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Marion, MA 02738
(508) 748-0937
foth.com

January 27, 2022

Mr. Timothy R. Carroll
Town Administrator
Town of Chilmark
Chilmark, MA 02535

Re: Request for Proposals for Certified Engineer Assessment and Report for the Menemsha
Commercial Fishing Dock Replacement Project

Ref: Addendum No. 1 dated January 25, 2022

Dear Mr. Carroll:

Enclosed, please find our proposal for Certified Engineer Assessment Services for the Menemsha Commercial Fishing Dock Project from Foth Infrastructure & Environment, LLC (Foth). Foth acknowledges the receipt of Addendum No.1 dated January 25, 2022. Attached please find copies of our proposal, team resumes and representative projects. Thank you for the opportunity to work with the Town of Chilmark on this project.

Sincerely,

Foth Infrastructure & Environment, LLC

A handwritten signature in blue ink, appearing to read "Michael E. Count".

Michael E. Count
Project Manager

A handwritten signature in blue ink, appearing to read "Carlos G. Peña".

Carlos G. Peña, P.E., M.ASCE
Senior Client Manager, Ports & Harbors
Licensed in MA, NY, LA & TX

Enclosure

Town of Chilmark, Massachusetts
Proposal for Certified Engineer Assessment and Report for
Menemsha Commercial Fishing Dock Replacement Project
January 27, 2022

I. Our Understanding of Your Project

Foth Infrastructure & Environment LLC (Foth) is pleased to submit this proposal to the Town of Chilmark (Town) for engineering services to assess the condition of 620 linear feet of existing town pier and bulkhead located in Menemsha Harbor. Foth understands the Department of Conservation and Recreation (DCR) constructed the bulkhead and pier structures in 1987 and the Town of Chilmark has completed maintenance and repairs over the years. Foth further understands the first (1st) phase of the project is to assess the condition of the existing dock infrastructure to evaluate the need to repair or replace these dock components. If deemed necessary, Foth will recommend options for replacement with new structures having a design-life of 30 to 40 years to support public and commercial access to the harbor and resiliency to rising sea levels. Once the initial assessment is completed, future project phases for design, permitting, funding and construction will be contracted separately by the Town of Chilmark.



Figure 1: Existing project bulkhead and pier

II. Town of Chilmark Project Objectives

The scope of work proposed by Foth addresses the town's project stated objectives.

"The Town of Chilmark seeks a Massachusetts certified maritime engineering firm to perform an inspection and assessment of the existing dock infrastructure including the land-side steel bulkhead to determine its condition, expected remaining life, its likely ability to support a replacement dock for approximately 25 more years, and to provide recommendations for replacement of that steel bulkhead and surrounding infrastructure as needed. The assessment should include work performed onsite and include up to two inspections. The first inspection and assessment should be limited to visible (mostly above water) elements of the infrastructure and if those findings are inconclusive, then include further inspections as needed including an underwater inspection. The primary deliverable of this work is a certified engineer inspection and assessment report to the Town containing the findings and recommendations of the assessment."

III. Scope of Services - Steps for Success

Foth shall perform all services related to this project in accordance with the Department of Conservation and Recreation – Division of Waterways (DCR) Guidelines for Consultants, dated 2014, and all applicable federal, state, and local laws, regulations, and codes.

Task 1 – Topographic Survey & Existing Conditions Plan

Foth shall perform a topographic survey within the project area, extending along the length of the 620' bulkhead and pier and approximately 50 feet east of the existing bulkhead to be reconstructed. The survey shall include existing coastal protection structures, buildings, landscape features, ground topography, wetland resource areas, utilities, and any other visible features relevant to the proposed project. The project team will identify and delineate all coastal resource and jurisdictional areas at the project site that are relevant to the local, state, and federal permitting, construction of the proposed work, future maintenance work, or to accessing the site with construction staff, materials, and equipment. Property line locations will be based on publicly available assessor's information, establishment of property lines is not included in this scope of work. Survey information will be collected and presented relative to the vertical reference plane established by the North American Vertical Datum of 1988 (NAVD88) and horizontal coordinates of the Massachusetts Mainland established via North American Datum of 1983 (NAD83).



Figure 2: Topographic Survey Limits

The project team will develop a base plan depicting the existing site conditions of the project area using the information described above. The draft base plan will be distributed to the Town for review and comments. The project team will incorporate review comments before advancing the project. The base plan developed during this task can be used as a basis for design and permitting for the remainder of the project.

Task 1 Fee = \$10,950.00

Task 2 – Preliminary Condition Report

Foth will perform a visual non-destructive (Level 1) above-water evaluation of the existing bulkhead and pier within the project limits to assess the current condition of the coastal protection structure. Measurements and assessments will be performed at 50-foot intervals to document the existing bulkhead and pier and provide a condition rating based on the Structural Condition Table in the Massachusetts Coastal Infrastructure Inventory and Assessment Project prepared by DCR. The proposed condition assessment and report will include the following scope of work (SOW):

- a. Coordinate with the Town of Chilmark to request the 1987 project plans and permits/licenses from the Department of Conservation and Recreation (DCR).

