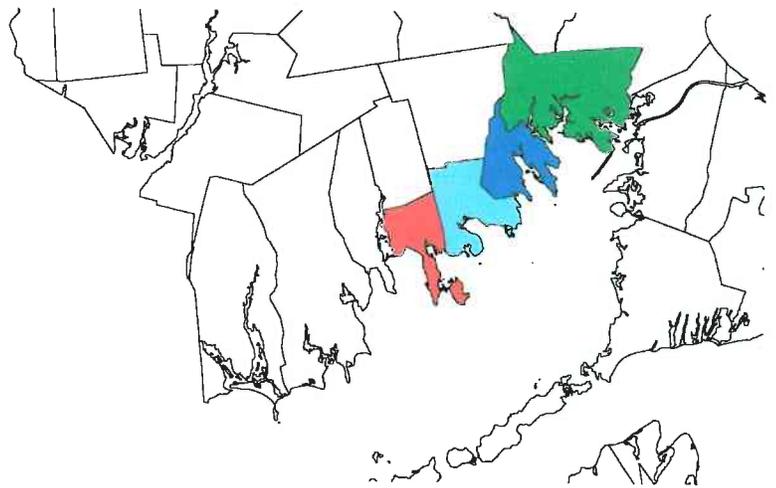


*Massachusetts Coastal Infrastructure
Inventory and Assessment Project
Coastal Hazards Commission*

South Coastal



Fairhaven
Mattapoissett
Marion
Wareham



July 6, 2009

Prepared for:

**Massachusetts Department of
Conservation and Recreation
Hingham, Massachusetts**

Presented by:

**Bourne Consulting Engineering
Franklin, Massachusetts**

MASSACHUSETTS COASTAL INFRASTRUCTURE INVENTORY AND ASSESSMENT PROJECT

South Coastal

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Section I

Coastal Hazards Infrastructure and Assessment Program

INTRODUCTION

PURPOSE

DEVELOPMENT OF MassGIS DATABASE ATTRIBUTES

DEVELOPMENT OF REPAIR / RECONSTRUCTION COSTS

***Massachusetts Coastal Infrastructure
Inventory and Assessment Project
Coastal Hazards Commission***

Section I – Coastal Hazards Infrastructure and Assessment Program

INTRODUCTION

The Project and Client

The Commonwealth of Massachusetts has initiated a Coastal Hazards Commission (CHC) to identify the vulnerability of the state to coastal hazards. As one of five working groups working under the CHC, the 20-Yr Infrastructure Plan was to establish a prioritization for the repair of coastal structures. The focus areas of the Working Group include:

- Publicly owned infrastructure
- Infrastructure for which State is responsible
- Inventory of public hazards infrastructure
- Evaluation on conditions
- Development for a prioritization of work
- Estimation of capital and maintenance costs

The 20-Yr Infrastructure Working Group is led by Representative Frank Hynes with CZM as the lead State Agency overseeing the management of the project. The Massachusetts coastline has been broken up into 4 major regions consisting of the North Shore, Boston, South Coast, and the Cape and Islands. The South Shore (the Towns of Hull, Cohasset, Seekonk, Hingham, Plymouth, Kingston, Scituate and Duxbury) was previously evaluated by Bourne Consulting Engineering as a demonstration project in 2006.

Consultant Team

The consultant team that performed the demonstration project was led by Bourne Consulting Engineering (*BCE*) of Franklin, MA who was responsible for overall project management, specified areas of field assessments, and research. Assisting *BCE* was Applied Coastal Research and Engineering Inc. of Mashpee, MA, Childs Engineering Corporation, of Medfield, MA., and Waterfront Engineer LLC of Stratham, NH.

PURPOSE

Study Purpose

CZM seeks to identify the capacity of Massachusetts coastal structures to resist major coastal storms and prevent storm damage. In working toward this goal, CZM has initiated a program to perform an assessment of Commonwealth owned and/or maintained coastal structures. The first phase of this program was the performance of a demonstration project for coastal structures located on the South Shore. The demonstration project identified existing structures, their general conditions, ability to provide coastal protection and the probable cost for repairs. The information collected and developed has been incorporated into the MassGIS system to allow use for developing a 20 Year Coastal Infrastructure Plan.

The demonstration project served as a basis for the current statewide inventory assessment of all Commonwealth coastal structures and the needs for their maintenance and/or repair.

Goals of Study

The goals of the Massachusetts Coastal Infrastructure Inventory and Assessment Project include:

- To identify all the coastal structures the state either owns or has responsibility to maintain for the 4 regions included within the study
- Of the structures identified, determine the structure location and characteristics, the structure condition relative to providing coastal protection and the structure importance in relation to what it is protecting.
- To the degree possible, identify the structure elevation and the FIRM mapping flood elevation and category.
- To the degree possible, identify structure owner and available documents from local, state and federal agencies.
- To establish an estimated cost to rehabilitate the coastal structures to provide the level of project established in the structure's original design.
- Provide the information in a format compatible for incorporation into the MassGIS system

Limit of Study

Due to the time constraints and the amount of effort necessary to collect, process and compile the information, the following are identified as limitations of the information presented:

- All property ownership was taken as presumed. No legal investigation of ownership was performed during the project. Property ownership is based on town assessor maps. Where structures were located outshore of assessor map defined property lines, it was assumed to be Town land unless other information indicated otherwise. Where structures were located outshore of Mean Low Water, property is assumed to be State owned.
- The structure ownership was based on assessor maps and research at the local, state and federal levels. Where there was indication of public work on a structure on Town land or on private property, the structure was presumed to be Town owned. Where the structure was on state property, the structure was presumed to be state owned. Where ownership of the structure was not clear but was located on private property, the structure ownership was defined as unknown.
- The study included town and state owned structures as it was assumed that most town owned structures received state funding at some level for construction and/or maintenance.
 - Structures that were determined to be private were not included.
 - Undocumented structures considered to be on private land, but having the potential to have been publicly built and/or maintained, were identified as having an "unknown ownership".
- The prioritizing of structures was based primarily on risk to general infrastructure and density of housing. Infrastructure included was buildings. The study did not consider all infrastructure issues including:
 - No consideration on utility impacts – water, electrical, sewer, gas
 - No consideration of roadway and bridge protection
 - Evacuation routes were not considered within the investigation
 - Location of Emergency Shelters were not included in priority assessments
- Research was performed at the local, state and federal levels. The local research was limited to location and documenting available coastal structure contract drawings. Research at DCR was restricted to available historic construction plans for coastal structures at the MA-DCR Waterways office in Hingham, MA, and MA-DCR Division of Urban Parks and Recreation in

Boston, MA. No investigation of state archives was performed. Research at MA DEP Chapter 91 and USACE was limited to recorded permits and licenses found in their files. No investigation was performed at the Registry of Deeds.

DEVELOPMENT OF MassGIS DATABASE ATTRIBUTES

The specific attributes that would be incorporated into the MassGIS system were developed based on the scope of work and the goals to be achieved. The following was established to standardize the data collection and presentation and to allow total flexibility for sorting by attributes in the final GIS database. The attributes identified below were input into a MS Access database which was used to manage the data from all eight communities within a single file.

Database Attributes

- Attribute Descriptions/Definitions

Structure Number: A unique structure number was given to each coastal structure. The number was based on existing numbering systems that include the State Department of Environmental Protection community number followed by the local community assessor's parcel numbering system. The last three digits of the number represent the structure within the parcel. Where structures extend over several parcels, the structure is referenced to a parcel that is approximately in the center of the structure. Where Town assessor's references include letters, those are also included within the structure number. Some communities have block numbering within their numbering system and these are included. Communities without block numbering still have the block numbering included but these are illustrated as all zeros for that specific segment.

Structures that are on Town property, which would otherwise not have a parcel number, are referenced to a parcel that is in the immediate vicinity of the coastal structure.

On this basis, the following is the general numbering convention:

CCC-MMM-BBB-PPP-SSS

| | | |
|--------|-----|---|
| Where: | CCC | DEP Community Number |
| | MMM | Community Map Number |
| | BBB | Block Number (000 if no block numbering system) |
| | PPP | Community Parcel Number |
| | SSS | Structure Number |

Property Ownership: All property ownership was on a "presumed" basis as no legal verification of ownership was performed. The ownership of the property was classified under four basic areas which were private ownership (Private), Town ownership (Local), Commonwealth of Massachusetts ownership (State), federal government ownership (Federal) or unknown. Property ownership was based on Town assessor's maps. Where the location was located above Mean Low Water, and not within a defined parcel, the property ownership was presumed to be the Town unless documentation was found to indicate otherwise. Where a structure was located offshore of Mean Low Water, the property ownership was presumed to be federal.

Structure Ownership: The ownership of all structures is presumed as no verification of ownership was performed. Ownership of the structure was determined by research into historic state and federal

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permits and the entity indicated on the permits as the applicant. Where no other information was found, the following was utilized:

- Structures located on private land but appearing to be significant structures were identified as owned by the Town or as “Unknown”. Unknown was used where there was a question of local or private ownership.
- Structures on Town property were assumed to be owned by the Town
- Structures that were located off-shore were presumed to be federally owned
- Structures that were identified as being privately owned were eliminated from the database

Basis of Ownership: The basis of structure ownership was provided to give rationale to the structure ownership and identified the research resource that identified the ownership or the methodology otherwise used. The responses utilized were limited to the following:

- DPW – DPW Employee Interview
- DCR - Contract Drawings
- DEP – Ch 91 License
- USACE – Permits
- Property Ownership
- Offshore Structure

Structure Owner's Name: Ownerships names reflect the presumed owner of publicly owned structures. As this was for public structures only, the ownership was restricted to the community name, the state agency or the federal agency.

Earliest Structure Record: The year of the oldest document located for the structure. The information is determined from the document research performed on the structure from local, state and federal agencies. If no documents could be found than this entry is denoted as “Unknown”. Where documentation of the structure could be found, the date from the oldest document was utilized.

Primary Structure / Secondary Structure: Many of the coastal structures consisted of combined structures which were rated separately. It was typically found that one structure was significantly more predominant (Ex. Bulkhead/Seawall) and was therefore identified as the Primary Structure while a smaller structure might exist in front (ex. Revetment) of it. The type, height and material of each structure are identified separately. The condition of each structure was based on the Primary Structure. Where there was no secondary structure, the fields were left blank.

Structure Type: The structure type was categorized into five basic coastal structure categories which were Bulkhead/Seawall, Revetment, Coastal Beach, Coastal Dune, and Jetty/Groin.

Structure Material: The identification of the coastal structure’s material of construction was performed and represents the primary material. Stone structures consisted of both mortared and non-mortared conditions.

Structure Height: Each type of structure was categorized by its visible height in feet which was broken into four specific ranges which are:

< 5 feet 5 to 10 feet 10 to 15 feet >15 feet

Structure Condition: A preliminary assessment of the condition for each structure was performed by the field teams. This was by visual observation only and no detailed investigation was performed. The condition assessments were based on a predefined five level rating system that ranged from Rating A for Excellent Condition to Rating F for Critical Condition. A detailed listing of the conditions and their definitions can be seen in Exhibit A.

Priority Rating: In order to account for the need for protection at any one site, a five level priority rating system was established. This allowed for consideration of public infrastructure protection, density of residential housing for development of structure overall importance for coastal protection. The ratings range from Level 1 for no infrastructure or residence protection to Level 5 for critical inshore infrastructure protection and/or high density residential. The detailed listing and definitions for the priority categories can be seen in Exhibit B.

Structure Repair / Reconstruction Cost: A preliminary estimation of construction costs to maintain or repair structures was made based on the preliminary field assessment of the structures. A Repair Cost Matrix was developed based on structure type, condition, height and material and can be seen in Exhibit C. Once each structure's type, height, and material classifications were determined, the cost per foot for the structure was determine from the Repair Cost Matrix and multiplied by the length of the structure to obtain the estimated repair/restoration cost. The cost matrix repair costs include a 20 percent construction cost contingency as well as 10 percent costs for engineering and permitting.

Structure Length: The length of each structure is provided and utilized in the development of the repair/reconstruction costs. The lengths are given to the nearest foot and taken as the linear distance along the structure, as determined by the GPS location, which takes into account structure angles and curvature.

Structure Elevation: The elevation of structures was determined in feet from existing information where available. The datum used is NAVD 88 and elevations are to the nearest foot. From a previous study much of the south shore coastal structures had elevations defined based on LIDAR mapping data. Where available structure documentation with elevations was found, in areas with no LIDAR data, the information was included within the structure information. Where there was no LIDAR information or existing documentation, the item has been left blank.

LIDAR (Light Detection and Ranging) is technology that is currently being used for high-resolution topographic mapping by mounting a LIDAR sensor, integrated with Global Positioning System (GPS) and inertial measurement unit (IMU) technology, to the bottom of aircraft and measuring the pulse return rate to determine surface elevations.

FEMA Zone and Elevation: For each structure the FEMA Flood Insurance Rate Maps (FIRM) were researched for their Flood Zone designation and their Base Flood Elevation from the most recent FIRM maps for the specific Town. The elevations are provided in feet on the same datum as the FIRM maps (NGVD) with no adjustments or conversions.

Structure Comments: The engineering team provided a brief description and comment on the structure at the time of the field assessments which is provided in support of the condition rating that was given for the structure.

Pictures: At the time of the field assessments, digital photographs were taken to provide a general overview of the structure. The number of pictures was limited to a maximum of six. The first photograph for each structure is shown on the Structure Assessment Form. The list of all photographs is provided on the form.

Town Documents: Town documents represent the structure information that could be found in the Town's DPW/Engineering Department records. Where particular records could be found, a table of document information was developed and included within the database with limited descriptions.

MA - DCR Documents: MA-DCR documents represent the structure information that could be found within DCR – Waterways office in Hingham. Where particular records could be found, a table of document information was developed and included within the database with limited descriptions.

MA - DEP Chp. 91 Licenses: MA-DEP Chapter 91 license documents represent the structure information that could be found within MA-DEP Chp 91 records in Boston. Where particular records could be found, they were scanned as pdf files and attached to the structure through the GIS database information. In addition, a table of license document information was developed and included within the database with limited descriptions.

USACE Permits: USACE Permits represent the structure information that could be found within the Army Corp of Engineers regulatory office in Concord, MA. Where particular records could be found, they were scanned as pdf files and attached to the structure through the GIS database information. In addition, a table of license document information was developed and included within the database with limited descriptions.

DEVELOPMENT OF REPAIR / RECONSTRUCTION COSTS

A matrix to be used within the database has been developed to assess likely rehabilitation/repair costs to restore the coastal structures to their original design condition. No attempt was made to assess the level of exposure and associated level of protection that might be required to meet current design standards for these structures. These costs are only an estimation to bring these structures back to their original design intent based on 2006 construction costs.

The development of the cost matrix is based on the following:

Structure Condition Ratings – The condition of the coastal structures was determined in the field by the survey crew which was led by an engineer with waterfront structure assessment and design experience. The definitions of the rating criteria utilized for the assessments are presented elsewhere.

The cost implications for each rating condition are as follows:

- **A Rating** Structures not requiring any maintenance, repair or rehabilitation cost and would not be expected to experience damage if subject to a major coastal storm event
- **B Rating** Structures requiring limited or no repair and would be expected to experience only minor damage if subject to a major coastal storm event. The value of these maintenance costs is assumed to be 10 percent of the construction cost.
- **C Rating** Structures requiring moderate to significant level of repair or reconstruction and would be expected to experience significant damage if subject to a major coastal storm event. The structure is presumed to be effective under a major storm event. The value of the repair costs is assumed to be 50 percent of the construction cost.
- **D Rating** Structures requiring significant level of rehabilitation or total reconstruction and would be expected to experience significant damage or possibly fail if subject to a major coastal storm event. The value of the repair costs is assumed to be 100 percent of the construction cost.

- **F Rating** Structures requiring complete reconstruction and would expect to provide little or no protection from a major coastal storm event. The value of the repair costs is assumed to be 100 percent of the construction cost plus a cost for removal/disposal of the original structure.

Height of Structure – Height of a structure is a major factor in the structure cost and therefore was identified as a significant factor in assessing rehabilitation/repair construction costs. The structures were broken down into four major categories which were:

| | |
|---------|---|
| < 5' | Structures that were less than five feet in height |
| 5'-10' | Structures five to 10 feet in height |
| 10'-15' | Structures over 10 feet to 15 feet in height |
| > 15' | Structures greater than 15 feet in height – assumed 20 feet typical |

Length of Structure – Length is based on field GPS location with measurements rounded to the nearest foot.

Bulkhead / Seawall Structures – These structures are assumed to be constructed out of concrete, steel, stone or wood with each having its own criteria for establishing costs. For each structure type the following was assumed:

- **Concrete Seawalls** – These walls were assumed to be gravity structures with the volume of concrete used based on the bottom width being one-half of the structure height. Costs of construction were based on a per cubic yard estimate that varied from \$350 to \$630 per cubic yard depending on the structure height. Values for excavation and demolition of existing structure were also included.
- **Stone Seawalls** - These walls were treated the same as concrete seawalls and assumed to be gravity structures with the volume of the structure based on the bottom width being one-half of the structure height. Costs of construction were based on a per cubic yard estimate that varied from \$350 to \$630 per cubic yard depending on the structure height. Values for excavation and demolition of existing structure were also included.
- **Steel Bulkheads** – Steel bulkheads were presumed to be constructed with steel sheet piling. Tie back systems were presumed for structures 10 feet or greater in height. Shorter walls were assumed to have a cantilever design. The total depth of sheeting was presumed to be two times the exposed height. The cost for construction varied from \$40 per square foot to \$60 per square foot plus the cost of excavation and demolition.
- **Timber Bulkheads** – Timber bulkheads were presumed to be constructed with timber piles at eight foot on center, horizontal wales and vertical four inch sheathing. The unit costs for installed materials used were \$1,500 per pile and \$7.50 per bfm.

Revetment Structures – Revetment structures were presumed to be constructed of dry placed (no concrete) stone with a two on one slope and a horizontal toe and crown equal to the thickness layer established for each height condition. The total thickness of the revetment layers varied from six to ten feet with the cost of armor and under-layer stone assumed to be \$50 per ton and the crushed stone base to be \$15 per ton.

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Groins and Jetties – Groins and jetties were assumed to be the same materials and construction as the revetment structures but would have two sides and therefore double the quantities.

Coastal Beaches – Costs for restoration of Coastal beaches presumed the placement of beach renourishment sands at a 1-on-20 slope over the existing beach conditions. The cost for deposition of sand assumed relatively close source of material and utilized \$20 per cubic yard for the material installed.

Coastal Dunes – Restoration of coastal dunes assumed a cross section of renourished sand with a one-on-four slope on one side of a 25 foot width at the defined dune height. The cost for deposition of sand assumed relatively close source of material and utilized \$20 per cubic yard for the material installed.

Contingency – A contingency of 20 percent was added to all costs to reflect the unknowns associated with this level of rehabilitation/repair estimating.

Engineering and Regulatory Approvals – A ten percent increase to the cost matrix prices was assessed to represent the engineering design and regulatory approval requirements for the restoration of these structures.

EXHIBIT A

Structure Condition Table – 5 Level Rating System

| Preliminary Condition Assessment | | Definition Based Upon Perceived Immediacy of Action and Potential to Cause Damage if Not Corrected | Level of Action Required |
|---|-----------|--|---------------------------------|
| A | Excellent | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm | None |
| B | Good | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure | Minor |
| C | Fair | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide additional material for full protection and extended life | Moderate |
| D | Poor | Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | Major |
| F | Critical | Conditions of structure/landform may warrant emergency stabilization as failure may result in potential loss of property and/or life. Landform eroded, loss of integrity Structure exhibits critical levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure provides little or no protection from a major coastal storm. Actions taken to totally reconstruct structure to regain full capacity. Landform stability is severely compromised, rate of erosion/material loss may be increasing, and landform does not provide adequate protection from a major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | Immediate |

EXHIBIT B

Priority Rating System - 5 Level Rating System

| Preliminary Priority Level Assessment | | Level Based Upon Perceived Immediacy of Action and Presence of Potential Risk to Inshore Structures if Not Corrected | Level of Action Required |
|--|------------------------------|---|---|
| I | None | No Inshore Structures or Residential Dwelling Units Present | Long Term Planning Considerations |
| II | Low Priority | Inshore Structures Present with Limited potential for Significant Infrastructure Damage | Future Project Consideration |
| III | Moderate Priority | Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline) | Consider for Active Project Improvement Listing |
| IV | High Priority | High Value Inshore Structures with Potential for Infrastructure Damage and/or Moderate Density Residential Dwellings (1-10 dwellings impacted / 100 feet of shoreline) | Consider for Next Project Construction Listing |
| V | Immediate / Highest Priority | Critical Inshore Structures Present with Potential for Infrastructure Damage and/or High Density Residential Dwellings Conditions of structure may warrant emergency stabilization as failure may result in potential loss of property and/or life. (>10 dwellings impacted / 100 feet of shoreline) | Consider For Immediate Action Due to Public Safety and Welfare Issues |

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CZM SOUTH SHORE COASTAL INFRASTRUCTURE INVENTORY AND ASSESSMENT PROJECT

EXHIBIT C

September 14, 2006

REPAIR / REHABILITATION COSTING DATA

Cost per linear foot of structure

| STRUCTURE TYPE | STRUCTURE MATERIALS | STRUCTURE HEIGHT | STRUCTURE CONDITION RATING | | | | |
|--------------------------|---------------------|------------------|----------------------------|-------|---------|---------|---------|
| | | | A | B | C | D | F |
| BULKHEAD/ SEAWALL | CONCRETE | Under 5 Feet | \$0 | \$84 | \$425 | \$850 | \$983 |
| | | 5 To 10 Feet | \$0 | \$152 | \$759 | \$1,518 | \$1,782 |
| | | 10 To 15 Feet | \$0 | \$251 | \$1,254 | \$2,508 | \$2,970 |
| | | Over 15 Feet | \$0 | \$396 | \$1,980 | \$3,960 | \$4,752 |
| | STEEL | Under 5 Feet | \$0 | \$54 | \$273 | \$546 | \$680 |
| | | 5 To 10 Feet | \$0 | \$165 | \$825 | \$1,650 | \$1,848 |
| | | 10 To 15 Feet | \$0 | \$251 | \$1,254 | \$2,508 | \$2,772 |
| | | Over 15 Feet | \$0 | \$343 | \$1,716 | \$3,432 | \$3,795 |
| | STONE | Under 5 Feet | \$0 | \$84 | \$425 | \$850 | \$983 |
| | | 5 To 10 Feet | \$0 | \$152 | \$759 | \$1,518 | \$1,782 |
| | | 10 To 15 Feet | \$0 | \$251 | \$1,254 | \$2,508 | \$2,970 |
| | | Over 15 Feet | \$0 | \$396 | \$1,980 | \$3,960 | \$4,752 |
| | WOOD | Under 5 Feet | \$0 | \$86 | \$431 | \$862 | \$994 |
| | | 5 To 10 Feet | \$0 | \$127 | \$632 | \$1,265 | \$1,463 |
| | | 10 To 15 Feet | \$0 | \$161 | \$804 | \$1,608 | \$1,872 |
| | | Over 15 Feet | \$0 | \$202 | \$1,008 | \$2,017 | \$2,380 |
| COASTAL BEACH | SAND | Under 5 Feet | \$0 | \$26 | \$132 | \$264 | \$264 |
| | | 5 To 10 Feet | \$0 | \$127 | \$634 | \$1,267 | \$1,267 |
| | | 10 To 15 Feet | \$0 | \$224 | \$1,122 | \$2,244 | \$2,244 |
| | | Over 15 Feet | \$0 | \$396 | \$1,980 | \$3,960 | \$3,960 |
| COASTAL DUNE | SAND | Under 5 Feet | \$0 | \$18 | \$93 | \$186 | \$186 |
| | | 5 To 10 Feet | \$0 | \$48 | \$238 | \$476 | \$476 |
| | | 10 To 15 Feet | \$0 | \$79 | \$395 | \$790 | \$790 |
| | | Over 15 Feet | \$0 | \$132 | \$660 | \$1,320 | \$1,320 |
| REVETMENT | STONE | Under 5 Feet | \$0 | \$66 | \$333 | \$664 | \$730 |
| | | 5 To 10 Feet | \$0 | \$120 | \$601 | \$1,201 | \$1,300 |
| | | 10 To 15 Feet | \$0 | \$157 | \$781 | \$1,564 | \$1,696 |
| | | Over 15 Feet | \$0 | \$247 | \$1,234 | \$2,468 | \$2,666 |
| GROIN | STONE | Under 5 Feet | \$0 | \$132 | \$664 | \$1,328 | \$1,460 |
| | | 5 To 10 Feet | \$0 | \$240 | \$1,201 | \$2,402 | \$2,600 |
| | | 10 To 15 Feet | \$0 | \$314 | \$1,564 | \$3,128 | \$3,392 |
| | | Over 15 Feet | \$0 | \$494 | \$2,468 | \$4,937 | \$5,333 |

NOTE: Repair / Rehabilitation Costs include 10% for engineering and regulatory approvals and 20 % construction contingency.

Section II

Fairhaven

Section II – Community Findings – Town of Fairhaven

COMMUNITY DESCRIPTION

The Town of Fairhaven consists of a land area of 12.41 square miles out of a total area of 14.1 square miles and had a population of 16,159 in the 2000 census. The Town is located on the south coast of Massachusetts and its location can be seen on this report’s cover. The estimated length of shoreline is 12.5 miles that are directly exposed to open ocean. The Town is protected from major coastal storms by both natural and man-made shoreline structures that require maintenance to insure the long term protection of its coastline. The man-made and publicly owned structures that protect the Town were investigated for their ability to provide adequate protection from major coastal storms. Structures have been identified as publicly owned, including coastal dunes and beaches, based on evidence of investment of public funds made to create/enhance/maintain these structures. The assessment did not include floating or pile supported structures as they are assumed not to provide any significant coastal protection from major storm events.

STRUCTURE INVENTORY

Within the Town of Fairhaven, there were 17 structures which had public or unknown ownership which provide significant coastal protection. The location of the structures can be seen in Sheets 1 through Sheet 7 in Section II-B of this report. The structures were categorized by their type and by their structural condition based on a preliminary field assessment. The distribution of structures by type and condition can be seen in the following table:

STRUCTURE TYPE AND QUANTITY - Town of Fairhaven

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Length |
|-----------------------|------------------|----------------------------|---|---|---|---|--------------|
| | | A | B | C | D | F | |
| Bulkhead / Seawall | 10 | | 4 | 3 | 2 | 1 | 4850 |
| Revetment | 3 | | 3 | | | | 1495 |
| Breakwater | | | | | | | |
| Groin / Jetty | 3 | | 1 | 1 | 1 | | 530 |
| Coastal Dune | | | | | | | |
| Coastal Beach | 1 | | 1 | | | | 1600 |
| | 17 | | 9 | 4 | 3 | 1 | 8475 |

Within the above table, the total length of each type of structure is also provided. The structures are listed by the type which is providing the primary coastal protection. Many sites have multiple structure types at the same location (i.e. revetment in front of seawall). These secondary structures, although not identified within these tables, are included in the development of repair/rehabilitation costs.

The development of repair costs has been included by structure type and by condition. In the Town of Fairhaven’s case there are a total of 17 structures which would require approximately \$ 3.9 million to bring all the coastal structures to “A” Rating. Most critical will be the structures in the “D” and “F” classifications as those are assumed to undergo some level of damage or failure during the next major coastal storm event. To reconstruct these structures, identified in the preliminary survey as being in poor condition, an estimated \$ 1.0 million would be required to upgrade the Town’s coastal protection.

STRUCTURE REPAIR / RECONSTRUCTION COST - Town of Fairhaven

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost |
|-----------------------|------------------|----------------------------|--------------|--------------|------------|------------|--------------|
| | | A | B | C | D | F | |
| Bulkhead / Seawall | 10 | | \$ 715,810 | \$ 1,595,715 | \$ 337,603 | \$ 445,500 | \$ 3,094,628 |
| Revetment | 3 | | \$ 131,954 | | | | \$ 131,954 |
| Breakwater | | | | | | | \$ - |
| Groin / Jetty | 3 | | \$ 72,000 | \$ 168,168 | \$ 216,216 | | \$ 456,384 |
| Coastal Dune | | | | | | | \$ - |
| Coastal Beach | 1 | | \$ 202,752 | | | | \$ 202,752 |
| | 17 | \$- | \$ 1,122,516 | \$ 1,763,883 | \$ 553,819 | \$ 445,500 | \$ 3,885,718 |

Based on the limited research within the scope of this project research, the presumed ownership of the structures was established on an initial basis and would be subject to more intense review in future tasks. Structures identified as being owned privately were excluded from further consideration. Although ownership of the land on which the structure was located was a factor, the structure ownership was treated as a separate issue from land ownership. For the Town of Fairhaven, the breakdown of structures by assumed ownership is as follows:

STRUCTURE OWNERSHIP / REPAIR COST - Town of Fairhaven

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost |
|-------------------------------|------------------|----------------------------|--------------|--------------|------------|------------|--------------|
| | | A | B | C | D | F | |
| Town Owned | 15 | | \$ 1,122,516 | \$ 216,315 | \$ 553,819 | \$ 445,500 | \$ 2,338,150 |
| Commonwealth of Massachusetts | 1 | | | \$ 1,379,400 | | | \$ 1,379,400 |
| Federal Government Owned | | | | | | | \$ - |
| Unknown Ownership | 1 | | | \$ 168,168 | | | \$ 168,168 |
| | 17 | \$- | \$ 1,122,516 | \$ 1,763,883 | \$ 553,819 | \$ 445,500 | \$ 3,885,718 |

The identification of presumed ownership was not based on the investigation of legal documents but relied on property ownership and from construction and regulatory documents that were found. A more detailed investigation of legal documents and agreements would be required where structure ownership is disputed. A more detailed identification of structure type, length, condition and location can be found in Section II-B which contains Structure Assessment Reports for each individual structure found.

SUMMARY

The enclosed reports and associated documents reflects the Town of Fairhaven's coastal structure information that will eventually be input into a state-wide GIS database and will be accessible through MassGIS. This data, when compiled state-wide, will be critical in the development of both short term and long term planning for maintaining and improving Massachusetts coastal protection.

This database will also provide relatively quick access to identify available documentation for these structures as well as the ability to be updated as coastal structure improvements are made.



