City of Jacksonville, Florida

Lenny Curry, Mayor

Department of Public Works
Engineering & Construction Management Division
214 N. Hogan Street, 10th Floor
Jacksonville, FL 32202
(904) 255-8762
www.coj.net

ONE CITY. ONE JACKSONVILLE.

June 23, 2017

TO: Gregory W. Pease, Chairman
Professional Services Evaluation Committee

THRU: John P. Pappas, P.E.
Director

FROM: Tom Fallin, P. E., Chief
Engineering and Construction Management Division

Thomas H. Goldsbury, P.E., C.B.O., Chief
Building Inspection Division

SUBJECT: P-14-17 Professional Design Services for Jacksonville Beach Pier – Review/Design

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The subcommittee has negotiated with the consultant selected for Professional Design Services for Jacksonville Beach Pier resulting in the Scope of Services, Exhibit A and Contract Fee Schedule, Exhibit B, attached for Phase 1- Study.

Accordingly, this is to recommend that the City of Jacksonville enter into a contract with Reynolds, Smith & Hills for Phase 1 - Study, that includes the attached Scope of Services identified as Exhibit "A" and Fee Schedule identified as Exhibit "B". For review and design during the Phase 1 Study, a lump sum amount of $205,456.78; for misc. reimbursable expenses (travel, reproduction, courier, etc.) a not to exceed amount of $111.35; for barge and crew contingency stand-by time a not-to-exceed amount of $31,320.00; with the maximum indebtedness of the City pursuant to this agreement is $236,888.13; and a contract expiration date of November 30, 2018. All other terms and conditions of the Contract shall be as provided in the Request for Proposals and the Department of Public Works Prototype Agreement for professional services, as applicable.

THG

Attachments: Exhibits A & B

cc: Lori A. West, Engineering Contract Specialist

Exhibit A

SCOPE OF SERVICES

RFP #P-14-17: Professional Design Services for Jacksonville Beach Review, Design – Phase I: Study Department of Public Works

CITY OF JACKSONVILLE, FLORIDA

I. SCOPE OF PROJECT

1. The intent of the project is for RS&H Inc. (RS&H), herein called the "Consultant", to perform a comprehensive analysis and study to determine the magnitude of the forces that damaged the Jacksonville Beach Pier (Pier) caused by the Hurricane Matthew storm event for the City of Jacksonville, herein called the "Client". These forces will be compared to the original design criteria and the original design of the Pier.

2. It is intended that the Consultant's services will result in a report providing:

   a) an evaluation of the design forces likely to have been used for the Pier;
   b) the forces the Pier experienced during Hurricane Matthew;
   c) recommendations on the design criteria for the design of the Pier reconstruction and repairs, most importantly the specific design storm event intended for use; and
   d) approximate limits of regions requiring reconstruction and repair.

3. In addition, RS&H understands that the City desires to open portions of the Pier for public use. RS&H will visit the site and also use assessments from previous field visits and previously collected field data from our January 27, 2017 Inspection Report in order to recommend the limits along the existing Pier that appear structurally sound to allow unrestricted public access. This recommendation will be made based on readily detectible flaws and whether the Pier appears in the same condition as prior to the damaging storm event.

   The City understands that detection of hidden flaws and structural analysis of any kind is outside the scope of basing this recommendation. This unrestricted limit recommendation may also require minor repairs which will be included in the recommendation provided. Also included will be conceptual guidelines on a physical barrier to prevent the public from accessing restricted areas. It is the sole responsibility of the City to secure the areas deemed unsafe for public access.

4. Scope of Work will include:

   A. **Coastal Investigation and Analysis (to be performed by Intera Incorporated)**

   Intera Incorporated (INTERA) will perform a comprehensive Coastal Analysis determining the return period of the Hurricane Matthew event. INTERA's Scope of Services and Fee Proposal is included as "Attachment A" and is summarized below:

   - Data Collection and Synthesis necessary to hindcast Hurricane Matthew
   - Model Development and Calibration
   - Hurricane Matthew Hindcast Data Analysis
   - Develop Sea State Conditions, Wave Forces and Scour Analysis for the Existing Pier based on Hurricane Matthew.