- b. Become familiar with the existing dock and associated infrastructure, the utility of the docks, general landscape of Menemsha Harbor and the relevant activities along the docks. This may include a preliminary on-site visit, discussions with the Harbormaster, review of any existing materials (designs, repair history, etc.) related the existing infrastructure, and review of any relevant regulations related to repair or reconstruction options of the dock and infrastructure.
 - i. Review town provided and publicly available plans, licenses and reports related to the bulkhead and pier structures.
 - ii. Schedule and attend one (1) site meeting with the Town of Chilmark to review the project conditions and objectives.
- c. A preliminary above-water and near under-water engineering inspection of the dock, bulkhead, and other easily accessible related infrastructure.
 - i. Perform a visual above-water (Level 1) inspection of the bulkhead and pier, along with adjacent pertinent structures. Site inspection will be performed on the same day as the existing conditions survey described in Task 1. Reduce inspections notes and measurements and prepare a Preliminary Condition Report noting the condition of the bulkhead and pier structures along with recommendations and presentation of three (3) alternatives for the repair and/or replacement of the waterfront structures.
- d. A determination of the expected remaining life of that infrastructure based on the preliminary inspection, including its ability to support one or more dock rebuild options for at least 25 years.
 - i. The initial inspection for this project will assess the general condition of the bulkhead and pier. The visual (non-destructive) inspection¹ will note areas of excessive corrosion, plumbness and any deformation of the structure along with evidence of past sinkholes and other subsidence adjacent to the structure indicting the possibility of fill loss due to section loss in the sheets.
 - ii. Based on the results of the initial inspections and findings of the preliminary report determine if the structure has exceeded its useful life and needs to be replaced.

Task 3 – Final Condition Report

In the event the results of the Preliminary Condition Report are deemed inconclusive, Foth in consultation with the Town of Chilmark will recommend additional inspections and engineering assessments calculate the remaining life of the bulkhead and pier structures. Foth will perform the following additional tasks:

- i. Perform additional underwater inspections with Fathom Research (OSHA 3-man dive team) to determine the expected remaining life of the bulkhead and pier structures including the following:

¹ Marine growth will not be cleared from bulkhead or pier structures for Level 1 inspection.

1. Steel Sheet Bulkhead
 - a. Ultrasonic testing (UT) of remaining steel thickness of the exposed bulkhead sheeting at the mudline and the splash zone at 50' intervals along the entire length of the bulkhead. The remaining steel thickness readings will be used to determine capacity of the bulkhead to support design loads.
2. Timber Pier & Piles
 - a. For the timber pier identify any damaged or deteriorated sections of the pier. Check the condition of the underlying structural framing members of soundness and section loss. Check all connecting hardware to soundness and note any deterioration and/or excessive corrosion.
 - b. For the supporting and fender timber piles note any damage or section loss.
 - c. Perform underwater cores of a representative number of timber piles along the mudline to confirm any "wood borer" activity and thereby loss of pile section and capacity. Seal all cores with marine epoxy.
- ii. Based on the results of the above-mentioned inspections, calculate the remaining capacity of the bulkhead and pier structures. The results of the remaining capacity will be used as a basis for recommendations of expected remaining life of the structures. Foth will utilize the 25-year benchmark as a basis for repair verses replacement recommendations for the project.
- e. A preliminary report to the Town of the results and conclusions reached from the preliminary inspection including a recommendation whether further inspections are needed including underwater inspections potentially using dive teams or other appropriate means.
 - i. If deemed necessary, the above stated additional inspections will need to be performed.
- f. If the results of the preliminary inspection are inconclusive as to the inability of the infrastructure to support a rebuilt dock for the desired period, and with written approval from the Town, conduct further inspections to determine the condition of the infrastructure more conclusively.
 - i. Foth will prepare and submit a contract addendum for any additional inspections that are determined to be necessary to complete the assessment of the bulkhead and pier structures.
- g. A final determination of the expected remaining life of the infrastructure.
 - i. As stated above, Foth will calculate the remaining capacity of the bulkhead and pier structures and determine whether residual capacity repairs or replacement is warranted.
- h. Assessment of options to replace or repair the infrastructure as appropriate. The findings should focus on the remaining lifetime and need to replace the steel bulkhead, but the report should also include other findings and recommendations

that are evident during the inspections related to the overall goal of replacing the docks including plumbing, electrical, and other elements of the docks.

- i. As part of the Final Condition Report and based on the remaining life of the structures, Foth will prepare recommendations for the repair or replacement of the structures based on remaining life, requirements for adaption to predicted sea-level rise (SLR) along with stated objectives for public and commercial access and use of the dock facilities. Foth will also review and document Town requirements for improvements to dock water and electrical service, internet, and other utilities.
- i. A final written report to the Town summarizing the activities, findings, and recommendations.
 - i. Foth will update the Final Condition Report based on input from the Town of Chilmark and the public.
- j. A meeting with the Town to discuss the report and answer questions to clarify the findings and recommendations.
 - i. Once the Final Condition Report is finalized the Town of Chilmark will be able to use this report to plan project activities and as a basis for future funding requests.

Task 3 Fee = \$25,950.00

Foth will complete the above stated tasks for the following Not-to-Exceed Costs:

<u>Task</u>	<u>Description</u>	<u>Est. Hours</u>	<u>Est. Cost</u>
1	Topo Survey & Base Plan	40	\$ 10,950
2	Preliminary Condition Report	60	\$ 9,950
	Initial Inspection Subtotal		\$ 20,900
3	Underwater Inspection w/ UT Testing	40	\$ 15,000
	Final Condition Report	60	\$ 10,950
	Project Total		\$ 46,850

If deemed necessary to assess the condition if the bulkhead the following additional tasks may be necessary:

3a	Test Pits & Tie-Back Inspection ²	24	TBD
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² If the bulkhead is supported by a tie-back system, work with the Town of Chilmark to excavate representative number of test pits along the alignment of the bulkhead to expose supporting wales and tie-back rods. The corrosion of the tie-back rods may occur just behind the bulkhead and may not be evident during standard visual inspections.

