



PROPOSAL FOR MARINA
ENGINEERING SERVICES

FOR THE

**HARRY S. TRUMAN PRESIDENTIAL
PARK MARINA
KEY WEST, FLORIDA**

AUGUST 11, 2010

PROPOSAL FOR MARINA DESIGN SERVICES

HARRY S. TRUMAN PRESIDENTIAL PARK MARINA DEVELOPMENT

Thank you for the opportunity to present our engineering services proposal for Marina design services for the Harry S. Truman Presidential Park Marina Development project in Key West, Florida. The purpose of this written proposal is to present our offer to perform the work identified in this proposal.

INTRODUCTION

Under consideration is the development of the Harry S. Truman Presidential Park Marina Development property in the City of Key West, Florida by the Meisel & Spottswood Marina Management Company, LLC. Bellingham Marine, H&K Engineers and Rosser International, Inc. understand the scope of work required to assist the development team in designing and building a world class marina facility as part of the overall project plans. Our focus will be on the engineering services for the marina from site investigation of soils, wind and wave forces, structural design of the Unifloat® concrete floating dock system and wave attenuation system as well as design of the marina utility systems and coordination with the upland design team. Once this information is generated, the project can proceed into the final design and construction. The following services will be included in the study and consist of:

- Review of the existing conceptual studies and drawings to incorporate this information into a preliminary design for the marina facility. This will confirm the marina slip mix, slip size and preliminary layout of boats that could be accommodated by the marina. Studies will also be conducted on the existing physical data (includes all the drawings and specifications for proposal preparation) to include geotechnical, bathymetric, topographic, seismic, and sedimentation.
- A separate assessment will be developed to determine preliminary wave climate, fetch distance and windspeeds for the immediate area. As a part of the initial conceptual studies, the existing layout of the proposed wave attenuation system will be analyzed as well as a study and verification of the optimum harbor depths.
- Bellingham Marine, H&K Engineers and Rosser International, Inc. will complete the preliminary design engineering to a level that will allow marina cost estimates and opinions of probable development fees to be defined. These services will include siting criteria, first order hindcast wind/wave studies, review of navigational charts for depths and approach channel bathymetry, recurrence interval review and determination of historical wind speed data along with wave attenuation options, as required, to handle this type of environment. If additional bathymetric information is required, these services can be contracted as Additional Services on a limited basis to develop minimal base line data. Once wind and wave modeling has been completed, detailed design of the Unifloat® concrete floating docks, Unifloat® concrete floating wave attenuator system, marina anchor piling, utilities and fuel system will be completed along with project construction plans and technical specifications.
- Preliminary regulatory review will be conducted once the Preliminary Design has been completed. These designs will help determine the permitting atmosphere for

the site and bring any potential problems to the forefront in the initial planning stages.

We recognize the Owner's desire to expedite the process and have identified the following scope of services broken out by task. In total, the result would be a full engineering analysis process resulting in a true picture of the level of planning and design services required with developing a first-class marina facility.

Our estimated price for engineering services as described in this proposal is:

\$312,000.00

TASK 1: MARINA PRELIMINARY STUDY

Under this task Bellingham Marine, H&K Engineers and Rosser International, Inc. will provide a Marina Preliminary Study, which will entail a review of the conceptual design drawings provided to date, soils information existing data, physical conditions, property confines and geometry of the proposed basins.

A. Project Review and Data Review

Based on the current objectives of Meisel & Spottswood Marina Management Company, LLC, a preliminary design concept will be developed based on the existing conceptual design drawings including any existing soils reports, geotechnical, bathymetric, topographic, site constraints and any other existing physical data for the proposed basin size and marina layouts.

B. Assessment of Local Conditions

A preliminary assessment of physical conditions affecting the site will be analyzed as they pertain to wave propagation, fetch lengths, approach depths and 25, 50 and 100 year return period wind speeds. Once the final design is initiated, a more thorough hindcast survey of wind speeds recorded for the area will be analyzed. While this portion of the study will not be as comprehensive as the final hindcast wind surveys for the project, the will provide a baseline of information in order to initiate preliminary design services. In addition new geotechnical, bathymetric and topographic reports will be prepared.

