

## COMPANY PROFILE



Coastal Engineering Co., Inc. is a provider of land surveying, civil, structural, and marine engineering, land-use planning, and environmental permitting services.

### EXPERTISE IN ENVIRONMENTALLY SENSITIVE AREAS

*Based on Cape Cod, a region of significant environmental exposure and sensitivity, we are exceptionally experienced in:*

- Site development and land use planning
- Low Impact Development
- Marine and waterfront infrastructure
- Shorefront protection and coastal resiliency
- Building design for hurricane and flood prone regions
- Historic preservation
- I/A wastewater treatment and disposal
- Environmental permitting and regulatory reviews
- Construction contract administration

### WORKING RELATIONSHIPS WITH REGULATORY AGENCIES

Since our founding in 1976, we have expanded our staff and broadened our expertise to keep abreast of the increasing environmental concerns and government regulations that affect our clients and the communities in which we practice. We understand the intricacies of the federal, state, and local regulations that affect our clients' projects, and have developed cooperative working relationships with the various regulatory agencies.

### SOLUTIONS FOR THE BENEFIT OF OUR CLIENTS AND COMMUNITY

We are committed to providing designs and solutions that are not only right for our clients, but are right for the community too. That may be the reason why so many of our clients repeatedly return to do business with us again.

***Our clients include:***

- Architects and other design professionals
- Developers and contractors
- Realtors and attorneys
- Local, state, and federal agencies
- Property owners

We take pride in providing designs that are environmentally responsible, cost effective, and practical. We know that our clients' projects are very important to them, no matter how small. Accordingly, every project is overseen by a project manager with many years of experience to guide a client through the planning, design, permitting, and construction phases of their project.

## PROFESSIONAL SERVICES



### LAND SURVEYING

- Boundary Surveys
- Data Accumulation Surveys
- Topographic and Hydrographic Survey
- Upland Surveys using GPS Equipment
- Land Court Surveys
- Right of Way and Easement Determinations
- ALTA/NSPS (Title Insurance) Surveys
- Certified Plot Plans
- Subdivision and ANR Plans
- Elevation Certificates

### CIVIL ENGINEERING

- Project Planning and Feasibility
- Site Analysis, Development, and Design
- Roadway and Parking Design
- Stormwater Drainage Design
- Sanitary Sewage Disposal Design
- Wastewater Treatment Plant Design
- Soil Evaluation for Septic System Installations
- Local, State, and Federal Permitting

### STRUCTURAL ENGINEERING

- Structural Analysis and Design
- Foundation Engineering
- Building Renovation and Rehabilitation
- Code Compliance Issues
- FEMA Coastal Design
- Retaining Wall Design
- Historical Building Restorations

### MARINE ENGINEERING

- Existing conditions and marine structures evaluations
- Feasibility studies and harbor management plans
- Coastal engineering and marine structures design
- Hydrographic surveys and dredging design
- Environmental regulatory review and permitting
- Construction administration and support services

### TECHNICAL SERVICES

- Wastewater Treatment Plant Operation and Maintenance
- Groundwater Monitoring Well Installation and Sampling for Underground Tanks
- Lithologic Boring and Standard Penetration Tests

# MARINE AND COASTAL ENGINEERING



## APPROACH

Marine and coastal engineering ensures that structures in a coastal environment, such as Cape Cod and the Islands, are safe, functional, and efficient. Coastal Engineering Co., Inc. has done extensive work throughout Cape Cod in the design and permitting of these structures. In addition, Coastal performs hydrographic surveys by a certified hydrographer using real-time differential GPS equipment.

Our established working relationships with local, state, and federal regulatory agencies aid in the efficient processing of permits and licenses through legal channels.

The Marine Engineering Division provides a full scope of professional services for engineered coastal structures, coastal zone projects, and wetlands and waterway projects, including:

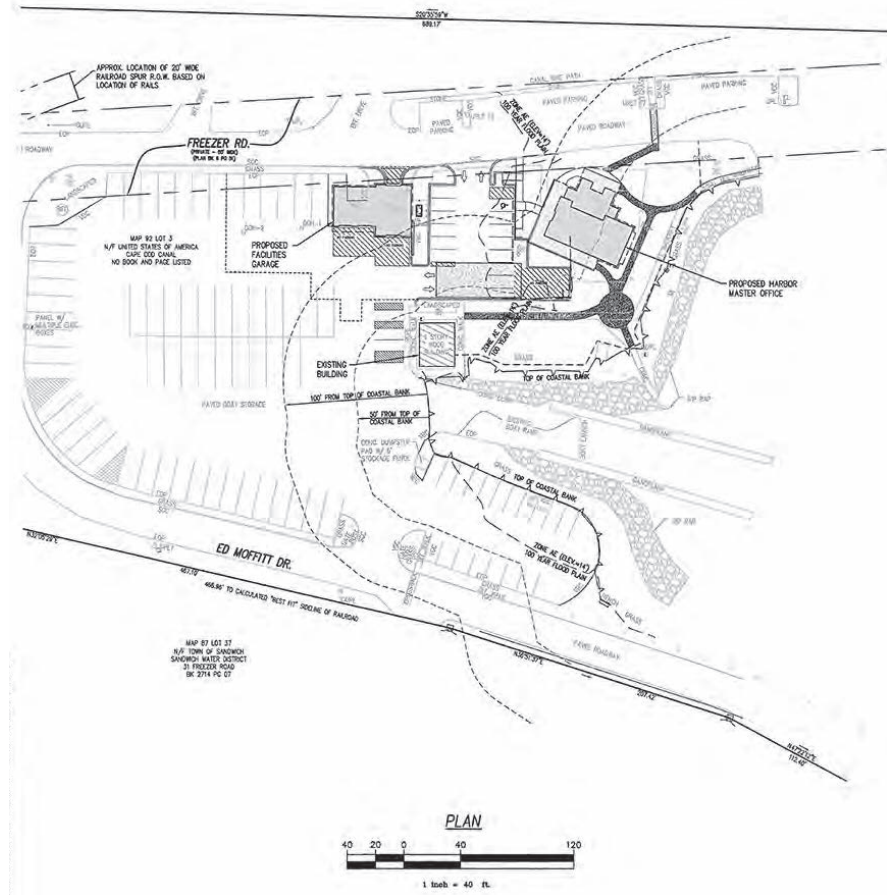
## SERVICES

- Existing conditions and marine structures evaluations
- Feasibility studies and harbor management plans
- Coastal engineering and marine structures design
- Hydrographic surveys and dredging design
- Environmental regulatory review and permitting
- Construction administration and support services

## PROJECTS

- Marinas and waterfront facilities
- Seawalls, bulkheads, and revetments
- Boat ramps and fishing piers
- Docks, wharfs, and piers
- Boardwalks and pile supported structures
- Beach nourishments and shoreline stabilization
- Bio-engineering (soft solutions)

# CIVIL ENGINEERING



## APPROACH

Coastal Engineering has been providing civil engineering services to public and private clients for over four decades. Whether a residential project or a large-scale commercial or institutional development, attention to the details can be the difference in making a project a success. Coastal Engineering pays attention to the details. Preparing designs that are constructible has always been a hallmark of Coastal Engineering.

Our engineers use their experience and ingenuity to prepare designs that meet today's tough environmental standards, while being ever mindful of the construction logistics and the construction costs associated with implementing our designs. In essence, we value engineer every project before it goes to bid.

