STATEMENT OF WORK

PORT AND MARINE SERVICES
TASK #72: ANGELFISH PIER – SURVEYING, GEOTECH, PRELIMINARY PLANS AND UTILITY COORDINATION, ENGINEERING FOR PERMITTING, BENTHIC ASSESSMENT AND ENVIRONMENTAL PERMITTING

Key West, FL

This proposal has been prepared in accordance with the current Environmental Engineering Services Agreement between the City of Key West and Tetra Tech, Inc, dated March 24th, 2020, RFQ 20-002. The work described herein will be performed on a Lump Sum and Time & Materials basis by Task in accordance with the fee schedule established in this agreement. Fees shall be not-to-exceed unless approved in writing by the City of Key West. This proposal is valid for a period of 90 days from the date on this page.

Prepared by: TETRA TECH, Inc.
January 30th, 2024

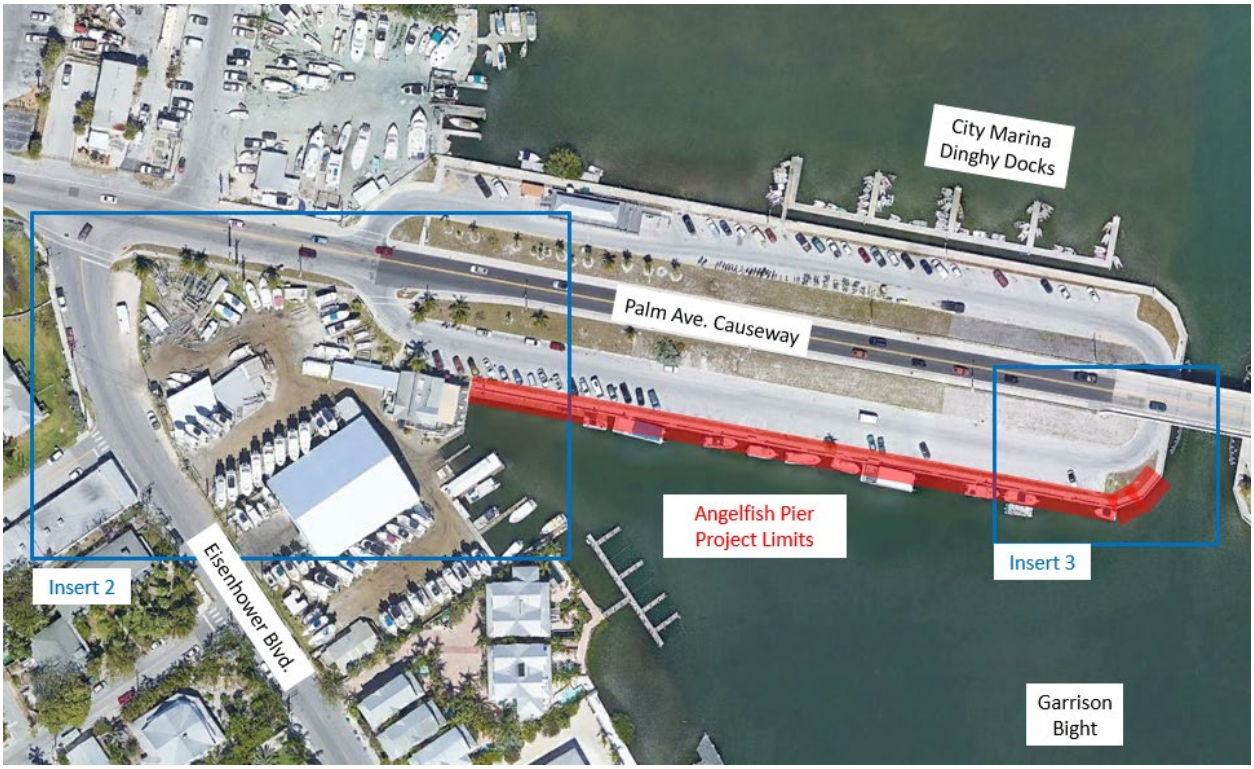
TETRA TECH, INC.

