City of Jacksonville, Florida

Lenny Curry, Mayor

Department of Public Works
Engineering & Construction Management Division
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Jacksonville, FL 32202
(904) 255-8762
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ONE CITY. ONE JACKSONVILLE.

June 5, 2018

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

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

06/07/18 11:34:53
Procurement Division

FROM: William J. Joyce, P. E.
Director of Operations

Daryl Joseph, Director
Parks, Recreation & Community Services

SUBJECT: P-52-17 Professional Services for Dock Inspections and Designs
Contract # 8567-02 Amendment 3
RPWF165-06505---AFA017-01

Based on the assessment of the current condition of the damages caused by Hurricane Matthew for the Trout River Floating Dock, the Arlington Lions Club Concrete Pier, the Jim King Park Boardwalk and the Arlington Lions Club Timber Boardwalk facilities, Taylor Engineering, Inc. is to provide inspections, condition reports, recommendations for repair and/or replacement, final engineering design and bid documents, permitting and post design construction phase support to repair or replace the various facilities as necessary. Negotiations with the consultant for these services have resulted in the attached Scope of Services, Exhibits G, I, K and M respectively and Fee Summaries, Exhibits H, J, L and N respectively. The City's JSEB program is not applicable to this project.

Accordingly, this is to recommend that Contract # 8567-02, originally executed November 14, 2017, between the City of Jacksonville and Taylor Engineering, Inc. for Professional Services for Dock Inspections and Designs, be amended to incorporate the attached Scope of Services identified as Exhibits G, I, K and M and Fee Summaries identified as Exhibits H, J, L and N, to add new not to exceed limits for design services for: Trout River Floating Dock in the amount of $105,801.38, Arlington Lions Club Concrete Pier in the amount of $77,602.72, Jim King Park Boardwalk in the amount of $58,829.50 and Arlington Lions Club Timber Boardwalk in the amount of $63,107.89, thereby increasing the maximum indebtedness to the City by $305,341.49 to a new maximum of $687,058.15, with all other terms and conditions of the Agreement remaining unchanged.

TF/lw

Attachment: Exhibits G, H, I, J, K, L, M & N

cc: Lori West, Contract Specialist

ab

Scope of Work
For
City of Jacksonville
Trout River Floating Dock Relocation
Engineering and Permitting Services

INTRODUCTION

In 2016, Hurricane Matthew brought strong winds and coastal conditions that severely damaged the Trout River Floating Dock in the City of Jacksonville (COJ). Based on an inspection completed by Taylor Engineering, the dock requires replacement. Through a previous qualification-based selection process, the COJ has chosen Taylor Engineering, Inc. (TAYLOR) to provide all professional services necessary to perform inspections; prepare condition reports, including recommendations for repair and/or replacement; prepare final design and bid documents; and provide post design construction phase support to repair or replace these facilities. As a continuing phase of this work, the COJ has requested TAYLOR provide this proposal for engineering and permitting services to replace and relocate the Trout River Floating Dock.

The Trout River public floating dock locates adjacent to the Trout River bridge. An aluminum gangway connects the floating dock to the pedestrian bridge. The floating dock consists of fourteen remaining concrete float modules. The dock previously comprised additional float modules; however, recent storms have displaced modules, leaving only fourteen. Previously, five guide piles fixed the float modules in place, only four of the guide piles remain connected to the floats. The floating dock's primary use is for fishing. The project will remove the floating dock, related fixtures (fender system, tie rods, etc.), and the piles. The dock is currently closed pending demolition. The COJ has proposed to relocate a new floating dock to the site in front of the bulkhead at Friendship Fountain. This project will consist of a new dock, related fixtures (fender system, tie rods, etc.), and piles.

Based on the inspection report for Trout River Floating Dock, TAYLOR understands that the COJ wishes to replace and relocate the facility at Trout River (Figure 1). TAYLOR will develop a design relocate the facility to the Friendship Fountain site (Figure 2). The report includes opinions of probable cost to repair and replace the boardwalk. Some of these costs may be eligible for financial assistance from the Federal Emergency Management Administration (FEMA) as per the Public Assistance (PA) Program and Policy Guide - *FP 104-009-2* (January 2016). When evaluating whether a damaged facility is eligible for replacement, FEMA compares the repair cost with the replacement cost and evaluates the feasibility of repairing the structure. If the repair cost is greater than 50% of the replacement cost, a full replacement is warranted. This scope of work entails providing final engineering design and permitting to construct demolish the damaged dock at the Trout River Bridge and develop a replacement floating dock at the Friendship Fountain site. As part of this project, TAYLOR will investigate the future flood/storm damage mitigation strategy of adjusting anchor pile sizes, and heights to improve the structure's resiliency.

<u>Assumptions</u>

- The project does not include shoreline armoring or another shoreline treatment.
- The replacement floating dock will provide an extension off the existing floating dock at the Friendship Fountain.

Exhibit 'G'

- Because of the project location, water depth, salinity, and water quality conditions, no eelgrass or other submersed vegetation will occur within the project location. A single environmental scientist will make a short visit and take photographs to verify site conditions for permit application statements in that regard.
- Demolition of the existing Trout River Floating Dock will require a general permit from the Florida Department of Environmental Protection (FDEP) and federal authorization in the form of a State Programmatic General Permit or Nationwide Permit.
- Because the proposed dock will occur at a new location, the new dock project will require an individual environmental resource permit from the FDEP and a standard permit 404/401 permit from the U.S. Department of the Army.
- The COJ will pay all permit fees.
- The COJ will be the permit applicant. TAYLOR will serve as the Engineer of Record and Agent for the permit applications.
- TAYLOR does not guarantee, warranty, or otherwise ensure that the agencies will authorize the types of permits requested by COJ.

If any of the above assumptions prove incorrect, TAYLOR will consult with COJ and, as necessary or appropriate, modify this scope of services and fee.

SCOPE OF WORK

TASK 1 – DATA COLLECTION

Through this task, TAYLOR and its subcontractors will conduct field investigations and collect necessary data to support engineering design and permitting for a replacement and relocation of the Trout River Floating dock i. For each of the subtasks below, TAYLOR will coordinate field activities with COJ such that the work does not interfere with any other activities.

Task 1.1 – Topographic and Hydrographic Survey

TAYLOR's subconsultant — GCY, Inc. (GCY) — will complete topographic and hydrographic survey of the Friendship Fountain site. The survey will include:

- Bathymetric survey within 100-ft of bulkhead at Friendship Fountain using approximately 50'x50' spacing of soundings, and approximately 25'x25' spacing for near-shore/on-shore topographic data.
- Mean High Water (MHW) line identification
- Existing conditions/ structure survey of the existing floating dock, the bulkhead, and location of abutments and nearest piles supporting existing pedestrian bridge.

Task 1.2 – Geotechnical Exploration

TAYLOR subconsultant — Meskel & Associates Engineering, PLLC (MAE) — will conduct geotechnical exploration at the site. The objective of the geotechnical exploration is to provide site and subsurface information to evaluate the conditions at the site for the proposed construction. The team will conduct the field investigations summarized by the table below.

Exhibit 'G'

Location	Number of Borings	Depth of Borings Below Ground Surface
Water side borings adjacent to the bulkhead[1]	1 SPT[2]	70 ft (below river mudline)

[1] Proposed Locations: a) One boring north of bulkhead
[2]Standard Penetration Test

MAE will perform laboratory classification and index property tests on selected soil samples obtained from the exploration.

A geotechnical engineer, licensed in the State of Florida, will direct the geotechnical exploration and provide an engineering evaluation of the site and subsurface conditions with respect to the planned construction and imposed loading conditions. The results of the exploration and engineering evaluation will then be documented in a deliverable report containing the following:

1. A brief discussion of the understanding of the planned construction and imposed loading conditions.
2. A presentation of the field and laboratory test procedures used, and the data obtained.
3. A presentation of the existing on-site conditions, such as topography, surface vegetation, etc. as they relate to the planned construction.
4. A presentation of the encountered subsurface conditions, including subsurface profiles and measured groundwater levels, estimated seasonal high groundwater levels, and estimated geotechnical engineering properties (as necessary).
5. A geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned construction.
6. Geotechnical design recommendations for foundation design parameters, including estimate of the performance of recommended pile foundation systems.
7. Installation recommendations for piles.

Task 1.3 Environmental Fieldwork and Desktop Assessments

Fieldwork

A TAYLOR environmental scientist will conduct a short field visit and photograph conditions at the proposed dock construction site. The findings will be included in the permit application to provide verification of the expected natural resource conditions.

Desktop Assessments

The permit applications (see Task 4 below) require identification of any sensitive natural resources within the work footprint, natural resource impacts, impact avoidance and minimization, and mitigation for unavoidable impacts. We have assumed that the project will incur no impacts that require mitigation. The federal permit application also requires an assessment of project impacts on listed and candidate species. We will develop environmental narratives for the FDEP and USACE applications including results of the fieldwork and the necessary information for each agency based on the permit application guidance and discussions with the agency staffs.

Exhibit 'G'

TASK 2 – CONCEPTUAL DESIGN (30%-Complete)

Task 2.1 – Coastal Conditions Analysis

TAYLOR will evaluate the historical and FEMA storm data for the area near the project site and modify and apply a previously developed two-dimensional model to determine water levels and current speeds at the site for the desired return period storms. TAYLOR will determine wave heights at the site from FEMA wave model results and compare these to fetch-limited model wave heights based on ASCE 7-16 wind speeds. TAYLOR will also compare the coastal conditions determined in this Task with available data from Hurricanes Matthew and Irma. TAYLOR will document tide and storm water levels, wind speeds, wave heights and wave periods, and recommended dock pile elevation in a coastal conditions report.

TAYLOR will apply these conditions to estimate the design hydraulic loads on the floating dock and supports and document the results. Applying this information, TAYLOR will recommend pile size and length. Additionally, this coastal condition analysis will provide input for the floating dock performance specification/requirements.

