

December 2, 2020

C16324.03

Harwich Waterways Committee c/o John Rendon, Harbormaster 715 Main Street Harwich, MA **By Hand Delivery**

Re: <u>Notice of Intent: Request for Waterways Comments</u>

Proposed Pier, Ramp & Float Donald Annino 14 Mill Point Road Harwich, MA Map 1-J1 Parcel 94-0

On behalf of our client, Donald Annino, we are submitting 6 copies of a request for comments for a Notice of Intent application for the above referenced project. The following items are enclosed:

- Request for Waterways Comments Letter
- Project Narrative
- Locus Map
- Shellfish Habitat Summary reports by AECOM dated 11/18/19 & 7/27/20
- Coastal Engineering Co., Inc., Plan Showing Proposed Dredging & Pier, Ramp, and Float, dated 12/1/2020

Please schedule this for your December 16, 2020 meeting. If you have any questions or require additional information, please give our office a call. Thank you.

Sincerely,

COASTAL ENGINEERING CO., INC.

sarah Cole

Sarah Cole

Enclosures: as stated

cc: Harwich Conservation Commission by email Donald Annino Roger P. Michniewicz, P.E., Coastal Engineering Co., Inc.

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December 2, 2020

C16324.03

Harwich Waterways Committee c/o John Rendon, Harbormaster 715 Main Street Harwich, MA

Re: Notice of Intent: Request for Waterways Comments

Proposed Pier, Ramp & Float Donald Annino 14 Mill Point Road Harwich, MA Map 1-J1 Parcel 94-0

Dear Committee Members:

On behalf of our client, Donald Annino, we are requesting a review and endorsement of the above referenced project. Please forward comments to Amy Usowski, Harwich Conservation Agent, to be included with our Harwich Conservation Commission Notice of Intent application for the project.

A representative from our office will be at the December 16, 2020 Waterways Committee meeting to discuss the project.

Sincerely,

COASTAL ENGINEERING CO., INC.

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Roger P. Michniewicz, P.E.

RPM/sgc

cc: Harwich Conservation Commission by email Donald Annino Atty. Glenn Wood

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Project Narrative

This project consists of the construction of a proposed pier, ramp, and float in the Herring River. Both a hydrographic survey and shellfish survey were performed at the site to assess existing site and shellfish habitat and population characteristics along the property shorefront for analysis of possibly siting of a pier facility in compliance with the Town of Harwich Conservation Commission Wetland Protection Regulations. A Shellfish Survey and Sediment Survey was performed by Pamrla Neubert Ph.D., Senior Marine Biologist with AECOM after which she prepared the attached Shellfish Habitat Summary Report dated November 18, 2019. Due to a proposed change in the location of the pier facility at the site during the permitting process, a second Shellfish Survey and Sediment Survey were performed by Pamrla Neubert after which she prepared the attached Shellfish Habitat Assessment Report dated July 27, 2020. The reports conclude that the proposed project will not have a significant, adverse impact to shellfish or shellfish habitat. Based upon this site investigation work and the preparation and submittal of proposed pier plans, the Harwich Waterways Committee approved the project, and a Notice of Intent was filed with the Harwich Conservation Commission for their approval of the project. The survey at the site indicated that sufficient depth of water below Mean Low Water (MLW) could not be attained within the required overall length of the pier, ramp, and float without dredging. The overall length of the facility beyond MHW is limited to 80 linear feet and the depth of water in the area of the proposed float must be at least 2.5 feet below Mean Low Water. Consequently the Commission expressed concern that the area under the proposed float could not be performed without the need to have some of the dredging footprint located within the intertidal zone. In addition to that dredging concern, the Commission was also concerned with need to install a number of pier piles within the 50 foot wide salt marsh at the site. Based upon these concerns by the Commission during the previous hearing process for the proposed pier project, it was decided to formally withdraw that NOI filing and redesign the facility.

Based upon an analysis of the previous concerns and comments of the Conservation Commission, a new pier facility has been designed. The redesigned facility includes a long pier that completely spans over the entire width of the salt marsh together with a gangway and narrow float as shown on the attached plans. The pier and gangway are proposed to be prefabricated of marine grade aluminum. The proposed pier design meets the town's pier regulations as well as state and federal design criteria. As can be seen on the plans, the project will require the dredging of about 90 cubic yards of anoxic mud to attain the required depth of water under the float. All such dredging is proposed to occur within the subtidal zone at the site.

All components of the pier facility are designed to be located at least 25' from the adjacent property line as required by the Army Corps of Engineers, and at least 65' from all components of the adjacent pier facility located south of the site. The Herring River is quite wide in this area, and has a deep water channel (EL -5.1 NAVD88) adjacent to the proposed pier facility that is about 145' wide as shown on the site plan. The site plan indicates the location of only four existing moorings located in the river in the vicinity of the proposed pier facility.



Shellfish Habitat Summary

То:	Town of Harwich Conservation Commissioners	From:	Pamela Neubert, AECOM
	Conservation Commission Administrator		9 Jonathan Bourne Drive Pocasset, MA 02559, USA
File:	Dr. Donald J. Annino, Jr. M.D., D.M.D. 14 Mill Point Road, Harwich, MA.	Date:	November 18, 2019

On September 19, 2019 AECOM, completed a shellfish habitat assessment at a proposed pier location adjacent to 14 Mill Point Road, Harwich, MA. The proposed project is within the tidal waters of the Herring River. This area is surrounded by year-round and seasonal residential development.

The results of this shellfish survey are being submitted as part of the applicant's Notice of Intent (NOI) package to meet performance standards and recommendations for both Massachusetts and the Town of Harwich for construction of new water dependent structures. The proposed structure is a pier with a location within an area determined by to be suitable habitat for quahogs (*Mercenaria mercenaria*) and soft shell clams (*Mya arenaria*) by Massachusetts Division of Marine Fisheries. The area is not mapped for eelgrass (*Zostera marina*) by Massachusetts Department of Environmental Protection (MADEP). The proposed project is located in an area The Town of Harwich has classified as suitable for quahogs (*Mercenaria mercenaria*).

