



# **ARTIBUS DESIGN**

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**ENGINEERING AND PLANNING**

**Task Order #1909**

**Structural Engineering Design Services**

**Permanent Repairs to Damaged Bridge Pier  
Safety Improvements to all unprotected bridge piers**

**Fleming Key Utility Bridge, Key West, FL 33040**

**Prepared for**

**City of Key West Utilities Department**

**July 22, 2019**

**By:**

**Artibus Design LLC,  
3706 N Roosevelt Blvd, Suite i-208  
Key West, FL 33040**

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FLEMING KEY UTILITY BRIDGE – PHASE 2, CITY OF KEY WEST



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ENGINEERING AND PLANNING



Location of Fleming Key Bridge

**City of Key West Areal Map**



Location of Damaged Utility Pier

**Location Map**



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## ENGINEERING AND PLANNING

### Project Description:

Utility bridge support was temporary stabilized during phase 1 of the project. Using steel piles and beams as shown on Figures 1 and 2. The stabilization is a temporary measure to prevent a failure of the utility bridge and allow normal use of both vehicular bridge and nautical traffic under the bridge. Permanent replacement of the pier is needed – by replacement of damaged elements, installation new piles, pile cap and pipe supports together with removal of all temporary steel columns and beams.

Also, the proposal include design of protective pile groups in front of existing utility bridge piers (east side only) – so called “dolphins” – similar to existing protecting only middle span of the bridge. All spans under the bridge are used for navigation and all locations are subjected to vessel impact risk. Current design has insufficient structural redundancy for such loads and requires protective measures to minimize the risks of costly damage or even failure.



Figure 1. Front view of temporary stabilization of damaged pier. (looking westward)



Figures 2. Side view of temporary stabilization.



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## **ENGINEERING AND PLANNING**

This task order includes a specialty engineer services for utility and vehicular bridge design and calculations together with our construction administration, inspections and coordination services.

Please note that environmental permitting (ACOE, FDEP, NOAA) permitting is not included into this proposal and shall be addressed directly by the client with his environmental permitting contractor (tentatively Terramar Environmental or others).

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 meetings, measurements of existing components.**

1.1 Coordinate with specialty engineer with preliminary design of the permanent supports. Coordinate with potential contractors for constructability comments.

1.2 Measure any existing components of the bridge and provide to specialty engineer.

#### **Task 2. Specialty Engineer bridge design.**

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

#### **Task 3. Review of the design drawings and reports.**

3.1 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, participation in meetings and conference calls for field co-ordinations, inspections etc.

2. Preliminary design options and final design for permanent support structure.

3. Preliminary design options and final design for bents protection (dolphins).

4. Inspections of the stabilization installation

5. Final certification of the permanent repair.

### **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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## **ENGINEERING AND PLANNING**

### **Cost of Work:**

The proposed total lump sum fee for this scope of work shall be: **\$74,520.00**

#### **Task 1. Coordination of Specialty Engineer, site inspections, evaluations, measurements, meetings, review and coordination of preliminary designs.**

Structural Engineer (P.E.):	40 hours @ \$150.00/hr	\$6,000.00
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#### **Task 2. Specialty Engineer bridge design.**

HighSpans Engineering, Inc. Proposal # 056.02 (Hourly Not to Exceed)		\$65,000.00
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#### **Task 3. Review of the final design drawings and reports.**

Structural Engineer (P.E.):	20 hours @ \$150.00/hr	\$3,000.00
Clerical	8 hours @ \$65.00/hr	\$520.00



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ENGINEERING AND PLANNING

## Schedule of Hourly Rates (Per Approved Contract)

<b>Title or work description</b>	<b>Hourly Rate</b>
Licensed Professional Engineer (P.E.)	\$150.00
Project Manager	\$130.00
Certified Engineer Intern (E.I.)	\$110.00
Structural Inspector (non P.E.)	\$110.00
Expert Witness (Legal)	\$350.00
Inspector (non P.E.)	\$90.00
Engineering Technician	\$85.00
Drafting Technician	\$85.00
Clerical	\$65.00

## Schedule of Reimbursable Expenses

<b>Item description</b>	<b>Rate</b>
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 \_\_\_\_\_  
 James K. Scholl  
 City Manager

By: Serge Mashtakov  
 Signature \_\_\_\_\_ Date 07/22/2019  
 Serge Mashtakov, PE  
 President, Artibus Design LLC



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**ENGINEERING AND PLANNING**

Appendix "A"  
HighSpans Engineering, Inc  
Proposal #: 056.02  
(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:	07/19/19
ATTN:	Serge Mashtakov, PE	EMAIL:	Serge@ArtibusDesign.com
CLIENT ADDRESS:	3706 N. Roosevelt Blvd, Suite I-208 Key West, FL 33040	PHONE:	(305) 304-3512
PROJECT NAME:	Fleming Key Pier Emergency Repairs		
LOCATION:	Key West, FL	HEI CLIENT #:	056
OWNER:	City of Key West	PROPOSAL #:	056.02
SUBMITTED BY:	Vince Zaliauskas, PE	239.443.7010	VinceZ@HighSpans.com

SCOPE OF SERVICES	DUE
<p>Design and detailed plans for: Fleming Key Pier</p> <p>Task 1: Design and plans for the permanent concrete bent or bent replacement. Configuration will be a four-pile bent with concrete "table top" cap supporting the saddles to support the forcemain. Design shall be in accordance with FDOT Structures Design Guidelines and AASHTO LRFD Bridge Design Specifications 7th Ed. Variances from the design code to accommodate the site-specific conditions will be outlined in writing. The scope also includes details for protection of the other bents with pile cluster (dolphin). There may be some uncertainty in the bent protection design, so we have accounted for that in the fee. Prepare exhibits for permit applications (by other). Show SWPPP requirements during construction. Provide details for attachment of the forcemain and coordination with other utilities.</p> <p>Task 2: Post Design Services for Task 1 (above) is included with this scope. Deliverables include review of shop drawings, RFIs, and production of record drawings.</p> <p>Task 3: Six (6) site visits for the purposes of field measurement and evaluation, progress, and final inspection.</p>	TBD

FEES AND PAYMENT TERMS
<b>\$65,000 Not To Exceed</b> – 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	7/19/19
President & Principal Engineer	
Name	Date
Title	



## 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: \_\_\_\_\_ None \_\_\_\_\_