Task 2.2 – Conceptual Design Engineering

During this task, TAYLOR will apply the data collected in Task 1 and results from Task 2.1 to complete an assessment to evaluate alternative pile configurations that will avoid conflict with existing structures. Also, TAYLOR will analyze potential alternative material options for the floating dock modules.

TASK 3 – PRELIMINARY DESIGN (60%-Complete)

Through this task, TAYLOR will apply the data collected in Task 1 and Task 2 to complete preliminary engineering design for the replacement floating dock.

Task 3.1 – Preliminary Design Engineering

Based on previously collected data and evaluations, TAYLOR will develop a preliminary structural design for the replacement floating dock at the Friendship Fountain site. Preliminary engineering will consider upland site conditions, geotechnical conditions, and anticipated coastal conditions. TAYLOR will work to identify a constructible, cost-effective, and resilient structural alternative for the replacement of the floating docks.

The task deliverable will include preliminary drawings; these drawings will depict plan arrangement, typical cross-sections, anticipated pile requirements, and estimated pile embedment depths, and draft floating dock performance specifications. The designer will also provide an updated opinion of probable costs based on 60%-complete level of design.

Once the preliminary engineering design is complete, TAYLOR will coordinate with COJ to schedule a meeting to review the preliminary design and receive comments. TAYLOR will make one revision to the preliminary design to incorporate those comments received from COJ.

Exhibit 'G'

TASK 4 – ENVIRONMENTAL PERMITTING SUPPORT

Task 4.1 – Preapplication Meetings

TAYLOR will work with the COJ and lead state and federal permitting agencies (FDEP and USACE) to coordinate and facilitate a preapplication meeting (one per agency) to present and discuss the proposed project. During the meeting, we will discuss the administrative process and appropriate permit authorization for the project. For COJ and agency review, we will prepare and submit a summary of the preapplication meeting. The summary will focus on the permit types required and agency recommendations for the application contents.

Task 4.2 – Permit Application Package Development and Submittal

TAYLOR will develop separate permit application packages for the FDEP and USACE based on input received during the preapplication meetings and submit the packages for COJ approval. The permit applications will cover demolition of the existing Trout River floating dock and construction of the new floating dock near the Friendship Fountain. After making any final changes to the application packages, we will submit to the FDEP and USACE for processing.

Task 4.3 – Response to Requests for Additional Information

Due to the nature of the project and the minimal environmental impacts that the project may incur, we expect to and have budgeted for responses to one request for additional information (RAI) each from the FDEP and USACE for each of the four requested authorizations. TAYLOR has budgeted $8,400 for all RAI responses. If agency request requires efforts expected to generate fees beyond this limit, TAYLOR will inform COJ and provide a proposal for the required additional services.

TASK 5 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

Taylor Engineering will develop the final design for the floating dock installation. The design will describe the locations, requirements, and parameters necessary to construct the proposed floating dock system. During the design process, Taylor Engineering will solicit input from multiple floating dock manufacturers to value engineer the floating dock system based on current floating dock manufacturing practices. Because COJ will select a manufacturer through competitive bid process, Taylor Engineering will author an engineering performance specification to detail the design components in terms of project-specific requirements. The specification will not limit selection to specific manufacturers, materials, processes, parts, etc. The performance specification will provide sufficient engineering design detail to ensure the owner receives a satisfactory product without limiting the bid selection process to a specific manufacturer or proprietary floating dock system. Because floating dock system design details and engineering parameters vary from manufacturer to manufacturer, the performance specification will require the selected manufacturer to provide final product-specific engineering documents, signed and sealed by a professional engineer licensed in Florida, during the construction process.

Because coastal conditions play a significant role in floating dock performance, the engineering performance specification will incorporate the coastal conditions analysis completed in Task 2.1.

In parallel with this final design effort, TAYLOR will incorporate the comments from the regulatory

Exhibit 'G'

agencies to prepare the 90%-complete design submittal. TAYLOR will deliver the 90%-complete submittal in electronic (PDF) format. The 90%-complete design package will include updated design calculations, construction drawings, project technical specifications, and opinion of probable cost.

TAYLOR will coordinate with COJ to incorporate the project technical specifications within COJ's standard "front-end" documents (bid documents, contract agreements, general and specific condition, forms, etc.). However, COJ will retain the right and responsibility to develop, review, and finalize all project manual components beyond those technical specifications prepared by TAYLOR.

TAYLOR will address all comments received from COJ and finalize project documents. TAYLOR will develop final signed and sealed construction drawings and technical/performance specifications. TAYLOR will prepare and provide a proposed schedule of bid items and a final updated opinion of probable cost.

DELIVERABLES

TASK 1 – DATA COLLECTION

- Signed and sealed topographic and hydrographic survey
- Signed and sealed geotechnical exploration report
- Summary of environmental fieldwork and desktop analysis

TASK 2 – CONCEPTUAL DESIGN (30%-Complete)

- Coastal conditions report
- 30%-complete design package (conceptual drawings, draft dock performance specifications, and opinion of probable cost)

TASK 3 – PRELIMINARY DESIGN (60%-Complete)

- 60%-complete design package (drawings, technical/performance specifications, and opinion of probable cost)

TASK 4 – ENVIRONMENTAL PERMITTING SUPPORT

- Preapplication meeting summary
- Preliminary draft permit applications
- Final permit applications packages (FDEP and USACE) for both demolition at the Trout River site and construction at the Friendship Fountain site
- RAI Responses

TASK 5 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

- 90%-complete design package (drawings, technical/performance specifications, calculations, and permits)
- Signed and sealed construction drawings and technical specifications
- Final opinion of probable construction cost
- Schedule of bid items

Exhibit 'G'

SCHEDULE

TAYLOR intends to complete the project on the timeline outlined below.

No.	Task	Months from Start Date											
		1	2	3	4	5	6	7	8	9	10	11	12
		Task Timelines											
1	DATA COLLECTION												
2	CONCEPTUAL DESIGN												
3	PRELIMINARY DESIGN												
4	PERMITTING SUPPORT*												
5	FINAL DRAWINGS AND SPECIFICATIONS												

*Permitting timeline is estimated. TAYLOR has no control over agency review timelines but will actively encourage the agencies to expedite the review process.

EXCLUSIONS

The following tasks are excluded from this Scope of Work unless later included through issuance of an amendment or additional authorization for work:

- Boundary or SSLL survey, or additional topographic or bathymetric surveying services beyond those included within this Scope of Work;
- Geotechnical investigations beyond those described herein;
- Additional natural resource, wetland surveys, or existing environmental condition assessments (e.g., water quality or sediment quality assessments, etc.) beyond those described herein;
- Numerical wave transformation, hydrographic, or sediment transport/morphologic modeling to assess hydrodynamic flushing, wave/structure interactions, long-shore and cross-shore sediment transport, or the potential impacts to adjacent shorelines or property;
- Upland planning, site layout, or design;
- Development of multiple conceptual structure alternatives beyond those described above;
- Cost comparison for multiple project alternatives;
- Bidding or construction phase services.

Exhibit 'G'

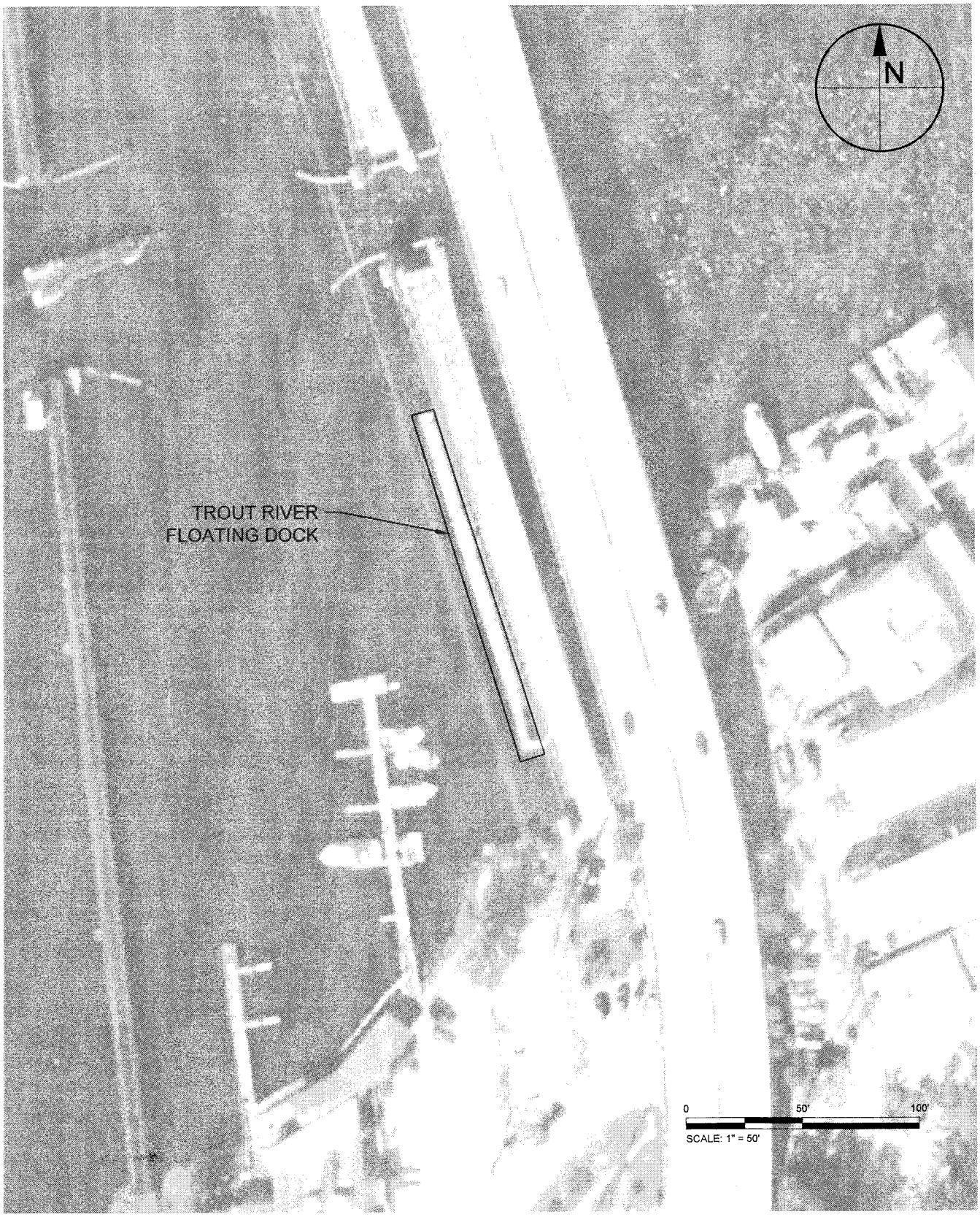
FEES

TAYLOR will complete the work on a fixed fee basis for task-by-task fees as summarized in the table below. Exhibit B outlines these fees in the Contract Fee Summary Format, Engineering Division, City of Jacksonville.