## SERVICES

- Project Feasibility
- Site Development/Redevelopment
- Stormwater Management Systems
- Sewage Disposal Systems
- Wastewater Treatment Plans
- Roads and Parking Lots
- Water Supply Testing and Hydrogeology
- Soil Evaluation and Geotechnical Services

## LAND SURVEYING



Coastal Engineering's Land Surveyors utilize state-of-the-art survey equipment to collect field data and then process the data using the latest computer software. Our survey equipment consists of Leica TS16 Imaging Robotic Survey Instruments, Leica TS06 Total Station Survey Instruments, and Leica GS16 GPS Units with Carlson Surveyor+ companions (with Carlson SurvCE firmware). We process the field data using Leica Infinity Software for GPS related services and Autodesk® Civil 3D 2016.

Coastal Engineering has a total staff of 40 persons. We routinely operate 2-3 survey field crews, and are capable of operating additional survey field crews when necessary to meet workload or project demands. Our civil engineering and land surveying department meets weekly to track project progress and to make sure that project commitments and deadlines are met. We have a lengthy history of delivering projects on time, a proud achievement we are sure our references will verify.

### RECENT MUNICIPAL ROJECTS

- Town of Orleans Downtown (600+ acres, including roadways)
- Cape Cod Regional Technical High School, Harwich, MA (62 acres)
- Monomoy Regional High School, Harwich, MA (50 acres)
- Barnstable High School and Middle School, Hyannis, MA (86 acres)
- Nauset Regional High School, North Eastham, MA (72 acres)
- Sandwich High School, Sandwich, MA (63 acres)

### RECENT COMMERCIAL ROJECTS

- Eastward Ho! Golf Club (130 acres)
- Air Station Cape Cod at the Massachusetts Military Reservation (134 acres)
- Wequassett Resort and Golf Club, Harwich, MA (20 acres)
- Chatham Bars Inn, Chatham, MA (25 acres)
- Skaket Corners Shopping Center, Orleans, MA (12 acres)



## HYDROGRAPHIC SURVEYING



For projects situated below mean high water - such as dredging, harbor improvements, bulkheads/piers/docks construction, and environmental monitoring - it is necessary to know the depth of the sea floor. Coastal Engineering utilizes single beam sonar technology and RTK GPS systems to collect hydrographic survey data (soundings). The soundings are then processed and used to calculate proposed dredge and post-dredge volumes and generate bathymetric contour plots. Coastal Engineering also conducts routine hydrographic surveys to monitor seafloor depth changes caused by erosion and littoral transport of sediment over time. Other types of hydrographic surveys conducted by Coastal Engineering include eel grass surveys and tide gauge monitoring.



# ENVIRONMENTAL PERMITTING



Expertise in engineering design, thorough understanding of complex codes and regulations, established working relationships with regulatory agencies, and signature project advocacy are key elements to our projects' regulatory success. Our consulting and processing support services include determination of applicable permits required by the boards and committees; assistance in application process; deadline tracking and permit compliance coordination; public hearings attendance; construction contract administration; and permit close out.

## RESIDENTIAL AND COMMERCIAL DEVELOPMENT

- Conservation Commission
- Board of Health
- Planning Board
- Zoning Board of Appeals
- Building Department
- MA DEP
- MA DOT

## SHOREFRONT PROTECTION

- Conservation Commission
- Zoning Board of Appeals
- MA DEP

## BEACH NOURISHMENT

- Conservation Commission
- Board of Selectmen
- MA DEP
- MA EEA

## PIERS, MARINAS, AND BOARDWALKS

- Conservation Commission
- Waterways Committee
- Shellfish Committee
- Zoning Board of Appeals
- MA DEP
- USEPA
- US Army Corps of Engineers

## DREDGING

- Conservation Commission
- Waterways Committee
- Shellfish Committee
- MA DEP
- MA EEA
- US Army Corps of Engineers



## John A. Bologna, P.E.

*President / Chief Executive Officer*

Years of Experience: 41 years of experience, including 33 years with Coastal Engineering Co., Inc.

John A. Bologna, P.E., is CEO and President of Coastal Engineering Co., Inc. as well as the Department Head for the firm's structural and coastal engineering divisions. As Principal-In-Charge, he has served as the lead design professional on many large-scale commercial and municipal projects that required multiple levels of coordination with staff, regulatory agencies, and other design professionals. He has directed the design of engineering projects for residential, commercial, institutional and industrial construction projects, including multi-family dwellings, schools, churches, mercantile centers, community centers, historic preservation projects, office buildings, power utility, industrial and marine structures with a specialization in coastal engineering structures. Mr. Bologna has a wide range of experience and a particular interest in early American historic building restoration and marine coastal construction projects. He has in-depth knowledge of building codes, project permitting and public bidding requirements. Mr. Bologna has served on several professional technical committees, including the BBRS Coastal Zone Sub-Group and the Task Force for Hurricane Resistant Construction. He has served as an adjunct professor in Construction Technology at Cape Cod Community College, and is a frequent presenter at construction industry training workshops. He currently serves on the College's Education Foundation Board of Directors and also donates his time to a number of charitable organizations. Mr. Bologna is recognized at the Barnstable Superior Court as an expert witness and has provided professional testimony on a number of construction arbitration causes.

### Educational Background

- Rice University, Houston, Texas, Bachelor of Science in Civil Engineering
- Rice University, Houston, Texas, Master of Civil Engineering
- Cape Cod Community College – Adjunct Professor in Construction Technology

### Continuing Education

- ASCE Continuing Education Programs
- MIT Seismic Design Lecture Series
- AISC Steel Structural Design Seminar
- ACI Seminars on Building Code Requirements
- Historic Structures Restoration and Renovation Seminar
- BSCE Soil/Structure Interaction Seminar
- ACOE Coastal Construction Seminar
- ASBA Coastal Engineering Conference
- ACEC Engineering Business Leadership and Project Management Training

### Registrations and Professional Affiliations

- Registered Professional Engineer – Massachusetts Registration No. 33776
- Registered Professional Engineer – Connecticut Registration No. PEN 0022498
- Massachusetts Society of Professional Engineers – Member
- American Society of Civil Engineers – Member



**Registration and Professional Affiliations (continued)**

- American Shore and Beach Preservation Association
- American Wood Council – Member
- American Institute of Steel Construction – Member
- American Concrete Institute – Member
- Structural Engineering Institute – Member
- National Trust for Historic Preservation – Member
- National Home Builders Association – Associate Member
- Home Builders and Remodelers Association of Cape Cod – Associate Member
- Cape Cod Community College Educational Foundation – Board of Directors Member

**Awards and Honors**

- J.M. Rockwell Scholarship, Rice University
- Texas Society of Professional Engineers Scholarship, Rice University
- Kappa Mu Epsilon, Mathematics Honor Society – Member
- Chi Epsilon, Civil Engineering Honor Society – Member
- Home Builders Association of Cape Cod, Associate of the Year Award – 2003 & 2008
- Home Builders Association of Cape Cod, Special Recognition Award – 2004
- Provincetown Preservation Award, Eastern School House, Binder-Boland Associates – 1998
- Falmouth Design Award, Plymouth Savings Bank, Noah Greenberg, Architect – 2002
- Falmouth Preservation Award, Fenno House, WHOI, Noah Greenberg, Architect – 2002
- American Registry of Outstanding Professionals – 2007
- Massachusetts Home Builders & Remodelers Association – Legend of Industry Award – 2013
- BRICC Award, Best Engineering Project – 2016, 2014, 2012