Section II - Fairhaven

Part B

Structure Assessment Reports





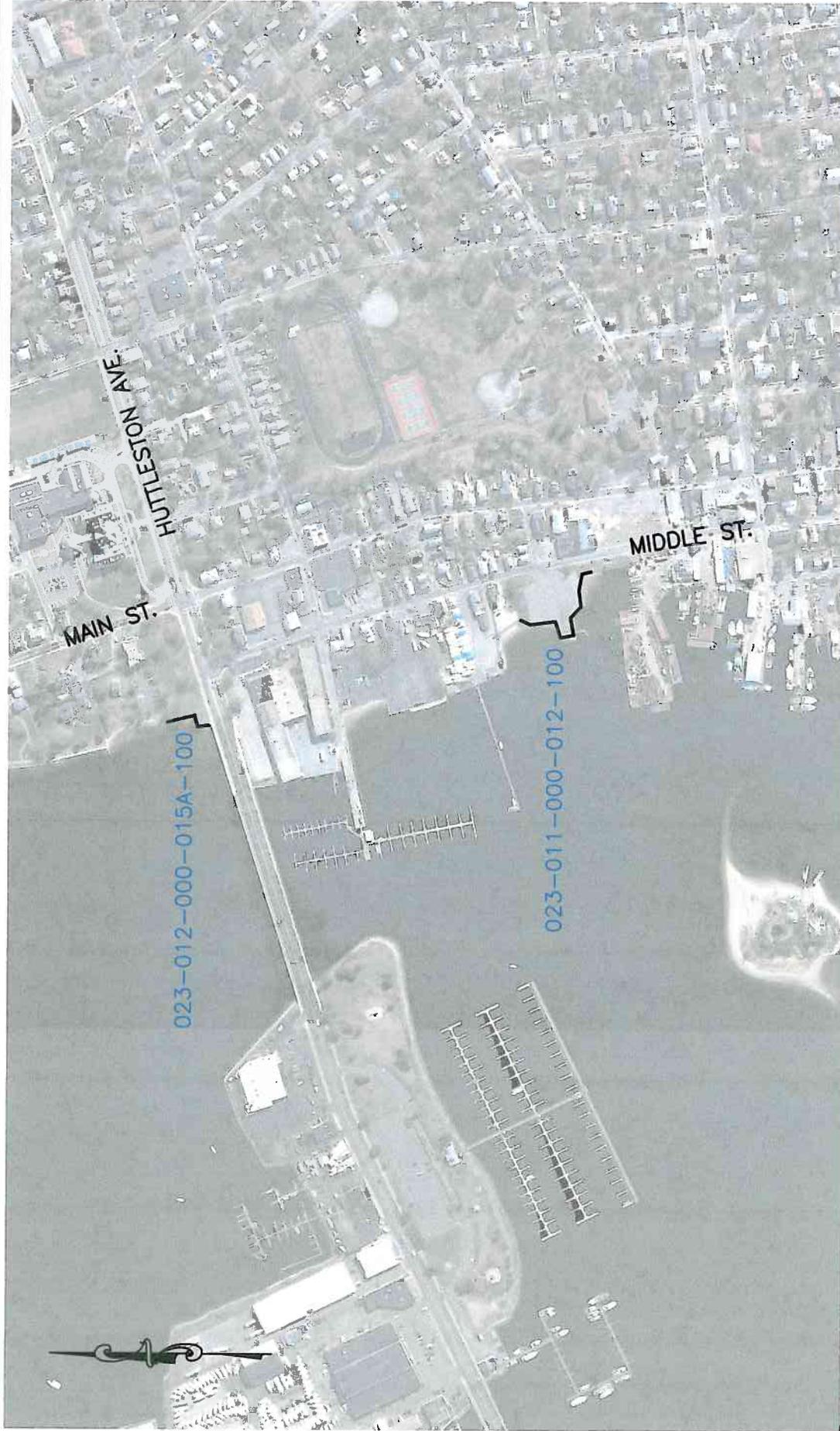
COASTAL STRUCTURE LOCATION PLAN

TOWN OF FAIRHAVEN
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



Bourne Consulting Engineering
 3 Local Street
 Bourne, MA 01909
 TEL: (508) 833-0000 FAX: (508) 833-0000



COASTAL STRUCTURE LOCATION PLAN

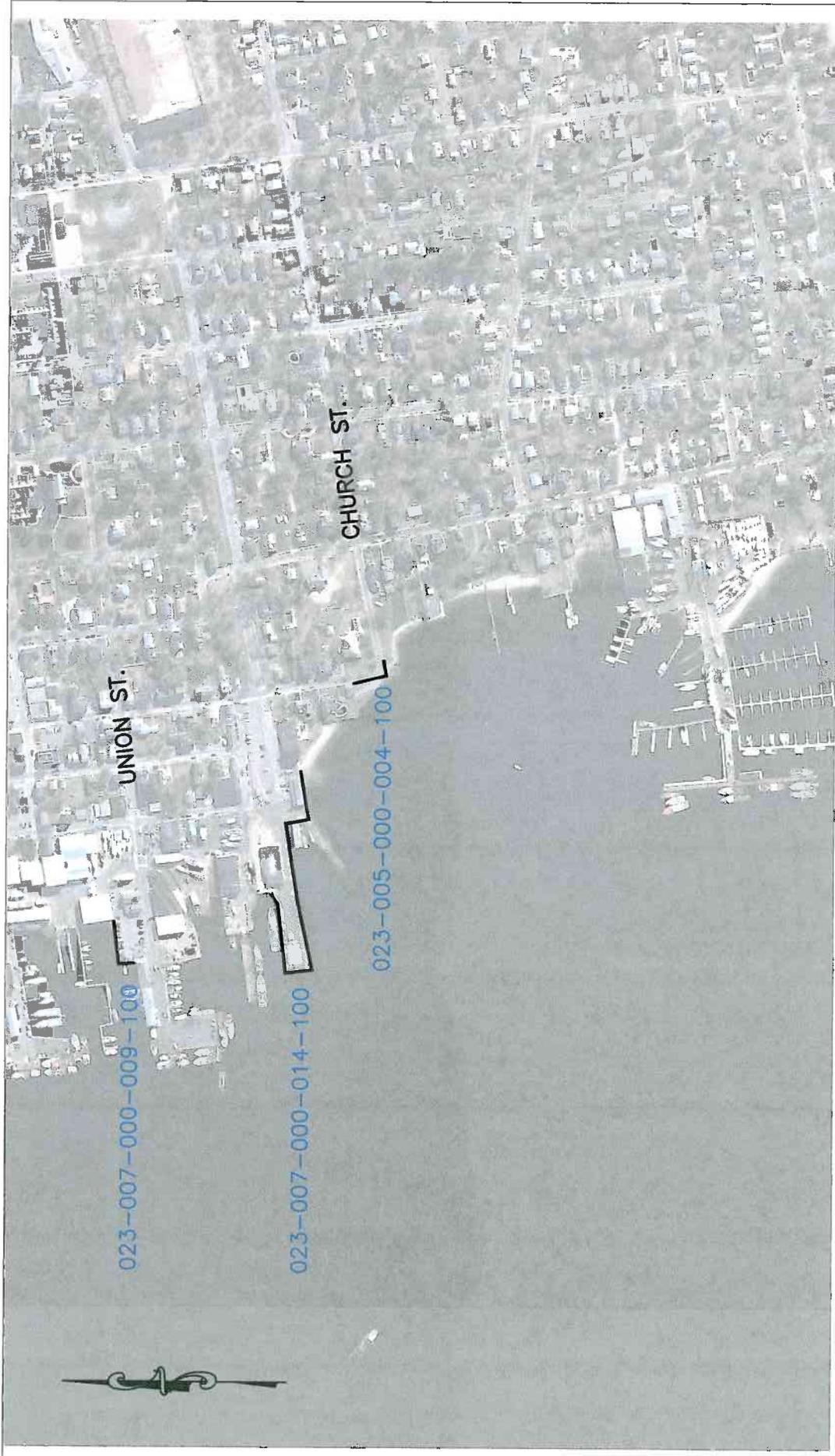
TOWN OF FAIRHAVEN
COASTAL INFRASTRUCTURE INVENTORY
AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

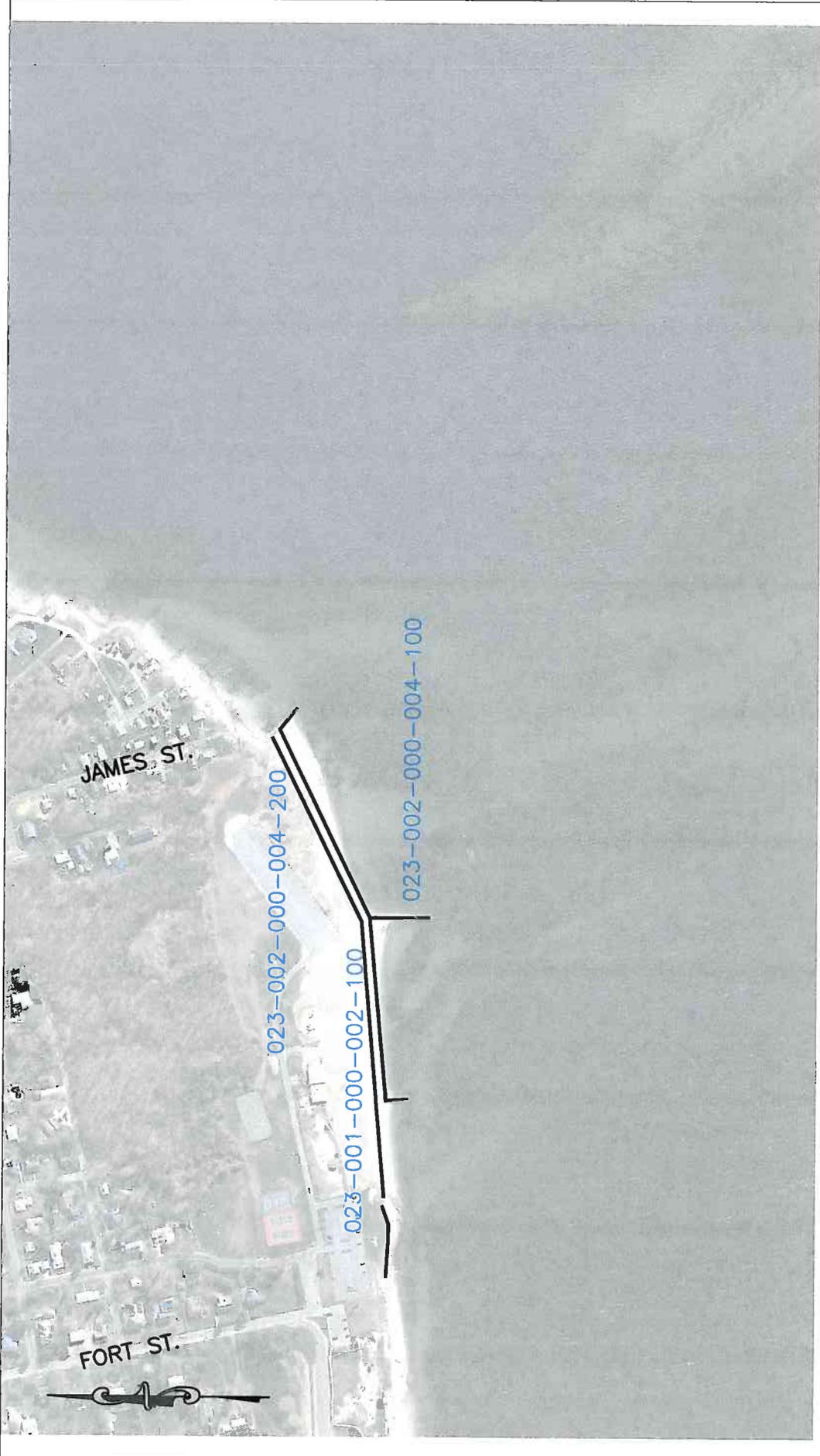
BCE Bourne Consulting Engineering
2000 Main Street
Fairhaven, MA 01939
TEL: (508) 528-4000 FAX: (508) 528-4000



COASTAL STRUCTURE LOCATION PLAN

TOWN OF FAIRHAVEN
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT
 JULY 2007





COASTAL STRUCTURE LOCATION PLAN

TOWN OF FAIRHAVEN
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

BCE Bourne Consulting Engineering
 125 (over) 555-0000 FAX (over) 253-0000



COASTAL STRUCTURE LOCATION PLAN

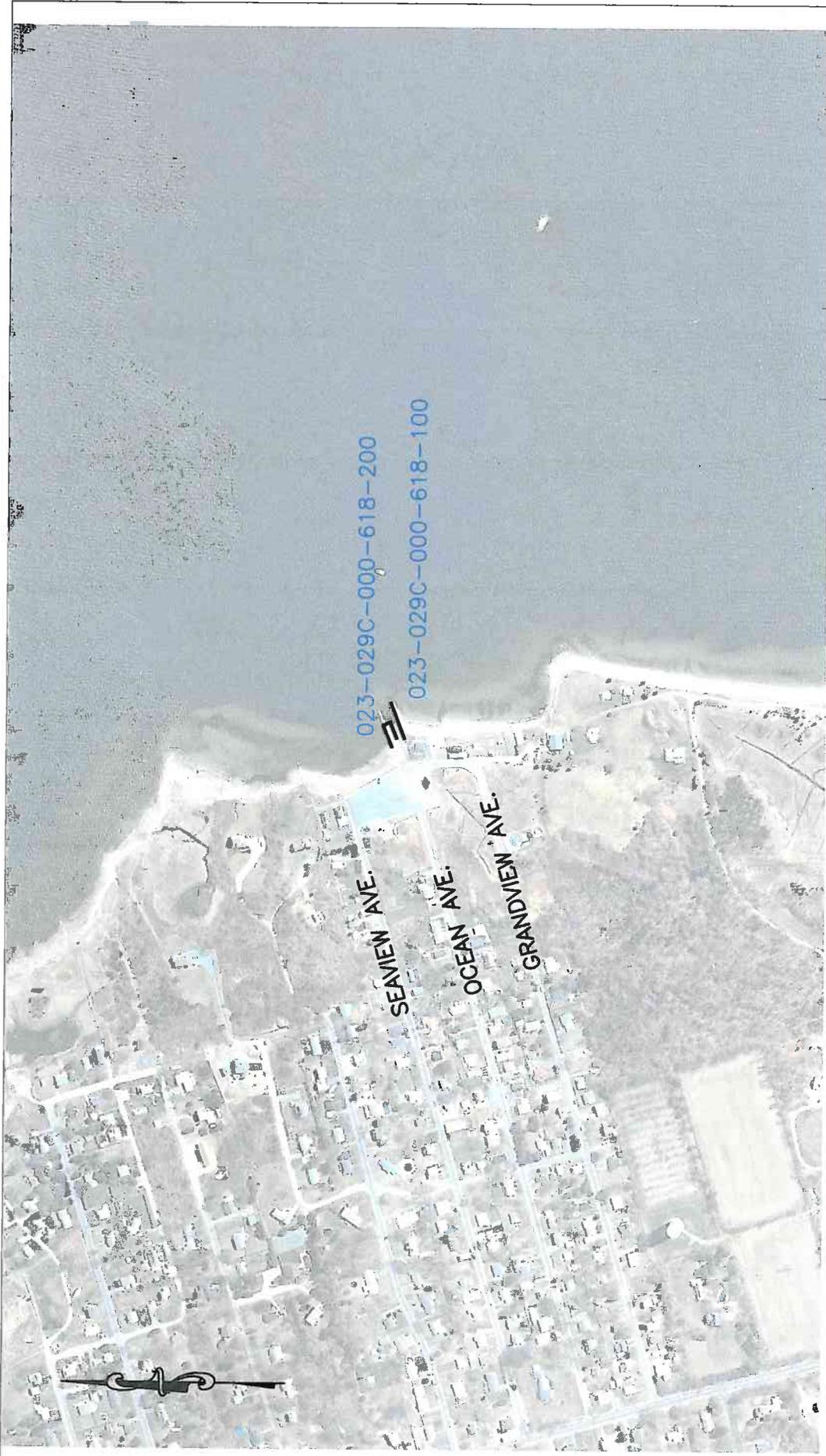
TOWN OF FAIRHAVEN
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

The logo for BCE Bourne Consulting Engineering, Inc. features the letters 'BCE' in a stylized font with a wave-like graphic to the right. Below the logo, the text reads 'Bourne Consulting Engineering' and 'INC.' followed by contact information: '1100 N. MAIN ST. FAIRHAVEN, MA 01934' and 'TEL: (978) 233-0000 FAX: (978) 233-0000'.



COASTAL STRUCTURE LOCATION PLAN

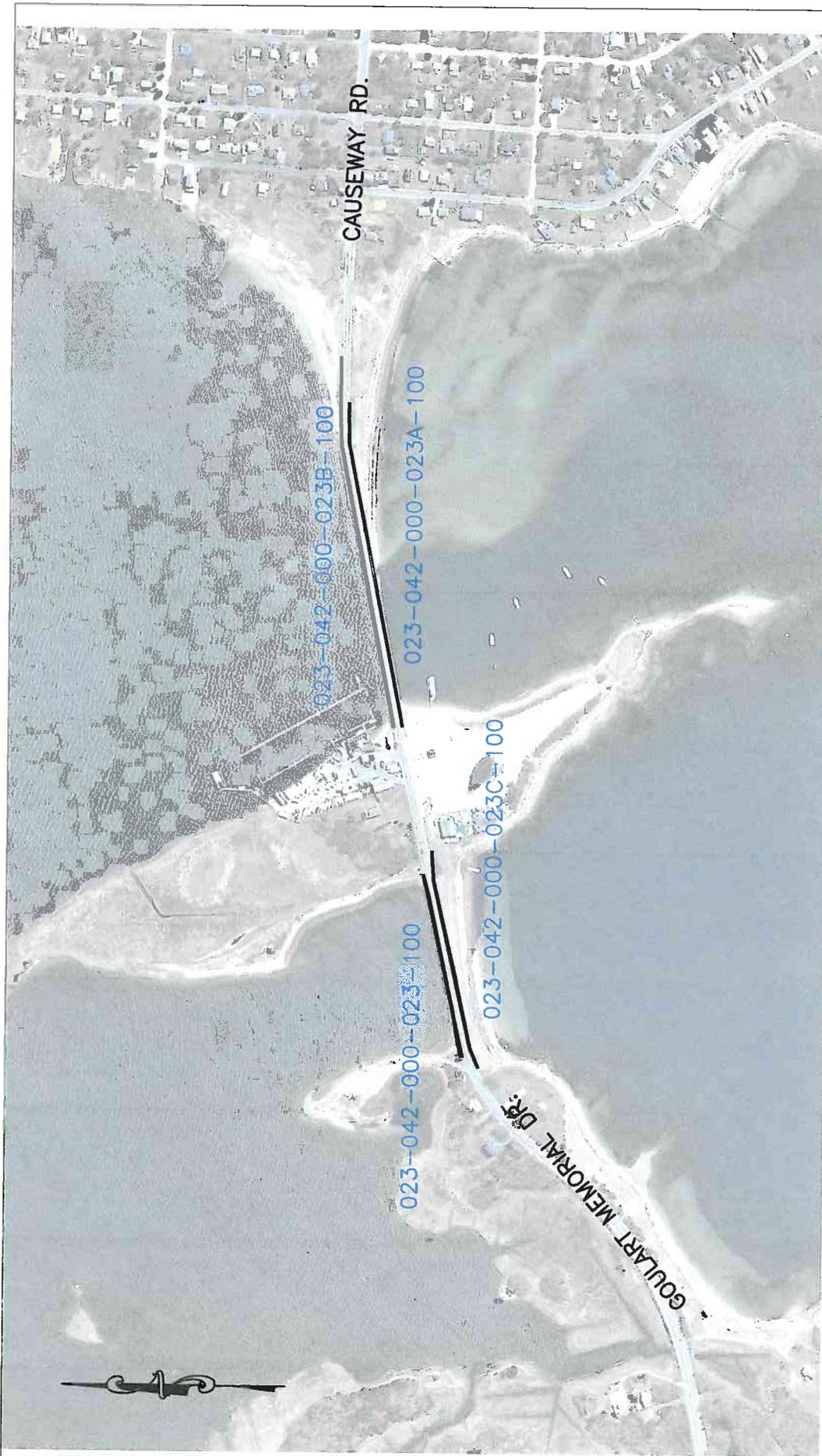
TOWN OF FAIRHAVEN
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

BCE Bourne Consulting Engineering
 111 Main Street
 Bourne, MA 01906
 TEL: (978) 653-4000 FAX: (978) 653-4000



COASTAL STRUCTURE LOCATION PLAN

TOWN OF FAIRHAVEN
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



BCE Bourne Consulting Engineering

31 West Street
 Bourne, MA 02532
 TEL: (408) 835-0000 FAX: (408) 835-0000

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|---|
| Property Owner: Local | Location: Fort Phoenix Beach | Date: 7/19/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Fairhaven | Earliest Structure Record: 1955 | Estimated Reconstruction/Repair Cost: \$445,500.00 |

| | | | |
|------------------------|--------------------------------|-----------------------|--|
| Length: 250 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: V14 | FIRM Map Elevation: 18 Feet NGVD |
|------------------------|--------------------------------|-----------------------|--|



| | | |
|------------------------------------|----------------------------|---------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Stone | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :

Mortared cobble seawall that is approximately 2 feet wide. Only 50 percent of the wall remains; the rest has failed. Behind the wall is a park and parking lot.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | F | <i>Priority</i> | I |
| <i>Rating</i> | Critical | <i>Rating</i> | None |
| <i>Level of Action</i> | Immediate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Conditions of structure/landform may warrant emergency stabilization as failure may result in potential loss of property and/or life. Landform eroded, loss of integrity. Structure exhibits critical levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure provides little or no protection from a major coastal storm. Actions taken to totally reconstruct structure to regain full capacity. Landform stability is severely compromised, rate of erosion/material loss may be increasing, and landform does not provide adequate protection from a major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

| | | | | |
|--|--------------------------------|----------|--------------------|---------------------------|
| Structure Images: 023-001-000-002-100-PHO1A.JPG | Structure Documents: MA-DCR | May 1955 | Proposed Hurricane | 023-001-000-002-100-DCR1A |
|--|--------------------------------|----------|--------------------|---------------------------|

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|--|
| Property Owner: Local | Location: Fort Phoenix | Date: 7/19/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Fairhaven | Earliest Structure Record: 1964 | Estimated Reconstruction/Repair Cost: \$72,000.00 |

| | | | |
|------------------------|--------------------------------|-----------------------|--|
| Length: 300 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: V14 | FIRM Map Elevation: 18 Feet NGVD |
|------------------------|--------------------------------|-----------------------|--|



| | | |
|-------------------------------|----------------------------|---------------------------------|
| Primary Type: Groin/ Jetty | Primary Material: Stone | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :

Set of three placed stone groins is at a 1 on 1 slope. The stones average 6 feet by 4 feet by 2 feet in size. There is no sign of scour. There is minor stone movement.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

023-002-000-004-100-PHO1A.JPG

Structure Documents:

| | | | |
|-----------|---------------|--------------------|---------------------------|
| USACE | April 9, 1964 | Proposed Beach | 023-002-000-004-100-COE1A |
| USACE | April 11, 196 | Proposed Beach | 023-002-000-004-100-COE1B |
| MA-DCR | September 1 | Fort Phoenix State | 023-002-000-004-100-DCR1A |
| MA-DCR | March 2000 | Fort Phoenix State | 023-002-000-004-100-DCR1B |
| MA-DCR | April 1968 | Proposed Beach | 023-002-000-004-100-DCR1C |
| MA-DCR | January 198 | Fort Phoenix State | 023-002-000-004-100-DCR1D |
| Fairhaven | 5/28/1999 | Fort Phoenix, Town | 023-002-000-004-100-TWN1A |

Structure Assessment Form

Property Owner:

Local

Location:

Fort Phoenix Beach

Date:

4/20/2009

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$202,752.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 1600 | | V14 | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Coastal Beach | Sand | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :

Coarse sandy beach with dune, park and picnic area behind it. Two groins are stablizing beach is there is no sign of erosion.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | II |
| <i>Rating</i> | Good | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

023-002-000-004-200-PHO2A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Main Street/Church Street

Date:

7/19/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$129,030.00

Length: Top Elevation: FIRM Map Zone: FIRM Map Elevation:

170 6
 Feet Feet NAVD 88 Feet NGVD

Primary Type: Primary Material: Primary Height:

Bulkhead/ Seawall Stone 5 to 10 Feet

Secondary Type: Secondary Material: Secondary Height:



Structure Summary :

The stone block mortared seawall has a street located behind it. There stones that make up the wall are approximately 2 feet by 1 foot on average. There are areas of mortar loss throughout. There is no visible scour.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

023-005-000-004-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Union Wharf

7/19/2007

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Fairhaven

1966

\$303,600.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 200 | | A1 | 6 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone block seawall has stones that are 2 feet by 2 feet by 1 foot in size. They are dry set. The wall is heaving outshore and the corners have started to unravel. There is minor erosion at the top. There are a few areas of stones missing.

| | | | |
|------------------------|--|-----------------|---|
| <i>Condition</i> | D | <i>Priority</i> | I |
| <i>Rating</i> | Poor | <i>Rating</i> | None |
| <i>Level of Action</i> | Major | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

023-007-000-009-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|-------------|-------------------|---------------------------|
| USACE | December 1 | Proposed Bulkhead | 023-007-000-009-100-COE1A |
| MA-DCR | April 1966 | Proposed Pier | 023-007-000-009-100-DCR1A |
| MA-DCR | February 19 | Repairs and | 023-007-000-009-100-DCR1B |

Structure Assessment Form

Property Owner:

State

Location:

Steamship Authority Warehouses

Date:

8/2/2007

Presumed Structure Owner:

State

Based On Comment:

Owner Name:

Commonwealth of Massachusetts

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$1,379,400.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 1100 | | A1 | 6 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

10 to 15 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The stone block seawall has a cast in place cap with stones that average 100 to 200 pounds. Above the structure is the Steamship Authority warehouses. There is moderate cracking and spalling on the concrete. There are minor areas of section loss of stones.

Condition

C

Rating

Fair

Level of Action

Moderate

Description

Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority

III

Rating

Moderate Priority

Action

Consider for Active Project Improvement Listing

Description

Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:

023-007-000-014-100-PHO1A.JPG

023-007-000-014-100-PHO1B.JPG

Structure Documents:

MA-DCR

May 1955

Proposed Hurricane

023-007-000-014-100-DCR1A

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|--|
| Property Owner: Local | Location: Pease Park | Date: 7/19/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Fairhaven | Earliest Structure Record: 1978 | Estimated Reconstruction/Repair Cost: \$37,594.00 |

| | | | |
|------------------------|--------------------------------|----------------------|---------------------------------------|
| Length: 445 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: A1 | FIRM Map Elevation: 6 Feet NGVD |
|------------------------|--------------------------------|----------------------|---------------------------------------|



| | | |
|------------------------------------|----------------------------|---------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Stone | Primary Height: Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :

The placed riprap is at a 1 on 1 slope. The stones are on average 3 feet by 2 feet in size. A parking lot is located behind the structure and a boat ramp is in the middle of it. The stones have been mortared, some with asphalt. There is minor scour at the toe.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 023-011-000-012-100-PHO1A.JPG
- 023-011-000-012-100-PHO1B.JPG

Structure Documents:

- USACE
- March 28, 19
- Addition to Public
- 023-011-000-012-100-COE1A

Structure Assessment Form

Property Owner:

Local

Location:

Route 6

Date:

7/19/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$39,204.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 180 | | A1 | 6 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

5 to 10 Feet

Secondary Type:

Revetment

Secondary Material:

Stone

Secondary Height:

Under 5 Feet

Structure Summary :

The stone block seawall has stones that average 4 feet by 2 feet by 1 foot in size. There is no visible erosion or scour. There is a park located behind the structure and a bridge adjacent to it. The riprap is scoured at the toe.

Condition

B

Rating

Good

Level of Action

Minor

Description

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority

II

Rating

Low Priority

Action

Future Project Consideration

Description

Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

023-012-000-015A-100-PHO1A.JPG

023-012-000-015A-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Pilgrim Avenue

7/19/2007

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Fairhaven

Unknown

\$87,285.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 115 | | A1 | 6 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Concrete | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone block seawall is mortared with stones that average 4 feet by 1 foot by 1 foot in size. There is visible scour at the toe. There is loose mortar. There is minor section loss and stones have come unraveled at the top.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

023-013-000-062-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Hedge Street

Date:

7/19/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$34,003.00

Length: 40 Feet
 Top Elevation: Feet NAVD 88
 FIRM Map Zone:
 FIRM Map Elevation: Feet NGVD



Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The stone block seawall has stones that are approximately 5 feet by 2 feet by 1 foot in size. The stones are rotating, shifting, and failed at the corners. There is minor scour at the base. There is a road located behind the structure.

Condition

D

Priority

IV

Rating

Poor

Rating

High Priority

Level of Action

Major

Action

Consider for Next Project Construction Listing

Description

Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.

Description

High Value Inshore Structures with Potential for Infrastructure Damage and/or Moderate Density Residential Dwellings (1-10 dwellings impacted / 100 feet of shoreline)

Structure Images:

023-015-000-054-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Little Bay/Nashetucket River

7/19/2007

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Fairhaven

Unkown

\$216,216.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 90 | | V14 | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Groin/ Jetty | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The placed stone groin has a concrete walkway on top of it. The end of the groin has become unraveled. The stones are on average 100 pounds and tightly placed.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | D | <i>Priority</i> | I |
| <i>Rating</i> | Poor | <i>Rating</i> | None |
| <i>Level of Action</i> | Major | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

Structure Documents:

023-028-000-014-100-PHO1A.JPG

023-028-000-014-100-PHO1B.JPG

Structure Assessment Form

Property Owner:

Local

Location:

Shore Drive

Date:

7/19/2007

Presumed Structure Owner:

Unknown

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

1978

Estimated Reconstruction/Repair Cost:

\$168,140.00

Length: **140** Top Elevation: **18** FIRM Map Zone: **V14** FIRM Map Elevation: **18**
 Feet Feet NAVD 88 Feet NGVD



Primary Type:

Groin/ Jetty

Primary Material:

Stone

Primary Height:

5 to 10 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The dumped stone mound groin has stones that average 5 feet by 3 feet by 2 feet in size. The offshore end has some areas of settling and stone movement. There is no visible scour.

Condition

C

Priority

I

Rating

Fair

Rating

None

Level of Action

Moderate

Action

Long Term Planning Considerations

Description

Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

023-029C-000-618-100-PHO1A.JPG

023-029C-000-618-100-PHO1B.JPG

Structure Documents:

| | | | |
|---------------|---------------------|---------------------------|-----------------------------------|
| USACE | February 19 | Addition to Public | 023-029C-000-618-100-COE1A |
| USACE | August 29, 1 | Plan Accompanying | 023-029C-000-618-100-COE1B |
| MA-DCR | February 20 | Nasketucket Bay, | 023-029C-000-618-100-DCR1A |
| DEP | February 19 | Addition to Public | 023-029C-000-618-100-LIC1A |
| DEP | August 29, 1 | Plan Accompanying | 023-029C-000-618-100-LIC1B |

Structure Assessment Form

| | | |
|--------------------------------------|------------------------------------|---|
| Property Owner: Local | Location: Shore Drive | Date: 7/19/2007 |
| Presumed Structure Owner: Unknown | Based On Comment: | |
| Owner Name: Fairhaven | Earliest Structure Record: 1978 | Estimated Reconstruction/Repair Cost: \$168,140.00 |

| | | | |
|------------------------|--------------------------------|-----------------------|--|
| Length: 140 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: V14 | FIRM Map Elevation: 18 Feet NGVD |
|------------------------|--------------------------------|-----------------------|--|



| | | |
|-------------------------------|----------------------------|---------------------------------|
| Primary Type: Groin/ Jetty | Primary Material: Stone | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :

The dumped stone mound groin has stones that average 5 feet by 3 feet by 2 feet in size. The offshore end has some areas of settling and stone movement. There is no visible scour.

| | | | |
|------------------------|---|-----------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 023-029C-000-618-100-PHO1A.JPG
- 023-029C-000-618-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|--------------|--------------------|----------------------------|
| USACE | February 19 | Addition to Public | 023-029C-000-618-100-COE1A |
| USACE | August 29, 1 | Plan Accompanying | 023-029C-000-618-100-COE1B |
| MA-DCR | February 20 | Nasketucket Bay, | 023-029C-000-618-100-DCR1A |
| DEP | February 19 | Addition to Public | 023-029C-000-618-100-LIC1A |
| DEP | August 29, 1 | Plan Accompanying | 023-029C-000-618-100-LIC1B |

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Goulart Memorial Drive

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Fairhaven

1955

\$73,874.00

Length: 615 Feet
 Top Elevation: Feet NAVD 88
 FIRM Map Zone: V14
 FIRM Map Elevation: 16 Feet NGVD



Primary Type: Revetment
 Primary Material: Stone
 Primary Height: 5 to 10 Feet
 Secondary Type:
 Secondary Material:
 Secondary Height:

Structure Summary :

The dumped riprap is at a 1 on 1 slope. The stones are approximately 4 feet by 2 feet in size. There is minor stone movement and settling. There is a sandy beach in front.