EXHIBIT A

B. **Geotechnical Investigations (to be performed by American Vibracore Services)**
American Vibracore Services (AVS) will perform geotechnical investigations and testing, provide soil properties for use in structural analyses and provide recommendations relating to the proposed foundation. AVS's Scope of Services and Fee Proposal is included as "Attachment B" and is summarized below:

- Perform four (4) core borings from a water-based platform
- Perform testing on soil samples obtained
- Provide soil properties for foundation analysis

C. **Structural Evaluation and Design Recommendations**
RS&H will use the results from the Coastal Analysis and the Geotechnical Investigation to analyze the as-built structure against the loads induced by Hurricane Matthew.

The software, FB-Multipier, will be used to analyze the foundations with respect to loadings and soil conditions.

Due to variations in wave heights and forces, soil properties, shoreline depths, and pile embedment into the shoreline along the length of the 1300 ft. pier, four (4) pile locations will be analyzed.

The structural evaluation is further summarized below.

- Analyze the as-built structure using the wave forces from the results of the Hurricane Matthew hindcasting.
- Provide the conceptual structural performance of the existing pier for Hurricane Matthew storm event to the City.
- Coordinate with the City to assist in understanding acceptable structural performance and assist in selecting the design storm that meets their budget, performance and risk goals for the project.
- Develop final design criteria, in close coordination with the City, for the repair and reconstruction of the Pier.
- Based upon the final design criteria, provide recommendations regarding which sections of the pier are suitable as-is, which sections require repair and/or strengthening; and which sections require removal and replacement.

D. **Deliverables**
- Letter Report containing recommendation of portions of the Pier that are safe for public access, repair recommendations and physical barrier recommendations.
- Coastal / Hydraulic Report.
- Geotechnical Report
- Structural Evaluation Report outlining recommended final design criteria and the approximate sections of the Pier that require repair or replacement.

5. Items <u>not included</u> in the Scope of Work are excluded:
   a) The following items are Specifically Excluded from the Scope of Work: Specific Repair Plans or Details, Physical barrier design and implementation, Environmental Assessment, Analyzing additional storm events, FEMA Coordination and Construction Cost Estimates. These items will be in Phase 2 – Design.

EXHIBIT A

6. Additional Services can be provided, if necessary, by negotiated supplemental agreements.

7. Assumptions and information to be provided by the City as it becomes available:
   a) Existing surveys from recent projects including US Army Corps of Engineers' Beach Renourishment Project and post-storm surveys.
   b) The City will be responsible for determining the suitability for reopening the Concession / Security Building.
   c) The City will select a design criteria for the design of the Pier reconstruction/replacement.

II. TIME SCHEDULE

1. Recommendation on portion of Pier that can be opened to Public Access – 7 days from Notice to Proceed (NTP)
2. Coastal / Hydraulic Analysis – 10-12 weeks from NTP
   a) Data Gathering / Model Development / Prelim. Results to RS&H: 6-8
   b) Final Report: 4 weeks after 2.a.
3. Geotechnical Investigation – 6 weeks from NTP.
4. Structural Evaluation and Recommended Final Design – 14-16 weeks from NTP
   a) Structural Evaluation to begin 6-8 weeks after NTP (once the Geotechnical and preliminary Coastal / Hydraulic results are provided).
   b) Structural Evaluation of Existing Pier for Hurricane Matthew storm event – 4 weeks after Schedule Task 4.a.
   c) Determination of Design Criteria for Pier Structural Evaluation of Conceptual Foundations for multiple storm events – 1 weeks after Schedule Task 4.b.
   d) Final Report – 3 weeks after Schedule Task 4.c.

III. FEE

1. All work will be performed for a Total Fee of $236,888.13 broken down as follows:

   a) Lump Sum of $205,568.13 for Design and Analysis Fee, Geotechnical Investigation, and Coastal and Storm Force Evaluation.
   b) A contingency Limiting Amount of $31,320.00 to cover the cost of idle equipment and mobilized crew due to unforeseen weather and sea conditions. ($5,220.00 per day for a maximum of 6 days.)

IV. NOTICE TO PROCEED

No work on this project shall be performed until a contract has been executed and a NTP is issued which specifically authorizes such work, signified by a signed agreement with the Client.