**Publications and Professional Presentations**

- Engineering New Record - Rare Inclined Elevator Is Nearly Complete at Pilgrim Monument, 2020
- Civil + Structural Engineer - Monumental Technology, 2020
- Civil Engineering - Inclined Elevator Improves Access To Historical Monument, 2020
- Cape & Plymouth Business - STEM and Building a Future Generation of Engineers, 2019
- Home Builders Association of Cape Cod – Presentation on New Code Requirements for Wood Frame Structure Design in Hurricane-prone Areas, 2018
- Charlestown Waterfront Coalition – Presentation on Flood Zones Overview and Allowed Mitigation Strategies, 2018
- Cape & Plymouth Business - Sellers' Due Diligence: The Importance of Permit Closeout, 2018
- Cape Housing Institute – Presentation on Zoning and Site Selection, 2017
- Home Builders Association of Cape Cod – Engineering Angles Presentation, 2017
- Cape & Plymouth Business – Is Zoning Doing What Was Intended for Cape Cod Housing, 2017
- SEAMASS - Presentation on ASCE 24-10 Code Requirements for Construction in Flood-Prone Regions, 2016
- Cape & Plymouth Business – Tact, Push, and Principle, 2016
- Journal of Light Construction, How Does Wood Work with Steel in a Composite Beam, 2010





## Todd D. Turcotte, P.E.

*Marine Division Manager*

Years of Experience: Over 27 years of engineering experience.

Mr. Turcotte is a professional civil engineer with extensive experience in marine and geotechnical/structural projects. He has managed and designed projects for industrial, commercial, municipal, and residential clients including piers, wharves, docks, bulkheads, ship berths, wave attenuators, dredging, petroleum facilities, pipelines, and shorefront protection. He also has an extensive knowledge of permitting on the federal, state, and local levels. Mr. Turcotte brings a unique perspective to projects as having 10 years of experiences as the Owner of a Petroleum storage facility with a large ship berth loading and offloading facility and over a million barrels of aboveground petroleum storage in the Port of Providence.

Prior to joining Coastal Engineering, Todd worked for several regional engineering companies and was the co-founder of RT Group, Inc., a well-recognized firm specializing in the design and management of projects in the marine and heavy industrial and commercial markets. Projects he managed and/or designed over his 27 plus year career include:

- Barge Breasting Dolphin, Middle Dolphin, and Mooring Dolphin Improvements Project
- 10-Year Improvements Planning, Wilkesbarre Petroleum Vessel Off-loading Facility
- Maintenance Dredging and Bulkhead Replacement Chemical Facility
- Condition Assessment Report for Waterfront Structures of a Fuel Handling Terminal
- Newport Marine Ferry Terminal Facility, RIDOT
- Aboveground Petroleum Storage Facility Expansion, 5-yr Project
- 24-inch Medium Pressure Steam Pipeline Above and Below Ground Replacement Project
- Pier 2, US Navy Complex, Design Study Assessment Report for Underwater Repairs

For 10 years, Todd as President, was responsible for all business aspects of Capital Terminal Company aboveground petroleum storage facility operation, engineering, maintenance, improvements, and compliance.

### Educational Background

- Roger Williams University, Bristol, RI, Bachelor of Science in Civil Engineering

### Registrations and Professional Affiliations

- Rhode Island Registered Professional Engineer #7627
- NCEES Record (In Progress for MA and CT licensing)
- American Society of Civil Engineers
- American Petroleum Institute



## Donald K. Munroe

*Senior Marine Project Manager*

Years of Experience: Over 27 years of experience, including 24 years with Coastal Engineering Co., Inc.

Donald Munroe has extensive experience in marine/environmental engineering and surveying, including design and permitting of piers, docks, and large-scale beach nourishment and harbor dredging projects for both the municipal and private sectors. He has served as a project manager and construction supervisor for many of the sea wall and revetment projects along the shorelines of Wellfleet and Eastham. Mr. Munroe is experienced in design, field engineering and project management. As a marine engineer, he has been instrumental in the ongoing development of a town-wide Harbor Management Plan for the Town of Harwich. His additional experience includes shorefront site inspections and environmental permitting on the federal, state, and local levels.

### Educational Background

- Plymouth State University, Plymouth, NH  
Bachelor of Science in Management
- University of Massachusetts, Amherst, MA  
Bachelor of Science in Civil Engineering

### Continuing Education

- BSCES Lecture Series:  
Sconset Beach Nourishment Project, Permitting, and Coastal Geology
- WHOI Beach Nourishment Workshop
- Massachusetts Association of Conservation Commissions –  
Basic Wetland Soils and Vegetation Delineation Workshops
- Massachusetts Association of Conservation Commissions –  
Wetlands Regulatory Exemptions and Exceptions Workshops

### Registrations and Professional Affiliations

- Massachusetts E.I.T. Registration No. 8257
- Massachusetts Construction Supervisor–License No. CS088532

### Publications

- Pile Buck Magazine – “Creating Marine Solutions for Harwich”



## Charles A. Agro, E.I.T.

*Marine Project Manager*

Years of Experience: Over 9 years of experience, including 5 years with Coastal Engineering Co., Inc.

Charles Agro is a graduate engineer, Certified Engineer in Training (E.I.T) and licensed OUPV U.S. Coast Guard boat captain. Charles has extensive experience in marine and civil engineering, surveying and construction projects, including design and permitting of harbor dredging, large-scale beach nourishment, docks and piers, and coastal protection systems for both the municipal and private sectors. He also has extensive experience in hydrographic surveying, processing hydrographic survey data, calculating dredge volumes, dredging operations, and generating bathymetric plots. Additional experience includes installing and maintaining tide gauges, analyzing measured tidal data, land surveying, plan drafting, off-shore soil sampling, water quality measurements (such as salinity), site inspections, and construction staking. Charles has served as a project engineer for multiple harbor dredging, hydrographic surveying, beach nourishment, docks and piers, and other coastal protection projects along the shorelines of Cape Cod.

### Educational Background

- University of Rhode Island, Kingston, RI  
Bachelor of Science in Ocean Engineering

### Continuing Education

- Sea School OUPV Training (SEASCH-352)
- Open Water Scuba Diver – Certificate #837E1EA

### Registrations and Professional Affiliations

- Engineer in Training - NY Registration
- OUPV-Operator USCG Captain's License
- ACOE Construction Quality Management for Contractors
- OSHA 40, 30, 10 hr. safety training
- ITI basic rigging and crane operations





## **Nicholas (Cole) Bateman, P.E.**

*Structural Project Engineer*

Years of Experience: 6 years of professional structural engineering experience.

Cole Bateman is experienced in structural engineering for a variety of structure types including commercial, residential, mixed-use, historical, municipal, and marine buildings. Mr. Bateman's experience includes report writing, structural analysis using modelling software, and Building Information Modelling (BIM). Cole is proficient in AutoCADD, Revit, and various structural analytic and design tools.

As a Project Engineer in Coastal Engineering Company's Structural Engineering Department, Mr. Bateman provides effective engineering solutions in accordance with project specifications, Building Code statutory requirements, and clients' needs. With his project experience focused on structures within greater Cape Cod, Mr. Bateman has a keen sense on how to best service the clients within the coastal communities.