The purpose of this shellfish survey was to provide the Harwich Conservation Commission with a complete and accurate description of the shellfish resources at the proposed project location. This information assists the Conservation Commission with their responsibility to protect the Town of Harwich wetlands and costal resources. **Figure 1** depicts the general location of the proposed project. The resource areas within 100 feet of the project site include: land under the ocean, land containing shellfish, coastal bank, salt marsh and land subject to coastal storm flowage.

Survey Methodology

AECOM's survey methodology followed those approved and utilized for shellfish studies throughout the Cape Cod including the Town of Harwich (Harwich) as well as other southeastern Massachusetts municipalities including Nantucket and Martha's Vineyard. Shellfish stations at the proposed project site were arranged in a grid pattern. The investigation included surveying the area along transects perpendicular and parallel to the proposed pier, and float project. A centerline was established running along the center of the proposed pier, and float location. Additional transects were established at 10-ft. intervals on either side of the proposed pier centerline out to 60-ft. running parallel to the centerline. Transects were established Parallel to shore and set every 10-ft. Samples were approximately 1-cubic foot of substrate and processed through a 0.25-inch mesh basket at each of the station locations. General sediment texture and other fauna observed were recorded and are presented on **Figure 2** and **Figure 3**.



Figure 1. Proposed Project 14 Mill Point Rd, Harwich. Green line depicts proposed project location.



Figure 2. Shellfish Habitat Substrate Survey.



Service Layer Credits: Est, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community Source: US National Park Service USGS: Massidia Produced: 10/21/2019



Figure 3. Shellfish Survey Results. Species Collected.



Service Layer Credits: Eet, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community Source: US National Park Service USGS, MassGIS Produces: 102/212019

Survey Results

AECOM's survey found no eelgrass present within the project area, which was consistent with MADEP figures provided within the MassGIS OLIVER website. The inshore area consisted of saltmarsh, peat and medium to fine sand which transitioned to anoxic, organic rich muddy substrate in subtidal. Water quality degradation has resulted from long term nitrogen and organic carbon loading causing eutrophication, which is not only endemic to the estuaries of Harwich but throughout Cape Cod, Martha's Vineyard, and Nantucket. This is commonly the cause of high organic content in coastal sediments throughout the Cape Cod region (**Figure 2**). A total of twelve (12) quahogs and ten (10) American oyster were collected from fifteen (15) of the one hundred thirty (130) sample stations (**Figure 3**).

Conclusions

The shellfish survey was performed using a methodology that accurately maps shellfish abundance in the area of the proposed project. Based on observations made during the shellfish survey, the intertidal zone is suitable shellfish habitat for both oysters and quahogs. No eelgrass was present in the project location.

Pertinent Resource Areas as defined by Commonwealth of Massachusetts 310 CMR, and Town of Harwich General Bylaws include:

- Land Under the Ocean Massachusetts 310 CMR 10.25
- Land Containing Shellfish 310CMR 10.34
- There are no coastal dunes, mud flats, and/or rocky intertidal natural resources associated with the proposed project
- Town of Harwich Chapter 304 8H Conducting a shellfish survey

Massachusetts 310CMR 10.25 Land Under the Ocean Performance Standards

Massachusetts 310CMR 10.25 states: "When land under the ocean or nearshore areas of land under the ocean are found to be significant to the protection of marine fisheries, protection of wildlife habitat, storm damage prevention or flood control, 310CMR 10.25(3) through (7) shall apply". These include as summarized below:

(5) Project not included in 310CMR 10.25(3) or (4) which affect nearshore areas of land under the ocean shall not cause adverse effects by altering the bottom topography so as to increase storm damage, erosion, coastal banks, dunes or salt marshes.

(6) Projects not included in 310 CMR 10.25(3) which affect land under the ocean shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries habitat or wildlife habitat caused by:

- (a) alterations in water circulation;
- (b) destruction of eelgrass (Zostera marina) or widgeon grass (Rupia maritina) beds;
- (c) alterations in the distribution of sediment grain size;

(d) changes in water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants; or (e) alterations of shallow submerged lands with high densities of polychaetes, mollusks or macrophytic algae.

(7) Notwithstanding the provisions of 310 CMR 10.25(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Pertaining to Massachusetts 310CMR 10.25 Land Under the Ocean:

The proposed Project will not adversely affect sediment transport, destroy or pollute fisheries and shellfish habitat or add nutrients to the Herring River. There is no eelgrass or widgeon grass in the Project area, there are no rare vertebrates or invertebrate species identified that would be affected by this project.



Massachusetts 310CMR 10.34 Land Containing Shellfish Performance Standards

Massachusetts 310CMR 10.34 defines land containing shellfish as follows:

"Land Containing Shellfish means land under the ocean, tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when any such land contains shellfish. Significance. Land containing shellfish shall be found significant to the protection of land containing shellfish and to the protection of marine fisheries when it has been identified and mapped as follows:

(a) by the conservation commission or the Department in consultation with the Division of Marine Fisheries and based upon maps and designations of the Division of Marine Fisheries;

or

(b) by the conservation commission or the Department, based upon maps and written documentation of the shellfish constable or the Department. In making such identification and maps the following factors shall be taken into account and documented: the density of shellfish, the size of the area and the historical and current importance of the area to recreational or commercial shellfishing.

Except as provided in 310 CMR 10.34(5), any project on land containing shellfish shall not adversely affect such land or marine fisheries by a change in the productivity of such land caused by:

- (a) alterations of water circulation;
- (b) alterations in relief elevation;
- (c) the compacting of sediment by vehicular traffic;
- (d) alterations in the distribution of sediment grain size;
- (e) alterations in natural drainage from adjacent land; or

(f) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of salinity, dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.

(6) In the case of land containing shellfish defined as significant in 310 CMR 10.34(3)(b) (i.e., those areas identified on the basis of maps and designations of the Shellfish Constable), except in Areas of Critical Environmental Concern, the issuing authority may, after consultation with the Shellfish Constable, permit the shellfish to be moved from such area under the guidelines of, and to a suitable location approved by, the Division of Marine Fisheries, in order to permit a proposed project on such land. Any such project shall not be commenced until after the moving and replanting of the shellfish have been commenced.