Exhibit A

ATTACHMENT "A"

WORK PROPOSAL

JACKSONVILLE FISHING PIER DESIGN
FOR
RS&H
10748 DEERWOOD PARK BLVD SOUTH
JACKSONVILLE, FL 32256

By

INTERA INCORPORATED
9550 REGENCY SQUARE, SUITE 906
JACKSONVILLE, FLORIDA 32225

INTERA
GEOSCIENCE & ENGINEERING SOLUTIONS

JUNE 2017

EXHIBIT A

JACKSONVILLE FISHING PIER DESIGN

Introduction:

The Jacksonville Beach Fishing Pier sustained significant damage during the passing of Hurricane Matthew storm event. The Department of Public Works of the City of Jacksonville (COJ) has contracted with the RS&H Team to design either repairs or a partial/complete replacement of the pier. The scope of the project is divided into two phases. The first phase evaluates the failure of the existing pier during Hurricane Matthew and develops the design conditions for the new pier. The second phase employs the design conditions developed in Phase 1 to design the new pier. This scope details the tasks required to complete Phase 1.

Assumptions:
We based our scope of services on the following assumptions:

1. INTERA will employ available bathymetry and topography data
2. INTERA will calibrate the hindcast model to available data
3. RS&H will provide geotechnical data necessary for calculating cross shore erosion and structure induced scour.

The tasks required to provide the design conditions include the following:

Task 1. Data Collection and Synthesis

In addition to a site visit, INTERA will collect information and data necessary to develop, verify, and hindcast Hurricane Matthew. This includes aerial photographs, bathymetry, topography, shorelines, hurricane high water marks (HWM), tide/wave gage data, and wind and pressure fields for Hurricane Matthew.

INTERA will collect data (water surface elevation (still water), wave conditions, and wind speeds) necessary to complete the return period analysis of Hurricane Matthew. These data include the FEMA Flood Insurance Study (either the effective or preliminary), USACE Wave Information Studies data (WIS), and ASCE wind speeds.

Task 2. Model Development and Calibration

INTERA will develop a SWAN+ADCIRC model mesh that encompasses the Western North Atlantic, Caribbean Sea, and the Gulf of Mexico with high

resolution along the coast of Jacksonville. The inland extent of the mesh will be determined by high water marks from Hurricane Matthew (if available) and local topography. Topography and bathymetry will dictate the model mesh resolution. INTERA will perform a limited calibration with Hurricane Matthew simulations compared to available HWM and tide/wave gage data recorded during Hurricane Matthew.

Task 3. Hurricane Matthew Hindcast Data Analysis

INTERA will employ the results of the hurricane hindcast at the pier location, FEMA still water elevations, USACE wave conditions, and ASCE wind data to determine the return period of each component during Hurricane Matthew.

INTERA will extract still water elevations, wave heights and periods, and wind speeds to develop the eroded profile and sea state during Hurricane Matthew. SBEACH modeling and local scour equations will provide the eroded profile along the pier alignment. INTERA's PBM model will provide the wave forces on the superstructure and Morison's Equation will provide the wave forces on the substructure. The results will provide the structural engineers the data to determine the mode(s) of failure of the existing pier.

Task 4. Quality Assurance/Quality Control and Coordination

This task assumes multiple reviews on this project. INTERA will perform internal QAQC of all its work and reporting for this project. We assume other reviews may originate from RS&H as well as reviews by the COJ. We anticipate addressing one review of the draft report from each entity (RS&H and COJ).

Coordination will involve contract administration and regular teleconferences with RS&H as well as expected consultation on coastal engineering issues during the design process.

Task 5. Report

INTERA will provide a report detailing the methods and procedures employed for this study. INTERA will develop a draft report suitable for submission to the City. Following review and comment, INTERA will incorporate the comments to the extent feasible and issue a final report.

Budget:
The total cost to perform this work is $55,847.99. This value reflects all burdened labor and other direct costs.

Exhibit A

ATTACHMENT "B"

AMERICAN VIBRACORE
SERVICES

May 23, 2017

Steven Starnes, PE
Senior Bridge Engineer
10748 Deerwood Park Blvd South, Jacksonville, FL 32256
O 904-256-2196 | M 904-654-3437

RE: Proposal for Professional Consulting Services
Jacksonville Fishing Pier
Geotechnical Investigation
Jacksonville, Duval County, Florida
AVS Proposal No. 17-0522.00

Dear Mr. Starnes:

American Vibracore Services, Inc. (AVS) appreciates the opportunity to become a part of your project team. Our professional engineers, geologists, and operations staff are dedicated to making this project a success, both on schedule and within budget. We are proud of our commitment to maintaining the highest levels of customer service and client satisfaction, and respectfully submit the following for your consideration.