Task	Fee
TASK 1 – DATA COLLECTION	$38,604.18
TASK 2 – CONCEPTUAL DESIGN (30%-Complete)	$18,766.65
TASK 3 – PRELIMINARY DESIGN (60%-Complete)	$15,200.05
TASK 4 – ENVIRONMENTAL PERMITTING SUPPORT	$17,570.41
TASK 5 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS	$15,660.09
TOTAL	**$105,801.38**

Exhibit 'G'

EXHIBIT G



MORGAN SMITH L:\2017\C2017-088 CITY OF JAX PROF. SERVICES FOR DOCK INSPECTION & DESIGN\SITE INSPECTIONS\02 - TROUT RIVER\REPORT\CAD\LOCATION MAP.DWG 5/25/2018 11:56:53 AM

TAYLOR ENGINEERING INC.
10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 1
CITY OF JACKSONVILLE
TROUT RIVER FLOATING DOCK
LOCATION MAP

PROJECT	DRAWN BY	SHEET	DATE
C2017-064	MMS	1 OF 1	05-25-18

SEAL

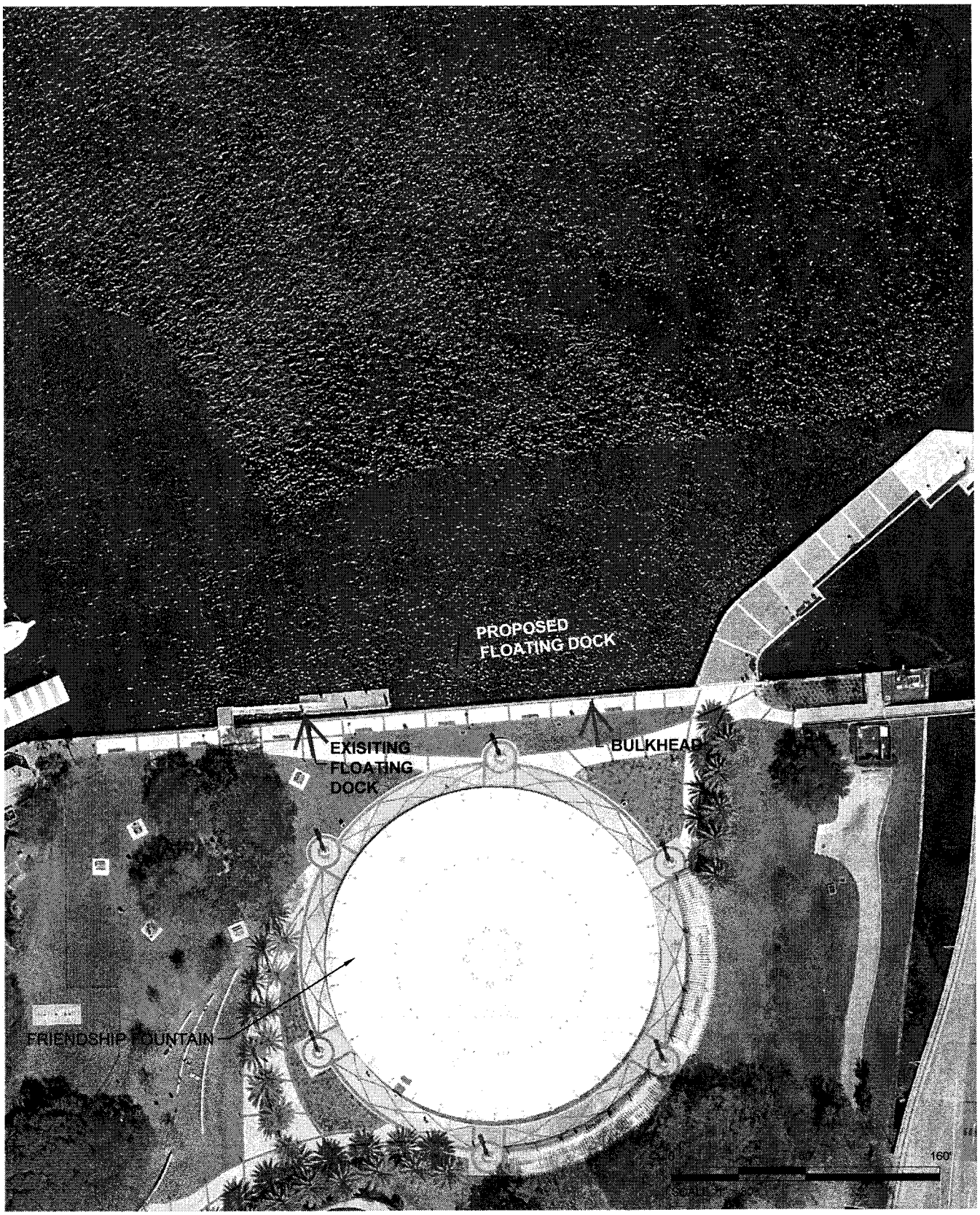
DRAFT

ENG DATE

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

Exhibit G

EXHIBIT G



MORGAN SMITH P:\2018\P2018-094 COJ-WF STRUCTURE DESIGN\TROUT RIVER FLOATING DOCKS\SUBSITE PLAN - FRIENDSHIP FOUNTAIN.DWG 6/4/2018 7:55:07 AM

TAYLOR ENGINEERING INC.
10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 2
CITY OF JACKSONVILLE
TROUT RIVER FLOATING DOCK RELOCATION
SITE PLAN

PROJECT	DRAWN BY	SHEET	DATE
C2015-XXX	MMS	XX of XX	00-00-15

SEAL

DRAFT

ENG DATE

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

Exhibit G

Fee

Summary

Exhibit 'H'

EXHIBIT H

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

PART I - GENERAL

1. Project Trout River Floating Dock Relocation Engineering and Permitting Services	**2. Proposal No. / Contract No.** P-52-17 / 8567-02
3. Name of Consultant Taylor Engineering, Inc.	**4. Date of Proposal** 6/5/2018

PART II - LABOR RELATED COSTS

5. Direct Labor (Limiting Amount)	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Principal Engineer	$ 67.87	23	$ 1,561.01	
Program Manager	$ 60.82	7	$ 425.74	
Senior Professional	$ 55.41	158	$ 8,754.78	
Project Professional	$ 42.38	9	$ 381.42	
Staff Professional	$ 31.48	260	$ 8,184.80	
Sr. CAD Designer	$ 45.90	89	$ 4,085.10	
Admin	$ 19.67	4	78.68	
TOTAL DIRECT LABOR	$ 42.68	550		$ 23,471.53
6. Overhead (Combined Fringe Benefit & Administrative) Overhead Rate	175 % x Total Direct Labor			$ 41,075.18
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				**$ 64,546.71**
8. PROFIT: Labor Related Costs (Item 7)		x	10%	$ 6,454.67

PART III - OTHER COSTS

9. Miscellaneous Costs (Reinmbursable/NTE)	$ $ $ $	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$ -
10. SUBCONTRACTS (Reimbursable/Not to Exceed) GCY Inc. MAE, PLLC	$ 10,700.00 $ 24,100.00	
SUB-CONTRACT SUB-TOTAL (Reimb/NTE)		$ 34,800.00
11. REIMBURSABLE COSTS (Limiting Amount)	$ $ $	
SUB-TOTAL REIMBURSABLES		$ -

PART IV - SUMMARY

TOTAL AMOUNT OF CONTRACT (Lump Sum Plus Reimbursables / Not To Exceed) (Items 5, 6, 8, 9, 10, and 11)	**$ 105,801.38**

Exhibit 'H'

Scope of Work
For
City of Jacksonville
Arlington Lions Club Concrete Pier Engineering and Permitting Services

INTRODUCTION

In 2016, Hurricane Matthew brought strong winds and coastal conditions that severely damaged the concrete pier at the Arlington Lions Club in the City of Jacksonville (COJ). The City has closed the pier until repairs are completed. Through a previous qualification-based selection process, the COJ has chosen Taylor Engineering, Inc. (TAYLOR) to provide all professional services necessary to perform inspections; prepare condition reports, including recommendations for repair and/or replacement; prepare final design and bid documents; and provide post design construction phase support to repair or replace these facilities as necessary. As a continuing phase of this work, the COJ has requested TAYLOR provide this proposal for engineering and permitting services to replacement of the concrete pier.

Based on the inspection report for Arlington Lions Club Concrete Pier, TAYLOR understands that the COJ wishes to replace the entire concrete pier (Figure 1). The report includes opinions of probable cost to repair and replace the pier. Some of these costs may be eligible for financial assistance from the Federal Emergency Management Administration (FEMA) as per the Public Assistance (PA) Program and Policy Guide - *FP 104-009-2* (January 2016). When evaluating whether a damaged facility is eligible for replacement, FEMA compares the repair cost with the replacement cost and evaluates the feasibility of repairing the structure. If the repair cost is greater than 50% of the replacement cost, a full replacement is warranted. This scope of work entails providing final engineering design and permitting to construct a replacement concrete pier (719 sf) and related railing to match the current pier's existing layout within the existing footprint. Also, this scope of work assumes the entire existing pier will be demolished and no existing features will be reused. If the COJ chooses to repair the facility (rather than replace it), TAYLOR will provide a revision to the scope of work.

