



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

September 27, 2011
File Number 113-11-13-0161

CH2M HILL
9428 Baymeadows Road, Suite 300
Jacksonville, FL 32256

Attention: Mr. Maxwell R Mozo, P.E.

Subject: Scope and Cost Proposal for Providing Geotechnical Engineering Services
Related to the City of Key West Projects, Key West, Florida

Gentlemen:

As requested, we are pleased to present you with the following proposal to provide geotechnical engineering services for the above subject projects. The projects will involve installation of a new berthing dolphin at the north end of the existing Mallory Square T-Pier, installation of a new sheet pile bulkhead waterside of the existing bulkhead at the Zero Duval Seawall, installation of a new extension to the Ferry Terminal Dock, installation of a 204 feet dock with 50 feet extensions along Trumbo Road at the Ferry Terminal Floating Dock; replacing the Tarpon Pier at the intersection of North Roosevelt and Palm Avenue in Key West. Based on your request, we will be performing one landside boring to Elevation -45 feet (msl), one marineside to Elevation -45 feet (msl), eight marineside borings to Elevation -60 feet (msl) and two marineside borings to Elevation -110 feet (msl) with the option to reach elevation -200 feet (msl). Borehole locations are determined by CH2M HILL. The boreholes will be recorded as drilled with a handheld GPS unit. Ground surface elevations will be determined in reference to the sea water level using the closest tidal station.

The following is our scope of services for this phase of the project:

1. Perform one landside SPT boring/rock coring, if refusal is encountered, to Elevation -45 feet (msl), at the location agreed upon with CH2M HILL.
2. Perform one marineside SPT boring/rock coring, if refusal is encountered, to Elevation -45 feet (msl) at the location agreed upon with CH2M HILL.
3. Perform eight marineside SPT boring/rock coring, if refusal is encountered, to Elevation -60 feet (msl) at the locations agreed upon with CH2M HILL.
4. Perform two marineside SPT boring/rock coring, if refusal is encountered, to Elevation -110 feet (msl) (with the option to reach elevation -200 feet (msl)) at the locations agreed upon with CH2M HILL.
5. Collect a total of four Shelby tube samples (two from each borehole). If more clay layers or soft sediments are encountered, additional Shelby tube samples will be taken if requested and paid for by the client.

6. Return the samples from the borings to our laboratory in Orlando to perform visual classification of the soils and determine moisture content, sieve analyses, fines content (percent passing U.S. -200 sieve) and Atterberg limits on selected samples.
7. Perform twenty eight unconfined compression tests.
8. Select soil properties and perform engineering analyses for design of the new structures.
9. Prepare a summary reports with recommendations and conclusions.

SCHEDULE

Drilling will start approximately two weeks after receiving the notice to proceed and will be completed within three weeks, laboratory testing will be completed five weeks after receiving the soil samples and soil recommendations along with the geotechnical exploration reports will be submitted for your review six weeks following the completion of the laboratory testing.

COST ESTIMATE

The costs associated with the aforementioned tasks are estimated in Table 1. The total cost will not be exceeded without your prior authorization.

The estimated cost of \$278,000 (or \$320,000 if the two, Elevation -110 feet msl, boreholes are drilled to Elevation -200 feet msl) for services during this phase of the project is based on our experience with similar projects in Key West and based on a 20% contingency for bad weather and other delays. It is our understanding that this cost estimate is for budgeting purposes.

We appreciate the opportunity to submit this proposal and look forward to working with you on this project. Please call if you have any questions or require any additional information.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950