IV. Owner Responsibilities

The Town of Chilmark is responsible for the following information and activities:

- ◆ Provide a single contact source for review, comment, and decision making on all issues related to the project.

V. Schedule for Success

Foth is committed to completing the scope of work stated in this proposal based on the below stated attributes and according to the following schedule:

- ◆ Foth's project manager resides locally in Southeastern Massachusetts.
- ◆ Foth has experience working in the project area and on Martha's Vineyard.
- ◆ Foth has a proven track record for completing waterfront projects on time.
- ◆ Foth has created streamlined and effective field and office procedures/protocols for survey, design, permitting, and construction management services.

Activity	Start Date	Completion Date
Receive a Notice to Proceed	1/28/2022	2/11/2022
<u>Preliminary Condition Report</u>		
Perform Initial Inspection (4 weeks)	2/14/2022	3/11/2022
Prepare Preliminary Report (2 weeks)	3/14/2022	3/25/2022
Report Failed Bulkhead Condition (1 week)	3/28/2022	4/1/2022
<u>Final Condition Report</u>		
<u>If deemed necessary by the Town</u>		
Add. Inspections & Assessments (4 weeks)	4/4/2022	5/13/2022
Prepare Final Report (4 weeks)	5/16/2022	6/10/2022
Final Report Meeting & Review w/ Town	6/13/2022	6/24/2022

Foth is committed to completing the stated work according to the proposed schedule unless circumstances beyond our control require modification of the schedule.

VI. Statement of Exceptions

Foth shall perform all work on this contract in accordance with the following terms:

1. Foth assumes all bulkhead and pier structures are authorized and no new or amended state (DEP) or federal (ACOE) permits or licenses will be required, along with any MEPA (ENF) filings. Any all work related to state and/or federal permitting or licensing services shall be deemed extra work.
2. Foth assumes there are no deed and/or other restrictions on the properties prohibiting the proposed bulkhead and pier repair or replacement. The Town of Chilmark will be responsible for obtaining all property and access easements required for this project. Any and all additional services related to site constraints and/or restrictions shall be deemed extra work.
3. Foth has made no provisions to research property deeds, procure easements or perform property line surveys or provide any additional surveying, geotechnical engineering, structural engineering, environmental permitting or CM services beyond those stated in the above proposal. Any required services beyond our stated schedule, budgets, or durations shall be deemed extra work.
4. Foth has made no provisions for any local, state, and federal permitting services with MassDEP, USACE, MESA, EOEEA MEPA (ENF), EPA, FEMA, MEMA or other agencies, compliance with MAAB requirements, or as a result of any action by third (3rd) parties. Any and all work related to additional permitting services shall be deemed extra work.
5. Any and all work beyond the scope of this proposal shall be deemed extra work and contracted for prior to the commencement of such work.

VII. Reimbursement

Billings will be on a monthly basis for payment within 15 days subject to our general terms and conditions. If your municipality utilizes a purchase order (PO) system, please issue a PO number and include a copy with our signed proposal.

Foth proposes to complete the work described in our scope of services in this proposal on a *Not-to-Exceed Cost* basis.

VIII. Agreement to Proceed

Professional services will be provided in accordance with Foth Infrastructure & Environment, LLC's Agreement for Professional Services terms and conditions (Terms)

which is hereby incorporated by reference. Should you accept this proposal; a completed contract will be forwarded to you for signature to authorize us to begin. Should you desire to authorize our services through the use of a Purchase Order, the previously referenced Terms shall govern and replace those on the Purchase Order. Should we start services upon a verbal authorization, it is with the understanding they are provided in accordance with the above referenced Terms. Should you have any questions regarding these Terms, or any other matter, please contact us. If the above Terms are not acceptable, please notify us in writing before we begin providing services.



Michael E. Count, C.H.

Lead Environmental Engineer

Role:

Education

B.S., Ocean Engineering
University of Rhode Island

Professional Registrations/Certifications

- ACSM Hydrographer, Certification #291
- USCG 100 Ton Master's License
- Transportation Workers Identification Card (TWIC)
- OSHA 40 hour HAZWOPER
- OSHA 10 hour Construction
- American Heart Association First Aid & CPR, AED Certified
- MA Licensed Soil Evaluator #13858

Key Expertise

- Project Management
- Environmental Permitting
- Construction Management
- Multibeam & Singlebeam Surveys
- Sidescan Sonar Surveys
- Land Surveys
- AutoCAD

Mike Count is a Certified Hydrographer with 15 years of project management, surveying, environmental permitting, waterfront design, and construction management experience. Mr. Count has extensive field experience in both land and hydrographic surveying in support of various small and large scale construction projects. Mr. Count has a background in the marine industry and is a USCG licensed captain having conducted numerous hydrographic surveys in exposed and environmentally sensitive locations. As a Project Manager with Foth, he is engaged in civil, marine, and environmental projects for private, commercial, and public clients. Mr. Count is directly involved with various assignments in the structural, geotechnical, dredging, environmental permitting, and civil engineering fields.