Assumptions

- The project does not include shoreline armoring or another shoreline treatment.
- The replacement pier will remain within the existing pier footprint and have the same, or fewer, amenities as previously existed.
- The project will avoid wetland and submersed resource impacts or create only temporary impacts that do not require mitigation.
- The lead state and federal agencies will not require wetland verification visits that include TAYLOR staff.
- TAYLOR will field locate wetland and submersed resources using sub-meter accuracy GPS equipment. No registered land surveyor verification of the GPS data will be required.
- The State of Florida will authorize a Noticed General Permit for this project.
- The USACE will review the application for authorization as a Nationwide Permit (NWP) 3 Maintenance, based on the following NWP Type 3 Permit authorization description: "This NWP also authorizes the replacement, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the

Exhibit I

repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays."

- The COJ will pay all permit fees.
- The COJ will be the permit applicant. TAYLOR will serve as the Engineer of Record and Agent for the permit applications.
- The federal permit application process will not require significant additional support for NEPA consultations between the USACE and other federal agencies.
- TAYLOR does not guarantee, warranty, or otherwise ensure that the agencies will authorize the permits requested by COJ.

If any of the above assumptions prove incorrect, TAYLOR will consult with COJ and, as necessary or appropriate, modify this scope of work and fee.

SCOPE OF WORK

TASK 1 – DATA COLLECTION

Through this task, TAYLOR and its subcontractors will conduct field investigations and collect necessary data to support engineering design and permitting for a replacement concrete pier at Arlington Lions facility in Jacksonville, Florida. For each of the subtasks below, TAYLOR will coordinate field activities with COJ such that the work does not interfere with any other activities.

Task 1.1 – Topographic and Hydrographic Survey

TAYLOR's subconsultant — GCY, Inc. (GCY) — will complete topographic and hydrographic survey of the site. The survey will include:

- Topographic survey within 20-ft of the either side of the pier
- Mudline elevations spaced every 2-ft for the overwater portions of the pier
- Mean High Water (MHW) line identification
- Existing conditions/ structure survey of the concrete pier and associated features

Task 1.2 – Geotechnical Exploration

TAYLOR subconsultant — Meskel & Associates Engineering (MAE) — will conduct geotechnical exploration at the site. The objective of the geotechnical exploration is to provide site and subsurface information to evaluate the subsurface conditions at the site for the proposed construction. The team will conduct the field investigations summarized by the table below.

Location	Number of Borings	Depth of Borings Below Ground Surface
Land side boring adjacent to pier [2]	1 SPT[2]	30 ft
Muck probes along overwater portion of pier	Approximately 12	Depth of muck

[1] Proposed Locations: a) As close as possible to the concrete pier and shoreline; [2]Standard Penetration Test

Exhibit "I"

MAE will perform laboratory classification and index property tests on selected soil samples obtained from the exploration.

A geotechnical engineer, licensed in the State of Florida, will direct the geotechnical exploration and provide an engineering evaluation of the site and subsurface conditions with respect to the planned construction and imposed loading conditions. The results of the exploration and engineering evaluation will then be documented in a deliverable report containing the following:

1. A brief discussion of the understanding of the planned construction and imposed loading conditions.
2. A presentation of the field and laboratory test procedures used, and the data obtained.
3. A presentation of the existing on-site conditions, such as topography, surface vegetation, etc. as they relate to the planned construction.
4. A presentation of the encountered subsurface conditions, including subsurface profiles and measured groundwater levels, estimated seasonal high groundwater levels, and estimated geotechnical engineering properties (as necessary).
5. A geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned construction.

Task 1.3 Environmental Fieldwork and Desktop Assessments

Fieldwork

TAYLOR environmental scientists will conduct a field visit to identify, characterize, and map any existing wetlands and submersed resources (e.g. oysters) which may occur in the project vicinity or within the project footprint. The project design will avoid and minimize any impacts to these resources. A two-person crew will perform the necessary work within one day. All resources will be mapped with GPS field instruments with sub-meter accuracy.

Desktop Assessments

The permit applications (see Task 3 below) require identification of any wetlands present within the work footprint, wetland impacts, impact avoidance and minimization, and mitigation for unavoidable impacts. We have assumed that the project will incur no impacts that require mitigation. The federal permit application also requires an assessment of project impacts on listed and candidate species. We will develop environmental narratives for the FDEP and USACE applications including results of the fieldwork and the necessary information for each agency based on the permit application guidance and discussions with the agency staffs.

TASK 2 – PRELIMINARY DESIGN (60%-Complete)

Through this task, TAYLOR will apply the data collected in Task 1 to complete preliminary engineering design for the replacement of the concrete pier.

Exhibit "I"

Task 2.1 – Coastal Conditions Analysis

TAYLOR will evaluate the historical and FEMA storm data for the area near the project site and modify and apply a previously developed two-dimensional model to determine water levels and current speeds at the site for the desired return period storms. We will determine wave heights at the site from FEMA wave model results and compare these to fetch-limited model wave heights based on ASCE 7-16 wind speeds. We will then apply these conditions to estimate the design hydraulic loads on the pier and document the results. TAYLOR will document tide and storm water levels, wind speeds, wave heights and wave periods, and recommended pier elevation in a coastal conditions report.

Task 2.2 – Preliminary Design Engineering

Based on previously collected data, TAYLOR will develop a preliminary structural design for the concrete pier replacement within the current footprint. Preliminary engineering will consider upland site conditions, geotechnical conditions, and anticipated coastal conditions. During this task, TAYLOR will consider potential substructure layouts to avoid the existing concrete piles locations. TAYLOR will work to identify a constructible, cost-effective, and resilient structural form for the replacement of the concrete pier.

The task deliverable will include preliminary drawings; these drawings will depict plan arrangement, typical cross-sections, deck elevations, anticipated pile specifications, and embedment depths. The designer will also provide an updated opinion of probable costs based on 60%-complete level of design.

Once the preliminary engineering design is complete, TAYLOR will coordinate with COJ to schedule a meeting to review the preliminary design and receive comments. TAYLOR will make one revision to the preliminary design to incorporate those comments received from COJ.

TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT

Task 3.1 – Preapplication Meetings

TAYLOR will work with the COJ and lead state and federal permitting agencies (FDEP and USACE) to coordinate and facilitate a preapplication meeting (one per agency) to present and discuss the proposed project. During the meeting, we will discuss the administrative process and appropriate permit authorization for the project. For COJ and agency review, we will prepare and submit a summary of the preapplication meeting. The summary will focus on the permit types required and agency recommendations for the application contents.

Task 3.2 – Permit Application Package Completion and Submittal

TAYLOR will develop separate permit application packages for the FDEP and USACE based on input received during the preapplication meetings and submit the packages for COJ approval. After making any final changes to the application packages, we will submit to the FDEP and USACE for processing.

Task 3.3 – Response to Requests for Additional Information

Due to the relatively simple nature of the project and the minimal environmental impacts that the project may incur, we expect to and have budgeted for responses to one request for additional information (RAI)

Exhibit I

each from the FDEP and USACE. TAYLOR has budgeted $4,000 for all RAI responses. If agency request requires efforts expected to generate fees beyond this limit, TAYLOR will inform COJ and provide a proposal for the required additional services.

TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

TAYLOR will complete structural analysis and develop the final detailed structural design. During structural design, we will verify the main structural elements, develop detailed structural connections between these elements, and document the design through a set of engineering calculations.

In parallel with this final design effort, TAYLOR will incorporate the comments from the regulatory agencies to prepare the 90%-complete design submittal. TAYLOR will deliver the 90%-complete submittal in electronic (PDF) format. The 90%-complete design package will include updated design calculations, construction drawings, project technical specifications, and opinion of probable cost.

TAYLOR will coordinate with COJ to incorporate the project technical specifications within COJ's standard "front-end" documents (bid documents, contract agreements, general and specific condition, forms, etc.). However, COJ will retain the right and responsibility to develop, review, and finalize all project manual components beyond those technical specifications prepared by TAYLOR.

TAYLOR will address all comments received from COJ and finalize project documents. TAYLOR will develop final signed and sealed construction drawings and technical specifications. We will prepare and provide a proposed schedule of bid items and a final updated opinion of probable cost.

DELIVERABLES

TASK 1 – DATA COLLECTION

- Signed and sealed topographic survey
- Signed and sealed geotechnical exploration report
- Summary of environmental fieldwork and desktop analysis

TASK 2 – PRELIMINARY DESIGN (60%-Complete)

- 60%-complete design package (drawings, technical specifications, and opinion of probable cost)

TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT

- Preapplication meeting summary
- Preliminary draft permit application
- Permit application packages for submittal to FDEP and USACE
- RAI Responses (included responses to inquiries from lead agencies and commenting agencies)

Exhibit I

TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

- 90%-complete design package (drawings, technical specifications, calculations, and opinion of probable cost)
- Signed and sealed construction drawings and technical specifications
- Final opinion of probable construction cost
- Schedule of bid items

SCHEDULE

TAYLOR intends to complete the project on the timeline outlined below.

No.	Task	Months from Start Date											
		1	2	3	4	5	6	7	8	9	10	11	12
		Task Timelines											
1	DATA COLLECTION												
2	PRELIMINARY DESIGN												
3	PERMITTING SUPPORT*												
4	FINAL DRAWINGS AND SPECIFICATIONS												

*Permitting timeline is estimated. TAYLOR has no control over agency review timelines but will actively encourage the agencies to expedite the review process.