(7) Notwithstanding 310 CMR 10.34(4) through (6), projects approved by the Division of Marine Fisheries = that are specifically intended to increase the productivity of land containing shellfish may be permitted. Aquaculture projects approved by the appropriate local and state authority may also be permitted.

(8) Notwithstanding the provisions of 310 CMR 10.34(4) through (7), no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37".

Pertaining to Massachusetts 310CMR 10.34 Land Containing Shellfish:

According to 310 CMR 10.34(5) Notwithstanding the provisions of 310 CMR 10.34(4), "projects which temporarily have an adverse effect on shellfish productivity but which do not permanently destroy the habitat maybe permitted if the land containing shellfish can and will be returned substantially to its former productivity in less than one year from the commencement of work, unless an extension of the Order of Conditions is granted, in which case such restoration shall be completed within one year of such extension".

- Water circulation would not be adversely changed. Tidal currents in the area are small and would not be altered by the placement of the proposed pylons.
- There will not be an icrease in compacting of sediment by vehicular traffic.
- The project will not alter the distribution of sediment grain size.
- The project will not adversely alter the natural drainage from adjacent land.
- The project will not change the water quality, including, salinity, dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.
- This project will have no adverse effect on rare vertebrate or invertebrate species as the proposed Project is not within an area considered as habitat for rare wildlife for coastal wetlands.



Town of Harwich General Bylaws Chapter 304 -8H Water Dependent structures

"No structure shall be located within 50 feet of an existing eelgrass bed or within a shellfish area defined by the Town bylaws or Town Shellfish Warden. The presence or absence of shellfish at a proposed site must be determined by a shellfish survey submitted by the applicant. The survey shall include existing populations of all sizes of commercially important species of shellfish (clams, quahogs, scallops, and mussels) and shall also include other species of mollusks which may indicate the capacity of the area to support commercially important species. The survey shall also include a description of shell fragments, if feasible, and references, if available, to historical information regarding the presence or absence of shellfish species."

Pertaining to Town of Harwich General Bylaws Chapter 304 -8H Water Dependent structures

The area is not mapped for eelgrass (*Zostera marina*) by (MADEP) and no eelgrass was observed during the survey. MADEP has deemed the area suitable habitat for softshell clams, and quahogs (**Figure 4**). The Town of Harwich has defined the project area as suitable quahog habitat (**Figure 5**). The shellfish survey conducted by AECOM on September 19th found only twelve (12) quahogs and ten (10) American oyster collected from one hundred thirty (130) sampled stations (**Figure 3**). This project, as proposed, will not have a significant, adverse impact to shellfish or shellfish habitat.

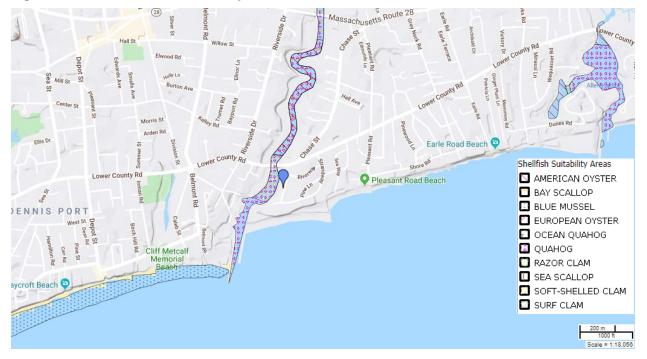


Figure 4. MADEP Shellfish Suitability Areas



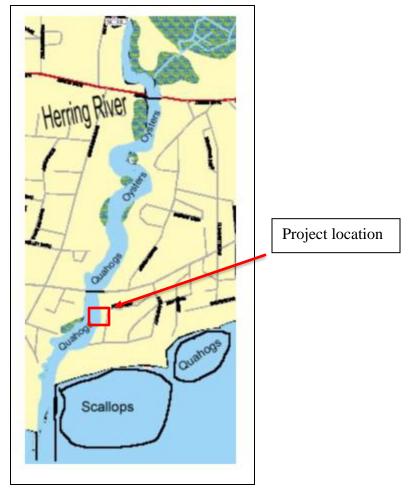


Figure 5. Town of Harwich Shellfish Habitat Map

Please do not hesitate to contact me if you have any questions. Sincerely yours,

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Pamela Neubert, Ph.D. Senior Marine Biologist

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Shellfish Habitat Assessment Report

То:	Town of Harwich Conservation Commissioners	From:	Pamela Neubert, Megalodon Environmental LLC
	Conservation Commission Administrator		P.O. Box 329 Woods Hole MA 02543
File:	Dr. Donald Annino 14 Mill Point Road, Harwich, MA.	Date:	July 27, 2020

Megalodon Environmental LLC (Megalodon), performed a shellfish habitat assessment on May 14, 2020 at a proposed pier location adjacent to 14 Mill Point Road, Harwich, MA (**Figure 1**). The proposed project is within the estuarine waters of the Herring River. This area is surrounded by year round and seasonal residential development.

The results of this shellfish survey are being submitted as part of the applicant's Notice of Intent (NOI) package to determine shellfish abundances and address performance standards within the Massachusetts state (State) and Town of Harwich (Town) Wetlands Regulations pertinent to construction of new water dependent structures. The proposed Project location is within an area determined by Massachusetts Division of Marine Fisheries (MADMF) to be conditionally approved for shellfish growing and suitable habitat for quahogs (*Mercenaria mercenaria*) and soft shell clams (*Mya arenaria*) (**Figures 2 and 3**). However, the MADMF mapping is neither recent nor site-specific, as the survey described herein, which was performed to obtain information necessary to determine if the proposed Project meets the State and Town's Wetlands Protection Act performance standards. Massachusetts Department of Environmental Protection (MADEP) has not mapped the Project area for eelgrass (*Zostera marina*). Town of Harwich shellfish map for the Project location, which were developed over a decade previously, do not indicate that the Project is directly within the Town's mapped shellfish habitat. While these maps present information from a historic perspective, the Town's Wetlands Protection Act By-laws specifically state that an updated shellfish survey must be performed to accurately map existing conditions within and adjacent to the proposed Project location (**Figure 6**).