PROJECT DESCRIPTION

AVS understands the project will consist of the reconstruction of the Jacksonville Fishing Pier, Jacksonville, Florida. The project information provided by your office included the following:

1) Original Pier Geotechnical Report Performed by Universal Engineering, Inc. 2002
2) Example of Soil Properties needed for analysis
3) As-Built Pier Plans
4) Excerpt of Plans showing Approximate Boring Locations

The project scope will include the performance of test borings from a jack up barge in the immediate vicinity of the existing pier followed by the performance of laboratory tests and report deliverables.

GEOTECHNICAL ENGINEERING SERVICES

The objective of AVS's services on this project will be to collect site and subsurface data within the proposed pier footprint area and summarize test results in the form of a Geotechnical Engineering Data Report. AVS anticipates that the following services will be required:

Exhibit A

- AVS will prepare an Accident Prevention Plan detailing all aspects of safety for the project including nearest Coast Guard facility resources, spill prevention, emergency care location and routing, lines of communication, etc.

- AVS will contact Sunshine State One Call to have any known utilities at the test boring locations and general vicinity identified. Utility locates will take a minimum of 1 week for completion. AVS cannot be responsible for underground utilities or structures not identified to us.

- An engineer from AVS's office will finalize the location of the borings with client taking into consideration the safe drilling distance from the pier and performing a review of the debris field known to exist beneath the water around the existing damaged pier.

- AVS will mobilize an ATV drill rig and drill crew to the project. Simultaneously, AVS will mobilize a jack up barge drilling platform and support vessel to the project. The drill rig will be craned onto the drill barge and secured. All tooling and drilling supplies will also be loaded at that time.

- AVS will perform four (4) Standard Penetration Test (SPT) borings advanced to depths up to seventy (70) feet below the approximate MHWL. It is anticipated that 1-50 foot boring and 3-70 foot borings will be performed.

- Boring locations will be documented using horizontal GPS precision. A weighted survey tape will be used to determine water depths and later tide corrected to reference approximate seafloor elevations.

- Upon completion of the drilling and sampling, AVS will then demobilize the jack up drill barge platform, support vessel and rig from the project.

- An AVS staff engineer will visually direct the drilling operations and log the boring activity including visually classifying the soil/rock samples recovered during the sampling. All samples will be retained for further classification and will be delivered to AVS's USACE certified laboratory. AVS will then perform laboratory testing as necessary to facilitate classification of samples and to determine engineering indexes. We propose to perform the following allowance of testing:

  8 - Atterberg Limit Testing – ASTM D4318
  16 - Particle Size Distribution Testing – ASTM D6913
  12 – Laboratory Determination of Density (Unit Weight) of Soil Specimens ASTM D7263-09

- Summarize our activities on this project in the form of a Geotechnical Engineering Report, which will include the test procedures used, the data collected, a discussion of project specific geotechnical data collected, a site plan showing the test locations, and a software generated log (Gint) of each test boring. It is our intent to support the project design team with pile recommendations as part of our scope.

Exhibit B

CONTRACT FEE SUMMARY FORMAT FOR ENGINEERING DIVISION
CITY OF JACKSONVILLE, FLORIDA

PART I - GENERAL	
1. Project Jacksonville Beach Pier Review, Design - Phase I	**2. Contract Number** P-14-17
3. Name of Consultant RS&H Inc.	**4. Date of Proposal** 6-20-17

PART II - LABOR RELATED COSTS				
5. Direct Labor	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Project Manager	$ 62.60	88	$ 5,508.80	
Principal	$ 91.40	10	$ 914.00	
Chief Engineer / Architect	$ 86.22	54	$ 4,655.88	
Senior Engineer	$ 65.69	8	$ 525.52	
Project Engineer / Architect	$ 53.95	34	$ 1,834.30	
Engineer (Registered)	$ 42.84	46	$ 1,970.64	
Designer / Tech (non-registered)	$ 32.31	28	$ 904.68	
Field Inspector / CBI	$ 33.29	0	0.00	
Clerical	$ 24.48	20	489.60	
TOTAL DIRECT LABOR	$58.35	288		$ 16,803.42
6. Overhead (Combined Fringe Benefit & Administrative) Overhead Rate 190.1 % x Total Direct Labor				$ 31,943.30
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				$ 48,746.72
8. PROFIT: Labor Related Costs (Item 7			x 10%	$ 4,874.67