EXCLUSIONS

The following tasks are excluded from this Scope of Work unless later included through issuance of an amendment or additional authorization for work:

- Boundary or SSLL survey, or additional topographic or bathymetric surveying services beyond those included within this Scope of Work;
- Geotechnical investigations beyond those described herein;
- Additional natural resource, wetland surveys, or existing environmental condition assessments (e.g., water quality or sediment quality assessments, etc.) beyond those described herein;
- Numerical wave transformation, hydrographic, or sediment transport/morphologic modeling to assess hydrodynamic flushing, wave/structure interactions, long-shore and cross-shore sediment transport, or the potential impacts to adjacent shorelines or property;
- Upland planning, site layout, or design;
- Development of multiple conceptual structure alternatives beyond those described above;
- Cost comparison for multiple project alternatives;
- Bidding or construction phase services.

Exhibit "I"

FEES

TAYLOR will complete the work on a fixed fee basis for task-by-task fees as summarized in the table below. Exhibit B outlines these fees in the Contract Fee Summary Format, Engineering Division, City of Jacksonville.

Task	Fee
TASK 1 – DATA COLLECTION	$15,193.10
TASK 2 – PRELIMINARY DESIGN (60%-Complete)	$25,432.32
TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT	$10,421.97
TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS	$26,555.33
TOTAL	$77,602.72

Exhibit I

EXHIBIT I

Exhibit I

TAYLOR ENGINEERING INC. 10151 DEERWOOD PARK BLVD BLDG 300, SUITE 300 JACKSONVILLE, FLORIDA 32256 CERTIFICATE OF AUTHORIZATION # 4815	FIGURE 1 CITY OF JACKSONVILLE ARLINGTON LIONS CLUB PIER LOCATION MAP	PROJECT C2017-064 DRAWN BY MS SHEET XX of XX DATE 05-29-18	SEAL DRAFT ENG DATE

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

MORGAN SMITH L:\2017\C2017-088 CITY OF JAX PROF. SERVICES FOR DOCK INSPECTION & DESIGN\SITE INSPECTIONS\04 - ARLINGTON LIONS CLUB\REPORT\FIGURES\CAD\LOCATION MAP.DWG 5/29/2018 9:12:36 AM

EXHIBIT J

Fee Summary

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

PART I - GENERAL	
1. Project Arlington Lions Club Concrete Pier Engineering and Permitting Services	**2. Proposal No. / Contract No.** P-52-17 / 8567-02
3. Name of Consultant Taylor Engineering, Inc.	**4. Date of Proposal** 5/25/2018

PART II - LABOR RELATED COSTS				
5. Direct Labor (Limiting Amount)	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Principal Engineer	$ 67.87	13	$ 882.31	
Program Manager	$ 60.82	5	$ 304.10	
Senior Professional	$ 55.41	135	$ 7,480.35	
Project Professional	$ 42.38	16	$ 678.08	
Staff Professional	$ 31.48	200	$ 6,296.00	
Sr. CAD Designer	$ 45.90	145	$ 6,655.50	
Admin	$ 19.67	0	0.00	
TOTAL DIRECT LABOR	$ 43.38	514		$ 22,296.34
6. Overhead (Combined Fringe Benefit & Administrative) Overhead Rate	175 % x Total Direct Labor			$ 39,018.60
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				**$ 61,314.94**
8. PROFIT: Labor Related Costs (Item 7)		x	10%	$ 6,131.49

PART III - OTHER COSTS		
9. Miscellaneous Costs (Reinmbursable/NTE)		
	$	
	$	
	$	
	$	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$ -
10. SUBCONTRACTS (Reimbursable/Not to Exceed)		
GCY Inc.	$ 3,800.00	
MAE, PLLC	$ 6,356.29	
SUB-CONTRACT SUB-TOTAL (Reimb/NTE)		$ 10,156.29
11. REIMBURSABLE COSTS (Limiting Amount)		
	$	
	$	
	$	
SUB-TOTAL REIMBURSABLES		$ -

PART IV - SUMMARY	
TOTAL AMOUNT OF CONTRACT (Lump Sum Plus Reimbursables / Not To Exceed) (Items 5, 6, 8, 9, 10, and 11)	**$ 77,602.72**

Exhibit 'J'

Scope of Work
For
City of Jacksonville
Jim King Park Boardwalk
Engineering and Permitting Services

INTRODUCTION

In 2016, Hurricane Matthew brought strong winds and coastal conditions that severely damaged the timber boardwalk at the Jim King Park facility in the City of Jacksonville (COJ). Through a previous qualification-based selection process, the COJ has chosen Taylor Engineering, Inc. (TAYLOR) to provide all professional services necessary to perform inspections; prepare condition reports, including recommendations for repair and/or replacement; prepare final design and bid documents; and provide post design construction phase support to repair or replace these facilities as necessary. As a continuing phase of this work, the COJ has requested TAYLOR provide this proposal for engineering and permitting services to replace the timber boardwalk at the Jim King Park facility.

While still in use, the damaged length of wetland boardwalk in the Jim King Park public includes a boardwalk segment approximately 205 ft long and 6 ft wide.

Based on the inspection report for the Jim King Park boardwalk, TAYLOR understands that the COJ wishes to replace the entire segment of boardwalk (Figure 1). The report includes opinions of probable cost to repair and replace the boardwalk. Some of these costs may be eligible for financial assistance from the Federal Emergency Management Administration (FEMA) as per the Public Assistance (PA) Program and Policy Guide - *FP 104-009-2* (January 2016). When evaluating whether a damaged facility is eligible for replacement, FEMA compares the repair cost with the replacement cost and evaluates the feasibility of repairing the structure. If the repair cost is greater than 50% of the replacement cost, a full replacement is warranted. . This scope of work entails providing final engineering design and permitting to construct a replacement timber boardwalk that will match the existing layout and includes raising the deck elevation by approximately 2 ft, consistent with the elevation of the perimeter boardwalk. If the COJ chooses to repair the facility (rather than replace it), TAYLOR will provide a revision to the scope of work.

Assumptions

- The project does not include shoreline armoring or another shoreline treatment.
- The renovated boardwalk will remain within (or only nominally outside of) the existing boardwalk footprint and have the same, or fewer, amenities as previously existed.
- The project will avoid wetland and submersed resource impacts or create only temporary impacts that do not require mitigation.
- TAYLOR will field locate wetland and natural resources using sub-meter accuracy GPS equipment. No registered land surveyor verification of the GPS data will be required.
- The project may qualify for an exemption from permitting because it includes only very minimal disturbance to the environment and will maintain the existing footprint. Otherwise a general permit under 52-330-488 F.A.C. is most likely.

Exhibit 'K'

- The USACE will review the application for a Nationwide Type 3 Maintenance authorization.
- Taylor Engineering will consult as soon as possible with state and federal agencies to verify appropriate permit vehicles.
- The COJ will pay all permit fees.
- The COJ will be the permit applicant. TAYLOR will serve as the Engineer of Record and Agent for the permit applications.
- TAYLOR does not guarantee, warranty, or otherwise ensure that the agencies will authorize the permits requested by COJ.

If any of the above assumptions prove incorrect, TAYLOR will consult with COJ and, as necessary or appropriate, modify this scope of services and fee.

SCOPE OF WORK

TASK 1 – DATA COLLECTION

Through this task, TAYLOR and its subcontractors will conduct field investigations and collect necessary data to support engineering design and permitting for a replacement timber boardwalk at the Jim King Park facility in Jacksonville, Florida. For each of the subtasks below, TAYLOR will coordinate field activities with COJ such that the work does not interfere with any other activities.

Task 1.1 – Topographic and Hydrographic Survey

TAYLOR's subconsultant — GCY, Inc. (GCY) — will complete topographic and hydrographic survey of the site. The survey will include:

- Topographic survey within 20-ft of either side of the boardwalk
- Existing structures survey
- Identification of Mean High Water and Mean Low Water Elevation
- Mudline elevations spaced every 2-ft, on both sides of the boardwalk for overwater portion of the boardwalk.

Task 1.2 – Geotechnical Exploration

TAYLOR subconsultant — Meskel and Associates Engineering (MAE) — will conduct geotechnical exploration at the site. The objective of the geotechnical exploration is to provide site and subsurface information to evaluate the subsurface conditions at the site for the proposed construction. The team will provide GPS coordinates of soil boring locations accurate to within 10 ft horizontal (hand held GPS). The team will conduct the field investigations summarized by the table below.

Location	Number of Borings	Depth of Borings Below Ground Surface
Land side boring adjacent to boardwalk	1 SPT[1]	30 ft
Muck probes along overwater portion of pier	20 Approximately	5 to 10 ft (or refusal)

[1]Standard Penetration Test

Exhibit "K"

MAE will perform laboratory classification and index property tests on selected soil samples obtained from the exploration.

A geotechnical engineer, licensed in the State of Florida, will direct the geotechnical exploration and provide an engineering evaluation of the site and subsurface conditions with respect to the planned construction and imposed loading conditions. The results of the exploration and engineering evaluation will then be documented in a deliverable report containing the following:

1. A brief discussion of the understanding of the planned construction and imposed loading conditions.
2. A presentation of the field and laboratory test procedures used, and the data obtained.
3. A presentation of the existing on-site conditions, such as topography, surface vegetation, etc. as they relate to the planned construction.
4. A presentation of the encountered subsurface conditions, including subsurface profiles and measured groundwater levels, estimated seasonal high groundwater levels, and estimated geotechnical engineering properties (as necessary).
5. A geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned construction.
6. Geotechnical design recommendations for foundation design parameters, including estimate of the performance of recommended pile foundation systems.
7. Installation recommendations for timber piles.

Task 1.3 Environmental Fieldwork and Desktop Assessments

Fieldwork

TAYLOR environmental scientists will conduct a one-day field visit to identify, characterize, and map any existing wetlands and submersed resources (e.g. oysters) which may occur in the project vicinity and within the project work footprint. The project design will avoid and minimize impacts to these resources. A two-person crew will perform the necessary work within one day. All resources will be mapped with GPS field instruments with sub-meter accuracy.

