TASK ORDER FOR THE

TRENCHLESS INSTALLATION OF UTILITIES ACROSS FLEMING CHANNEL
FINAL DESIGN & BID SUPPORT

This TASK ORDER is issued under the terms and conditions of the _____ ("AGREEMENT") between the City of Key West ("CITY") and Jacobs ("CONSULTANT") executed on _____, which are incorporated herein by this reference.

A. SCOPE OF SERVICES

Specific services which the CONSULTANT agrees to furnish are summarized on the below document entitled TASK ORDER FOR THE TRENCHLESS INSTALLATION OF UTILITIES ACROSS FLEMING CHANNEL FINAL DESIGN , "SCOPE OF SERVICES." The "Scope of Services" defines the work effort anticipated for the Task order.

This Task Order, when executed, shall be incorporated in and shall become an integral part of the AGREEMENT.

B. TIME OF COMPLETION

Start date for this project will be no later than ten (10) days after execution of this authorization. The duration of this Task Order is estimated in 130 weeks.

C. COMPENSATION

Compensation for the labor will be on a Time and Materials fee basis as stipulated in Article 5, Paragraph 5.1.1 of the AGREEMENT. Compensation for all expenses will be on a Cost Reimbursable-Per Diem basis as stipulated in Article 5, Paragraph 5.1.2 of the AGREEMENT.

D. ACCEPTANCE

By signature, the parties each accept the provisions of this TASK ORDER and authorize the CONSULTANT to proceed at the direction of the CITY's representative in accordance with the "SCOPE OF SERVICES."

For Jacobs Engineering Group Inc.

By: _____
Diana F. Francois, P.E.
Manager of Projects

_____
Mike Stickley, P.E.
Senior Project Manager

For CITY OF KEY WEST

By: _____
Albert P. Childress
City Manager

Dated the _____ day of _____, 2023

ATTEST: _____

TASK ORDER FOR THE
TRENCHLESS INSTALLATION OF UTILITIES ACROSS FLEMING CHANNEL
FINAL DESIGN

SCOPE OF SERVICES

Background and Project Description

The City of Key West (City) owns and operates the Richard A. Heyman Environmental Protection Facility (WWTP). Currently, a force main conveying wastewater to the WWTP is installed on a utility bridge spanning approximately 460 feet, across the Fleming Channel from Trumbo Point to Fleming Key. These welded steel pipelines were originally completed in May 1996, and are approaching 24 years in service. There is a concern related to the condition of the exposed 30-inch wastewater force main, but the primary focus of the project is to ensure that they are protected from damage from a hurricane or impact from boats. The bridge was struck by debris from hurricane Irma in 2017 and since then two additional times by boats. A failure of the force main from impact(s) or due to pipe support damage/failure would prevent conveyance of wastewater to the WWTP. This would result in a loss of wastewater service for Key West and could result in significant environmental impacts. This project provides for the relocation of the force main and other utilities to below the channel using a trenchless method to protect the utilities and reduce the risk of damage or failure from impact(s) and support failure(s).

Removal of the existing aerial electrical conduit and water main will be reviewed and discussed with the City and Stakeholders as part of design. The two 30-inch steel pipes will not be removed or interconnected with the new main installed under Fleming Channel. As part of a separate project the City intends to perform a condition assessment of these two pipes and maintain one for redundancy. Valving and other required appurtenances will be incorporated into the design of the new force main to facilitate the future connection with the selected aerial 30-inch main to remain based upon the results of a condition assessment completed by others.

The utilities to be relocated consist of:

- 1 - 30-inch force main
- 1 – 12-inch reclaimed water line
- 1 – 8-inch water line
- 4 – 4-inch electrical conduits

This project will build on the work completed in Jacob's feasibility assessment performed in 2021 that detailed approaches and concepts for relocation of the utilities to below Fleming Channel by either microtunneling or horizontal directional drilling (HDD). Both approaches as detailed in the assessment are feasible. Major work to be performed and detailed within the following sections of this scope of services includes:

- Task A: Feasibility Assessment Review and Stakeholder Workshop

- Task B: Permitting
- Task C: Grant Assistance
- Task D: Detailed Design
- Task E: Surveying and Easements
- Task F: Bid Phase Services
- Task G: Construction Services

The design deliverables to be prepared as part of this scope of services includes preparation of construction documents along with permit documents for the relocation of the existing utilities to below Fleming Channel along with drawings detailing interconnections with the existing utilities.

Scope of Services

Task A –Feasibility Assessment Review and Stakeholder Workshop

This task provides for conducting a review of the feasibility assessment prepared by the CONSULTANT in 2021 with CITY staff along with conducting a workshop with the multiple stakeholders. This review and workshop will be conducted in person as part of a single trip. As part of this workshop site visits will be conducted to further review the installation approaches. The discussions and decisions from this task will determine the preferred horizontal alignment and trenchless approach (HDD or microtunneling) for relocation of the utilities. A key decision that may impact/drive the installation method are the requirement(s) of FDEP related to the separation of the water main and sewer force main. Discussions with FDEP will occur before the review meeting and stakeholder meeting detailed within the following subtask.

Subtask A.1 – Feasibility Assessment Review

A workshop will be conducted with the CITY to perform a detailed review of the feasibility assessment. This review will include a detailed summary and discussion of the two trenchless technologies, work site/work shaft layouts, relocation/realignment of the existing utilities along with other considerations to include easement requirements and construction duration. As part of the workshop, the summary of items to be presented to the stakeholders will be discussed and finalized. Time has been included in this task for onsite meetings with the stakeholders to further discuss the work and installation methods to gain their input for consideration.

Known stakeholders and roles include:

- *City of Key West*: Owner and CITY for this project.
- *Florida Keys Aqueduct Authority:* Owner and operator of the 8-inch water line to be relocated.
- *Keys Energy:* Owner and operator of the four, 4-inch electrical conduct and wiring to be relocated.

- *U.S. Navy*: Temporary and potentially permanent easements will be required from the U.S. Navy to complete both the trenchless installation along with realignment of the existing utilities. The work sites and laydown areas will impact the use of areas by the Navy.
- *Richard A. Heyman Environmental Protection Facility:* Coordination with the treatment plant to determine tie in locations, constraints along with allowed outages of the force main and its associated pump stations.
- *US Pipeline:* Maintains and operates a jet fuel line in the proximity of the relocation work to be performed as part of this project.

The outcome from this workshop (along with the discussions with FDEP related to the force main and water main separation) is to determine the trenchless installation approach to advance. These stakeholders will continue to be involved throughout the design process with reviews conducted with them as part of each design phase.

Deliverables Submitted Electronically

- Meeting minutes and attendant list in PDF format will be prepared and submitted to all relevant parties within 7 calendar days of each meeting.

Task B – Permitting

Under this task, the CONSULTANT will obtain required permits and document decisions/requirement of permitting agencies necessary to complete design and construction of the utility project as described above. This work will primarily be performed by Cummings Cederberg, Inc. (SUBCONSUTANT) under the CONSULTANT. Their scope of services is provided as an attachment to this document and provides additional detail related to the permits and permitting process for this work. A representative of the SUBCONSUTANT will participate in the kickoff workshop under Task A and has included two additional meetings as part of their services for meeting with the CITY and stakeholders.

The following provides a list of required or potentially required permits based upon decisions/determinations of agencies, additional work items that will be performed along with the final deliverable. Where a permit is determined to not be required the basis or determination will be documented within a technical memorandum of not more than one page in length along with e-mail or other documentation from the agency confirming the permit is not a requirement. The budget for each of the permits has been broken out within the SUBCONSULTANT's Scope of Work. Where a permit is found to not be required the budget for that permit will not be used. The task numbers align with the SUBCONSULTANT's scope of work.

- Task 1 –In-Person Meetings and Site Visit
    - *Deliverable: Tracked changes in JEG Draft Meeting Minutes in Word Format for three (3) meetings*
- Task 2 –Preparation of Environmental Assessment
    - *Deliverables: Preliminary Draft EA, Draft EA, Preliminary Final EA, and Final EA in Word and PDF format*
- Task 3 –Wetland Delineation and Habitat Assessment
    - *Deliverables: Draft and Final Environmental Survey Report and Basemap in PDF format*
- Task 4 –Environmental Regulatory Permitting Requirements
    - *Deliverable: Environmental Regulatory Permit Matrix*

- Task 5 –USACE Nationwide Permit Verifications
  - Task 5.1 USACE Pre-application Meeting
    - *Deliverable: USACE Meeting Minutes in PDF format*
  - Task 5.2 USACE NWP Verification and Processing
    - *Deliverables: Nationwide Permit Verification request package, Response to one (1) RAI*
- Task 6 –Historic Properties Desktop Analysis
  - *Deliverables: Cultural Resources Technical Memorandum in PDF format*
- Task 7 –FDEP Permitting
  - Task 7.1 FDEP Pre-application Meeting
    - *Deliverable: State Lands Title Determination, FDEP Meeting Minutes in PDF format*
  - Task 7.2 FDEP Exemption Verification and Processing
    - *Deliverables: FDEP Exemption Verification Application, Response to RAI*
  - Task 7.3 NPDES Construction Generic Permit Application
    - *Deliverable: NPDES Generic Permit Application*
- Task 8 –FKNMS Permitting
  - *Deliverables: NOAA National Marine Sanctuaries Permit Application, Response to one (1) RAI*
- Task 9 –Formal Wetland Jurisdictional Determination
  - *Deliverables: Environmental Survey Report in PDF format*
- Task 10 –Submerged Cultural Resources Assessment Survey and Diver Identification
  - *Deliverables: Cultural Resources Technical Memorandum in bound copy and PDF format for submittal to the City, unbound copy and electronic data submitted to the Florida State Site Files*
- Task 11 –USACE Standard Permit Application and Processing
  - *Deliverables: Draft and Final USACE Application packages, up to three (3) RAI response packages*
- Task 12 –U.S. Fish and Wildlife Service Biological Assessment
  - *Deliverable: Draft and Final Biological Assessment for FWS Species in PDF format*
- Task 13 –National Marine Fisheries Service, Protected Resources Division Biological Assessment
  - *Deliverable: Draft and Final Biological Assessment for NMFS PRD Species in PDF format*
- Task 14 – National Marine Fisheries Service, Habitat Conservation Division and/or Environmental Protection Agency Section 404(q) Clean Water Act Elevation
  - *Deliverable: Response to NMFS HCD and EPA 3(b) comments as deemed appropriate by USACE*
- Task 15 – Keys Restoration Trust Fund and UMAM Assessment
  - *Deliverables: UMAM Assessment Worksheets in PDF-format*
- Task 16 – FDEP Statewide Environmental Resource Permit Application and Processing
  - *Deliverables: Draft and Final FDEP SWERP Application packages, up to three (3) RAI response packages*
- Task 17 – Sovereign Submerged Lands Easement Application and Processing
  - *Deliverables: SWERP Section F Application, RAI responses*
- Task 18 – NOI Dewatering Permit Application and Processing
  - *Deliverables: NOI for Dewatering Operations, RAI Responses*
- Task 19 – Benthic Resource Survey

- *Deliverables: Dive Safety Plan, Draft and Final Benthic Survey Plan, Draft and Final Environmental Survey Report in PDF-format*

Specific work items that the CONSULTANT will complete in support of this permitting work includes:

- Florida Department of Environmental Protection (FDEP): Prior to the meetings detailed for completion as part of Task A, the CONSULTANT will conduct a virtual call with FDEP and CITY staff to confirm that installation of the force main and water main within the same casing installed by microtunneling will be permitted since it will not be possible to achieve the required separation. Alternate methods typically allowed when separation is not possible include installing the force main within as steel casing or using steel pipe or ductile piping as the carrier. Discussions from this call will be documented and a follow up e-mail submitted to FDEP as documentation of the discussion. If the requirements from FDEP would substantially increase construction cost or impact the ability to access/maintain the utilities this will be discussed further with the CITY as this may impact the installation method (microtunneling or HDD) to advance along with the approach to be presented to the Stakeholders. The results of this meeting will be document.
- General Items used as part of Multiple Permit Items Listed Above include:
    - Frac-out Plan (HDD Only)
    - Turbidity Control Plan
    - Dewatering Plan
    - Sediment and Erosion Control Plan

These general items will be completed as part of design development and will be included in the contract documents (drawings and specifications). The cost associated with this work has been included as part of Task D, Design.

Task C - Grant Assistance

As part of this task the CONSULTANT will provide Grant Assistance to the CITY. A primary funding source for this work is through Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP). The CONSULTANT will provide supporting data and documents required for the phased approval process to meet the requirements of the HMGP cost sharing requirements. As part of this task, a kickoff workshop will be conducted with the FEMA Coordinator and CITY to discuss and confirm work requirements. The work as part of Phase 1 will include but is not limited to development of a documented model or tool that details the potential that the utilities on the bridge or the bridge itself could be impacted and damaged by a storm/storm debris or other impacts. This work will include a review and summary of historical weather data along with predicted changes in patterns that would increase the risk to the utilities. Work to be completed by the CONSULTANT in support of Phase II includes development of documents and data to demonstrate that the

project is technically feasible, cost effective, and compliant with environmental planning and historic preservation (EHP) considerations. Alternatives, as required by FEMA, will be reviewed and developed by the CONSULTANT will respond to additional information/data requests for confirming/obtaining funding.

Task D – Detailed Design

This task includes the detailed design for the relocation of the existing utilities to under Fleming Channel. The work performed as part of the previous tasks will be used as the basis for the design. Work as part of this will include hydraulic modeling, surveying, preparation of easement descriptions, contract drawings and specifications adequate for bidding. Portions of this work will be performed by subconsultants as noted in following sections.

Subtask D1. Conceptual Design (30% Design)

As part of this task, the horizontal alignment and trenchless installation approach selected as part of Task A will be advanced and conceptual drawings will be developed for the trenchless channel crossing along with the alignments and approaches for connecting into the existing utilities to maintain redundancy. The Drawings will show any required temporary and permanent easements. No technical specification will be prepared as part of this phase of design. The design will detail concepts (valves and other appurtenances) to allow future interconnection with one of the existing 30-inch aerial pipelines that is to be used for redundancy. Removal of existing utilities no longer required or to be maintained based upon meeting(s) with the CITY and Stakeholders will be into the bid documents if requested by the CITY.

A hydraulic model will be developed of the force main. The 30-inch force main crossings via the bridge has a relatively flat profile. Installing the new trenchless carrier pipe at the anticipate depth of the trenchless crossing creates a significant drop for the pipes on the mainland side and a similarly significant rise on the island side. Five pump stations contribute flow to the 30-inch force main (Pump Stations A, B, C, D and F). CONSULTANT will use AFT Fathom modeling software to evaluate the change in grade for impacts to upstream five pump stations. Pump curves, pressure, flow and other available date will be used to calibrate the model. CONSULTANT will summarize the analysis and results in a technical memorandum. Modeling of the water main will be performed by FKAA and will be responsible for sizing of the water main that will be incorporated into the bid documents.

Two workshops will be conducted as part of this task. The first will be a virtual to allow the CONSULTANT to review the conceptual design along with the findings from the hydraulic model with the CITY. Comments will be incorporated into conceptual drawings prior to the second workshop. The second workshop will be a virtual workshop with the CITY and stakeholders. The goal of this phase of design will be to advance the concepts to a level that will obtain final consensus of the approaches, areas to be used (temporary and permanent), concepts, etc. prior to advancement into detailed design.

Deliverables Submitted Electronically

- Draft conceptual drawings (for presentation to the CITY)
- Hydraulic Model Technical Memorandum
- Final conceptual drawings (for presentation to the CITY and Stakeholders)

- Workshop meeting minutes

Subtask D.2 – Detailed Design

The CONSULTANT will develop Bid Documents to include detailed design drawings and a Project Manual for the utility relocation based upon the agreed upon concepts, layouts and approaches from Subtask D.1. The drawings will be 22-inch by 34-inch format (to allow scaling to 11x17) and prepared in AutoCAD Civil 3D. Plan and profile of trenchless crossing and utility relocations will be on the same sheet and drawn at appropriate horizontal and vertical scales for clarity. Bid Documents will outline the work and be prepared to bid in a single prime contract format. The construction sequence and operations criteria will be developed and outlined in the Bid Documents provide uninterrupted service (water, sewer, power) during construction.

The Project Manual will include the following information as a minimum:

- Front-end documents
- Technical specifications
- MBE/DBE forms
- HMGP Required Documents
- CITY standard forms
- Geotechnical Data Report(s)
- Permits, permit information/documents required for bidding or construction purposes.

The Project Manual will be developed using the CITY's standard front-end documents and the CONSULTANT's standard technical specifications.

CONSULTANT will prepare and submit drawings at the 60% and 90% completion stages of design. Draft specifications will also be provided at each completion stage. A review time of 15 working days will be provided to the CITY and Stakeholders. After the review period, a meeting may be held to discuss questions and comments. The 60% review will be conducted in person and will include a site visit. The goal of this workshop is to gain final consensus and "freeze" all concepts and approaches.

