000.00	$5,000.00
			Total Base Bid	$

SailFish Pier Dock Replacement
Garrison Bight Marina
Key West, Florida, Florida
Stantec Project No. 215612745
BID FORM

Item Description	Quantity	Unit	Unit Price	Total
Alternate Bid Item 1 (Piles)				
Apply tar epoxy coating to all piles (interior and exterior)	1	LS	$	$
Sub-total Alternate Bid Item 1				$
Alternate Bid Item 2 (Electrical)				
Replace G-Cable	1	LS	$	$
Sub-total Alternate Bid Item 2				$
Total Base Bid plus Alternate Bid Items 1 and 2				$

TOTAL LUMP SUM BID (**BASE BID)**

_____Dollars

(Amount written in words has precedence)

and_____ **Cents**

TOTAL :

LUMP SUM BID: (**BASE BID PLUS ALTERNATE BID ITEMS 1 &2)**

_____Dollars

(Amount written in words has precedence)

and_____ **Cents**

TOTAL :

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:

_____

Name

_____ _____ _____

Street City State Zip

_____

Name

_____ _____ _____

Street City State Zip

_____

Name

_____ _____ _____

Street City State Zip

_____

Name

_____ _____ _____

Street City State Zip

Surety

_____whose address is

_____ _____ _____
Street City State Zip

Bidder

The name of the Bidder submitting this Bid is _____

_____ doing business at

_____ _____ _____
Street City State Zip

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

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

_____ _____

_____ _____

_____ _____

If Sole Proprietor or Partnership

IN WITNESS hereto the undersigned has set his (its) hand this___day of_____20____.

_____
Signature of Bidder

_____
Title

If Corporation

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this___day of_____20___.

(SEAL)

_____
Name of Corporation

By: _____

Title: _____

Attest: _____
Secretary

END OF SECTION

16. FAILURE TO EXECUTE CONTRACT AND FURNISH BOND

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

17. PERFORMANCE OF WORK BY CONTRACTOR

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

Each Bidder must furnish with his Bid a list of the items that he will perform with his own forces and the estimated total cost of these items.

18. TIME OF COMPLETION

The time of completion of the work to be performed under this Contract is the essence of the Contract. Delays and extensions of time may be allowed in accordance with the provisions stated in the General Conditions. The time allowed for the completion of the work authorized is stated in the Bid

The term of this contract is 90 calendar days.

END OF SECTION

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

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

5.06 *Property Insurance*

Contractor

A. Unless otherwise provided in the Supplementary Conditions, ~~Owner~~ shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to

GENERAL SPECIFICATIONS

SAIL FISH PIER REPLACEMENT

Additional Requirements:

1. This Work must be completed according to the plans and these specifications in the contract, and within compliance with the conditions of the Florida Department of Environmental Protection (DEP), US Army Corps of Engineers (COE), and local authorizations. All work shall be performed in accordance with Occupational and Safety Health Administration (OSHA) standards for work in or over waters of the United States. Contractor will provide the OWNER with a Safety Plan detailing compliance.

2. ~~It is the CONTRACTOR'S responsibility to ensure that the layout of the Work will reuse as many of the existing piling locations as possible. The Contractor will provide a stakeout by a Professional Surveyor of the existing mooring piling locations. These locations will be coordinated with the floating dock manufacturer to ensure the proposed dock installation reuses as many of the previous locations as possible while adhering to the design parameters. Upon completion of construction, the Contractor will provide a post-construction record drawing, signed and sealed by a Professional Surveyor. The CONTRACTOR will furnish such stakes, equipment, tolls, and qualified City of Key West Tarpon Pier personnel as may be required for any additional layout of the Work, and for maintaining such staking as necessary for completion of the Work.~~

3. The geotechnical report indicates the potential for a hard substrate shallower than the pile embedment depth. Due to this subsurface condition, pre-drilling of the pile may be required in order to obtain the full embedment of the piles without cutting or splicing. The CONTRACTOR will perform any additional investigations that the CONTRACTOR deems necessary to determine the conditions of the substrate for the construction.

4. Special measures will be taken to prevent bilge pumpage or effluent, chemicals, fuels, oils, greases, and bituminous materials from entering the water.

5. Disposal of any demolition debris, materials, wastes, effluent, trash, garbage, oil, grease, chemital, etc. in and adjacent to the project site will not be permitted. If any waste materials are dumped in unauthorized areas the CONTRACTOR will remove the material and restore the area to the original condition before being disturbed. If necessary, contaminated ground will be excavated, disposed of as directed by the ENGINEER, and replaced with suitable fill material.

