



ARTIBUS DESIGN

ENGINEERING AND PLANNING

Task Order #0223-01

Structural Engineering Design Services

Spencer's Boat Yard

701 Palm Ave, Key West, FL 33040

**Replacement of the existing severely damaged seawalls, gantry crane piers
and wood frame marginal docks**

Prepared for

City of Key West Engineering Department

February 21, 2023

By:

**Artibus Design LLC,
3710 N Roosevelt Blvd,
Key West, FL 33040**

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3710 N. ROOSEVELT BLVD,
KEY WEST, FL 33040

(305) 304-3512
INFO@ARTIBUSDESIGN.COM
WWW.ARTIBUSDESIGN.COM

SPENCER'S BOAT YARD



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Location Map

Project Description:

As a result of our preliminary evaluation of the property it was established that the existing marine facilities are in various states of disrepair to the point of failure of various elements. The original seawalls and other shoreline improvements were constructed in 1950's with minimal improvements over the years.

In order to maintain the Boat Yard safe operations the complete replacement of all seawalls, finger piers and docks is recommended together with a maintenance dredging of the silted in boat basins to promote healthy circulation and safe gantry lift operations.

The following photographs were taken during one of the several site visits performed by Serge Mashtakov, P.E., demonstrate the existing conditions of the facility.

Specialty subconsultants were contacted to facilitate the design and permitting process. HighSpans Engineering, Inc as a specialist in bridge design to accommodate heavy boat lift gentry traffic loads on the piers and seawalls (provided prior assistance on Knights Key Pier span replacement and on Fleming Key Utility Bridge Emergency Repairs). Terramar Environmental Services Inc. as a local environmental survey specialist (provided prior assistance on numerous City Historic Seaport Projects).

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Figure 2. Severely damaged finger pier. Supporting gantry crane trucks. The core of the pier completely eroded backfill soils and seawall cap collapsed. Damaged seawall and soldier piles.



Figure 3. Same as Figure 2. Top view. Corroder reinforcement inside of the slab.



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Figure 4. Concrete spalling, cracks and failure of seawall cap, soldier piles. Heavy silted dock basins require maintenance dredging.



Figure 5. Lack of support and shoreline erosion along of wood frame dock. Old failing wood frame marginal dock abandoned under the new over framing.



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Artibus Design LLC is pleased to present this engineering service proposal for the scope described below.

Scope of work:

Task 1. Coordination of Specialty Engineer, site meeting and design scope definition.

- 1.1 Coordinate with specialty engineer on-site meeting present the damaged structure.
- 1.2 Define limits of the replacement and expected field conditions.
- 1.3 Coordinate detailed scope of work with City Staff.

Task 2. Specialty Engineer Design and Permitting Services.

- 2.1 See Appendix "A" for HighSpans Engineering, Inc proposal.

Task 3. Environmental Subconsultant

- 3.1 Establish the limits and review benthic survey of the seawall and sea bottom as needed for seawall replacement and maintenance dredging of the dock basins.

Task 4. Review of the 30%, 90% and final design drawings and reports.

- 4.1 Review of the progress and final drawings and calculation reports for completeness and coordination with on-site conditions. (Please note the Specialty Engineer of Record is responsible for structure adequacy meeting current design loads).

Deliverables:

1. Up to five (5) site visits for field co-ordinations, inspections etc.
2. See Appendix "A" for Specialty Engineer scope of service.

Assumptions:

1. City will provide any available documents related to the original construction and improvements (if available).
2. City will provide full and unrestricted access to the property during normal work hours Monday-Friday 7 am till 5 pm.
3. It is understood that the work may be terminated at the end of any task, if the City deems necessary.



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Cost of Work:

The proposed total lump sum fee for this scope of work shall be: **\$152,580.00.**

Task 1. Coordination of Specialty Engineer, site meeting and design scope definition.

Structural Engineer (P.E.):	30 hours @ \$180.00/hr	\$5,400.00
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Task 2. Specialty Engineer bridge design.