Condition

B

Priority

V

Rating

Good

Rating

Immediate / Highest Priority

Level of Action

Minor

Action

Consider For Immediate Action Due to Public Safety and Welfare Issues

Description

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Description

Critical Inshore Structures Present with Potential for Infrastructural Damage and/or High Density Residential Dwellings Condition of structure may warrant emergency stabilization as failure may result in potential loss of property and/or life. (>10 dwellings impacted / 100 feet of shoreline)

Structure Images:

023-042-000-023-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|-------------|------------------|---------------------------|
| MA-DCR | May 1955 | Hurricane Damage | 023-042-000-023-100-DCR1A |
| MA-DCR | May 1956 | Hurricane Damage | 023-042-000-023-100-DCR1B |
| MA-DCR | February 19 | Proposed Harbor | 023-042-000-023-100-DCR1C |
| MA-DCR | August 1977 | Proposed Shore | 023-042-000-023-100-DCR1D |
| MA-DCR | February 20 | Nasketucket Bay, | 023-042-000-023-100-DCR1E |

Structure Assessment Form

Property Owner:

Local

Location:

Goulart Memorial Drive

Date:

7/19/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$299,112.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 1100 | | V14 | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Concrete | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| Revetment | Stone | 5 to 10 Feet |

Structure Summary :

The placed riprap is at a 1 to 1 slope. The stones are approximately 200 to 300 pounds. The top of the wall is precast concrete. There is minor cracks in the concrete and settling among the stones.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 023-042-000-023A-100-PHO1A.JPG
- 023-042-000-023A-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|-------------|------------------|----------------------------|
| MA-DCR | May 1955 | Hurricane Damage | 023-042-000-023A-100-DCR1A |
| MA-DCR | May 1956 | Hurricane Damage | 023-042-000-023A-100-DCR1B |
| MA-DCR | February 19 | Proposed Harbor | 023-042-000-023A-100-DCR1C |
| MA-DCR | August 1977 | Proposed Shore | 023-042-000-023A-100-DCR1D |
| MA-DCR | February 20 | Nasketucket Bay, | 023-042-000-023A-100-DCR1E |

Structure Assessment Form

| | | |
|------------------------------------|-------------------------------------|---|
| Property Owner: Local | Location: Goulart Memorial Drive | Date: 7/19/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Fairhaven | Earliest Structure Record: 1955 | Estimated Reconstruction/Repair Cost: \$339,900.00 |

| | | | |
|-------------------------|--------------------------------|-----------------------|--|
| Length: 1250 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: V14 | FIRM Map Elevation: 16 Feet NGVD |
|-------------------------|--------------------------------|-----------------------|--|

| | | |
|------------------------------------|-------------------------------|-----------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Concrete | Primary Height: 5 to 10 Feet |
| Secondary Type: Revetment | Secondary Material: Stone | Secondary Height: 5 to 10 Feet |



Structure Summary :

The placed riprap is at a 1 on 1 slope. The stones average 200 to 300 pounds in size. The top of the wall is precast concrete sections. There is minor cracking on the concrete. There is visible stone settling.

| | | | |
|------------------------|--|-----------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 023-042-000-023B-100-PHO1A.JPG
- 023-042-000-023B-100-PHO1B.JPG
- 023-042-000-023B-100-PHO1C.JPG

Structure Documents:

| | | | |
|--------|-------------|-------------------|----------------------------|
| MA-DCR | May 1955 | Hurricane Damage | 023-042-000-023B-100-DCR1A |
| MA-DCR | May 1956 | Hurricane Damage | 023-042-000-023B-100-DCR1B |
| MA-DCR | February 19 | Proposed Harbor | 023-042-000-023B-100-DCR1C |
| MA-DCR | August 1977 | Proposed Shore | 023-042-000-023B-100-DCR1D |
| MA-DCR | February 20 | Nasketucket Bay - | 023-042-000-023B-100-DCR1E |

Structure Assessment Form

Property Owner:

Local

Location:

Goulart Memorial Drive

Date:

7/19/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Fairhaven

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$48,180.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 730 | | V14 | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The dumped riprap is adjacent to the roadway. Stones are 400 to 500 pounds in size and placed randomly. A sandy beach is in front. There is no visible scour.

| | | | |
|------------------------|--|--------------------|--|
| <i>Condition</i> | B | <i>Priority</i> | V |
| <i>Rating</i> | Good | <i>Rating</i> | Immediate / Highest Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Consider For Immediate Action Due to Public Safety and Welfare Issues |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Critical Inshore Structures Present with Potential for Infrastructure Damage and/or High Density Residential Dwellings Condition of structure may warrant emergency stabilization as failure may result in potential loss of property and/or life. (>10 dwellings impacted / 100 feet of shoreline) |

Structure Images:

023-042-000-023C-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|-------------|------------------|----------------------------|
| MA-DCR | May 1955 | Hurricane Damage | 023-042-000-023C-100-DCR1A |
| MA-DCR | May 1956 | Hurricane Damage | 023-042-000-023C-100-DCR1B |
| MA-DCR | February 19 | Proposed Harbor | 023-042-000-023C-100-DCR1C |
| MA-DCR | August 1977 | Proposed Shore | 023-042-000-023C-100-DCR1D |
| MA-DCR | February 20 | Nasketucket Bay, | 023-042-000-023C-100-DCR1E |

Section II - Fairhaven

Part C

Structure Photographs

TOWN: FAIRHAVEN
 SOURCE: BCE - FIELD PHOTOGRAPHS
 LOCATION: Bourne Consulting Engineering
 DATE OF RESEARCH: SEPTEMBER 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|-----------------------|--------------------------------|--------------------------------|-------------------------------|--------------|-------------|---------------|--------|--------------------|---|
| 023-001-000-002-100 | 023-001-000-002-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-002-000-004-100 | 023-002-000-004-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-005-000-004-100 | 023-005-000-004-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-002-000-004-200 | 023-002-000-004-200-PHO2A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-007-000-009-100 | 023-007-000-009-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-007-000-014-100 | 023-007-000-014-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-007-000-014-100 | 023-007-000-014-100-PHO1B.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-011-000-012-100 | 023-011-000-012-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-011-000-012-100 | 023-011-000-012-100-PHO1B.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-012-000-015A-100 | 023-012-000-015A-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-012-000-015A-100 | 023-012-000-015A-100-PHO1B.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-013-000-062-100 | 023-013-000-062-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-015-000-054-100 | 023-015-000-054-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-028-000-014-100 | 023-028-000-014-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-028-000-014-100 | 023-028-000-014-100-PHO1B.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-029C-1000-618-100 | 023-029C-000-618-100-PHO1A | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-029C-1000-618-100 | 023-029C-000-618-100-PHO1B | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-029C-1000-618-200 | 023-029C-000-618-100-PHO2A | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-042-000-023-100 | 023-042-000-023-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-042-000-023A-100 | 023-042-000-023A-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-042-000-023A-100 | 023-042-000-023A-100-PHO1B.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-042-000-023B-100 | 023-042-000-023B-100-PHO1A.jpg | | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |

TOWN: FAIRHAVEN
 SOURCE: BCE - FIELD PHOTOGRAPHS
 LOCATION: Bourne Consulting Engineering
 DATE OF RESEARCH: SEPTEMBER 2007

| | | | | | | | | |
|----------------------|----------------------------------|-------------------------------|-----------|-------------|---------------|---|--------------------|---|
| 023-042-000-023B-100 | 023-042-000-023B-100-PHOTO1B.jpg | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-042-000-023B-100 | 023-042-000-023B-100-PHOTO1C.jpg | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 023-042-000-023C-100 | 023-042-000-023C-100-PHOTO1A.jpg | Bourne Consulting Engineering | Fairhaven | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |

Massachusetts Coastal Infrastructure and Assessment



023-029C-000-618-100-PHO1A



023-029C-000-618-100-PHO1B



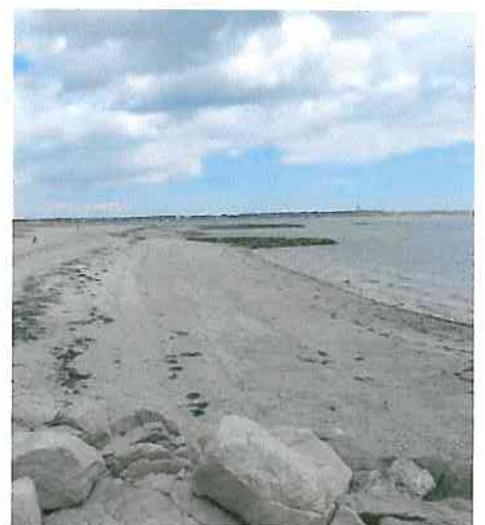
023-029C-000-618-200-PHO2A



023-001-000-002-100-PHO1A



023-002-000-004-100-PHO1A



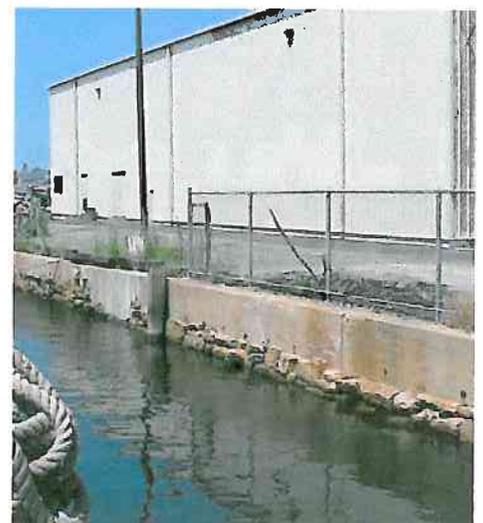
023-002-000-004-200-PHO2A



023-005-000-004-100-PHO1A

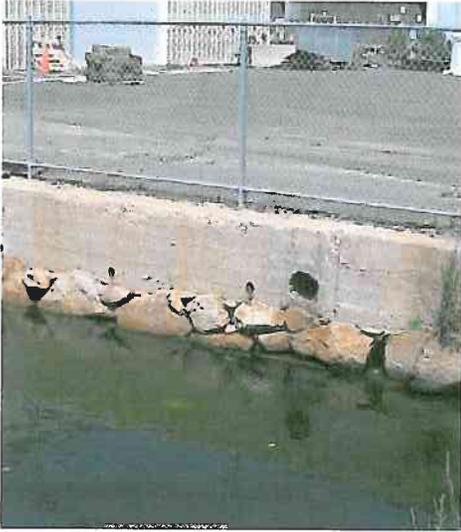


023-007-000-009-100-PHO1A



023-007-000-014-100-PHO1A

Massachusetts Coastal Infrastructure and Assessment



023-007-000-014-100-PHO1B



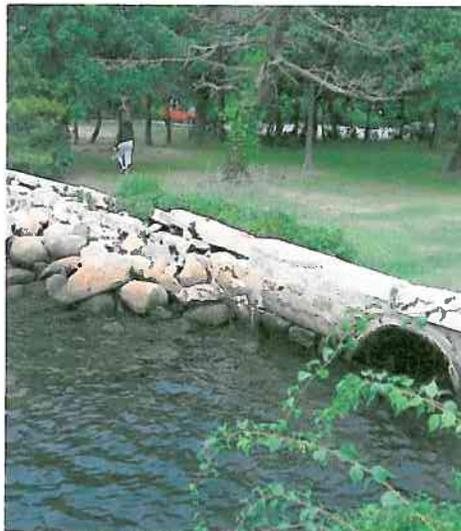
023-011-000-012-100-PHO1A



023-011-000-012-100-PHO1B



023-012-000-015A-100-PHO1A



023-012-000-015A-100-PHO1B



023-013-000-062-100-PHO1A



023-015-000-054-100-PHO1A



023-028-000-014-100-PHO1A



023-028-000-014-100-PHO1B

Massachusetts Coastal Infrastructure and Assessment



023-042-000-023-100-PHO1A



023-042-000-023A-100-PHO1A



023-042-000-023A-100-PHO1B



023-042-000-023B-100-PHO1A



023-042-000-023B-100-PHO1B



023-042-000-023B-100-PHO1C



023-042-000-023C-100-PHO1A

Section II - Fairhaven

Part D

Structure Documents

TOWN DOCUMENT LIST

MA DCR - DOCUMENT LIST

MA DEP – Ch 91 DOCUMENT LIST

- Copies of License Documents

USACE – PERMIT DOCUMENT LIST

- Copies of Permit Documents

TOWN: FAIRHAVEN
SOURCE: TOWN OF FAIRHAVEN
LOCATION: TOWN
DATE OF RESEARCH: JUNE 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|---------------------------|--------------------------------|-----------|--------------|-----------|-------------------------------------|--------|----------|-------------|
| 023-002-000-004-100 | 023-002-000-004-100-TWN1A | N/A | Fairhaven | Fairhaven | 5/28/1999 | Fort Phoenix, Town of Fairhaven, MA | 5 | | |

TOWN: FAIRHAVEN
 SOURCE: MA - DCR
 LOCATION: MA - DCR BOSTON and HINGHAM, MA
 DATE OF RESEARCH: JULY 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|----------------|---|--------|-------------------------------------|--------------------------------------|
| 023-001-000-002-100 | 023-001-000-002-100-DCR1A | 1501 | MA-DCR | Fairhaven | May 1955 | Proposed Hurricane Repairs - Seawall Repairs - Fort Phoenix - Fairhaven, MA - Prepared for DPW of MA - Division of Waterways | 1 | Fort Phoenix | Seawall Repairs |
| 023-002-000-004-100 | 023-002-000-004-100-DCR1A | 528-89 | MA-DCR | Fairhaven | September 1988 | Fort Phoenix State Reservation - Improvement Program | 7 | | Groins - Site Plan and Details |
| 023-002-000-004-100 | 023-002-000-004-100-DCR1B | 071-00 | MA-DCR | Fairhaven | March 2000 | Fort Phoenix State Reservation - Site Improvements | 6 | | |
| 023-002-000-004-100 | 023-002-000-004-100-DCR1C | 04672-A | MA-DCR | Fairhaven | April 1988 | Proposed Beach Improvements - Sand Fill and Stone Groin - Fort Phoenix Beach Reservation | 5 | | |
| 023-002-000-004-100 | 023-002-000-004-100-DCR1D | 275-85 | MA-DCR | Fairhaven | January 1986 | Fort Phoenix State Reservation Improvements | 6 | | |
| 023-007-000-009-100 | 023-007-000-009-100-DCR1A | 2539 | MA-DCR | Fairhaven | April 1986 | Proposed Pier Repairs - Union Wharf, Fairhaven - Prepared for DPW of MA - Division of Waterways | 2 | Union Wharf | Wharf Repairs |
| 023-007-000-009-100 | 023-007-000-009-100-DCR1B | 2821 | MA-DCR | Fairhaven | February 1976 | Repairs and Reconstruction of Union Wharf - Town of Fairhaven - Prepared for DPW of MA - Division of Waterways | 10 | Union Wharf | Sheet Pile and Riprap |
| 023-007-000-014-100 | 023-007-000-014-100-DCR1A | 1489 | MA-DCR | Fairhaven | May 1955 | Proposed Hurricane Repairs - Town Pier - Fairhaven, MA - Prepared for DPW of MA - Division of Waterways | 1 | Town Pier | Pier Repairs |
| 023-029C-000-618-100 | 023-029C-000-618-100-DCR1A | 3449 | MA-DCR | Fairhaven | February 2002 | Nasketucket Bay, Fairhaven, MA | 14 | Causeway, Rocky Point, Ocean Avenue | Riprap, Beach Nourishment, Boat Ramp |
| 023-029C-000-618-200 | 023-029C-000-618-200-DCR2A | 3449 | MA-DCR | Fairhaven | February 2002 | Nasketucket Bay, Fairhaven, MA | 14 | Causeway, Rocky Point, Ocean Avenue | Riprap, Beach Nourishment, Boat Ramp |
| 023-042-000-023-100 | 023-042-000-023-100-DCR1A | 1510 | MA-DCR | Fairhaven | May 1955 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | West Island | Riprap Reconstruction |
| 023-042-000-023-100 | 023-042-000-023-100-DCR1B | 1604 | MA-DCR | Fairhaven | May 1956 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 1 | Causeway Street | Riprap Reconstruction |
| 023-042-000-023-100 | 023-042-000-023-100-DCR1C | 2118 | MA-DCR | Fairhaven | February 1989 | Proposed Harbor Improvements - Channel and Bridge - West Island Causeway - Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | Causeway Road | Revetment |
| 023-042-000-023-100 | 023-042-000-023-100-DCR1D | 2825 | MA-DCR | Fairhaven | August 1977 | Proposed Shore Protection Causeway Reconstruction - West Island Causeway, Fairhaven | 3 | Causeway Road | Riprap Reconstruction |
| 023-042-000-023-100 | 023-042-000-023-100-DCR1E | 3449 | MA-DCR | Fairhaven | February 2002 | Nasketucket Bay, Fairhaven, MA | 14 | Causeway, Rocky Point, Ocean Avenue | Riprap, Beach Nourishment, Boat Ramp |
| 023-042-000-023A-100 | 023-042-000-023A-100-DCR1A | 1510 | MA-DCR | Fairhaven | May 1955 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | West Island | Riprap Reconstruction |
| 023-042-000-023A-100 | 023-042-000-023A-100-DCR1B | 1604 | MA-DCR | Fairhaven | May 1956 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 1 | Causeway Street | Riprap Reconstruction |
| 023-042-000-023A-100 | 023-042-000-023A-100-DCR1C | 2118 | MA-DCR | Fairhaven | February 1989 | Proposed Harbor Improvements - Channel and Bridge - West Island Causeway - Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | Causeway Road | Revetment |
| 023-042-000-023A-100 | 023-042-000-023A-100-DCR1D | 2825 | MA-DCR | Fairhaven | August 1977 | Proposed Shore Protection - Causeway Reconstruction - West Island Causeway, Fairhaven | 3 | Causeway Road | Riprap |
| 023-042-000-023A-100 | 023-042-000-023A-100-DCR1E | 3449 | MA-DCR | Fairhaven | February 2002 | Nasketucket Bay, Fairhaven, MA | 14 | Causeway, Rocky Point, Ocean Avenue | Riprap, Beach Nourishment, Boat Ramp |
| 023-042-000-023B-100 | 023-042-000-023B-100-DCR1A | 1510 | MA-DCR | Fairhaven | May 1955 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | West Island | Riprap Reconstruction |
| 023-042-000-023B-100 | 023-042-000-023B-100-DCR1B | 1604 | MA-DCR | Fairhaven | May 1956 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 1 | Causeway Road | Riprap Reconstruction |
| 023-042-000-023B-100 | 023-042-000-023B-100-DCR1C | 2118 | MA-DCR | Fairhaven | February 1989 | Proposed Harbor Improvements - Channel and Bridge - West Island Causeway - Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | Causeway Road | Revetment |
| 023-042-000-023B-100 | 023-042-000-023B-100-DCR1D | 2825 | MA-DCR | Fairhaven | August 1977 | Proposed Shore Protection Causeway Reconstruction - West Island Causeway, Fairhaven | 3 | Causeway Road | Riprap |
| 023-042-000-023B-100 | 023-042-000-023B-100-DCR1E | 3449 | MA-DCR | Fairhaven | February 2002 | Nasketucket Bay - Fairhaven, MA | 14 | Causeway, Rocky Point, Ocean Avenue | Riprap, Beach Nourishment, Boat Ramp |
| 023-042-000-023C-100 | 023-042-000-023C-100-DCR1A | 1510 | MA-DCR | Fairhaven | May 1955 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | West Island | Riprap Reconstruction |
| 023-042-000-023C-100 | 023-042-000-023C-100-DCR1B | 1604 | MA-DCR | Fairhaven | May 1956 | Hurricane Damage Repairs - Causeway Reconstruction - West Island, Fairhaven - Prepared for DPW of MA - Division of Waterways | 1 | Causeway Street | Riprap Reconstruction |
| 023-042-000-023C-100 | 023-042-000-023C-100-DCR1C | 2118 | MA-DCR | Fairhaven | February 1989 | Proposed Harbor Improvements - Channel and Bridge - West Island Causeway - Fairhaven - Prepared for DPW of MA - Division of Waterways | 5 | Causeway Road | Revetment |

TOWN: FAIRHAVEN
 SOURCE: MA - DCR
 LOCATION: MA - DCR BOSTON and HINGHAM, MA
 DATE OF RESEARCH: JULY 2007

| | | | | | | | | | |
|----------------------|----------------------------|------|--------|-----------|---------------|--|----|-------------------------------------|--------------------------------------|
| 023-042-000-023C-100 | 023-042-000-023C-100-DCR1D | 2825 | MA-DCR | Fairhaven | August 1977 | Proposed Shore Protection, Causeway Reconstruction - West Island Causeway, Fairhaven | 3 | Causeway Road | Riprap |
| 023-042-000-023C-100 | 023-042-000-023C-100-DCR1E | 3449 | MA-DCR | Fairhaven | February 2002 | Nasketucket Bay, Fairhaven, MA | 14 | Causeway, Rocky Point, Ocean Avenue | Riprap, Beach Nourishment, Boat Ramp |

TOWN: FAIRHAVEN

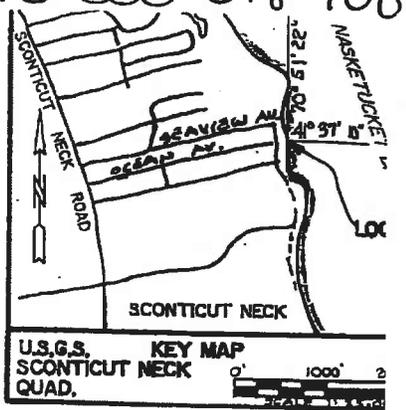
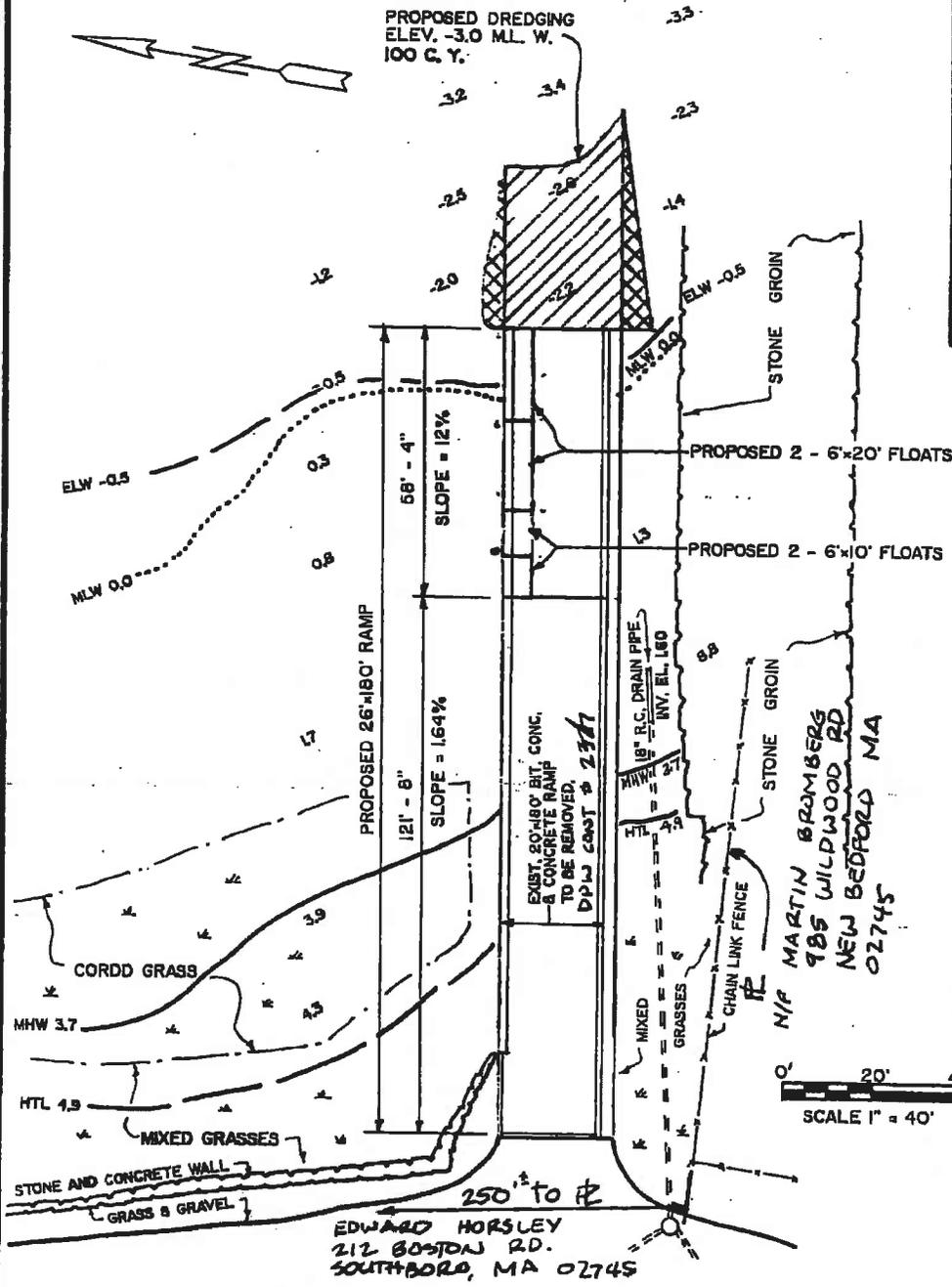
SOURCE: DEP

LOCATION: DEP - BOSTON

DATE OF RESEARCH: JULY 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|-----------------|--|--------|--------------|----------------------|
| 023-029C-000-618-100 | 023-029C-000-618-100-L1C1A | 2718 | DEP | Fairhaven | August 29, 1991 | Plan Accompanying Petition of Commonwealth of Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement - Public Access Board - To Construct a Launching Ramp, Flots and Dredge in Nasketucket Bay, Fairhaven, Bristol Co., MA | 6 | Ocean Avenue | Riprap and Boat Ramp |
| 023-029C-000-618-200 | 023-029C-000-618-200-L1C2A | 2718 | DEP | Fairhaven | August 29, 1991 | Plan Accompanying Petition of Commonwealth of Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement Public Access Board - To Construct a Launching Ramp, Flots and Dredge in Nasketucket Bay - Fairhaven, Bristol Co., MA | 6 | Ocean Avenue | Riprap and Boat Ramp |

NASKETUCKET BAY



ELEVATIONS ARE BASED ON THE PLANE OF MEAN LOW WATER

PUBLIC USE

ALL TIMBER TO BE (LA TREATED)

ALL HARDWARE TO BE GALV.

EXIST. RAMP CONSTRUCTED UNDER D.P.W. CONT. NO. 2327, JULY 1961.



BENCH MARK
8" SPIKE SET IN U.P. #42534
@ EL. 8.4 MLW.

SHORE DRIVE

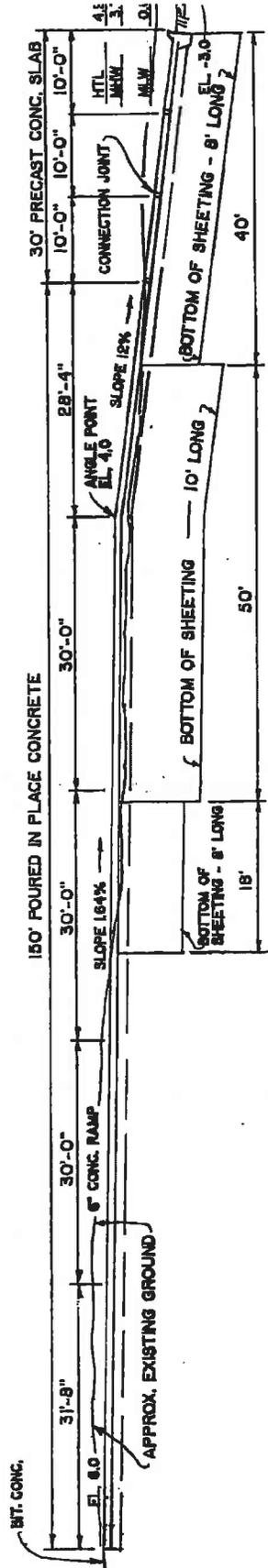
PLAN ACCOMPANYING PETITION OF COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF FISHERIES, WILDLIFE AND ENVIRONMENTAL LAW ENFORCEMENT PUBLIC ACCESS BOARD TO CONSTRUCT A LAUNCHING RAMP, FLOATS AND DREDGE IN NASKETUCKET BAY FAIRHAVEN, BRISTOL CO. MA.

JULY 6, 1989 SHEET: 1 OF 6

BRAMAN ENGINEERING COMPANY, LTD. CIVIL ENGINEERS & SURVEYORS 258 MAIN ST., BUZZARDS BAY, MA.

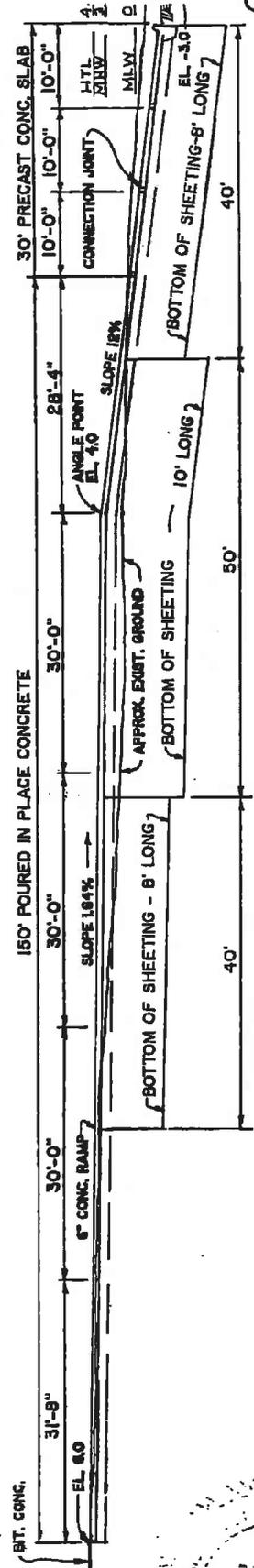
CIVIL
Robert A. Braman

LICENSE PLAN NO. 2718
Approved by Department of Environmental Protection
James Barrows COMMISSIONER
Director
SECTION CHIEF



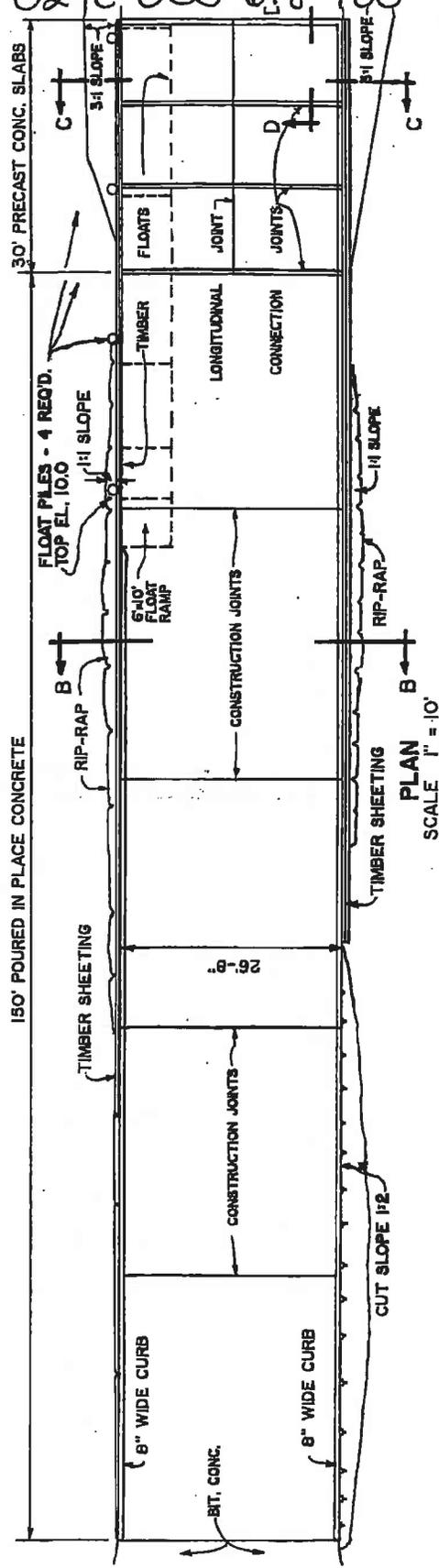
LAUNCHING RAMP PROFILE SOUTH SIDE

HORIZ. 1" = 10'
VERT. 1" = 10'
SCALE: 1" = 10'



LAUNCHING RAMP PROFILE NORTH SIDE

HORIZ. 1" = 10'
VERT. 1" = 10'
SCALE: 1" = 10'



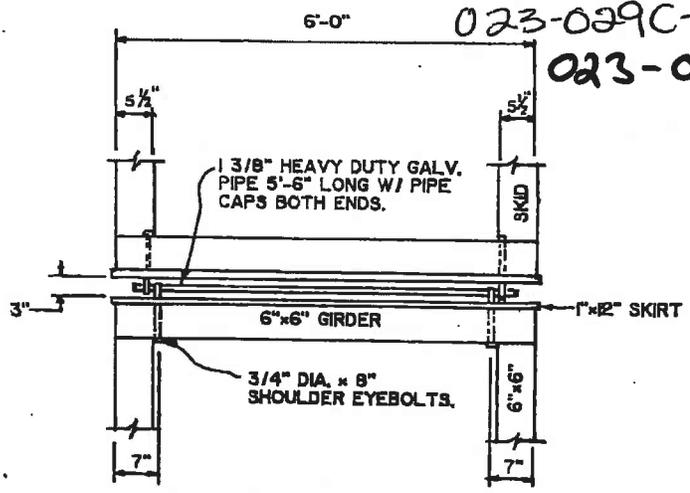
PLAN

SCALE 1" = 10'

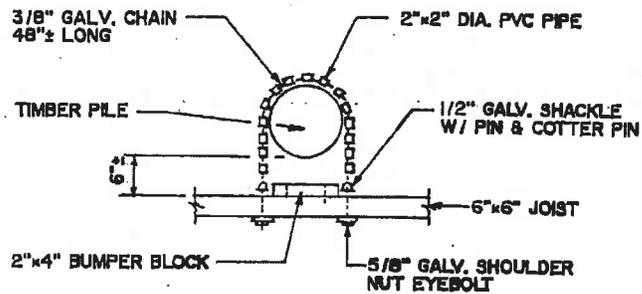
LICENSE PLAN NO. 2718
 Approved by Department of Environmental Protection
 Date: **AUG 29 1991**
 COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

Robert A. Braman
 CIVIL
 No. 2015
 JULY 6, 1989

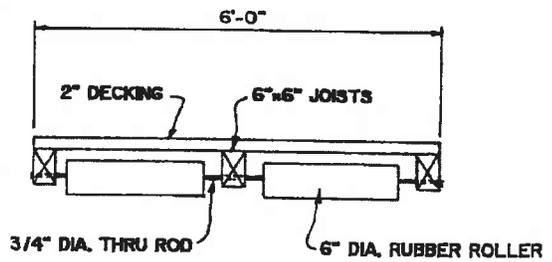
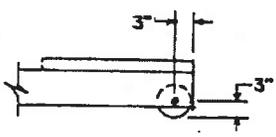
023-029C-000-618-100
 023-029C-000-618-200



FLOAT TO FLOAT CONNECTION
 SCALE 3/8" = 1'-0"



FLOAT GUIDE
 SCALE 3/8" = 1'-0"

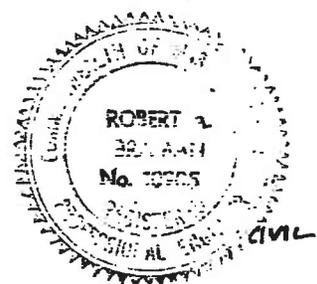


FLOAT RAMP
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718

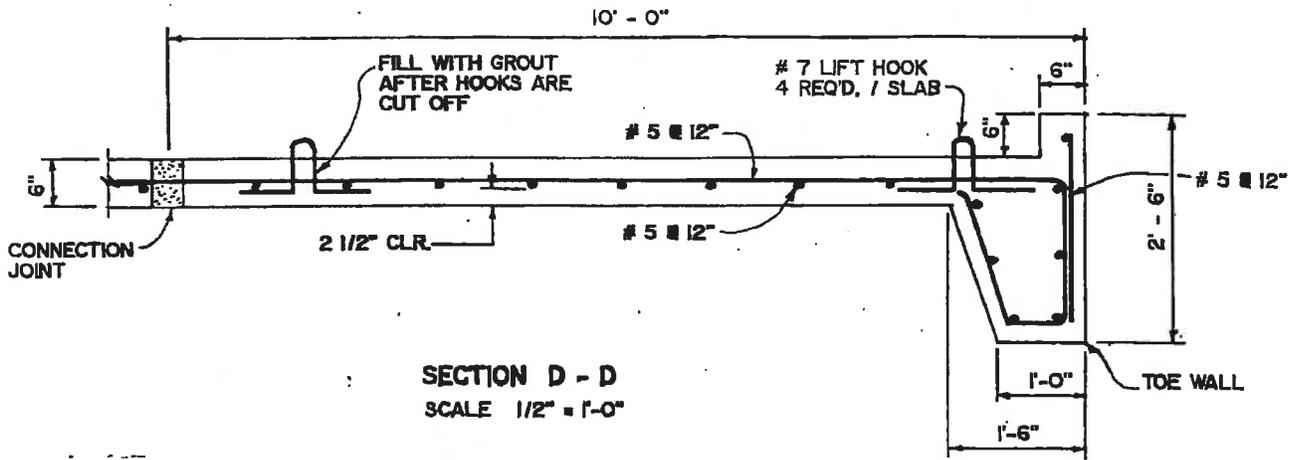
Approved by Department of Environmental Protection

Date: **AUG 29 1991**



Robert A. Braman

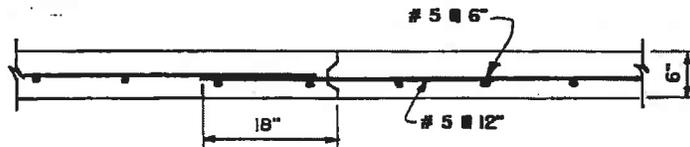
023-029C-000-618-100
 023-029C-000-618-200



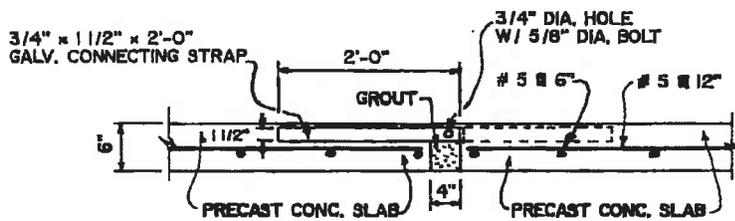
SECTION D - D
 SCALE 1/2" = 1'-0"



LONGITUDINAL JOINT DETAIL
 SCALE 1/2" = 1'-0"



CONSTRUCTION JOINT DETAIL
 SCALE 1/2" = 1'-0"

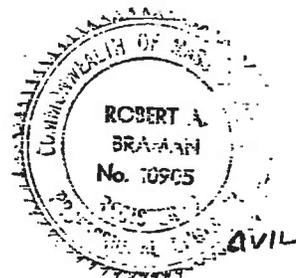


CONNECTION JOINT DETAIL
 SCALE 1/2" = 1'-0"

LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

Date: AUG 29 1991



Robert A. Braaman

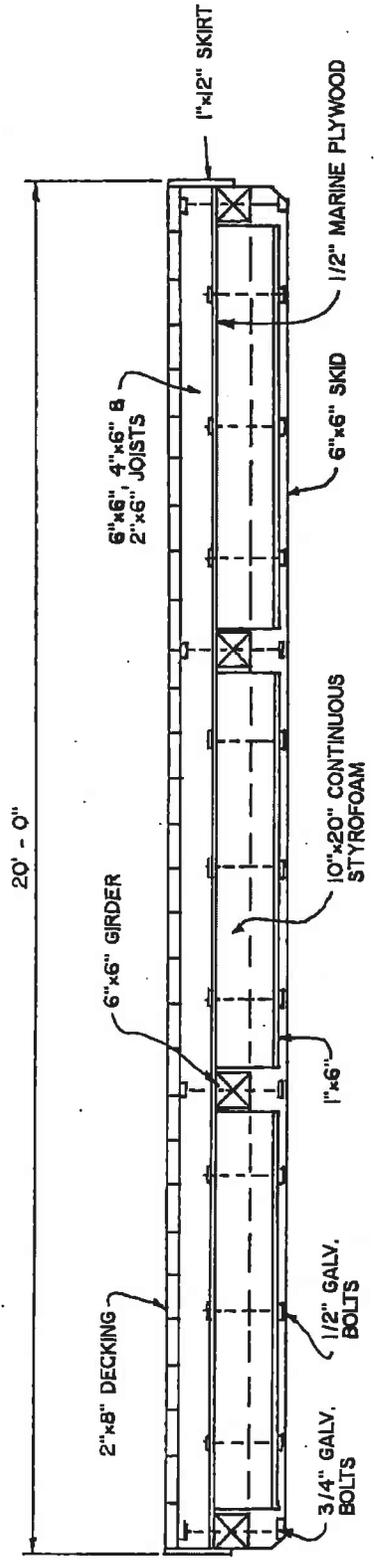
COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

JULY 6, 19889

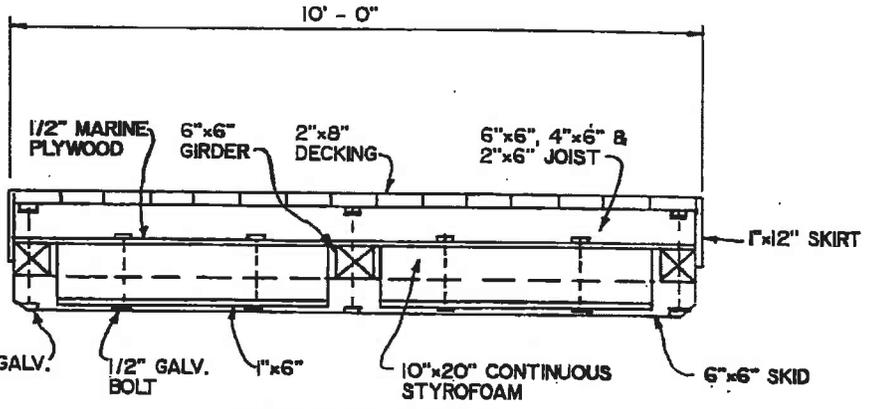
REVISED 3-12-91

SHEET 4 OF 6

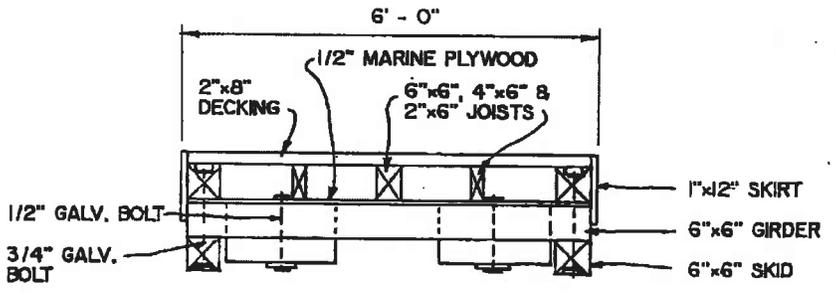
023-029C-000-618-100
 023-029C-000-618-200



PROFILE 6x20' FLOAT
 SCALE 3/8" = 1'-0"



PROFILE 6x10' FLOAT
 SCALE 3/8" = 1'-0"

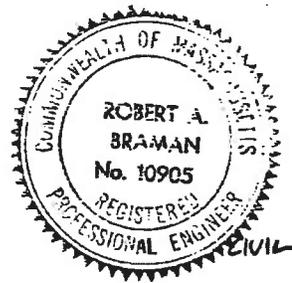


SECTION 6' WIDE FLOAT
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718

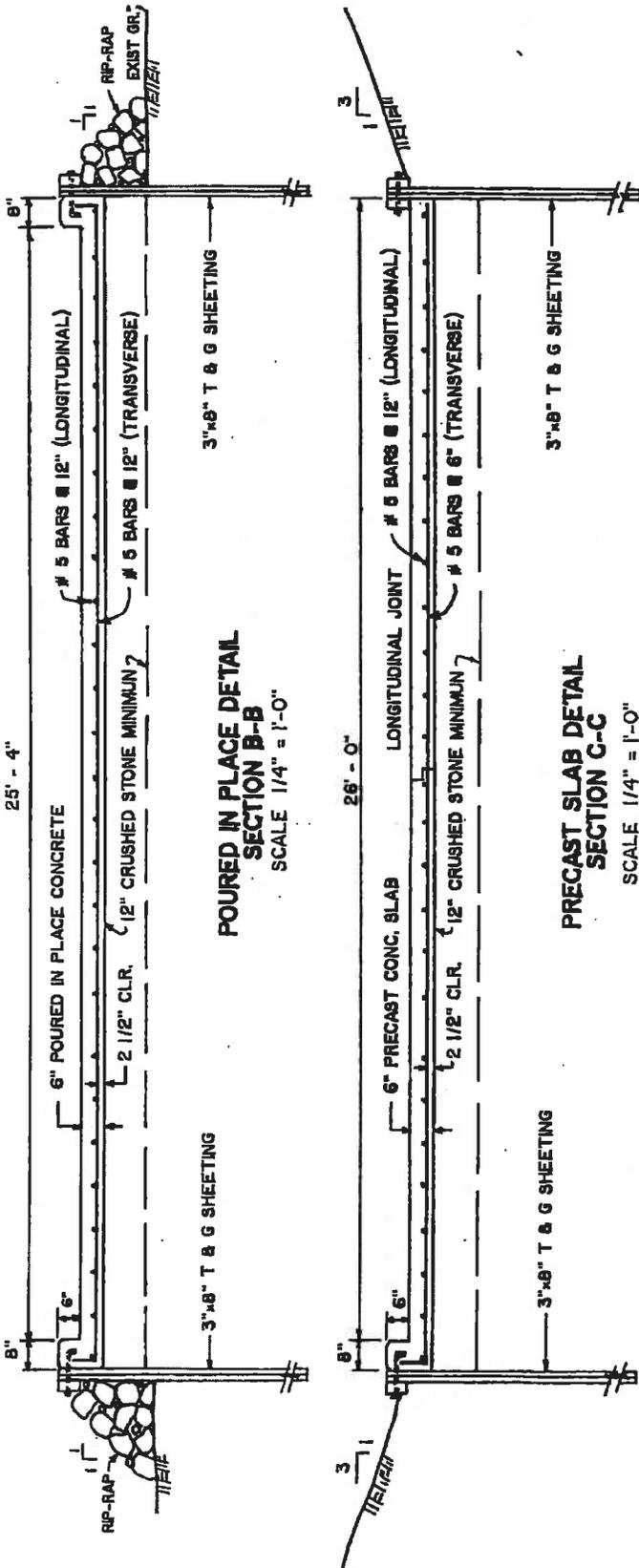
Approved by Department of Environmental Protection
 Date:

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND



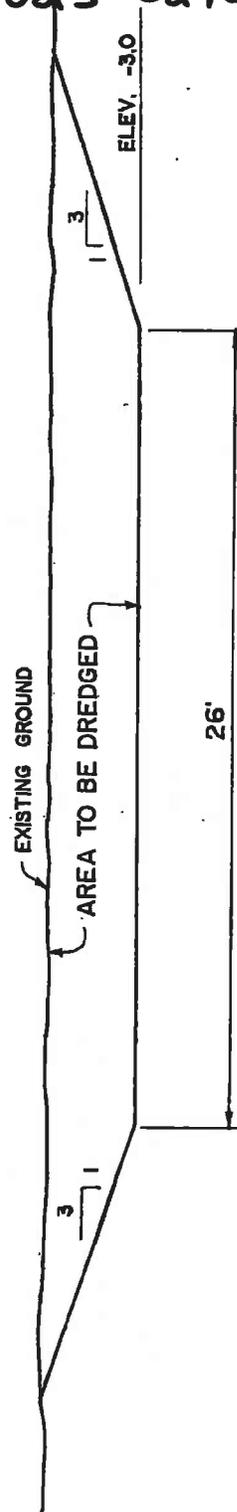
Robert A. Braman
 REUSED 3-12-91

023-029C-000-618-100
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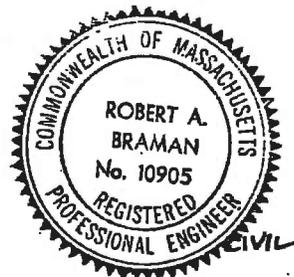
**POURED IN PLACE DETAIL
 SECTION B-B**
 SCALE 1/4" = 1'-0"

**PRECAST SLAB DETAIL
 SECTION C-C**
 SCALE 1/4" = 1'-0"



DREDGED SECTION
 SCALE 1" = 6'

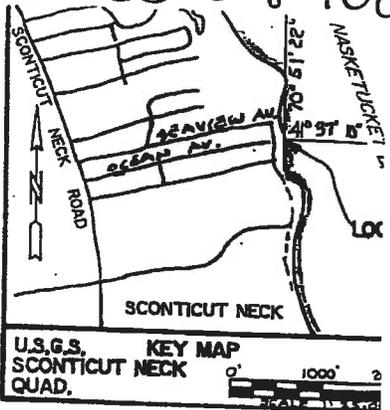
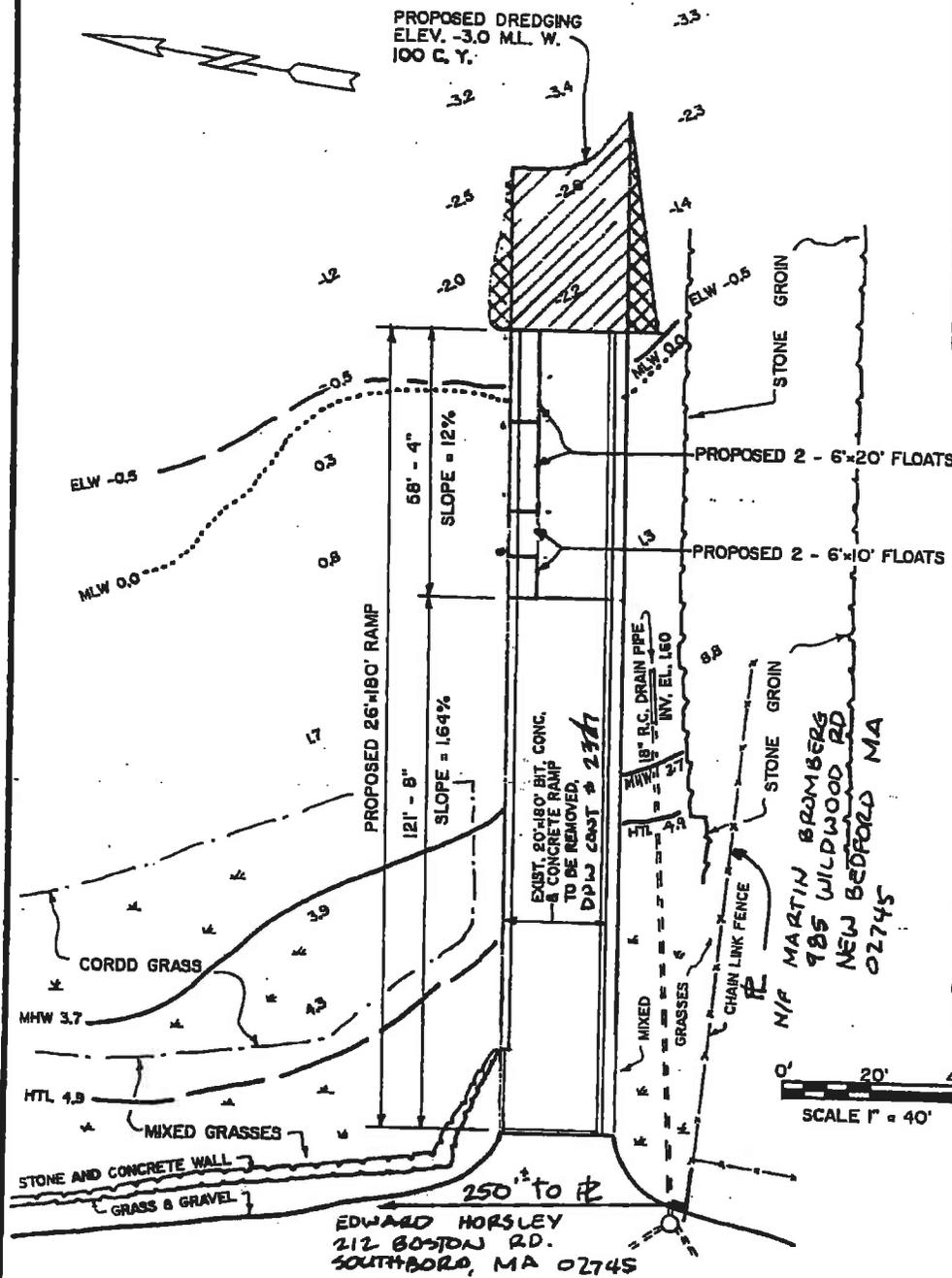
NOTE:
 3 CY RIP RAP BELOW MHW
 ALL CONC. BELOW MHW.



Robert A. Braman
 JULY 6, 1969

LICENSE PLAN NO. 2718
 Approved by Department of Environmental Protection
 Date:

NASKETUCKET BAY



ELEVATIONS ARE BASED ON THE PLANE OF MEAN LOW WATER

PUBLIC USE

ALL TIMBER TO BE CCA TREATED

ALL HARDWARE TO BE GALV.

EXIST. RAMP CONSTRUCTED UNDER D.P.W. CONT. NO. 2327, JULY 1961.



BENCH MARK
8" SPIKE SET IN U.P. #42534
@ EL. 8.4 MLW.

SHORE DRIVE

PLAN ACCOMPANYING PETITION OF COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF FISHERIES, WILDLIFE AND ENVIRONMENTAL LAW ENFORCEMENT PUBLIC ACCESS BOARD TO CONSTRUCT A LAUNCHING RAMP, FLOATS AND DREDGE IN NASKETUCKET BAY FAIRHAVEN, BRISTOL CO. MA.

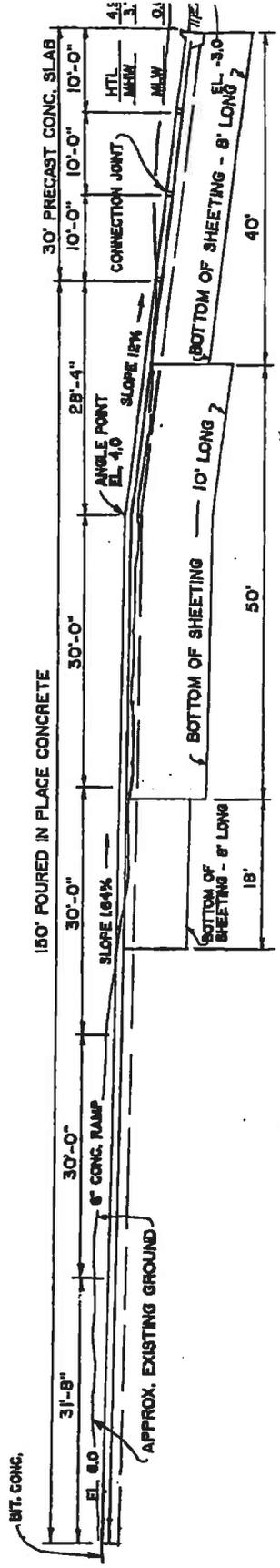
JULY 6, 1989 SHEET: 1 OF 6

BRAMAN ENGINEERING COMPANY, LTD.
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST., BUZZARDS BAY, MA.

LICENSE PLAN NO. 2718

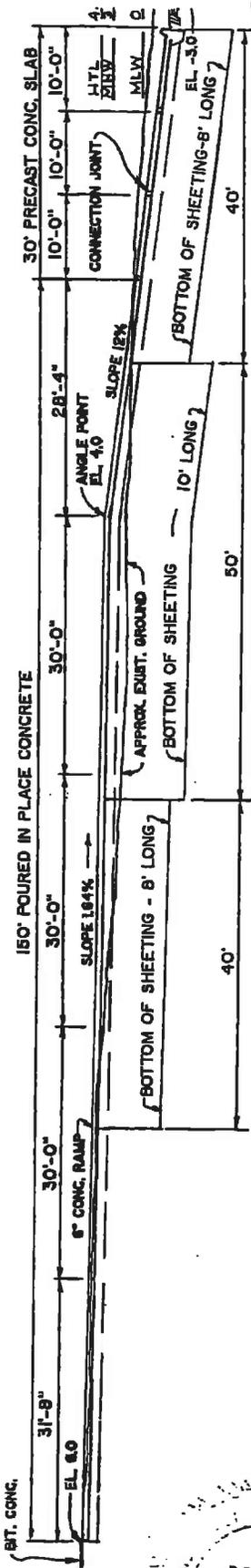
Approved by Department of Environmental Protection of Massachusetts

Thomas B. Powers COMMISSIONER
 [Signature] DIRECTOR
 [Signature] SECTION CHIEF



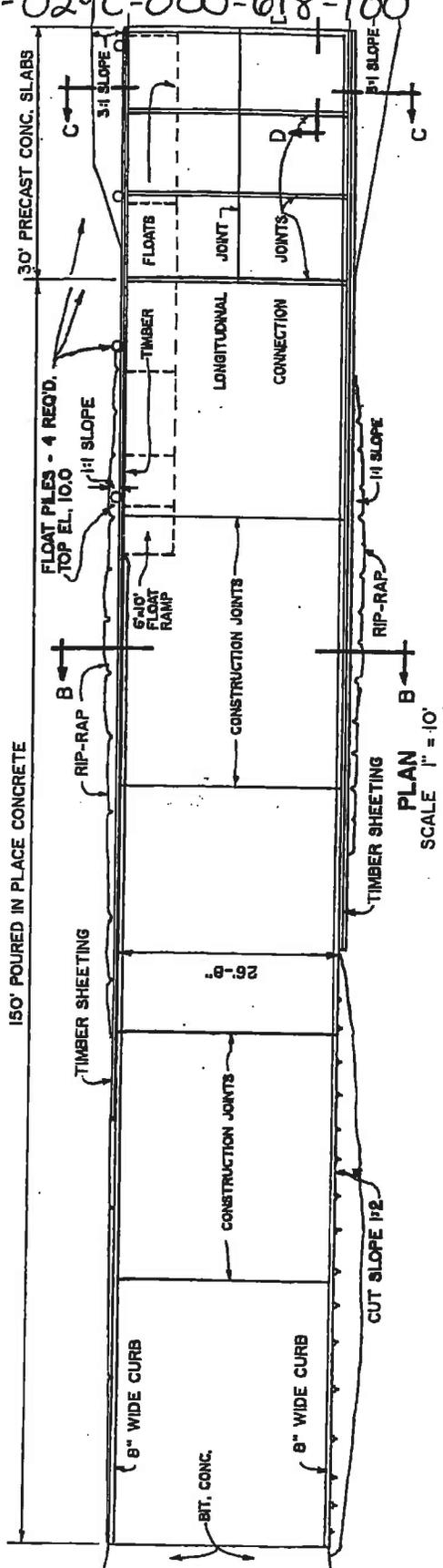
LAUNCHING RAMP PROFILE SOUTH SIDE

HORIZ. 1" = 10'
SCALE: VERT. 1" = 10'



LAUNCHING RAMP PROFILE NORTH SIDE

HORIZ. 1" = 10'
SCALE: VERT. 1" = 10'



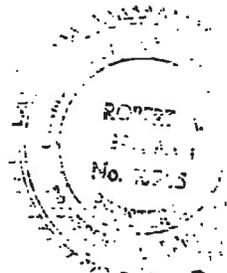
PLAN
SCALE 1" = 10'

LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

Date: AUG 29 1991

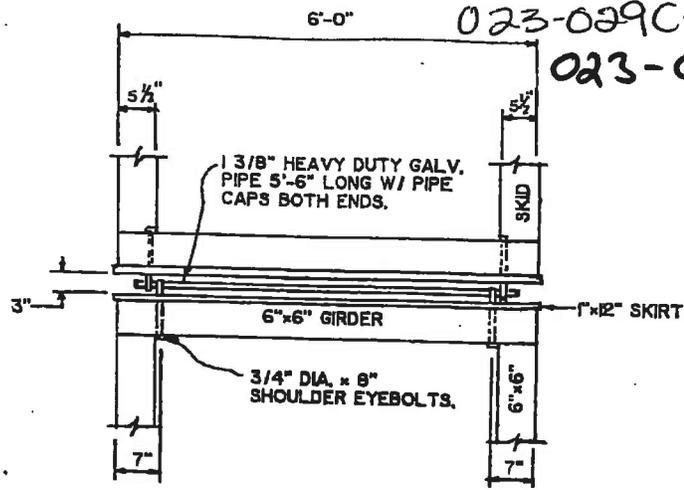
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF FISHERIES, WILDLIFE AND
ENVIRONMENTAL LAW ENFORCEMENT



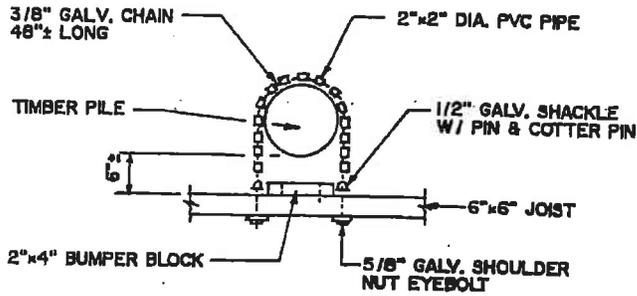
Robert A. Braman

JULY 6, 1989

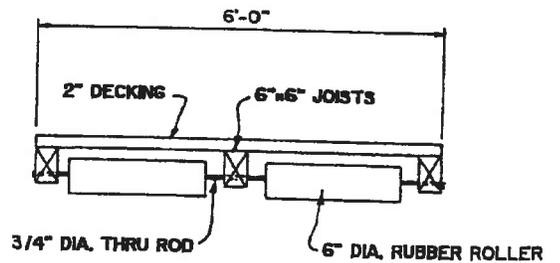
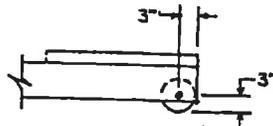
023-029C-000-618-100
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FLOAT TO FLOAT CONNECTION
 SCALE 3/8" = 1'-0"



FLOAT GUIDE
 SCALE 3/8" = 1'-0"

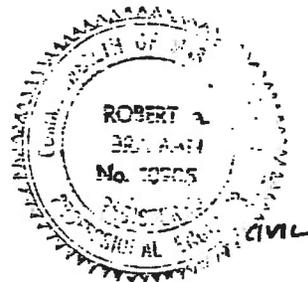


FLOAT RAMP
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718

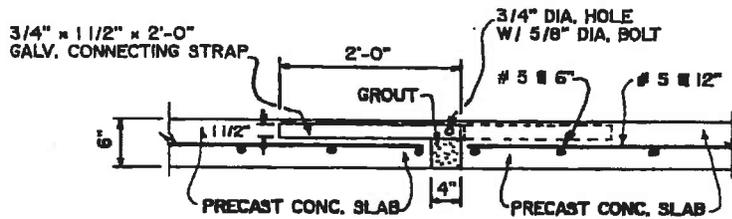
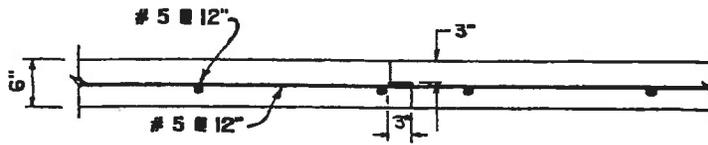
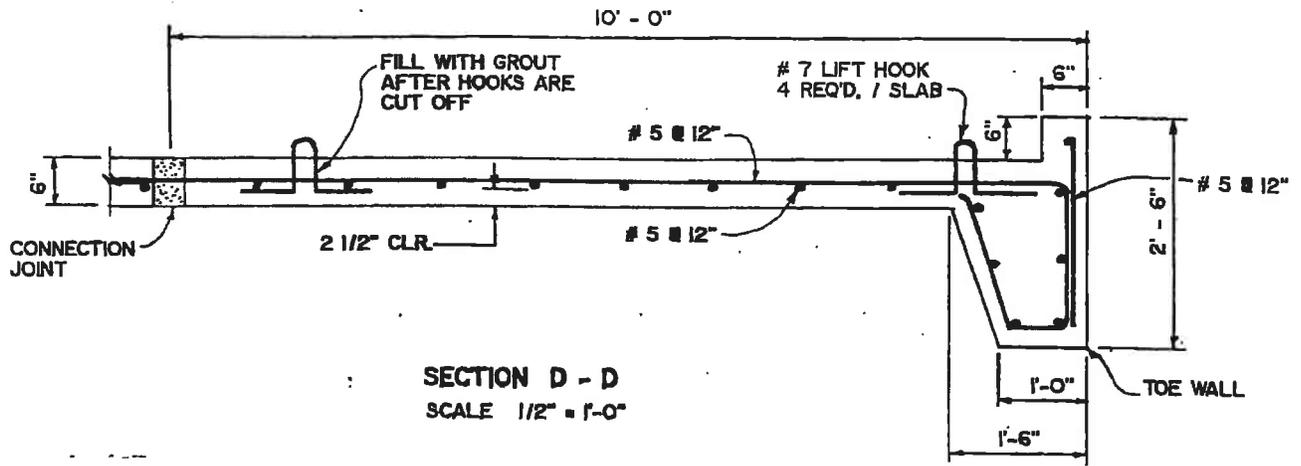
Approved by Department of Environmental Protection

Date: **AUG 29 1991**



Robert A. Braman

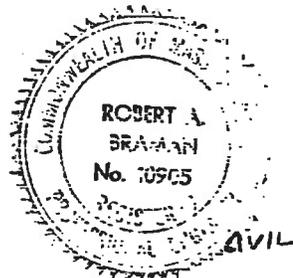
023-029C-000-618-100
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LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

Date: AUG 29 1991



Robert A. Brauman

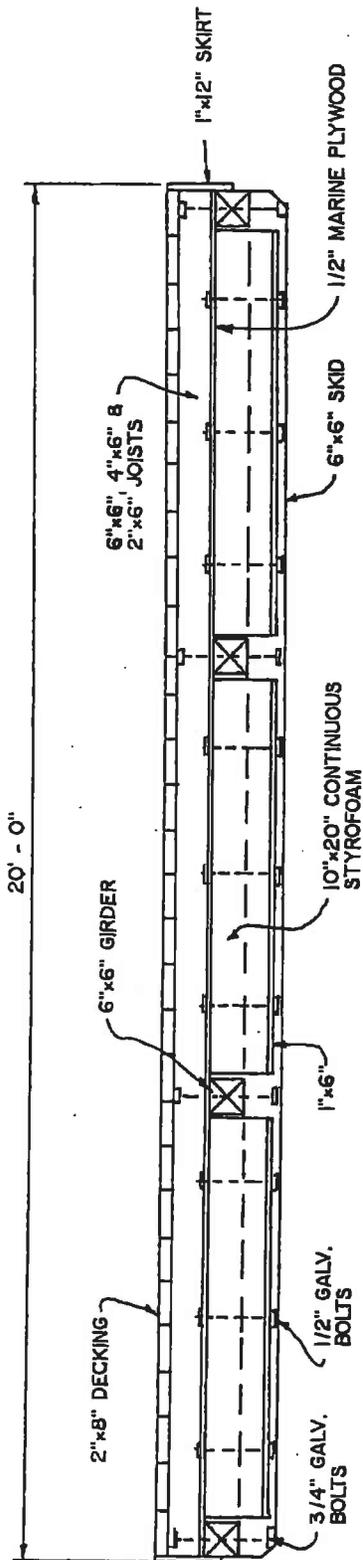
COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

JULY 6, 19889

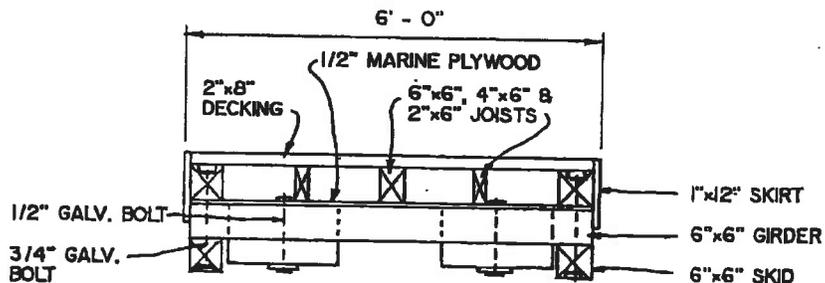
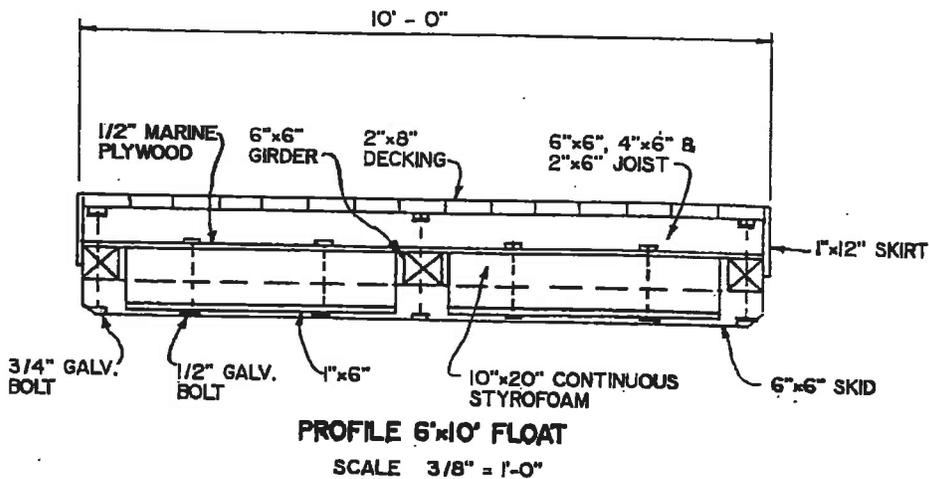
REVISED 3-12-91

SHEET 4 OF 6

023-029C-000-618-100
 023-029C-000-618-200



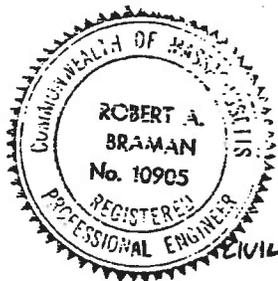
PROFILE 6x20' FLOAT
 SCALE 3/8" = 1'-0"



LICENSE PLAN NO. 2718

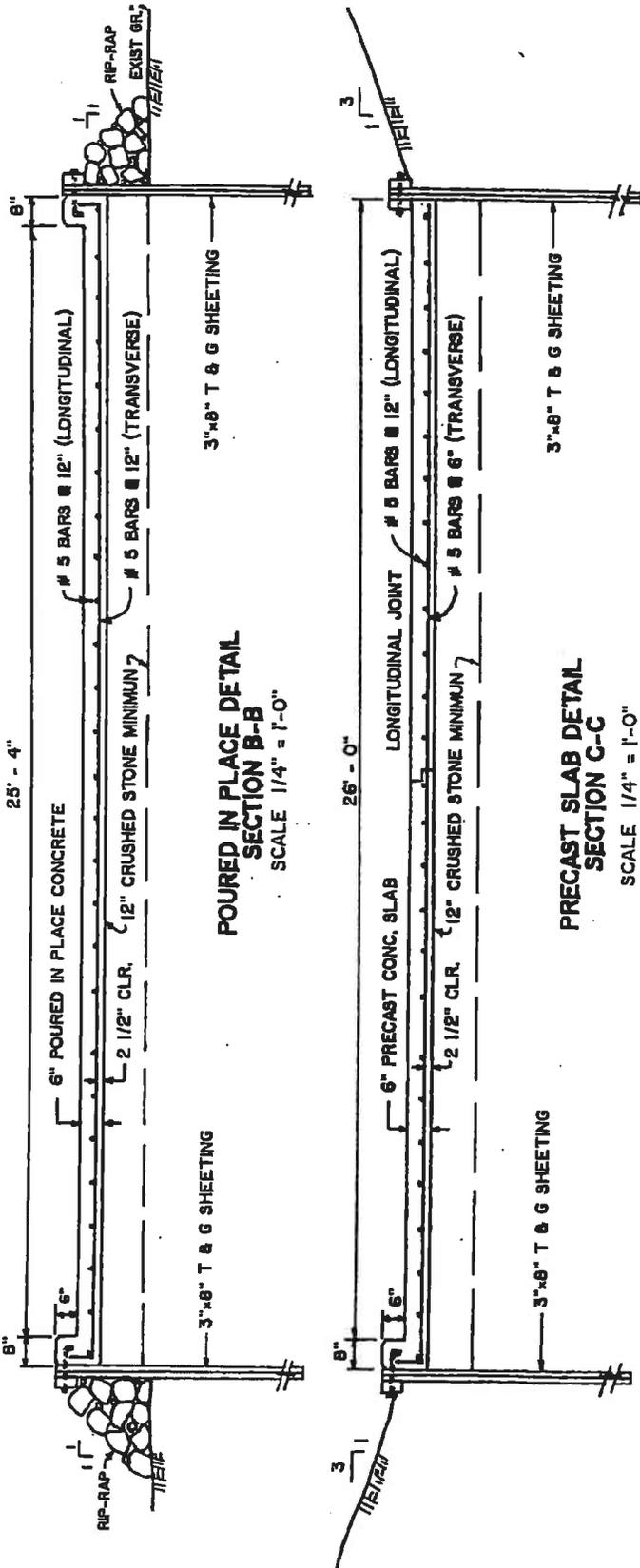
Approved by Department of Environmental Protection
 Date:

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND



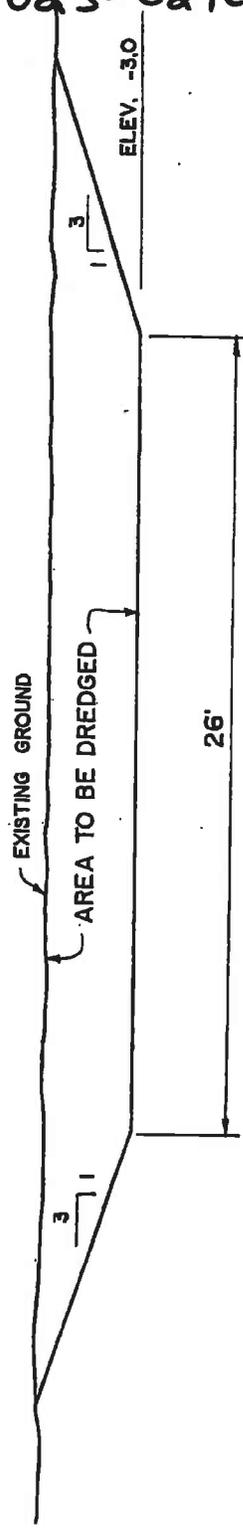
Robert A. Braman
 REVISED 3-12-91

023-029C-000-618-100
 023-029C-000-618-201



POURED IN PLACE DETAIL
 SECTION B-B
 SCALE 1/4" = 1'-0"

PRECAST SLAB DETAIL
 SECTION C-C
 SCALE 1/4" = 1'-0"



DREDGED SECTION
 SCALE 1" = 6'

LICENSE PLAN NO. 2718
 Approved by Department of Environmental Protection
 Date:

NOTE:
 3 CY RIP RAP BELOW MHW
 42 CY CONC. BELOW MHW.