Relevant Experience

Sengekontacket Pond Dredging with Beach Nourishment, Oak Bluffs/Edgartown, MA. Performed construction phase services for the 45,000 CY hydraulic dredging event including pre and post-dredge single beam hydrographic surveys, volume computations, installation of tide boards and channel designation markers for a marine contractor, and beach nourishment topographic surveys. The project also included near-shore eelgrass surveys adjacent to the beach nourishment areas which required underwater video with GPS position tagging in conformance with state fisheries guidelines.

Bass River Marina Improvements, West Dennis, MA. Project Manager for marina improvement project which includes maintenance and improvement dredging of approximately 20,000 cy of sand and marine silts in Horsefoot Cove. The project includes the construction of marina float expansion areas, licensing of a marina float reconfiguration zone, and an ADA accessible boardwalk extending 334' across a tidal cove and existing restaurant parking area. The boardwalk includes a pier extension servicing a 200' float system that services the town boat ramp and transient vessels accessing the marina and restaurant facilities. Responsibilities included oversight of dredge material sampling and testing, preparation of preliminary plans, and permit applications to obtain authorizations through the local, state, and federal regulatory review process for the dredging and structural improvements. Construction services were also provided including bid document preparation, pre and post-dredge multi-beam hydrographic surveys, volume computations, and on-site construction services including performance and oversight of water quality monitoring throughout the dredging event.

East Chop Coastal Bank Repairs, Oak Bluffs, MA. Project Manager for the 2,400 linear foot coastal bank repair project along East Chop Drive. The project includes the reconstruction of a stone revetment with adjacent vegetated coastal bank erosion reconstruction. The project also includes the construction of an ADA-accessible ramp system down to the shoreline from the roadway for public use. Developed preliminary design plans, and permit applications for local, state, and federal agencies. Collaborated with town officials in the development of the proposed roadway repairs and drainage enhancements.

Town of Barnstable Inner Harbor Dredging, Barnstable, MA. Performed on-site conditional surveys and plan preparation in support of the 10,000 cy town dredging project. Assisted with dredge template design and conducted pre and post-dredge single beam hydrographic surveys and volume computations along with construction phase monitoring including water quality sampling and report preparation.

Michael E. Count, cont.

Motiva Enterprises, LLC, Hydrographic Surveys/Inspections, New Haven, CT and Providence, RI. Oversight of underwater dive inspections and data compilation to report pile-supported pier structural assessments at Motiva's Providence, RI, and New Haven, CT facilities. The reports were set up to form the basis of the ongoing 5-year inspection cycle required by Motiva Enterprises, LLC. Professional Services at their New Haven, CT, and Providence, RI facilities. Certified hydrographer, responsible for annual berth clearance surveys as well as pre and post-dredge bathymetric surveys at these facilities. Used survey results to generate dredge volumes to maintain adequate under keel clearances for the ships berthing at the Motiva facilities.

Appledore Marine Engineering, LLC, Marine Facility Hydrographic Surveys, Portsmouth NH, Searsport, ME, USCG Bases in New London, CT and Sandy Hook, NJ. Performed hydrographic and land surveys, and prepared final deliverables including existing conditions plans. Surveys were closely coordinated with dive teams performing structural inspections of the facilities. River currents at the Portsmouth facility demand skilled boat maneuvering to complete the hydrographic surveys. Surveys were generally done in coordination with the dive team performing structural inspections. Conditional surveys were analyzed to portray shoal and problem areas for ship berthing operations.

Quonset Development Corporation, Dredging Oversight, Quonset, RI. Hydrographer responsible for annual hydrographic conditions surveys for the ongoing maintenance dredging events at the CITGO terminal berth facility. The project consists of an existing 100-foot wide by 38-foot deep berth area to allow for access to navigable waters to/from the commercial facility. Annual monitoring of this project is essential to allow for continued efficient and safe delivery of gasoline, diesel, and heating oil. Multi-beam surveys are performed to gain full coverage of the bottom for generating dredge quantity computations.

Hingham Harbor Basin Dredging, Hingham, MA. Mr. Count performed hydrographic surveys, dredge design, state and federal permit applications and provided construction oversight of the town maintenance dredging project including the mooring re-organization in Hingham Harbor. Pre and post-dredge surveys were performed using single-beam sonar on various Foth survey vessels. Land surveys were also performed along the shoreline of the basin area for future town planning to develop the waterfront.

Project Experience

Client:

Description & Location:

Bel Marin Keys	Novato Creek Dredging, Novato, CA
Bel Marin Keys	South Lagoon Levee Repairs, Novato, CA
Richard Gormley	Harbor Dredging Hydrographic Surveying, Marion, MA
Bass River Marina	Marina Bulkhead Replacement, West Dennis, MA
Mass. DCR	Dune Restoration/ Beach Nourishment, Orleans, MA
Appledore	Hydrographic Surveying, Searsport, ME
Citgo Corp.	Hydrographic Surveying, Braintree, MA
Town of Hingham	Hydrographic Surveying, Hingham, MA
Town of Oak Bluffs	Hydrographic Surveying/ Permitting, Oak Bluffs, MA
Waveland Marina	Waterfront Structures Design/ Permitting, Hull, MA
Fairhaven Shipyard	Waterfront Structures Design/ Permitting, Fairhaven, MA
Mass. DCR	State Pier Design/ Permitting, Plymouth, MA
Mashpee Neck Marina	Waterfront Structures Design/ Permitting, Mashpee, MA
Gorton's Seafood	Facility Bulkhead Repairs, Gloucester, MA
Hingham Shipyard Marina	Maintenance Dredging, Hingham, MA
MA Div. of Marine Fisheries	Deer Island Public Access Facility, Boston, MA
MA Div. of Marine Fisheries	Public Boat Ramp, New Bedford, MA
MA Div. of Marine Fisheries	Public Boat Ramp, Hingham, MA
Stantec	Hydrographic Surveying, Kittery, ME

Member name, cont.