### **Educational Background**

- University of New Hampshire  
Bachelor of Science in Civil Engineering

### **Registrations and Professional Affiliations**

- Engineer in Training – NH Registration

# OLD NORTH WHARF BULKHEAD

Nantucket Harbor, MA

Coastal Engineering Co. was retained by Old North Wharf Cooperative, Inc. to provide professional engineering and environmental permitting services for the replacement of about 210 l.f. of a bulkhead along a section of Old North Wharf fronting on Nantucket Harbor, which had been in place for more than 40 years and had corroded to the extent that large void areas in the face above the mud line were allowing soil fill material to migrate into the harbor. Due to the existence of buried utilities located behind the bulkhead that might prove to be problematic for the installation of a bulkhead tieback system, CEC designed the replacement as a steel sheet pile cantilever bulkhead to be located just outside the face of the existing bulkhead. The design included a request by the client that the new bulkhead be completely sheathed with a timber façade for aesthetic purposes in this historically significant location. The Nantucket Conservation Commission included a condition in their approval that no CCA treated timber could be used for the proposed timber façade. Consequently, greenheart timber was selected as the façade material because of its durability characteristics without the use of any chemical preservatives. The bulkhead was constructed during winter by working from a large barge berthed adjacent to the site in Nantucket Harbor. CEC helped to maintain a high level of quality control during the sheet pile installation to ensure the face maintained as linear an alignment as possible to facilitate the successful installation of the timber façade.

## SERVICES

- Data accumulation
- Engineering design
- Environmental and regulatory permitting at local, regional, state, and federal levels
- Construction bid administration
- Construction contract administration



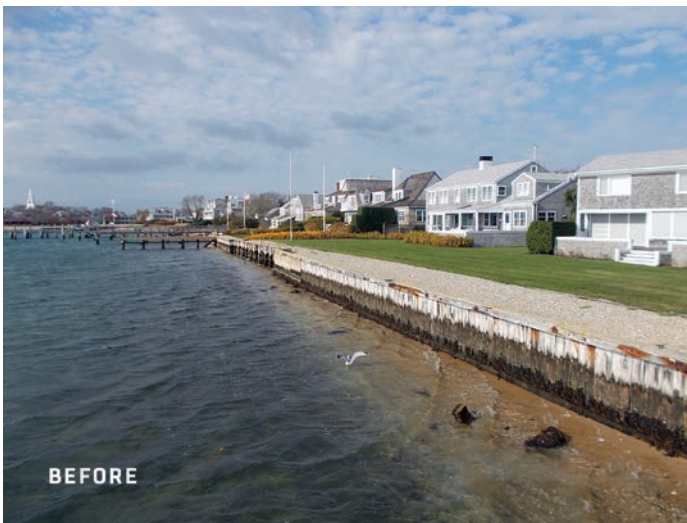
## EASTON STREET BULKHEAD

Nantucket Harbor, MA

Coastal engineering provided engineering design and environmental permitting on local, state, and federal levels for reconstruction of a bulkhead spanning across three adjacent residential properties on Nantucket Harbor. The existing deteriorated timber sheet-pile bulkheads were replaced with a new continuous and more durable cantilevered steel sheet pile bulkhead. All the work was performed during the winter off-season.

### SERVICES

- Engineering design
- Environmental permitting on local, state, and federal levels
- Construction phase services





# CHILMARK FIRE/EMS HEADQUARTERS

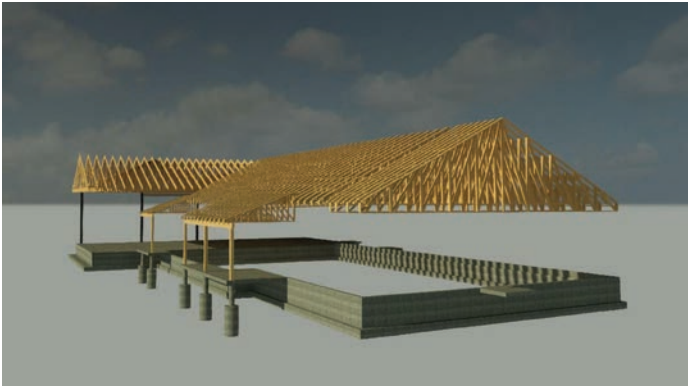
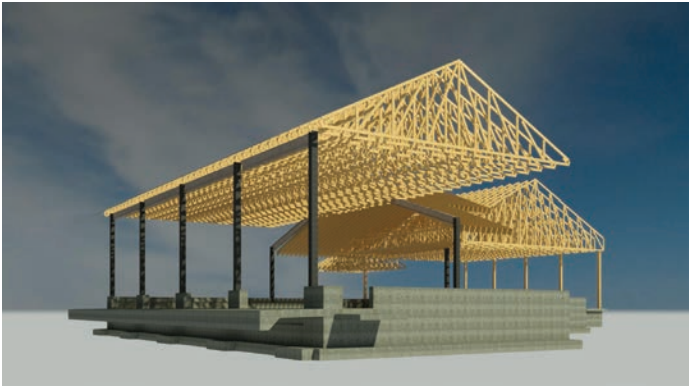
Chilmark, MA

Coastal Engineering worked with K+K Architects to provide design services for a new Fire Station to replace an existing building adjacent to the Town Hall in Chilmark; additionally under that contract, we are to provide a new EMS Headquarters with ambulance service on the adjacent property. This includes Schematic Design, Design Development, Construction Documents, Bidding, Construction Contract Administration and Project Closeout. A full space needs and existing facility assessment were completed prior to beginning design.

The program for the new Fire Station includes four apparatus bays, support spaces including Decon, Turn out Gear, Utility Room, an Administrative Office space with kitchenette, Public Toilet, Storage Room, and Mechanical and Electrical Rooms. The Fire Station is approximately 4,500 SF in area. The Tri-Town EMS Headquarters is approximately 6,300 SF in area and has a similar program with the addition of a Day Room, Meeting Room, and Dorm and Locker Rooms with only two apparatus bays and medical storage rooms, which need to be conditioned due to pharmaceutical requirements. Both buildings are proposed to be wood-framed on conventional slab-on-grade foundation.

## SERVICES

- Structural engineering design
- Construction documents
- Construction contract administration





# MARTHA'S VINEYARD SHIPYARD

Vineyard Haven, MA

Coastal Engineering Company (CEC) is providing professional engineering services for constructing a small-craft marina at Martha's Vineyard Shipyard, which will provide slips for 50 small craft vessels and parking for the slip holders. CEC's services include topographic and hydrographic surveys of the area to develop the existing conditions plans, design of a floating dock configuration with two new piers for the boat slips, design of a new parking lot, and design of a dredge footprint for the slip area and approach channel. Some of the dredged sediment will be reused onsite to increase the grade along the shoreline and decrease the likelihood of coastal flooding during higher tides.

## SERVICES

- Existing conditions survey (topographic and hydrographic)
- Sediment sampling and analysis
- Marine engineering design of the proposed piers, ramps, floating docks, and dredge footprint
- Civil engineering for proposed new marina parking and mast storage area redevelopment and associated site improvements
- Permitting
- Pre- and post-dredge hydrographic surveys



# PAPPAS COMMERCE CENTER - RESERVED CHANNEL REHABILITATION

South Boston, MA

On behalf of Pappas Enterprises, Jay Cashman, Inc. engaged the services of Coastal Engineering Co. to investigate, design, and permit extensive improvements at the site of the Pappas Commerce Center located along the Reserved Channel in South Boston, an industrial park which the owners were rehabilitating as a mixed-use “urban lifestyle center”. The project involved the design and construction of a pedestrian walkway with guardrail and handrail, stormwater drainage, utilities and road improvements, as well as replacement of the sheet pile bulkhead with about 1700 linear feet of rock revetment. A small park with two public viewing/fishing piers and a 150KW wind turbine were planned as part of an effort to obtain LEED certification.