Desktop Assessments

The permit applications (see Task 3 below) require identification of any wetlands present within the work footprint, wetland impacts, impact avoidance and minimization, and mitigation for unavoidable impacts. We have assumed that the project will incur no impacts that require mitigation. The federal permit application also requires an assessment of project impacts on listed and candidate species. We will develop environmental narratives for the FDEP and USACE applications including results of the fieldwork and the necessary information for each agency based on the permit application guidance and discussions with the agency staffs.

TASK 2 – PRELIMINARY DESIGN (60%-Complete)

Through this task, TAYLOR will apply the data collected in Task 1 to complete preliminary engineering design for the replacement timber boardwalk.

Exhibit 'K'

Task 2.1 – Coastal Conditions Analysis

TAYLOR will evaluate the historical and FEMA storm data for the area near the project site and modify and apply a previously developed two-dimensional model to determine water levels and current speeds at the site for the desired return period storms. We will determine wave heights at the site from FEMA wave model results and compare these to fetch-limited model wave heights based on ASCE 7-16 wind speeds. We will then apply these conditions to estimate the design hydraulic loads on the pier and document the results. Applying this information, TAYLOR will recommend a new boardwalk elevation as a FEMA Hazard Mitigation strategy. TAYLOR will document tide and storm water levels, wind speeds, wave heights and wave periods, and recommended boardwalk elevation in a coastal conditions report.

Task 2.2 – Preliminary Design Engineering

Based on previously collected data, TAYLOR will develop a preliminary structural design for the replacement timber boardwalk within the current footprint. Preliminary engineering will consider upland site conditions, geotechnical conditions, and anticipated coastal conditions. During this task, TAYLOR will consider potential substructure layouts to avoid/replace the existing timber piles and identify the need for cross braces along the boardwalk. TAYLOR will work to identify a constructible, cost-effective, and resilient structural form for the replacement of the timber boardwalk.

The task deliverable will include preliminary drawings; these drawings will depict plan arrangement, typical cross-sections, deck elevations, anticipated pile specifications, and embedment depths. The designer will also provide an updated opinion of probable costs based on 60%-complete level of design.

Once the preliminary engineering design is complete, TAYLOR will coordinate with COJ to schedule a meeting to review the preliminary design and receive comments. TAYLOR will make one revision to the preliminary design to incorporate those comments received from COJ.

TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT

Task 3.1 – Preapplication Meetings

TAYLOR will work with the COJ and lead state and federal permitting agencies (FDEP and USACE) to coordinate and facilitate a preapplication meeting (one per agency) to present and discuss the proposed project. During the meeting, we will discuss the administrative process and appropriate permit authorization for the project. For COJ and agency review, we will prepare and submit a summary of the preapplication meeting. The summary will focus on the permit types required and agency recommendations for the application contents.

Task 3.2 – Permit Application Package Completion and Submittal

TAYLOR will develop separate permit application packages for the FDEP and USACE based on input received during the preapplication meetings and submit the packages for COJ approval. After making any final changes to the application packages, we will submit to the FDEP and USACE for processing.

Task 3.3 – Response to Requests for Additional Information

Due to the relatively simple nature of the project and the minimal environmental impacts that the project

Exhibit 'K'

may incur, we expect to and have budgeted for responses to one request for additional information (RAI) each from the FDEP and USACE. TAYLOR has budgeted $2,300 for all RAI responses. If agency request requires efforts expected to generate fees beyond this limit, TAYLOR will inform COJ and provide a proposal for the required additional services.

TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

TAYLOR will complete structural analysis and develop the final detailed structural design. During structural design, we will verify the main structural elements, develop detailed structural connections between these elements, and document the design through a set of engineering calculations.

TAYLOR will coordinate with COJ to incorporate the project technical specifications within COJ's standard "front-end" documents (bid documents, contract agreements, general and specific condition, forms, etc.). However, COJ will retain the right and responsibility to develop, review, and finalize all project manual components beyond those technical specifications prepared by TAYLOR.

TAYLOR will address all comments received from COJ and finalize project documents. TAYLOR will develop final signed and sealed construction drawings and technical specifications. We will prepare and provide a proposed schedule of bid items and a final updated opinion of probable cost.

DELIVERABLES

TASK 1 – DATA COLLECTION

- Signed and sealed topographic and hydrographic survey
- Signed and sealed geotechnical exploration report
- Summary of environmental fieldwork and desktop analysis

TASK 2 – PRELIMINARY DESIGN (60%-Complete)

- 60%-complete design package (drawings, technical specifications, and opinion of probable cost)

TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT

- Preapplication meeting summary
- Preliminary draft permit application
- Final permit application packages (FDEP and USACE)
- RAI Responses

TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

- Signed and sealed construction drawings and technical specifications as well as calculations
- Final opinion of probable construction cost
- Schedule of bid items

Exhibit 'K'

SCHEDULE

TAYLOR intends to complete the project on the timeline outlined below.

No.	Task	Months from Start Date											
		1	2	3	4	5	6	7	8	9	10	11	12
		Task Timelines											
1	DATA COLLECTION												
2	PRELIMINARY DESIGN												
3	PERMITTING SUPPORT*												
4	FINAL DRAWINGS AND SPECIFICATIONS												

*Permitting timeline is estimated. TAYLOR has no control over agency review timelines but will actively encourage the agencies to expedite the review process.

EXCLUSIONS

The following tasks are excluded from this Scope of Work unless later included through issuance of an amendment or additional authorization for work:

- Boundary or SSLL survey, or additional topographic or bathymetric surveying services beyond those included within this Scope of Work;
- Geotechnical investigations beyond those described herein;
- Additional natural resource, wetland surveys, or existing environmental condition assessments (e.g., water quality or sediment quality assessments, etc.) beyond those described herein;
- Numerical wave transformation, hydrographic, or sediment transport/morphologic modeling to assess hydrodynamic flushing, wave/structure interactions, long-shore and cross-shore sediment transport, or the potential impacts to adjacent shorelines or property;
- Upland planning, site layout, or design;
- Development of multiple conceptual structure alternatives beyond those described above;
- Cost comparison for multiple project alternatives;
- Bidding or construction phase services.

Exhibit "K"

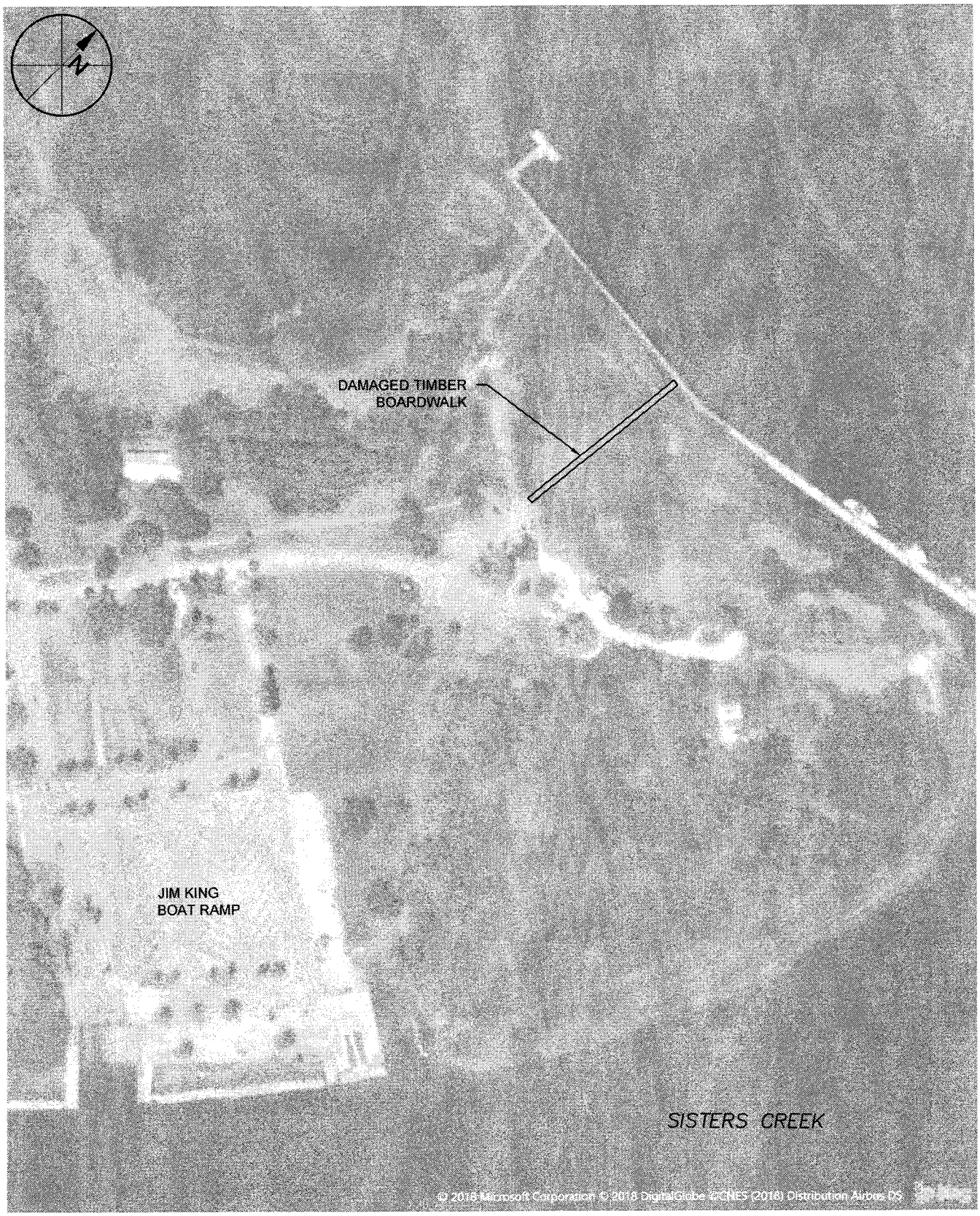
FEES

TAYLOR will complete the work on a fixed fee basis for task-by-task fees as summarized in the table below. Exhibit B outlines these fees in the Contract Fee Summary Format, Engineering Division, City of Jacksonville.