PART III - OTHER COSTS		
9. Miscellaneous Direct		
Transportation & Shipping	$ 76.85	
Original Reproducibles	$ 0.00	
Reproduction	$ 4.50	
Courier	$ 30.00	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$ 111.35
10. SUBCONTRACTS (Lump Sum)		
INTERA Inc.	$ 55,847.99	
American Vibracore Systems, Inc.	$ 95,987.40	
SUB-CONTRACT SUB-TOTAL		$ 151,835.39
TOTAL LUMP SUM AMOUNT (Items 5, 6, 8, 9 and 10)		$ 205,568.13
11. REIMBURSABLE COSTS (Limiting Amount)		
American Vibracore Systems, Inc. (congintency - weather / sea condition)	$ 31,320.00	
SUB-TOTAL REIMBURSABLES		$ 31,320.00

PART IV - SUMMARY	
TOTAL AMOUNT OF CONTRACT (Lump Sum Plus Reimbursables) (Items 5, 6, 8, 9, 10 and 11)	**$ 236,888.13**

Exhibit B

ESTIMATE OF WORK EFFORT AND FEE FOR
STRUCTURAL ENGINEERING AND EVALUATION

CONSULTANT: RS&H Inc.
CONTRACT NO.: P-14-17
ESTIMATOR NAME / DATE: S. Starnes / 6-20-17

NAME OF PROJECT: Jacksonville Beach Pier Review, Design - Phase I
FROM: N/A
TO: N/A
LENGTH: N/A

No. / ACTIVITY	Project Manager RATE/HR $ 62.60		Principal RATE/HR $91.40		Chief Engineer / Architect RATE/HR $86.22		Senior Engineer RATE/HR $65.69		Project Engineer / Architect RATE/HR $53.95	
	HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST
Project Managment / Coordination	42	$2,629.20	4	$365.60	16	$1,379.52	0	$0.00	14	$755.30
Analysis: Design vs Matthew	12	$751.20	0	$0.00	8	$689.76	0	$0.00	20	$1,079.00
Recommendations and Cost Estimates	12	$751.20	0	$0.00	12	$1,034.64	0	$0.00	0	$0.00
Summary Rerport	6	$375.60	6	$548.40	6	$517.32	8	$525.52	0	$0.00
Letter Report - Partial Reopen	16	$1,001.60	0	$0.00	12	$1,034.64	0	$0.00	0	$0.00
TOTAL	88	$5,508.80	10	$914.00	54	$4,655.88	8	$525.52	34	$1,834.30

No. / ACTIVITY	Engineer (Registered) RATE/HR $42.84		Designer / Tech (non-registered) RATE/HR $32.31		Field Inspector / CBI RATE/HR $ 33.29		Clerical RATE/HR $ 24.48		MAN HOURS BY ACTIVITY	SALARY COST BY ACTIVITY	AVG. HOURLY COST	SALARY COST DIST. %
	MAN HOURS	LABOR COST	MAN HOURS	LABOR COST	MAN HOURS	LABOR COST	MAN HOURS	LABOR COST				
Project Managment / Coordination	0	$0.00	0	$0.00	0	$0.00	8	$195.84	84	$5,325.46	$63.40	31.7
Analysis: Design vs Matthew	32	$1,370.88	20	$646.20	0	$0.00	0	$0.00	92	$4,537.04	$49.32	27.0
Recommendations and Cost Estimates	0	$0.00	0	$0.00	0	$0.00	0	$0.00	24	$1,785.84	$74.41	10.6
Summary Rerport	14	$599.76	8	$258.48	0	$0.00	12	$293.76	60	$3,118.84	$51.98	18.6
Letter Report - Partial Reopen	0	$0.00	0	$0.00	0	$0.00	0	$0.00	28	$2,036.24	$72.72	12.1
TOTAL	46	$1,970.64	28	$904.68	0	$0.00	20	$489.60	288	$16,803.42	$58.35	100.0

EXHIBIT B

MISCELLANEOUS DIRECT COST

CONSULTANT: RS&H Inc.
CONTRACT NO.: P-14-17
PREPARED: STS

NAME OF PROJECT: Jacksonville Beach Pier Review, Design - Phase I
FROM: N/A
TO: N/A