## SERVICES

- Consultation, planning, and coordination with MassPort, Water and Sewer Commission, and Boston Redevelopment Authority
- Work with Marine Fisheries on an equal mitigation value plan
- Prepare and File Notice of Intent (NOI), Ch912, ACOE, ENF
- Design of a new rock revetment, drainage improvements, and wind turbine foundation
- Final plans and specifications for construction
- Construction phase services





# WEYMOUTH BEACH CONNECTION

City of Weymouth, MA

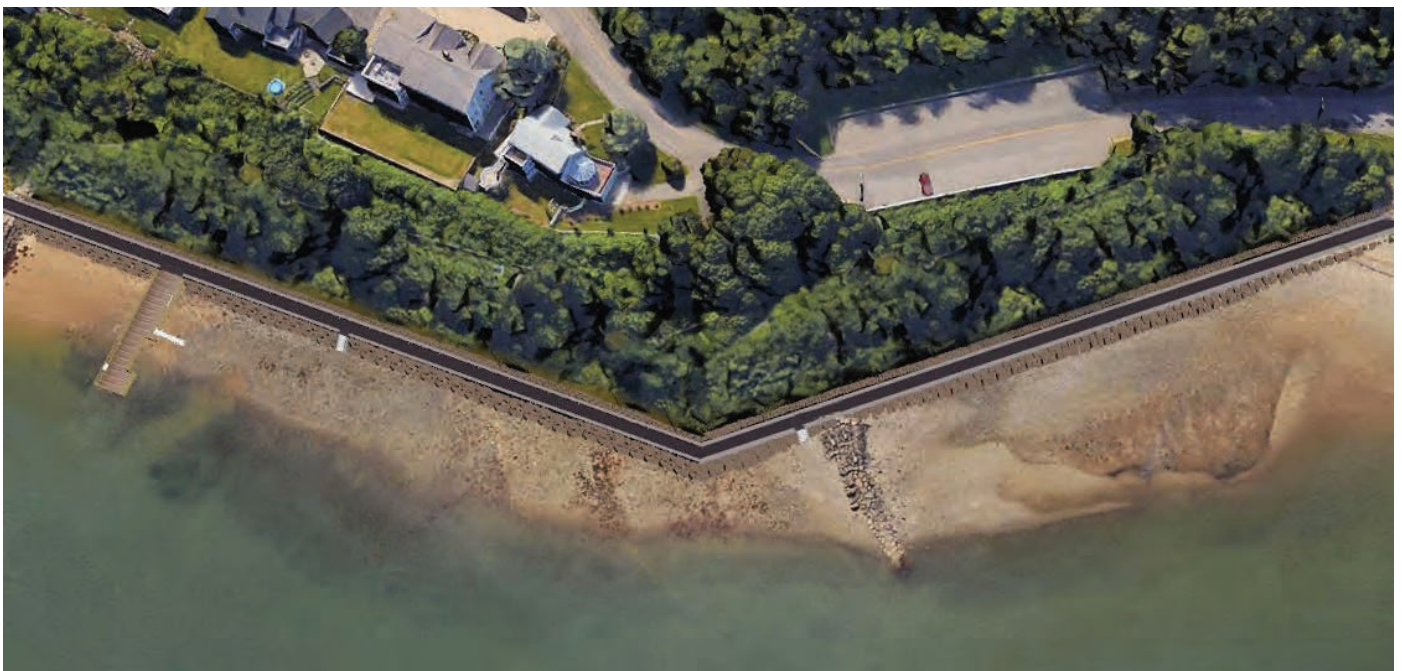
Situated along the Weymouth Fore River, Wessagusset Beach and George Lane Beach are separated by 2,000 feet of rocky coastline that is inaccessible and abuts a steep, heavily vegetated coastal bank. The new boardwalk construction project, financed by the Seaport Economic Council Program grant, aims to increase accessible open space at Weymouth's beaches while enhancing opportunities for passive recreation along the town's waterfront. Other project considerations include parking, erosion, stability of existing revetment/shorefront structures, storm drainage, and interpretive signage at the site.

Coastal Engineering is currently designing a new waterfront connecting link between the two beaches. The project consists of approximately 1,000 linear feet of an eight-foot-wide boardwalk, reconstruction of the existing rock revetment, 1,000 linear feet of beach mats, new sidewalk from the upper parking area, additional handicap accessible parking at the entrance of the boardwalk, as well as replacement of existing concrete access stairway with a new pre-cast concrete stairway.

Coastal Engineering is also working with Kyle Zick Landscape Architecture and the Town of Weymouth to enhance and restore the vegetation on the coastal bank of the site. The majority of the bank is comprised of invasive species that destabilize the slope. The design team is developing a vegetation management and maintenance plan that will enhance the area not only for slope stability, but for wildlife habitat and aesthetics purposes.

## SERVICES

- Existing conditions site survey
- Engineering feasibility assessment and design study
- Vegetation management and maintenance plan
- Permit plans and permit and license filings, including NOI
- Final plans, specifications, and cost estimates
- Construction bid documents and construction contract administration



# FISHERMAN'S WHARF

Provincetown, MA

Fisherman's Wharf and Marina, located in the center of Provincetown, provides not only boat moorings and vessel slips, but much-needed parking space for tourists and visitors to the town. The wharf owners needed to obtain certain local, state and federal compliance permits without interrupting the pier operations. In addition, the owners had purchased the ship *Provincia*, which was berthed at the pier and needed to be permitted as a permanently moored vessel (PMV).

To address these issues, a team of engineers, environmental consultants, and lawyers was assembled to assist the owners in negotiations with the various regulatory agencies. Working with the state Department of Environmental Protection and the federal Army Corps of Engineers, the team was able to obtain the required permit for the *Provincia* from the United States Coast Guard and reach an agreement for the pier to continue to operate as a water-dependent facility. Throughout the entire process, the pier remained open for parking and operated at full capacity.

## SERVICES

- Underwater structural evaluation of pier and berthing facility
- Chapter 91 and ACOE permit applications
- Permit application for a permanently moored vessel with the US Coast Guard
- Design of new parking and stormwater management system
- Consultations with regulatory agencies
- Environmental surveys, including eel grass, fish habitat, and shellfish.



Photos Ksenia Pryme



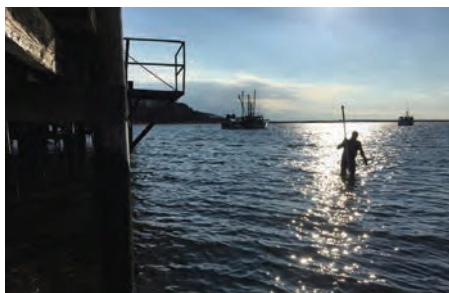
## STAGE HARBOR PIER

Town of Chatham, MA

Town of Chatham has hired Coastal Engineering to provide site engineering and conceptual design services for rehabilitation of the Town-owned commercial timber pier, along with the adjacent privately-owned pier located in Stage Harbor. In order to have a full understanding of the best option for reconstruction, Coastal Engineering has performed an assessment of the existing condition of the two interconnected timber piers and underlying concrete sea wall, including an above and partial underwater survey in accordance with Naval Engineering Facilities Service Center guidelines and prepared a structural evaluation report including permit drawings, references, photographs, calculations, alternative repair recommendations, and cost analysis for the use of alternative construction materials to improve infrastructure durability and reduce future maintenance requirements. The proposed plan calls for the current building on the trap dock property to be removed and a new elevated concrete platform to be built, where trucks could back up to take on fish. It would stretch the width of the narrow parcel and out to a new bulkhead. The existing docks are proposed to be replaced by a concrete deck supported by steel or fiberglass pilings. All are proposed to be at the same elevation. An area between the yacht club and town docks is proposed to be filled in with an additional deck. The plans show several possible configurations for a floating dock off the concrete decks. Several hoists to assist fishermen with offloading their catch are also included in the plan.