Task	Fee
TASK 1 – DATA COLLECTION	$16,357.87
TASK 2 – PRELIMINARY DESIGN (60%-Complete)	$19,757.11
TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT	$8,089.58
TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS	$14,624.94
TOTAL	$58,829.50

Exhibit 'K'

EXHIBIT K



TAYLOR ENGINEERING INC.
10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 1
CITY OF JACKSONVILLE
JIM KING PARK
LOCATION MAP

PROJECT	DRAWN BY	SHEET	DATE
C2017-088	JBB	1 of 1	12-15-17

SEAL
DRAFT
ENG DATE

MORGAN SMITH \\SJAX1\CADSYS\PROJECTS\C2017-088 COJ PRO-SERV DOCK INSP-DSGN\PARTNERFILES\JIM KING\C2017-088_JIM KING_SITEPLAN.DWG 5/25/2018 12:19:18 PM

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

Exhibit "K"

EXHIBIT L

Fee

Summary

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

PART I - GENERAL	
1. Project Jim King Park Boardwalk Engineering and Permitting Services	**2. Proposal No. / Contract No.** P-52-17 / 8567-02
3. Name of Consultant Taylor Engineering, Inc.	**4. Date of Proposal** 5/29/2018

PART II - LABOR RELATED COSTS				
5. Direct Labor (Limiting Amount)	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Principal Engineer	$ 67.87	12	$ 814.44	
Program Manager	$ 60.82	4	$ 243.28	
Senior Professional	$ 55.41	71	$ 3,934.11	
Project Professional	$ 42.38	16	$ 678.08	
Staff Professional	$ 31.48	168	$ 5,288.64	
Sr. CAD Designer	$ 45.90	101	$ 4,635.90	
Admin	$ 19.67	0	0.00	
TOTAL DIRECT LABOR	$ 41.92	372		$ 15,594.45
6. Overhead (Combined Fringe Benefit & Administrative)				
Overhead Rate	175 % x Total Direct Labor			$ 27,290.29
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				**$ 42,884.74**
8. PROFIT: Labor Related Costs (Item 7)		x	10%	$ 4,288.47

PART III - OTHER COSTS		
9. Miscellaneous Costs (Reinmbursable/NTE)		
	$	
	$	
	$	
	$	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$ -
10. SUBCONTRACTS (Reimbursable/Not to Exceed)		
GCY Inc.	$ 5,900.00	
MAE, PLLC	$ 5,756.29	
SUB-CONTRACT SUB-TOTAL (Reimb/NTE)		$ 11,656.29
11. REIMBURSABLE COSTS (Limiting Amount)		
	$	
	$	
	$	
SUB-TOTAL REIMBURSABLES		$ -

PART IV - SUMMARY	
TOTAL AMOUNT OF CONTRACT (Lump Sum Plus Reimbursables / Not To Exceed) (Items 5, 6, 8, 9, 10, and 11)	**$ 58,829.50**

Exhibit 'L'

Scope of Work
For
City of Jacksonville
Arlington Lions Club Boardwalk Engineering and Permitting Services

INTRODUCTION

Hurricanes Matthew brought strong winds and coastal conditions that severely damaged the timber boardwalk that spans between the Arlington Lions Club Boat Ramp and Blue Cypress Park in the City of Jacksonville (COJ). Through a previous qualification-based selection process, the COJ has chosen Taylor Engineering, Inc. (TAYLOR) to provide all professional services necessary to perform inspections; prepare condition reports, including recommendations for repair and/or replacement; prepare final design and bid documents; and provide post design construction phase support to repair or replace these facilities as necessary. As a continuing phase of this work, the COJ has requested TAYLOR provide this proposal for engineering and permitting services to repair the timber boardwalk.

Arlington Lions Club Timber Boardwalk, located along the St. Johns River, just south of the Lions Club Boat Ramp, consists of a timber boardwalk that runs along the shoreline of the river. The wooded Arlington Lions Club Park provides abundant nature areas and scenic views, and a long boardwalk along the river links the property with the adjacent Blue Cypress Park. The repair area includes a boardwalk section approximately 405 ft long, six ft wide. This segment of boardwalk is currently closed.

Based off the inspection report for Arlington Lions Club Boardwalk, TAYLOR understands that the COJ wishes to replace the entire segment of boardwalk (Figure 1). The report includes opinions of probable cost to repair and replace the boardwalk. Some of these costs may be eligible for financial assistance from the Federal Emergency Management Administration (FEMA) as per the Public Assistance (PA) Program and Policy Guide - *FP 104-009-2* (January 2016). When evaluating whether a damaged facility is eligible for replacement, FEMA compares the repair cost with the replacement cost and evaluates the feasibility of repairing the structure. If the repair cost is greater than 50% of the replacement cost, a full replacement is warranted. This scope of work entails providing final engineering design and permitting to construct a replacement boardwalk that will match the current boardwalk's existing layout within the existing footprint. Also, this scope of work assumes the entire existing boardwalk segment will be demolished and no existing features will be reused. If the COJ chooses to repair the facility (rather than replace it), TAYLOR will provide a revision to the scope of work.

<u>Assumptions</u>

- The project does not include shoreline armoring or another shoreline treatment.
- The renovated boardwalk will remain within the existing boardwalk footprint and have the same, or fewer, amenities as previously existed.
- The project lies above the mean high-water line and will avoid existing wetland and submersed resource impacts or create only temporary impacts that do not require mitigation.
- TAYLOR will field locate wetland and submersed resources using sub-meter accuracy GPS equipment. No registered land surveyor verification of the GPS data will be required.
- The lead state and federal agencies will not require wetland verification visits that include TAYLOR staff.

Exhibit 'M'

- If the project remains outside any wetland line, the state would not require a permit.
- In the case that the footprint does include a wetland line, the state would likely require authorization of a "General Permit to Governmental Entities for Certain Public Use Facilities at Public Natural Areas" 62-330.488 F.A.C.. The timber boardwalk replacement project will not qualify for exemption because the storm damage occurred over a year ago. A negotiation with the FDEP will be necessary to determine the required permit type.
- The project is above the mean high water line; if the project remains outside any wetland line, the USACE would not require a permit. In the case that the footprint is below MHW and/or does include a wetland line, TAYLOR will coordinate with USACE regarding the type of permit required. Nominally, the USACE would review the application for authorization as a standard 404/401(b) permit; the project does not qualify for a Nationwide Type 3 Maintenance Permit due to the boardwalk current lack of serviceability and relatively extended period that the boardwalk has remained in that non-serviceable state. However, for damage from catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, "provided the permittee can demonstrate funding, contract, or other similar delays." A negotiation with the USACE will be necessary to determine the required permit type.
- The COJ will pay all permit fees.
- The COJ will be the permit applicant. TAYLOR will serve as the Engineer of Record and Agent for the permit applications.
- TAYLOR does not guarantee, warranty, or otherwise ensure that the agencies will authorize the permits requested by COJ.

If any of the above assumptions prove incorrect, TAYLOR will consult with COJ and, as necessary or appropriate, modify this scope of services and fee.

SCOPE OF WORK

TASK 1 – DATA COLLECTION

Through this task, TAYLOR and its subcontractors will conduct field investigations and collect necessary data to support engineering design and permitting for a replacement boardwalk at Arlington Lions Club facility in Jacksonville, Florida. For each of the subtasks below, TAYLOR will coordinate field activities with COJ such that the work does not interfere with any other activities.

Task 1.1 – Topographic and Hydrographic Survey

TAYLOR's subconsultant — GCY, Inc. (GCY) — will complete topographic and hydrographic survey of the site. The survey will include:

- Topographic survey within 20-ft of either side of the boardwalk
- Mean High Water (MHW) line identification
- Existing conditions/ structure survey of the boardwalk and associated features

Exhibit 'M'

Task 1.2 – Geotechnical Exploration

TAYLOR subconsultant — Meskel & Associates Engineering (MAE) — will conduct geotechnical exploration at the site. The objective of the geotechnical exploration is to provide site and subsurface information to evaluate the subsurface conditions at the site for the proposed construction. The team will conduct the field investigations summarized by the table below.

Location	Number of Borings	Depth of Borings Below Ground Surface
Land side borings adjacent to timber boardwalk[1]	2 SPT[2]	30 ft

[1] Proposed Locations: a) As close as possible to the timber boardwalk and shoreline
[2]Standard Penetration Test

MAE will perform laboratory classification and index property tests on selected soil samples obtained from the exploration.

A geotechnical engineer, licensed in the State of Florida, will direct the geotechnical exploration and provide an engineering evaluation of the site and subsurface conditions with respect to the planned construction and imposed loading conditions. The results of the exploration and engineering evaluation will then be documented in a deliverable report containing the following:

1. A brief discussion of the understanding of the planned construction and imposed loading conditions.
2. A presentation of the field and laboratory test procedures used, and the data obtained.
3. A presentation of the existing on-site conditions, such as topography, surface vegetation, etc. as they relate to the planned construction.
4. A presentation of the encountered subsurface conditions, including subsurface profiles and measured groundwater levels, estimated seasonal high groundwater levels, and estimated geotechnical engineering properties (as necessary).
5. A geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned construction.
6. Geotechnical design recommendations for foundation design parameters, including estimate of the performance of recommended pile foundation systems.
7. Installation recommendations for timber piles.

Task 1.3 Environmental Fieldwork and Desktop Assessments

<u>Fieldwork</u>

TAYLOR environmental scientists will conduct a field visit to identify, characterize, and map existing wetlands or other sensitive natural resources which occur in the project area and which may occur within the project work footprint. The project design will avoid and minimize any impacts to these resources. A two-person crew will perform the necessary work within one day. All resources will be mapped with GPS field instruments providing sub-meter accuracy.