ITEM DESCRIPTION										ITEM TOTAL	COMMENTS
Drafting Medium: (Original Reproducibles)											
Reproduction (Blue Line & Sepias)											
		24 x 36			11 x 17						
		0			0	Sheets					
		0			0	Sheets					
		0			0	Sheets					
		0			0	Sheets					
	Total Sheets	0			0						
Cost:		0	Sheets @	$	0.54	=	$0.00				
		90	Sheets @	$	0.05	=	$4.50	8.5x11			3 copies of report
		0	Sheets @	$	0.09	=	$0.00			$4.50	
Travel From: site-to-site											
	# Trips										
Transport.	1	x	25	miles x	$	0.53	per mile*		$13.25		Site Visit
	# Trips										
Transport.	4	x	30	miles x	$	0.53	per mile*		$63.60		Meetings at COJ
To Other Agency:	# Trips										
Transport.	0	x	0	miles x	$	0.53	per mile*		$0.00	$76.85	
Shipping	Courier	x	2		$	15.00	each		$30.00	$30.00	
Other (Specify)											
TOTAL COST										$111.35	

EXHIBIT B

CONTRACT FEE SUMMARY FORMAT FOR ENGINEERING DIVISION
CITY OF JACKSONVILLE, FLORIDA

PART I - GENERAL	
1. Project Jacksonville Beach Pier Review, Design - Phase I	**2. Contract Number** P-14-17
3. Name of Consultant Intera	**4. Date of Proposal** 6-17

PART II - LABOR RELATED COSTS				
5. Direct Labor	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Chief Engineer	$ 70.90	14	$ 992.60	
Project Manager	$ 64.26	50	$ 3,213.00	
Senior Engineer	$ 57.20	120	$ 6,864.00	
Project Engineer	$ 43.25	132	$ 5,709.00	
Engineer Intern	$ 30.00	72	$ 2,160.00	
	$ -		$ 0.00	
	$ -		$ 0.00	
TOTAL DIRECT LABOR	$48.81	388		$ 18,938.60
6. Overhead (Combined Fringe Benefit & Administrative)				
Overhead Rate	150 % x Total Direct Labor			$ 28,407.90
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				$ 47,346.50
8. PROFIT: Labor Related Costs (Item 7			x 10%	$ 4,734.65

PART III - OTHER COSTS		
9. Miscellaneous Direct		
Transportation & Shipping	$ 266.84	
Original Reproducibles	$ 0.00	
Reproduction	$ 0.00	
Other	$ 3,500.00	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$ 3,766.84
10. SUBCONTRACTS (Lump Sum)		
SUB-CONTRACT SUB-TOTAL		$ -
TOTAL LUMP SUM AMOUNT (Items 5, 6, 8, 9 and 10)		$ 55,847.99
11. REIMBURSABLE COSTS (Limiting Amount)		
SUB-TOTAL REIMBURSABLES		$ -

PART IV - SUMMARY	
TOTAL AMOUNT OF CONTRACT (Lump Sum Plus Reimbursables) (Items 5, 6, 8, 9, 10 and 11)	**$ 55,847.99**

Exhibit B

ESTIMATE OF WORK EFFORT AND FEE FOR
COASTAL ENGINEERING AND ANALYSIS

CONSULTANT: INTERA Inc.
CONTRACT NO.: P-14-17
ESTIMATOR NAME / DATE:

NAME OF PROJECT: Jacksonville Beach Pier Review, Design - Phase I
FROM: N/A
TO: N/A
LENGTH: N/A

No. / ACTIVITY	Chief Engineer RATE/HR: $ 70.90		Project Manager RATE/HR: $64.26		Senior Engineer RATE/HR: $57.20		Project Engineer RATE/HR: $43.25		Engineer Intern RATE/HR: $30.00	
	HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST
Task #1 Data Collection and Site V	0	$0.00	2	$128.52	8	$457.60		$0.00	24	$720.00
Task #2 Model Development and A	4	$283.60	4	$257.04	40	$2,288.00	32	$1,384.00	24	$720.00
Task #3 Hurricane Matthew Hindca	0	$0.00	8	$514.08	40	$2,288.00	60	$2,595.00		$0.00
Task #5 Quality Assurance/Quality	8	$567.20	32	$2,056.32		$0.00		$0.00		$0.00
Task #6 Report	2	$141.80	4	$257.04	32	$1,830.40	40	$1,730.00	24	$720.00
TOTAL	14	$992.60	50	$3,213.00	120	$6,864.00	132	$5,709.00	72	$2,160.00