6. Permit drawings will be used in conjunction with technical specifications and site drawings. Consult these permit drawings and the existing permits for other details not shown on the construction drawings. All dimensions and conditions must be verified in the field. Any discrepancies will be brought to the attention of the ENGINEER before proceeding with the affected part of the work. All structures are designed to be self supporting and stable after completion. It is the CONTRACTOR'S responsibility to determine erection procedures and sequencing to insure safety of the structure and its components during erection. This includes the addition of necessary shoring, sheeting, temporary bracing, guys, and/or tie downs.

7. The CONTRACTOR will restore or replace, when and as directed by the ENGINEER, any public or private property damaged by his work, equipment or employees, to a

TS-2.0 Demolition and Disposal

TS-2.1 Demolition will include the WORK as shown in the permit and construction drawings. All piling must be removed at, or below, the mudline. All demolition material well be removed from the site and disposed of properly. Proper disposal is the responsibility of the Contractor. Demolition is subject to the coral relocation plan and permit.

TS-2.2 As a matter of project staging, removal of the finer piers located at the Kingfish Pier will be completed first to allow for the vessels moored at the Sailfish Pier to be relocated to the Kingfish Pier. Upon relocation of these vessels, demolition of Sailfish Pier can commence.

TS-2.3 Contractor should be aware that the existing pier is entirely concrete pile supported. In addition, sections of the pier consist of concrete decking.

TS-3.0 Professional Surveyor Stakeout and Record Drawings

TS-3.1 The Contractor will provide a stakeout by a Professional Surveyor of the existing mooring piling locations. These locations will be coordinated with the floating finger pier installation to ensure that the proposed finger pier alignment "shadows" the outboard mooring piling to prevent intrusion of the mooring piling into the slip mooring space.

TS-3.2 Upon completion of construction, the Contractor will provide a post-construction record drawing, signed and sealed by a Professional Surveyor. In addition, Contractor will provide two sets of all Operations/Maintenance manuals and warranty certificates in a three ringed binder and two sets on a flash drive.

TS-4.0 Floating Docks Construction, Materials, and Testing

TS-4.1 General Materials to be used for the construction of the floating docks are outlined as follows:

Dock Piling	14" or 20" (depending upon plan selected by client) diameter, 0.5" thick epoxy coated steel tubular piles as specified on the Construction Drawings
Floating Docks Materials	Aluminum floating docks will be installed as manufactured by GatorDocks (gatordock.com), TechnoMarine (technomarine.com), Crane International (gatordock.com), or StructurMarine (structurmarine.com). Alternate manufacturers may be quoted at the Contractor's option
Freeboard	24" for main dock and finger piers
Piling Guides	External to the floating system

Chases Minimum 6” deep by 12” both sides

TS-4.2 The design conditions for the floating docks will be as follows and assume that the facility is occupied:

Basin Design Depth	-7.5’ NAVD
Pile Elevation	+10.0’ NAVD
Pile Embedment	-28.0’ NAVD
Storm Surge	+5.6’ NAVD
Elevation of Applied Loads	+7.6’ NAVD
Wave Conditions	Negligible
Currents	Negligible
Live load	50 psf. – Distributed load 400lb – Point load
Dead Load	Based on specific system components and should account for utilities, marine growth, and all other support features

TS-4.3 The floating dock plans and material specifications will be submitted to the Engineer for approval prior to manufacturing of the aluminum floating docks. If the Engineer requires additional clarification of the methods or calculations, in order to satisfy himself of general conformance, the floating dock manufacturer will promptly provide the requested information. Delays in the project schedule due to inadequate or non-conforming floating dock and anchorage designs will not be grounds for project extension. The plans will include a dimensional layout of floating dock system with pilings, typical sections and details showing flotation, framing, decking, and connections, connection of gangway to the upland, and a signed and sealed letter of design compliance by a Professional Engineer registered in the State of Florida.

TS-4.4 The plastic pontoons will be linear low-density polyethylene such as Permafloat Floatation Drum as Manufactured by Cellofoam, or Engineer’s approved equivalent. The base material for all polyethylene shells will conform to the following minimum requirements: minimum density 0.937 g/cc per ASTM D-1505; minimum ultimate tensile strength of 2,560 psi per ASTM D-638; and minimum flexural modulus of 96,000 psi per ASTM D-790. They will be designed for a freeboard under dead load will be 24 inches (+/- 1 inch). The dead load plus a concentrated live load of 400 lbs applied vertically at any location on the main dock surface will not tilt the dock more than six degrees from horizontal or overstress the framing members. Dead load freeboard will be maintained within two inches of that identified in these specifications for a period of five years following installation.