This shellfish survey provides a complete and accurate description of the shellfish resources at the proposed Project location. This information will assist the Conservation Commission and other regulatory agencies with their responsibility to protect the Town of Harwich wetlands and costal resources. The resource areas within 100 feet of the project site include: land under the ocean, land containing shellfish, coastal bank, salt marsh and land subject to coastal storm flowage.

Survey Methodology

Megalodon's survey methodology followed those approved and utilized for shellfish studies in the Town as well as throughout Cape Cod and Islands. Shellfish stations at the Project location were arranged in a grid pattern. The study included surveying the area along transects perpendicular and parallel to the proposed pier and float. A centerline was established running along the center of the proposed Project. Additional parallel transects were established at 10-ft. on either side of the proposed pier centerline out to 50-ft. on both sides of the centerline. Transects were established Parallel to shore and set every 10-ft. out to 100-ft from mean high water. Samples were approximately 1-cubic foot of substrate and processed through a 0.25-inch mesh basket at each of the station locations. General sediment texture, shellfish abundance, and other observations were recorded (**Figures 4 and 5**).



Figure 1. Shellfish survey area, 14 Mill Point Rd, Harwich, MA.

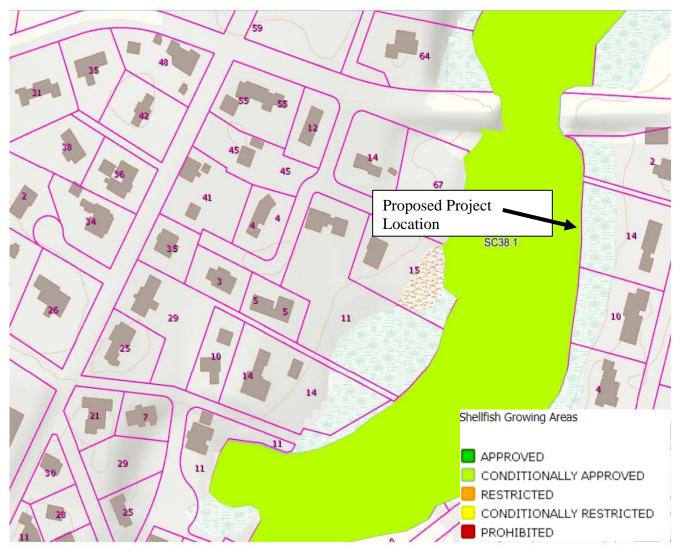


Figure 2. MADMF Shellfish Suitability (downloaded July 28, 2020).





Figure 3. MADMF Shellfish Growing Areas (downloaded July 28, 2020).



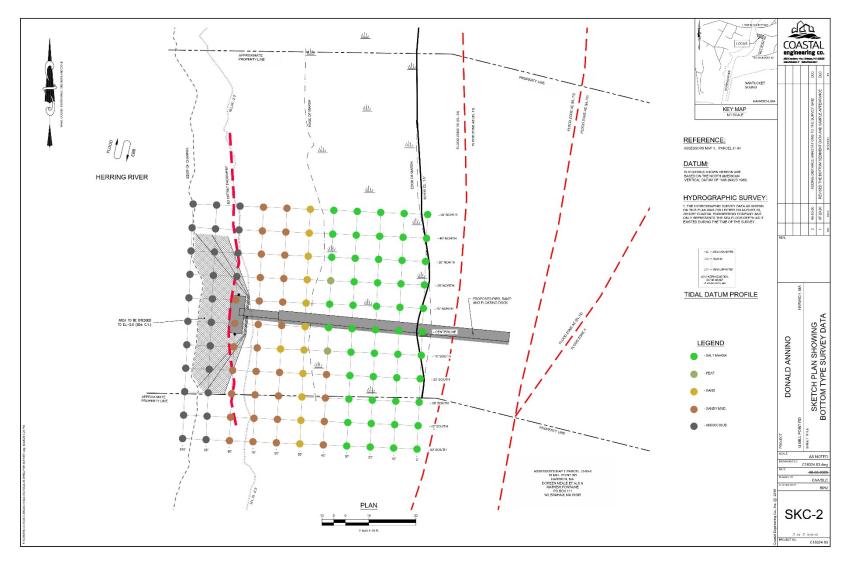


Figure 4. Sediment type within Survey Area, 14 Mill Point Road, Harwich, MA.

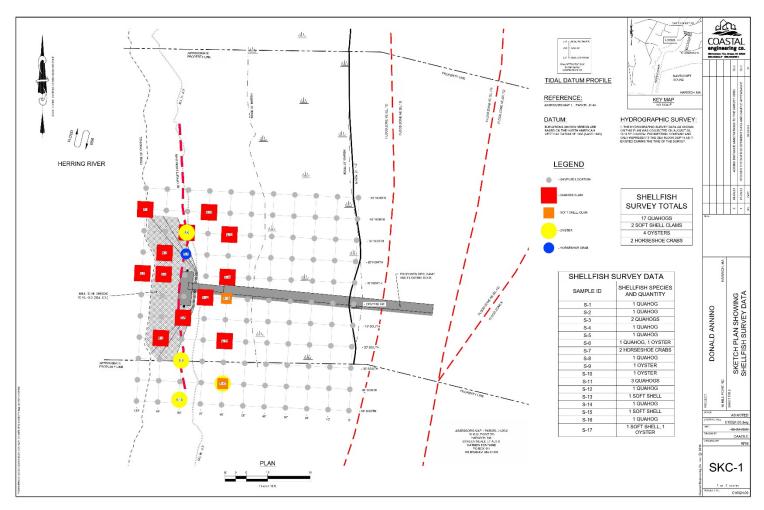


Figure 5. Shellfish abundance within Survey Area, 14 Mill Point Road, Harwich, MA (S-# indicates unique sample identification number).