759 South Federal Highway, Suite 314 Stuart, FL 34994
Tel 772.781.3400 Fax 772.781.3411 www.tetratech.com

PROPOSAL / STATEMENT OF WORK

Tetra Tech, along with our subconsultants (Florida Keys Land Surveying (FKLS)) and Ardaman will work with the City of Key West Port and Marine Services (City) to perform Topographic & Bathymetric Surveying, Geotechnical Engineering, Preliminary Engineering and Utility Coordination, Engineering Design for Permitting, Scientific Diving and Benthic Assessment, Prepare Permit Applications and Process Permit Applications for replacement of approximately 645 LF of the Angelfish Pier Seawall and installation of a floating dock along 590 LF of that seawall, located at the City Marina in Garrison Bight along Palm Avenue Causeway in Key West, FL

PROJECT LIMITS



Insert 1: Limits of Seawall Replacement Shown in Red.

Insert 2: Western Limits of Seawall Replacement, and Eisenhower Blvd for Utility Sourcing

Insert 3: Eastern Limits of Seawall Replacement

Project Understanding

Tetra Tech understands that the City of Key West wishes to replace the subject concrete pile & panel seawall system with a steel sheetpile system within the limits noted above. The City also wishes to place a floating dock parallel to the seawall for side-tie mooring of boats. This proposal seeks to provide a 60% design, sufficient for permitting purposes to replace the seawall immediately waterward of the existing seawall for the limits shown above and construct a marginal floating dock parallel to the seawall within the limits shown above.

Tetra Tech proposes to support the project through the following Scope of Services:

Task 1 –Surveying (Topographic & Bathymetric)

Tetra Tech will work with Florida Keys Land Surveying (FKLS) to perform Topographic & Bathymetric Survey illustrating the improvements adjacent to the existing seawall at Angelfish Pier.

- FKLS will locate the approximate R/W line / property line between the City of Key West and FDOT R/W
- FKLS will locate the upland parking lot and the drive aisle.
- FKLS will locate the MHW line on the existing seawall with the elevation
- FKLS will attempt to the best of their ability to locate the floating dock supports *(see note (1) below)
- FKLS will locate the existing handrail and gaps in the said handrail
- FKLS will locate visible above ground utilities immediately adjacent the project location on Eisenhower Drive and Palm Drive where applicable.
- FKLS will locate the bridge fenders on both sides of the access channel under the bridge with a dimension between the said fenders.
- Bathymetry on the mudline, out from the existing seawall 10’ from seawall and 20’ from the seawall.
- Horizontal coordinates will be referenced to grid north, based on the 2011 Adjustment of the North American Datum of 1983 (NAD 83/2011), of the Florida State Plane Coordinate System (Transverse Mercator Projection), East Zone.
- Elevations will be in feet and based on the National Geodetic Vertical Datum of 1929 (NGVD 1929).

Note (1) – If necessary, Tetra Tech to assist FKLS with these tasks by supplying a diver and or dive team with communication capabilities (during Task 5 – Scientific Diving and Benthic Assessment) to work under the existing floating dock and/or existing seawall cap and document and communicate items back to the FKLS field crew to be able to accurately map items under the floating dock and seawall cap. FKLS will not have field crew personnel in the water at any time for this survey work.

(1) Topographic & Bathymetric Surveying: $ 15,228

Task 2 – Geotechnical Engineering

Tetra Tech will work with Ardaman to perform a subsurface soil exploration at Angelfish Pier. The purpose of the work is to obtain general subsurface soil information for Tetra Tech to use in designing the proposed seawall replacement and the piles for anchoring the floating dock system.

Field Exploration

Ardaman proposes to perform three (3) Standard Penetration Test (SPT) borings to a depth of 40 feet at accessible locations near the proposed seawall replacement. The borings will be performed with a truck-mounted drill rig and support truck in general accordance with the procedures recommended in ASTM D-1586. Please note that there will be signs of completed work (boreholes, tire ruts, drilling fluids, soil cuttings, etc.). The groundwater table level will be measured (if encountered), and the boreholes will be collapsed/backfilled with existing material at the site upon completion of the field program. The surface of the boring will be patched with asphalt cold patch if performed through existing pavement. We do not anticipate the need for rock coring services and therefore has not been included in our proposal. We assume that the drill rig can be parked on City of Key West property when it's not in use.

Considering the location of the roadway, we will provide only minimal traffic control measures (warning signs, cones, etc.) during the performance of our field work. If it is determined that the field exploration work cannot be safely performed without a formal Maintenance of Traffic (MOT) plan with partial and/or periodic lane closures, we will utilize a third-party MOT for those services company and those estimated costs can be provided if deemed necessary.