TS-4.5 The dock structure will be constructed using aluminum alloy 6061-T6 and will be in accordance with AA "Specification for Aluminum Structures." All welds will be in accordance with AA "Specifications for Aluminum Structures". All bolts, nuts, and washers will be set square with connecting structural members and the nuts will be drawn tight. All screws, bolts, nuts, and lock washers will conform to ASTM A307 and will be Type 304 Stainless Steel. Lock washers

or other devices or techniques will be used to prevent nuts from loosening after being properly tightened. High strength bolts will be used where required in accordance with the American Institute of Steel Construction specifications "Structural Joints Using ASTM A325 or A490 Bolts." Finished metal members will be free from twists, bends, distortions, open joints, sharp edges, and burrs. Ends of exposed metal members will be rounded or beveled. All coping and mitering will be done with care.

TS-4.6 Any lumber used for mounting hardware, fendering, or other applications will be counter-bored wherever projecting bolt heads or nuts may damage boats or provide a hazard to pier users. Counter-boring will be sufficiently deep to permit installation of the bolts and nuts with washers well below the surface of the wood. The heads of dome head bolts may project above the surface. All exterior (visible) structural wood and wood fendering in the splash zone will be Southern Yellow Pine No. 1 (or approved equivalent) hand selected - no downgrades allowed - with a minimum CCA (Chromated Copper Arsenate) content equal to 0.6 pcf moisture content not to exceed 19% after treatment, KDAT or S-Dry. All submerged wood members will be treated to 2.5 pcf CCA. Interior (non-visible) structural wood will be minimum Southern Yellow Pine No. 2 (or approved equivalent) and will comply to the treatment and moisture requirements mentioned herein. Timber for decking will be naturally decay-resistant exotic wood species (IPE) or plastic composite manufactured by AZEK (weathered gray color). All IPE boards will be air dried to less than 16% moisture content prior to installation. Deck fasteners will be corrosion resistant stainless steel screws. All decking will be predrilled to prevent cracking or splitting of boards. Connections between floating pier modules or other elements such as lifting rings will not protrude above the level of the deck. Gaps between deck boards will be no less than 1/16 inch and no more than 1/4 inch. There will not be any gap in the walking surface of the floating piers that exceeds 1/2 inch. All deck surfaces will be level and properly drained so that water will not puddle on the deck surface. Adjacent dock modules will have less than 1/8-inch difference in elevation.

TS-4.7 Connections will be designed to permit removal and replacement of connectors without the necessity of removing other components for access. Connectors will be of materials that are easily available and will be positively contained so as to prevent their working free under normal conditions. All connections must be capable of transmitting all loads and forces imposed upon the structure. Any potential corrosive installation of dissimilar materials will be properly insulated to minimize or eliminate corrosion in the marine environment.

TS-4.8 Contractor will submit detailed record drawings for floating docks (including all floating docks, piles, accessories, and utilities), warranty, operations and maintenance manual(s), and listing of typical replacement parts, part numbers, and manufacturer contact information where applicable.

TS-5.0 Gangway Construction, Materials, and Testing

TS-5.1 The aluminum gangway is to be a low profile design with an integral hand railing system meeting ADA requirements and a 36" landing plate. It will be constructed using 6061-T6 aluminum with non-skid surfaces. The aluminum bolts, nuts, and washers will conform to the Federal Specification QQ-A-270a (1) as amended for aluminum alloy 6061-T6. Stainless steel bolts, nuts, washers, and screws where used will be type 18-8 (300 Series). A wear plate will be installed between the landing plate and the floating dock decking. Rollers for gangways will be UHMW polyurethane with black ultra-violet light inhibitor added. The gangway will be securely fastened to the floating dock and allowed to roll on a platform attached to the existing seawall cap.

TS-5.2 The gangway and transition plates will be designed to withstand a minimum uniform live load of 50 psf. applied vertically. Minimum loads for handrail and toe rail will be 250 lbs according to requirements of ADAAG Section 15.2. Gangways will be designed to incorporate the dead load weights of all utilities that traverse the gangway (see utility plans for additional detail and coordinate with utilities Contractor(s)). Additional dead load weight of gangway will be coordinated with the dock manufacturer to ensure adequate flotation under the gangway landing so that the landing area maintains the same freeboard as the rest of the floating docks. All connection and utility routes will be incorporated into the gangway design. Cable, hose, and pipe hangars will be of similar metal to the gangway and designed to support the maximum loaded condition of the utilities to minimize chafing, etc. Appropriate dielectric materials will be used to insulate dissimilar metals.