Similarly the 90 % review workshop will be conducted in person and based upon discussions may include a site visit if items are identified that need to be confirmed. For each meeting, minutes that summarize major decisions and action items will be prepared by the CONSULTANT and submitted to the CITY and Stakeholders.

The documents produced at this phase will be used to initiate required permitting. Also following the 90% design phase, CONSULTANT will prepare an Easement Acquisition submittal showing permanent and temporary construction easements to be acquired, parcel and property ownership information, and Land Tie data in accordance with the CITY's standards.

CONSULTANT will prepare and submit a 100% design submittal of one full size sets of printed drawings and one electronic pdf copy. These documents will incorporate all final notes, details and other requirements and considerations from the CITY and stakeholders. Drawings and specifications will be signed and sealed by engineer(s) licensed in the State of Florida.

CONSULTANT will submit construction cost estimates for the 60%, 90% and 100% design submittal stages.

All design documents will undergo a formal internal review process prior to submittal. The reviewers will be integrated into planning and design throughout the project to ensure technical quality. A certification that the Quality Review has been performed will be submitted with each deliverable.

Deliverables – Submitted Electronically and Hard Copy as Noted

- 60%, 90 and 100% Drawings and specifications in PDF format along with 1 Hard copy of each with drawings in 22x34 inch format
- 60% (Class 2, +20 to -15%, 90% and 100% (Class 1, +15 to -10%)cost estimates.
- Workshop Agenda, Minutes and Attendant List.
- Quality Review Form

Task E – Surveying and Easement

Services to be subcontracted in the performance of the work detailed within this Scope of Services includes:

- Surveying and Easements. The CONSULTANT will contract the services of a licensed surveyor. The scope and budget for this work is based upon relocating the existing utilities utilizing HDD as this trenchless approach since this method requires a larger work area and more easements then microtunneling. Specific work to be performed includes:
    - Surveying of areas on land required for completion of construction to include collection of elevations, utility alignments and estimated elevations and other data critical for design
    - Performance of a bathometric survey of the channel crossing alignment if it is determined that the available data is not sufficient for design and/or permitting requirements.
    - Drawings and legal descriptions for easements. This includes the easement associated with the Sovereign Submerged Lands Easement.

  The total area to be surveyed may be reduced or modified from that detailed within the subcontractor's scope of work based upon installation method selected and results of Stakeholder meetings.

The scopes of services from the Avirom & Associates, Inc. is provided as an attachment to this agreement.

Task F – Bid Phase Services

The CONSULTANT will provide the following bid phase services to the CITY:

- Bid documents.
    - Provide CITY with contract documents in a format that will allow assembly and upload by the CITY into DemandStar.

- Preparation of addenda.
    - All communications with bidders on matters related to the technical aspects of the design will be forwarded by CITY, and reviewed by the CONSULTANT, for inclusion in ADDENDA, if required.
    - Up to two ADDENDA, if required for distribution by the CITY
- Prebid Meeting.
    - Coordinate and conduct one pre-bid meeting. CONSULTANT will prepare an agenda and meeting minutes.
    - Contractor questions will be documented and responded to as part of an ADDENDA.
    - CONSULTANT's Project Manager and Tunneling Engineer will attend in person and will include a site visit/site walk with the contractors/bidders.
- Bids.
    - Review and evaluate bids for compliance and completeness if requested by the CITY. The CONSULTANT will prepare an award letter for the CITY recommending the successful bidder.
- Conformed Documents.
    - After award, the CONSULTANT will conform the documents to include the bid information, addenda, etc. and will distribute to the successful contractor three sets of contract documents for execution. The contractor will be directed to return the documents to the CONSULTANT for compliance review. After the CONSULTANT reviews the contract documents for each successful contractor, these three sets of documents will be sent to the CITY for final review and signatures.
    - Work as part of this will include one set of electronic digitally signed and sealed documents along with a hard copy printed in 22x34 inch format for submission to City of Key West Utilities Department (if required). If requested the autocad files will be provided to the CITY and CONTRACTOR.

Bid services will be considered complete upon the CONSULTANT's review and forwarding of the Contractors executed documents to the CITY, and submittal of conformed documents to the CITY for each Task.

Deliverables – Submitted electronically

- Prebid agendas.
- Pre-bid meeting minutes and attendant list.
- Addenda
- Recommendation of award letter.
- Three copies of Contract Documents for execution by the successful bidder. (Hard copies)
- Electronically sealed Contract Document for Permitting
- Printed copy of Contract Documents in 22x24-inch format.

Task G: Services During Construction

Consultant will provide Services During Construction related to the Fleming Channel Trenchless installation project. The services include construction administration, submittal review, and limited resident inspection which are described in more detail below. This Task assumes that the trenchless method used for crossing the channel is microtunneling. The services to be provided and allowances for time are detailed in the following bullets.

- Provide technical interpretations of drawings, specifications, and Contract Documents, and evaluate requested deviations/request for information (RFI) from the approved design or specifications, and issue field orders as necessary. This scope and fee for this work includes a total of 80 engineering hours.
- Review shop drawings and other data that the Contractor is required to submit. These will be reviewed for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Reviews will be completed within 10 working days of document delivery to the CONSULTANT. The exact number of submittals will vary based upon the final installation approach and other work requested by the CITY to include. A total of 140 engineering hours have been included for this task.
- Periodic site visits by design engineers to observe progress and quality of the work and to determine, in general, if the work is proceeding in accordance with the intent and requirements of the Contract Documents. This scope assumes 2 site visits during the open cut installation by the CONSULTANT representative along with 2 site visits during installation of the utilities within the casing. An allowance is included for 2 additional site visits (total of 6) that will be used during shaft construction, excavation and placement of bottom concrete plug. Note that these site visits will occur where possible on the same day as monthly construction progress meetings.
- The CONSULTANT representative will be present 10 hours a day for the duration of the trenchless installation under the Fleming Channel which is projected to require approximately 8 weeks. A total of 480 hours have been included for this task. This time is based upon a typically trenchless contractor work schedule of 6 days/week, 10 hours per day.
- The CONSULTANT will review the technical merit of the change orders and will provide comments to the City. This scope assumes a total of 2 change orders for a total time of 16 hours of engineering time.

Deliverables

- Responses to RFIs and RFI tracking summary in PDF electronic format.
- Responses to submittals and submittal tracking summary in PDF electronic format.
- Construction Reports/Documents from Site Visits
- Comments related to change order merit.

Assumptions

The following assumptions associated with all Tasks used in the development of this agreement

- Work under this Task Order will be completed in calendar year 2023-2025.
- The design will be based on the federal, state, and local codes and standards in effect at the start of the project. Any changes in these codes may necessitate a change in scope.

- Geotechnical characteristics beneath the Fleming Channel are similar to those found in geotechnical borings obtained in TO 1-19. No additional borings are proposed for completion as part of this scope of services.
- The CONSULTANT's master specifications will be used as the basis for all technical sections in Divisions 1 through 49. CITY documents will be used for General Conditions, Supplemental Conditions, and other front-end documents.
- Existing system Record Drawings will be used when available. CONSULTANT will reasonably rely upon the accuracy and completeness of the information/data provided by the City or other third parties. Potholing or other subsurface investigation is beyond the scope of this project and where required will be detailed in the documents for the Contractor to confirm/complete.
- In soils, foundation, groundwater, and other subsurface investigations, the actual characteristics may vary significantly between successive test points and sample intervals and at locations other than where observations, exploration, and investigations have been made. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that could affect total project cost and/or execution. These conditions and cost/execution effects are not the responsibility of CONSULTANT.
- Permitting, mailing and other fees noted in previous Tasks will be paid by the CITY.
- This Task Order does not include any local (City or County) Building Department permit applications or Dewatering Permit Applications. These permits will be responsibility of the Contractor to obtain.
- The contract will be awarded after the first bidding process. Re-bidding will be considered as an "Additional Services" for each bid.
- Providing Construction/Cost Estimates – In providing opinions of cost, financial analyses, economic feasibility projections, for the project, the CONSULTANT has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, the CONSULTANT makes no warranty that CITY's actual project costs, financial aspects, economic feasibility, will not vary from the CONSULTANT's opinions, analyses, projections, or estimates and the CONSULTANT will have no liability for such variances.
- Review of Third-Party Design – Any review by CONSULTANT of design prepared by a third-party (such as that prepared by the Contractor's engineer) will be for general conformance with the design intent, drawings and specifications along with a review of all design details and calculations. The Designer and their design professionals will remain responsible for the accuracy and completeness of their design and construction documents. The CONSULTANT does not assume any liability for work product(s) prepared by third parties, including but not limited to design and related work and makes no representation or warranty regarding same.

The CONSULTANT will reasonably rely upon the accuracy, and completeness of the information/data provided by the CITY or other third parties.

- The presence or duties of CONSULTANT' personnel at a construction site, whether as onsite representatives or otherwise, do not make CONSULTANT or CONSULTANT' personnel in any way responsible for those duties that belong to City and/or the construction contractor or other entities, and do not relieve the construction contractor or any other entity of their obligations, duties, and responsibilities, including, but not limited to, all construction methods, means, techniques, sequences, and procedures necessary for coordinating and completing all portions of the construction work in accordance with the construction Contract Documents and any health or safety precautions required by such construction work.

CITY's Responsibilities

To assist meeting schedule and budget estimates contained in this proposal, the CITY will provide the following:

- Prompt review and comment on all deliverables (within 15 working days of document reception).
- Facilitate access to required facilities
- Facilitate / coordinate meetings with Stakeholder and other parties required for the work
- Attendance of key personnel at meeting as requested

Completion Dates

- A project schedule will be developed with the CITY as part of the kickoff workshop. The schedule will require input from CITY staff. CONSULTANT will be prepared with a draft matrix/schedule for surveying, permitting and design for discussion during the workshop.

Task durations do not include delays in the review of deliverables from the CITY or Agencies for each Task.

Compensation

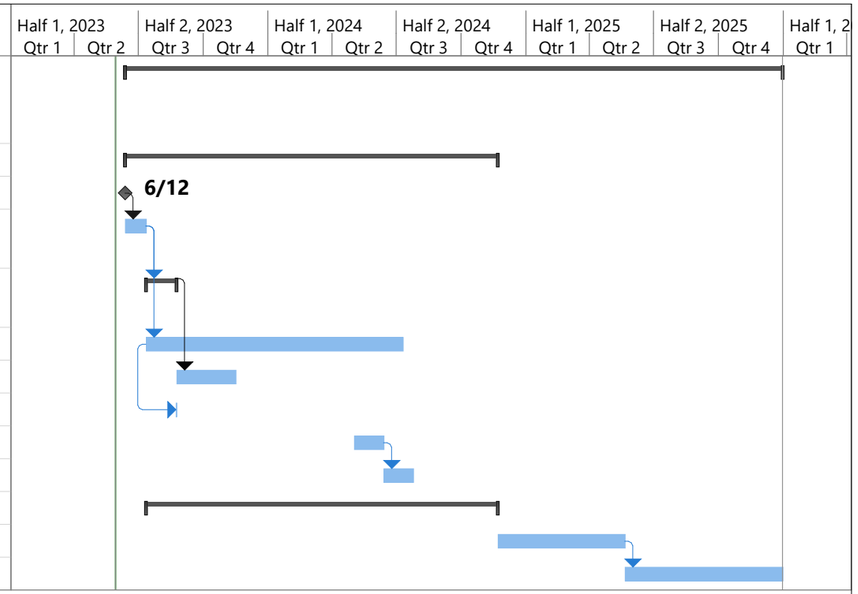
The estimated Time and Materials compensation for this Task Order, is shown as Attachment A. The breakdown of hours by task is also included as part of this attachment.

Attachment A: Compensation/Schedule

Task	Description	Jacobs Labor ($)	Subconsultant ($)	Expenses ($)	Subconsultant
A	Feasibility Assessment Review and Stakeholder Workshop	$41,586			
B	Permitting	$15,960	$385,930		Cummings Cederberg Inc.
C	Grant Assistance	$49,676			
D	Detailed Design	$283,802			
E	Surveying and Easements		$86,291		Avirom & Associates, Inc.
F	Bid Phase Services	$45,625			
G	Services During Construction	$173,802			
	Jacob Expenses (All Tasks)			$66,640	
	Subtotal	$610,451	$472,221	$66,640	

Total Time and Materials Fee **$1,149,313**

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Notes	Resource Names
1		**TRENCHLESS INSTALLATION OF UTILITIES ACROSS FLEMING CHANNEL**	**667 days**	**Mon 6/12/23**	**Tue 12/30/25**			
2		**Design Services**	**379 days**	**Mon 6/12/23**	**Thu 11/21/24**			
3		NTP for Design	0 days	Mon 6/12/23	Mon 6/12/23			
4		Kick off Meeting and Subcontracts	22 days	Mon 6/12/23	Tue 7/11/23	3		
5		**Feasibility Assessment Review and Stakeholder Workshop**	**31 days**	**Wed 7/12/23**	**Wed 8/23/23**	**4**		
9		Permitting	260 days	Wed 7/12/23	Tue 7/9/24	4		
10		Funding Assistance	60 days	Thu 8/24/23	Wed 11/15/23	5		
11		Workshop with FEMA	1 day	Wed 8/23/23	Wed 8/23/23	9SS+30 days		
12		Phase 1 Grant Model/Tool Development	30 days	Thu 5/2/24	Wed 6/12/24	23		
13		Phase 2 Grant Feasibility, Estimates	30 days	Thu 6/13/24	Wed 7/24/24	12		
14		**Detailed Design**	**357 days**	**Wed 7/12/23**	**Thu 11/21/24**			
31		Bid Phase Services	128 days	Fri 11/22/24	Tue 5/20/25	30		
32		Limited Services During Construction	160 days	Wed 5/21/25	Tue 12/30/25	31		



Date: Tue 5/30/23

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

Project Name	TO 1-23 Fleming Channel
City of Key West	

TOTAL [$]	$1,149,313

Total Labor	$610,452
Total Jacobs Expenses	$66,640
Total Subconsultants	$472,221

		Man-Hours by Activity	QA / QC	Project Manager	Civil Engineer	Trenchless Design Engineer	Electrical Engineer	Structural Engineer	CADD Technician	Senior CADD Designer	Specification Editor	Cost Estimator	Permitting Engineer	Construction Inspector	Hydraulic Modeling	Grant Assistance Support	Document Editor	Labor by Activity	Jacobs Expenses	Subconsultants
TOTAL [h]		**2951**	**48**	**371**	**473**	**583**	**162**	**110**	**326**	**108**	**114**	**90**	**72**	**320**	**40**	**96**	**38**	**$610,452**	**$66,640**	**$472,221**
	Assumed Rates		$280	$240	$183	$259	$183	$240	$158	$183	$109	$166	$183	$209	$166	$259	$109			
	Total Labor	$610,452	$13,440	$88,922	$86,641	$151,062	$29,646	$26,400	$51,508	$19,764	$12,426	$14,940	$13,176	$66,880	$6,640	$24,864	$4,142			
TASK A FEASIBILITY ASSESSMENT		**174**																**$41,586**	**$0**	**$0**
	Feasibility Assessment Review and Stakeholder Workshop	24		2	8	6											8	$4,370		
	Meeting with City of Key West	24		8	4	12												$5,760		
	Meeting Stakeholder	112		56		56												$27,944		
	Site Trip Documentation	14		6		8												$3,512		
TASK B PERMITTING		**76**																**$15,960**	**$0**	**$385,930**
	Jacobs Permitting Oversight	76		36									40					$15,960		$385,930
TASK C FUNDING ASSISTANCE		**238**																**$49,676**	**$0**	**$0**
	Funding Assistance	16		8		8												$3,992		
	Workshop with FEMA	2			2													$366		
	Phase 1 Model/Tool Development	124			32											80	12	$27,884		
	Phase 2 Feasibility, Estimates, Etc.	96.45			36.45							32				16	12	$17,434		
TASK D DETAILED DESIGN		**1450**																**$283,802**	**$0**	**$86,291**
	Detailed Design	0																$0		$86,291
	Draft Conceptual Drawings	329.76	48	25.51	48	30.25	32	16	60	32	6	32						$67,179		
	Hydraulic Model Development	36		4											32			$6,272		
	Hydraulic Model Technical Memo	20		2							4				8		6	$2,898		
	Conceptual Design Workshop	14		2	8	4												$2,980		
	60% Design Drawings	264		8	48	24	48	32	80	24								$50,416		
	60% Specifications	128		8	24	40	16	8	8		24							$25,400		
	Opinion of Construction Cost Estimate	28		2		8			2			16						$5,524		
	60% Design Workshop (on Site)	50		24	2	24												$12,342		
	90% Design Drawings	192		8	48	24	16	12	60	24								$36,600		
	90% Specifications	104		4	16	24	8	4	16		32							$18,544		
	Opinion of Construction Cost Estimate	22		2		8			4			8						$4,512		
	90% Design Workshop (on Site)	6		2	2	2												$1,364		
	Bid Drawings	118		6	24	16	8	8	40	16								$22,608		
	Bid Specifications	62		2	8	16	4	4	4		24							$11,028		
	Class 1 Opinion of Probable Construction Cost	4		1		1						2						$831		
	Subcontractor Services	72		32	4	4							32					$15,304		
TASK E BID PHASE SERVICES		**233**																**$45,625**	**$0**	**$0**
	Bid Phase Services	28		12	16													$5,808		
	Attend Prebid Meeting and Summary	48		24		24												$11,976		
	Respond to Questions	89		8	35	8	6	4	12	8	8							$16,687		
	Bid Review and Letter of Recommendation	20		2	16	2												$3,926		
	Develop and Submit Conformed Documents	48		4					24	4	16							$7,228		
TASK F LIMITED SDC		**780**																**$173,802**	**$66,640**	**$0**
	Limited Services During Construction	16							16									$2,528		
	Respond to RFIs	80		8	32	26	8	6										$17,414		
	Review Shop Drawings	140		8	60	40	16	16										$30,028		
	Review of Pay Applications	0																$0		
	Milestone Visits forOpen Cut Installation	48		48														$11,520		
	Technical Supervision Druring Trenchless Installations	480				160								320				$108,320		
	Assistance during Change Order Anegotiations	16		8		8												$3,992		
	Reimbursable Travel	0																$0	$66,640	

Attachment B: Subcontractor Agreements

CUMMINS | CEDERBERG
Coastal & Marine Engineering

May 9, 2023 98300-R1

Jacobs Engineering Group
Attn: Mike Stickley, Senior Technologist

Sent via email: Mike.Stickley@jacobs.com

RE: Proposal for Fleming Key Cut Utility Line Environmental Services
Environmental Permitting Support

Dear Mr. Stickley:

Pursuant to our recent discussion, Cummins Cederberg, Inc. (Cummins Cederberg) is pleased to present Jacobs Engineering Group (JEG, Client) with this revised proposal for our environmental consulting services for the proposed Fleming Key Cut Utility Line installation located in Key West, Monroe County, Florida (Project).