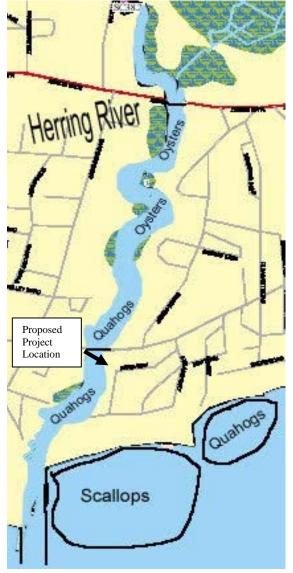


Figure 6. Town of Harwich designated shellfish areas.

Survey Results

Megalodon's survey found no eelgrass within the project area, which was consistent with MADEP figures provided within the MassGIS OLIVER website. The shoreline had saltmarsh, peat, and sediment consistency of medium to fine sand mixed with silts based on visual inspection. The sediment consistency transitioned to organic rich muddy substrate into the subtidal area. (Figure 4). A total of seventeen (17) quahogs, four (4) American oysters, two (2) softshell clams and (2) horseshoe crabs (*Limulus polyphemus*) were identified from seventeen (17) of the one hundred twenty one (121) sample stations (Figure 3). Within the dredge footprint, seven (7) quahogs and two (2) oysters were sampled from six (6) of the fourteen (14) stations in this area (Figure 5) were identified from anoxic mud as indicated by presence of hydrogen sulfide and black color of the sediment, at and below the sediment-water interface to an observable depth of 12 inches.

Conclusions

The shellfish survey was performed using a methodology that accurately maps shellfish abundance in the area of the proposed project, as well as areas in vicinity. Based on observations made during the shellfish survey, the intertidal zone is designated by MADMF as suitable shellfish habitat for quahogs and softshell clams. No eelgrass was observed within the surveyed area. Few shellfish were sampled within the project area, including the proposed dredge footprint. Transects closes to the navigation channel were comprised of mud that was anoxic and highly sulfidic. Anoxic sediment with high concentrations of hydrogen sulfide does not provide optimal shellfish habitat. Sediment that is anoxic with hydrogen sulfide creates an acidic environment that degrades the calcerous shells of quahogs, soft shell clams and oysters, in particular the thin shells of juvenile stages making the habitat suboptimal for the sustainability of juvenile stages of shellfish. Adult quahogs and oysters, which have thicker shells, may be able to exist in anoxic sediment if the overlying water column remains oxidized but their shells will also degrade, and this will reduce their likelihood of survivability. Dredging, as proposed, will remove this anoxic sediment and may benefit shellfish habitat by exposing and re-oxidizing existing sediment.

Pertinent Resource Areas as defined by Commonwealth of Massachusetts 310 Code of Massachusetts Regulations (CMR) include:

- Land Under the Ocean Massachusetts 310 CMR 10.25
- Salt Marsh Massachusetts 310 CMR 10.32
- Land Containing Shellfish 310CMR 10.34
- There are no designated coastal dunes, mud flats and/or rocky intertidal natural resources associated with the proposed project

Massachusetts 310CMR 10.25 Land Under the Ocean Performance Standards

Massachusetts 310CMR 10.25 states: "When land under the ocean or nearshore areas of land under the ocean are found to be significant to the protection of marine fisheries, protection of wildlife habitat, storm damage prevention or flood control, 310CMR 10.25(3) through (7) shall apply". These include as summarized below:

(5) Project not included in 310CMR 10.25(3) or (4) which affect nearshore areas of land under the ocean shall not cause adverse effects by altering the bottom topography so as to increase storm damage, erosion, coastal banks, dunes or salt marshes.

(6) Projects not included in 310 CMR 10.25(3) which affect land under the ocean shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries habitat or wildlife habitat caused by:

- (a) alterations in water circulation;
- (b) destruction of eelgrass (Zostera marina) or widgeon grass (Ruppia maritima) beds;
- (c) alterations in the distribution of sediment grain size;

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(d) changes in water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants; or (e) alterations of shallow submerged lands with high densities of polychaetes, mollusks or macrophytic algae.

(7) Notwithstanding the provisions of 310 CMR 10.25(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Pertaining to Massachusetts 310CMR 10.25 Land Under the Ocean:

The proposed Project will not adversely affect sediment transport, destroy or pollute fisheries and shellfish habitat or add nutrients to the Herring River. There is no eelgrass or widgeon grass in the Project area, there are no rare vertebrates or invertebrate species identified that would be affected by this project. The dredging and removal of the eutrophic organic mud will enhance tidal flushing and oxygenation of the sediment.

Massachusetts 310CMR 10.32 Salt Marsh Performance Standards

Salt marsh is defined as a coastal wetland that extends landward up to the highest high tide line, that is the highest spring tide of the year and is characterized by plants that are well adapted to prefer living in saline soils. Dominant plants within saltmarshes typically include salt meadow cord grass (*Spartina patens*), and/or salt marsh cord grass (*Spartina alterniflora*).

As stated in 310 CMR 10.32 (4) a small project within a salt marsh, such as an elevated walkway or other structure which has no adverse effects other than blocking sunlight from underlying vegetation for a portion of each day, may be permitted if such a project complies with other applicable requirements of 310 CMR 10.21 through 10/37. Additionally, a project which will restore or rehabilitate a salt marsh or create a salt marsh may be permitting in accordance with 310 CMR 10.11 through 10.14, 10.24(8) and/or 10.53(4). In subsection (6) no project may be permitted which will have an adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37 should the salt marsh area be determined to be significant to the protection of marine fisheries, the prevention of pollution, storm damage prevention or ground water supply 310 CMR 10.32.

Pertaining to Massachusetts 310CMR 10.32 Salt Marshes

The proposed Project is a small project such as an elevated walkway and meets the performance standards as stated within 310CMF 10.32.