TS-6.0 Tubular Steel Piling

TS-6.1 Dock piling will be 14" or 20" (depending upon plan selected by client) diameter 0.5" thick epoxy coated steel piles as shown on the Construction Drawings. Piling tops will be set no lower than 9.0' NAVD, and embedment depth will be as shown on the Construction Drawings. Cutting, splicing, and extending of steel piling will not be allowed.

TS-6.2 Steel piles will be tubular steel minimum ASTM A252 Grade 50 seamless steel pipe. New steel piles will be 100% cleaned of biological growth, unsound coatings and rust, surface contamination (oils, grease, dirt), surface chloride contamination, and blasted in accordance with SSPC-SP 10, Near White Blast Cleaning. Coal tar epoxy coating will extend from the top of the pile to 2 feet below the mudline. In the event that the epoxy coating is damaged during handling or installation the Contractor will repair the epoxy coating in accordance with manufacturer's specifications. The pile coating will be a Two-Coat Coal Tar Epoxy-Polyamide System, in accordance with FDOT specification 560. Apply each coat at a dry film thickness of not less than 8 mils. Provide total system minimum dry film thickness of 16mils. Prior to coating the steel pile the surface will be prepared with a near white SP10 sand blast or better. The Contractor will grind all steel pile tops 0.5 ft on the inside and paint with a matching protective coating prior to attaching pile cones. After the epoxy coating has cured per the manufacturers

specifications the epoxy coated pile shall be painted with two coats of a Two-Part Linear Polyurethane (LP) Coating with gray pigmentation. Prior to coating the piles the Contractor will provide the Engineer specification sheets for proposed product and a dry sample to verify coloring is to the satisfaction of the Owner.

TS-6.3 The Contractor will provide the Engineer with a pile installation plan that includes the methodology, equipment used, and schedule.

TS-6.4 The geotechnical report indicates the potential for a hard substrate shallower than the pile embedment depth. Due to this subsurface condition, pre-drilling of the pile may be required in order to obtain the full embedment of the piles without cutting or splicing. All costs associated with the need to pre-drill in order to reach the prescribed embedment depth will be borne by the Contractor.

TS-6.5 The Contractor will keep accurate record of each pile driven which will include pile location, diameter, original length, ground elevation, final tip elevation, penetration in blows per foot for the last ten feet (if applicable), hammer data including make, type, and size (if applicable), any unusual pile behavior or circumstances experienced during installation. Within 15 days of completion, records will be turned over to the Engineer.

TS-6.6 Any pile which is cracked or broken because of internal defects or by improper handling or driving, or which is otherwise injured such that their structural capacity to withstand or transfer the design load to the foundation is impaired, or any pile driven out of proper location, will be removed and replaced. All work of removal and cost of replacement will be borne by the Contractor at no additional expense to the Owner.

TS-7.0 Dock Accessories

TS-7.1 Pile guides for floating docks will allow free vertical movement of the dock at all elevations, while minimizing damage due to normal dock movement caused by tides, boat wakes, water fluctuation, and seasonal winds. Piles and external pile guides will be installed in the locations as noted on the Construction Drawings. Where dock manufacturer does not require gussets for structural purposes, exposed pile guides will be framed with bumper and rub rail to protect vessels from impact damage. Finger pier end pile guides, where required for fingers, will be inset to the pier and not extend into the clear fairways indicated on the Construction Drawings. Pile guides will be of a multiple roller type and allow full vertical movement of the pier system without inducing binding or torsion into the system. Guide pile rollers and rub blocks be made of ultra-high molecular weight plastic. Rollers will be mounted on a stainless steel axle. The mounting bracket will be galvanized after fabrication. Rollers and rub blocks will be configured for simple replacement and be adjustable.

TS-7.2 Bumper strips will be extruded, non-marring, marine grade vinyl, white in color and similar or same as the fendering on Marline Dock. Each strip will have a minimum height of four inches, minimum thickness of 1/8 inch, and a minimum weight of 1.6 lb/lf. Outside corners will

Benthic Resource Assessment

Sailfish Pier Replacement Project

City Marina at Garrison Bight

1801 North Roosevelt Boulevard

Key West, FL 33040

FDEP 44-0116528-009

USACE SAJ-2015-02647

Prepared for:

City of Key West
Engineering Department
3140 Flagler Ave
Key West, FL 33040

Prepared by:

Terramar Environmental Services, Inc.
1241 Crane Boulevard
Sugarloaf Key, Florida 33042
(305) 304-4061
victoria.brisson@att.net

August 25, 2015

Introduction

The proposed project at Sailfish Pier, Key West, Florida involves the replacement of an existing public mooring facility (Figure 1). The replacement consist of replacing the existing pile-supported pier with a floating dock pier in effectively the same footprint of the existing facility with only minor adjustments in design to improve safety. The total number of slips will remain the same; the replacement will remain within the existing footprint and no new mooring slips will be added. The project has a total area of 3,000 square feet. Specific information regarding the project design are contained in the engineered plans dated July 22, 2015, prepared by Stantec (Attachment 1).