C. Marina Structures

Preliminary layout of the following structures and or features will be created as a part of this task:

- Unifloat® Wave Attenuators at the north, west and south sides of the marina to protect the inner harbor and provide safe dockage.
- Interior marina layout for vessel accommodation.
- Location of fuel and other utility system services in the marina.
- Sizing and location of pedestrian gangways for ADA access throughout the marina.
- Public access locations to proposed ferry operation and events in the marina.

Plans will be developed based on these layouts and utilizing the data assimilated from the review phase and preliminary wind/wave assessment of the facility. Once completed and reviewed for

conformance with the project themes, these layout plans will become a planning roadmap or guide to developing the final construction working drawings which will be completed in the later tasks. While used for planning and budgeting, the plans will be a working tool and changes can be easily made to accommodate different concepts or revisions.

B. Utilities and Infrastructure Review

This task encompasses the preliminary design of the marina electrical system, marina potable water supply system, marina fire protection system, marina waste water collection network and marina low voltage systems. Upon completion of the preliminary design, cost estimates will be developed. Since it is not possible to develop opinions of probable cost for any of these features without first completing a preliminary design, the initial task will be to:

- Determine future potential usage of water per marina slip based on a total count of marina users for the project as well as the minimum volumes required for fire protection.
- Once the end user figures are developed and the volume of water required, a wastewater treatment plan will be developed for the project. Since this may entail multiple pump stations to transport wastewater to a central facility, we will also look at multiple package plans to several shoreside connection points that could be completed.
- Our electrical engineers will review the anticipated loads and develop a plan together with the shoreside infrastructure design team to facilitate the necessary service for this type of marina.
- Marina waste disposal and a complete marina sanitation pump out system will be developed to provide these services at each slip and at the Fuel Dock. Coordination with the shoreside infrastructure design team will be facilitated to connect these dockside services to the systems shoreside.
- Low voltage systems such as wireless communication systems for meter reading, HDTV systems and security systems will be prepared.

TASK 2: PRELIMINARY DESIGN ASSESSMENT

A. Preliminary Design Assessment

Based on the findings from the initial conceptual designs, drawings and information provided to date and a preliminary site visit, a Preliminary Design Assessment will be performed. The Design Assessment will provide the Owners with reasonable assurance that the initial design services work proposed can proceed to the next phase and that the Owners will not be saddled with an unexpected development burdens in the final development phases.

The objective of the Preliminary Design Assessment is to identify potential areas of adverse impact to the construction as planned by further analyzing the soils of the site, through reviewing the past use of the property, performing a detailed site reconnaissance, conducting a regulatory inquiry, and collecting a limited number of soil samples in proposed areas of interest. The Assessment will also complete additional geotechnical borings as required and will task a Marine Consultant to conduct soil borings (6 borings are included in this proposal). The objectives of the Preliminary Design Assessment will be achieved by following the Scope of Work listed below.

B. Scope of Work

The site is currently developed as a U.S. Navy facility. During the preliminary site visit (5 site visits are included in this proposal), areas of potential concern will be observed and identified. The Preliminary Design Assessment is designed to investigate these areas, as well as the overall environmental condition of the site. Task 1 involves a generic feasibility review of the site, while Task 2 involves a more detailed investigation at specific locations on the site displaying visual concern. The Tasks required to develop a more comprehensive level of information will be performed concurrently, eliminating repeated site visits and allowing the tasks to be performed economically.

C. Hydraulic Studies

- A review of readily available historical aerial photographs.
- Review of past erosion rates or storm scour of the Property
- A review of National Oceanic and Atmospheric Administration (NOAA) buoy information for this region for maximum wind speeds
- Determination of historical wind records for the site from climatological centers, National Hurricane Center, local airport records or other sources of wind speeds
- Interviews with site personnel having knowledge of past site activity, if such personnel are available.
- A review of applicable U.S.G.S. topographic maps.
- A thorough reconnaissance of the entire site to locate visual evidence of scour, erosional areas, zones of accretion and other potential areas of adverse environmental conditions
- Regulatory agency inquiries for enforcement actions, adjacent properties of concern, ongoing remediation efforts, and other applicable concerns

Based on the history of the site, it is then possible to develop reports from existing data sources and analyze the site from a mathematical perspective from wave propagation, wave sizes and frequency as well as anticipated water quality and circulation within the facility. Any earlier completed Environmental Assessments, Contamination Assessments, Groundwater Monitoring Reports, and other reports documenting on-site conditions should be forwarded to us at this time. Review of these documents will be critical to ascertain the current site potential for any environmental concerns.