### SERVICES

- Structural inspection and evaluation of commercial fish pier
- Hydrographic survey
- Conditions assessment and resiliency report based on the history of storm events
- Alternative evaluation and cost analysis
- Conceptual design plan



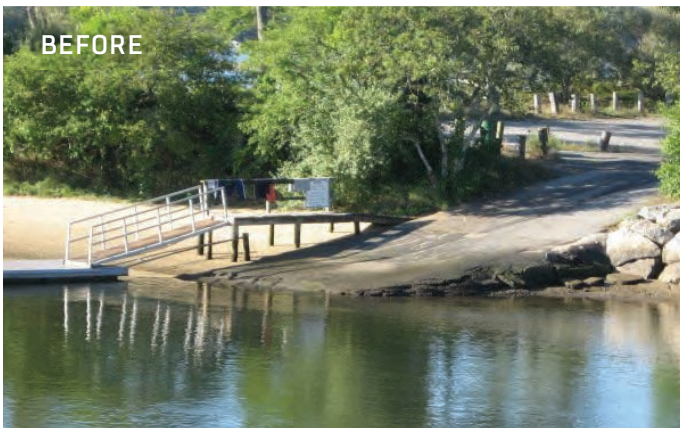
# BASS RIVER PUBLIC ACCESS FACILITY, WILBUR PARK

Town of Yarmouth, MA

Bass River waterfront park in Yarmouth was in need of redevelopment. The town received many complaints about the boat ramp being washed out and parking lot drainage leading directly into the river. Coastal Engineering Co. worked with Dept. of Fish & Game Office of Fishing and Boating Access on this state-funded project to include expansion of the boat ramp with a new accompanying floating dock system running parallel to the ramp, handicapped accessible fishing pier, new concrete bulkhead with a stone revetment facing, overlay paving and new layout for existing parking lot, and new storm drainage system and landscaping. The town has had very positive public response, with many visitors stopping by for fishing, launching a boat or just relaxing on a bench or narrow beach.

## SERVICES

- Topographic and hydrographic survey and site planning
- Engineering design for boat ramp, pier, floating dock, storm drainage, and bulkhead/revetment
- **Permitting for Notice of Intent with the Conservation Commission and DEP, Chapter 91 License, Army Corps of Engineers permits, and Water Quality Certificate**
- Construction bid documents





# BACK RIVER DREDGING

City of Weymouth, MA

Coastal Engineering is providing professional engineering services required for filing permit applications for maintenance dredging of the boat launch ramp channel in Back River, North Weymouth. Permits are being obtained for the following agencies:

- Town of Weymouth Shellfish Advisory Committee
- Town of Weymouth Waterways Advisory Committee
- Town of Weymouth Harbormaster
- Town of Weymouth Conservation Commission - Notice of Intent
- Massachusetts Environmental Policy Act (MEPA)
- Massachusetts Department of Environmental Protection (DEP) and 401 Water Quality Department - Combined Chapter 91 licensing
- Army Corps of Engineers (ACOE)
- Massachusetts Coastal Zone Management (MA CZM)

## SERVICES

- Hydrographic and topographic survey of the proposed maintenance dredge area and preparation of existing conditions plan
- Collection of core sediment samples within the dredge area to determine the grain size distribution of the sediment and compatibility for disposal
- Engineering design of the maintenance dredge footprint, volume calculations, and preparation of a proposed site plan to accompany permit applications
- Environmental permitting



# PAMET HARBOR MANAGEMENT PLAN

Town of Truro, MA

Pamet Harbor is Truro's only public harbor, providing commercial and recreational boating access to Cape Cod Bay. Coastal Engineering Co. was hired by the Town of Truro to develop a "Ten Year Harbor Master Plan" to assist the Town in evaluating its alternatives for the long-term planning, budgeting, and implementation of maintenance improvements to the harbor facilities.

First, an evaluation assessment of all existing harbor facilities was performed — including jetties, moorings, revetments, parking lots, and maintenance dredging operations — to identify the issues of concern and outline options to mitigate each issue in the Master Plan. An action plan was developed, including a timeline for implementation and estimated costs to help forecast budgetary requirements and capital expenditures through the upcoming 10-year cycle.

To ensure long-term maintenance of the harbor, a 10-year dredge permit was obtained to allow annual maintenance dredging of the Pamet River Channel and basin area. The dredging is performed by hydraulic means using the Barnstable County Dredge with the clean dredge spoils placed directly on the Town's public beach — and then placed along the shoreline for beach nourishment and dune re-establishment suitable for piping plover and tern nesting habitat.

## SERVICES

- Feasibility study and evaluation report
- Marine engineering analysis and design of jetty reconstruction, parking lot improvements, and revetment repair
- Dredge sampling, laboratory analysis review, report, and recommendations
- Environmental permitting for jetty sand by-pass and beach nourishment program, including DEP Chapter 91 license and ACOE permits
- Construction contract administration





# TOWN OF HARWICH MARINE FACILITIES

Town of Harwich, MA

The Town of Harwich wanted to conduct a harbor and facilities analysis at five waterfront areas in the Town including: Allen Harbor, Herring River, Wychmere Harbor, Saquatucket Harbor, and Round Cove. Coastal Engineering performed in-depth inspections at these locations, which consisted of bulkheads (steel and timber), boat ramps, docks/piers, buildings and parking/drainage areas. The objective of this project was to evaluate each site for performance and stability, then systematically analyze for repair or replacement options, and cost out for capital budget planning purposes. After extensive research and inspections, Coastal Engineering furnished an in-depth technical report and projected cost estimate to the Town for all 5 areas and subsequent facilities. The report was then used to assist the Town in determining long-term strategic planning objectives for the management of such important town resources.

## SERVICES

- Assess existing conditions with level 1, 2, and 3 inspections
- Prepare comprehensive conditions assessment technical report, inspection forms and long-term capital improvement plan for each of the town's facilities
- Assist with petrographic analysis of concrete samples for Wychmere Harbor pier
- Meet with Town officials to discuss long term maintenance and repairs
- Develop projected cost estimate for each facility
- Conduct reconnaissance with Harwich DPW to assess the existing drainage structures
- Prepare ENF, EIR waiver, MEPA certification, NOI, ACOE Dredge Permit, Chapter 91 License
- Utilize dredge material for beach nourishment





# HARBORMASTER'S FACILITY

Town of Harwich, MA

Just in time for the boating season, the Town of Harwich has completed a harbor improvement project which brought Saquatucket Harbor facilities up-to-date, making waterfront Harwich more accessible and visitor-friendly. Coastal Engineering Co. provided structural engineering services for the project. The landside phase of the improvements included design and construction of a new harbormaster's office, a garage/maintenance building, a snack shack, and artist shanties. Additionally, the project included an ADA-compliant boardwalk structure running parallel to the shoreline. The structures are located in an AE Flood Zone and are designed to conform to current FEMA flood code design requirements, with the ground floor levels built above the designated Design Flood Elevation (DFE). The harbormaster building is elevated on a traditional timber pile foundation, whereas the garage/maintenance building is constructed on a helical pile and concrete grade beam system. Both buildings are designed to meet the loading criteria for structures located in hurricane prone areas.