Robert A. Braman
 JULY 6, 1989

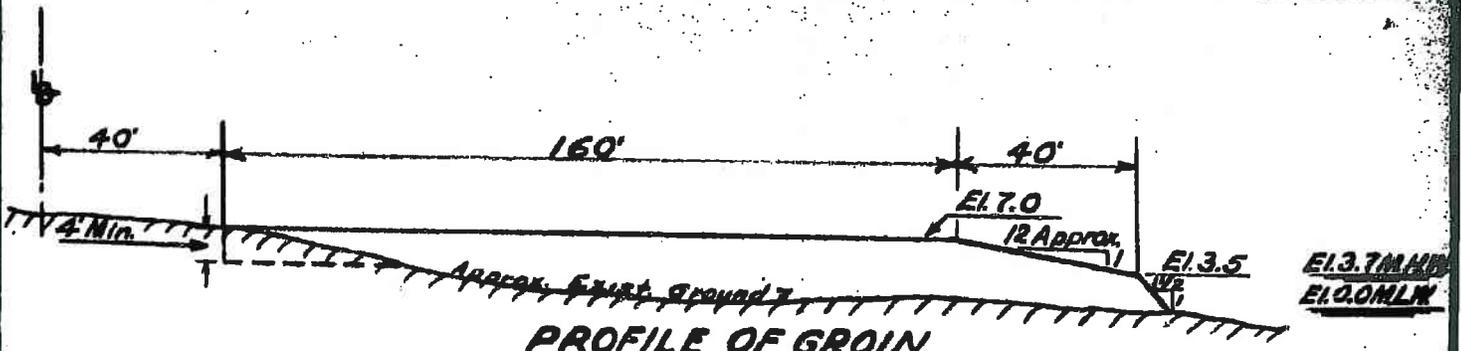
TOWN: FAIRHAVEN
 SOURCE: US ACEE
 LOCATION: CONCORD, MA
 DATE OF RESEARCH: AUGUST 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|-------------------|---|--------|--------------------------------|-------------------------------|
| 023-002-000-004-100 | 023-002-000-004-100-COE1A | 64-135 | USACE | Fairhaven | April 9, 1964 | Proposed Beach Development - Stone Groin and Sand Fill - Fort Phoenix Beach, Buzzards Bay, Fairhaven, MA | 2 | Fort Phoenix Beach | Groins |
| 023-002-000-004-100 | 023-002-000-004-100-COE1B | 66-187 | USACE | Fairhaven | April 11, 1968 | Proposed Beach Development - Stone Groins and Sand Fill, Fort Phoenix Beach, Buzzards Bay, Fairhaven, MA | 1 | Fort Phoenix Beach | Groins |
| 023-007-000-009-100 | 023-007-000-009-100-COE1A | 75-306 | USACE | Fairhaven | December 11, 1975 | Proposed Bulkhead and Fill in Fairhaven, MA - Al Union Wharf | 1 | Union Wharf | Bulkhead and Fill |
| 023-011-000-012-100 | 023-011-000-012-100-COE1A | 78-248 | USACE | Fairhaven | March 28, 1978 | Addition to Public Access Facility - Acusmet River, Fairhaven, MA | 2 | Pease Street and Middle Street | Boat Ramp and Stone Revetment |
| 023-029C-000-618-100 | 023-029C-000-618-100-COE1A | 05097A | USACE | Fairhaven | February 1978 | Addition to Public Access Facility - Sconticut Neck, Fairhaven, MA | 2 | Shore Drive and Ocean Avenue | Boat Ramp and Groin |
| 023-029C-000-618-100 | 023-029C-000-618-100-COE1B | 2718 | USACE | Fairhaven | July 6 1989 | Plan Accompanying Petition of Commonwealth of Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement Public Access Board To Construct A Launching Ramp, Floats and Dredge in Nasketucket Bay | 6 | Shore Drive | Boat Ramp |
| 023-029C-000-618-200 | 023-029C-000-618-200-COE2A | 05097A | USACE | Fairhaven | February 1978 | Addition to Public Access Facility - Sconticut Neck, Fairhaven, MA | 2 | Shore Drive and Ocean Avenue | Boat Ramp and Groin |
| 023-029C-000-618-200 | 023-029C-000-618-200-COE2B | 2718 | USACE | Fairhaven | July 6 1989 | Plan Accompanying Petition of Commonwealth of Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement Public Access Board To Construct A Launching Ramp, Floats and Dredge in Nasketucket Bay | 6 | Shore Drive | Boat Ramp |

D 7 4 1 0 8 5

02-3-002-006-004-100

SHEET 2 of 2

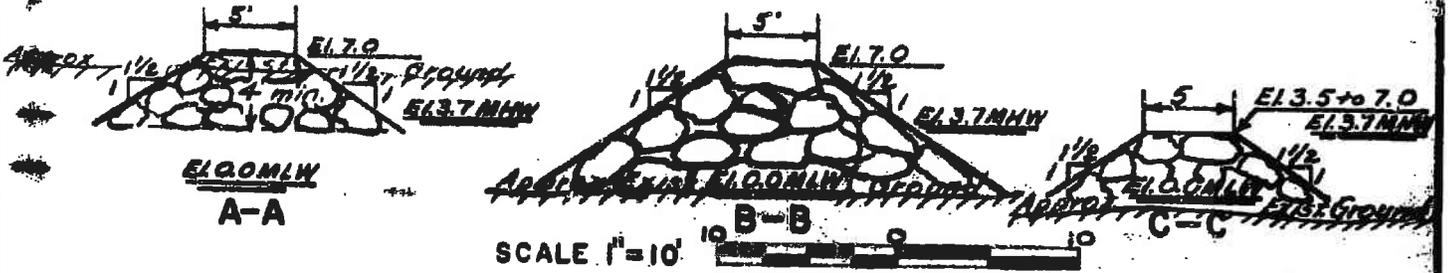


PROFILE OF GROIN
SCALE

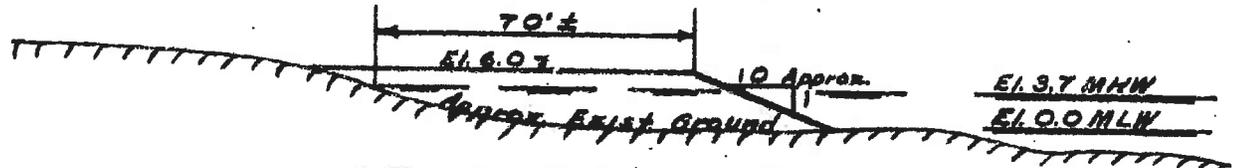
HOR. 1" = 40'
VERT. 1" = 20'



1196

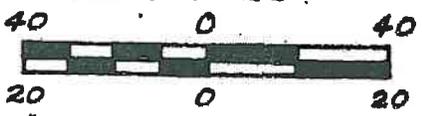


SCALE 1" = 10'



TYPICAL SECTION OF SAND FILL

SCALE
HOR. 1" = 40'
VERT. 1" = 20'



**PROPOSED BEACH DEVELOPMENT
STONE GROIN & SAND FILL
FORT PHOENIX BEACH
BUZZARDS BAY
FAIRHAVEN MASS.**

Application By
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS

MARCH 1964

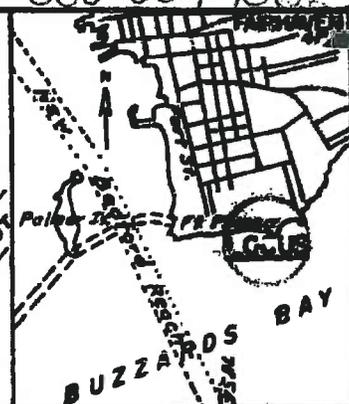
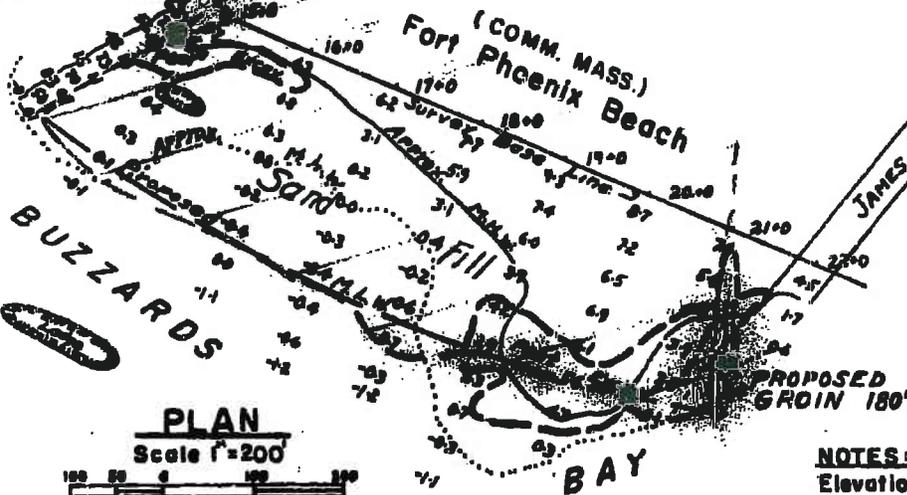
David B. Hogan
DEPUTY CHIEF ENGINEER - WATERWAYS

0 6 3 0 0 7 6

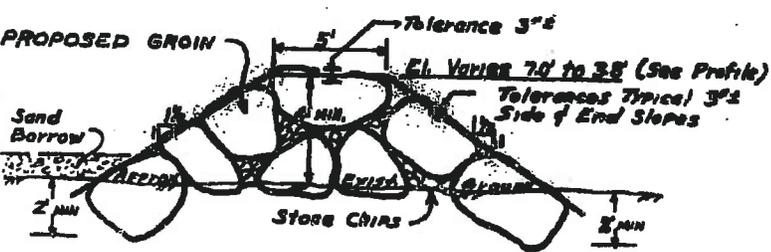
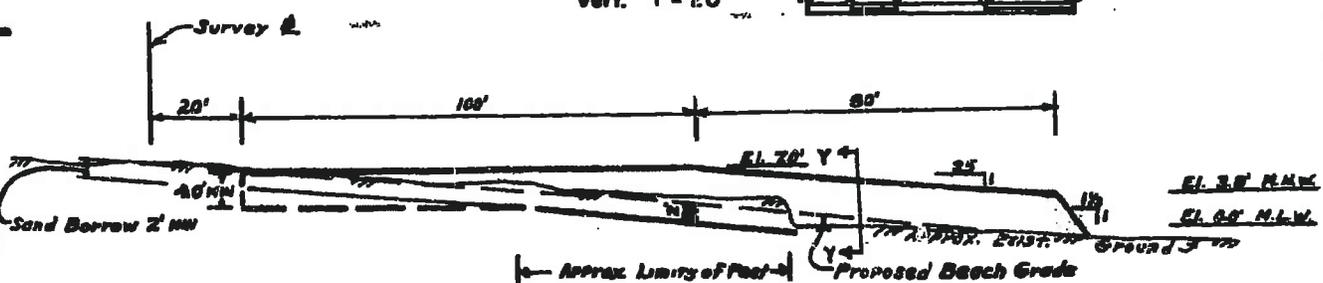
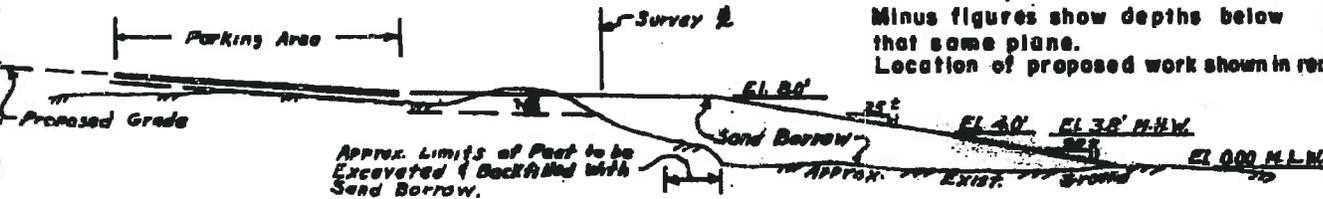
023-002-000-004-100

Existing Groin
Acc. No. 04373
Application March 1964

FAIRHAVEN



NOTES:
Elevations are in feet and tenths above the plane of Mean Low Water. Minus figures show depths below that same plane. Location of proposed work shown in red.



PROPOSED BEACH IMPROVEMENTS
Sand Fill & Stone Groin
BUZZARDS BAY
Fort Phoenix Beach Reservation
FAIRHAVEN MASS.

Application By
Department of Public Works of Massachusetts
DIVISION OF WATERWAYS
APRIL 1968

PERMIT NUMBER: MA-NEBN-75-306
DATED: 11 DECEMBER 1975

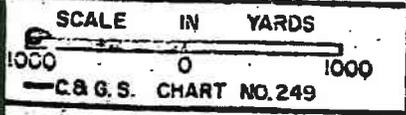
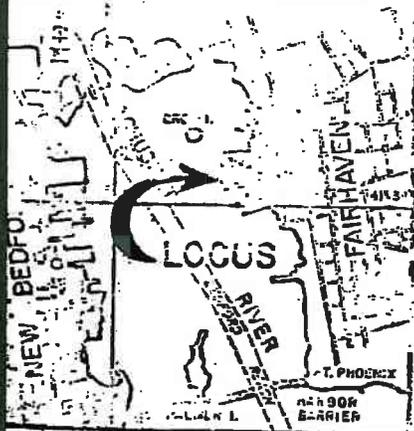
023-007-000-009-100

1

0% MAR 1, 1976
P8 9/11

Paul

SHEET 1 of 3

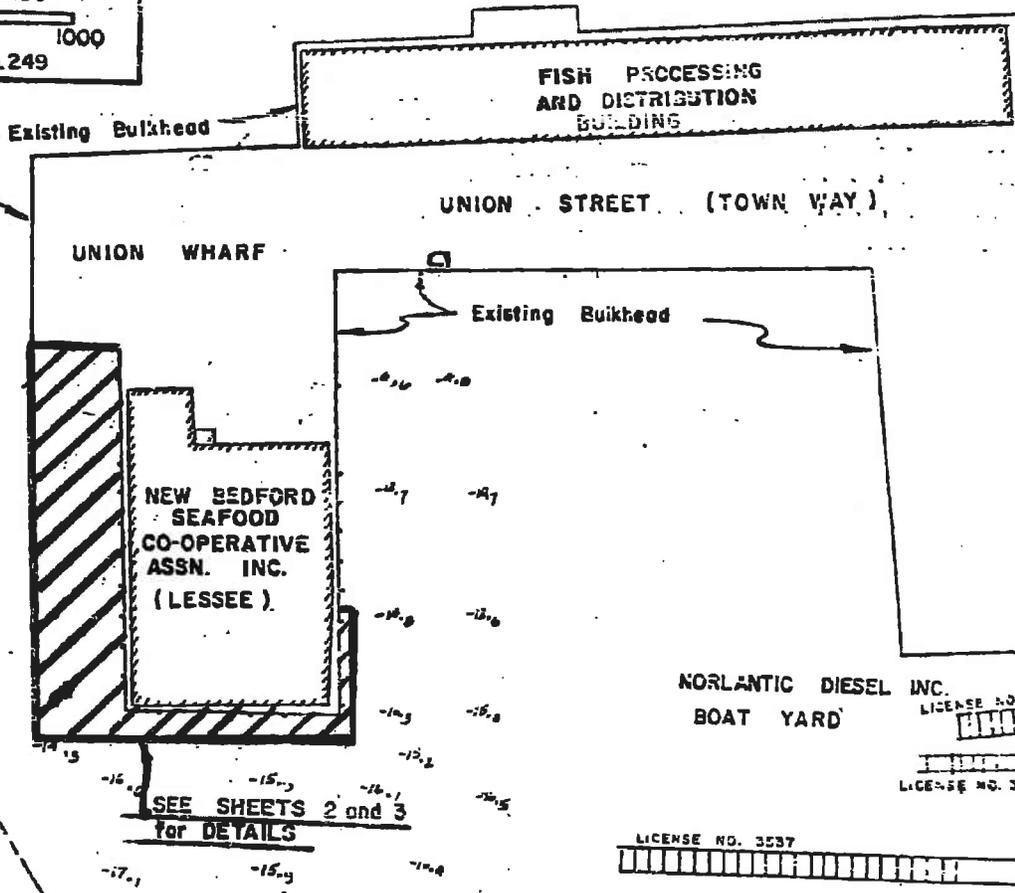


Robert L. Ladd
Roberts Engineering Corp.

64003
FLOOD

ACHUSNET RIVER

US PIERHEAD & BULKHEAD LINE



SEE SHEETS 2 and 3
for DETAILS

NORLANTIC DIESEL INC.
BOAT YARD
LICENSE NO. 3537



SOUNDINGS ARE IN FEET AND TENTHS
AND REFER TO MEAN LOW WATER

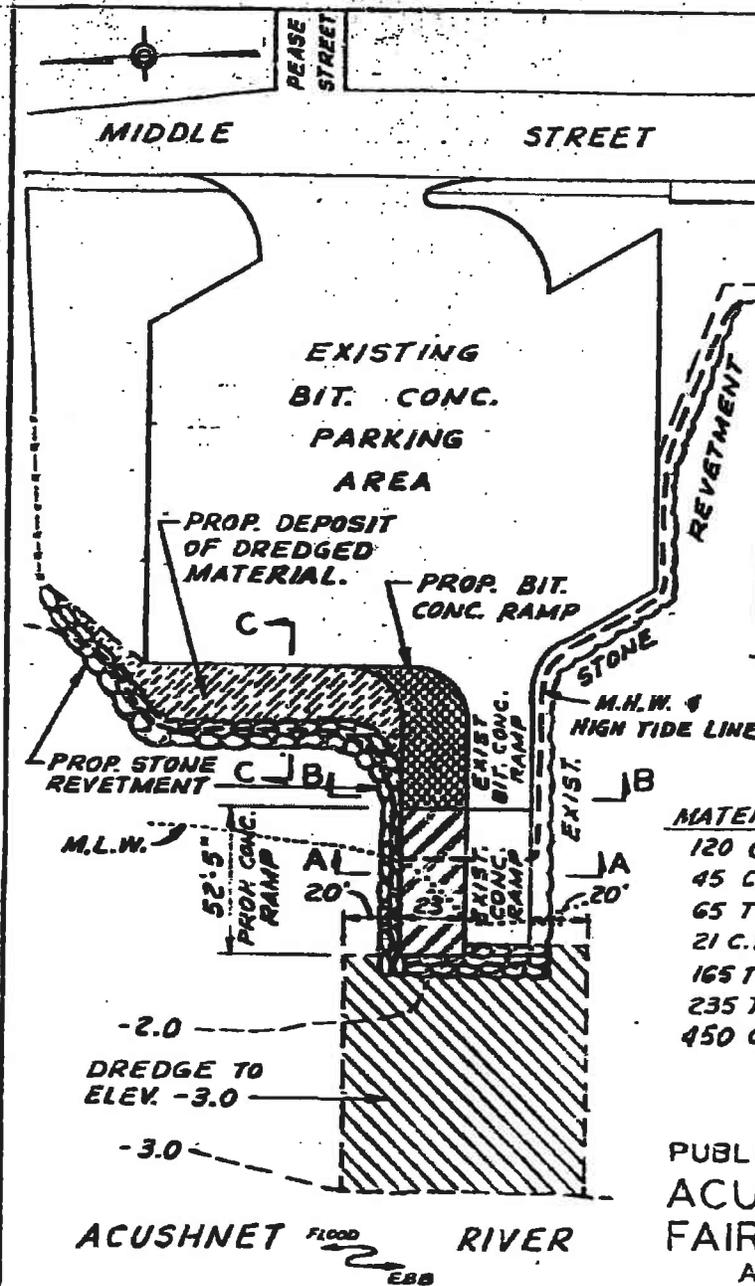
Proposed Bulkhead & Fill

at Union Wharf

County of Bristol

State of Mass.

PLAN
SCALE IN FEET



LOCATION PLAN
SCALE
0 1000 2000 1" = 2000'
NEW BEDFORD
U.S.G.S. NORTH, QUAD.

NOTE:
ELEVATIONS ARE IN FEET AND TENTHS AND REFER TO MEAN LOW WATER - DATUM 0.0'

- MATERIAL FOR RAMP CONSTRUCTION**
- 120 C.Y. OF ORDINARY BORROW
 - 45 C.Y. OF GRAVEL BORROW
 - 65 TONS OF CRUSHED STONE
 - 21 C.Y. OF CL. "D" CEM. CONC. MASONRY
 - 165 TONS OF ROCK FILL
 - 235 TONS OF STONE REVETMENT
 - 450 C.Y. OF DREDGED MATERIAL

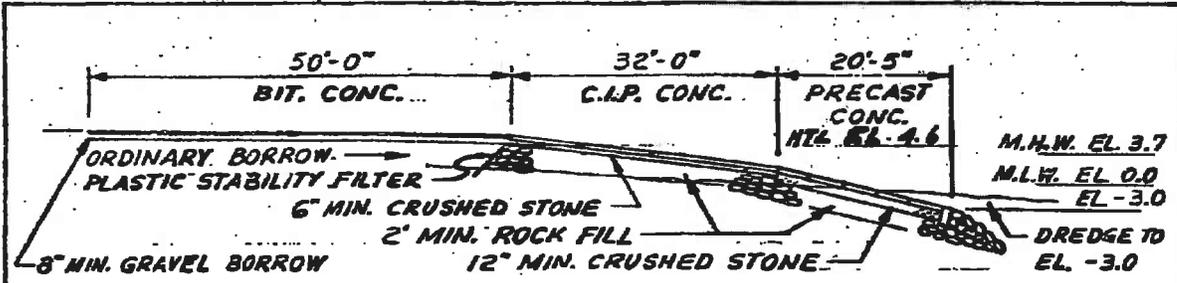
**ADDITION TO
PUBLIC ACCESS FACILITY
ACUSHNET RIVER
FAIRHAVEN, MASS.**

APPLICATION BY
MASS. DEPT. OF ENVIRONMENTAL
QUALITY ENGINEERING
DIVISION OF WATERWAYS
FEBRUARY 1978

PLAN
SCALE: 1" = 60'

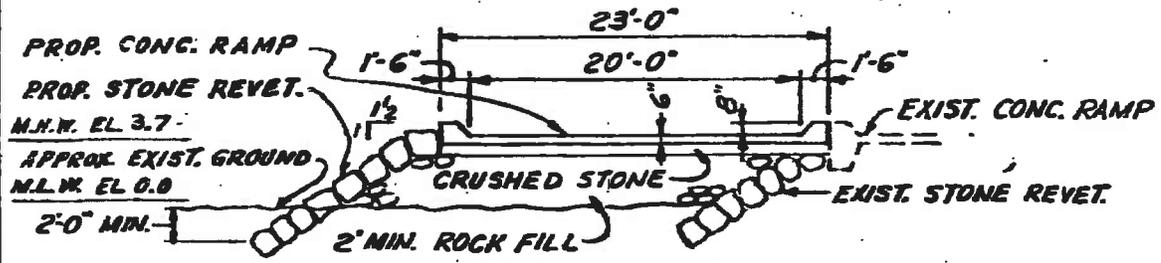
John J. ...
CHIEF ENGINEER - WATERWAYS
ACC. NO. 05096 A

2321998



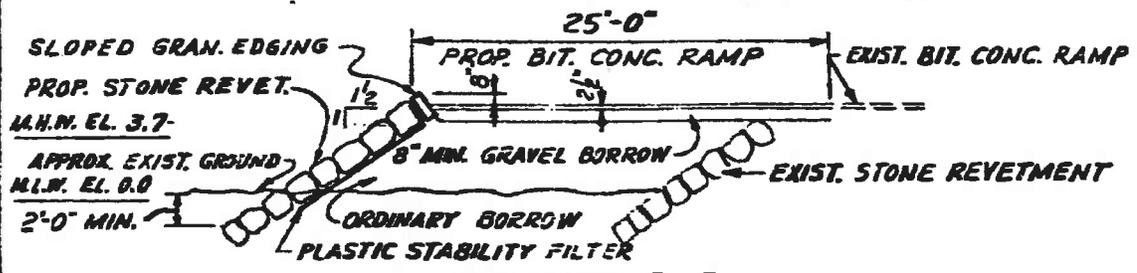
LONGITUDINAL SECTION

SCALE: 1" = 20'
0 10 20 40



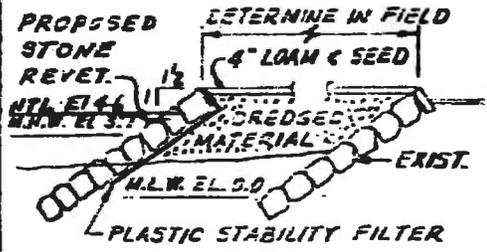
SECTION A-A

SCALE: 1" = 10'
0 10 20



SECTION B-B

SCALE: 1" = 10'
0 10 20



SECTION C-C

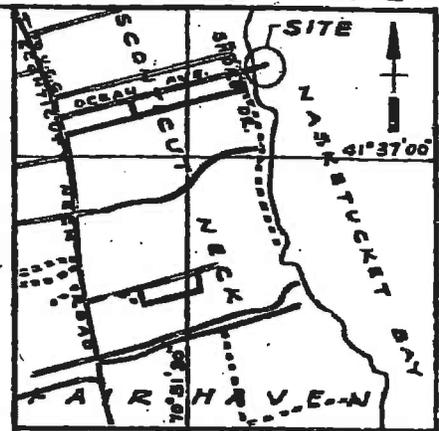
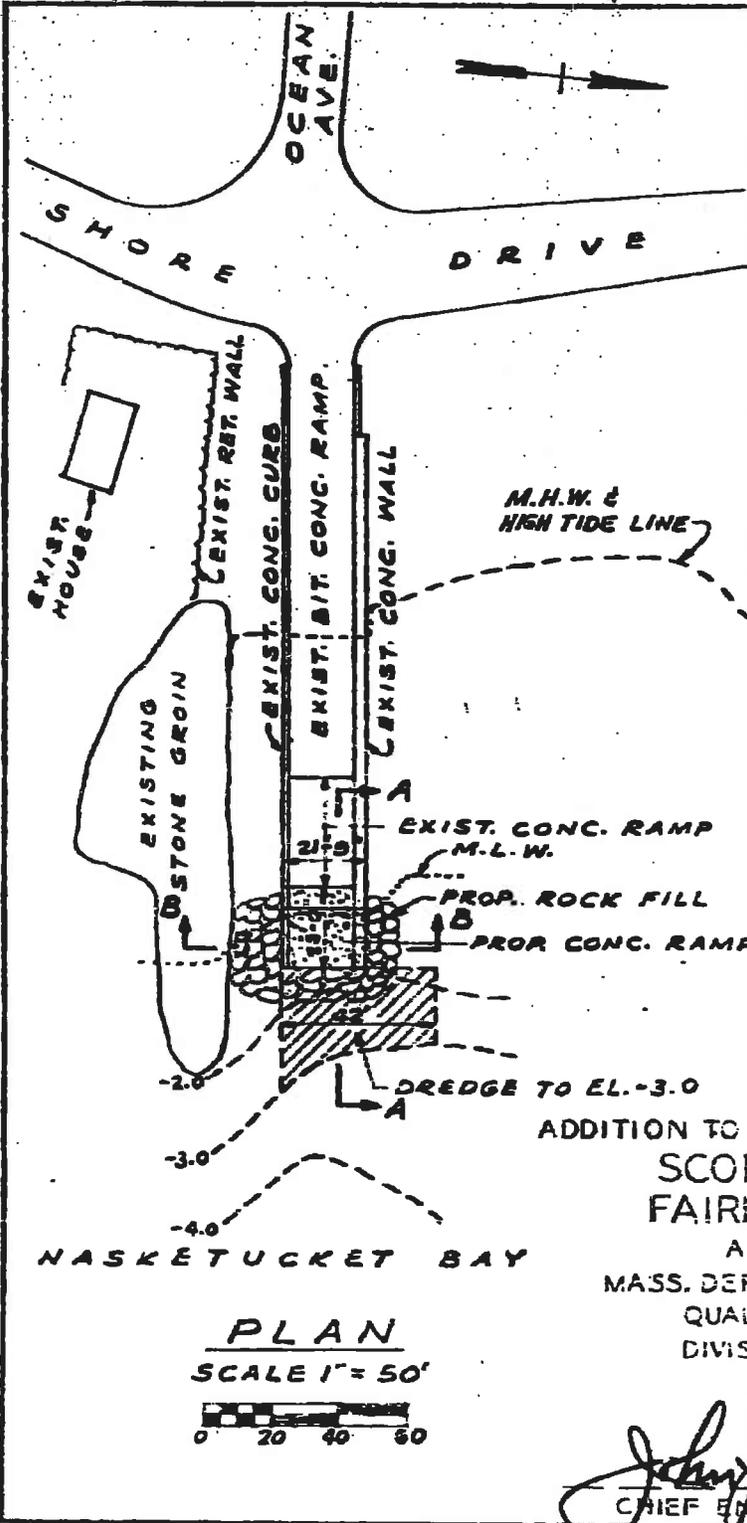
SCALE: 1" = 10'
0 10 20

ADDITION TO PUBLIC ACCESS FACILITY
ACUSHNET RIVER
FAIRHAVEN, MASS.
APPLICATION BY
MASS. DEPT. OF ENVIRONMENTAL
QUALITY ENGINEERING
DIVISION OF WATERWAYS
FEBRUARY 1978

2321999

023-029C-000-618-100
 023-029C-000-618-200
 SHEET 1 OF 2

2322000



LOCATION PLAN

SCALE 1" = 2000'
 0 500 1000 2000

U.S. GEOLOGICAL SURVEY
 SCONTICUT NECK QUADRANGLE

NOTE.
 ELEVATIONS ARE IN FEET
 AND TENTHS AND REFER
 TO MEAN LOW WATER -
 DATUM 0.0'

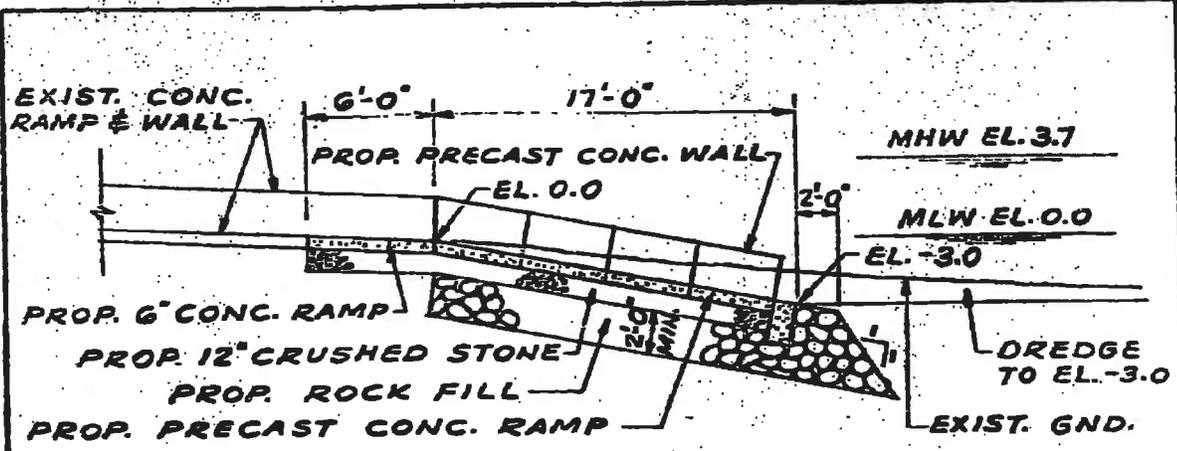
ADDITION TO PUBLIC ACCESS FACILITY
 SCONTICUT NECK
 FAIRHAVEN, MASS.
 APPLICATION BY
 MASS. DEPT. OF ENVIRONMENTAL
 QUALITY ENGINEERING
 DIVISION OF WATERWAYS
 FEBRUARY 1978

PLAN
 SCALE 1" = 50'