Massachusetts 310CMR 10.34 Land Containing Shellfish Performance Standards

Massachusetts 310CMR 10.34 defines land containing shellfish as follows:

"Land Containing Shellfish means land under the ocean, tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when any such land contains shellfish. Significance. Land containing shellfish shall be found significant to the protection of land containing shellfish and to the protection of marine fisheries when it has been identified and mapped as follows:

(a) by the conservation commission or the Department in consultation with the Division of Marine Fisheries and based upon maps and designations of the Division of Marine Fisheries;

or

(b) by the conservation commission or the Department, based upon maps and written documentation of the shellfish constable or the Department. In making such identification and maps the following factors shall be taken into account and documented: the density of shellfish, the size of the area and the historical and current importance of the area to recreational or commercial shellfishing.

Except as provided in 310 CMR 10.34(5), any project on land containing shellfish shall not adversely affect such land or marine fisheries by a change in the productivity of such land caused by:

- (a) alterations of water circulation;
- (b) alterations in relief elevation;

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- (c) the compacting of sediment by vehicular traffic;
- (d) alterations in the distribution of sediment grain size;
- (e) alterations in natural drainage from adjacent land; or

(f) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of salinity, dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.

(6) In the case of land containing shellfish defined as significant in 310 CMR 10.34(3)(b) (i.e., those areas identified on the basis of maps and designations of the Shellfish Constable), except in Areas of Critical Environmental Concern, the issuing authority may, after consultation with the Shellfish Constable, permit the shellfish to be moved from such area under the guidelines of, and to a suitable location approved by, the Division of Marine Fisheries, in order to permit a proposed project on such land. Any such project shall not be commenced until after the moving and replanting of the shellfish have been commenced.

(7) Notwithstanding 310 CMR 10.34(4) through (6), projects approved by the Division of Marine Fisheries that are specifically intended to increase the productivity of land containing shellfish may be permitted. Aquaculture projects approved by the appropriate local and state authority may also be permitted.

(8) Notwithstanding the provisions of 310 CMR 10.34(4) through (7), no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37".

Pertaining to Massachusetts 310CMR 10.34 Land Containing Shellfish:

According to 310 CMR 10.34(5) Notwithstanding the provisions of 310 CMR 10.34(4), "projects which temporarily have an adverse effect on shellfish productivity but which do not permanently destroy the habitat maybe permitted if the land containing shellfish can and will be returned substantially to its former productivity in less than one year from the commencement of work, unless an extension of the Order of Conditions is granted, in which case such restoration shall be completed within one year of such extension".

- Water circulation would not be adversely changed. Tidal currents in the area are small and would not be altered by the placement of the proposed pilings.
- There will not be an increase in compacting of sediment by vehicular traffic as the area will have a small amount of dredging to provide sufficient water depth for the proposed vessel to be used by the homeowner.
- The project will not significantly alter the distribution of sediment grain size, instead it will create a small area to provide sufficient water depth for the vessel and will remove sediment observed to be anoxic in this area.
- The project will not adversely alter the natural drainage from adjacent land.
- The project will not change the water quality, including, salinity, dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.
- The dredging and removal of the eutrophic organic mud will enhance shellfish habitat.
- This project will have no adverse effect on rare vertebrate or invertebrate species as the proposed Project is not within an area considered as habitat for rare wildlife for coastal wetlands.
- Based on sampling results, shellfish are located adjacent to the neighboring pier and float, therefore it is anticipated that shellfish will similarly occupy the area of the proposed project.

Town of Harwich Wetlands Protection Act 1.10 Water Dependent Structures – Tidal Waters Pertinent Town of Harwich Performance Standards

- Any structure proposed for siting in a salt marsh, or in a body of water adjacent to a salt marsh, shall not destroy any portion of the salt marsh or its substratum, nor have any adverse impact on the productivity of the salt marsh. Additionally, the structure should be oriented to minimize the effect of vessels using the structure on the adjacent salt marsh and in its substratum.
- The presence or absence of shellfish at a proposed site must be determined by a shellfish survey submitted by the applicant. The survey shall include existing populations of all sizes of commercially important species of shellfish (soft and hard shell clams, scallops, mussels) and shall also include

MEG LODON

ENVIRONMENTAL LLC

other species of mollusks which may indicate the capacity of the area to support commercially important species. The survey shall also include a description of shell fragments, if feasible, and references, if available, to historical information regarding the presence or absence of shellfish species

Pertaining to Town of Harwich Wetlands Protection Act 1.10 Water Dependent Structures – Tidal Waters

- The proposed project will be designed minimize and avoid potential impacts to any portion of the salt marsh or its substratum that may be crossed by the proposed Project structures. It will be designed to not have adverse impact to the productivity of the salt marsh.
- A shellfish survey was performed that accurately assessed for existing populations of commercially important species of shellfish and included other species not only of mollusks that may indicate the capacity of the area to support commercially important species with a description of sediment and other characteristics observed.
- The proposed project will not have significant impact to shellfish populations or salt marsh habitat based on the Project design and engineering.


Water quality degradation has resulted from long term nitrogen and organic carbon loading causing eutrophication, which has greater potential impacts to shellfish and salt marsh habitat. Sediment in the area where dredging is proposed was anoxic, likely as a consequence of the eutrophication process. Eutrophication in estuarine habitats is not only endemic to Harwich but throughout Cape Cod, Martha's Vineyard, and Nantucket. This project proposes to remove anoxic sediment and by doing so, water quality and shellfish habitat may improve. Additionally, the eight (8) quahogs and two (2) oysters can be easily mitigated through the applicant's desire to provide the Town of Harwich with funding to be used specifically for shellfish seeding and the Town's Waterways Commission has approved the Project as currently proposed.

Please do not hesitate to contact me if you have any questions.