Client:

Description & Location:

Bel Marin Keys	Novato Creek Dredging, Novato,CA
Bel Marin Keys	South Lagoon Levee Repairs, Novato, CA
Richard Gormley	Harbor Dredging Hydrographic Surveying, Marion, MA
Bass River Marina	Marina Bulkhead Replacement, West Dennis, MA
Mass. DCR	Dune Restoration/ Beach Nourishment, Orleans, MA
Appledore	Hydrographic Surveying, Searsport, ME
Citgo Corp.	Hydrographic Surveying, Braintree, MA
Town of Hingham	Hydrographic Surveying, Hingham, MA
Town of Oak Bluffs	Hydrographic Surveying/ Permitting, Oak Bluffs, MA
Waveland Marina	Waterfront Structures Design/ Permitting, Hull, MA
Fairhaven Shipyard	Waterfront Structures Design/ Permitting, Fairhaven, MA
Mass. DCR	State Pier Design/ Permitting, Plymouth, MA
Mashpee Neck Marina	Waterfront Structures Design/ Permitting, Mashpee, MA
Gorton's Seafood	Facility Bulkhead Repairs, Gloucester, MA
Hingham Shipyard Marina	Maintenance Dredging, Hingham, MA
MA Div. of Marine Fisheries	Deer Island Public Access Facility, Boston, MA
MA Div. of Marine Fisheries	Public Boat Ramp, New Bedford,MA
MA Div. of Marine Fisheries	Public Boat Ramp, Hingham, MA
Stantec	Hydrographic Surveying, Kittery, ME



Carlos G. Peña, P.E
Senior Client Manager

Education

B.S., Civil Engineering, University of Massachusetts at Amherst

Continuing Education / Business & Japanese, Northeastern University

Professional Registrations/Certifications

- Professional Engineer - MA #36206; LA # 32366; NY # 84211; TX# 108273
- Certified PADI Open Water Diver
- Certified SSI Advanced Open Water Diver
- Transportation Workers Identification Card (TWIC)

Key Expertise

- Dredging
- Site Investigations & Inspections
- Permitting & Assessments
- Civil & Structural Design
- Claims & Expert Testimony
- Surety Completion and Consulting

Carlos G. Peña, P.E. has over 35 years of experience as a consulting engineer, an elected official, a professional society leader, a construction engineer and a project manager. He oversees updates to quality control procedures, standardization of designs and professional standards. Mr. Peña specializes in project site investigations, cost estimates, schedules, design development, environmental permitting, management, construction claims, surety consulting, and expert services for waterfront construction, shoreline and dredging projects. Mr. Peña has developed his career as a consultant through the unique perspective of the owner, engineer and contractor and has found success in the consulting business by understanding their relationships to complete projects in the client's best interest. His garnered experience in many facets of the marine construction business stem from a variety of assignments by private entities, municipal government and professional organizations.

Relevant Experience

Dredging and Marine Construction Project. Responsibilities included providing consulting services for surveys, engineering, permitting, feasibility studies, and project management for the following representative projects:

- ◆ Mobil Oil Facility Dredging, East Boston, MA
- ◆ East Boston Shipyard Structural Evaluations, East Boston, MA
- ◆ Citgo Terminal Renovation Project, Braintree, MA
- ◆ Boston Third Harbor Tunnel (CA/T), Boston, MA
- ◆ Boston Outfall Diffuser (C/I), Boston, MA
- ◆ Rio Puerto Nuevo Drainage Project, San Juan, PR
- ◆ Mill Pond Rehabilitation Project, West Newbury, MA
- ◆ Piers 1 & 2, and Approach Channels, Rhode Island Port Authority, Davisville, MA
- ◆ Brooklyn Navy Yard Dredging, Brooklyn, NY
- ◆ McArdle Bridge Cable Project, Chelsea, MA
- ◆ Old North Wharf Piers & Float Projects, Nantucket, MA
- ◆ New Bedford Harbor Superfund Site, Area D Bulkhead, New Bedford, MA
- ◆ CEC Jamestown Bridge Demolition Project, Jamestown, RI
- ◆ Bass River Marina Bulkhead Replacement, Dennis, MA
- ◆ New Rochelle Municipal Marina Bulkhead Replacement, New Rochelle, NY
- ◆ Duke Energy Gas Pipeline Reef Project, Boston, MA
- ◆ Tern Harbor Marina Bulkhead Replacement, Weymouth, MA
- ◆ Sakonnet Bridge Demolition, Tiverton, RI
- ◆ DCR-Hingham Harbor & Channel Dredging Project, Hingham, MA
- ◆ Scituate Conservation Commission – Waterfront Project Reviews, QDC-Pier 1
- ◆ NOAA Homeport Berth Project, Kingstown, RI
- ◆ Tern Harbor Marina Dredging (Superfund) Project, Weymouth, MA
- ◆ DCR-Squantum Point Park Ferry Dock Rehabilitation, Quincy, MA
- ◆ Oak Bluffs North Bluff Seawall, Oak Bluffs, MA
- ◆ Oak Bluffs East Chop Coastal Bank, Oak Bluffs, MA
- ◆ Sengekontacket Dredging & Beach Nourishment, Oak Bluffs, MA
- ◆ DCR-Hingham Moorings & Docks Expansion Project, Hingham, MA
- ◆ Scituate Lighthouse & Oceanside Seawalls, Scituate, MA
- ◆ New Bedford Marine Commerce Terminal, New Bedford, MA