Project Introduction

It is our understanding that JEG, as the prime consultant for the City of Key West (City), is working with the City to undertake a proposed project for a trenchless installation of utilities beneath the seabed, east of and parallel to Fleming Key Bridge in Key West. As the construction methodology has not yet been confirmed, the following provides a menu of consulting services to support permitting for the Project.

Scope of Services

The following section outlines the scope of services to be provided by Cummins Cederberg.

Task 1 – C.1.1 In-Person Meetings and Site Visit

Cummins Cederberg will participate in three (3) in-person meetings to discuss the proposed action, alternatives, and Environmental Assessment (EA) process with the City of Key West and the Project team. During the Project kickoff meeting a preliminary site visit will be conducted to observe upland site conditions. Cummins Cederberg will review the JEG meeting minutes for each of the three (3) meetings and provide additions in tracked changes relative to the scope of work herein.

Deliverable: Tracked changes in JEG Draft Meeting Minutes in Word Format for three (3) meetings

Task 2 – C.1.4 Preparation of Environmental Assessment

Cummins Cederberg will prepare an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) for the proposed Project. The EA is anticipated to result in a Finding of No Significant Impact (FONSI) determination. The EA and FONSI will utilize the Federal Emergency Management Agency (FEMA) templates. The EA will include discussion of the affected environment, environmental consequences and cumulative impacts, mitigation, required permits, and identify contributors to the EA. Comments and feedback on the Draft EA will be addressed in a Response Matrix in the Final EA. Issuance of the State Permit (addressed herein) will provide Coastal Zone Management Act consistency and Water Quality Certification.

JEG will provide the following for Cummins Cederberg to incorporate into the EA:

- NEPA scoping with FEMA to develop the viable alternatives for evaluation
- Comprehensive Alternatives Analysis
- Description of the Proposed Action Area
- Scoping letters to relevant federal, state, and local agencies for input with agency responses
- Publish Notices of Availability, Issuance of Public Notices, and Stakeholder Coordination
- Public Meetings
- Response to comments on Draft EA for incorporation into Response Matrix in Final EA

Deliverables: Preliminary Draft EA, Draft EA, Preliminary Final EA, and Final EA in Word and PDF format

Task 3 – C2.2 Wetland Delineation and Habitat Assessment

A field visit will be conducted by two environmental scientists to identify the estimated landward extent of jurisdictional wetlands at the Project site. The wetland limits will be delineated in accordance with the US Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Regional Supplement, Version 2.0, November 2010, and the Florida Department of Environmental Protection (FDEP) statewide rule for delineation of landward extent (boundaries) of wetlands and other surface waters as defined by Chapter 62-340, F.A.C. October 2013. Representative wetland and upland data points will be established and observations of hydrology, plant communities, and soils will be recorded, per USACE field data records.

The wetland boundaries will be recorded using a Trimble© Geo 7X handheld DGPS unit with sub-meter accuracy. The Other Surface Waters on site (e.g., ditches, canals, ponds) will be located and marked on a map. During the site visit, Cummins Cederberg will conduct a preliminary assessment for the occurrence of Federal and State endangered and threatened floral and faunal species onsite by performing a pedestrian survey of habitat types within the Project site boundary. Habitats occurring within the Project limits will be mapped on an aerial photograph.

Cummins Cederberg will prepare a basemap documenting the limits of jurisdictional wetlands and observed habitats. An Environmental Survey Report will be prepared documenting field observations and referencing the basemap. Representative photographs will be included in the Report.

Deliverables: Draft and Final Environmental Survey Report and Basemap in PDF format

Task 4 – C.3.1 Environmental Regulatory Permitting Requirements

Cummins Cederberg will review environmental regulatory agency requirements and prepare a matrix summarizing state and federal environmental permitting requirements and associated costs based upon the selected construction methodology and anticiapted Project impacts. It is anticipated that JEG and the City will provide feedback relative to local permitting requirements.

Deliverable: Environmental Regulatory Permit Matrix

Task 5 – C.3.2 USACE Nationwide Permit Verifications

Nationwide Permits are permits issued by the US Army Corps of Engineers (USACE) that have already undergone the consultations that are required for a Standard Permit (e.g., cultural resources, historical resources). This Task assumes the USACE will verify that the proposed scope of work will qualify for issued Nationwide Permits and that the Benthic Survey by Terramar conducted in March 2022 will be sufficient for permitting. Please note that the USACE typically requires benthic surveys to be conducted within the federally recognized seagrass growing season (June 1 through September 30) and current within one year. This Task assumes there will be no impacts to aquatic resources as a result of the proposed Project and no mitigation negotiations will be required. It is assumed that the Project will result in a “May Affect, Not Likely to Adversely Affect” determination with no further consultation with the U.S. Fish and Wildlife Service (FWS) required pursuant to the Manatee Key and the National Marine Fisheries Service (NMFS) Protected Resources Division (PRD) will determine that the scope of work is consistent with the Statewide Programmatic Biological Opinion.

Task 5.1 USACE Pre-application Meeting

Cummins Cederberg will coordinate a virtual pre-application meeting with the USACE to discuss the proposed Project and any anticipated permitting challenges. Cummins Cederberg will prepare for and participate in the pre-application meeting with USACE. Discussions will include, but are not limited to, environmental site conditions, purpose and need, construction methodology, and confirmation that the Project is not located within a federal channel, subject to a Consent to Easement, and subject to 408 Consultation. Confirmation as to whether the Project will qualify for Nationwide Permit verification or will require a Standard Permit will be sought. Meeting minutes will be prepared documenting Project discussions.

Deliverable: USACE Meeting Minutes in PDF format

Task 5.2 USACE NWP Verification and Processing

Cummins Cederberg will prepare and process a Department of the Army Pre-construction Notification (PCN) Form (ENG Form 6082) with the USACE requesting verification that the proposed scope of work qualifies for the Nationwide 57 (NW-57) Electric Utility Line and Telecommunications Activities Permit and the Nationwide 58 (NW-58) Utility Line Activities for Water and Other Substances Permit. JEG will provide Permit Sketches depicting the proposed construction, Construction Methodology narrative, Frac-out Plan, Dewatering Plan, Sediment and Erosion Control Plan, and the Benthic Survey from Terramar, as well as City of Key West signature on completed ENG Form 6082. Cummins Cederberg will prepare a detailed cover letter introducing the Project and will provide the Environmental Survey Report, Pre-Application Meeting Minutes, Manatee Key to facilitate FWS consultation, and JaxBO checklists for Activity 8 Transmission and Utility Lines to facilitate NMFS PRD consultation. Cummins Cederberg will maintain contact with the USACE to review plans and provide a comprehensive response to one (1) Request for Additional Information (RAI) from the USACE, to include information requested by the FWS and NMFS PRD. Upon completion of construction, Cummins Cederberg will submit the Self-Certification Statement of Compliance with As-built Drawings provided by JEG, to the USACE.

Deliverables: Nationwide Permit Verification request package, Response to one (1) RAI

Task 6 – C.3.2 Historic Properties Desktop Analysis

Cummins Cederberg's subconsultant will review Florida Department of Historic Resources (DHR) sites files to determine the presence of any known cultural resources within a 1-mile vicinity of the Project area. The information obtained from the site file review will be used to determine the probability of cultural resources on the property. A comprehensive literature and records review of pertinent historic documents will be performed in order to understand the historic contexts for the study areas. This task includes inquiries with county, state, and federal agencies as needed. The information obtained from the site file review, historic documents, and current conditions will be used to determine the probability (high, moderate, and/or low) of cultural resources on the property, in conjunction with known culturally sensitive areas. The results of this probability evaluation will determine the level of effort needed for field verification, should a field-based reconnaissance or later Phase I Cultural Resources Assessment Survey (CRAS) be requested.

The estimated costs provided for this Task are for the desktop analysis only. Using this data, a technical memorandum narrative will be prepared presenting the results of the assessment, along with an aerial map featuring cultural resource survey boundaries and select groups of resources within the 1-mile radius of the Project area. The report will include the results from background and literature review and recommendations for further work as described above, if necessary. The letter report will comply with DHR standards and will reflect the potential for and/or presence of known cultural resources in and around the Project area.

Project information can be provided to the Florida State Historic Preservation Office (SHPO) and appropriate Tribes to include but not limited to, topographic and aerial maps of the Project area boundary, photographs of current site conditions and GIS data for areas subject to proposed

ground disturbing activities, and pertinent historical information, including previous and current use, known sites or historic use, and previous surveys. Recommendations for additional work will also be provided, as appropriate, in the cover letter and/or through oral communication with JEG. The information compiled herein is anticipated to support agency preparation of a Section 4(f) de minimus letter.

Deliverables: Cultural Resources Technical Memorandum in PDF format

Task 7 – C.3.4 FDEP Permitting

This Task assumes the proposed scope of work will qualify for an FDEP exemption. Qualification for an exemption is contingent upon the selected construction methodology (e.g., laid on, embedded in, water-jet plowing, horizontal directional drilling). Please note that the FDEP does not interpret horizontal directional drilling as qualifying for the 403.813(1)(m) Florida Statutes (F.S.) exemption. Although horizontal directional drilling is covered by some General Permits, those General Permits are excluded in Outstanding Florida Waters (OFW), and the Project is located in an OFW. Additionally, this Task assumes that a State Lands Easement and a State Lands Lease will not be required.

Task 7.1 FDEP Pre-application Meeting

Cummins Cederberg will submit a State Lands Title Determination Request to the FDEP Division of State Lands for the Project site to determine ownership of the submerged lands. Cummins Cederberg will coordinate a virtual pre-application meeting with the FDEP to discuss the proposed Project and any anticipated permitting challenges. Cummins Cederberg will prepare for and participate in the pre-application meeting with FDEP. Discussions will include, but are not limited to, environmental site conditions and construction methodology. Confirmation as to whether the Project will qualify for an Exemption or will require an Individual Permit will be sought. Confirmation will also be sought relative to the type of submerged lands use authorization that will required, if the State Lands Title Determination confirms that the Project is located on Sovereign Submerged Lands. Meeting minutes will be prepared documenting Project discussions.

Deliverable: State Lands Title Determination, FDEP Meeting Minutes in PDF format

Task 7.2 FDEP Exemption Verification and Processing

Cummins Cederberg will prepare and process a Statewide Environmental Resource Permit (SWERP) Exemption Verification Form requesting authorization for the proposed Project, pursuant to Chapter 62-330.051(14)(b), Florida Administrative Code (F.A.C.) and 403.813(1)(m) F.S. JEG will provide Permit Sketches depicting the proposed construction, Construction Methodology narrative, Frac-out Plan, Dewatering Plan, Sediment and Erosion Control Plan, and Property Ownership documentation, as well as City of Key West signature on completed Exemption Verification Form. Cummins Cederberg will prepare a detailed cover letter introducing the Project and will provide the Environmental Survey Report, Pre-Application Meeting Minutes, State Land Use Cover Map, USDA Soil Map, and State Lands Title Determination. Cummins Cederberg will maintain contact with the FDEP to review plans and provide a comprehensive

response to one (1) Request for Additional Information (RAI) from the FDEP to include information requested by the Florida Fish and Wildlife Conservation Commission (FWC). Cummins Cederberg will maintain contact with FDEP to review plans and provide additional information. JEG or the City will provide the exemption verification fee in the amount of $100.00.

Deliverables: FDEP Exemption Verification Application, Response to RAI

Task 7.3 NPDES Construction Generic Permit Application

Cummins Cederberg will prepare a Notice of Intent (NOI) to use National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharge from Large and Small Construction Activities pursuant to 62-621.300(4) F.A.C. The NOI will include the Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan, both prepared by JEG. The NOI will be submitted to FDEP as required prior to commencement of construction. Upon completion of construction, the NPDES Stormwater Notice of Termination Form, completed by JEG, will be submitted to FDEP as required by 62-621.300(6) F.A.C. JEG or the City will provide the generic permit application fee in the amount of $250.00.

Deliverable: NPDES Generic Permit Application

Task 8 – C.3.5 FKNMS Permitting

Cummins Cederberg will prepare and process a NOAA National Marine Sanctuaries Permit Application (OMB #0648-0141) requesting authorization for the proposed Project and submit it to the Office of National Marine Sanctuaries (ONMS) as required by 15 CFR Part 922. JEG will provide Permit Sketches depicting the proposed construction, Construction Methodology narrative, Frac-out Plan, Dewatering Plan, Sediment and Erosion Control Plan, Property Ownership documentation, and the Benthic Survey by Terramar. Cummins Cederberg will prepare a detailed cover letter introducing the Project and will provide the Environmental Survey Report. Cummins Cederberg will maintain contact with the ONMS to review plans and provide a comprehensive response to one (1) Request for Additional Information (RAI) from the ONMS. Cummins Cederberg will maintain contact with ONMS to review plans and provide additional information. The ONMS permit is typically issued after receipt of the USACE and FDEP permits; however, Florida Keys National Marine Sanctuary (FKNMS) staff prefer to be involved during the USACE and FDEP permitting process. Cummins Cederberg will include FKNMS staff in the permitting process, copy them on relevant correspondence, and solicit their input during the process. JEG or the City will provide the FKNMS OMB fee in the amount of $50.00.

Deliverables: NOAA National Marine Sanctuaries Permit Application, Response to one (1) RAI

Task 9 – C.4.1 Formal Wetland Jurisdictional Determination

A Cummins Cederberg biologist, experienced in the identification and mapping of important wetland species, will conduct a wetland survey within the Project site. The wetland species and exotic vegetation will be field located, and the upland/wetland boundaries will be flagged. A

Petition for a Formal Determination of the Landward Extent of Wetlands and Other Surface Waters (Form 62-330.201(1)) will be prepared and a U.S. Army Corps of Engineers – Jacksonville District – Regulatory Division, Request for Corps Jurisdictional Determination (JD) (For Jurisdictional Status and Identifying Wetlands and Other Aquatic Resources) will be prepared. JEG will provide signed forms upon completion by Cummins Cederberg. The requests will be accompanied by cover letters to the FDEP and USACE respectively, and will include a summary of the proposed Project, Project Drawings, the Cummins Cederberg preliminary wetland boundary with photos, completed USACE Wetland Data Forms, Property Ownership information, NRCS Soil Map, USGS Quad Map, FWS National Wetland Inventory Map, Project site Topography Map, and a Historical Aerial Document to support the FDEP and USACE in preparation of their respective jurisdictional determinations.

Cummins Cederberg will work with FDEP and the USACE to coordinate a joint site visit so all parties involved can agree on a final wetland boundary to be used in subsequent environmental permit processing for the proposed Project. Within one week after the agency site visit with Cummins Cederberg, JEG will have the Project Surveyor conduct a survey of the final flagged wetland boundary. The survey must be digitally signed/sealed by a Professional Land Surveyor, tied to the State Plane Coordinate Systems, and provided in CAD and PDF-format. Cummins Cederberg will submit the signed and sealed survey to the FDEP and USACE for issuance of the Jurisdictional Determinations.

A brief environmental survey report, including representative photographs and referencing the site survey from the Project surveyor, will be prepared summarizing the investigations. JEG or the City will pay the fee for the petition for formal determination of the landward extent of wetlands and other surface waters for an area less than 10 acres in the amount of $780.00.