HighSpans Engineering, Inc. Proposal # 056.04 (Lump Sum)	\$125,500.00
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Task 3. Environmental Subconsultant – Benthic Survey

Fee provided by Terramar Environmental Services Inc (Lump Sum)	\$8,000.00
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Task 4. Review of the 30%, 90% and final design drawings and reports.

Structural Engineer(P.E.):	60 hours @ \$180.00/hr	\$10,800.00
Engineering Technician (non P.E.)	20 hours @ \$105.00/hr	\$2,100.00
Clerical	10 hours @ \$78.00/hr	\$780.00



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Schedule of Hourly Rates (Per Approved Contract)

Title or work description	Hourly Rate
Licensed Professional Engineer (P.E.)	\$180.00
Project Manager	\$156.00
Certified Engineer Intern (E.I.)	\$130.00
Structural Inspector (non P.E.)	\$130.00
Expert Witness (Legal)	\$350.00
Inspector (non P.E.)	\$105.00
Engineering Technician	\$105.00
Drafting Technician	\$105.00
Clerical	\$78.00

Schedule of Reimbursable Expenses

Item description	Rate
Large Format Prints (Arch-D, 24"x36") Color	\$35.00/Each
Large Format Prints (Arch-D, 24"x36") Black&White	\$15.00/Each
Prints (Tabloid, 11"x17") Color	\$5.00/Each
Prints (Tabloid, 11"x17") Black&White	\$0.75/Each
Prints (8.5"x11") Color	\$0.50/Each
Prints (8.5"x11") Black&White	\$0.25/Each
Binding Large Format	\$50.00/Each
Binding Tabloid and Letter Format	\$20.00/Each
Mailing and Shipping Expenses	Cost + 20%
Travel Expenses (outside Monroe County)	Cost + 20%
Misc. (Discs, Flash Drives, etc.)	Cost + 20%

Client:
Signature _____ Date _____
Patti McLauchlin
City Manager

By: Serge Mashtakov Date 02/21/2023
Signature _____
Serge Mashtakov, PE
President, Artibus Design LLC



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Appendix "A"
HighSpans Engineering, Inc
Proposal #: 056.04
(see attached)

Project Proposal - Task Work Order




2121 MCGREGOR BLVD. - STE 200
FT. MYERS, FL 33901
OFFICE: 239.433.3000
FAX: 888.449.2462

CLIENT NAME:	Artibus Design	DATE:	02/16/2023
ATTN:	Serge Mashtakov, PE	EMAIL:	Serge@ArtibusDesign.com
CLIENT ADDRESS:	3710 N. Roosevelt Blvd Key West, FL 33040	PHONE:	(305) 304-3512
PROJECT NAME:	Spencer's Boat Yard Sea Wall Repairs		
LOCATION:	Key West, FL	HEI CLIENT #:	056
OWNER:	City of Key West	PROPOSAL #:	056.04
SUBMITTED BY:	Vince Zaliauskas, PE	239.443.7010	VinceZ@HighSpans.com

SCOPE OF SERVICES	DUE
See Attachment 1 – Scope of Services	TBD

FEES AND PAYMENT TERMS
\$125,500 Lump Sum – Progress Invoices due 30 days from invoice date. See General Conditions.

GENERAL CONDITIONS
By accepting this Proposal, the Terms on this page and HighSpans Engineering, Inc.'s General Conditions, attached, are incorporated herein by reference. If after progress submittal, revisions are required which are necessary because of inaccurate information provided by the Client, revision fees may apply. If after 60% submittals, revisions are required due to concept changes, revision fees will apply. Additional S/S fees will apply.

ACCEPTANCE	
HighSpans Engineering, Inc., by:	Artibus Design, by:
	
Vincent A. Zaliauskas, PE, SECB	02/16/2023
President & Principal Engineer	

GENERAL CONDITIONS

PAYMENT – Payment shall be due within **30 days after date of Invoice**. Interest at the rate of 12% per annum (or the highest rate allowable by law) from 30 days after date of invoice to date payment is received will be added to all amounts not paid within 30 days after date of invoice. All attorney fees and expenses associated with collection of past due invoices will be paid by Client. Failure to timely pay any HighSpans Engineering, Inc.'s (HighSpans) invoice shall constitute a waiver of any and all claims against HighSpans. If payment of any HighSpans invoice is not paid within 60 days of invoice submittal date, HighSpans reserves the right to cease performing work, including submitting previously completed work, on any Client projects until payment on outstanding invoices is made in full.