No. / ACTIVITY	0 RATE/HR: $0.00		0 RATE/HR: $0.00		MAN HOURS	SALARY	AVG.	SALARY COST
	MAN HOURS	LABOR COST	MAN HOURS	LABOR COST	BY ACTIVITY	COST BY ACTIVITY	HOURLY COST	DIST. %
Task #1 Data Collection and Site V	0	$0.00	0	$0.00	34	$1,306.12	$38.42	6.9
Task #2 Model Development and A	0	$0.00	0	$0.00	104	$4,932.64	$47.43	26.0
Task #3 Hurricane Matthew Hindca	0	$0.00	0	$0.00	108	$5,397.08	$49.97	28.5
Task #5 Quality Assurance/Quality	0	$0.00	0	$0.00	40	$2,623.52	$65.59	13.9
Task #6 Report	0	$0.00	0	$0.00	102	$4,679.24	$45.87	24.7
TOTAL	0	$0.00	0	$0.00	388	$18,938.60	$48.81	100.0

EXHIBIT B

MISCELLANEOUS DIRECT COST

CONSULTANT: INTERA Inc.
CONTRACT NO.: P-14-17
PREPARED:

NAME OF PROJECT: Jacksonville Beach Pier Review, Design - Phase I
FROM: N/A
TO: N/A

ITEM DESCRIPTION										ITEM TOTAL	COMMENTS
Drafting Medium: (Original Reproducibles)											
Reproduction (Blue Line & Sepias)											
		24 x 36			11 x 17						
		0			0	Sheets					
		0			0	Sheets					
		0			0	Sheets					
		0			0	Sheets					
	Total Sheets	0			0						
Cost:		0	Sheets @	$	0.54	=	$0.00				
		180	Sheets @	$	0.05	=	$9.00				
		0	Sheets @	$	0.09	=	$0.00			$9.00	
Travel From: site-to-site											
	# Trips										
Transport.	1	x	100	miles x	$	0.535	per mile*		$53.50	53.5	Site Visit (assume 1)
	# Trips										
Transport.	3	x	108	miles x	$	0.535	per mile*		$173.34	173.34	Meetings (COJ Offices
To Other Agency:	# Trips										
Transport.	0	x	0	miles x	$	0.535	per mile*		$0.00	$226.84	
Shipping								40	40	$40.00	FedEx Draft and Final Reports
Other (Specify)	Hurricane Matthew Wind and Pressure Fields								3500	3500	
TOTAL COST										$3,775.84	

* MAXIMUM $ 0.535 / MILE

EXHIBIT B

We have assumed that the current property owner(s) and/or current property user(s) will grant site access to our personnel for the performance of the work. If this assumption is incorrect, we must be notified prior to the start of our work.

A lump sum budget for the scope of services detailed above is presented below:

Jacksonville Fishing Pier Project Lump Sum Estimate Fees

Item	*Units*	*No. of units*	*cost per unit*	*total cost*
Utility Locate Request Submittals	EA	2	$100.00	$200.00
Mob/Demob of Drill Barge, Portable Equipment, Crane Fees, Captain	EA	1	$49,920.00	$49,920.00
Mob/Demob Drill Rig & Crew	EA	1	$3,000.00	$3,000.00
Daily Barge Rate (12 hr day)	Day	6	$2,520.00	$15,120.00
Support Vessel, Captain	Day	6	$700.00	$4,200.00
Water SPT Borings, 4@50-70 feet below MHWL				
0-30 ft. depth	Per Ft.	120	$18.00	$2,160.00
31-70 ft. depth	Per Ft.	140	$20.00	$2,800.00
Temporary Casing	Per Ft.			
0-30 ft. depth	Per Ft.	120	$14.00	$1,680.00
31-70 ft. depth	Per Ft.	80	$17.00	$1,360.00
Grouting Boreholes	Per Ft.	260	$4.00	$1,040.00
		Fieldwork Work Subtotal		**$81,480.00**
Lab Testing				
Index Property Testing	LS	1	$4,680.00	$4,680.00
		Lab Testing Subtotal		**$4,680.00**
Engineering				
Principle Engineer, P.E. (Design Eng.)	HR	8	$130.35	$1,042.80
Project Manager	HR	40	$90.75	$3,630.00
Staff Engineer, E.I.	HR	40	$61.05	$2,442.00
CADD Technician	HR	10	$49.50	$495.00
Senior Engineering Technician (Inspector)	HR	40	$49.50	$1,980.00
Clerical	HR	8	$29.70	$237.60
		Engineering Subtotal		**$9,827.40**
		Total Lump Sum Estimate		**$95,987.40**