Alex Mora, PE

Lead Structural Engineer

Role:

Education

B.S., Civil Engineering, Catholic University
Guayaquil

M.S., Civil Engineering, City University of
New York City College

Professional Registrations/Certifications

- Professional Engineer - CA, #85274;
CT, PEN.0019857; IN, 11900202; MA;
ME, #PE16200; MI, #6201068427; NJ,
24GE04984300; NY, #077260-1; RI,
#13252; WI, #46991-6
- OSHA 30 hour Supervisor
- OSHA START & RCA Supervisor
- Diplomat Port Engineering, 2018

Key Expertise

- Structural Engineering
- 3D Modeling and Analysis
- Dock/Berth Planning
- Engineering and Construction Support
- Vessel Mooring and Berthing
Engineering Analysis
- Heavy Port Equipment Analysis:
Mooring Hooks, Fender Systems,
Mooring and Breasting Dolphins, Rail
Mounted Gantry Cranes
- Analysis, Evaluation of Existing
Structures
- Post- Allision or Natural Disaster
Structural Damage Evaluation
- Project Management and Construction
Administration
- Client Management
- Analysis and Design of Waterfront
Structures
- Structural review
- Construction Administration
- Client Account Manager

Alex I. Mora is a Structural Engineer Working since 1993, initially for the building industry and since 2003 for the maritime industry (ports & harbors). He has over 100 projects related to the marine industry with a varied scope ranging from maintenance projects to capital projects. His experience with ports & harbors is working as Owner's Engineer leading multi-discipline teams for the engineering and development of construction documents (drawings and technical specifications), as well as the assistance during the bid process (bid solicitation and evaluation) and construction administration (submittal review, special inspections, addressing field conditions). He also provides Owners with an asset maintenance plan.

Relevant Experience

Bass River Marina, Bass River Marina, Structural Engineer, West Denis, MA.

Analysis and design of timber piers for marina.

Analysis, Design, and Evaluation of Steel Sheet Pile Bulkheads, Structural Engineer. Analysis, design and evaluation of steel sheet pile bulkheads, anchored and cantilever, for multiple clients.

Pier 4 Dolphin and Catwalk Rehabilitation, International Matex Tank Terminals (IMTT), Client Manager/Project Manager, Bayonne, NJ. Managed engineering team to evaluate existing mono-pile dolphins and design new berthing/mooring dolphin replacement of existing, as well as provide new access catwalks. Managed the generation of structural drawings issued for bid and construction, as well as project specifications. Managed project and construction administration activities.

Pier 6 Hose Tower No. 1 Retrofit, International Matex Tank Terminals (IMTT), Client Manager/Project Manager, Bayonne, NJ. Managed engineering disciplines to evaluate existing hose tower and determine effects of removal of top levels while applying new design loads from Client-supplied crane. Coordinated with Client product pipeline requirement and evaluated location of new hose manifold for the connection of proposed vessels. Managed the generation of structural drawings issued for bid and construction, as well as project specifications. Managed Project and construction administration activities.

Pier 8 Cell No. 2 Rehabilitation, International Matex Tank Terminals (IMTT), Client Manager/Project Manager, Bayonne, NJ. Managed the underwater inspection of Dolphin No. 2 (cellular cofferdam) and engineering disciplines for the over-sheeting (ringing) of the existing cell due to failed interlock. Managed engineering and design of cell repair. Managed the generation of structural drawings issued for bid and construction, as well as project specifications. Managed project and construction administration activities.

Pier A Emergency Demolition, Temporary Construction, and Emergency Repairs, International Matex Tank Terminals (IMTT), Client Manager/Project Manager, Bayonne, NJ. Review with Client required approach to replace a section of Pier A catwalk and approach after vessel allision. Managed engineering disciplines to replace catwalk and approach in-kind. Managed analysis and design of new pier for current loading conditions. Coordinate design of pier with Client for expedite procurement of materials for construction. Managed the generation of structural drawings issued for bid and construction, as well as project specifications. Managed Project and construction administration activities.

Additional Education/Training

- 19th Trellex Fender Technology Seminar
- 40-Hour HAZWOPER Training
- 30-Hour OSHA-Construction Training

Honors/Awards

- Past-President Connecticut Society of Civil Engineers, Fairfield County Branch

Memberships

- Member of the American Society of Civil Engineers
- Member of the American Institute of Steel Construction
- Connecticut Society of Civil Engineers (Past President of Fairfield County Branch Current Chair of CSCE Structural Engineering Institute)

Previous Employment

- Years of Previous Experience: Since 1993 (28 years)

Publications/Presentations

- American Society of Civil Engineers, Seismic Design of Piers and Wharves, ASCE/COPRI 61-14.