Deliverables: Environmental Survey Report in PDF format

Task 10 – C.4.2 Submerged Cultural Resources Assessment Survey and Diver Identification

Our team understands that in relation to this contract, the City plans to install a utility line in the Fleming Key Cut area. As such, submerged targets may require identification and evaluation for the Government to determine eligibility for listing on the National Register of Historic Places (NRHP). Having worked in Florida for many years, our Team understands the potential for the dredging to adversely affect historic properties. Cummins Cederberg's subconsultant will: 1) perform the comprehensive literature and records review of pertinent historic documents in order to develop historic contexts for the study areas; 2) document previously recorded cultural resources within and adjacent to the Project area; 3) conduct a remote sensing survey and diver identification of recorded targets; 4) analyze the data; 5) evaluate all anomalies and complete the necessary reporting and documentation, and 6) prepare all required deliverables including collected data.

All work completed by the Team for these cultural resource investigations will be conducted in compliance with the National Historic Preservation Act of 1966, as amended (P.L. 89-665); the Archaeological and Historic Preservation Act, as amended (P.L. 93-291); the Abandoned Shipwreck Act of 1987; and the Advisory Council on Historic Preservation revised 36 CFR, Part 800 Regulations. The Team will abide by all applicable regulations, publications, manuals, and local policies and procedures including, but not limited to, Section 267.12, Florida Statutes, Chapter 1A-32 and 46 of the Florida Administrative Code; the Florida Division of Historical Resources, Performance Standards for Submerged Remote Sensing Surveys, including obtaining the required permits from the state. The Team will abide by the Bureau of Ocean Energy Management's (BOEM) Survey Requirements and Mitigations. The investigations will be performed by a professional archaeologist meeting the qualifications established in the Secretary of Interior's Standards and Guidelines.

Our Team is fully aware of Florida's long maritime history and, for that reason, that there is a high potential for submerged historic properties that could be adversely affected by this proposed Project. We are fully qualified to explore whether submerged historic properties exist in the Project study areas and, if such properties are documented, assist in determining how to avoid, minimize, or mitigate any adverse effects.

We further understand that the Primary Objective and Scope of this Project is to provide compliance services, and if deemed necessary by the lead regulatory agency, to perform a submerged cultural resources assessment survey and the diver identification/evaluation of recorded targets should they be detected. The specifications presented in this Task are designed to determine the absence or presence of potentially significant submerged cultural resources within the proposed Project location.

- Conduct a literature search, background review, and archival research in preparation for the remote sensing including an overview of the history, geology, and previous research in and near the Project area;
- Coordinate with government agencies, and acquire a State permit for archaeological investigations in Florida state waters;
- Magnetometer, side scan sonar, and CHIRP-style sub-bottom profiler survey of the APE;
- Analysis and interpretation of data collected;
- Diver Identification and evaluation of identified targets; and
- Draft and final reports including evaluation all remote sensing anomalies and previously recorded resources for inclusion in the National Register of Historic Place (NRHP).

Archival, Literature, and Informant Research

The Team will collect environmental and cultural information on the location and potential significance of cultural resources in the study area by conducting a thorough archival/literature review of pertinent data and interviews with local informants and other knowledgeable individuals. The Team will utilize the Florida Master Site File (FMSF) data and the local knowledge of resource managers to document previously recorded cultural resources within and adjacent to the Project area. A review of the Florida State Site Files will be made to gather data on nearby historic

properties in relationship to historically significant individuals, institutions or events, including the history of the land use for the survey in relation to maritime transportation and commerce. Emphasis will be placed on examination of historic and cartographic data relating to the locations of historic wrecks and hydrographic change. Repositories may include, but are not limited to, the following: municipality records, university and private collections, photography collections, and regional and national archives. Emphasis will also be placed on documentation related to exploration, colonization, development, agriculture, fishing, industry, trade, transportation, commerce, warfare, and shipbuilding. Appropriate information will be collected that may provide information about targets, anomalies, and landforms and their relationship to known shipwrecks. Data regarding historic wrecks and hydrographic change using data collected from the Florida State Historic Preservation Office (SHPO), the National Oceanic and Atmospheric Administration (NOAA), and other appropriate archival sources will be consulted. Shipwrecks and obstructions are recorded in the vicinity of the Project area.

Additional archival research will be conducted, as necessary, to identify, evaluate, and assess the significance of targets, anomalies, and/or landforms. The Team will examine historic background data and build upon that data to further construct and refine a background history of the targets, anomalies, and landforms as they relate to the project area, i.e., place identifiable targets in appropriate historical context. These contexts will be used as the framework in which to apply the criteria for National Register evaluations. Archival research will address the following:

- Past field surveys in the Project area and the relevance of the major findings in the area currently under study, with in-text references and full citations;
- Pertinent data regarding archaeological reports and site forms from the Florida SHPO files and local repositories, as appropriate, with in-text references and full citations;
- Pertinent data regarding historic wrecks and hydrographic change using data collected from the Florida SHPO, the National Oceanic and Atmospheric Administration (NOAA), and other appropriate archival sources, mapped and cited appropriately;
- Pertinent historical data from records such as plat maps, tract books, aerial and topographic maps, atlases, tax records, photographs, local historical/archaeological societies and relevant historical documents, cited appropriately;
- Pertinent historic aerials of the project area, with at least one appearing in the report, with intext references/discussion and full citations;

Additionally, any pertinent information from informants will be included and cited. If formal interviews are conducted, we will provide transcripts of the interviews and signed waivers completed by the interviewee. Informal interviews will be cited as personal communication and will be indicated in the field notes.

Coordination and Permits

Consultation with the Florida SHPO will determine if properties listed on, being considered for listing on, or determined eligible for the NRHP are located within or near the current Project area boundaries. Project area maps will be included in the consultation for reference purposes. An 1A-

32 permit will be acquired prior to any fieldwork commencing. This Task will also consist of coordinating the fieldwork schedule.

Fieldwork

The Team will conduct an intensive cultural resource remote sensing survey of the Project Area of Potential Effects (APE). This full remote sensing survey will incorporate a Trimble DSM-232 Differential Global Positioning System (DGPS), navigation software (Hypack®), Geometrics-882 Cesium Marine magnetometer, EdgeTech 4125 side-scan sonar, and an EdgeTech 3100P CHIRP sub-bottom profiler (with SB-216S Towfish) or equivalent. All instruments to be utilized for this Project in accordance with the Florida Division of Historical Resources (FDHR), Performance Standards for Submerged Remote Sensing Surveys. The side-scan sonar will be towed at a height that is 10 to 20 percent of the range of the instrument, while the magnetometer may have to be increased to avoid grounding/loss of instruments but will not exceed six (6) meters. Line transects will be spaced at no greater than 30-meter intervals and may be decreased over known or suspected submerged cultural resources. The boat speed will not exceed 5 knots. The side scan sonar range will collect data with 100 percent overlapping coverage (200 percent seafloor coverage) of the Project area. Investigations will explicitly determine the extents of any newly identified sites, targets, or anomalies, and map the site components within the survey area. Field methodology will be designed to collect sufficient information on magnetic anomalies, sonar targets, and sub-bottom anomalies at depth to locate and evaluate their potential significance and make recommendations on the need for, and scope of, future investigations or avoidance measures. All data will be gathered in Florida State Plane East coordinates using North American Datum 1983. The total area to be surveyed is estimated at 1.6 acres. The remote sensing is projected to take 1 day to complete; additional refinement of the targets that are subject to diver identification will also be conducted.

Diver Identification of remote sensing targets

The dive operation phase of this Project will consist of SCUBA or surface-supplied air diver inspection of identified target areas and possibly hydraulic probing. The Team understands that no artifacts or cultural material will be collected under the contract unless the resource cannot be adequately documented without such collection. This portion of the investigation will consist of visual inspection, identification, evaluation, and significance assessment of targets. Horizontal and vertical extents of each target will be defined through remote sensing, excavation, direct physical observation/examination, probing, waterjets, or other means. The Team will examine the physical characteristics of each target and obtain sufficient data to identify and record the feature.

It is assumed Surface Supplied Air (SSA) will be the most efficient and safe method of conducting investigations within the Project Area. Divers will employ a commercial dive mask connected to a surface-supplied air source, radio communications cable, safety tether, and pneumofathometer hose. A certified dive tender will aid the diver with dress and equipment and will tend the diver while submerged and moving about the sea floor. The radio communications operator will maintain contact with the diver and relay messages between the diver and the topside support team. A dressed, standby certified diver will be on site in the event of an emergency situation that

requires aid to the primary diver. A certified dive supervisor will be present on site at all times to oversee diver and topside operations to achieve the Project goals.

All divers are required to have a primary air supply and an emergency gas supply (EGS), or bailout. The primary air supply is delivered via the diver's umbilical. This is a three-strand spiral wound umbilical which provides air, enables communications, and sends depth information to the Dive Control System. The umbilical is also used to lower and raise divers into and out of the water. The manifold has a one-way (non-return) valve and allows the umbilical to be correctly attached. The emergency gas supply (EGS) valve on the manifold controls the flow of the bailout supply and allows the diver to switch from surface supply to his/her EGS without removing the mask or losing communication with the surface. The EGS will be a scuba cylinder with volumes of no less than 850L (30 ft^3) which can provide air to the diver in case of primary air source failure. This bailout system allows the diver to safely end the dive and return to the surface.

The diver's air supply will be delivered through the Kirby Morgan Air Control System 5 (KMACS-5). This system is a fully integrated, lightweight, portable control box for use in surface supplied air diving operations. The unit controls the diver's air supply, communications, and monitors the diver's depth. The KMACS-5 utilizes four wire (round robin) communications between the divers and the surface. Air for SSA diving will be provided by a cascade system of two 240 ft^3 compressed air cylinder K bottles, opened to supply air one at a time. Pressure gauges and check valves will be included in the air supply system. Two levels of redundant backup air supply will be used, including an aluminum 80 ft^3 Self Contained Underwater Breathing Apparatus (SCUBA) cylinder linked to the SSA cascade system and at least a 30 ft^3 SCUBA cylinder worn by the diver and connected to the dive mask. The Dive Supervisor will act as timekeeper and radio operator, monitoring the air supply system during each dive to ensure that air pressure is correctly maintained and adequate reserve air is available. All air supplied to divers will meet industry air purity standards. A certificate of air quality will be obtained from the air supplier prior to commencement of diving activities.

A daily Pre-Dive Safety Meeting will be held with all members of the dive team and vessel crew. Safety and diving procedures will be fully discussed. Diving will commence only upon completion of this meeting. A magnetometer or underwater metal detector may be deployed with the diver to refine any magnetometer target signatures on the seafloor. The diver can then determine the center or strongest signature detected. Buoys will be placed at refined source material locations between the largest positive and negative contours for all anomalies. Divers will enter the water and proceed to the buoy location and follow the buoy line to the sea floor. Employing the buoy anchor as a center point, the diver will conduct a visual inspection of the bottom with a magnetometer or metal detector. The diver will accomplish this task by a series of circle searches, where the diver's umbilical will be let out in 3.05 meter increments, the diver will cover a circle with a diameter of up to 30 meters. Visual observations will be recorded. If nothing explaining the anomaly is encountered, then a grid pattern of hydro-probes will be conducted.

Probing of anomalies or features will determine the spatial extent and burial depth of any object present beneath the sea floor. Hydro-probes are utilized as minimally invasive means to

investigate below the surface of the seafloor. Water is propelled through the probe to liquify the sediments allowing divers to locate buried material. This method of survey is considered minimally invasive because it only disrupts a small column in sand which is quickly filled after the probe is removed. The hydro-probe is constructed out of 3.05 m long (10 foot), 1.27 cm (0.5 inch) diameter pipe connected to a topside water pump via a hose. The probe can be easily dismantled and shorted to 1.5 m (5 foot) by the diver underwater. The probe is marked in 10 cm increments, which allows the diver to easily identify the depth of any buried material. In addition, the diver can typically identify the type of material encountered based on the feel and sound produced by the probe encountering the object. The diver will use the hydro-probe to penetrate the bottom, with probing conducted at the buoy and every 1 meter out from the buoy to 5 meters, then every 5 meters in each of the four cardinal directions, out to a distance of 25 meters from the refinement buoy.

The results of the diver identification will aid in determining the presence or absence of buried cultural material, and, if present, the spatial extent of the material, the type(s) of overburden (i.e., sand, mud, shell), the type(s) of cultural material, and the depth of overburden. It is assumed the use of digital photographs is acceptable for this effort, and artifacts may be brought to the surface for photographs and afterward returned to their original provenience. No artifacts or other material will be collected under this contract unless the resource cannot be adequately documented without doing so.

In the event conditions become unsafe or to a level that visibility or other environmental conditions warrant, the Dive Operations Safety Officer will direct the operations to cease until safe conditions are in place. This may include cessation of that day's diving activities.

Data Analysis

All remote sensing data will be checked in the field daily for Quality Control (QC) and a preliminary evaluation of the data collected will be made in order to identify the need to adjust the survey methodology or correct the quality of data within the previously surveyed area. After the remote sensing survey, the Team will conduct an archaeological analysis of the acquired data in the field. This will include all magnetometer, side-scan sonar, and sub-bottom records collected during the survey. The magnetometer data will be reviewed for ferromagnetic / manmade objects to include gamma deviation, duration, type (i.e., monopole, dipole, multi-component) and association with other anomalies. All magnetic data will be contoured to determine the complexity of the anomalies, as well as association with other remote sensing anomalies. Side-scan sonar will be mosaicked and will be reviewed for linearity, exposed structure, seabed features, and association with other anomalies. Sub-bottom profiler data will be reviewed for sub-surface geological conditions that may reveal previous land surfaces that may be indicative of submerged cultural resources.

The Team will analyze and synthesize the archival research and survey data to evaluate the magnetic anomalies, sonar targets, and sub-bottom anomalies. The Team will maintain a complete record of all activities related to archival research and field investigations. This includes,

for example, calibrations of instruments, procedures, and fieldwork techniques. Archival data will be used to assist in interpretation of the field data.

All remote sensing survey anomalies will be plotted in X/Y coordinates (i.e., UTM) on a map and listed in a table for easy relocation, should identification and evaluation studies or anomaly avoidance and preservation be required. All plotted maps will include a scale and north arrow for reference.

Following completion of the fieldwork, The Team will complete the analysis of the archival and field data sets to identify, characterize, and evaluate the anomalies, targets, and features, and make recommendations of potential historic significance and the need for, and scope of, future investigation or avoidance measures. Previous general experience, as well as specific Florida experience, sound judgment, and a thorough knowledge of remote sensing data analysis will all be utilized to determine the potential significance of a target. In addition, a review of the historic use of the body of water, previous archaeological investigations, and shipwreck inventory will all be taken into account in determining a target's potential significance. A target's magnetic signature, side-scan sonar image, and association with other anomalies will also assist in the determination of potential significance. The Team will prepare Florida Site File forms for each site evaluated. All work will adhere to the requirements outlined in Chapter 1A-46, Florida Administrative Code.

Technical Report - Draft

After fieldwork is complete, all information collected will be compiled to produce a graphically illustrated, scientifically acceptable report which will comply with the FDHR, Chapter 1A-46 Archaeological an Historical Report Standards and Guidelines and the standards set forth in the Department of the Interior's "Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines," regarding archaeological documentation, following the American Antiquity Style Guide. This report will include the purpose of the Project, Project area location, description of the areas prehistoric and historic context, shipwreck inventory referencing known vessel losses, and inundated terrestrial sites based on previous research. This information will be correlated with the data collected during the remote sensing survey.

Information will be presented in textual, tabular, and graphic forms, whichever is most appropriate, effective, and advantageous to communicate necessary information. A methods chapter will describe in detail the Project area environment (i.e., water depth, weather conditions), survey procedures, navigation parameters, survey vessel utilized during the survey, remote sensing equipment, and collection of data. An inventory of all anomalies located during the remote sensing survey will be incorporated into the results section of the report. This inventory will include X/Y coordinates for all magnetometer, side-scan sonar, and sub-bottom profiler targets. All magnetic anomaly descriptions will include each target's gamma deviation, each target's signature type (i.e., monopole, dipole, multi-component), duration (in feet), description, association with other targets, and potential significance. The side-scan sonar inventory will include target location, description, association with other targets, and assessment of significance. Sub-bottom profiler features will be mapped identifying length, burial depth, orientation, and location. Quality report

graphics including magnetic contour maps, side-scan sonar images, and sub-bottom reflectors will be included within the results section of the report.

The conclusions and recommendations section will describe in detail the location and reasoning of any anomalies considered potentially significant. Previous experience, sound judgment, and a thorough knowledge of remote sensing data analysis will all be utilized to determine the potential significance of a target. In addition, a review of the historic use of the body of water, previous archaeological investigations, and shipwreck inventory will all be taken into account in determining a target's potential significance. A target's magnetic signature, side-scan sonar image, and association with other anomalies will also assist in the determination of potential significance. Depending upon proposed Project activities, recommendations can be made relative to the determination of a target's potential significance. This may include avoidance of potentially significant targets, incorporation of buffer zones, or mitigation. If a target cannot be avoided by proposed Project activities, additional work to determine the site's significance may be recommended.