AVS

EXHIBIT B

PROJECT SCHEDULE

Upon authorization, we estimate the following schedule:

1. Mobilization - 3 weeks
2. Drilling Duration - 1 week
3. Laboratory Program - 1 week
4. Final Deliverables - 1 week

Please note that we will look to minimize field time on the project location and try our best to schedule with consideration to weather and forecasted sea conditions. Daily /hourly rates will apply in the case of standby for jack up vessel and drill/drill crew. Please see below a contingency budget for the project that may be used as a guide in the case of standby or delays related to adverse weather such as a named storm or sustained high sea states.

Item	*Units*	*No. of units*	*cost per unit*	*total cost*
Daily Barge Rate Standby	Day	6	$2,520.00	$15,120.00
Support Vessel, Captain Standby	Day	6	$700.00	$4,200.00
Drill Rig and Drill Crew Standby	Day	6	$2,000.00	$12,000.00
Standby Contingency Budget				**$31,320.00**

CONDITIONS AND QUALIFICATIONS

AVS will provide detailed invoices at the mobilization date and at completion of the project. If credit is established, our terms will be 2/10/net-30 days. The pricing contained herein is subject to change if this proposal is not authorized within 90 days from the date of this proposal. If more than 90 days have passed since the date of this proposal, please contact us for an updated proposal. Additional items not listed in this proposal will be quoted upon request.

AUTHORIZATION

All services will be conducted in accordance with this proposal and attached Terms and Conditions. To initiate services, please complete and return the included Proposal Acceptance Agreement form. The Terms and Conditions are part of this agreement. **The signed proposal acceptance agreement form must be received by AVS via email prior to any work being performed, and an original copy must be received before completed reports can be distributed.**

Exhibit B

CLOSING

AVS appreciates the opportunity to submit this proposal, and looks forward to working with you as a member of the project team. Please contact the undersigned at 561.414.7631 if you have any questions or comments.

From our team to yours,

Fred Kaub, P.G., CEO
American Vibracore Services, Inc.

AVS

Exhibit B

AMERICAN VIBRACORE
SERVICES

PROPOSAL ACCEPTANCE AGREEMENT

Description of Services:	Professional Consulting Services, Geotechnical Investigation
Project Name:	Jacksonville Pier Project
Project Locations:	Jacksonville, Duval County, FL
AVS Proposal No.:	17-0522.00
Proposal Date:	May 25, 2017

APPROVAL & PAYMENT OF CHARGES

Invoices will be charged and mailed to the account of:

Firm: _____ FED ID#: _____

Attention: _____

Address: _____

Telephone: _____ Fax: _____

Email: _____

PROPERTY OWNER IDENTIFICATION: (If other than above)

Name: _____

Address: _____

Telephone: _____ Fax: _____

American Vibracore Services, Inc. (AVS) reserves the right to withhold all reports until such time as we receive a signed Proposal Acceptance Agreement or other written authorization referencing this in its entirety. This AGREEMENT, the proposal and terms and conditions constitute the entire agreement between the client and AVS, and supersede all prior written or oral understanding. Please note that pricing is valid for a period of ninety (90) days from proposal date.

The above signed, having full legal authority to bind the Client identified in the foregoing Proposal Agreement, has read the foregoing Proposal Agreement and hereby agrees to all of the terms and conditions contained in AVS's Standard Terms and Conditions attached hereto as Exhibit "A" which are incorporated herein by reference as a fundamental and material pert of the Proposal Agreement. The Client agrees and understands that AVS's Standard Terms and Conditions have been established in a large measure to allocate certain risks between Client and AVS, and AVS will not initiate services without Client's execution of agreement to the terms of the Proposal Agreement and the Standard Terms and Conditions and other terms and conditions set forth in this Agreement.

PURSUANT TO FLORIDA STATUTE 558.0035, A DESIGN PROFESSIONAL, AS DEFINED IN FLORIDA STATUTE 558.002, ACTING AS AN INDIVIDUAL EMPLOYEE OR AGENT OF AMERICAN VIBRACORE SERVICES, INC. MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

AUTHORIZED SIGNATURE: _____

PRINTED NAME & TITLE: _____

DATE ACCEPTED: _____

(See below for service line acceptance)

SERVICES ACCEPTED: Geotechnical Drilling and Engineering Services_____

Initial accepted service line(s)