## SERVICES

- Structural engineering services for a new harbormaster's office, garage/maintenance building, snack shack, and boardwalk
- Preparation of plans and specifications for public bid procurement
- Value engineering design review of alternate foundation design concepts
- Construction contract administration



# SANDWICH MARINA

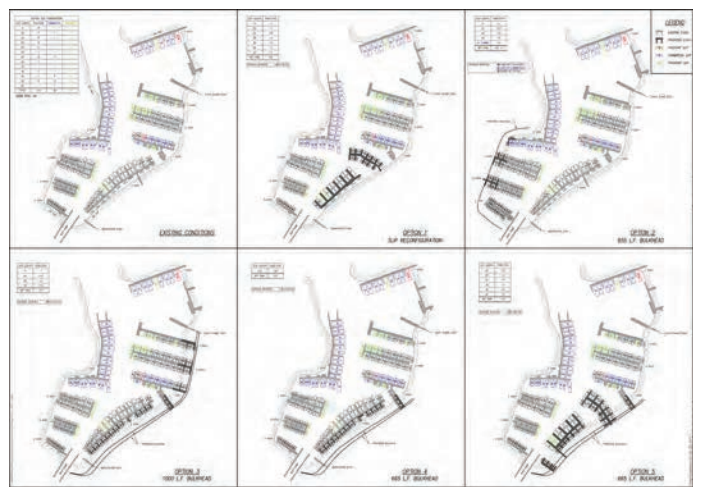
Town of Sandwich, MA

The Sandwich Marina, which sits on the eastern side of the Cape Cod canal, is one of the busiest marinas in Massachusetts and is home to a large commercial and recreational fishing fleet. The old pile-supported marina office frequently flooded during nor'easters, necessitating the need for a new facility. Coastal Engineering Co. worked with Brown Lindquist Fenuccio & Raber Architects to provide full scope civil and structural engineering, environmental permitting, construction bid and contract administration.

The new office and garage are sited near Sandwich Marina boat ramp, allowing the Harbormaster a panoramic view from a second story office, while affording boaters convenient access to the Harbormaster facility. The marina playground that formerly occupied the building site was relocated closer to the canal. The parking lot was realigned and new walkways were added to provide full handicap accessibility to the facility. Because the building is located in a flood zone, it was designed to higher wind standards, elevated above flood elevation and properly secured to sustain hurricane force winds. Roof runoff is routed into dry wells for groundwater recharge on the site. The town also wanted a year-round restroom facility, so a new sewage disposal system was designed. Vegetation was planted as a buffer on the coastal bank. We are currently working with the Town to optimize the marina's mooring area layout.

## SERVICES

- Civil and structural engineering design for a new public marina facility
- Evaluation of marina layout
- **Notice of Intent preparation and regulatory review meetings**
- Construction bid and contract administration





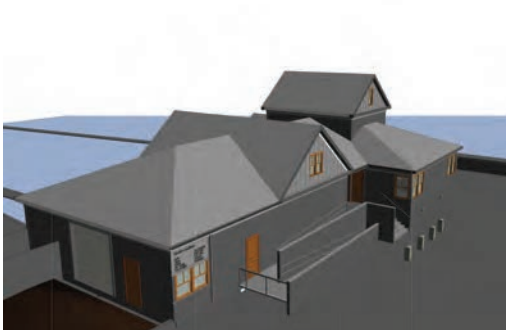
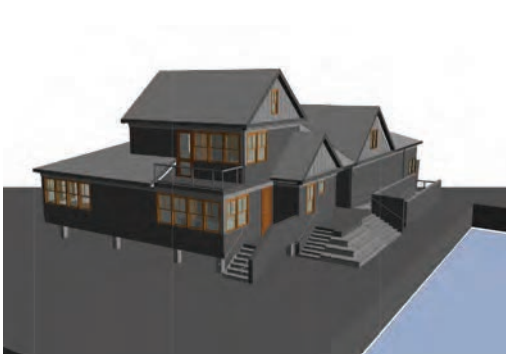
# HARBORMASTER'S FACILITY

Town of Marshfield, MA

The new Marshfield Harbormaster Facility is to be constructed on the existing town property located at Green Harbor. The proposed facility consists of two interconnected buildings, one a two story, wood frame structure to house the new Harbormaster Office, and the other a one and a half story wood frame public restrooms/shower rooms/storage and garage structure. The proposed structures will be of conventional wood frame construction supported on an elevated foundation with the lowest building floor and all proposed utilities to be situated above the FEMA base flood elevation for this area.

## SERVICES

- Preliminary design and final construction documents
- Site investigation for project layout, grading, and utility modifications
- Permit document preparation and regulatory review hearings
- Construction bid documents
- Construction administration





# RYDERS COVE LANDING

Town of Chatham, MA

Coastal Engineering performed an existing conditions assessment and prepared conceptual plans for proposed repairs and improvements at Ryder's Cove town landing located in Chatham's coastal Area of Critical Environmental Concern. The objective of this project was to evaluate the site for performance and stability and provide conceptual repair or replacement options for the Ryder's Cove facilities - boat ramp, bulkhead, and floating docks. Other considerations included a more efficient traffic plan, upgrades to boat wash-down area, pump-out station, comfort station, and beach erosion mitigation. The report also included estimates for capital budget planning purposes, existing conditions plan, and conceptual plan for regulatory review. This project has provided the town of Chatham with a well thought out road map for efficient upgrades and future utilization of this facility.

## SERVICES

- Existing conditions site plan
- Conceptual design plan
- Summary report of findings
- Preliminary cost estimate for project implementation



# OLD MILL BOATYARD DREDGE SAMPLE AND HYDRO SURVEY

Town of Chatham, MA

The Town of Chatham hired Coastal Engineering to provide hydrographic surveying and engineering services for the dredging of Old Mill Boat Yard. The goal of the project was to provide a deeper depth for vessels docked at the Old Mill Boat Yard facility. Coastal Engineering's role in the project was to conduct a pre-dredge hydrographic survey of the designated dredge area to determine the cubic yardage of sediment that would be dredged, and to conduct post-dredge surveys to determine if the dredge contractor was able to reach the design depth and calculated the volume that was dredged. Coastal Engineering also prepared pre-dredge and post dredge plans to show the contours before and after dredging was completed. The hydrographic survey was completed using the Coastal Engineering survey vessel equipped with a single beam transducer, digital fathometer, and RTK GPS antenna. Grades underneath the floating dock located in the middle of the dredge area were determined by Coastal Engineering's divers.

## SERVICES

- Pre-dredge and post-dredge hydrographic survey of the proposed dredge area
- Preparation of a plan of the surveyed area at one-foot contours
- Post-dredge volume calculations
- Dredge material sampling and report





# WEST TISBURY POLICE STATION

Martha's Vineyard, MA

The former West Tisbury Police Station site was too small and had limited parking with poor traffic access and poor egress. A "West Tisbury Police Department Site and Planning Committee" was formed from Town residents, the retiring Police Chief, and the incoming Police Chief. The conclusion of this Committee's study led to recommendations for space requirements and site location.