Technical Report - Final

The Final Report will address and resolve the reviewer's comments and will be submitted to JEG for submittal to the City of Key West. An unbound copy and electronic data will be provided to the Florida State Site Files. The proposed cultural resources field survey crew will consist of four archaeologists, and the entire fieldwork is anticipated to be completed in two days, excluding mobilization to and from the Project area. It is estimated that no artifacts will be collected, but they will be recorded and left on site. All supporting documentation (field notes and forms, maps and drawings, other paper records, photographic records, and all other materials associated with Project documentation) will be delivered to JEG and submitted to the Florida Master Site File (FMSF) at the Division of Historical Resources (DHR).

> *Deliverables: Cultural Resources Technical Memorandum in bound copy and PDF format for submittal to the City,* unbound copy and electronic data submitted to the Florida State Site Files

Task 11 – C.4.2 USACE Standard Permit Application and Processing

Cummins Cederberg will prepare and process a U.S. Army Corps of Engineers (USACE) Application for Department of the Army Permit (ENG Form 4345) with the USACE requesting authorization of the proposed Project, pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, as required based on the selected construction methodology. JEG will provide Cummins Cederberg with a signed application form, as well as Permit Sketches depicting the proposed construction, Construction Methodology narrative, Frac-out Plan, Dewatering Plan, Sediment and Erosion Control Plan, and the Benthic Survey from Terramar or updated benthic survey if required and Task 17 is authorized. Cummins Cederberg will prepare a detailed cover letter introducing the Project and will provide the Environmental Survey Report, Pre-Application Meeting Minutes, Manatee Key to facilitate FWS consultation, and JaxBO

checklists for Activity 8 Transmission and Utility Lines to facilitate NMFS PRD consultation. The USACE does not charge permit fees to government applicants.

The USACE will consult with the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), the National Marine Fisheries Service (NMFS) Protected Resources Division (PRD), and the NMFS Habitat Conservation Division (HCD), as required pursuant to the Endangered Species Act, Magnuson Stevens Fishery Conservation and Management Act, and other federal agencies regarding their guiding regulations. The USACE will require demonstration of avoidance and minimization of ecological impacts (if any) before considering compensatory mitigation (if required, this will be addressed under Task 13). Additionally, the USACE permit cannot be issued until after issuance of the FDEP permit, which provides Coastal Zone Management Act consistency and Water Quality Certification. The Project does not appear to be located within a federal channel; however, if a USACE Consent to Easement is required, Cummins Cederberg will coordinate with the Project surveyor to prepare a survey suitable for consultation with the USACE Construction Operations Division and Real Estate Division, as required to secure a Consent to Easement. If it is determined that the Project is located within a federal channel, Cummins Cederberg will facilitate Section 408 consultation with the USACE. Cummins Cederberg will confer with USACE staff to further advise them of the details of the Project and to address staff comments and up to three (3) Requests for Additional Information (RAIs), including comments from the federal commenting agencies.

Deliverables: Draft and Final USACE Application packages, up to three (3) RAI response packages

Task 12 – C.4.2 U.S. Fish and Wildlife Service Biological Assessment

Cummins Cederberg will prepare a Biological Assessment to address species under FWS purview that the USACE has made a “may affect” determination for. The Biological Assessment will support FWS formal consultation, which will result in a Biological Opinion with Project specific Terms and Conditions, and Reasonable and Prudent Measures. The Biological Assessment will include a detailed project description, define the Project area as necessary to delineate the action area, describe the physical and biological attributes of the action area, identify regulated species that may be present, describe the habitat conditions that may be present in the action area, assess potential cumulative effects of the proposed Project, and describe how the proposed Project may affect each protected species and their habitat. The Biological Assessment will include a Literature Cited section identifying the sources of supporting information utilized to prepare the Biological Assessment and make determinations for each species and for any associated designated critical habitat.

Deliverable: Draft and Final Biological Assessment for FWS Species in PDF format

Task 13 – C.4.2 National Marine Fisheries Service, Protected Resources Division Biological Assessment

Cummins Cederberg will prepare a Biological Assessment to address species under NMFS PRD purview that the USACE has made a "may affect" determination for. The Biological Assessment will support NMFS PRD formal consultation, which will result in a Biological Opinion with Project specific Terms and Conditions, and Reasonable and Prudent Measures. The Biological Assessment will include a detailed Project description, define the Project area as necessary to delineate the action area, describe the physical and biological attributes of the action area, identify regulated species that may be present, describe the habitat conditions that may be present in the action area, assess potential cumulative effects of the proposed Project, and describe how the proposed project may affect each protected species and their habitat. The Biological Assessment will include a Literature Cited section identifying the sources of supporting information utilized to prepare the Biological Assessment and make determinations for each species and for any associated designated critical habitat.

Deliverable: Draft and Final Biological Assessment for NMFS PRD Species in PDF format

Task 14 – C.4.2 National Marine Fisheries Service, Habitat Conservation Division and/or Environmental Protection Agency Section 404(q) Clean Water Act Elevation

This Task includes permitting coordination to address NMFS Habitat Conservation Division environmental concerns pursuant to the Magnuson Stevens Fishery Conservation and Management Act relative to Essential Fish Habitat, if elevated pursuant to the 1992 MOA between the Department of Commerce and the Department of the Army pursuant to Section 404(q) of the Clean Water Act, 33 USC 1344(q). This Task also includes permitting coordination to address EPA environmental concerns relative to the Clean Water Act if elevated pursuant to the 1992 MOA between the Environmental Protection Agency and the Department of the Army pursuant to Section 404(q) of the Clean Water Act 33 USC 1344(q). Should NMFS HCD and/or EPA have concerns about potential Project impacts and issue a 3(a) Letter, it is likely that the budget provided in Task 9 will be exceeded. As such, this supplemental budget will be utilized to respond to NMFS HCD and/or EPA comments provided to the USACE in subsequent 3(b) Letters and forwarded to the Applicant in an RAI for response. It is anticipated that the USACE will review the 3(b) comments and only forward relevant comments to the Applicant for response; however, USACE may deem all comments relevant and in need of response. This scope anticipates resolution of the 3(b) comments during this process.

Deliverable: Response to NMFS HCD and EPA 3(b) comments as deemed appropriate by USACE

Task 15 – C.4.2 Keys Restoration Trust Fund and UMAM Assessment

If it is determined that impacts to aquatic functions and values will occur as a result of Project construction, and these impacts cannot be avoided or minimized, then compensatory mitigation will be required. The FDEP requires, pursuant to 62-345 F.A.C., the use of the Uniform Mitigation

Assessment Method (UMAM), a functional assessment, to quantify the impacts to aquatic resources (debits) and to quantify the lift from proposed mitigation (credits). The USACE requires the use of a functional assessment to assess impacts, and typically accepts UMAM, and also has a clear preference for Mitigation Banks followed by In-lieu fee program credits, if one services the Project area, pursuant to 33 CFR 332. The impacts and mitigation must be assessed using the same functional assessment.

The Keys Restoration Fund (KRF), In-Lieu Fee Mitigation Program services the Project area and is anticipated to be suitable for providing mitigation associated with any unanticipated impacts from Project construction. The KRF uses UMAM to assess mitigation credits. Cummins Cederberg will prepare a UMAM assessment to evaluate Project-related impacts that cannot be avoided or minimized that must be offset through compensatory mitigation. Cummins Cederberg will coordinate with the KRF to encumber the required credits to mitigate Project impacts. JEG or the City will be responsible for purchase of the mitigation credits, if required.

This scope assumes that the USACE and FDEP will accept KRF mitigation credits to offset any unanticipated impacts associated with the proposed Project. If the FDEP will not accept KRF mitigation credits and a Permittee responsible mitigation project must be identified, it will be subject to an addendum scope and it is presumed that budget herein can be reallocated to the identification, development, UMAM assessment, and agency negotiations associated with that effort.

This scope does not include development of a Contingency Mitigation Plan to mitigate ecological impacts associated with construction (e.g., frac-out, anchor drag), restoration of impacts that may occur during construction, or implementation of a Contingency Mitigation Plan. These services can be provided, if required, under an addendum scope with supplemental budget, if sufficient unused budget cannot be reallocated from unused tasks herein.

Deliverables: UMAM Assessment Worksheets in PDF-format

Task 16 – C.4.3 FDEP Statewide Environmental Resource Permit Application and Processing

Cummins Cederberg will prepare and process an Individual Statewide Environmental Resource Permit (SWERP) Application with the FDEP requesting authorization for the proposed Project pursuant to Chapter 62-330.054, F.A.C. JEG will provide Cummins Cederberg with a signed application form, as well as Permit Sketches depicting the proposed construction, Construction Methodology narrative, Frac-out Plan, Dewatering Plan, Sediment and Erosion Control Plan, Property Ownership information (i.e., warranty deed), processing fee, and the Benthic Survey from Terramar or updated benthic survey if required and Task 17 is authorized. Cummins Cederberg will prepare a detailed cover letter introducing the Project and will provide the Environmental Survey Report, Pre-Application Meeting Minutes, State Land Use Cover map, USDA soil map, and State lands Title Determination. JEG or the City will provide the individual permit application fee in the amount of $420.00.

The FDEP will coordinate with the FWC regarding manatees, corals, and other State listed species under their purview during their permit review for issuance of an Individual Environmental Resource Permit (ERP). The FDEP will also require demonstration of avoidance and minimization of ecological impacts before evaluating proposed compensatory mitigation for unavoidable impacts.

Cummins Cederberg will confer with agency staff to advise them of the details of the Project and to address staff comments and RAIs. Cummins Cederberg will maintain contact with agency staff to expedite their review and processing of the permit application. Cummins Cederberg will confer with JEG, the City, the Surveyor, and design team members as to questions, revisions, or additional items that may be required by agency staff. Cummins Cederberg will review and coordinate submittal of responses to three (3) comprehensive agency RAIs towards securing an ERP.

Deliverables: Draft and Final FDEP SWERP Application packages, up to three (3) RAI response packages

Task 17 – C.4.3 Sovereign Submerged Lands Easement Application and Processing

As the Project is proposed within Sovereign Submerged Lands owned by the Board of Trustees (BOT) of the Internal Improvement Trust Fund (TIITF) and includes utilities that will remain within these submerged lands, an Easement will be required, to provide proprietary authorization for the portion of the Project, pursuant to 18-21 F.A.C. It is anticipated that the BOT will issue a Temporary Use Agreement (TUA) to authorize Project construction and will then issue an Easement for a reduced footprint once the as-built survey has been completed.

Cummins Cederberg will assist the JEG in securing a TUA and an Easement for the Project area from the BOT. Cummins Cederberg will complete 62-330.060(1) Section F Application for Authorization to use State-Owned Submerged Lands requesting proprietary authorization for the Project. JEG will provide Cummins Cederberg with evidence of riparian interest, Easement processing fees (in amounts to be determined) and completed easement billing and financial affidavit forms. Cummins Cederberg will coordinate with the Project surveyor to prepare a State Lands Easement survey consistent with the SLER 0950 guidelines. The surveyor will provide Cummins Cederberg with a signed and sealed survey and a legal description of the final Project design and Easement boundary. Cummins Cederberg will confer with JEG and the City relative to affirming any terms and conditions required for the Easement. JEG or the City will provide the State Lands Easement Application Fee estimated at $657.00.

Deliverables: SWERP Section F Application, RAI responses

Task 18 – C.4.3 NOI Dewatering Permit Application and Processing

Cummins Cederberg will prepare and process a Notice of Intent (NOI) to Use the Generic Permit for the Discharge of Ground Water from Dewatering Operations [subsection 62-621.300(2)

F.A.C.] for dewatering associated with Project construction. JEG will provide technical information required to complete the NOI application. JEG will provide a Turbidity Control and Management Plan, Dewatering Plan, and Sediment and Erosion Control Plan, to support the NOI. Cummins Cederberg will prepare a cover letter describing the Project and submit the package to the FDEP for review. Cummins Cederberg will coordinate with JEG to provide response to RAIs relative to the proposed dewatering operation. If it is determined that the proposed dewatering does not qualify for the Generic Permit, an addendum scope will be provided for an Individual Permit and it is assumed that unused budget herein can be reallocated to fund the addendum scope. JEG or the City will provide the NOI Application fee in the amount of $100.00.

Deliverables: NOI for Dewatering Operations, RAI Responses

Task 19 – Benthic Resource Survey

If the USACE, FDEP, and/or the FKNMS determine that the Terramar Benthic Resource Survey is not sufficient to support the environmental permitting process, Cummins Cederberg marine scientists will develop a draft BRS plan (Plan) in accordance with the *Florida Keys National Marine Sanctuary Resource Assessment Survey Protocols for Nearshore Construction Projects* (November 2022). The Plan will include all methods, equipment, and materials proposed for the in-water portion of the survey; survey approaches and strategies relative to tide cycles (survey should be conducted at slack tide during high or low tide), vessel traffic, and communication with local agencies; post-survey reporting and submittals; and proposed daily activities and staffing. In addition, Cummins Cederberg will perform a desktop assessment of available resources per the FDEP guidelines and provide information about previous data on natural resources in the immediate area.

During the Plan development, Cummins Cederberg PM (or Alternate PM) will coordinate with JEG and the FKNMS to discuss details of the plan, requirements of the survey, and permitting. Comments and recommendations from JEG and the FKNMS on the draft Plan will be reviewed, discussed as needed, and incorporated into a final Plan for approval.

Cummins Cederberg has an existing FKNMS permit (FKNMS-2018-168-A1; attached), and we have confirmed with the FKNMS Resource Protection and Permit Coordinator that this permit is inclusive of all activities needed to complete the BRS. A copy of the permit will be kept onboard the survey vessel at all times.

Dive Safety

Cummins Cederberg will prepare a Dive Safety Plan (Dive Plan) that follows JEG dive safety standards and AAUS standards. The Dive Plan will include, but is not limited to, an overview of the project and BRS diving operations, names and roles of all divers, documentation for each diver (e.g., certifications, trainings, medical clearance) dive logs, environmental conditions, diving and safety equipment (including bailout bottles and facemasks with comms, as required), pre- and post-dive procedures, proposed number of dives and location, all tools and survey equipment to be used, and a detailed Emergency Action Plan (EAP) with information on procedures and details/locations of nearest hospital and recompression chamber. The comprehensive dive plan

will be provided to the JEG Scientific Dive Safety Officer and the JEG Enterprise Dive Safety Specialist for review and approval prior to commencing field preparations and survey activities.

Field Preparation and Scheduling

Upon final authorization of the BRS plan by JEG and the FKNMS, and the Dive Safety Plan, Cummins Cederberg will review local tide charts during the preferred survey time period (June-September 2023) and propose survey windows and timeframes for the survey. Our team will communicate with the City of Key West through JEG's PM, and the Florida Fish and Wildlife Conservation Commission (FWC) to coordinate safety zone requirements during survey activities.

Field Survey

The primary objective is to investigate (identify, map, and characterize) both Submerged Aquatic Vegetation (SAV) and coral resources within the Project area. The first step is for the team to initially perform a reconnaissance dive to qualitatively determine the resources within the general survey area, and place surface buoys to delineate the boundary of the Project survey area. Following the reconnaissance dive, the team will use a Differential Global Positioning System (DGPS) unit with sub-meter accuracy to outline and map the subsurface edges of each habitat type (e.g., SAV, homogeneous seagrass, hardbottom, coral). Once the outer limits of the survey area and each habitat type are delineated, the team will quantitatively assess the habitats using line-intercepts, quadrats, or direct measurements, as determined, and needed. Representative photos and video will be collected with a slate or datasheet in view (at beginning of video) showing data, time, and location. All divers will be equipped with the necessary safety equipment while a third standby diver will remain onboard with the vessel operator/surveyor; all of whom are capable of providing topside support.

Deliverables: Dive Safety Plan, Draft and Final Benthic Survey Plan, Draft and Final Environmental Survey Report in PDF-format

Conditions/Assumptions

- Client shall notify Cummins Cederberg of any known conditions related to the Project that may affect the above-described scope of services.
- Client shall provide safe access to the Project site as needed by Cummins Cederberg to complete the above-described scope of services.
- All permit, lease, easement, mitigation, and other fees to be paid directly by JEG or City.
- There will be no change in public agency regulations or policies following contract execution.
- There are no property ownership or other legal issues that will complicate the permitting process.
- There will be no stakeholder meetings required by the City or County, no public hearings, no objections to the Project, or other third party discussions/negotiations required.
- All local (land use/zoning/building dept., etc.) permitting will be provided by others.
- Permittee responsible mitigation planning, negotiation, design, and monitoring services, if required, can be provided under a separate scope.
- Development of a Compensatory Mitigation Plan or efforts to assist with restoration and mitigation in the event unanticipated impacts occur during construction are not included in this scope. These services can be addressed under an addendum scope and budget if

required.