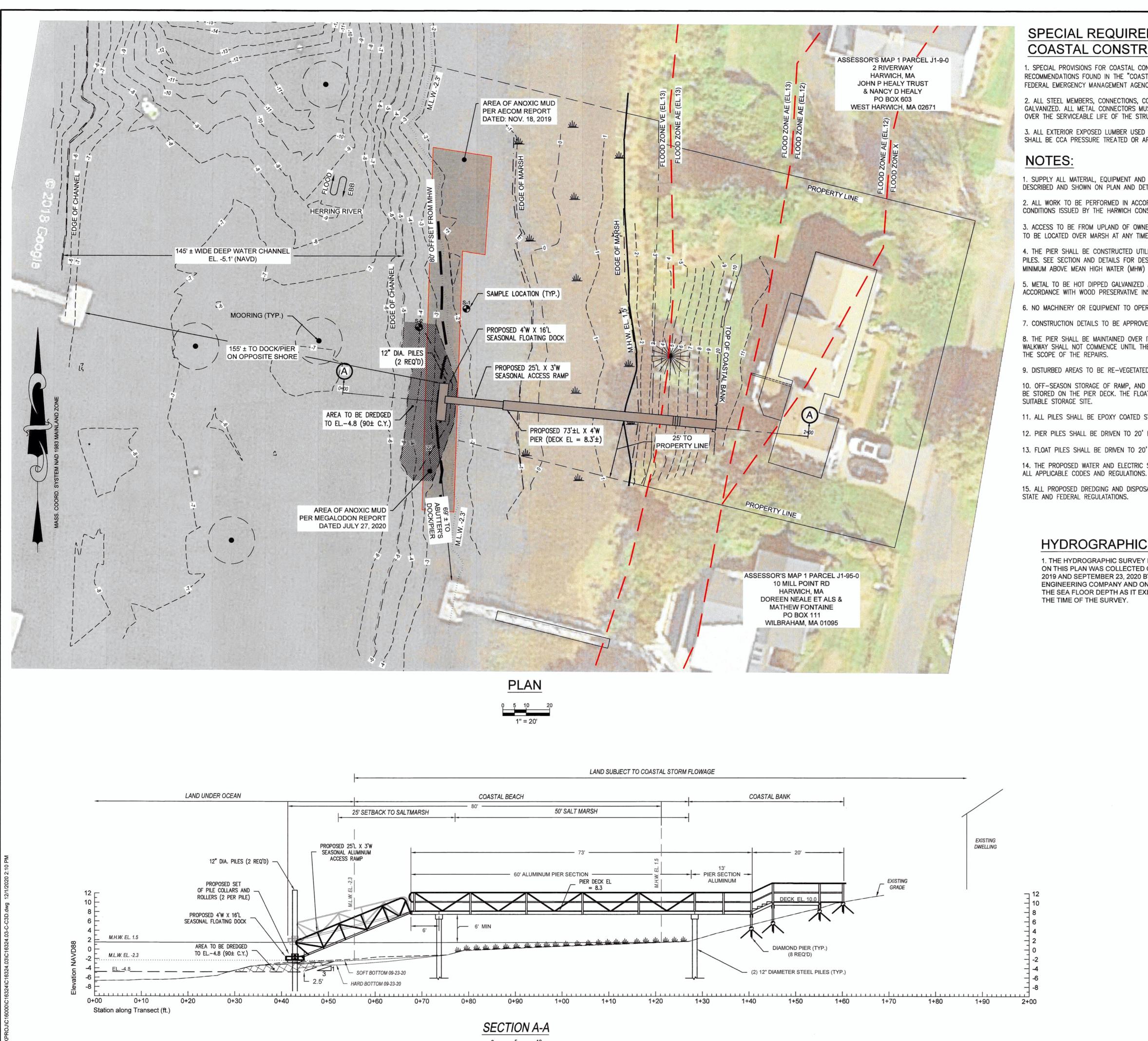
Sincerely yours,

amilla I. neutros

Pamela Neubert, Ph.D. Principal Megalodon Environmental, LLC megalodonev@gmail.com



Datum: NAD27



1"=10'

SPECIAL REQUIREMENT FOR COASTAL CONSTRUCTION:

1. SPECIAL PROVISIONS FOR COASTAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS FOUND IN THE "COASTAL CONSTRUCTION MANUAL" AS PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA-55).

OVER THE SERVICEABLE LIFE OF THE STRUCTURE.

SHALL BE CCA PRESSURE TREATED OR APPROVED EQUAL.

NOTES:

1. SUPPLY ALL MATERIAL, EQUIPMENT AND LABOR FOR CONSTRUCTION OF WALKWAY, RAMP AND FLOAT AS DESCRIBED AND SHOWN ON PLAN AND DETAILS.

2. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND THE ORDER OF CONDITIONS ISSUED BY THE HARWICH CONSERVATION COMMISSION.

3. ACCESS TO BE FROM UPLAND OF OWNER'S PROPERTY OR FROM WORKING BARGE. WORKING BARGE NOT TO BE LOCATED OVER MARSH AT ANY TIME. STAGING AREA FOR MATERIALS TO BE IN OWNER'S DRIVEWAY.

MINIMUM ABOVE MEAN HIGH WATER (MHW) AS SHOWN ON THE PLAN DETAILS.

5. METAL TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. TIMBER TO BE PRESSURE TREATED IN ACCORDANCE WITH WOOD PRESERVATIVE INSTITUTE OF AMERICA.

6. NO MACHINERY OR EQUIPMENT TO OPERATE DIRECTLY ON THE MARSH.

7. CONSTRUCTION DETAILS TO BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION. 8. THE PIER SHALL BE MAINTAINED OVER ITS USEFUL LIFE. ANY FUTURE MAINTENANCE REQUIRED ON THE WALKWAY SHALL NOT COMMENCE UNTIL THE HARWICH CONSERVATION AGENT HAS FIRST BEEN NOTIFIED AS TO

THE SCOPE OF THE REPAIRS.

9. DISTURBED AREAS TO BE RE-VEGETATED TO MATCH PRE-CONSTRUCTION CONDITIONS. 10. OFF-SEASON STORAGE OF RAMP, AND FLOAT TO BE AN APPROVED UPLAND LOCATION. THE RAMP MAY BE STORED ON THE PIER DECK. THE FLOATS WILL BE TOWED TO THE TOWN LANDING AND TRUCKED TO A SUITABLE STORAGE SITE.