An assessment of the benthic resources which could potentially be impacted by the project was conducted on August 24, 2015. The objective of the benthic assessment was to assess and document the living marine resources on the state submerged land where the pier is proposed, and to document benthic resources adjacent to the project area. In addition, a specific-purpose survey for stony coral was performed to fulfill Florida Keys National Marine Sanctuary (FKNMS) requirements.

Methods

An in-water assessment of the project area was conducted on August 24, 2015 by a scientific diver experienced in conducting resource assessments of benthic habitats found in the Florida Keys. Water clarity was excellent, averaging 15 to 20 foot visibility. The survey area included the footprint of the proposed pier, all existing pilings and dolphins and a 15 foot buffer zone outside the proposed footprint.

A scientific diver swam the length of the footprint conducting a visual assessment of the seafloor and existing structures including the buffer zone. All existing pier supports and mooring piles were carefully evaluated for marine resources. Locations were recorded where benthic resources were observably different, e.g. where habitats changed. The percent cover for the observed benthic communities (e.g. seagrass cover, macroalgae cover) were categorized into discrete cover classifications by visual estimation using the following cover classes:

Description	Barren	Sparse	Moderate	Dense
Cover Class	0-1 %	1-25%	25-75%	75-100%

The data recorded included any significant change in habitat, the dominant habitat type, and the percent coverage. This scientific survey method provided a qualitative and quantitative assessment of the type and location of benthic resources found throughout the entire project footprint.

A visual survey was also conducted to document the presence of stony corals within project limits and surrounding buffer, and also specifically attached to any of the pier supports or mooring piles.

Reference photographs representing dominant benthic species, examples of seagrass communities and other applicable reference photographs were taken (Attachment 2).

Results

The seafloor beneath the pier and associated mooring area is composed of barren substrate, a deep silt component lacking observable attached benthic communities. No seagrass or algal communities were identified within the existing pier area.

In the secondary buffer area, scattered seagrass and algal patches are present on the seafloor. Seagrass was present mainly as widely scattered individual shoots and small patches of *Thalassia testudinum*. The greatest presence of seagrass was found laterally at the T-head of the existing pier. The small patches were observed as 5% cover and begin approximately 15 feet from the pier and extend north toward the existing wood piling. The patches were consistent on both ends of the T-head. Scattered shoots were also observed in areas on the eastern side of the pier waterward of the boat moorings. Large numbers of the upside-down jellyfish (*Cassiopea frondosa*) were present throughout the survey area, often forming dense mats on the seafloor.

The lack of seagrass and other marine resources within the footprint of the existing facility was not unexpected as large boats moored close together along the pier effectively block light penetration and the deep, loose silt substrates present a less than optimal environment for the formation of seagrass or hardbottom communities.

The pier supports and mooring piles associated with the Sailfish Pier were covered with a well-developed and diverse attached algal and sponge community. The coverage was estimated at 75-100% cover.

Coral Resources

No corals were observed in project area, within the buffer area, or attached to any of the pier supports or mooring piles.

Project Impacts

The proposed project as designed will have negligible impacts to the benthic resources; the replacement project is in the footprint of the existing facility, and no significant marine resources are present that would be impacted by the replacement project.

No seagrass or coral resources will be impacted by the project.

Construction will occur within the footprint of the existing facility and secondary construction impacts outside the footprint and not anticipated.

Best management practices (BMP's) will be implemented during construction including sediment control so that impacts to benthic communities within Garrison Bight are avoided.

Figure 1. Location of the proposed pier replacement at Sailfish Pier, Garrison Bight Marina, Key West, Florida.

Attachment 1: Engineered Plans

Attachment 2: Reference Photographs

Topside photo of Sailfish Pier showing numerous large houseboats moored close together.

Topside photo of Sailfish Pier showing numerous large houseboats moored close together.