As part of this Task, Bellingham Marine and H&K Engineers will contact Governmental Regulatory agencies regarding environmental history of the site. This Task does not include any Title Searches, wetland delineation's/determinations, wildlife surveys, or other ecological conditions.

D. Preliminary Structural and Marine Design

The preliminary analysis of the primary features of the marina will include, but not be limited to developing conceptual plans for:

- Slip sizes, layout, floating and fixed dock criteria from the aspect of freeboard, live load allowances, overturning loads, impact potential and tie up arrangements
- Anchorage system requirements for the floating docks and recommended pile restraint system for the size of vessels anticipated

- Utility systems required for the vessels moored in the marina for electrical service, potable water supply, fire protection, marina sanitation and pump out equipment and cable TV and telephone/modem access
- Gangway sizing for live loads required and availability to handle golf cart and/or personnel gear carts to serve vessels and meet ADA requirements for public access.

TASK 3: MARINA DETAILED DESIGN

Detailed Design Concept

Refine the preliminary design based on our Preliminary Design Assessment and Owner provided conceptual design information for the proposed individual marina planning components. Set objectives and explore project implications of individual components including:

A. Final Marina Planning and Engineering

- Siting Criteria:
 - ❑ Identify best layouts within project site boundaries for marina based on prevailing winds, boat traffic, currents, ingress/egress, water depths, land access, etc.
- Final Wind/Wave studies will be conducted on a first order level to provide:
 - ❑ Hindcast data of winds experienced in the area
 - ❑ Review of recurrence interval of wind speeds
 - ❑ Determination of maximum expected wind event
 - ❑ Development of wave models to determine wave climate at site
 - ❑ Determine required wave climate in inner harbor area
- Refine marina design:
 - ❑ Optimize number of slips in the basin, with emphasis on the accommodating vessels over 100 feet for transients and seasonal users, ferry boats and charter boats.
 - ❑ Determine the size, shape, depth and height of the wave attenuation docks to protect the interior of the basin from damaging incoming waves.
- Verify final project layout (based on tidal conditions, marina usage and slip mix).
 - ❑ Optimize depth and distance extended across marina for large vessels
 - ❑ Optimize fairway width requirement's for larger boats, transients or sail boats
- Address navigational safety; safe ingress/egress.
 - ❑ Identify navigational aids required
 - ❑ Contact coast guard for preliminary review
 - ❑ Analyze shape of breakwater at basin entrances to control incoming wakes

B. Final Interior Marina and Wave Attenuation Engineering

- The final design will include all necessary calculations, numerical models and drawings necessary to define the geometry and recommended construction materials of all the marina elements of the project that include:
 - ❑ Wave attenuation docks
 - ❑ Interior floating docks
 - ❑ Marina system piling

C. Bathymetric and Geotechnical Data

- Identify any additional required bathymetric surveys required for optimum frontage site use and ingress/egress to the marina.
 - ❑ Contouring and control accuracy
 - ❑ NGVD or MLW datum tied to upland
- Identify any additional geotechnical data for pile anchorage
 - ❑ Depth and sampling frequency
 - ❑ Additional testing required

D. Construction Documents

Formal Construction Documents will be developed for the project which will include layout and design plans, technical specifications, scope of services, list of equipment to be used and subcontractors' lists.

Thank you for your request and we look forward to working with your group on this project. Please call to discuss any questions or if you require additional information regarding this proposed scope of work. Upon receipt of your comments we can finalize the proposal and provide contract documents for your approval.

Sincerely,

Steve Ryder

Steve Ryder, Manager of Project Development
Bellingham Marine