RIGHT-OF-ENTRY – Unless otherwise agreed, Client will furnish right-of-entry on the property for HighSpans to make the planned inspections or materials sampling. HighSpans will take reasonable precautions to minimize damage to the property caused by its equipment and sampling procedures, but the cost of restoration or damage which may result from the planned operations is not included in the contracted amount. If client desires HighSpans to restore the property to its former condition, HighSpans will accomplish this and add the cost to its fee.

DAMAGE TO EXISTING MAN-MADE OBJECTS – It shall be the responsibility of the Client or his duly authorized representative to disclose the presence and accurate location of all hidden or obscure man-made objects relative to field tests, sampling, or boring locations. In addition, Client waives any claim against HighSpans arising from any damage to existing man-made objects.

WARRANTY AND LIMITATION OF LIABILITY – HighSpans shall perform services for Client in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with the standards of competent consultants practicing in the same or a similar locality as the project. In the event any portion of the services fails to comply with this warranty obligation and HighSpans is promptly notified in writing prior to two months after completion of such portion of the services, HighSpans will re-perform such portion of the services, or if re-performance is impractical, HighSpans will refund the amount of compensation paid to HighSpans for such portion of the services.

INDEMNIFICATION – In consideration of the first One Hundred and No/100 Dollars (\$100.00) to be paid hereunder and to the fullest extent permitted by law, Subconsultant agrees to indemnify, hold harmless and defend HighSpans and its agents, servants and employees, from and against any and all claims, costs, expenses, damages, or liability (including reasonable attorneys' fees and costs of defense) caused by, attributable to, arising out of, or resulting from Subconsultant's negligent acts, errors or omissions in the performance of professional services under this Agreement and those of its sub-subconsultants, agents, servants and employees. Subconsultant is not obligated to indemnify HighSpans in any manner whatsoever for HighSpans' own negligence. Subconsultant's monetary limitation under this indemnity provision shall be limited to the sum of One Million and No/100 Dollars (\$1,000,000.00) per occurrence. The parties agree that the foregoing sum bears a reasonable relationship to this Agreement. The indemnity provision shall be considered a material part of the specifications governing Subconsultant's performance under this Agreement. This indemnity provision is intended to comply with Florida laws on indemnity and, specifically, to comply with Sections 725.06 and 725.08, Florida Statutes, and is to be interpreted in such manner as to be enforceable.

LEGAL JURISDICTION – The parties agree that any actions brought to enforce any provision of this Agreement shall only be brought in a court of competent jurisdiction located in Ft. Myers, Lee County Florida. All causes of action, including but not limited to actions for indemnification, arising out of HighSpans' work shall be deemed to have accrued and the applicable statutes of limitation shall commence to run not later than either the date of substantial completion of the Work for acts or failures to act occurring prior to substantial completion, or the date of issuance of HighSpans final invoice for acts or failures to act occurring after substantial completion of the Work.

TERMINATION – This Agreement may be terminated by either party by seven (7) days written notice in the event of substantial failure to perform in accordance with the terms herein by the other party through no fault of the terminating party. If this Agreement is so terminated, Client shall pay HIGHSPANS compensation for work satisfactorily completed up to date of termination and upon receipt of the work by Client. HighSpans may terminate this agreement for convenience. In the event of termination or suspension of the Prime Contractor, the Client shall pay HighSpans for the work accomplished up to the date of termination or suspension upon receipt of the work by the Client.

DISPUTE RESOLUTION – If a dispute arises out of or relates to this contract, or the breach thereof, the parties will attempt to settle the matter through amicable discussion. If no agreement can be reached the parties agree to use mediation before resorting to a judicial forum. The cost of a third-party mediator will be shared equally by the parties. In the event of litigation, reasonable costs and attorneys' fees will be awarded to the prevailing party.