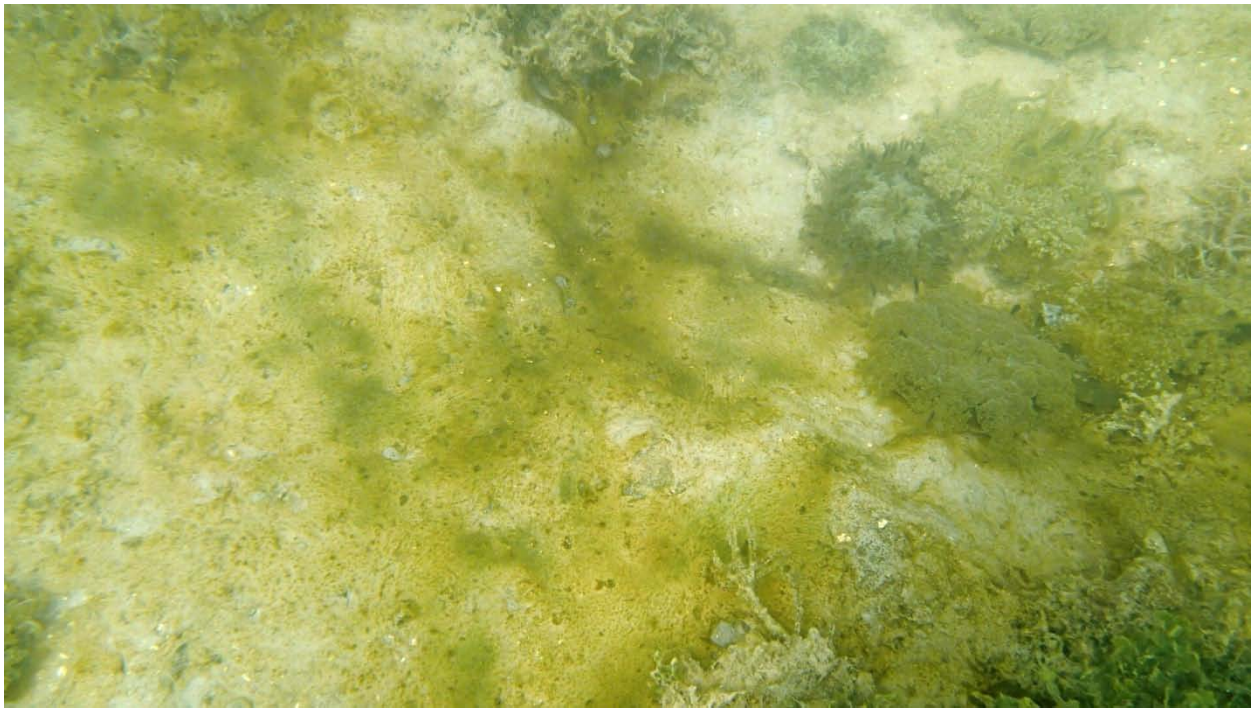


Photo of typical barren seafloor throughout the project area with numerous upside-down jellyfish (*Cassiopea frondosa)* present.

Photo of typical scattered turtlegrass (*Thalassia testudinum*) observed in the secondary buffer zone outside of the footprint of the project. Seagrass resources outside of the project footprint will be protected though best management practices.