The new Police Station building is located on the existing Fire Station #2 site, which also houses the EMS Office and Ambulances, so the resulting facility is a multi-use public safety structure whose architecture is compatible with c. 2000 Fire Station building and its design elements. The Police Department operation is now spread out on 5,000 sq ft between two floors with administrative, living, and storage spaces for all the Police Department needs.

## SERVICES

- Schematic design
- Design development
- Construction documents
- Construction bid and contract administration





## REFERENCES

### PAPPAS COMMERCE CENTER – RESERVE CHANNEL REHABILITATION CITY OF BOSTON, MA

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**Client:** Jay Cashman, Inc.  
**Contact:** Brendan Campbell, Vice President  
**Address:** P.O. Box 692396  
Quincy, MA 02269-2396  
**Phone:** (617) 890-0600  
**E-mail:** [bcampbell@jaycashman.com](mailto:bcampbell@jaycashman.com)

### WEYMOUTH BACK RIVER DREDGE SURVEY TOWN OF WEYMOUTH, MA

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**Client:** Town of Weymouth  
**Contact:** Robert Luongo, Director of Planning and Community Development  
**Address:** 75 Middle Street  
Weymouth, MA 02189  
**Phone:** (781) 340-5015  
**E-mail:** [rluongo@weymouth.ma.us](mailto:rluongo@weymouth.ma.us)

### WEYMOUTH BEACH CONNECTION TOWN OF WEYMOUTH, MA

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**Client:** Town of Weymouth  
**Contact:** Robert Luongo, Director of Planning and Community Development  
**Address:** 75 Middle Street  
Weymouth, MA 02189  
**Phone:** (781) 340-5015  
**E-mail:** [rluongo@weymouth.ma.us](mailto:rluongo@weymouth.ma.us)

### SANDWICH MARINA TOWN OF SANDWICH, MA

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**Client:** Town of Sandwich  
**Contact:** John Kondratowicz, Harbormaster  
**Address:** 12 Freezer Road  
Sandwich, MA 02563  
**Phone:** (508) 833-0808  
**E-mail:** [jkondratowicz@townofsandwich.net](mailto:jkondratowicz@townofsandwich.net)

*Continued on next page*

## REFERENCES continued

### WILBUR PARK BASS RIVER PUBLIC ACCESS FACILITY TOWN OF YARMOUTH, MA

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**Client:** MA Office of Fishing & Boating Access, Department of Fish and Game  
**Contact:** Doug Cameron, Assistant Director/Deputy Chief Engineer  
**Address:** 1 Rabbit Hill Road  
Westborough, MA 01581  
**Phone:** (508) 389-7812  
**E-mail:** [doug.cameron@state.ma.us](mailto:doug.cameron@state.ma.us)

### MARINE FACILITIES TOWN OF HARWICH, MA

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**Client:** Town of Harwich  
**Contact:** Bob Caferelli, P.E., Town Engineer  
**Address:** 723 Main Street  
Harwich, MA 02645  
**Phone:** (508) 430-7508  
**E-mail:** [rcafarelli@town.harwich.ma.us](mailto:rcafarelli@town.harwich.ma.us)

### GREAT RIVER PUBLIC ACCESS FACILITY TOWN OF MASHPEE, MA

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**Client:** Town of Mashpee  
**Contact:** Catherine Laurent, DPW Director  
**Address:** 350 Meetinghouse Road  
Mashpee, MA 02649  
**Phone:** (508) 539-1420  
**E-mail:** [celaurent@mashpeema.gov](mailto:celaurent@mashpeema.gov)

### FREEMAN'S LANDING, BASS RIVER TOWN OF DENNIS, MA

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**Client:** Town of Dennis  
**Contact:** Ed Tierney, Natural Resource Officer (currently serving Town of Yarmouth)  
**Address:** 685 Route 134  
South Dennis, MA 02660  
**Phone:** (508) 760-4800  
**E-mail:** [etierney@yarmouth.ma.us](mailto:etierney@yarmouth.ma.us)

*Continued on next page*

## REFERENCES continued

### BAY STREET BOAT RAMP TOWN OF BARNSTABLE, MA AND

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**Client:** Town of Barnstable DPW  
**Contact:** Paul Graves, Town Engineer  
**Address:** 382 Falmouth Road  
Hyannis, MA 02601  
**Phone:** (508) 790-6400  
**E-mail:** paul.graves@town.barnstable.ma.us

### HARBORMASTER FACILITY TOWN OF SANDWICH, MA

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<b>Client:</b>	Catalyst (BLFR Architects)	Town of Sandwich
<b>Contact:</b>	Tim Sawyer, Principal	John Kondratowicz, Harbormaster
<b>Address:</b>	203 Willow St. Suite A Yarmouthport, MA 02675	12 Freezer Road Sandwich, MA 02563
<b>Phone:</b>	(508) 362-8382	(508) 833-0808
<b>E-mail:</b>	tim@capearchitects.com	jkondratowicz@townofsandwich.net

### SAQUATUCKET HARBORMASTER FACILITY TOWN OF HARWICH, MA

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<b>Client:</b>	Catalyst (BLFR Architects)	Town of Harwich
<b>Contact:</b>	Tim Sawyer, Principal	John Rendon, Harbormaster
<b>Address:</b>	203 Willow St. Suite A Yarmouthport, MA 02675	715 Main Street Harwichport, MA 02646
<b>Phone:</b>	(508) 362-8382	(508) 430-7532
<b>E-mail:</b>	tim@capearchitects.com	<a href="mailto:jrendon@town.harwich.ma.us">jrendon@town.harwich.ma.us</a>

### MARSHFIELD HARBORMASTER FACILITY TOWN OF MARSHFIELD MA

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<b>Client:</b>	BHA Architects	Town of Harwich
<b>Contact:</b>	Joel Bargman, Principal	Michael DiMeo, Harbormaster
<b>Address:</b>	9 Channel Center Boston MA 02210	1639 Ocean Street Marshfield, MA 02050
<b>Phone:</b>	(617)350-0450	781-834-6655
<b>E-mail:</b>	<a href="mailto:bha@bhaplus.com">bha@bhaplus.com</a>	mdimeo@marshfieldpolice.org



## REFERENCES continued

### RYDERS COVE LANDING TOWN OF CHATHAM, MA

---

**Client:** Town of Chatham Department of Natural Resources  
**Contact:** Theodore Keon, Director of Coastal Resources  
**Address:** 261 George Ryder Road  
Chatham, MA 02633  
**Phone:** (508) 945-5100  
**E-mail:** tkeon@chatham-ma.gov

### EASY STREET PARK NANTUCKET, MA

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**Client:** Nantucket Land Bank  
**Contact:** Jesse A Bell, Executive Director  
**Address:** 22 Broad Street  
Nantucket, MA 02554  
**Phone:** (508) 228-7240  
**E-mail:** director@nantucketlandbank.org

### STAGE HARBOR PIER TOWN OF CHATHAM, MA

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**Client:** Town of Chatham Department of Natural Resources  
**Contact:** Theodore Keon, Director of Coastal Resources  
**Address:** 261 George Ryder Road  
Chatham, MA 02633  
**Phone:** (508) 945-5100  
**E-mail:** tkeon@chatham-ma.gov

### WATER WORKS COMPLEX CITY OF FALL RIVER, MA

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**Client:** Spencer & Vogt Group (Presently Spencer, Sullivan & Vogt)  
**Contact:** Lynne Spencer, Principal  
**Address:** 1 Thompson Square  
Charlestown, MA 02129  
**Phone:** (617) 861-4291  
**E-mail:** lspencer@ssvarchitects.com