Mobil Pier, In-Kind Replacement, International Matex Tank Terminals (IMTT), Client Manager/Project Manager, Bayonne, NJ. Review with Client required approach to replace Mobil Pier after vessel allision. Managed engineering disciplines to replace pier in-kind. Managed analysis and design of new pier for current loading conditions. Coordinate design of pier with Client for expedite procurement of materials for construction. Managed the generation of structural drawings issued for bid and construction, as well as project specifications. Managed Project and construction administration activities.

Pier 7 Berths 5 and 6 Rehabilitation, International Matex Tank Terminals (IMTT), Structural Engineer/Project Manager, Bayonne, NJ, 2010 and 2014. Managed engineering team to evaluate existing pipeline trestle over the pier. Analysis and design of temporary shoring to support existing pipeline trestle during construction. Analysis and design of steel-framed, reinforced concrete platforms, all on pipe pile foundation. Berthing and mooring analysis for the design of new breasting and mooring mono-piles, as well as access catwalks. Managed the generation of structural drawings issued for bid and construction, as well as project specifications. Managed project and construction administration activities.

DiBlasi Associates PC, Senior Structural Engineer, Monroe, CT March (2001-Nov 2002). Perform analysis, design, and construction observation of institutional and industrial facilities and low-rise buildings using concrete, steel, and wood (Greenwich Academy, Greenwich, CT; Burr Street Elementary, Fairfield, CT; Stamford Train Station Parking Garage, Stamford, CT). Perform field and analytical investigations to evaluate the strength, durability, and serviceability of existing steel, concrete, and wood structures. Perform code-prescribed special inspection of concrete and steel structures.

Pier 1 Platform Rehabilitation, International Matex Tank Terminals (IMTT), Structural Engineer, Bayonne, NJ, 2011. Analysis and Design of steel-framed and reinforced concrete platform for the existing pier. Evaluation of existing pier foundation for proposed loading. Generation of structural drawings issued for bid and construction, as well as project specifications. Construction administration.

Quality Assurance/Quality Control. Performs structural review and QC review of bid and contract document deliverables.

Structural Methodologies. Reviews, advises, and makes recommendations regarding analysis methodologies, computer-aided modeling, structural optimization, constructability, and cost estimates.

Construction. Reviews, advises, and makes recommendations about structural systems, code application, construction materials, and construction sequencing.

Code Inspections. Performed code-prescribed special inspection of concrete and steel structures.

Field Investigations. Performed field and analytical investigations to evaluate the strength, durability, and serviceability of existing steel, concrete, and wood structures.

Litigation Support. Researches, reviews and processes technical data for expert witness reports in construction/forensic litigation cases.

Industrial Facilities. Performed analysis, design, and construction observation of institutional and industrial facilities and low-rise buildings using concrete, steel, and wood.

Bismore Park Bulkhead Improvements

Town of Barnstable, MA



The Town of Barnstable, MA has retained the services of Foth in 2018 to perform a conditions assessment, conceptual alternatives analysis, preliminary design services and permitting for improvements to the existing Bismore Park Bulkhead and associated marine infrastructure that is located in Hyannis Inner Harbor. The project site includes the local Harbormaster & Visitor Center building, seven fixed finger piers that support commercial charters and fishing vessels along with a public park which features several artist shanties, where local artists and artisans display their work each year between May and October. The existing 675-foot long steel bulkhead was originally constructed by the Commonwealth of MA around 1962, and the Town performed repairs to existing bulkhead, removed/replaced timber piers and dredged the pier basin to depths of 6-feet and 9-feet below mean low water (MLW) in the late 1990s.

The marina facility is managed by the Town's Marine & Environmental Affairs (MEA) Division and is authorized for a slip capacity of up to 27 vessels.

Foth completed an in-depth above and below water inspection of the steel bulkhead and associated waterfront structures in Fall 2018 to assist in the development of conceptual improvement alternatives and cost estimates. Due to constraints imposed upon the project site from existing backland uses and utilities, conceptual alternatives are limited to the under- or over-sheeting of the existing bulkhead with new steel sheet piles with installation of soil/rock anchors and interior wale system to reduced landside impacts. Other improvements considered include the raising the top elevation of the bulkhead cap to account for sea level rise with stop gap measures at existing access openings and repairing/replacing fixed timber piers and fender piles as

needed. The new bulkhead design will also allow for the future dredging of the existing vessel berthing area to a -10 feet MLW. Conceptual alternatives are currently under review by the Town.

- ◆ Investigation/Data Acquisition
- ◆ Permitting
- ◆ Engineering
- ◆ Construction/Project Management
- ◆ Consulting

Union Wharf Bulkhead Replacement

Town of Fairhaven, MA



Foth was selected by the Town of Fairhaven to design a replacement bulkhead system and facility upgrades for Union Wharf. At the start of the project, Foth reviewed all existing plans of record, performed an existing conditions survey, and geotechnical investigation.

With this information, Foth developed an alternatives analysis detailing options for the 830 linear feet of bulkhead replacement surrounding the solid filled wharf based on loading conditions and proposed future dredge depths. The Town selected an anchored steel sheet piling system in front of the existing bulkhead face with a mix of steel and timber fender piles depending on the designated use of the space/vessel berthing requirements. The design and construction of Union Wharf is being funded by a state grant. The Seaport Advisory Counsel and construction has been phased in order to match funding provided.