Prior to the mobilization of our drilling equipment, we will notify Sunshine State One-Call of Florida, Inc. (SSOCOF) of our planned exploration to allow affected utility companies the opportunity to mark the location of buried utility lines in the proposed exploration areas. The locating process will require a lead time of 3 to 5 business days. We cannot take responsibility for damages to private underground lines or structures and/or underground services which do not subscribe to SSOCOF; their locations should be provided by the client prior to commencement of the field work. Based upon the proposed location of the borings, Ground Penetrating Radar (GPR) does not appear to be necessary to safely drill the site and therefore, was not included in our proposal.

Laboratory Testing

Gradation, moisture content, and organic content tests will be performed on select samples if deemed necessary. The number of laboratory tests will be determined upon completion of the soil borings and will depend on the nature of the encountered soils. All laboratory tests will be performed in accordance with applicable ASTM standards.

Engineering Analysis and Report

Upon completion of our field exploration and laboratory testing program, an engineering data report will be issued presenting the findings from our exploration and our recommended soil properties for design.

Assumptions

1. Access to the boring locations is to be readily available to our drilling equipment
2. Undisturbed samples and consolidation tests on fine-grained soils are not budgeted in the total cost.
3. Neither Tetra Tech nor Ardaman will not take responsibility for damages to underground structures and/or services that are not located by Sunshine State One-Call
4. Exploration or evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface is not included.

(2) Geotechnical Engineering: $ 14,677

Task 3 – Preliminary Plans and Utility Coordination

1. Upon receipt of the survey, Tetra Tech will prepare preliminary (30% conceptual) plan set for the seawall replacement that depict the project limits and reference the intended replacement. The project design will match the survey datum of NGVD 1929. The anticipated 30% conceptual plan set would include the following:
    a. Cover Sheet with Vicinity Map
    b. Existing Conditions Plan
    c. Proposed Conditions Plan depicting new seawall waterward of existing along with floating dock system with anchoring piles.
    d. Typical Conceptual Section of Seawall Replacement
2. Plans will depict removal of the existing fixed dock along Angelfish Pier.
3. Tetra Tech will show a new floating dock within the limits noted above. The floating dock will be accessible by 3 or 4 gangways within the project limits, at the City's discretion.
4. Tetra Tech will create a design ticket with Sunshine 811 and distribute the plan set to all responding utilities requesting confirmation of the presence or absence of utilities in the area. Any responding utility as-builts will be incorporated into future plan sets and design considerations. Should utilities need to be relocated, an additional authorization will be required.
5. Tetra Tech will coordinate with the City Engineering Department for as-built records of utilities within the vicinity of the project, particularly along Eisenhower Blvd., for opportunities to bring water, sewer, and electric service to the project site. Any existing as-built record utilities will be added to the plan set.
6. Although not included with this proposal, information gathered as part of this phase will be used in (a) subsequent task order(s) to design the required utility services to Angelfish pier.

(3) Preliminary Plans and Utility Coordination: **$ 18,124**

Task 4 – Engineering for Permitting

Tetra Tech will conduct a structural analysis based upon the results of the Ardaman geotechnical report and surveying efforts and select a sheetpile solution tailored to fit the project's unique requirements. Tetra Tech will develop a set of 60% permit drawings to be used in the preparation of permit applications. These drawings may be refined pending any comments received from the City or the regulatory agencies. We assume up to one (1) round of revisions for each agency (FKNMS-NOAA, FDEP and USACE) and one (1) round of revisions from City review, to be incorporated into the plan set concurrently.

Drawings will be focused on the replacement of the seawall with a cantilever steel sheet pile wall with a reinforced concrete cap. Should tie-back rods or other lateral reinforcement be required, they may be designed in a subsequent authorization. The elevation of the replacement seawall top-of-cap will be at the existing seawall cap elevation unless otherwise directed by the City.

The floating dock will be replaced with a floating dock connected at three (3) or four (4) locations by a gangway system at the discretion of the City. The floating dock and gangway system will be per standard manufacturer details (Ravens, Bluewater, Gator, etc.) Although not included with this proposal, the floating dock may be expandable to future finger piers as part of a future work effort. Tetra Tech plans will show the presence of existing utilities within the project limits, however, water, sewer, electric and fire suppression will be designed under a future authorization.

Tetra Tech will perform calculations sufficient to design the floating dock anchor pilings (anticipated to be either timber or concrete pilings). Tetra Tech will incorporate the gangway systems per manufacturer's standard details with sufficient length to be ADA compliant pursuant to marina gangways.