- Development of a Permittee responsible mitigation project or efforts to assist with this mitigation or monitoring are not included in this scope. These services can be addressed under an addendum scope and budget if required by environmental regulatory agencies.
- If it is determined that the Project will result in Significant Impacts and an Environmental Impact (EIS) Statement must be prepared pursuant to NEPA, it can be addressed under an addendum scope and budget.
- JEG will provide any water and/or wastewater permitting required for Project authorization.
- JEG to provide Project drawings, cultural resource surveys, Frac-out Plan, Turbidity Control Plan, Dewatering Plan, construction methodology, Sediment and Erosion Control Plan, and any other documentation not clearly provided by Cummins Cederberg herein.
- Any consulting services or support not clearly provided herein are subject to an addendum scope. It is anticipated that budget can be reallocated from unused tasks to cover most potential addendum services. However, if permittee responsible mitigation or coral relocation are required, there may not be sufficient budget available in unused tasks herein.
- Client shall provide the limits of the work area (northing and easting coordinates and CAD file).
- In-water work will only be conducted pending determination of safe working conditions for the area. Cummins Cederberg maintains the right to make its own determination on safe working for its divers.
- The different agencies recognize different seagrass growing seasons. FDEP recognizes a seagrass growing season between April 1 and October 31 and the USACE growing season is between June 1 and September 30.
- Fees include equipment rental and reimbursable expenses.
- Acquisition of a FWC Special Activities License for coral relocation activities is not included in this proposal.
- Direct impacts to resources (i.e., SAV and corals) are not anticipated due to the microtunneling methodology.
- A minimum 14-day notification is needed prior to conducting the survey.
- It is assumed that no archaeologic or historic resources will be within or directly adjacent to the Project stie nor affected by the Project.
- There will be no delays beyond those that are the result of circumstances beyond the control of the Cummins Cederberg Team. These include but are not limited to hurricanes, tropical storms, and government shutdown.
- The Cummins Cederberg Team will coordinate the work schedule with the JEG and will be permitted to work a non-traditional work schedule that may include extended workdays and deployments, weekend and holiday work to complete field work.
- Area estimates are based on information provided by JEG and the remote sensing fieldwork is anticipated to be conducted over 1 day, weather permitting. It is assumed that no more than 3 targets/anomalies/clusters will require Diver Identification for the Submerged Cultural Resource Assessment Diver Surveys.
- Submerged Cultural Resources Assessment Survey Target testing is estimated to take 1 day to complete, depending on size and complexity, weather permitting.

Fees

Fees for services are provided in the following table. Total Fees are presented as hourly, not to exceed, and include equipment rental, reimbursable expenses, and subconsultant fees. Estimated hours included in each task will vary based on staff rate, please refer to Rate Schedule. Cummins Cederberg shall invoice JEG on a percent complete basis each month and/or completion of tasks.

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Task #	Description	Total Fee	Basis	Estimated Hours Included	Estimated Expenses	Subconsultant Fee
1	In-Person Meetings and Site Visit	$14,780.00	Hourly, NTE	48	$2,300.00	
2	Preparation of Environmental Assessment	$62,640.00	Hourly, NTE	384		
3	Wetland Delineation and Habitat Assessment	$11,060.00	Hourly, NTE	58	$1,500.00	
4	Permitting Requirements	$3,120.00	Hourly, NTE	16		
5	USACE Nationwide Permit Verifications	$12,240.00	Hourly, NTE	72		
6	Cultural Resources Desktop Review and SHPO Coordination	$2,830.00	Hourly, NTE	4		$1,788.00
7	FDEP Permitting	$14,800.00	Hourly, NTE	84		
8	FKNMS Permitting	$11,920.00	Hourly, NTE	64		
9	Formal Wetland Jurisdictional Determination	$14,220.00	Hourly, NTE	76	$1,500.00	
10	Archaeological or Historic Resources Field Investigation	$50,100.00	Hourly, NTE	8		$47,994.00
11	USACE Standard Permit Application and Processing	$38,400.00	Hourly, NTE	224		
12	US Fish and Wildlife Service Biological Assessment	$11,200.00	Hourly, NTE	68		
13	National Marine Fisheries Service, Protected Resources Division Biological Assessment	$11,200.00	Hourly, NTE	68		
14	National Marine Fisheries Service, Habitat Conservation Division and/or Environmental Protection Agency Elevation	$27,400.00	Hourly, NTE	140		
15	Keys Restoration Trust Fund and UMAM Assessment	$11,920.00	Hourly, NTE	64		
16	FDEP Statewide Environmental Resource Permit Application and Processing	$38,400.00	Hourly, NTE	224		
17	Sovereign Submerged Lands Easement	$11,200.00	Hourly, NTE	56		
18	NOI Dewatering Permit Application and Processing	$4,080.00	Hourly, NTE	20		
19	Benthic Resource Survey	$34,420.00	Hourly, NTE	162	$8,000.00	

Application and Land Use Fees

Application and land use fee estimates are provided in the following table. Fees provided are estimated based upon information available as of the date of this Proposal. In-lieu fee program credit purchase and annual easement fees, if required, are not included. All fees to be provided by JEG or the City directly.

Task #	Description	Agency Fee
1	In-Person Meetings and Site Visit	
2	Preparation of Environmental Assessment	
3	Wetland Delineation and Habitat Assessment	
4	Permitting Requirements	
5	USACE Nationwide Permit Verifications	
6	Cultural Resources Desktop Review and SHPO Coordination	
7	FDEP Permitting	$400.00
8	FKNMS Permitting	
9	Formal Wetland Jurisdictional Determination	$780.00
10	Archaeological or Historic Resources Field Investigation	
11	USACE Standard Permit Application and Processing	
12	US Fish and Wildlife Service Biological Assessment	
13	National Marine Fisheries Service, Protected Resources Division Biological Assessment	
14	National Marine Fisheries Service, Habitat Conservation Division and/or Environmental Protection Agency Elevation	
15	Keys Restoration Trust Fund and UMAM Assessment	
16	FDEP Statewide Environmental Resource Permit Application and Processing	$420.00
17	Sovereign Submerged Lands Easement	$657.00
18	NOI Dewatering Permit Application and Processing	$100.00
19	Benthic Resource Survey	

General

We appreciate the opportunity to prepare a proposal for our marine engineering and environmental consulting services and look forward to working together. This proposal is valid for 60 days and was prepared based on the information provided by JEG to date.

If you wish us to provide the services detailed above, please sign this agreement, which includes Cummins Cederberg's General Terms & Conditions attached herein, which will serve as our Authorization to Proceed. Should you have any questions or require additional information, please do not hesitate to contact me at 954-401-2578 or pcutt@cumminscederberg.com.

Sincerely,
CUMMINS CEDERBERG, INC.

Penny Cutt
Senior Director

Read and Accepted by **Client:**

By:_____

Name:_____

Title:_____

Date:_____

Enclosures:
Rate Schedule
General Terms & Conditions
Certificate of Insurance
FKNMS Permit (FKNMS-2018-168-A1)

CUMMINS CEDERBERG, INC. 2023 RATE SCHEDULE[1]

Title	Hourly Rate
Principal	$300.00
Senior Director	$260.00
Project Director	$240.00
Senior Project Manager	$220.00
Project Manager	$190.00
Chief Scientist	$220.00
Senior Scientist	$190.00
Project Scientist	$155.00
Associate Scientist II	$140.00
Associate Scientist I	$115.00
Chief Engineer	$250.00
Senior Engineer	$220.00
Project Engineer	$180.00
Associate Engineer II	$160.00
Associate Engineer I	$140.00
Senior Designer	$145.00
Designer	$120.00
Senior GIS Analyst	$160.00
GIS Analyst	$120.00
Technician	$85.00
Clerical	$75.00

Reimbursable Expenses

Professional Supplies, Standard Expenses and Direct Reimbursable Expenses will be billed at cost plus 10 percent. Professional supplies and standard expenses include standard office supplies, plots and photocopies, mail and courier delivery services, domestic and international travel, and related travel expenses. Direct reimbursable expenses include field equipment rental, field supplies, research materials, permit fees, and other expenses not included in Professional Supplies and Standard Expenses.

[1] Rates are subject to change at one-year intervals from date of proposal execution.

General Terms & Conditions

1 – Definitions:

"Cummins Cederberg, Inc." (hereinafter referred to as "CC") shall include said company, and its individual professional or professionals, performing the "Work."

"Work" means the specific engineering or other service to be performed by CC as set forth in CC's proposal.

"Client" refers to the person or business entity ordering the Work to be done by CC.

"Agreement" refers to CC's proposal, the client's acceptance, and CC's Terms and Conditions. The Client's acceptance of the proposal includes acceptance of these general conditions. The proposal and acceptance are hereby incorporated by reference herein.

2 – Authorization of Work: If the Client is ordering the Work on behalf of another, the Client represents and warrants that the Client is the duly authorized agent of said party for the purpose ordering and directing said Work. Client agrees that CC's professional duties are specifically limited to the Work set forth in CC's proposal. CC's Work is for the exclusive use of the Client. In no event shall CC have any duty or obligation to any third party.

3 – Payment: Invoices shall be submitted either upon completion of tasks or on a monthly basis. Invoices are to be paid in full within thirty (30) days of receipt of the invoice by the Client. Invoices not paid in full within thirty (30) days shall incur interest at a rate of 1.5 percent per month (or the maximum rate of interest permitted by law, if less). If an invoice is not paid within sixty (60) days, CC may, without waiving any claim or right against the Client and without any liability whatsoever to the Client, terminate the performance of Work. The written notice requirement of Section 9 below does not apply to a termination of work under this paragraph.

4 – Indemnification and Mutual Waiver: To the fullest extent permitted by Laws and Regulations, CC shall indemnify and hold harmless Client, and Client's officers, directors, members, partners, agents, consultants, and employees, from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from third-party claims or actions relating to the Project, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of CC or CC's officers, directors, members, partners, agents, employees, or Consultants. This indemnification provision is subject to and limited by the provisions in Section 5 below. Further, this indemnification does not apply if the Client, and Client's officers, directors, members, partners, agents, consultants, and employees cause or contribute to the loss.

Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless CC and its officers, directors, members, partners, agents, employees, and Consultants from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising out of or connected with the Agreement or performance by any of the parties above-named, of the services performed under this Agreement, except those damages, liabilities or costs attributed to the negligent acts by CC specifically in the performance of the Agreement..

To the fullest extent permitted by Laws and Regulations, Client and CC waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, and Consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes.

5 – Warranty and Limit of Liability: CC shall perform services for Client in a professional manner, using the degree of care and skill ordinarily exercised by and consistent with the standards of competent consultants practicing at the same time and in the same or a similar locality as the project. CC makes no warranties, express or implied, under this Agreement or otherwise, in connection with the services provided.

To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of CC and CC's officers, directors, members, partners, agents, employees, and Consultants, to Client and anyone claiming by, through, or under Client for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied of CC or CC's officers, directors, members, partners, agents, employees, or Consultants shall not exceed the total compensation received by CC under this Agreement.

To the fullest extent permitted by Laws and Regulations, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Client, CC, and all other negligent entities and individuals.

PURSUANT TO SECTION 558.0035. FLORIDA STATUTES, AN INDIVIDUAL EMPLOYEE OR AGENT OF CC MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

6 – Use of Documents: All Documents prepared by CC are instruments of service, and CC shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the CC) whether or not the Project is completed. Instruments of service by CC are for the sole use of Client and are not to be copied or distributed, in any manner, to a third party, without the express written permission of CC. Any reuse by the Client or others of documents and plans that result from CC's services under this Agreement shall be at Clients or others sole risk without liability to CC. Electronic information and files are for the informational purposes only. It is the responsibility of Client to verify the accuracy of the information therein and to hold CC harmless for any damages that may result from the use of the information.

7 – Cost Estimates: CC opinions of probable construction cost are made based on experience, qualifications, and general knowledge of the construction industry. However, CC has no control over the cost of labor, materials, equipment, or services furnished by others, or methods of determining prices, or market conditions. Client hereby acknowledges that CC cannot warrant that estimates of probable construction or operating costs provided by CC will not vary from actual cost incurred by the Client.

8 – Construction Services: CC shall not be responsible for or have control over means, methods, techniques, sequences, procedures, or for safety precautions and programs in connection with the construction of the Project; nor shall CC be responsible for the Contractor's failure to carry out the work in accordance with the contract documents or for Contractor's failure to comply with applicable laws, ordinances, rules or regulations.

9 – Termination of Services: The obligation to provide further services under this Agreement may be terminated by either party upon seven (7) days written notice to the other party. The written notice requirement of this paragraph does not apply to CC's termination of work under section 3 above. In the event of termination, the Client shall pay CC for all services rendered and costs incurred through the effective date of termination. Neither party may assign, sublet or transfer any rights under or interest (including, but not without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law.

10 – Mediation/Dispute Resolution: Client and CC agree to negotiate all disputes or conflicts between them in good faith for a period of 30 days from the date of notice. If said dispute or conflict is not resolved within 30 days, Client and CC agree to then submit any and all unsettled disputes or other matters in question between them arising out of or relating to this Agreement to non-binding mediation. The fees and/or costs of mediation shall be equally borne by the parties to the Agreement. The process shall be conducted on a confidential basis. If such mediation is unsuccessful in resolving a dispute, then the parties may seek to have the Dispute resolved in circuit court.

In the event of litigation, the prevailing party shall be entitled to recover from the non-prevailing party all reasonable attorney fees, taxable court costs, expert witness fees and costs, demonstrative evidence costs, and such other reasonable fees and/or costs generally associated with the litigation of such matters, as determined upon hearing, post-trial, by the court.

Irrespective of any contract provision or obligation of either party hereunder pursuant to contract or agreement with person(s) and/or entity(ies) not specifically named herein, CC shall not be obligated to participate in, nor be a named party in, any arbitration proceeding without the express written consent of CC.

11 – Legal Jurisdiction: This Agreement is to be governed by and interpreted according to the laws of the State of Florida. The parties agree that any actions brought to enforce any provision of this Agreement shall only be brought in a State court of competent jurisdiction located in Miami-Dade County, Florida.

12 – Notice: Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered United States mail, with return receipt requested, addressed to the party for whom it is intended.

13 – Agreement: This Agreement constitutes the entire agreement between Client and CC and supersedes all prior written or oral understandings. This Agreement may only be amended or modified in writing and duly executed by both parties.

Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/04/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Patricia Schmaltz
Lassiter-Ware Insurance 1300 North Westshore Blvd. Suite 110 Tampa, FL 33607	PHONE (A/C, No, Ext): (800) 845-8437 FAX (A/C, No): (888) 883-8680 E-MAIL ADDRESS: patricias@lassiterware.com

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A :	American Casualty Company - Reading	20427
INSURER B :	Continental Insurance Company	35289
INSURER C :	Pacific Insurance Company, Ltd.	10046
INSURER D :	Benchmark Insurance Company	41394
INSURER E :	North River Insurance Company	21105
INSURER F :		

INSURED
Cummins Cederberg, Inc. 201 Alhambra Circle Suite 601 Coral Gables, FL 33134

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	GENERAL LIABILITY ☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☒ LOC			7034507431	09/26/2022	09/26/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	1,000,000 1,000,000 10,000 1,000,000 2,000,000 2,000,000
B	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☒ HIRED AUTOS ☒ NON-OWNED AUTOS			7034507445	09/26/2022	09/26/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) PIP	$ $ $ $ $	1,000,000 10,000
E	☒ UMBRELLA LIAB ☒ OCCUR EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $			CU902174Q2022.01	10/04/2022	09/26/2023	EACH OCCURRENCE AGGREGATE	$ $	2,000,000 2,000,000
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		MWC2200075-00	09/26/2022	09/26/2023	☒ WC STATU-TORY LIMITS ☐ OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $	 1,000,000 1,000,000 1,000,000
C	Professional Liability / Pollution Incident Liability (Claims-Made)			21OH046445622	09/30/2022	09/30/2023	Each Claim Aggregate		$2,000,000 $2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

Cummins Cederberg, Inc.

For Information and/or Bidding Purposes

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Patricia Lane Schmaltz

ACORD 25 (2010/05)

STATEMENT OF WORK

SURVEYING SERVICES for
TRENCHLESS INSTALLATION OF WASTEWATER PIPELINES ACROSS FLEMING CHANNEL
Key West, FL
April 19th, 2021

1.1 INTRODUCTION AND BACKGROUND

A. The City of Key West owns and operates the Richard A. Heyman Environmental Protection Facility (WWTP). Currently, wastewater lines supplying the WWTP are installed on a utility bridge spanning approximately 460 feet, across the channel from Trumbo Point to Fleming Key. These welded steel pipelines with traditional flange and bolt connections were originally completed in May 1996, and now, approaching 24 years in service, require significant rehabilitation and/or replacement to address corrosion issues.

A Feasibility investigation was recently performed to evaluate constructing the wastewater pipeline(s) beneath Fleming Channel using one of two methods for Trenchless construction, Horizontal Direction Drilling or Microtunneling. Under this task order, Jacobs will produce construction ready documents for the construction of a microtunnel installation of a 72-inch steel casing beneath Fleming Channel housing the following utilities: 1 - 30-inch sanitary force main, 4 – 4-inch electrical conduits, 1-8-inch water line in an 18-inch steel casing, and 1 – 12-inch reclaimed water line in a 24-inch steel casing. The design includes connection to the existing utilities on both sides of the Fleming Channel with appurtenances and connection to one force main that will remain on the bridge crossing.