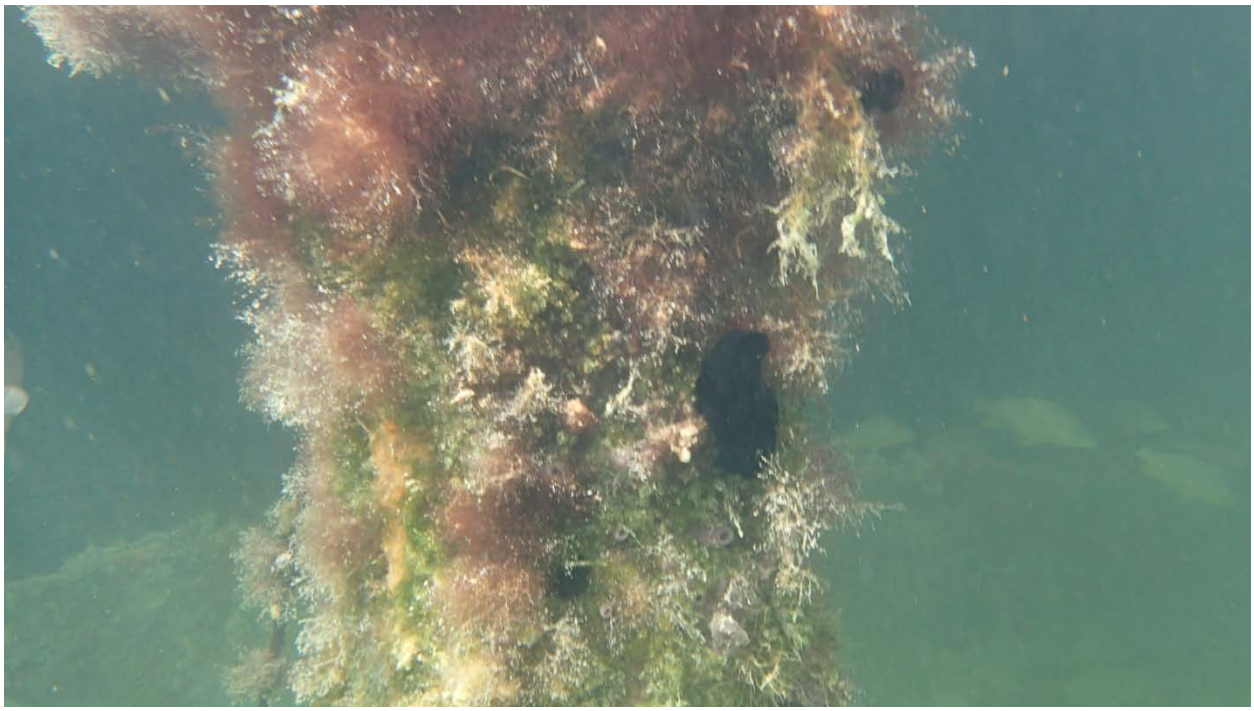
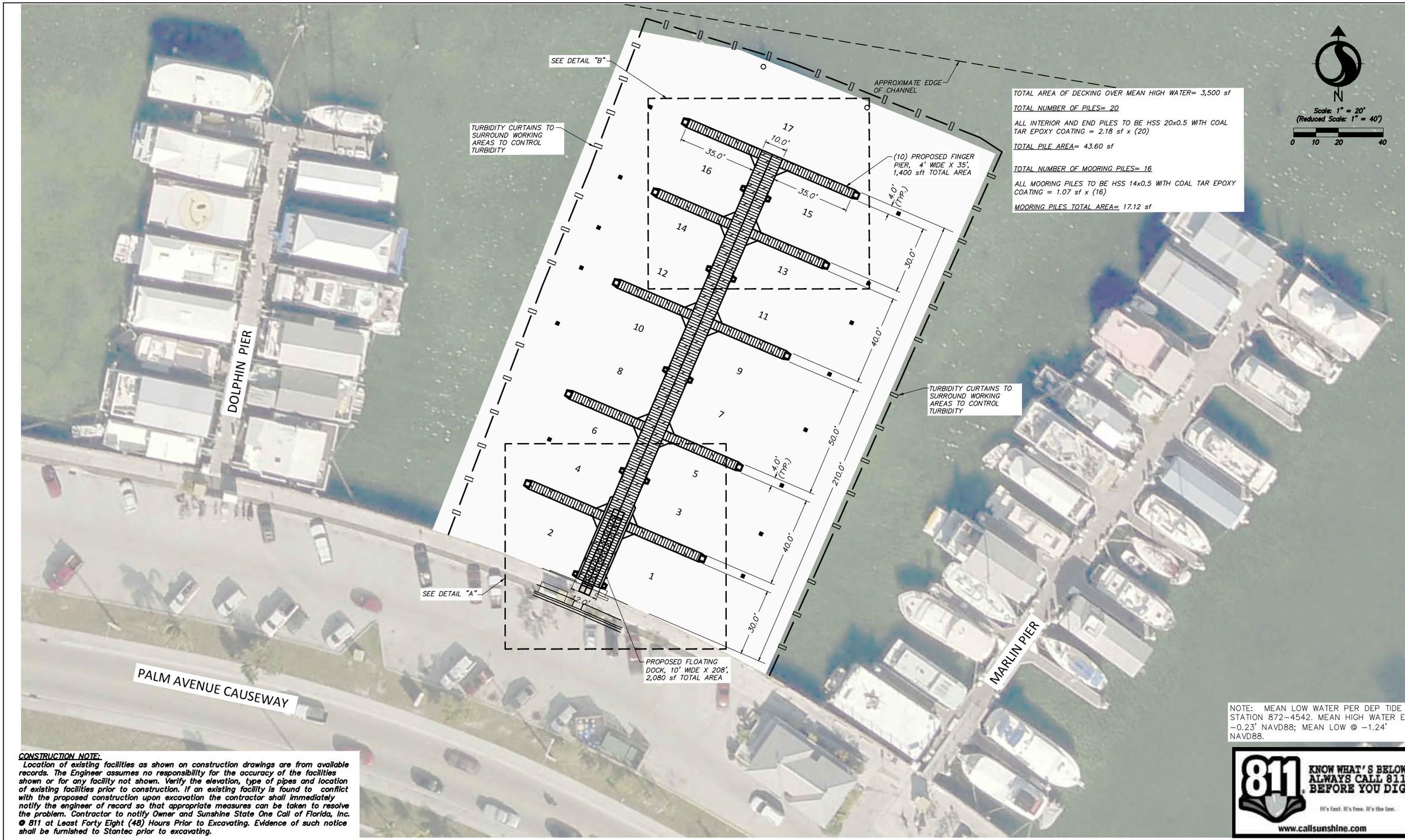


Photo of typical mooring pile with dense algal community attached. No corals were observed attached to pilings, probably due to competition from encrusting algae and sponges.