The anticipated 60% permanent seawall replacement permitting plan set will include the following:

1. Cover Sheet with Vicinity Map
2. Soil Boring Logs
3. Existing Conditions Plan
4. Proposed Conditions Plan depicting new seawall waterward of existing seawall and new floating dock system waterward of the seawall.
5. Typical Section(s) of Seawall Replacement and floating dock design
6. Opinion of Probable Construction Cost

(4) Engineering for Permitting: **$ 33,148**

Task 5 – Scientific Diving and Benthic Assessment

The benthic resource survey will be performed by a standard SCUBA team of scientific divers as required by the Florida Keys National Marine Sanctuary. Tetra Tech will coordinate with the Florida Keys National Marine Sanctuary to perform the certified resource survey for the permitting process and prepare a written report cataloging the resources and showing their position and size along the face of the existing wall and within 5 LF of the wall for the length of the project. This resource survey will be presented to NOAA for comment and will ultimately be used during the permitting process with FDEP and the USACE.

This cost includes the preparation of the benthic resource survey report with mitigation plan but does not include the physical coral relocation or mitigation. Our mitigation plan will need to be reviewed by NOAA before any mitigation can be performed. It is expected that the benthic resource survey will take 2 days of field time plus two days of travel time.

(5) Benthic Assessment: **$ 45,380**

Task 6 – Prepare Permit Applications

Upon completion of the 60% permitting drawings, Tetra Tech will prepare and submit a permit application for a Verification of Exemption to the Florida Department of Environmental Protection (FDEP) and an application for an Nationwide Permit (NWP-28) to the U.S. Army Corps of Engineers (USACE). Tetra Tech will provide the USACE package to FKNMS-NOAA to expedite their portion of the USACE review. This fee includes up to a total of $500 in permit application fees (paid by Tetra Tech) at the time of submittal.

(6) Prepare Permit Applications: **$ 9,528**

Task 7 – Process Permit Applications

Tetra Tech will process the permit applications through FDEP and the USACE. No coral relocation services are proposed as part of this scope of services. Should these services be required by the permitting agencies, a separate scope and budget can be prepared. We have budgeted up to $5,000 of coral mitigation fees for this task and $500 in permit application fees. Should additional coral mitigation fees be required a separate scope and budget can be prepared.

Tetra Tech cannot guarantee the permits will be issued or the length of the review process. It is expected that the permit processing could take over six months to complete. This application processing task includes time for the permit processing of the applications and preparation of one (1) round of required requests for additional information (RFIs).

(7) Process Permit Applications: **$ 15,028**

PROJECT ASSUMPTIONS

1. Water and Sewer mains are located in Eisenhower Dr. between Palm Ave. and Angela St.
2. Up to one (1) round of plan revisions for each permitting agency.
3. Up to one (1) round of plan revisions following receipt of City comments.
4. The City will be responsible for supplying Tetra Tech with any water, sewer, fire or electrical utility demand requirements for the project.
5. Only one diving mobilization will be required.
6. The City of Key West is to provide a city employee familiar with the underground utilities in the area to assist with locating underground lines that cannot be visually seen on-site for the duration of the utility survey field work. No excavation will be performed by Tetra Tech or its subcontractors.
7. The City owns the Garrison Bight submerged lands and therefore no submerged lands lease work is required.
8. Any non-standard manufacturer dock or seawall details required by the City will be communicated to Tetra Tech by the City prior to the start of design. This includes decking, railings, or other special requirements.
9. The proposed floating dock will be for side-tie vessels; no mooring piles will be required.
10. The intended use of the floating dock will be for side-tie for transient vessels.

PROJECT EXCLUSIONS

This proposal does not include the following services, which may be provided under separate authorization:

- Structural assessment
- Ground penetrating radar
- Coral relocation
- Mitigation Fees beyond $5,000
- Permitting fees beyond $500
- Project phasing
- Preparation of construction documents including specifications
- Final engineering
- Design of barriers, fish carving stations, locations of cleats, fenders, or features beyond the seawall, cap, and floating dock and piles to anchor the floating dock.
- Finger piers off or mooring pilings for the floating dock
- City or County permitting
- Utility engineering and/or utility permitting
- Design of pedestals

- Fire flow calculations or testing
- Bid support
- Services During Construction

Task	Description	Amount	Terms
1	**Surveying**	$ 15,228	LS
2	**Geotechnical Engineering**	$ 14,677	LS
3	**Preliminary Plans and Utility Coordination**	$ 18,124	T&M
4	**Engineering for Permitting**	$ 33,148	T&M
5	**Scientific Diving and Benthic Assessment**	$ 45,380	T&M
6	**Prepare Permit Applications**	$ 9,528	T&M
7	**Process Permit Applications**	$ 15,028	T&M
	TOTAL	**$ 151,113**	