Foth has managed the design and construction of both Phase I and Phase II which includes approximately 450' of the bulkhead replacement.

In addition to the bulkhead replacement, Foth developed plans for a 3,300 sf pile supported concrete platform, and a public safety marina floating dock system to house harbormaster, fire, and police department response vessels. Foth's expertise with waterfront engineering and permitting allowed us clearly identify project goals and design criteria early in the process with the owners to proceed with cost effective alternatives for bulkhead replacement and facility upgrades which met the varying needs of the many different stakeholders.

- ◆ Investigation/Data Acquisition
- ◆ Permitting
- ◆ Engineering
- ◆ Construction/Project Mgmt.
- ◆ Consulting



Orient Point Bulkhead and Revetment

World Technical Services, Greenport, NY



Foth lead the design and construction services for a multi-phase project located at the facilities of the Plum Island Animal Disease Center in Orient, NY. The project included installation of 280 LF of steel sheet pile bulkhead and a timber fender pile system located at the entrance to the PIADC harbor along with the fabrication and installation of a steel breakwater/wave attenuator and dolphins/pile clusters located off of the southern face of the harbor.

Foth performed a site inspection and topographic and hydrographic surveys

to confirm site conditions and delineate wetland resources including near-shore eelgrass beds. An engineering evaluation and a wave analysis of the existing site and structure was performed. The project also included the construction of 1 new sections of stone revetment located the entrance to the PIADC harbor and 2 new sections of revetment stone protection located at the point of the island. In total over 1000 LF of new revetment stone protection was installed.

- ◆ Engineering
- ◆ Permitting
- ◆ Engineering
- ◆ Construction/Project Management
- ◆ Consulting



Easy Street Bulkhead | Town of Nantucket, MA

Foth was selected by the Town of Nantucket to provide consulting, permitting, engineering design, and construction management services. Foth performed a topographic survey to locate the bulkhead, resource areas, utilities and adjacent structures within the project area. Foth performed a visual non-destructive evaluation of the existing timber bulkhead and the adjacent roadway and structures within the 200' project area. Measurements were taken at 25' intervals to document the existing bulkhead face slope. The Full Condition Survey included the performance of three (3) Standard Penetration Tests (SPT) at 100' spacing to a depth of fifty (50') to characterize the underlying sediments. Foth prepared a findings report with design recommendations.

Foth prepared all environmental permits including; MEPA, Notice of Intent, DEP Chapter 91, and ACOE Self Verification. Foth prepared the final plans, specifications and bid documents for review by the Town of Nantucket and provided bid review services. Foth's design needed to reflect the aesthetics of Nantucket and have limited impact to the surrounding historic structures and to help address local flooding. Foth

provided full time resident engineering services for all critical tasks, review construction submittals, and responded to RFIs from the contractor.



Rock Harbor Bulkhead Replacement

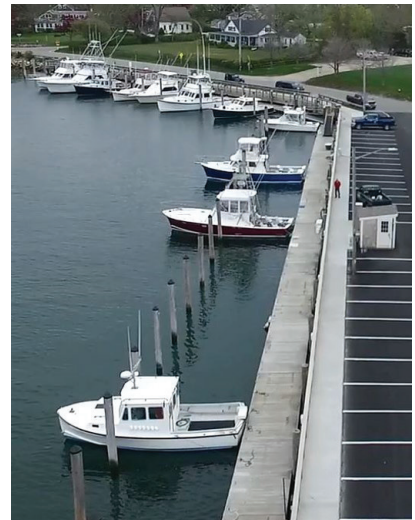
Town of Orleans, MA



Foth was retained by the Town of Orleans, MA in November 2015 for design, permitting, bid and construction services to replace a ±540 LF failed bulkhead structure at the Town docking facility located in Rock Harbor. Due to the failed condition of the bulkhead, field investigations, design, permitting and bid phase services were completed within less than five months from receiving a Notice to Proceed so that local funding could be secured at the May 2016 Town Meeting for Fall 2016–Winter 2017 construction.

The project also included boat ramp repairs, stormwater management/improvements via MA DEP Best Management Practices (BMPs) and electrical/water service upgrades.

- ◆ Investigation/Data Acquisition
- ◆ Consulting
- ◆ Engineering
- ◆ Permitting
- ◆ Construction Management



Bulkhead Replacement & Travel Lift

Tern Harbor Marine, Weymouth, MA



Foth was contracted by Tern Harbor Marine to provide engineering and environmental consulting including permitting, design and construction management for the bulkhead replacement and site improvements for this project. Foth's project design consisted of removal of approximately 500 linear feet of existing wood bulkhead, the removal of approximately 417 linear feet of rip rap and debris

and the installation of 500 lineal feet of steel bulkhead system including the design of the anchor system, railing system, repairs to the travel lift and reinforced concrete slab construction. Foth coordinated with the site LSP with the management and removal of contaminated sediment materials.

Foth worked closely with Tern Harbor Marina on a design to meet the

project needs and schedule. Foth engineered the project in such that the bulkhead repairs were divided into Supply and Delivery of materials and a construction contract for the bulkhead installation. Foth prepared contract documents, provided project management and construction oversight services. The project was completed within permit windows, on-time for the marina's season opening and within budget.



- ◆ Investigation/Data Acquisition
- ◆ Consulting
- ◆ Engineering
- ◆ Permitting
- ◆ Construction Management