11. ALL PILES SHALL BE EPOXY COATED STEEL.

STATE AND FEDERAL REGULATATIONS.

HYDROGRAPHIC SURVEY:

1. THE HYDROGRAPHIC SURVEY DATA AS SHOWN ON THIS PLAN WAS COLLECTED ON AUGUST 28, 2019 AND SEPTEMBER 23, 2020 BY COASTAL ENGINEERING COMPANY AND ONLY REPRESENTS THE SEA FLOOR DEPTH AS IT EXISTED DURING THE TIME OF THE SURVEY.

2. ALL STEEL MEMBERS, CONNECTIONS, CONNECTORS, ETC. SHALL BE HOT DIPPED GALVANIZED. ALL METAL CONNECTORS MUST BE ROUTINELY INSPECTED AND MAINTAINED

3. ALL EXTERIOR EXPOSED LUMBER USED FOR STRUCTURAL FRAMING, STAIRS, RAILING, ETC.

4. THE PIER SHALL BE CONSTRUCTED UTILIZING CENTER TO CENTER SPANS AS SHOWN BETWEEN SUPPORT PILES. SEE SECTION AND DETAILS FOR DESIGN DIMENSIONS. WALKWAY TO BE CONSTRUCTED AND ELEVATED 5

12. PIER PILES SHALL BE DRIVEN TO 20' MINIMUM EMBEDMENT

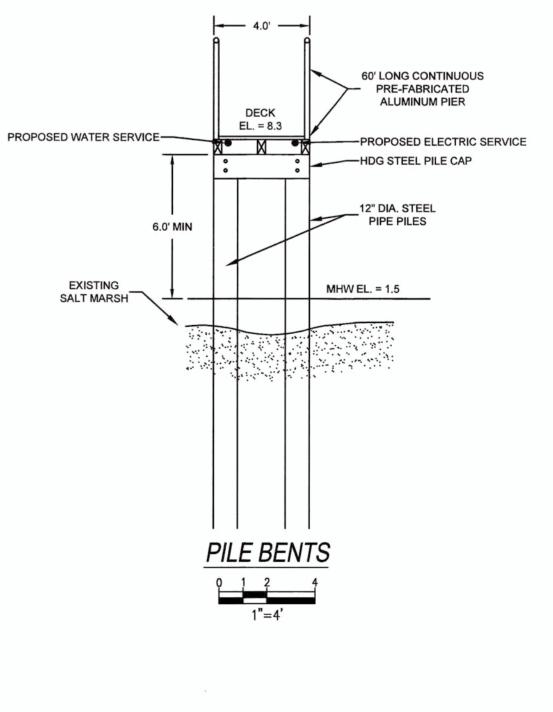
13. FLOAT PILES SHALL BE DRIVEN TO 20' MINIMUM EMBEDMENT.

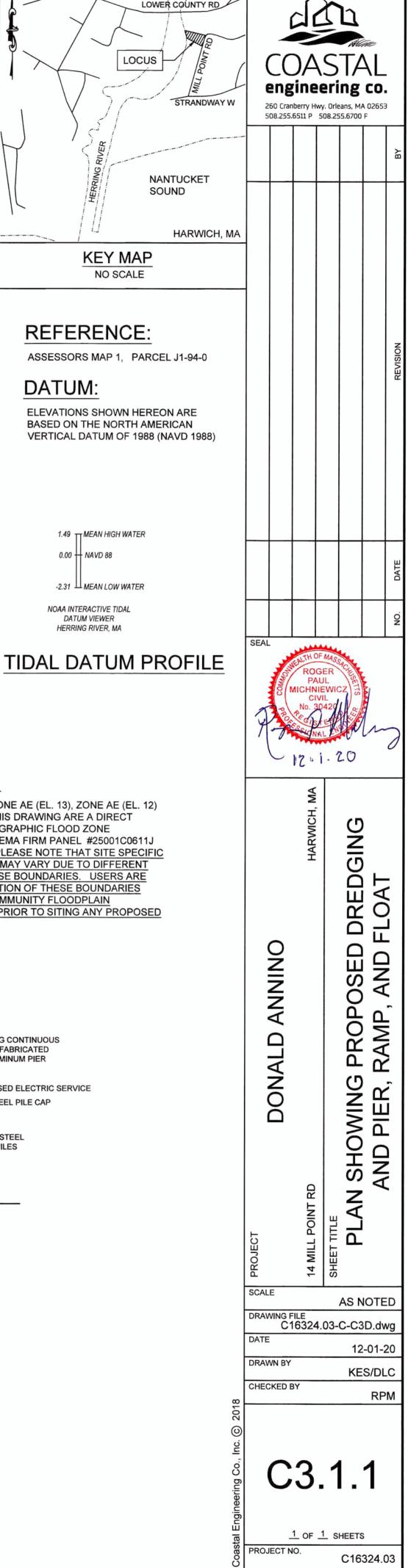
14. THE PROPOSED WATER AND ELECTRIC SERVICES TO THE PIER SHALL BE INSTALLED IN COMPLIANCE WITH

15. ALL PROPOSED DREDGING AND DISPOSAL SHALL BE PERFORMED IN STRICT COMPLIANCE WITH ALL LOCAL,

FLOOD ZONE:

FLOOD ZONE VE (EL. 13), ZONE AE (EL. 13), ZONE AE (EL. 12) AND ZONE X SHOWN ON THIS DRAWING ARE A DIRECT REPRESENTATION OF THE GRAPHIC FLOOD ZONE BOUNDARIES SHOWN ON FEMA FIRM PANEL #25001C0611J EFFECTIVE JULY 16, 2014. PLEASE NOTE THAT SITE SPECIFIC FLOODPLAIN BOUNDARIES MAY VARY DUE TO DIFFERENT NTERPRETATIONS OF THESE BOUNDARIES. USERS ARE ADVISED TO VERIFY LOCATION OF THESE BOUNDARIES WITH THE DESIGNATED COMMUNITY FLOODPLAIN MANAGERS AND/OR FEMA PRIOR TO SITING ANY PROPOSED STRUCTURES.





LOWER COUNTY RD