ENTIRETY OF AGREEMENT – This Agreement and any attachment listed herein embody the entire agreement and understanding between the parties hereto, and there are no other agreements and understandings, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby. No alteration, change or modification of the terms of the Agreement shall be valid unless made in writing signed by both parties hereto.

PURSUANT TO SECTION 558.0035 FLORIDA STATUTES, INDIVIDUAL EMPLOYEES OR AGENTS OF HIGHSPANS ENGINEERING, INC. MAY NOT BE HELD INDIVIDUALLY LIABLE FOR ECONOMIC DAMAGES RESULTING FROM NEGLIGENCE OCCURRING WITHIN THE COURSE AND SCOPE OF THE PROFESSIONAL SERVICES INCLUDED IN THIS CONTRACT. HIGHSPANS ENGINEERING, INC. MAINTAINS PROFESSIONAL LIABILITY INSURANCE AS SHOWN ON THE CERTIFICATE OF INSURANCE PROVIDED TO THE CLIENT.

Attachments: 1. Scope of Services

Attachment 1 – Scope of Services

Background:

The City of Key West owns the seaside property located at 701 Palm Ave which is currently being operated as a marine boatyard. The property includes approximately 360 linear feet of seawalls, several boat gantry support platforms and dock areas and is currently operating as Spencer's Boat Yard. The existing seawall and associated facilities were constructed in 1950 and again in 1970 and recent inspections show seawalls have deteriorated to the point where several sections have collapsed and are in need of complete reconstruction/replacement. Within the boat yard, a tire supported boat gantry crane system operates by rolling out over the concrete platforms to access the boat slip and lift and relocate boats to other areas in the yard. The site is tidal with waters that are designated as Outstanding Florida Waters (OFW) and extremely aggressive in terms of corrosion potential. The site includes limitations on construction activity related to a high voltage overhead powerline (assumed 44kv to 160 kv) that crosses the project area.

Scope of Work:

The scope consists of structural and geotechnical engineering services and permitting necessary to develop construction plans for the removal and reconstruction of approximately 200 linear feet of seawall, 700 square feet of boat gantry crane support platforms, and 300 square feet of dock areas. The scope includes all tasks necessary to perform the structural and geotechnical design of the seawall, boat gantry support platform, and docks in accordance with all Monroe County, Florida Building Code, and ASCE design and construction requirements. This includes geophysical investigation necessary to evaluate the subsurface soil conditions at the site and provide structural design of the replacement seawall and foundations supporting gantry platforms. The scope is limited to structural design and plans and does not include any associated mechanical, electrical, plumbing, lighting, or other incidentals that may be necessary for the operation of the docks and boat gantry system as these would be provided by Artibus Design. The key deliverable will consist of construction plans, specifications, and estimates (PS&E package) digitally signed and sealed by a Florida Registered Professional Engineer and delivered electronically to Artibus Design for incorporation into the overall project plan set. The key tasks that will be performed under this contract include:

1. Project Management and Coordination:

- a. Coordination with the City of Key West and utility owners as necessary to perform field work for the subsurface soil exploration.
- b. Coordination with the City of Key West and relevant utility owners as necessary to perform field work to support the structural design.
- c. Perform Quality Control & Quality Assurance reviews for all plans submittals.
- d. Coordination and meetings with Artibus Design as necessary to incorporate structures plan sheets into the overall project plan set.

2. Permitting Services

a. SFWMD Individual Permit Application

1. Prepare, submit, and support a SFWMD Individual Permit package.
2. Attend one (1) site visit with the SFWMD.
3. Coordinate with client retained environmental consultant to prepare application packages and RAI responses.
4. Support SFWMD Request for Additional Information (RAI) based on comments received from SFWMD Staff. Assumes one (1) round of comments. Additional RAI's will be negotiated on a time and material basis if required.