1.2 SUMMARY OF WORK

A. Identification of licensed land surveyor in the State of Florida as the responsible party and Surveyor of Record for the work to be performed, based the requirement of the statement of work.

B. Control Surveys: Recover and confirm existing control suitable for the Work described herein. Establish control onsite to complete the Work specified herein. Known survey control is shown and described in Attachment 1.

C. Provide Surveyor Report, mapping, and electronic data.

D. Proposed schedule.

E. Topographic and planimetric Surveys: Survey topographic and planimetric features in the areas depicted in Attachment 1

F. Bathymetric Surveys: Provide hydrographic surveys using a method determined by the surveyor that can include field cross-sections, lead-line measurements, echo soundings or multi-beam underwater scanning depicted in Attachment 1

G. Easement legal descriptions and sketches: To assist the City in obtaining easements for the new work.

H. Attachment 2 is the USACE Permit SAJ-2015-02361 (NW-JMH) issued to the City of key west with some requirements for working in the channel.

I. Surveyor shall be familiar with the area, responsible for obtaining any permits if required and will responsible for safety of their personnel.

1.3 GENERAL PROVISIONS

A. Follow all local, state, and Navy regulations for accessing channel and Navy property, and restore Site to condition existing prior to Surveyors' entry or as agreed upon with the property owner.

B. Coordinate permissions for access to property with the CLIENT as required. Contact Navy and State and negotiate access as necessary.

C. Complete the work under direction of a Professional Land Surveyor, hereafter called SURVEYOR, licensed/registered in the state of Florida.
   1. Conduct work using equipment, personnel, and procedures that will ensure compliance with the accuracy standards as defined herein.
   2. It is the responsibility of the SURVEYOR to ensure the Work under this agreement complies with state, local and Federal regulations and professional standards and the requirements of this Scope of Work.
   3. Documents submitted shall bear the Surveyor's seal, signature, and certification that Work was done under the Surveyor's supervision and that information contained in the document is true and accurately shown.

D. Surveyor is responsible for the quality control of the survey work which includes but is not limited to: field work checks, equipment calibration, office calculations, drawings, and a final peer review of all deliverables. Provide documentation of quality control procedures in the survey report.

E. Data and deliverables prepared for this survey are the property of the Surveyor, Owner and JACOBS.
   1. Surveyor also understands and agrees that Owner and JACOBS may reproduce the drawings and use the information provided on the drawings.
   2. Prepare reports in connection with the investigative work for this Site without incurring obligation for additional compensation to Surveyor.
   3. Original drawings, copies of field notes, and required survey reports are the property of the Surveyor, Owner and JACOBS.
   4. Submit required documents and copies of field notes to JACOBS upon completion of the Work or upon request.

1.4 STANDARDS

A. Survey Accuracy Standard: Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C), and Facility Management.

B. Utility Location: ASCE 38-02, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.

C. Map Accuracy Standards: ASPRS 2014 Map Accuracy Standards.

D. CAD Standards: National CAD Standards (NCS), as published for the National Institute of Building Sciences.

1.5 TECHNICAL SPECIFICATIONS

A. Datums:
   1. Surveyor shall research, recover, and confirm existing horizontal and vertical control networks found on or near Site. Provide documentation in the surveyor's report to include monuments to be used as a basis of survey. Coordinate selection of monuments with JACOBS before beginning work.
      a. Surveyor shall confirm horizontal and vertical coordinate system and datums are consistent with coordinate system and datums currently in use onsite.
      b. In the event that variations are found between datums listed, Surveyor shall report values in both datum systems.
   2. Horizontal:
      a. Data shall be reported as North American Datum of 1983 (NAD 83) current adjustment.
   3. Vertical:
      a. Data shall be reported as North American Vertical Datum of 1988 (NAVD 88) current adjustment.
      b. Surveyor shall notify JACOBS Project Manager if an alternative to specified datum is to be used. JACOBS must approve the use of alternative datum prior to conducting any work.
   4. Values shall be delivered in US Survey Feet, as defined or as legally adopted by the state or municipality in which the Work is being delivered.

B. Coordinate System
   1. Florida state plane coordinate system.

C. Accuracy:
   1. Control:
      a. Horizontal control work shall comply with Third Order Class II (1:5,000) or better, as outlined in the FGDC Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C), and Facility Management. If GPS is used (only if acceptable for the type of survey required), relative horizontal accuracy shall conform to the FGDC Geospatial Positioning Accuracy Standards, Part 2: National Standard for Spatial Data Accuracy.

b. Vertical Control work shall be Third Order (0.050oM) or better, as outlined in the FGDC Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C) and Facility Management.

2. Other Features:
   a. All other surveys (other than control surveys if required), shall comply with FGDC Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C), and Facility Management with accuracy tolerances of plus or minus 0.10 feet for the horizontal and plus or minus 0.03 feet for the vertical, if applicable, on all other hard surfaces and plus or minus 0.10 feet for the vertical on soft or natural ground surfaces (if applicable).
   b. Surveyor shall report all control coordinates X, Y & Z of points to four decimal places. All other coordinates shall be reported to three decimal places.
   c. When higher vertical/elevation accuracy tolerance is required, Real-Time Kinematic Global Positioning System (RTK GPS) cannot be used.

1.6 MAP PRODUCTS MINIMUM CONTENT REQUIREMENTS

A. Scale: 1-inch equals 20 feet.

B. Contour Interval: one foot [feet]CI.

C. Spot Elevations: 25 feet Grid (nominal).

Minimum Content Requirements		
Title Block	North Arrow	Scale (Bar) Contour Interval
Date of Survey	Legend w/ Symbols & Abbreviations	Datum: Horizontal and Vertical
Grid Ticks	Grid Values	Survey Control Points Found and Set
Surveyors Certificate	Surveyors Seal & Signature	For Boundary Plat - State and Local Requirements

1.7 SURVEY ITEMS

A. Control survey
   1. Perform control survey to establish control for all survey activities for the project area and establish control monuments for future work.
   2. Provide report documenting the control point survey and compliance with closure requirements.
   3. Surveys shall include at least 2 control points at each end of the proposed Site
      a. Primary control points shall be set by driving an iron pin, 2 feet or longer, 5/8-inch diameter, flush with the ground just outside the limits of the topographic survey or equivalent marker set in pavement or concrete. These points shall be:
         1) Marked with a 4-foot lath displaying point number.
         2) Part of the main traverse or network adjustment for Site.

3) Tied to datum system and specifications as outlined for control points in the next section with X, Y, and Z coordinates listed to the nearest 0.01 foot.

b. Include control points in the base map deliverables, both PDF and CAD file formats.

c. Set secondary control points with hub and tack, nails, scribes in concrete, or similar, in locations least likely to be disturbed by activities and to maximize line of sight visibility with other control points.

B. Topographic and Planimetric Survey:

1. Perform topographic survey for the project area, as shown in Attachment 1
2. Locate three-dimensional features, including, but not limited to:
   a. Abrupt changes in slope (breaklines), edges of structures, road crowns, top and flow line of curbs, edges and bottoms of the channel and ditches.
   b. Include void area break lines where Digital Terrain Model (DTM) data was not captured and a boundary edge breakline to confine the limits of the DTM surface and subsequent contours generated by the DTM surface.
   c. Top of grates, manhole lids, and pipe inverts at all structures and other surface features.
3. Include spot elevation points with X, Y, and Z coordinates at grid spacing specified above. Include all surface features, manmade and natural, within the subject area including, but not limited to the following items
   a. Fire hydrants, manholes, gas line markers, Trumbo Pipeline, edge of road (paved and unpaved), structures, valves and valve stems, above ground pipe, crossings, and associated structures, debris/rock/fill areas, power poles, transformers, and cabinets, light poles, fences and gates, guard rails, seawalls, culverts, trees 6" and larger, and other at grade or above ground features.
4. Include utility locate marks and utilities that can be located by the use of existing plans and visual field inspection.
   a. Arrange for utility location/mark-out call services.
   b. Comply with all state, and local procedures and regulations related to utility location/mark-out services.
   c. Report utility research activities including records found and reviewed, One-Call notification requests and procedures followed, and correspondence with utility purveyors.
   d. Locate and map utilities found within the Survey limits
      1) Include utilities found in record documents in addition to that field located. Utility shall be compiled on separate CAD layers.

1.8 BATHYMETRIC SURVEYING

A. Perform a multi-beam hydrographic survey (or the most appropriate method that will yield the best results given the site conditions) of the underwater area as shown on Attachment 1. Survey transects will be collected by running lines along the general contours of the underwater bed to ensure the best angle of incidence and data density.

B. Depending on the size and depth of the water body the bathymetric survey could include conventional field survey methods or the use of multi-beam acoustic sounding equipment. The vessels used for multibeam sounding shall be equipped with GPS positioning and marine vessel stabilization and orientation equipment. A combination of these methods may also be required.

C. If multi-beam acoustic methods are attempted but prove ineffective due to the shallow water depths in the survey area, then other echo sounding or manual methods shall be taken into consideration. An example of a secondary method would be a single-beam echo-sounder or a single-beam multi-transducer system if feasible.

D. If vegetation or similar interference is present that affects the acoustic signals of the echo-sounder to detect the full trace of the bottom of the water body, then post-processing methods to eliminate the erroneous digitized data should be conducted and the methods shall be documented in the survey report.

E. If vegetation or similar interference is significant and completely prevents satisfactory echo-sounder readings of the bottom of the water body, then other surveying methods to be recommended by the Surveyor shall be provided to JACOBS for review and approval prior to data collection in these areas.

F. Hydrographic (bathymetry) survey work shall be performed using RTK GPS coupled with manual, or multibeam and singlebeam echosounder and transducer techniques meeting the horizontal and vertical accuracy specifications of the project. Quality control checks shall be performed to document proof that the 95% confidence level of the expected positional tolerances have been attained.

G. All hydrographic survey data must be obtained using a RTK GPS geospatially referenced to the horizontal and vertical coordinate system and horizontal and vertical datum required for the project. RTK GPS precision values shall be recorded throughout the survey data collection and documented in project survey report. These values shall include, but are not limited to, the number of satellites, PDOP, RMS (signal to noise ratio), and the base vector data. The base vector data shall identify that all positions collected were from the intended RTK GPS base station.

H. For consistency purposes regarding horizontal and vertical positions to the project control network, calibration “check-in” procedures shall be implemented for the hydrographic (bathymetry) survey data collection system. Secondary reference control monuments shall be strategically placed in locations where the survey vessel can easily access them. Each reference control monument shall be set using the project survey control network and the XYZ coordinates of each bathymetry secondary control monument (which shall also act as benchmarks) shall be documented in the survey report. At a minimum the SURVEYOR shall use the survey vessel system to observe/check-in to at least one secondary control monument for XYZ values at the start and end of each day. For the check-in observations a digital recording of a minimum of 30 samples shall be stored in the hydrographic (bathymetry) survey program and submitted to JACOBS in an XYZ table and in ASCII format. The samples can be 1-second intervals for 30 seconds and the XYZ values should be recorded.

I. The Hydrography Surveyor shall be responsible for field quality control checks for all hydrographic (bathymetry) data gathering methods. Minimum field quality control shall consist of periodic lead line checks and/or multibeam or single beam perpendicular cross sections checks. All check data will be submitted in XYZ format and in ASCII format, and tabulated with differences, and RMSE (root mean square error) values computed. JACOBS understands that comparing two independent data sets surveyed over the same area may show differences due to normal limitation errors governed by each system. Even though most multibeam systems have

quality control tools within the system itself, the purpose of this exercise is to provide a reasonable quality verification check that is completely independent. JACOBS may provide an independent field quality control agent during any or all of the hydrographic (bathymetry) field work. If provided, the SURVEYOR shall coordinate field activities with the independent quality control agent.

J. Collect data as close to shore\structures as permitted by weather and water conditions to maintain safety for equipment and personnel. Unless specifically not required, the requirement of the Bathymetric Survey is to tie the underwater surface/DTM into and existing above water DTM surface for a continuous project area DTM surface.

K. Edit data for erroneous 'flyers', reduced for environmental variables, and develop a DTM surface model and contours interpolated from the DTM surface for the site. The DTM format and contour interval will be as specified. If there is an existing above water DTM surface, the underwater DTM surface shall be matched to a 3D edge/boundary breakline common to both DTMs.

L. .Prepare a report describing the hydrographic surveying techniques and observations made during the survey.

1.9 EASEMENT LEGAL DESCRIPTIONS AND SKETCHES

A. Produce legal descriptions and sketches to assist the City in obtaining the necessary easements for the proposed work. Anticipated easements are:
   1. Two 50-foot square easements for valve vaults.
   2. Two 300-foot long, 25-foot wide easements for pipelines.
   3. Two 100-foot long, 50-foot wide easements for the tunnel shafts.
   4. Two temporary construction easements over the entire survey areas on both sides of the channel.
   5. One 1300 foot long, 50-foot wide temporary construction easement for a temporary road.

1.10 DELIVERABLES

A. Provide preliminary copies of all deliverables listed below for review. Upon receiving comments from JACOBS, provide final copies with revisions. Provide one signed and sealed PDF copy and one electronic copy of the final drawings in CAD format.

B. Preliminary schedule for completion of the activities listed herein.

C. Surveyor's Report:
   1. Provide Surveyor's Report which defines horizontal and vertical datums, control monuments recovered, and control set used as basis for survey.
   2. Describe equipment and methodology used to perform the Work.
   3. Describe results of survey and accuracies obtained.
   4. Horizontal and Vertical Control Assessment: Provide data/recover sheets for existing and new control stations used for Project.

D. CAD files.
   1. DTM or TIN surface model with 3D graphic triangles, 3D contour lines and features.
   2. A 20-scale, 1-foot contour interval topographic/planimetric map.

E. Bathymetric Survey:
   1. DTM surface of the bottom of the water body in CAD format.
   2. A 20-scale, 1-foot contour interval topographic/planimetric map of the surface of the bottom of the water body in CADD format.
   3. A listing of control points used and established for the bathymetric survey.
   4. Quality control checks performed and RMSE/having a 95% confidence level accuracy calculations for the delivered surface.

1.11 REQUIRED FORMATS

A. CAD Format:
   1. Provide survey information in a MicroStation or AutoCAD electronic drawing.
   2. Drawing shall show information established and provided to mapping consultant where applicable.
   3. Electronic drawing symbology shall conform to the National CAD Standards (NCS), as published for the National Institute of Building Sciences.
   4. A 3-D file is required, all information shall be at the correct elevation for all elements.
   5. Provide DTM/TIN surface model with 3D graphic triangles, 3D contour lines and features compatible with InRoads.

1.12 DATA DELIVERY FORMAT

A. Terrain Data:
   1. Provide the following point types:
      a. Random points or spot elevations.
      b. Breaklines (faults) including normal, proximity, and wall breaklines.
      c. Boundaries, both perimeter/tin as well as any hidden (void) boundaries used.
   2. Provide in CAD Files. File specifications are listed below:
      a. Layer separate the data by point types (random/spot, breaklines, perimeter/tin, voids).
      b. Breaklines should be layer separated by feature code
      c. Layer names should be logically named or match the feature code.
      d. Breakline, boundary and void data should be 3-D line strings or polylines.
      e. Spot elevations or random points should be MicroStation 3-D lines of zero length. Text nodes, cells and blocks are not permitted.
   3. Provide digital Terrain Model Data in CAD format with the following items:
      a. CAD file with Triangulated Irregular Network (3D faces) displayed on a unique layer.
      b. CAD file with contours displayed from TIN on a unique layer/level. Contour Interval to be agreed upon prior to delivery.
      c. Note settings used by surveyor of record for Stroking, curve and linear, as well as Triangle Side Length. Embed notes in the CAD file.
      d. Note or color code any “switched” or “flip-flopped” triangles used in DTM development.

1.13 PAYMENT SCHEDULE FORM FOR SURVEYING SERVICES

A. Offeror’s Name: _____

B. Offeror shall provide Fixed Unit Prices to complete the services specified below. Proposal shall include a breakdown of labor, equipment, materials, lower-tier subcontractors, and supplies

necessary to complete each of the Scope of Services items specified herein. The quantities provided below are estimated. Payment will be for actual quantities of work.