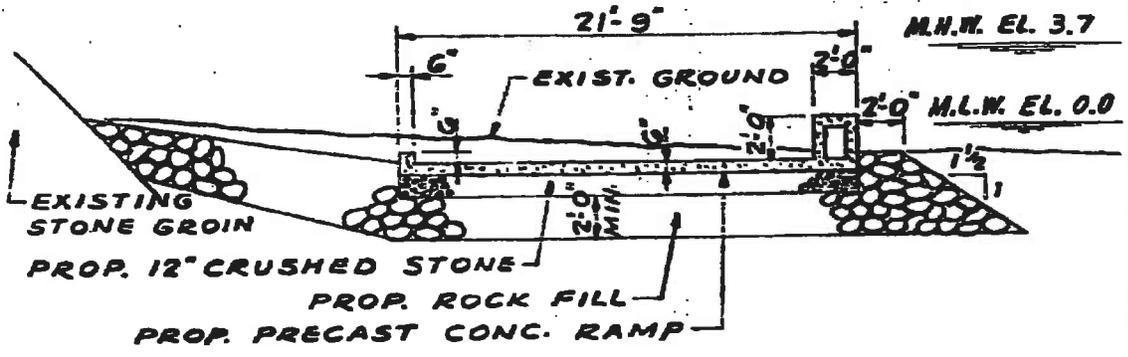
0 20 40 60

John J. Conway
 CHIEF ENGINEER - WATERWAYS

ACC. NO. 05097 A



SECTION A-A
 SCALE 1" = 8'



SECTION B-B
 SCALE 1" = 8'

NOTE:
 100 C.Y. OF DREDGED
 MATERIAL TO BE DISPOSED
 OFF WORK AREA AND ABOVE
 M.H.W. AT A LOCATION
 APPROVED BY THE ENGINEER

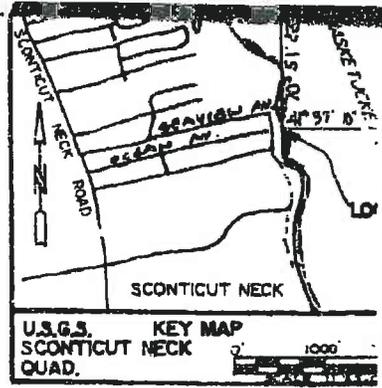
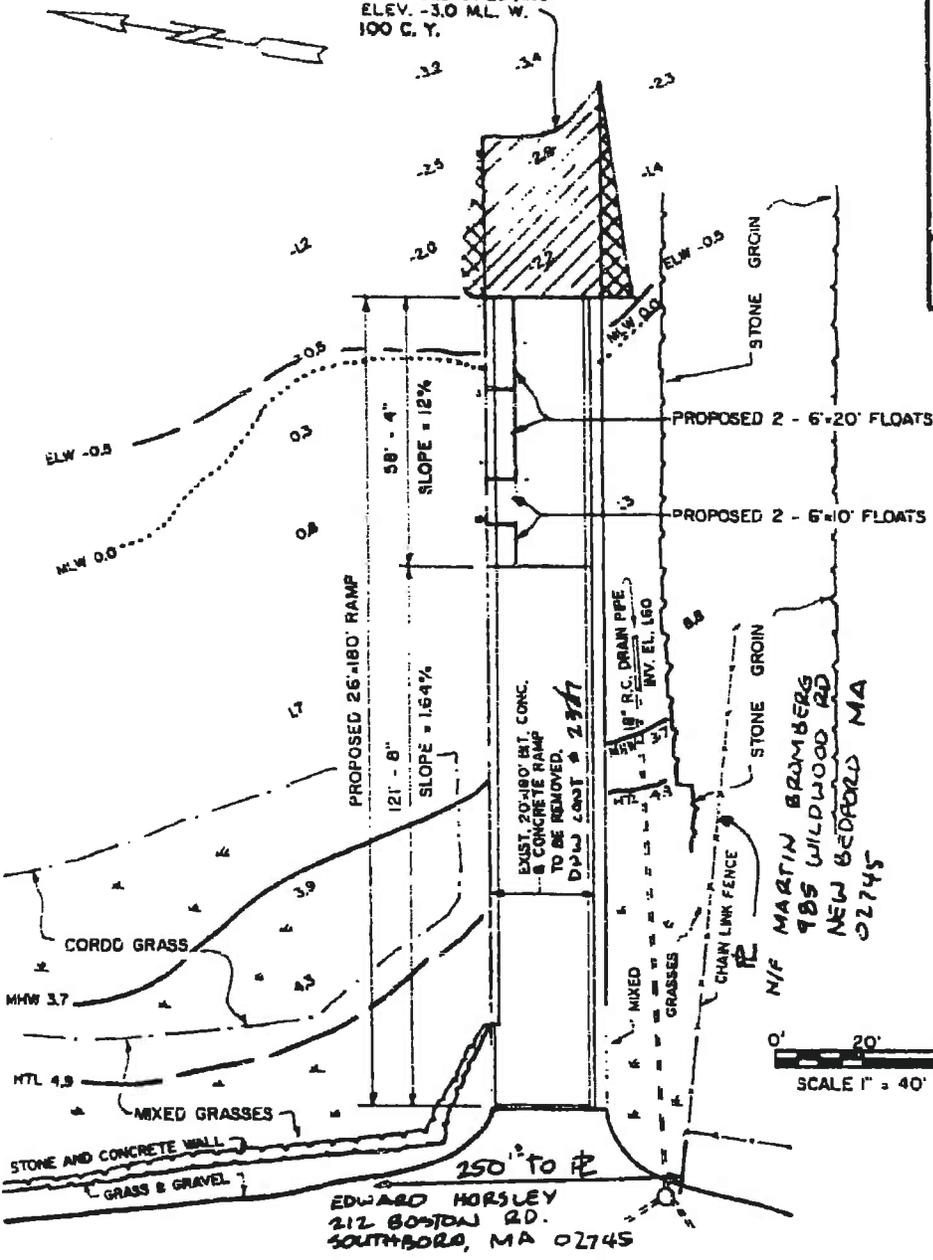
ADDITION TO PUBLIC ACCESS FACILITY
SCONTICUT NECK
FAIRHAVEN, MASS.
 APPLICATION BY
 MASS. DEPT. OF ENVIRONMENTAL
 QUALITY ENGINEERING
 DIVISION OF WATERWAYS
 FEBRUARY 1978

MATERIAL FOR RAMP CONSTR.
 9 C.Y. CL. D CEM. CONC. MASONRY
 35 TONS CRUSHED STONE
 135 TONS ROCK FILL

2
3
2
2
0
0
1

023-029C-000-618-100
 023-029C-000-618-200

PROPOSED DREDGING
 ELEV. -3.0 M.L.W.
 100 C.Y.



ELEVATIONS ARE BASED ON
 THE PLANE OF MEAN
 LOW WATER

PUBLIC USE

ALL TIMBER TO BE
 CCA TREATED

ALL HARDWARE TO
 BE GALV.

ENST. RAMP CONSTRUCTED
 UNDER D.P.W. CONT. NO
 2327, JULY 1961.



BENCH MARK
 8" SPIKE SET IN U.P. #4253
 @ EL. 8.4 MLW.

SHORE DRIVE

PLAN ACCOMPANYING PETITION OF
 COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT
 PUBLIC ACCESS BOARD
 TO CONSTRUCT A LAUNCHING RAMP,
 FLOATS AND DREDGE IN
 NASKETUCKET BAY
 FAIRHAVEN, BRISTOL CO. MA.

JULY 6, 1989 SHEET 1 OF 6

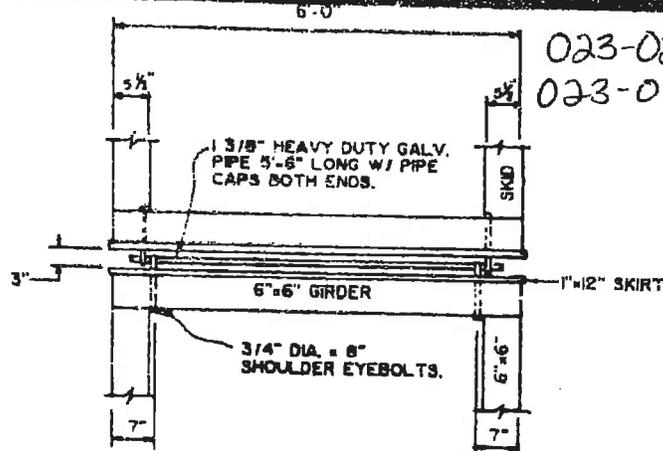
BRAMAN ENGINEERING COMPANY, LTD.
 CIVIL ENGINEERS & SURVEYORS
 258 MAIN ST., BUZZARDS BAY, MA.

2215ED 3-12-91

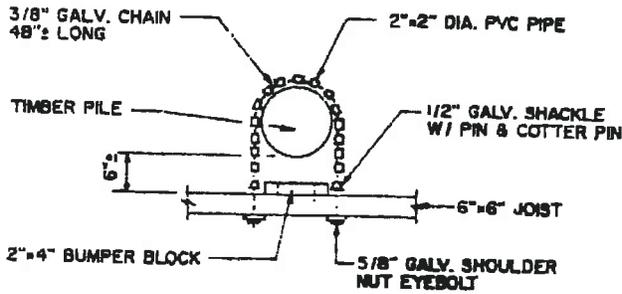
CIVIL
 Robert A. Braman

LICENSE PLAN NO. 2718
 Approved by Department of Environmental Protection
 of Massachusetts
 James Barnes COMMISSIONER
 [Signature] DIRECTOR
 [Signature] SECTION CHIEF
 AUG 29 1991 DATE

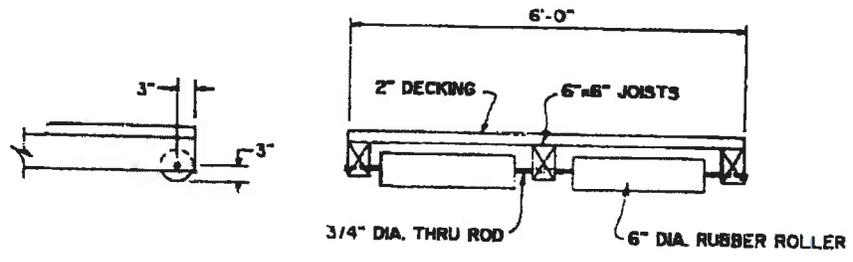
023-029C-000-618-100
 023-029C-000-618-200



FLOAT TO FLOAT CONNECTION
 SCALE 3/8" = 1'-0"



FLOAT GUIDE
 SCALE 3/8" = 1'-0"



FLOAT RAMP
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718
 Approved by Department of Environmental Protection
 Date: **AUG 29 1991**



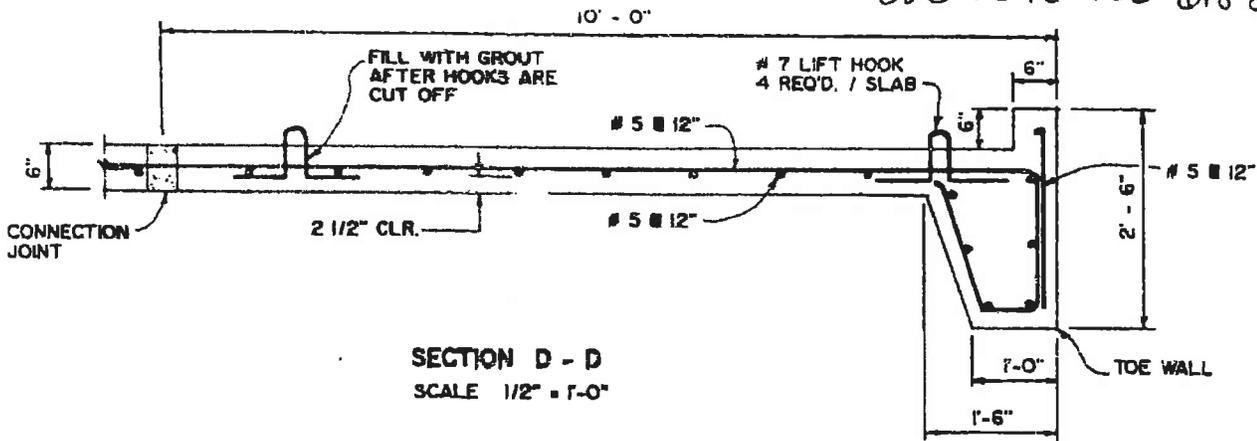
Robert A. Braham

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

REVISED JULY 6 1989
 3-12-91

SHEET 3 OF 3

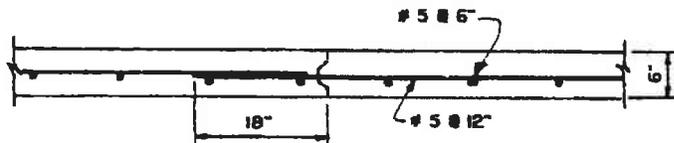
023-029C-000-618-100
 023-029C-000-618-200



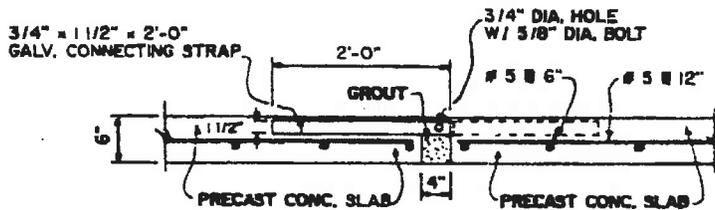
SECTION D - D
 SCALE 1/2" = 1'-0"



LONGITUDINAL JOINT DETAIL
 SCALE 1/2" = 1'-0"



CONSTRUCTION JOINT DETAIL
 SCALE 1/2" = 1'-0"

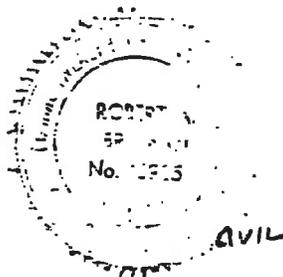


CONNECTION JOINT DETAIL
 SCALE 1/2" = 1'-0"

LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

Date: AUG 29 1991



Robert A. Brennan

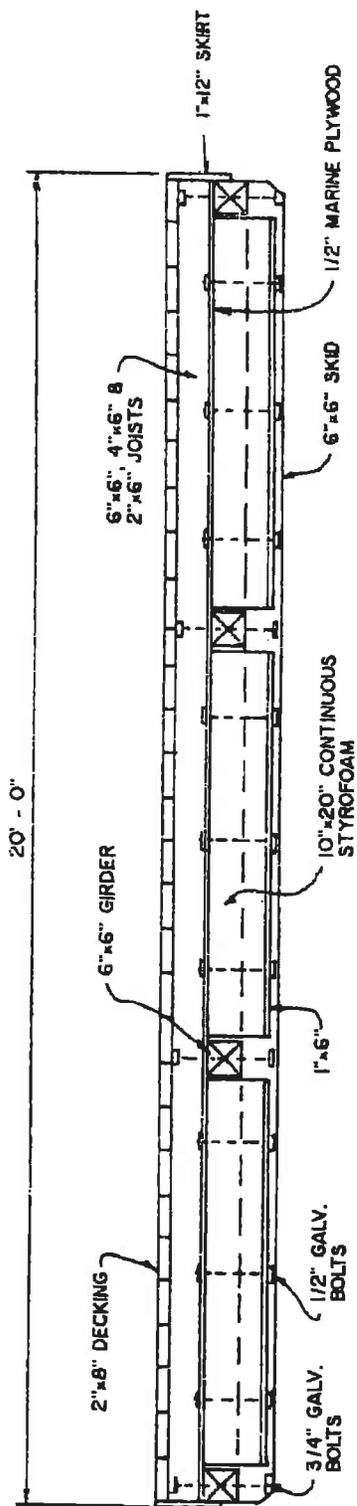
COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

JULY 6, 1989

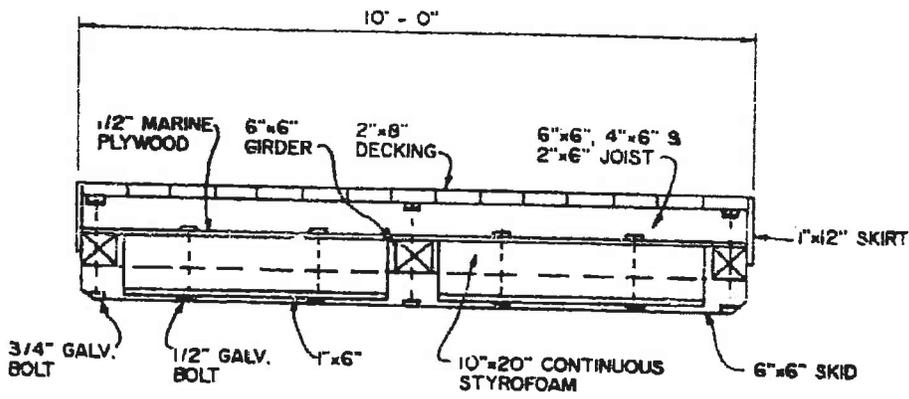
SHEET 4 OF 6

REUSED 3-12-91

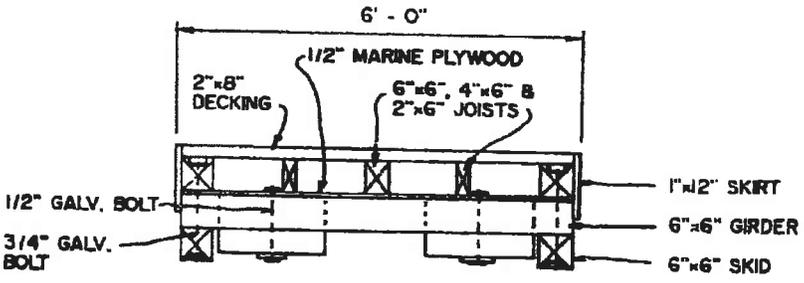
023-029C-000-618-100
 023-029C-000-618-200



PROFILE 6"x20' FLOAT
 SCALE 3/8" = 1'-0"



PROFILE 6"x10' FLOAT
 SCALE 3/8" = 1'-0"



SECTION 6' WIDE FLOAT
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718

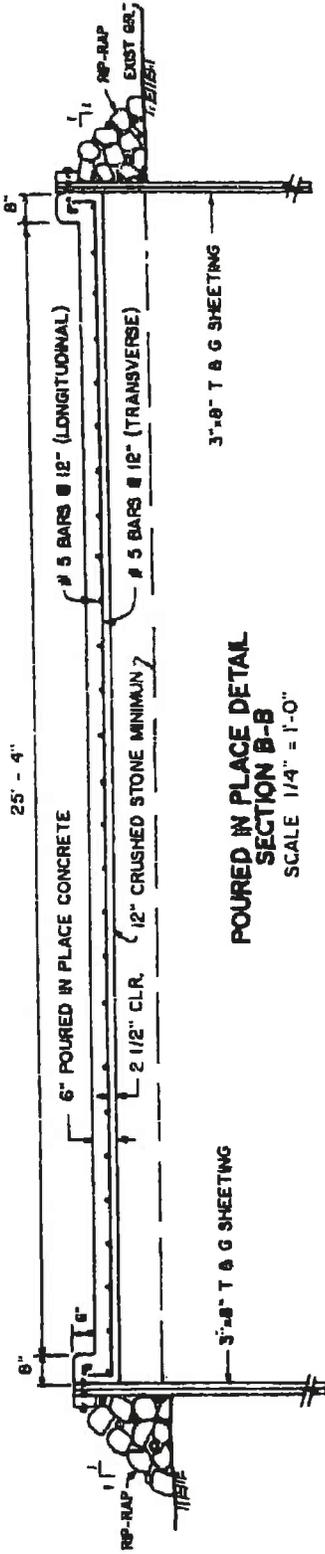
Approved by Department of Environmental Protection
 Date:



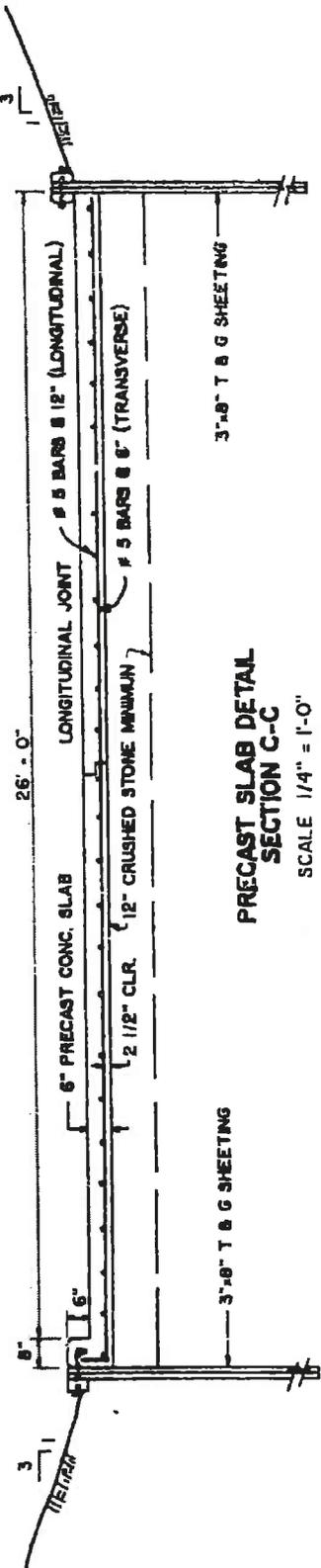
Robert A. Braman
 REVISED 3-12-91
 JULY 6 1991

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

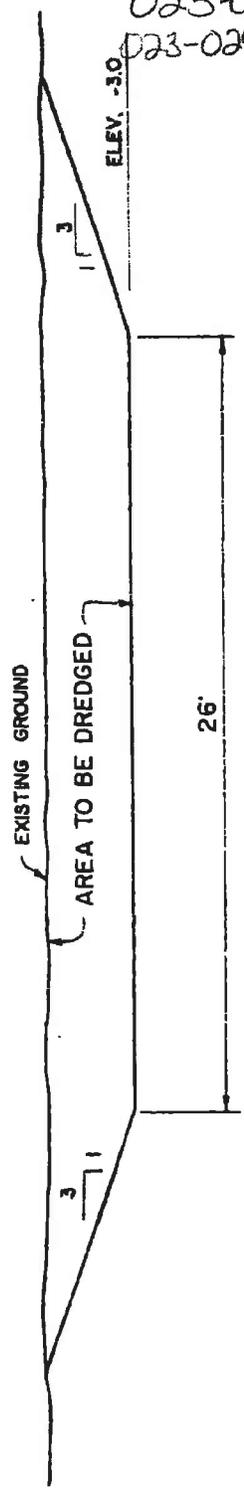
023-029C-000-618-100
023-029C-000-618-200



**POURED IN PLACE DETAIL
SECTION B-B**
SCALE 1/4" = 1'-0"



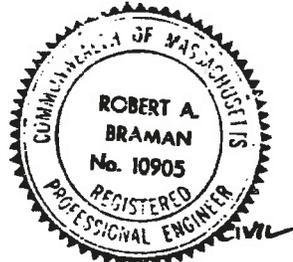
**PRECAST SLAB DETAIL
SECTION C-C**
SCALE 1/4" = 1'-0"



DREDGED SECTION
SCALE 1" = 6'

NOTE:
3 CY RIP RAP BELOW MHW
42 CY CONC. BELOW MHW.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF FISHERIES, WILDLIFE AND
ENVIRONMENTAL LAW ENFORCEMENT



Robert A. Braman

JULY 6, 1968
REVISED 3-12-91

LICENSE PLAN NO. 2718

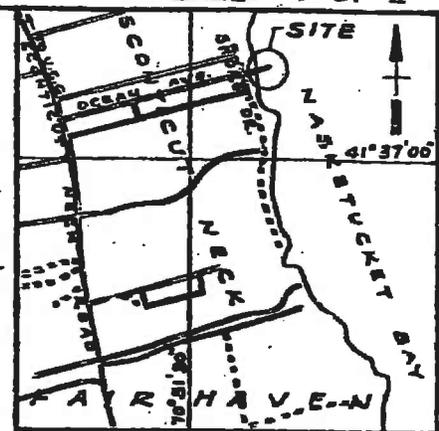
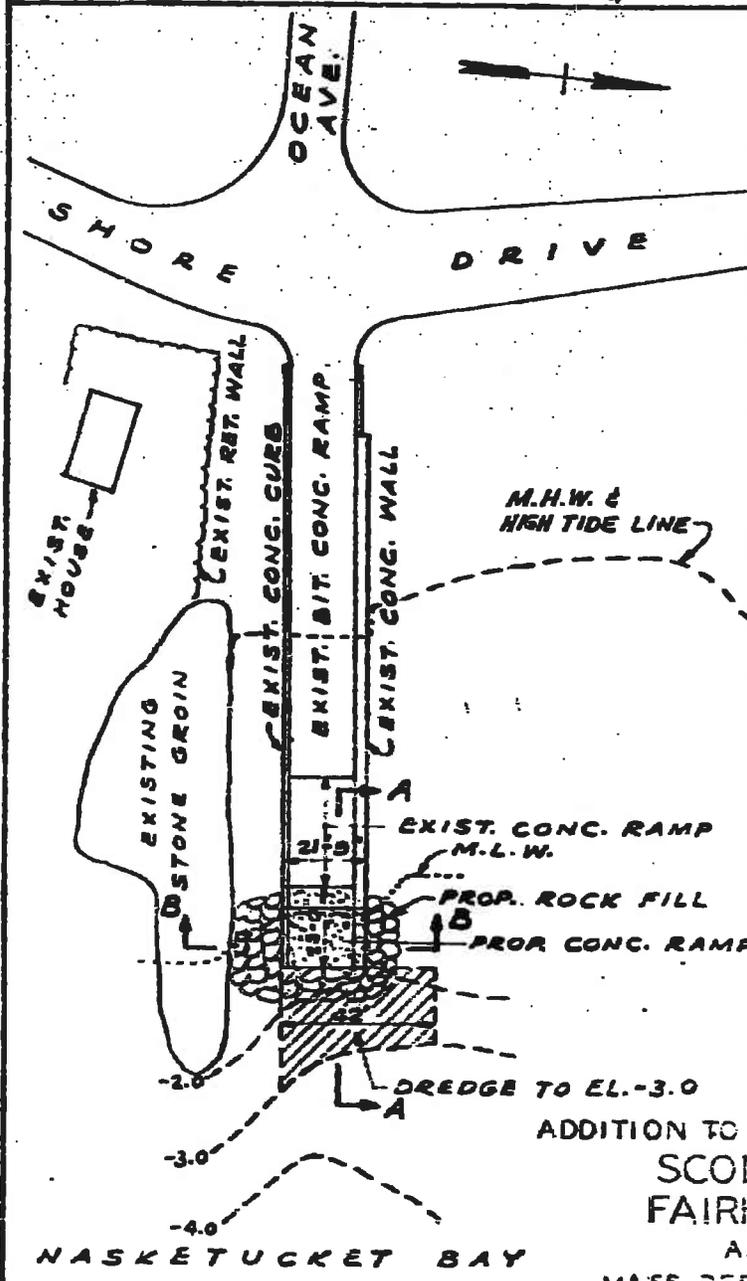
Approved by Department of Environmental Protection

Date:

SHEET 6 OF 6

023-0290-000-618-100
 023-0290-000-618-200
 SHEET 1 OF 2

2322000



LOCATION PLAN
 SCALE 1" = 2000'
 0 500 1000 2000
 U.S. GEOLOGICAL SURVEY
 SCOTICUT NECK QUADRANGLE

NOTE
 ELEVATIONS ARE IN FEET
 AND TENTHS AND REFER
 TO MEAN LOW WATER -
 DATUM 0.0'

PLAN
 SCALE 1" = 50'
 0 20 40 60

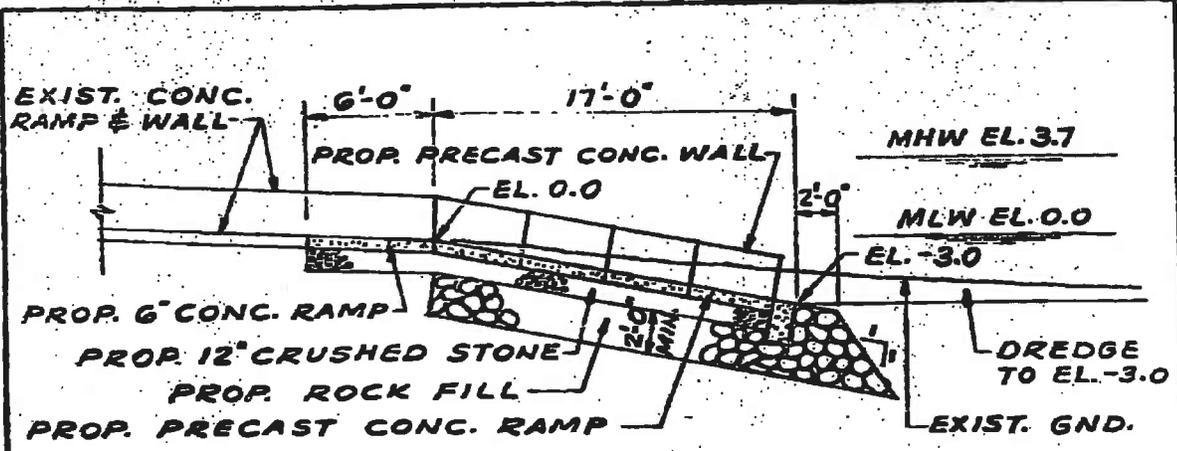
**ADDITION TO PUBLIC ACCESS FACILITY
 SCOTICUT NECK
 FAIRHAVEN, MASS.**

APPLICATION BY
 MASS. DEPT. OF ENVIRONMENTAL
 QUALITY ENGINEERING
 DIVISION OF WATERWAYS
 FEBRUARY 1978

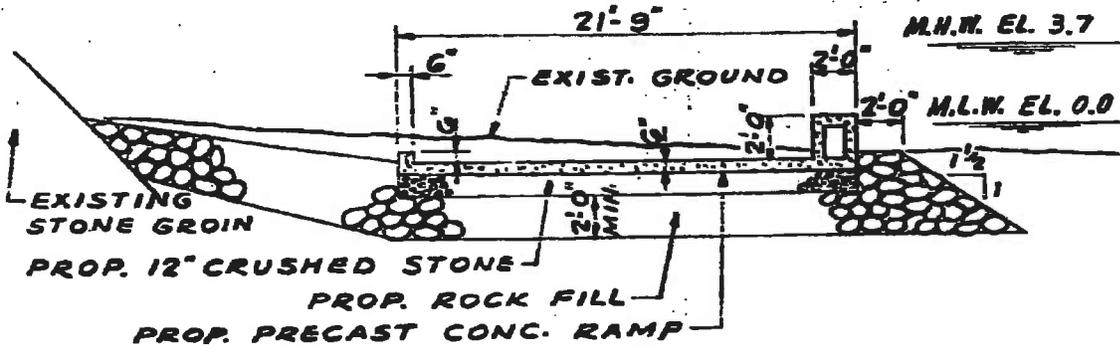
John J. Conway
 CHIEF ENGINEER - WATERWAYS

ACC. NO. 05097 A

023-029C-000-618-100
 023-029C-000-618-200
 SHEET 2 OF 2



SECTION A-A
 SCALE 1" = 8'



SECTION B-B
 SCALE 1" = 8'

NOTE:
 100 C.Y. OF DREDGED
 MATERIAL TO BE DISPOSED
 OFF WORK AREA AND ABOVE
 M.H.W. AT A LOCATION
 APPROVED BY THE ENGINEER

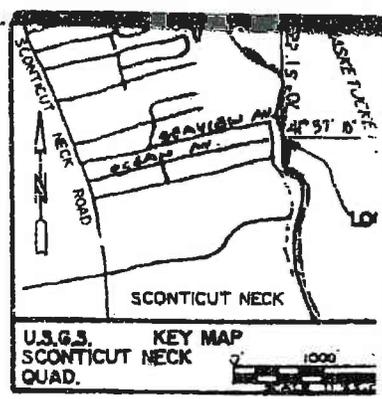
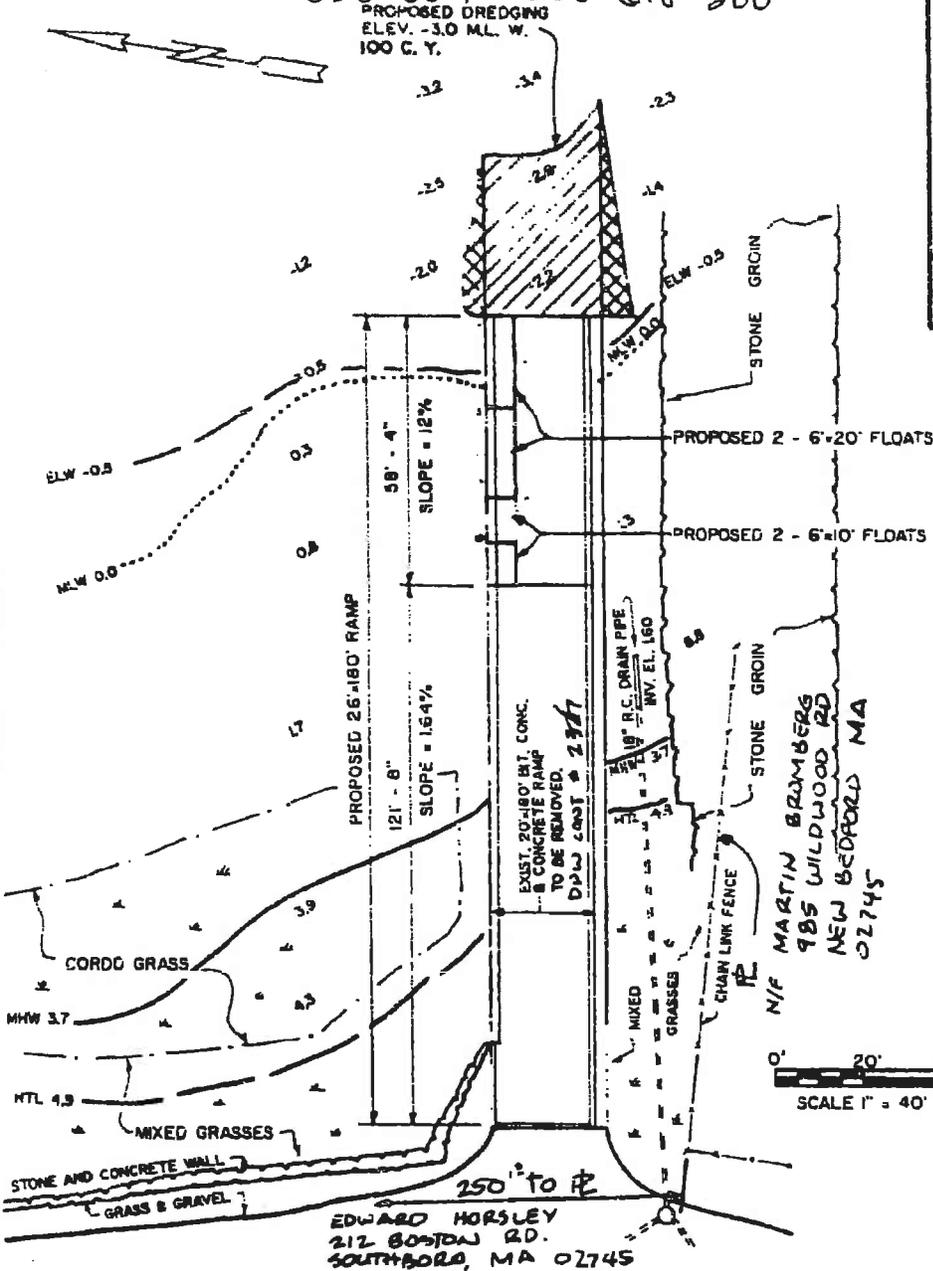
ADDITION TO PUBLIC ACCESS FACILITY
 SCONTICUT NECK
 FAIRHAVEN, MASS.