COST MODEL

CITY OF KEY WEST			TASK 01		TASK 02		TASK 03		TASK 04		TASK 05		TASK 06		TASK 07		TOTAL	
ANGELFISH PIER DESIGN & PERMITTING			SURVEYING		GEOTECHNICAL ENGINEERING		PRELIMINARY ENGINEERING AND UTILITY COORDINATION		ENGINEERING DESIGN FOR PERMITTING		SCIENTIFIC DIVING AND BENTHIC ASSESSMENT		PREPARE PERMIT APPLICATIONS		PROCESS PERMIT APPLICATIONS			
NAME	TITLE	UNIT RATE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE
TETRA TECH STAFF																		
Dave Prokham	Proj/Sci/Planner Senior Staff III	$ 185.00	15.0	$2,775	15.0	$2,775	32.0	$5,920	72.0	$13,320	24.0	$4,440	16.0	$2,960	16.0	$2,960	190.0	$35,150
Lisa Canty	Proj/Sci/Planner Senior Staff II	$ 175.00						$860	4.0	$860	40.0	$7,000					40.0	$7,000
Tom Mueller	Senior Consultant I	$ 215.00					4.0										8.0	$1,720
Nicole Goldy	Proj/Sci/Planner Staff IV	$ 130.00																
Francisco Martinez	Proj/Sci/Planner Senior Staff I	$ 155.00					72.0	$11,160	120.0	$18,600			40.0	$6,200	40.0	$6,200	272.0	$42,160
Pat Zuloaga	Project Manager	$ 230.00									40.0	$9,200					40.0	$9,200
Mike Mendoza	Proj/Sci/Planner Staff IV	$ 130.00																
Rob Baron	Proj/Sci/Planner Senior Staff IV	$ 195.00									80.0	$15,600					80.0	$15,600
Lori Boberg	Project Support Services II	$ 92.00	4.0	$368	4.0	$368	2.0	$184	4.0	$368	2.0	$184	4.0	$368	4.0	$368	24.0	$2,208
Caprice Warren	Project Support Services IV	$ 145.00	1.0	$145	1.0	$145					4.0	$580					2.0	$290
Ana McDonald	Project Support Services Manager	$ 172.00															4.0	$688
Megan Reising	Proj/Sci/Planner Senior Staff II	$ 175.00																
	-	$ -																
	-	$ -																
TOTAL LABOR COST			20.0	$3,288	20.0	$3,288	110.0	$18,124	200.0	$33,148	190.0	$37,112	60.0	$9,528	60.0	$9,528	660.0	$114,016
EXTERNAL SUBCONTRACTOR																		
Surveyor		$ 11,940.00	1.0	$11,940													1.0	$11,940
Geotech		$ 11,389.00			1.0	$11,389											1.0	$11,389
																	-	
																	-	
																	-	
																	-	
TOTAL EXTERNAL SUBCONTRACTOR			1.0	$11,940	1.0	$11,389	-	-	-	-	-	-	-	-	-	-	-	$23,329
TRAVEL																		
R/T Airfare		$ 500.00									550.0	$360					-	$360
Mileage		$ 0.655									13.0	$1,040					550.0	$1,040
Rental Car w/Fuel		$ 80.00									18.0	$900					13.0	$900
Misc. Travel Costs (gas, parking, tolls)		$ 50.00									18.0	$2,340					18.0	$2,340
Lodging		$ 130.00									18.0	$1,188					18.0	$1,188
Meals & Incidental Expenses		$ 66.00															18.0	$1,188
TOTAL TRAVEL COSTS												$5,828						$5,828
OTHER DIRECT COSTS / RENTAL EQUIPMENT / LABORATORY																		
Shipping		$ 10.00															-	
Misc. Printing & Supplies		$ 100.00									4.0	$400					4.0	$400
Client Mitigation Fee Budget		$ 5,000.00															1.0	$5,000
Boat Fuel		$ 150.00									4.0	$600					4.0	$600
Permit Fees		$ 500.00															1.0	$500
Dive Equipment - Air Fills		$ 45.00									32.0	$1,440					32.0	$1,440
																	-	
																	-	
TOTAL OTHER DIRECT COSTS												$2,440						$7,940
TETRA TECH OWNED EQUIPMENT																		
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TOTAL TT EQUIPMENT																		
GRAND TOTAL			$15,228		$14,677		$18,124		$33,148		$45,380		$9,528		$15,028		$151,113	