Mohamad Al-hawaree, P.E.
Senior Project Manager



John E. Garlanger, PhD., P.E.
Senior Vice President

MH/JEG/mh

Item	Unit	Quantity	Unit Rate	Mob/Demob	Mallory Square	Zero Duval	Ferry Pier Extension	Floating Dock	Tarpon Pier	Sub Total
Field Exploration Program										
Marine Side Borings										
Mobilization/demobilization	Lump	1	\$40,000.00	\$40,000.00						\$40,000
Barge, Tug Boat and Drilling Rig Rate	Day	17	\$6,740.00		\$33,700.00	\$6,740.00	\$20,220.00	\$33,700.00	\$20,220.00	\$114,580
Geologist	Day	17	\$1,332.00		\$6,660.00	\$1,332.00	\$3,996.00	\$6,660.00	\$3,996.00	\$22,644
Materials	Lump/Day	17	\$300.00		\$1,500.00	\$300.00	\$900.00	\$1,500.00	\$900.00	\$5,100
Sub Total Marine Boring	Days	17		\$40,000.00	\$41,860.00	\$8,372.00	\$25,116.00	\$41,860.00	\$25,116.00	\$182,324
Land Side Borings (One Boring)										
Mobilization/demobilization	Lump	1	\$1,000.00			\$1,000.00				\$1,000
Borings (1 borings - 45 feet)	0 -25 feet	feet	25	\$15.00		\$375.00				\$375
	25-50 feet	feet	25	\$16.75		\$418.75				\$419
	50-100 feet	feet	10	\$18.75		\$187.50				\$188
Geologist	hours	8	\$111.00			\$888.00				\$888
Borehole Grouting and Sealing	Crew Hour	2	\$185.00			\$370.00				\$370
Sub Total Land Side Borings						\$3,239.25				\$3,239
Allowance for Room and Board	Day/Person	68	\$150.00		\$3,000.00	\$600.00	\$1,800.00	\$3,000.00	\$1,800.00	\$10,200
Subtotal					\$40,000.00	\$44,860.00	\$12,211.25	\$26,916.00	\$44,860.00	\$195,763
Total Field Exploration Program										
\$195,763										
Laboratory Testing Program										
Soil Classification	Lump	1	\$2,500.00		\$700.00	\$300.00	\$400.00	\$700.00	\$400.00	\$2,500
Fines Content	each	40	\$30.50		\$335.50	\$152.50	\$183.00	\$366.00	\$183.00	\$1,220
Sieve Analyses	each	40	\$45.50		\$500.50	\$227.50	\$273.00	\$546.00	\$273.00	\$1,820
Atterberg Limits	each	5	\$101.50		\$101.50	\$101.50	\$101.50	\$101.50	\$101.50	\$508
Unconfined Compression Test (ASTM D-2166)	with									
Stress-Strain Curve	each	28	\$96.00		\$768.00	\$384.00	\$384.00	\$768.00	\$384.00	\$2,688
Sub Total Classification Tests					\$2,405.50	\$1,165.50	\$1,341.50	\$2,481.50	\$1,341.5	\$8,736
Total Laboratory Testing Program										
\$8,736										
Engineering Services										
Coordinating, Planning and Meetings										
Senior Project Manager/Engineer	hour	32	\$140.50	\$4,496.00						\$4,496
Project Engineer V	hour	32	\$121.00	\$3,872.00						\$3,872
Subtotal				\$8,368.00						\$8,368
Summarizing and Evaluating Field and Laboratory Data										
Senior Project Manager/Engineer	hour	20	\$140.50		\$843.00	\$281.00	\$421.50	\$843.00	\$421.50	\$2,810
Assistant Project Engineer	hour	60	\$102.00		\$1,734.00	\$714.00	\$918.00	\$1,836.00	\$918.00	\$6,120
Subtotal					\$2,577.00	\$995.00	\$1,339.50	\$2,679.00	\$1,339.50	\$8,930
Summary Report										
Senior Consultant	hour	5	\$175.00		\$175.00	\$175.00	\$175.00	\$175.00	\$175.00	\$875
Senior Project Manager	hour	10	\$140.50		\$281.00	\$281.00	\$281.00	\$281.00	\$281.00	\$1,405
Project Engineer V	hour	25	\$121.00		\$847.00	\$363.00	\$484.00	\$847.00	\$484.00	\$3,025
Project Engineer III	hour	10	\$115.50		\$231.00	\$231.00	\$231.00	\$231.00	\$231.00	\$1,155
Assistant Project Engineer	hour	10	\$102.00		\$204.00	\$204.00	\$204.00	\$204.00	\$204.00	\$1,020
Draftsperson	hour	20	\$54.50		\$327.00	\$109.00	\$163.50	\$327.00	\$163.50	\$1,090
Technical Secretary	hour	20	\$46.00		\$276.00	\$92.00	\$138.00	\$276.00	\$138.00	\$920
Copying	Per Page	600	\$0.10		\$12.00	\$12.00	\$12.00	\$12.00	\$12.00	\$60
Color Copying	Per Page	60	\$0.50		\$6.00	\$6.00	\$6.00	\$6.00	\$6.00	\$30
Subtotal					\$2,359.00	\$1,473.00	\$1,694.50	\$2,359.00	\$1,694.50	\$9,580
Total Engineering Services										
\$26,878										
Estimated Total Cost Of Services										
\$48,368.00										
Estimated Total Cost Of Services Plus 20% Contingency for Bad Weather and										