MATERIAL FOR RAMP CONSTR.
 9 C.Y. CL. D CEM. CONC. MASONRY
 35 TONS CRUSHED STONE
 135 TONS ROCK FILL

APPLICATION BY
 MASS. DEPT. OF ENVIRONMENTAL
 QUALITY ENGINEERING
 DIVISION OF WATERWAYS
 FEBRUARY 1978

2322001

023-029C-000-618-100
 023-029C-000-618-200



ELEVATIONS ARE BASED ON THE PLANE OF MEAN LOW WATER

PUBLIC USE

ALL TIMBER TO BE (LA TREATED)

ALL HARDWARE TO BE GALV.

EXIST. RAMP CONSTRUCTED UNDER D.F.W. CONT. NO 2327, JULY 1961.

BENCH MARK 8" SPIKE SET IN U.P. #4253 @ EL. 8.4 MLW.

SHORE DRIVE

PLAN ACCOMPANYING PETITION OF COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF FISHERIES, WILDLIFE AND ENVIRONMENTAL LAW ENFORCEMENT PUBLIC ACCESS BOARD TO CONSTRUCT A LAUNCHING RAMP, FLOATS AND DREDGE IN NASKETUCKET BAY FAIRHAVEN, BRISTOL CO. MA.

JULY 6, 1989 SHEET 1 OF 6

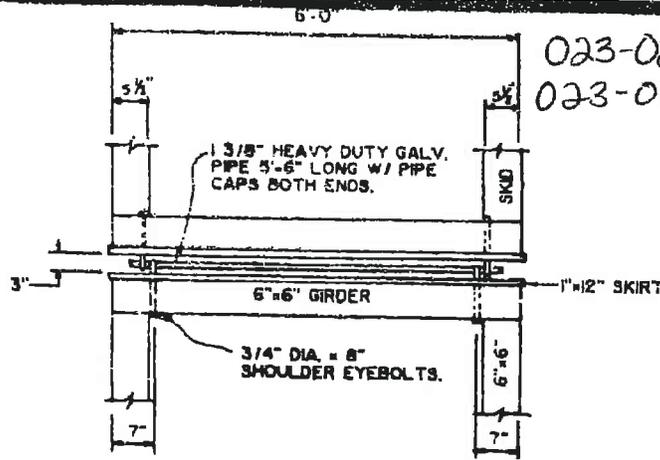
BRAMAN ENGINEERING COMPANY, LTD. CIVIL ENGINEERS & SURVEYORS 258 MAIN ST., BUZZARDS BAY, MA.

2215ED 3-12-91

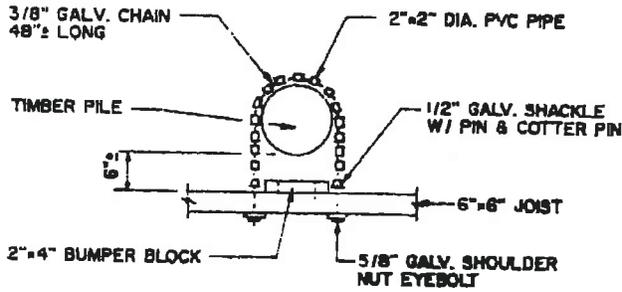
CIVIL
 Robert A. Braman

LICENSE PLAN NO. 2718
 Approved by Department of Environmental Protection
 of Massachusetts
 Thomas Barrows COMMISSIONER
 [Signature] DIRECTOR
 [Signature] SECTION CHIEF
 AUG 29 1991 DATE

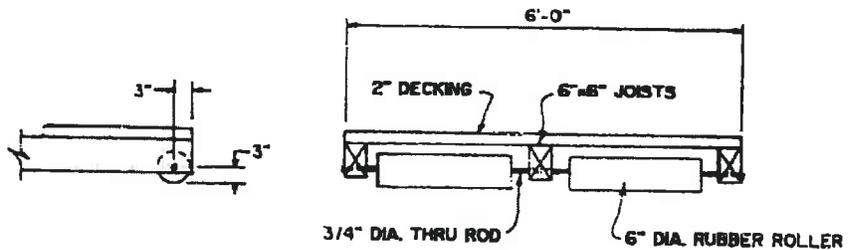
023-029C-000-618-100
 023-029C-000-618-200



FLOAT TO FLOAT CONNECTION
 SCALE 3/8" = 1'-0"



FLOAT GUIDE
 SCALE 3/8" = 1'-0"

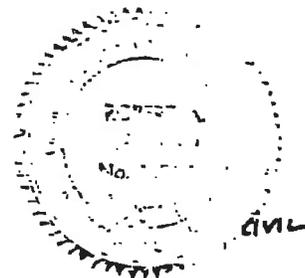


FLOAT RAMP
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

DATE: **AUG 29 1991**



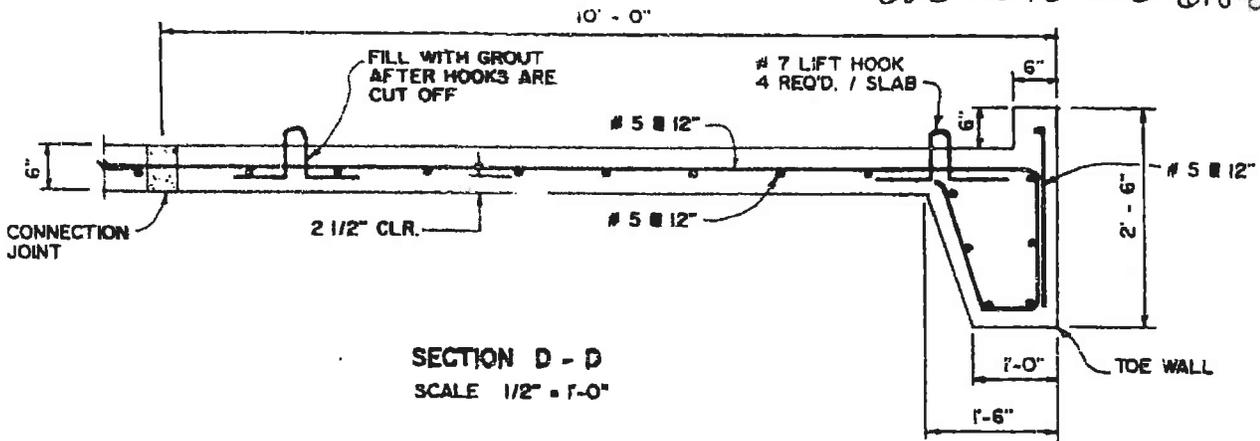
Robert A. Brauman

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

REVISED JULY 6, 1989
 3-12-91

SHEET 3 OF :

023-029C-000-618-100
 023-029C-000-618-200



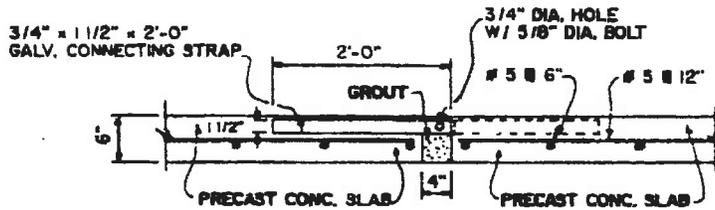
SECTION D - D
 SCALE 1/2" = 1'-0"



LONGITUDINAL JOINT DETAIL
 SCALE 1/2" = 1'-0"



CONSTRUCTION JOINT DETAIL
 SCALE 1/2" = 1'-0"

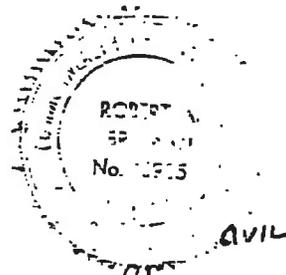


CONNECTION JOINT DETAIL
 SCALE 1/2" = 1'-0"

LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

Date: AUG 29 1991



Robert A. Brannan

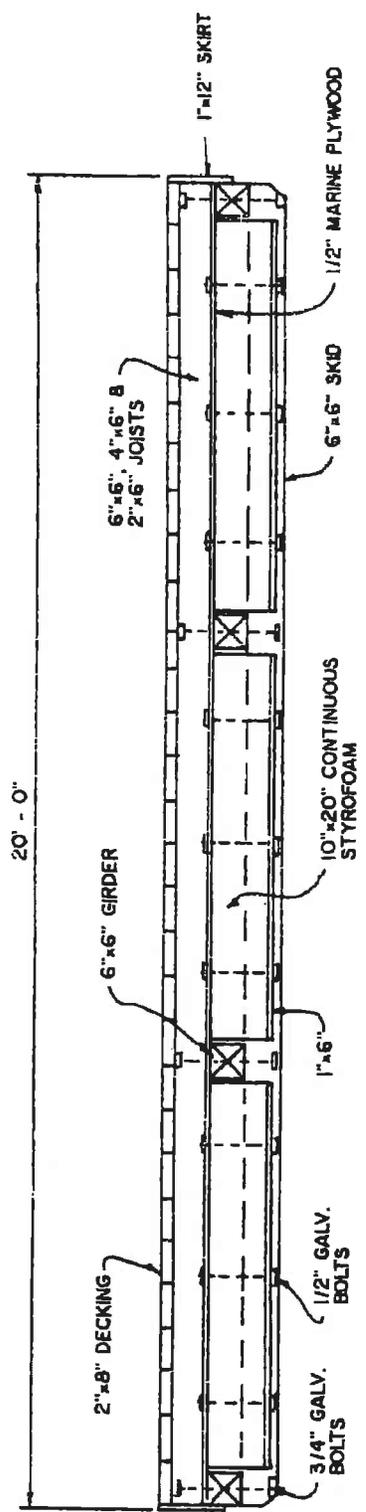
COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

JULY 6, 19889

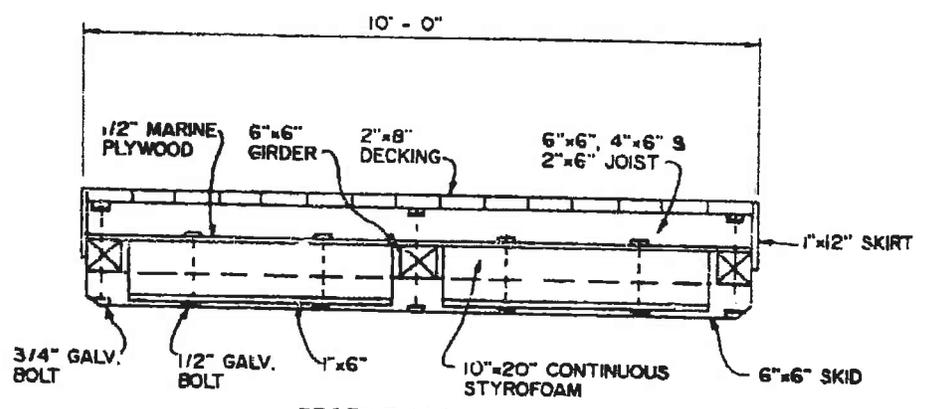
SHEET 4 OF 6

REVISED 3-12-91

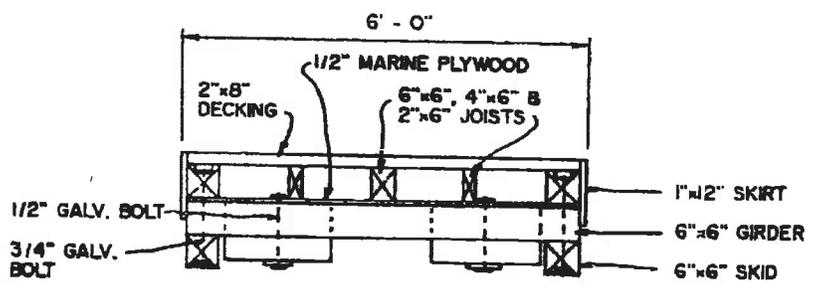
023-029C-000-618-100
 023-029C-000-618-200



PROFILE 6'x20' FLOAT
 SCALE 3/8" = 1'-0"



PROFILE 6'x10' FLOAT
 SCALE 3/8" = 1'-0"



SECTION 6' WIDE FLOAT
 SCALE 3/8" = 1'-0"

LICENSE PLAN NO. 2718

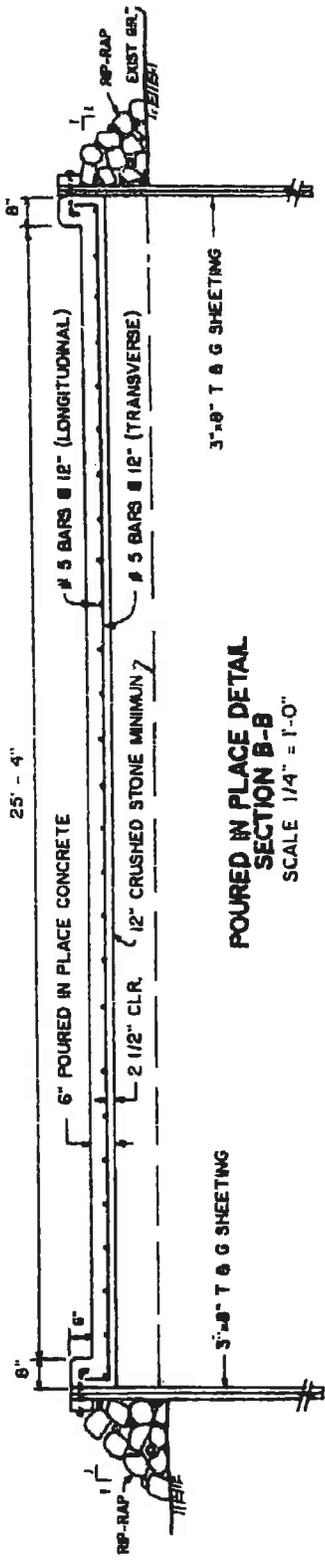
Approved by Department of Environmental Protection
 Date:



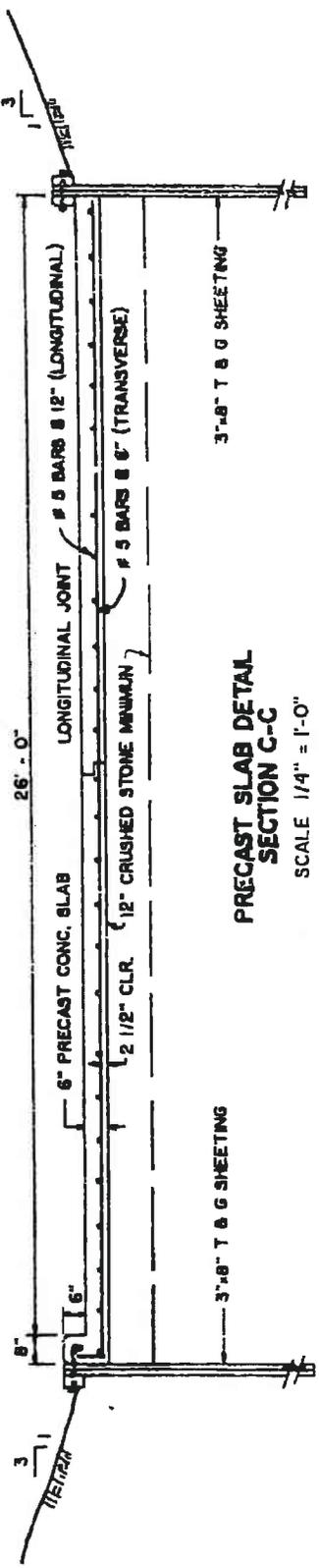
Robert A. Braman
 REVISED 3-12-91
 JULY 6 1991

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF FISHERIES, WILDLIFE AND
 ENVIRONMENTAL LAW ENFORCEMENT

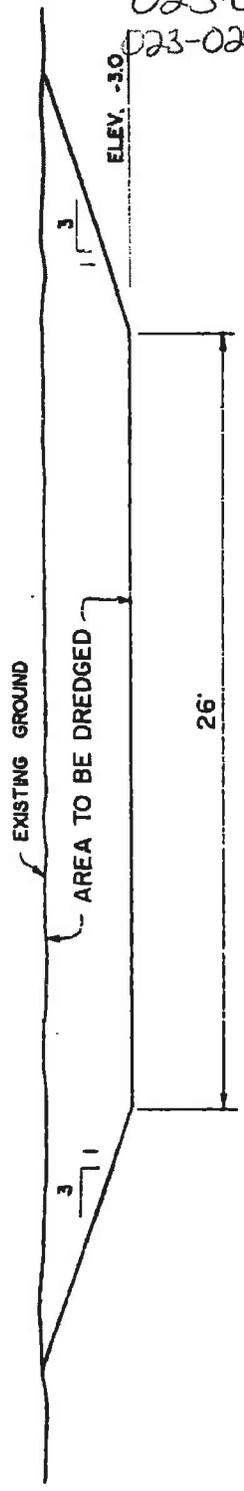
023-029C-000-618-100
023-029C-000-618-200



**POURED IN PLACE DETAIL
SECTION B-B**
SCALE 1/4" = 1'-0"



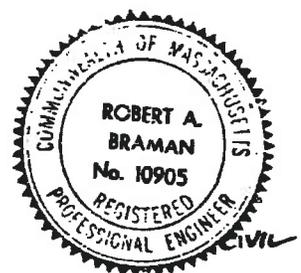
**PRECAST SLAB DETAIL
SECTION C-C**
SCALE 1/4" = 1'-0"



DREDGED SECTION
SCALE 1" = 6'

NOTE:
3 CY RIP RAP BELOW MHW
22 CY CONC. BELOW MHW.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF FISHERIES, WILDLIFE AND
ENVIRONMENTAL LAW ENFORCEMENT



Robert A. Braman

JULY 6, 1969

REVISED 3-12-91

LICENSE PLAN NO. 2718

Approved by Department of Environmental Protection

Date:

SHEET 6 OF 6

Section III

Mattapoisett

Section III – Community Findings – Town of Mattapoisett

COMMUNITY DESCRIPTION

The Town of Mattapoisett consists of a land area of 16.48 square miles out of a total area of 23.33 square miles and had a population of 6,268 in the 2000 census. The Town is located south coast of Massachusetts and its location can be seen on this report’s cover. The estimated length of shoreline that is directly exposed to open ocean waves is 13.5 miles with the remaining shoreline semi-protected by offshore structures or landforms. The Town is protected from major coastal storms by both natural and man-made shoreline structures that require maintenance to insure the long term protection of its coastline. The man-made and publicly owned structures that protect the Town were investigated for their ability to provide adequate protection from major coastal storms. Structures have been identified as publicly owned, including coastal dunes and beaches, based on evidence of investment of public funds made to create/enhance/maintain these structures. The assessment did not include floating or pile supported structures as they are assumed not to provide any significant coastal protection from major storm events.

STRUCTURE INVENTORY

Within the Town of Mattapoisett, there were 20 structures which had public or unknown ownership which provide significant coastal protection. The location of the structures can be seen in Sheets 1 through Sheet 5 in Section III-B of this report. The structures were categorized by their type and by their structural condition based on a preliminary field assessment. The distribution of structures by type and condition can be seen in the following table:

STRUCTURE TYPE AND QUANTITY - Town of Mattapoisett

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Length |
|-----------------------|------------------|----------------------------|----|---|---|---|--------------|
| | | A | B | C | D | F | |
| Bulkhead / Seawall | 9 | | 6 | 3 | | | 3600 |
| Revetment | 9 | 5 | 3 | | | 1 | 1805 |
| Breakwater | | | | | | | |
| Groin / Jetty | 2 | 1 | 1 | | | | 175 |
| Coastal Dune | | | | | | | |
| Coastal Beach | | | | | | | |
| | 20 | 6 | 10 | 3 | | 1 | 5580 |

Within the above table, the total length of each type of structure is also provided. The structures are listed by the type which is providing the primary coastal protection. Many sites have multiple structure types at the same location (i.e. revetment in front of seawall). These secondary structures, although not identified within these tables, are included in the development of repair/rehabilitation costs.

The development of repair costs has been included by structure type and by condition. In the Town of Mattapoisett’s case there are a total of 14 structures which would require approximately \$ 3.2 million to bring all the coastal structures to “A” Rating. Most critical will be the structures in the “D” and “F” classifications as those are assumed to undergo some level of damage or failure during the next major coastal storm event. To reconstruct these structures, identified in the preliminary survey as being in poor condition, an estimated \$ 73,000 would be required to upgrade the Town’s coastal protection.



STRUCTURE REPAIR / RECONSTRUCTION COST - Town of Mattapoissett

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost |
|-----------------------|------------------|----------------------------|------------|--------------|------|-----------|--------------|
| | | A | B | C | D | F | |
| Bulkhead / Seawall | 9 | | \$ 361,864 | \$ 2,645,940 | | | \$ 3,007,804 |
| Revetment | 9 | | \$ 119,816 | | | \$ 72,996 | \$ 192,812 |
| Breakwater | | | | | | | \$ - |
| Groin / Jetty | 2 | | \$ 9,900 | | | | \$ 9,900 |
| Coastal Dune | | | | | | | \$ - |
| Coastal Beach | | | | | | | \$ - |
| | 20 | \$- | \$491,580 | \$ 2,645,940 | \$ - | \$ 72,996 | \$ 3,210,516 |

Based on the limited research within the scope of this project research, the presumed ownership of the structures was established on an initial basis and would be subject to more intense review in future tasks. Structures identified as being owned privately were excluded from further consideration. Although ownership of the land on which the structure was located was a factor, the structure ownership was treated as a separate issue from land ownership. For the Town of Mattapoissett, the breakdown of structures by assumed ownership is as follows:

STRUCTURE OWNERSHIP / REPAIR COST - Town of Mattapoissett

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost |
|-------------------------------|------------------|----------------------------|------------|--------------|------|-----------|--------------|
| | | A | B | C | D | F | |
| Town Owned | 20 | | \$ 491,580 | \$ 2,645,940 | | \$ 72,996 | \$ 3,210,516 |
| Commonwealth of Massachusetts | | | | | | | \$ - |
| Federal Government Owned | | | | | | | \$ - |
| Unknown Ownership | | | | | | | \$ - |
| | 20 | \$- | \$491,580 | \$ 2,645,940 | \$ - | \$ 72,996 | \$ 3,210,516 |

The identification of presumed ownership was not based on the investigation of legal documents but relied on property ownership and from construction and regulatory documents that were found. A more detailed investigation of legal documents and agreements would be required where structure ownership is disputed. A more detailed identification of structure type, length, condition and location can be found in Section III-B which contains Structure Assessment Reports for each individual structure found.

SUMMARY

The enclosed reports and associated documents reflects the Town of Mattapoissett's coastal structure information that will eventually be input into a state-wide GIS database and will be accessible through MassGIS. This data, when compiled state-wide, will be critical in the development of both short term and long term planning for maintaining and improving Massachusetts coastal protection.

This database will also provide relatively quick access to identify available documentation for these structures as well as the ability to be updated as coastal structure improvements are made.



Section III - Mattapoisett

Part B

Structure Assessment Reports





COASTAL STRUCTURE LOCATION PLAN

TOWN OF MATTAPOISETT
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



BCE Bourne Consulting Engineering
 1250 ROUTE 1A
 BOURNE, MA 01939
 TEL: (978) 633-4000 FAX: (978) 633-4000



COASTAL STRUCTURE LOCATION PLAN

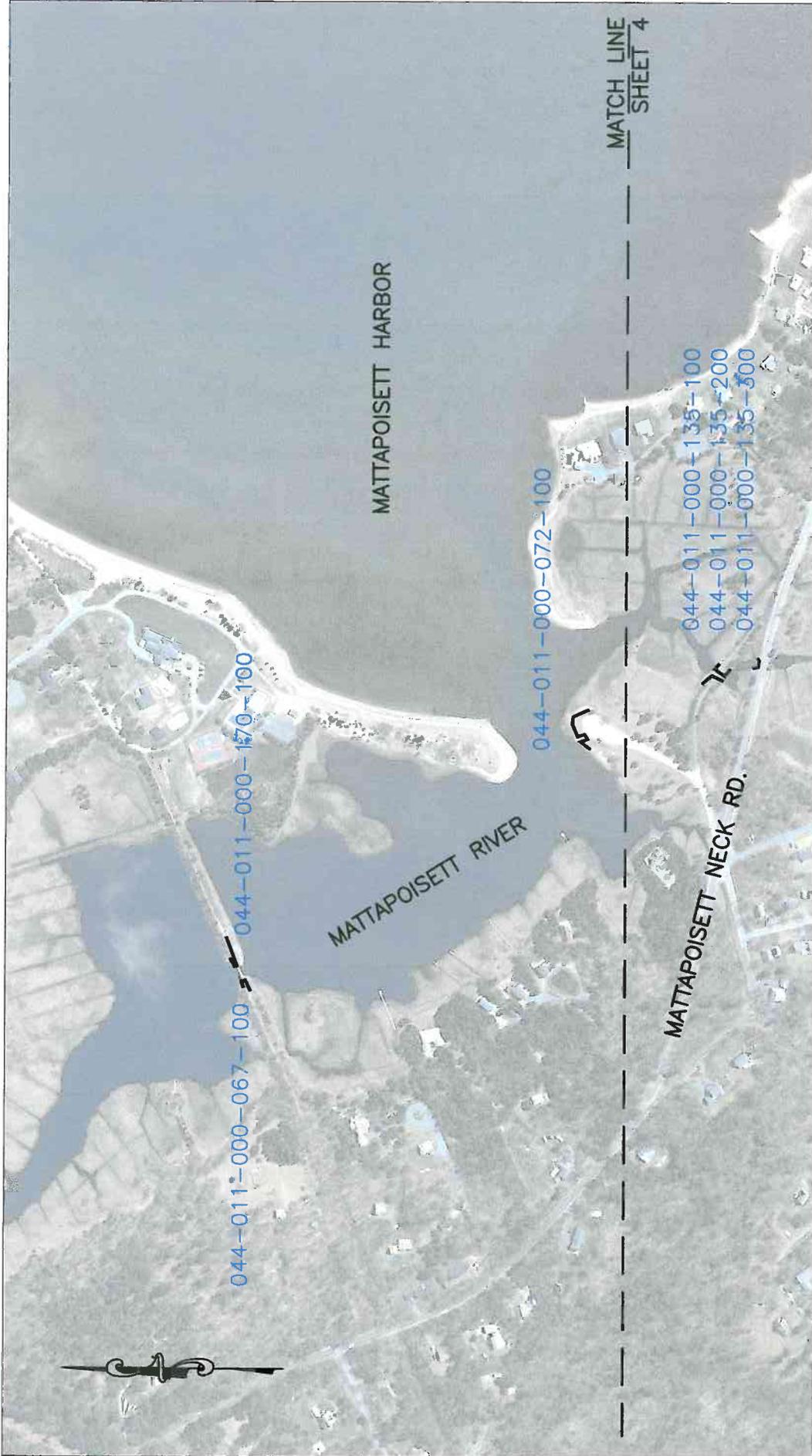
TOWN OF MATTAPOISETT
COASTAL INFRASTRUCTURE INVENTORY
AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

Bourne Consulting Engineering
BCE
 3 Acad Street
 Bourne, MA 01929
 TEL: (508) 235-4000 FAX: (508) 235-4000



COASTAL STRUCTURE LOCATION PLAN

TOWN OF MATTAPoisETT
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

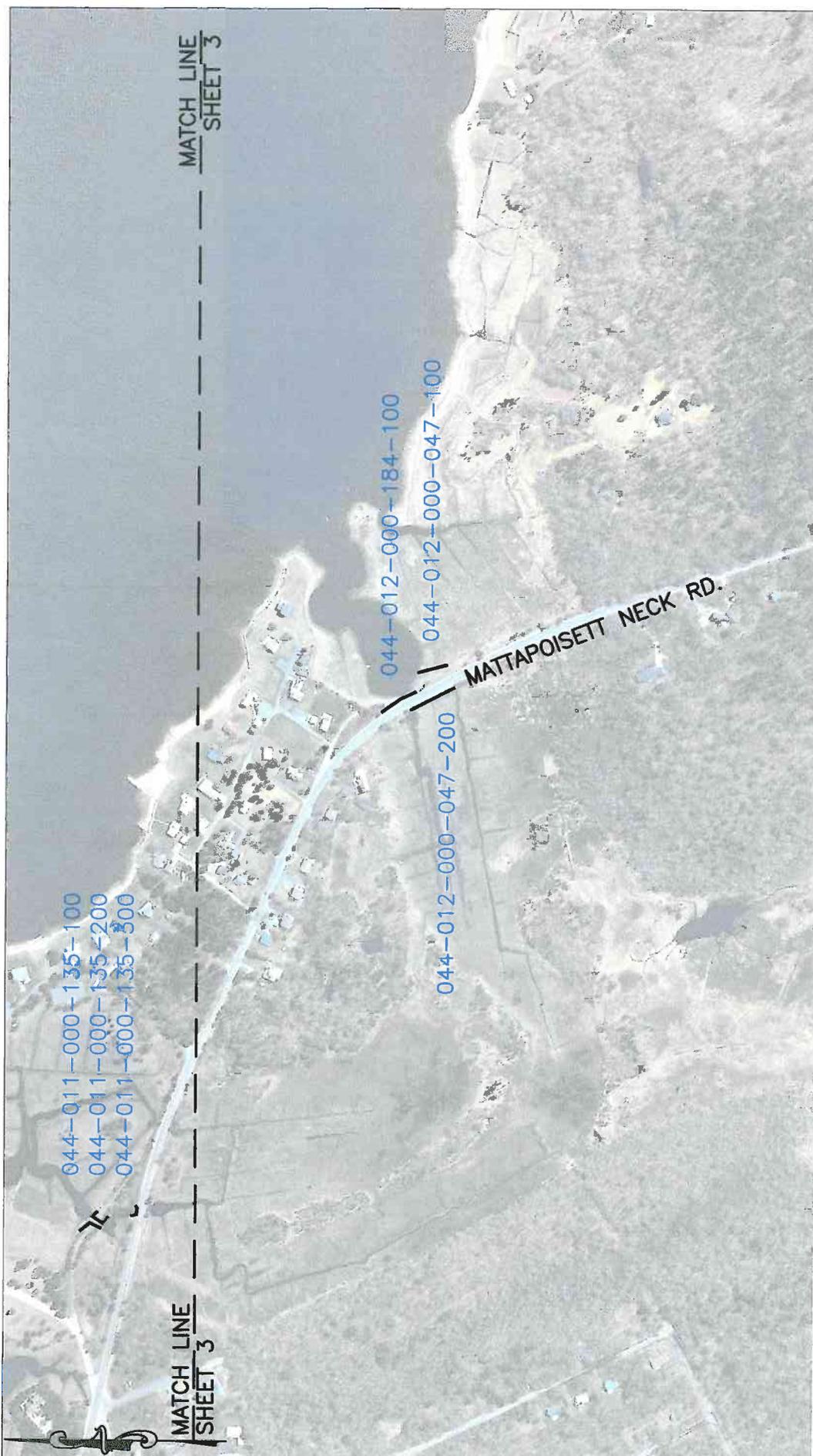
JULY 2007



SCALE: 1" = 150'-0"



SHEET 3



MATCH LINE
SHEET 3

MATCH LINE
SHEET 3

COASTAL STRUCTURE LOCATION PLAN

TOWN OF MATTAPOISETT
COASTAL INFRASTRUCTURE INVENTORY
AND ASSESSMENT PROJECT
JULY 2007



SCALE: 1" = 150'-0"

BCE Bourne Consulting Engineering
 200 West Street
 Bourne, MA 01909
 TEL: (978) 255-0000 FAX: (978) 255-0000

SHEET 4



File: X:\27652-27667\South Coast\Mattapoisett\dwg\Mattapoisett.dwg

COASTAL STRUCTURE LOCATION PLAN

TOWN OF MATTAPOISETT
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007

0 150



SCALE: 1" = 150'-0"



Structure Assessment Form

Property Owner:

Local

Location:

Ned's Point Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoisett

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$78,078.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 650 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone revetment is in good condition. There is parking around the lighthouse. Revetment consists of large 3 to 4 feet stones. There are no signs of erosion or stone movement.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-007-000-130-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoisett

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$135,432.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 540 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

Primary Type:

Bulkhead/ Seawall

Primary Material:

Concrete

Primary Height:

10 to 15 Feet

Secondary Type:

Secondary Material:

Secondary Height:



Structure Summary :

A filled wharf that has a concrete wall constructed that is in good condition. The concrete wall is 18 inches to 24 inches wide were constructed as a facing to original stone wall. Filling with concrete behind the structures was observed.