5. Excluded services includes any required bathymetric surveys, land surveys, environmental surveys, environmental impact statement reports or assessments, title work, sketch and legal descriptions, and UMAM analysis.

b. FDEP State 404 Individual Permit Application

1. Prepare, submit, and support a FDEP Individual Permit package.
 2. Attend one (1) site visit with the FDEP.
 3. Coordinate with client retained environmental consultant to prepare application packages and RAI responses.
 4. Support FDEP Request for Additional Information (RAI) based on comments received from FDERP Staff. Assumes one (1) round of comments. Additional RAI's will be negotiated on a time and material basis if required.
 5. Excluded services includes any required bathymetric surveys, land surveys, environmental surveys, environmental impact statement reports or assessments, title work, sketch and legal descriptions, and UMAM analysis.
- c. Based on discussions with Artibus Design Planning and Engineering, it is either assumed that there is already an established Sovereign Submerged Land Lease (SSLL) over the project limits, or that one will not be required for the project as the submerged lands are owned by the City of Key West.
- d. Based on discussions with Artibus Design Planning and Engineering, it is assumed in this scope of services that the building permit and any site permit through the City of Key West will be coordinated and obtained by the City, and no services for this effort other than providing the design, calculations, and specifications will be required.

3. Geotechnical Exploration and Engineering Report

- a. Perform two (2) Standard Penetration Test (SPT) borings at the site.
- b. Perform laboratory classification testing on soil samples as needed.
- c. Prepare a geotechnical engineering report that summarizes the subsurface soil conditions and results of our evaluation.

4. Analysis, Plans, Specifications, and Engineers Estimate of Construction Cost:

- a. Structural analysis and design in accordance with all applicable codes for the replacement of the existing seawall with the proposed location generally following that of the existing and in accordance with permitting restrictions.
- b. Structural analysis and design for the boat gantry support platforms with gantry live loads as provided by the City of Key West.
- c. Structural analysis and design of timber dock areas for pedestrian loading per applicable codes.
- d. Incorporation of specialized design admixtures, construction materials, and details as necessary to provide a 50-year design service life to seawall and platforms.
- e. Evaluation of wall types to balance economy, constructability, and durability/service life given the extremely aggressive saltwater environment and limited construction access within the site.
- f. Incorporation of plan notes, specifications, and details as necessary to address the presence of the overhead high-voltage transmission line.
- g. Plan sheets that specify maintenance dredging to restore boat slip areas to original depth. Note that this would be based on a bathymetric survey to be performed by others.
- h. Notes and specifications to stipulate restrictions on construction activity related to site specific endangered plant and animal species. Note that this would be based on a endangered plant and animal species survey to be performed by others.

- i. Develop an engineer's estimate of probable cost to be submitted with 30% plans submittal and a final signed and sealed cost estimate submitted with the final bid package.
- j. Assist Artibus Design in preparing bid documents for public advertisement of the construction.

5. Post-Design Services

- a. Review of shop drawings submittals and RFIs generated by the Contractor during construction.
- b. Performance of 2 on-site inspections at during construction.

Deliverables

All submitted documents (drawings, specifications, etc.) will meet the statutory requirements for plans filed for public record.

1. 30% Deliverable – Preliminary Plans & preliminary Engineers Estimate of Probable Cost.
2. 90% Deliverable – Substantially complete Plans, Specifications & Estimate at 90% completion.
3. Final Deliverable – Engineering Report, Final Plans, Specifications & Estimate signed and sealed along with associated bid documents identified above.

EXCLUDED SERVICES AND DESIGN CHANGES

The professional services to be provided by HighSpans Engineering, Inc. are limited to those described in the Scope of Services above. If substantive changes are made to the design after the 90% submittal, then additional fees would be applicable to incorporate these changes. Services not identified in this scope are specifically excluded, including, but not limited to the following items:

- Environmental/Endangered Species Survey to be performed by others
- Bathymetric Survey of Boat Slip Areas to be performed by others
- Landscape/Irrigation Design and Plans
- Legal Services
- Site Lighting/Electrical Design and Plans if needed to be designed by others
- Design Services related to Planning and Zoning
- Design services related to Plumbing if needed to be designed by others