Exhibit M

Desktop Assessments

The FDEP and USACE permit applications (see Task 3 below) require environmental narratives including results of the fieldwork and other necessary information based on the permit application guidance and discussions with the agency staffs. FDEP and USACE generally require general site characterization, identification of any wetlands present within the work footprint, wetland impacts, impact avoidance and minimization measures, and mitigation for unavoidable impacts. We have assumed that the project will incur no impacts that require mitigation. The federal permit application also requires an assessment of project impacts on listed and candidate species.

TASK 2 – PRELIMINARY DESIGN (60%-Complete)

Through this task, TAYLOR will apply the data collected in Task 1 to complete preliminary engineering design for the repair of the timber boardwalk.

Task 2.1 – Coastal Conditions Analysis

TAYLOR will evaluate the historical and FEMA storm data for the area near the project site and modify and apply a previously developed two-dimensional model to determine water levels and current speeds at the site for the desired return period storms. We will determine wave heights at the site from FEMA wave model results and compare these to fetch-limited model wave heights based on ASCE 7-16 wind speeds. We will then apply these conditions to estimate the design hydraulic loads on the boardwalk and document the results. TAYLOR will document tide and storm water levels, wind speeds, wave heights and wave periods, and recommended boardwalk elevation in a coastal conditions report.

Task 2.2 – Preliminary Design Engineering

Based on previously collected data, TAYLOR will develop a preliminary structural design for the timber boardwalk repair within the current footprint. Preliminary engineering will consider upland site conditions, geotechnical conditions, and anticipated coastal conditions. During this task, TAYLOR will consider potential substructure layouts to avoid/replace the existing timber piles and identify the need for cross braces along the boardwalk. TAYLOR will work to identify a constructible, cost-effective, and resilient structural form for the repair of the timber boardwalk.

The task deliverable will include preliminary drawings; these drawings will depict plan arrangement, typical cross-sections, deck elevations, anticipated pile specifications, and embedment depths. The designer will also provide an updated opinion of probable costs based on 60%-complete level of design.

Once the preliminary engineering design is complete, TAYLOR will coordinate with COJ to schedule a meeting to review the preliminary design and receive comments. TAYLOR will make one revision to the preliminary design to incorporate those comments received from COJ.

TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT

Task 3.1 – Preapplication Meetings

TAYLOR will work with the COJ and lead state and federal permitting agencies (FDEP and USACE) to coordinate and facilitate a preapplication meeting (one per agency) to present and discuss the proposed

Exhibit M

project. During the meeting, we will discuss the administrative process and appropriate permit authorization for the project. For COJ and agency review, we will prepare and submit a summary of the preapplication meeting. The summary will focus on the permit types required and agency recommendations for the application contents.

Task 3.2 – Permit Application Package Completion and Submittal

TAYLOR will develop separate permit application packages for the FDEP and USACE based on input received during the preapplication meetings and submit the packages for COJ approval. After making any final changes to the application packages, we will submit to the FDEP and USACE for processing.

Task 3.3 – Response to Requests for Additional Information

Due to the relatively simple nature of the project and the minimal environmental impacts that the project may incur, we expect to and have budgeted for responses to one request for additional information (RAI) each from the FDEP and USACE. TAYLOR has budgeted $4,000 for all RAI responses. If agency request requires efforts expected to generate fees beyond this limit, TAYLOR will inform COJ and provide a proposal for the required additional services.

TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

TAYLOR will complete structural analysis and develop the final detailed structural design. During structural design, we will verify the main structural elements, develop detailed structural connections between these elements, and document the design through a set of engineering calculations.

In parallel with this final design effort, TAYLOR will incorporate the comments from the regulatory agencies to prepare the 90%-complete design submittal. TAYLOR will deliver the 90%-complete submittal in electronic (PDF) format. The 90%-complete design package will include updated design calculations, construction drawings, project technical specifications, and opinion of probable cost.

TAYLOR will coordinate with COJ to incorporate the project technical specifications within COJ's standard "front-end" documents (bid documents, contract agreements, general and specific condition, forms, etc.). However, COJ will retain the right and responsibility to develop, review, and finalize all project manual components beyond those technical specifications prepared by TAYLOR.

TAYLOR will address all comments received from COJ and finalize project documents. TAYLOR will develop final signed and sealed construction drawings and technical specifications. We will prepare and provide a proposed schedule of bid items and a final updated opinion of probable cost.

DELIVERABLES

TASK 1 – DATA COLLECTION

- Signed and sealed topographic survey
- Signed and sealed geotechnical exploration report
- Summary of environmental fieldwork and desktop analysis

TASK 2 – PRELIMINARY DESIGN (60%-Complete)

- 60%-complete design package (drawings, technical specifications, and opinion of probable cost)

TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT

- Preapplication meeting summary
- Preliminary draft permit application
- Permit application packages for submittal to FDEP and USACE
- RAI Responses

TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS

- 90%-complete design package (drawings, technical specifications, calculations, and opinion of probable cost)
- Signed and sealed construction drawings and technical specifications
- Final opinion of probable construction cost
- Schedule of bid items

SCHEDULE

TAYLOR intends to complete the project on the timeline outlined below.

No.	Task	Months from Start Date											
		1	2	3	4	5	6	7	8	9	10	11	12
		Task Timelines											
1	DATA COLLECTION												
2	PRELIMINARY DESIGN												
3	PERMITTING SUPPORT*												
4	FINAL DRAWINGS AND SPECIFICATIONS												

*Permitting timeline is estimated. TAYLOR has no control over agency review timelines but will actively encourage the agencies to expedite the review process.

EXCLUSIONS

The following tasks are excluded from this Scope of Work unless later included through issuance of an amendment or additional authorization for work:

- Boundary or SSLL survey, or additional topographic or bathymetric surveying services beyond those included within this Scope of Work;
- Geotechnical investigations beyond those described herein;

Exhibit "M"

- Additional natural resource, wetland surveys, or existing environmental condition assessments (e.g., water quality or sediment quality assessments, etc.) beyond those described herein;
- Numerical wave transformation, hydrographic, or sediment transport/morphologic modeling to assess hydrodynamic flushing, wave/structure interactions, long-shore and cross-shore sediment transport, or the potential impacts to adjacent shorelines or property;
- Upland planning, site layout, or design;
- Development of multiple conceptual structure alternatives beyond those described above;
- Cost comparison for multiple project alternatives;
- Bidding or construction phase services.

FEES

TAYLOR will complete the work on a fixed fee basis for task-by-task fees as summarized in the table below. Exhibit B outlines these fees in the Contract Fee Summary Format, Engineering Division, City of Jacksonville.

Task	Fee
TASK 1 – DATA COLLECTION	$17,191.33
TASK 2 – PRELIMINARY DESIGN (60%-Complete)	$20,481.00
TASK 3 – ENVIRONMENTAL PERMITTING SUPPORT	$10,421.97
TASK 4 – FINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS	$15,013.59
TOTAL	$63,107.89

Exhibit "M"

EXHIBIT M

TAYLOR ENGINEERING INC.
10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 1
CITY OF JACKSONVILLE
ARLINGTON LION'S CLUB TIMBER BOARDWALK
LOCATION MAP

PROJECT	DRAWN BY	SHEET	DATE
C2017-088	JBB	1 of 1	12-15-17

SEAL

ENG DATE

JONATHAN BRUMFIELD C:\USERS\JBRUMFIELD\DESKTOP\ARLINGTON LION'S CLUB_SITEPLAN - JBB.DWG 4/26/2018 3:48:33 PM

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

Exhibit 'M'

Fee

Summary

Exhibit 'N'

EXHIBIT N

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

PART I - GENERAL	
1. Project Arlington Lions Club Boardwalk Engineering and Permitting Services	2. Proposal No. / Contract No. P-52-17 / 8567-02
3. Name of Consultant Taylor Engineering, Inc.	4. Date of Proposal 5/25/2018

PART II - LABOR RELATED COSTS				
5. Direct Labor (Limiting Amount)	Hourly Rate	Estimated Hours	Estimated Cost	TOTAL
Principal Engineer	$ 67.87	12	$ 814.44	
Program Manager	$ 60.82	5	$ 304.10	
Senior Professional	$ 55.41	95	$ 5,263.95	
Project Professional	$ 42.38	16	$ 678.08	
Staff Professional	$ 31.48	166	$ 5,225.68	
Sr. CAD Designer	$ 45.90	101	$ 4,635.90	
Admin	$ 19.67	0	0.00	
TOTAL DIRECT LABOR	$ 42.84	395		$ 16,922.15
6. Overhead (Combined Fringe Benefit & Administrative) Overhead Rate	175 % x Total Direct Labor			$ 29,613.76
7. SUBTOTAL: Labor + Overhead (Items 5 & 6)				**$ 46,535.91**
8. PROFIT: Labor Related Costs (Item 7)		x	10%	$ 4,653.59

PART III - OTHER COSTS		
9. Miscellaneous Costs (Reinmbursable/NTE)		
	$	
	$	
	$	
	$	
MISCELLANEOUS DIRECT COSTS SUB-TOTAL		$ -
10. SUBCONTRACTS (Reimbursable/Not to Exceed)		
GCY Inc.	$ 5,500.00	
MAE, PLLC	$ 6,418.39	
SUB-CONTRACT SUB-TOTAL (Reimb/NTE)		$ 11,918.39
11. REIMBURSABLE COSTS (Limiting Amount)		
	$	
	$	
	$	
SUB-TOTAL REIMBURSABLES		$ -

PART IV - SUMMARY	
TOTAL AMOUNT OF CONTRACT (Lump Sum Plus Reimbursables / Not To Exceed) (Items 5, 6, 8, 9, 10, and 11)	**$ 63,107.89**

Exhibit 'N'