Description	Qty.	Units	Unit Price	Extended Total
1. Control Survey	1	Lump Sum	$ 8,295	$ 8,295
2. Topographic and Planimetric Survey	1	Lump Sum	$35,220	$35,220
3. Bathymetric Survey	1	Lump Sum	$15,725	$15,725
4. Easement Legal Descriptions and Sketches	9	Lump Sum	$ 1,200	$10,800
TOTAL PRICE				$70,040

END OF SECTION

AVIROM & ASSOCIATES, INC.
SURVEYING & MAPPING

February 24, 2023

Via E-Mail: Diana.Francois@jacobs.com

Ms. Diana Francois, P.E.
Project Manager
Jacobs
5811 Pelican Bay Boulevard
Suite 305
Naples, FL 34108

Re: Fleming Key Cut, Fleming Key, Monroe County, Florida
Upland Topographic Survey and Bathymetric Survey.
Our Job No. 8705

Dear Diana:

In accord with your request, the following proposal for the above referenced project is submitted for your consideration:

Scope:

Upland Limits:

The upland topographic survey limits shall be along the north and south shorelines of Trumbo Point and Fleming Key respectively, adjacent to Fleming Key Cut. The southerly upland limit is comprised of approximately 7.23 acres and the northerly upland limit is comprised of approximately 16.20 acres within the areas delineated in yellow on Exhibit A (below), incorporated herein for reference.

Bathymetric Limits:

The limits shall be within the Fleming Key Cut and along the east shoreline of Fleming Key having a bandwidth of 200-feet, including the immediate near-shore along Trumbo Point and Fleming Key comprised of approximately 8.79 acres, shown in blue on Exhibit A (below), incorporated herein for reference.

1. Upland Topographic Survey

Obtain sufficient elevations to define the existing topography in detail, and to generate 1' contours, including significant grade changes in elevations. The elevations shall be referenced to the North American Vertical Datum of 1988 (NAVD 88) and horizontally referenced to the North American Datum of 1983 (NAD 83-2011) Epoch 2010.00 and tied to the National Geodetic Survey (NGS) benchmark network. Additionally, we shall establish a minimum of two (2) benchmarks on Trumbo Point and two (2) benchmarks on Fleming Key. We shall calculate and place the vertical conversion factor from NAVD 88 to the National Geodetic Vertical Datum of 1929 (NGVD 29) on the face of the map.

We shall locate all above ground improvements including, but not limited to buildings, pavement, ramps, driveways, steps, gates, top of curb, bottom of curb, flow line, edge of pavement, centerline of pavement, bottom of gutter, back of walk, face of walk, trees 6" and larger and above ground evidence of utility, including the Trumbo Pipeline attached to the existing bridge. We will obtain rim elevations, pipe size, material and inverts of sewer and drainage structures where accessible. Due to the nature of obtaining the data where the structures are in use and the actual inverts may be obscured, the information obtained will be the best approximation of the true measurements. It is the responsibility of the end user to verify the diameter and material utilizing as-built drawings or other resources prior to construction. Utility locations will include fire hydrants, water valves, meter boxes, vaults and electrical outlets, power poles and overhead wires. We will locate wells and main irrigation valves, but will not locate individual sprinkler heads.

There is no provision for the excavation, probing or location of underground utilities structures or improvements. Utilities shall be located to the extent that they are above ground and visible. This proposal does *not* include the contracting of an underground utility locating service to locate the subsurface utilities. If this item is required, we will provide client with our consultant's contact information to have the utilities flagged under a separate contract.

We shall submit a design ticket to Sunshine 811 for the contact information of all owners of underground utilities within the project limits and request as-builts adding the provided information on the survey. The information will be based on as-built drawings supplied by the utility companies, if any and will be a graphical representation of the actual existing underground utilities compiled from the above ground evidence and the as-builts.

The utility locations shall be done to Quality Level C, defined as:

Quality Level C: QL-C involves surveying visible utility facilities (e.g., manholes, valve boxes, etc.) and correlating this information with existing utility records (QL-D information).

We shall submit a design ticket to Sunshine 811 for the contact information of all owners of underground utilities within the project limits and request as-builts adding the provided information on the survey. The information will be based on the location of existing above ground utilities combined with as-built drawings supplied by the utility companies, if any and will be a graphical representation of the existing underground utilities compiled from the above ground evidence and the as-builts.

This proposal does not include the location of underground markers prior to excavation. If this item is required, it will be negotiated on an as needed basis at a future date.

The survey data will be reported to the nearest 0.05 feet for horizontal locations and for the vertical component, 0.1 feet spot elevations on ground shots and 0.03' spot elevations on paving or hard surfaces, with all work performed in accordance with the Standards of Practice as defined in Chapter 5J -17, Florida Administrative Code.

We shall obtain topography along the adjacent shoreline, extending into the water establishing elevation overlaps with the bathymetry. The overlaps will provide a quality check of the bathymetry data and the near shore elevations will seamlessly integrate with the bathymetric survey.

Obtaining the topographic data shall be limited to areas that are open and unobstructed without the cutting of vegetation. If areas are encountered that are heavily vegetated, we shall locate the edge of vegetation and delineate it on our survey.

This is not a boundary survey and the information should not be relied upon as such. It is strongly recommended that if the design is contingent on accurate boundary placement and especially prior to construction, a boundary survey should be performed to establish the lines. We will not be responsible for the misuse of the topographic survey for purposes it was not intended.

2. Bathymetric Survey

We propose to utilize a single beam survey grade fathometer due to the shallow depth and lack of vegetation on the sea floor.

The bathymetric surveys shall be conducted using a fully automated, hydrographic survey system comprised of a 200 kHz Sonarmite BT survey grade fathometer, Leica GS18 GNSS Global Positioning System (RTK-GPS), and computer-based navigation/data collection system. Data will be collected along transects oriented approximately perpendicular to the shoreline spaced at twenty (20) foot intervals from the previous transect spanning approximately 315-feet from shoreline to shoreline, including a 200-feet bandwidth along the eastern shoreline of Fleming Key.

Data shall be recorded continuously along each transect at approximate intervals of five (5) feet in raw digital format along with other information such as date, time, northing/easting, latitude/ longitude and a summary of all the parameters of the navigation file. Prior to the start of the survey a tide staff will be established in close proximity to the site for use in monitoring water levels during the course of the bathymetric survey operations.

Water levels will be recorded at 6-minute intervals. We will establish both horizontal and vertical controls needed for the survey. Upon completion of the data collection activities, raw digital bathymetric data files will be edited and reduced to the proper vertical datum via application of collected tide information. Charts will be prepared in ACAD 2018 format and shall encompass contours and/or plotted plan data. Contours shall be plotted at one (1) foot contour intervals. Contours will be generated via the development of a Digital Terrain Model (DTM) of the data.

Final charts will encompass a grid depicting northings (Y) and eastings (X) relative to the project datum. In addition, charts will include a complete description of horizontal and vertical control used for the survey, approximate location of the tide staff and any general notes pertinent to the survey. Charts will be provided to the client on paper media along with digital files in PDF format and AutoCAD 2018 format. In addition to the digital PDF files, the client will be provided with an ASCII file containing the final X, Y, Z data. The depths will be based on elevations relative to the North American Vertical Datum of 1988 (NAVD 88), with a conversion factor listed to reduce the data to Mean Low Water (MLW).

3. Easement Sketch & Descriptions:

We shall prepare a total of nine (9) sketch and descriptions of proposed easements.

Client is responsible for providing the deeds or legal descriptions of the underlying parent parcels upon which our legal descriptions shall be based.

This proposal does not include obtaining a title report or researching the public records for deeds, easements and encumbrances of the underlying parent parcels.

Deliverable

We shall provide digitally signed electronic PDF file of the survey and a drawing file in AutoCAD 2018 format.

Time Frame

We can mobilize to the site within seven (7) working days after receipt of an executed contract, and have the work completed forty (40) working days after mobilization.

Clarification:

- Client shall arrange for all access to the property. Delays caused by the inability to gain access to the property at no fault of Avirom & Associates, Inc. may incur additional charges. It is anticipated that our two (2) upland crews will be on-site for approximately 20 working days. The bathymetric crew will be on-site for three (3) working days.

  Our crews will be qualified to be badged for unrestricted work within the site. We shall coordinate and provide the documentation necessary for the client to obtain badging for our crews.

- This proposal is based on the site being free and clear of storm debris. We will not move obstacles that impede obtaining the survey data, or if field conditions are considered hazardous to the safety of our crews.
- This proposal does *not* include identification of seagrass which we are not qualified to do. We do not have an environmentalist or biologist on staff.

- The tree species shall be listed to the best of knowledge and ability of the surveyor (without the benefit of a botanist or landscape architect). It is the responsibility of the end user to verify the identity of the species. The location of shrubbery and landscaping is not included in this proposal. Large, bunched groups of trees shall be located as clusters with a count and diameter listed. We will not locate exotic or non-native species.

  Mangroves consist of prop roots and by nature do not possess a defined tree trunk; therefore, the edge of the mangroves will be located.

Fee:

The itemized fees to perform the above services are attached to the Statement of Work.

General Conditions.

All invoices are due and payable in full upon receipt. Surveyor reserves the right to withhold certified prints and files to client or client's consultants until payment is made in full. CAD file (if part of deliverables) will not be released until invoice is paid in full. If payment is not received within 10 days of the invoice date, a late charge may be added to the invoice in an amount not to exceed 1½ percent per month on the outstanding balance. If payment is not received within 45 days of the invoice date, Surveyor may terminate this agreement or suspend work under the agreement until payments have been made in full. The undersigned agrees to pay reasonable attorneys' fees, costs and expenses incurred by Avirom & Associates, Inc. at all pre-litigation, trial, and appellate levels relating to any dispute arising from this agreement or any efforts to collect any past due obligation of the undersigned pursuant hereto.

Copies in excess of four prints, Federal Express, deliveries and out-of-pocket expenses will be charged to client at cost. Additional prints will be charged at $5.00 per print.

Revisions to survey requested by governmental agencies that are more stringent than Standards of Practice as set forth in Chapter 5J-17 FAC pursuant to Section 472 Florida Statutes will be an additional expense to client based on our current hourly rates.

We thank you for the opportunity to submit this proposal and we look forward to working with you on this project.

Should you have any questions or comments, please feel free to contact me.

Respectfully,

Keith M. Chee-A-Tow, P.L.S.
For the Firm

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EXHIBIT A

AVIROM & ASSOCIATES, INC.
SURVEYING & MAPPING

March 2, 2023

Via E-Mail: *Diana.Francois@jacobs.com*

Ms. Diana Francois, P.E.
Project Manager
Jacobs
5811 Pelican Bay Boulevard, Suite 305
Naples, FL 34108

Re. Florida Department of Environmental Protection Lease over Fleming Key Cut
Submerged Lease Survey in Accord with SLER 0960 (Professional Sketch Requirements)

Dear Diana,

We shall perform a Division of State Lands Lease survey in accord with the following scope:

Limits:

The limits shall be from the south bank (Mean High Water Line) of Fleming Key across the Fleming Key Cut to the north bank (Mean High Water Line) of Trumbo Point having a bandwidth of the existing bridge width. We shall delineate on the Submerged Land Lease survey the upland boundary of Fleming Key and also the upland boundary of Trumbo Point. We shall only recover the monuments along the upland boundaries coincident with the sovereignty submerged lands to satisfy the requirements of the Submerged Land Lease survey.

Scope:

The work shall be in accord with all items of SLER 0960 Professional Sketch Requirements of the Florida Department of Environmental Protection, Division of State Lands, Bureau of Survey and Mapping's requirements for leases over Sovereignty Submerged Lands comprised of the following items:

- Boundaries of the preempted area over sovereignty lands.

- Locate the existing bridge within the preempted area, including the adjacent upland boundaries.
- We shall show the proposed underground distribution pipe, which shall be provided to us by the client.
- We shall show the upland boundary information only (not a boundary survey).
- Perform a Tidal Water survey of the upland banks of Fleming Key and Trumbo Point, coincident with the sovereign lands to determine the Mean High Water Line.
- Determine and delineate the subject property's Riparian Rights line.
- Depict the distances from existing and proposed structures relative to the projected riparian lines.
- Calculate and show the linear footage coincident with the sovereign lands.
- Reference the Section, Township, Range, County and name of waterbody, including total square footage (and acreage) of the requested lease. Reference ties to a minimum of two found or set upland monuments, one of which must be a section corner, subsection corner or other corner of record.
- Establish NAD 1983 coordinates on the Point of Beginning, with methodology to determine the coordinates noted.
- Survey will be in compliance with Chapter 61G17-6, F.A.C., and Chapter 177, Part II, F.S. and meet the requirements of the Department's SLER 0960 "Survey Requirements" procedure.

Deliverables:

1. Provide four (4) signed and sealed certified hard copies of the Sovereignty Submerged Land Lease.
2. Digital signed PDF file and an AutoCAD 2018 or lower format file of the above survey.
3. The delivery format shall be as specified under Checklist for Review of Sketch & Lease Area Description.

Clarifications:

- This proposal is based on one mobilization by our crew from Boca Raton to accomplish the project.
- Client is to provide the legal descriptions for the uplands of Fleming Key and Trumbo Point
- Requirements to the survey requested by governmental agencies that are more stringent than Standards of Practice as set forth in Chapter 5J-17 FAC pursuant to Section 472 Florida Statutes will be an additional expense.

- This proposal is based on the site being free and clear of storm debris. We will not move obstacles that impede obtaining the survey data, or if field conditions are considered hazardous to the safety of our crews.

Timeframe:

After receipt of a Purchase Order, we will mobilize a crew within seven (7) working days and have the project completed within thirty (30) working days after mobilization. Mobilization is dependent on the availability of accommodations for our field crew and/or restrictions due to access to the site.

Fee:

The itemized fee to provide the above surveying services shall be lump sum:

1. Recover monumentation to define the Uplands (Fleming Key/Trumbo Point)..... $ 2,500.00
2. Establish Mean High Water Lines (Tidal Survey)…...……..... $ 1,320.00
3. Research and delineate existing adjacent Submerged Land Leases ……..... $ 1,321.00
4. Create Sketch & Description of Submerged Lease Area ……...…….$ 3,500.00

TOTAL ……. $ 8,641.00 lump sum

Thank you for the opportunity to submit this proposal. Should you have any questions, please contact me accordingly.

Respectfully,

Keith M. Chee-A-Tow, P.L.S.
Project Surveyor

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AVIROM & ASSOCIATES, INC.
SURVEYING & MAPPING

March 2, 2023

Via E-Mail: *Diana.Francois@jacobs.com*

Ms. Diana Francois, P.E.
Project Manager
Jacobs
5811 Pelican Bay Boulevard, Suite 305
Naples, FL 34108

Re. *USACOE Permit crossing Fleming Key Cut, City of Key West, Florida 33040.*
As-Built of Subaqueous Pipe Crossing

Dear Diana:

Subsequent to your request, we will provide surveying services at the above referenced site all in accordance with the Standards of Practice, Chapter 5J-17 F.A.C, in accord with Chapter 472, Florida Statutes based on the following scope of service:

Scope

Location

Along the south bank (Mean High Water Line) of Fleming Key across the Fleming Key Cut to the north bank (Mean High Water Line) of Trumbo Point in Section 31, Township 67 South, Range 25 East, City of Key West, Monroe County, Florida 33040 as delineated on Exhibit A (see below), incorporated herein as reference.

1. *As-Built of Subaqueous Pipe crossing Fleming Key Cut:*

We shall perform an as built of the above referenced structure to support the U.S. Army Corps of Engineers (ACOE) Permit Application. Bore logs of the installed pipe shall be provided to us by the client on which the as-built will be based. We shall obtain top of water elevation, top of bank elevation (berm), toe of slope elevation, upland boundary lines, and twelve (12) foot setback line from the Fleming Key Cut right-of-way line. Additionally, we shall obtain the elevation of the base of the bridge crossing the Fleming Key Cut.

2. Retracement of Fleming Key Cut Right-of-Way:

We shall perform a retracement survey to define the right-of-way of the Fleming Key Cut from deeds or legal description provided to us by the client. We shall recover sufficient boundary monuments to spatially place the right-of-way within the drawing file and calculate the ties of the existing improvements relative to the right-of-way. This is not a boundary survey and the information should not be relied upon as such.

Deliverables:

The survey will be provided in DWG and DXF formats, including a signed and sealed hard copy and a PDF file of the hard copy.

Clarifications:

- The elevations (z) shall be referenced to the North American Vertical Datum of 1988 (NAVD 88) and horizontally referenced (x,y) to the North American Datum of 1983 (NAD 83-2011) Epoch 2010.00 and tied to the National Geodetic Survey (NGS) benchmark network. Additionally, we shall establish a minimum of two (2) benchmarks at the site. We shall calculate and place the vertical conversion factor from NAVD 88 to the National Geodetic Vertical Datum of 1929 (NGVD 29) on the face of the map.
- Client shall arrange for all access to the property. Delays caused by the inability to gain access to the property at no fault of Avirom & Associates, Inc. may incur additional charges.
- This proposal is based on one mobilization by our crew to accomplish the project.
- This proposal is based on performing the work in conjunction with the submerged land lease survey, sent under separate cover.

Time Frame

We can mobilize to the site within seven (7) working days of receipt of a PO and have the work completed within thirty-five (35) working days after mobilization.

Fee

The fee to provide the above surveying services shall be lump sum amount of $7,610.00.

We thank you for the opportunity to submit this proposal and we look forward to working with you on this project.

Should you have any questions or comments, please do not hesitate to contact me.

Respectfully,

Keith M. Chee-A-Tow, P.L.S.
Project Manager
AVIROM & ASSOCIATES, INC.

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EXHIBIT A