Photo of typical mooring pile with dense sponge community attached. No corals were observed attached to pilings, probably due to competition from encrusting algae and sponges.

Photo of typical pier support pile with dense algal community attached. No corals were observed attached to pilings, probably due to competition from encrusting algae and sponges.

Photo of typical pier support pile showing extensive damage. Replacement of the pier is needed to prevent a structural failure.



TOTAL AREA OF DECKING OVER MEAN HIGH WATER= 3,500 sf

TOTAL NUMBER OF PILES= 20

ALL INTERIOR AND END PILES TO BE HSS 20x0.5 WITH COAL TAR EPOXY COATING = 2.18 sf x (20)

TOTAL PILE AREA= 43.60 sf

TOTAL NUMBER OF MOORING PILES= 16

ALL MOORING PILES TO BE HSS 14x0.5 WITH COAL TAR EPOXY COATING = 1.07 sf x (16)

MOORING PILES TOTAL AREA= 17.12 sf

NOTE: MEAN LOW WATER PER DEP TIDE STATION 872-4542. MEAN HIGH WATER EL. -0.23' NAVD88; MEAN LOW @ -1.24' NAVD88.

CONSTRUCTION NOTE:

Location of existing facilities as shown on construction drawings are from available records. The Engineer assumes no responsibility for the accuracy of the facilities shown or for any facility not shown. Verify the elevation, type of pipes and location of existing facilities prior to construction. If an existing facility is found to conflict with the proposed construction upon excavation the contractor shall immediately notify the engineer of record so that appropriate measures can be taken to resolve the problem. Contractor to notify Owner and Sunshine State One Call of Florida, Inc. @ 811 at Least Forty Eight (48) Hours Prior to Excavating. Evidence of such notice shall be furnished to Stantec prior to excavating.

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Issued	By	Appd.	YY.MM.DD

Seal

CARLOS M. HERDOCIA, P.E.
REGISTERED ENGINEER NO. 47660
STATE OF FLORIDA

Consultants

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
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CITY OF KEY WEST
SAILFISH PIER DOCK REPLACEMENT
Key West, Florida

File Name:

DS	SC	DS	14.01.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

GEOMETRY PLAN

Project No. 215612745
Scale
Drawing No. C05
Sheet of 27
Revision

ORIGINAL SHEET – ANSI D HORIZ

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2016/07/11 10:02 AM By: Morales, Ted

SAILFISH PIER REPLACEMENT
City Marina @ Garrison Bight
ITB #010-16
Mandatory Pre-Bid Meeting SIGN-IN Sheet
March 9, 2016
2:30 PM

NAME / COMPANY	CONTACT #	EMAIL
Doug Bradshaw CKW	809-3792	DBRADSHAW@CITYOFKEYWEST-FL.GOV
David Hawthorne CKW	809-3982	DHAWTHORNE@CITYOFKEYWEST-FL.GOV
Karen Olson CKW	809-3803	KOLSON@CITYOFKEYWEST-FL.GOV
Sean Compel Stantec	305-445-2900	sean.compel@stantec.com
Carlos Herdocia stantec	3/445290	Carlos.Herdocia@stantec.com
SEAN MONEY KWHS	305 454-3121	KWHARBOR@GMAIL.COM
MIKE BULLOCK FL DREDGE & DOCK	305849023	MMBULLOCK.KW@GMAIL
DWIGHT DEVORE NEARSHORE ELEC.	305-294-3901	dwightdevore@yahoo.com
Paul Waters DNHI	305-797-1019	Paulw@dnhiggins.com
Dane Kelly/Kelly Brothers	239 482 7300	estimating@kellybros.net
KEARNS CONSTRUCTION/CHARLES KEARNS	786-295-1717	
JOE STANTON/Shoreline Foundation Inc.	954 985 0460	JSTANTON@Shorelinefoundation.com
John Keasns/Keasns Construction	John 305-975-8878	John Keasns@keasnsconstruction.com
Rick Varney/Esary Foundation	(305) 898 3965	RVARNEY@Esaryfoundationco.com