Condition

B

Rating

Good

Level of Action

Minor

Description

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority

II

Rating

Low Priority

Action

Future Project Consideration

Description

Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

044-009-000-185-100-PHO1A.JPG

044-009-000-185-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|-------------|--------------------|---------------------------|
| MA-DCR | May 1955 | Proposed Hurricane | 044-009-000-185-100-DCR1A |
| MA-DCR | January 195 | Proposed Wharf | 044-009-000-185-100-DCR1B |
| MA-DCR | July 1966 | Proposed Wharf | 044-009-000-185-100-DCR1C |
| DEP | January 26, | Plan Accompanying | 044-009-000-185-100-LIC1A |
| DEP | October 18, | Plan Accompanying | 044-009-000-185-100-LIC1B |
| DEP | May 1, 1996 | Plan Accompanying | 044-009-000-185-100-LIC1C |

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$125,400.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 500 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Concrete | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :

A filled wharf that has a concrete wall constructed that is in good condition. Concrete wall is 18 inches to 24 inches wide were constructed as a facing to original stone wall. Filling behind structures with concrete observed.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | II |
| <i>Rating</i> | Good | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

044-009-000-185-200-PHO2A.JPG

Structure Documents:

| | | | |
|--------|-------------|--------------------|---------------------------|
| MA-DCR | May 1955 | Proposed Hurricane | 044-009-000-185-200-DCR2A |
| MA-DCR | January 195 | Proposed Wharf | 044-009-000-185-200-DCR2B |
| MA-DCR | July 1966 | Proposed Wharf | 044-009-000-185-200-DCR2C |
| DEP | January 26, | Plan Accompanying | 044-009-000-185-200-LIC2A |
| DEP | October 18, | Plan Accompanying | 044-009-000-185-200-LIC2B |

Structure Assessment Form

Property Owner:

Local

Location:

Old Mattapoissett Neck Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$1,203,840.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 960 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :

A filled wharf in fair condition. Mortar filled joints above mean high water. No mortar observed below mean high water mark. Signs of minor stone movement.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | II |
| <i>Rating</i> | Fair | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

044-009-000-185-300-PHO3A.JPG

044-009-000-185-300-PHO3B.JPG

Structure Documents:

| | | | |
|--------|-------------|--------------------|---------------------------|
| MA-DCR | May 1955 | Proposed Hurricane | 044-009-000-185-300-DCR3A |
| MA-DCR | January 195 | Proposed Wharf | 044-009-000-185-300-DCR3B |
| MA-DCR | July 1966 | Proposed Wharf | 044-009-000-185-300-DCR3C |
| DEP | January 26, | Plan Accompanying | 044-009-000-185-300-LIC3A |
| DEP | October 18, | Plan Accompanying | 044-009-000-185-300-LIC3B |

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1955

Estimated Reconstruction/Repair Cost:

\$451,440.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 360 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

A filled wharf in fair condition. Mortar filled joints above mean high water. No mortar observed below mean high water mark. There are signs of minor stone movement.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | II |
| <i>Rating</i> | Fair | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

- 044-009-000-188-100-PHO1A.JPG
- 044-009-000-188-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|-------------|--------------------|---------------------------|
| MA-DCR | May 1955 | Proposed Hurricane | 044-009-000-188-100-DCR1A |
| MA-DCR | January 195 | Proposed Wharf | 044-009-000-188-100-DCR1B |
| MA-DCR | July 1966 | Proposed Wharf | 044-009-000-188-100-DCR1C |
| DEP | January 26, | Plan Accompanying | 044-009-000-188-100-LIC1A |
| DEP | October 18, | Plan Accompanying | 044-009-000-188-100-LIC1B |

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1995

Estimated Reconstruction/Repair Cost:

\$36,128.00

| | | | |
|------------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 230 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|------------------|---------------------|----------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone revetment is in good condition. There is some concrete fill along the top edge. The revetment consists of 12 inches to 24 inches of dumped stone. There is a parking lot located along the top edge.

| | | | |
|------------------------|--|--------------------|--|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-009-000-188-200-PHO2A.JPG

Structure Documents:

| | | | |
|------------|--------------------|--------------------------|----------------------------------|
| DEP | January 26, | Plan Accompanying | 044-009-000-188-200-LIC2A |
| DEP | October 18, | Plan Accompanying | 044-009-000-188-200-LIC2B |

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1966

Estimated Reconstruction/Repair Cost:

\$990,660.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 790 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The filled wharf has a stone dry stack wall around its perimeter in fair condition. Stones are rounded with no chinking stone to fill voids. Walls are 3 feet wide at the top with signs of maintenance repair of filling the top voids with concrete.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-009-000-193-100-PHO1A.JPG
044-009-000-193-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|-------------|-------------------|---------------------------|
| MA-DCR | July 1966 | Proposed Wharf | 044-009-000-193-100-DCR1A |
| DEP | October 18, | Plan Accompanying | 044-009-000-193-100-LIC1A |

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1975

Estimated Reconstruction/Repair Cost:

\$9,900.00

| | | | |
|-----------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 75 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Groin/ Jetty

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The stone groin is in good condition. Groin consists of 2 feet stones with no sign of erosion or movement.

Condition

B

Rating

Good

Level of Action

Minor

Description

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority

I

Rating

None

Action

Long Term Planning Considerations

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

044-009-000-193-200-PHO2A.JPG

044-009-000-193-200-PHO2B.JPG

Structure Documents:

MA-DCR

May 1975

Proposed Shore

044-009-000-193-200-DCR2A

DEP

October 18,

Plan Accompanying

044-009-000-193-200-LIC2A

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Water Street

6/6/2007

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Mattapoisett

1995

\$6,758.00

| | | | |
|-----------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 80 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|--------------------------|---------------------|---------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Concrete | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The concrete wall is located at the top of the beach. 12 inch concrete wall separates the beach from a small park. Exposed height ranges from 0 to 2 feet. There are no visible signs of erosion, loss of fill, or wall movement. There is minor spalling at the top.

| | | | |
|------------------------|--|--------------------|--|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

Structure Documents:

044-009-000-193-300-PHO3A.JPG

DEP

October 18,

Plan Accompanying

044-009-000-193-300-LIC3A

Structure Assessment Form

Property Owner:

Local

Location:

Water Street

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoisett

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 215 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone revetment is in good condition. It consists of 3 foot placed stone with 3 foot edging along the top of the slope. There are no signs of erosion or stone movement.

Condition A
Rating Excellent
Level of Action None
Description Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm.

Priority II
Rating Low Priority
Action Future Project Consideration
Description Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

044-010-000-065-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Route 101

6/6/2007

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Mattapoissett

Unknown

\$27,819.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 75 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Concrete | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| Revetment | Stone | 5 to 10 Feet |

Structure Summary :

The bridge abutment and revetment are in good condition. There is a pedestrian bridge near the revetment. There is no vehicle access. Mortared joint stone wall is 4 feet high with a concrete cap. There is 12 inches of dumped riprap stone along the base of the wall. There are no signs of erosion or stone movement.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

Structure Documents:

- [044-011-000-067-100-PHO1A.JPG](#)
- [044-011-000-067-100-PHO1B.JPG](#)
- [044-011-000-067-100-PHO1C.JPG](#)

Structure Assessment Form

Property Owner:

Local

Location:

Mattapoissett Neck Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 240 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

Primary Type:

Revetment

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:



Structure Summary :

The stone wall is in good condition. There is a parking area and boat ramp located near it. Wall edges parking area. At high water the wall is 2 feet wide and under 5 feet in height.

Condition

A

Rating

Excellent

Level of Action

None

Description

Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm.

Priority

I

Rating

None

Action

Long Term Planning Considerations

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

044-011-000-072-100-PHO1A.JPG

044-011-000-072-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Old Mattapoissett Neck Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$72,996.00

Length: 100 Feet
 Top Elevation: Feet NAVD 88
 FIRM Map Zone: VE
 FIRM Map Elevation: 18 Feet NGVD



Primary Type: Revetment
 Primary Material: Stone
 Primary Height: Under 5 Feet
 Secondary Type:
 Secondary Material:
 Secondary Height:

Structure Summary :

The stone revetment is along an abandoned (no access) road. The revetment is in poor condition with major erosion and loss of stones.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | F | <i>Priority</i> | I |
| <i>Rating</i> | Critical | <i>Rating</i> | None |
| <i>Level of Action</i> | Immediate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Conditions of structure/landform may warrant emergency stabilization as failure may result in potential loss of property and/or life. Landform eroded, loss of integrity. Structure exhibits critical levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure provides little or no protection from a major coastal storm. Actions taken to totally reconstruct structure to regain full capacity. Landform stability is severely compromised, rate of erosion/material loss may be increasing, and landform does not provide adequate protection from a major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 044-011-000-135-100-PHO1A.JPG
- 044-011-000-135-100-PHO1B.JPG
- 044-011-000-135-100-PHO1C.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Old Mattapoissett Neck Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$5,610.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 85 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone revetment is around an abandoned (no access) road. The 2 feet stones are dry stacked long the end of the road. Pedestrians access only. There are minor signs of erosion.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 044-011-000-135-200-PHO2A.JPG
- 044-011-000-135-200-PHO2B.JPG
- 044-011-000-135-200-PHO2C.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Old Mattapoissett Neck Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

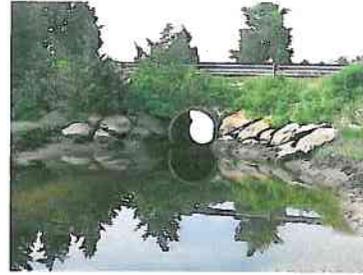
Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 50 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The revetment is in good condition. It supports the roadway and the culvert. Large 4 foot stones provide wing walls to 4 foot diameter culvert under roadway.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | A | <i>Priority</i> | I |
| <i>Rating</i> | Excellent | <i>Rating</i> | None |
| <i>Level of Action</i> | None | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-011-000-135-300-PHO3A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Route 101

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$53,783.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 145 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Concrete | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| Revetment | Stone | 5 to 10 Feet |

Structure Summary :

The bridge abutment and revetment are in good condition. There is a pedestrian bridge near the revetment. There is no vehicle access. Mortared joint stone wall is 4 feet high with a concrete cap. The 12 inches of dumped riprap stone is along the base of the wall. There are no signs of erosion or stone movement.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-011-000-170-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Mattapoissett Neck

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 100 | | VE | 20 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone revetment found along the roadway is in good condition. Consists of 2 to 3 feet stones. There are no visible signs of erosion or stone movement.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | A | <i>Priority</i> | I |
| <i>Rating</i> | Excellent | <i>Rating</i> | None |
| <i>Level of Action</i> | None | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-012-000-047-100-PHO1A.JPG
 044-012-000-047-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Mattapoissett Neck Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$12,672.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 150 | | VE | 20 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The vertical stone wall located along the roadway is in good condition. 2 feet wide stone dry stacked wall under 5 feet in height. There is minor movement in a few stones.

Condition

B

Rating

Good

Level of Action

Minor

Description

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority

I

Rating

None

Action

Long Term Planning Considerations

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

044-012-000-047-200-PHO2A.JPG

044-012-000-047-200-PHO2B.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Mattapoissett Neck

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 135 | | VE | 20 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Revetment

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The revetment is in good condition along the roadway to the culvert. Stone revetment provides wing walls to culvert that runs under roadway. Stones are 1 to 3 feet and dry stacked. There are no signs of erosion.

Condition

A

Priority

I

Rating

Excellent

Rating

None

Level of Action

None

Action

Long Term Planning Considerations

Description

Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm.

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

044-012-000-184-100-PHO1A.JPG

044-012-000-184-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Brandt Island Shores

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1960

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 100 | | AE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Groin/ Jetty | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone jetty is in very good condition. Jetty consists of large 3 to 4 feet stones. There are no signs of erosion or stone movements.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | A | <i>Priority</i> | I |
| <i>Rating</i> | Excellent | <i>Rating</i> | None |
| <i>Level of Action</i> | None | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

044-14B-000-019-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|------------|---------------------|---------------------------|
| USACE | November 1 | Proposed Groins and | 044-14B-000-019-100-COE1A |
| MA-DCR | May 1975 | Proposed Shore | 044-14B-000-019-100-DCR1A |

Section III - Mattapoisett

Part C

Structure Photographs

TOWN: MATTAPOISETT
 SOURCE: BCE - FIELD PHOTOGRAPHS
 LOCATION: Bourne Consulting Engineering
 DATE OF RESEARCH: SEPTEMBER 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|-------------------------------|--------------------------------|-------------------------------|--------------|-------------|---------------|--------|--------------------|---|
| 044-007-000-130-100 | 044-007-000-130-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-185-100 | 044-009-000-185-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-185-100 | 044-009-000-185-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-185-200 | 044-009-000-185-200-PHO2A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-185-300 | 044-009-000-185-300-PHO3A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-185-300 | 044-009-000-185-300-PHO3B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-188-100 | 044-009-000-188-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-188-100 | 044-009-000-188-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-188-200 | 044-009-000-188-200-PHO2A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-193-100 | 044-009-000-193-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-193-100 | 044-009-000-193-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-193-200 | 044-009-000-193-200-PHO2A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-193-200 | 044-009-000-193-200-PHO2B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-009-000-193-300 | 044-009-000-193-300-PHO3A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-010-000-065-100 | 044-010-000-065-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-067-100 | 044-011-000-067-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-067-100 | 044-011-000-067-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-067-100 | 044-011-000-067-100-PHO1C.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-072-100 | 044-011-000-072-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-072-100 | 044-011-000-072-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-135-100 | 044-011-000-135-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-135-100 | 044-011-000-135-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |

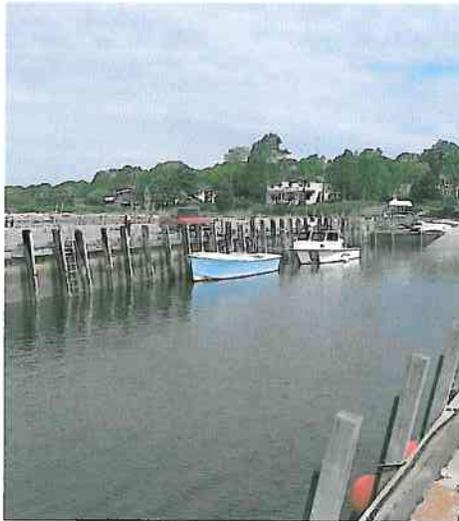
TOWN: MATTAPOISETT
 SOURCE: BCE - FIELD PHOTOGRAPHS
 LOCATION: Bourne Consulting Engineering
 DATE OF RESEARCH: SEPTEMBER 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|-------------------------------|--------------------------------|-------------------------------|--------------|-------------|---------------|--------|--------------------|---|
| 044-011-000-135-100 | 044-011-000-135-100-PHO1C.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-135-200 | 044-011-000-135-200-PHO2A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-135-200 | 044-011-000-135-200-PHO2B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-135-200 | 044-011-000-135-200-PHO2C.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-135-300 | 044-011-000-135-300-PHO3A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-011-000-170-100 | 044-011-000-170-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-012-000-047-100 | 044-012-000-047-100-PHO1A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-012-000-047-100 | 044-012-000-047-100-PHO1B.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 044-012-000-047-200 | 044-012-000-047-200-PHO2A.JPG | | Bourne Consulting Engineering | Mattapoisett | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
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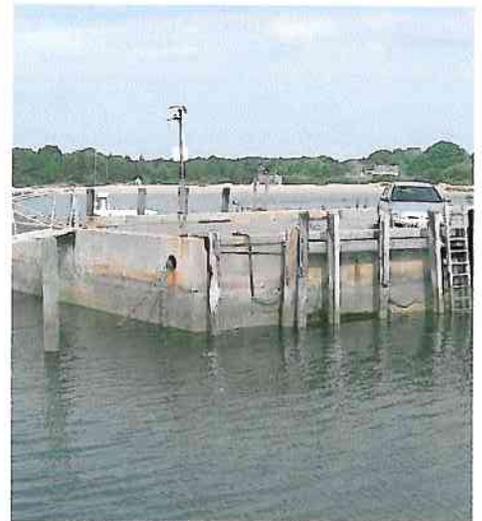
Massachusetts Coastal Infrastructure and Assessment



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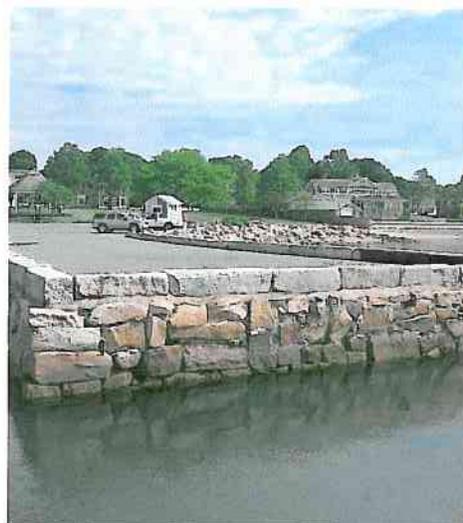
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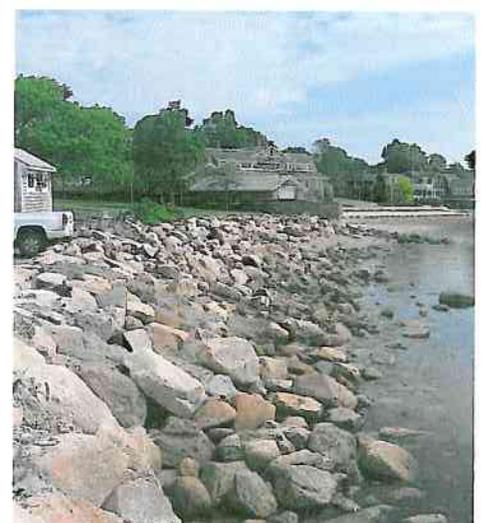
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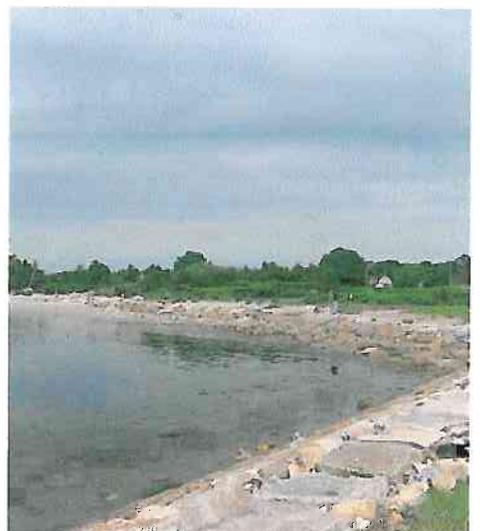
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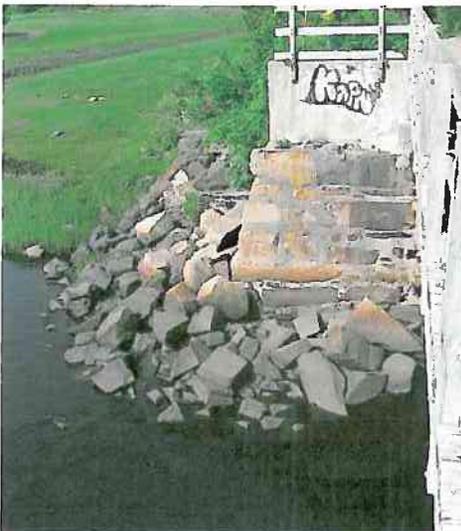
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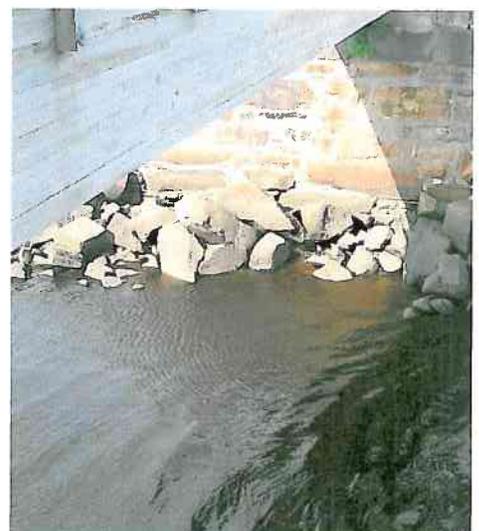
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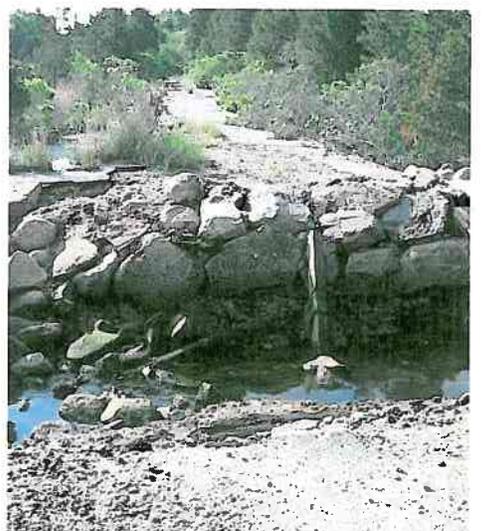
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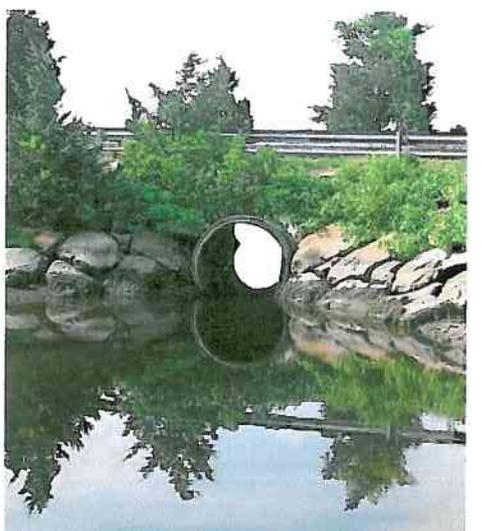
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Massachusetts Coastal Infrastructure and Assessment



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044-012-000-184-100-PHO1A



044-012-000-184-100-PHO1B



044-14B-000-019-100-PHO1A

Section III - Mattapoisett

Part D

Structure Documents

TOWN DOCUMENT LIST

MA DCR - DOCUMENT LIST

MA DEP – Ch 91 DOCUMENT LIST

- Copies of License Documents

USACE – PERMIT DOCUMENT LIST

- Copies of Permit Documents

No Town Documents for the Town of Mattapoisett

TOWN: MATTAPOISETT
SOURCE: TOWN OF MATTAPOISETT
LOCATION: TOWN
DATE OF RESEARCH: JUNE 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|------------------|-------------|--------------------------------|--------|--------------|------|-------|--------|----------|-------------|
|------------------|-------------|--------------------------------|--------|--------------|------|-------|--------|----------|-------------|

TOWN: MATTAPOISETT
 SOURCE: MA - DCR
 LOCATION: MA - DCR BOSTON and HINGHAM, MA
 DATE OF RESEARCH: JULY 2007

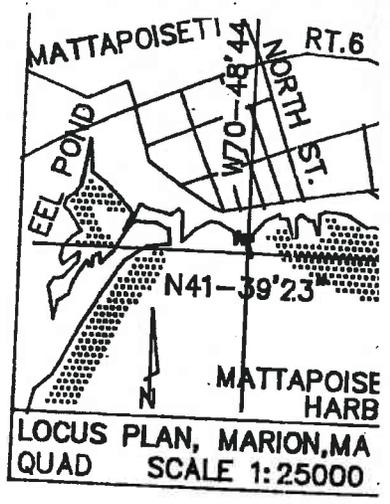
| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|---------------------------|--------------------------------|--------|--------------|--------------|--|--------|---------------------|--------------|
| 044-009-000-185-100 | 044-009-000-185-100-DCR1A | 1500 | MA-DCR | Mattapoisett | May 1955 | Proposed Hurricane Repairs - Revetment Repairs - Veterans Memorial Park - Mattapoisett, MA - Prepared for DPW of MA - Division of Waterways | 1 | Memorial Park | Revetment |
| 044-009-000-185-100 | 044-009-000-185-100-DCR1B | 1716 | MA-DCR | Mattapoisett | January 1957 | Proposed Wharf Improvements - Paving, Excavation, and Wall Repairs - Barstow Wharf - Mattapoisett - Prepared for DPW of MA - Division of Waterways | 1 | Barstow Wharf | Wall Repairs |
| 044-009-000-185-100 | 044-009-000-185-100-DCR1C | 2559 | MA-DCR | Mattapoisett | July 1966 | Proposed Wharf Repairs - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 2 | Water Street | Wharf |
| 044-009-000-185-200 | 044-009-000-185-200-DCR2A | 1500 | MA-DCR | Mattapoisett | May 1955 | Proposed Hurricane Repairs - Revetment Repairs - Veterans Memorial Park - Mattapoisett - Prepared for DPW of MA - Division of Waterways | 1 | Memorial Park | Revetment |
| 044-009-000-185-200 | 044-009-000-185-200-DCR2B | 1716 | MA-DCR | Mattapoisett | January 1957 | Proposed Wharf Improvements - Paving, Excavation, and Wall Repairs - Barstow Wharf - Mattapoisett - Prepared for DPW of MA - Division of Waterways | 1 | Barstow Wharf | Wall Repairs |
| 044-009-000-185-200 | 044-009-000-185-200-DCR2C | 2559 | MA-DCR | Mattapoisett | July 1966 | Proposed Wharf Repairs - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 2 | Water Street | Wharf |
| 044-009-000-185-300 | 044-009-000-185-300-DCR3A | 1500 | MA-DCR | Mattapoisett | May 1955 | Proposed Hurricane Repairs - Revetment Repairs - Veterans Memorial Park - Mattapoisett, MA - Prepared for DPW of MA - Division of Waterways | 1 | Memorial Park | Revetment |
| 044-009-000-185-300 | 044-009-000-185-300-DCR3B | 1716 | MA-DCR | Mattapoisett | January 1957 | Proposed Wharf Improvements - Paving, Excavation and Wall Repairs - Barstow Wharf - Mattapoisett - Prepared for DPW of MA - Division of Waterways | 1 | Barstow Wharf | Wall Repairs |
| 044-009-000-185-300 | 044-009-000-185-300-DCR3C | 2559 | MA-DCR | Mattapoisett | July 1966 | Proposed Wharf Repairs - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 2 | Water Street | Wharf |
| 044-009-000-188-100 | 044-009-000-188-100-DCR1A | 1500 | MA-DCR | Mattapoisett | May 1955 | Proposed Hurricane Repairs - Revetment Repairs - Veterans Memorial Park - Mattapoisett, MA - Prepared for DPW of MA - Division of Waterways | 1 | Memorial Park | Revetment |
| 044-009-000-188-100 | 044-009-000-188-100-DCR1B | 1716 | MA-DCR | Mattapoisett | January 1957 | Proposed Wharf Improvements - Paving, Excavation, and Wall Repairs - Barstow Wharf - Mattapoisett - Prepared for DPW of MA - Division of Waterways | 1 | Barstow Wharf | Wall Repairs |
| 044-009-000-188-100 | 044-009-000-188-100-DCR1C | 2559 | MA-DCR | Mattapoisett | July 1966 | Proposed Wharf Repairs - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 2 | Water Street | Wharf |
| 044-009-000-193-100 | 044-009-000-193-100-DCR1A | 2559 | MA-DCR | Mattapoisett | July 1966 | Proposed Wharf Repairs - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 2 | Water Street | Wharf |
| 044-009-000-193-200 | 044-009-000-193-200-DCR2A | 2844 | MA-DCR | Mattapoisett | May 1975 | Proposed Shore Protection - Stone Groin - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 1 | Mattapoisett Harbor | Groin |
| 044-14B-000-019-100 | 044-14B-000-019-100-DCR1A | 2844 | MA-DCR | Mattapoisett | May 1975 | Proposed Shore Protection - Stone Groin - Mattapoisett Harbor - Prepared for DPW of MA - Division of Waterways | 1 | Mattapoisett Harbor | Groin |

TOWN: MATTAPOISETT
 SOURCE: DEP
 LOCATION: BOSTON, MA
 DATE OF RESEARCH: JULY 2007

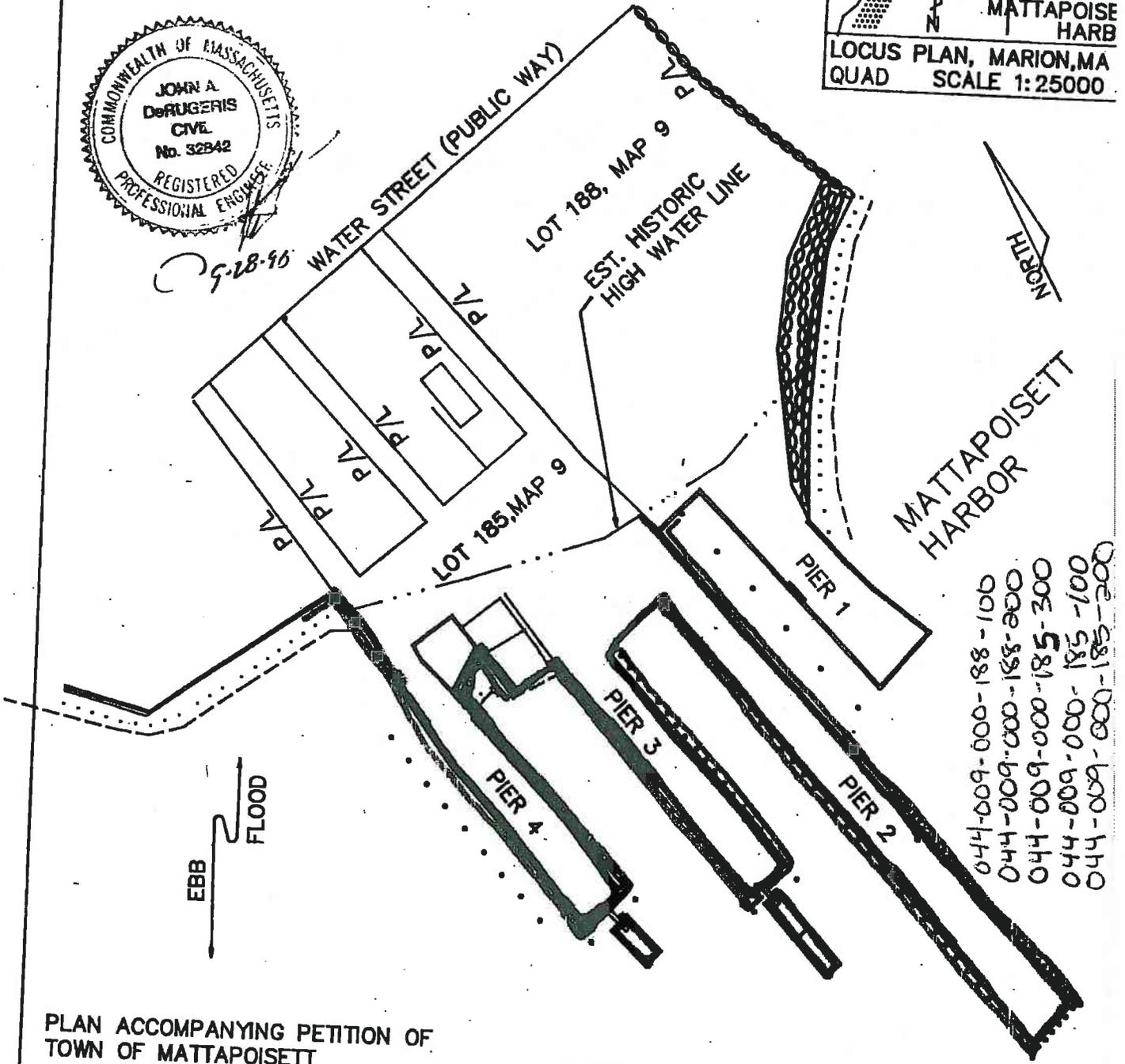
| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|---------------------------|--------------------------------|--------|--------------|------------------|---|--------|-------------------------------|---|
| 044-009-000-185-100 | 044-009-000-185-100-LIC1A | 4328 | DEP | Mattapoisett | January 26, 1995 | Plan Accompanying Petition of Town of Mattapoisett, 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Float, Launching Ramp and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 5 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Floats, Ramp and Piles |
| 044-009-000-185-100 | 044-009-000-185-100-LIC1B | 4928 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Revetment and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 3 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Revetment and Piles |
| 044-009-000-185-100 | 044-009-000-185-100-LIC1C | 5570 | DEP | Mattapoisett | May 1, 1996 | Plan Accompanying Petition of Town of Mattapoisett To Construct and Maintain Concrete Boat Ramp, Concrete and Timber Walls, Floats and to Excavate in Mattapoisett Harbor | 3 | Mattapoisett Harbor | Bulkhead/Seawall |
| 044-009-000-185-200 | 044-009-000-185-200-LIC2A | 4328 | DEP | Mattapoisett | January 26, 1995 | Plan Accompanying Petition of Town of Mattapoisett, 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Float, Launching Ramp and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 5 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Floats, Ramp and Piles |
| 044-009-000-185-200 | 044-009-000-185-200-LIC2B | 4928 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Revetment and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 3 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Revetment and Piles |
| 044-009-000-185-300 | 044-009-000-185-300-LIC3A | 4328 | DEP | Mattapoisett | January 26, 1995 | Plan Accompanying Petition of Town of Mattapoisett, 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Float, Launching Ramp and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 5 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Floats, Piles and Ramp |
| 044-009-000-185-300 | 044-009-000-185-300-LIC3B | 4928 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Revetment and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 3 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Revetment and Piles |
| 044-009-000-188-100 | 044-009-000-188-100-LIC1A | 4328 | DEP | Mattapoisett | January 26, 1995 | Plan Accompanying Petition of Town of Mattapoisett, 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Float, Launching Ramp and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 5 | Water Street and Davol Street | Maintain Existing Pier, Seawall, Floats, Ramp and Piles |
| 044-009-000-188-100 | 044-009-000-188-100-LIC1B | 4928 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Revetment and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 3 | Water Street and Davol Street | Maintain Existing Pier, Seawall, Revetment and Piles |
| 044-009-000-188-200 | 044-009-000-188-200-LIC2A | 4328 | DEP | Mattapoisett | January 26, 1995 | Plan Accompanying Petition of Town of Mattapoisett, 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Float, Launching Ramp and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 5 | Water Street and Davol Street | Maintain Existing Pier, Seawall, Floats, Ramp and Piles |
| 044-009-000-188-200 | 044-009-000-188-200-LIC2B | 4928 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Revetment and Tie-off Piles in Mattapoisett Harbor, Massachusetts | 3 | Water Street and Davol Street | Maintain Existing Pier, Seawall, Revetment and Piles |
| 044-009-000-193-100 | 044-009-000-193-100-LIC1A | 4913 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Tie-off Piles and Float - Mattapoisett Harbor, MA | 3 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Piles and Floats |
| 044-009-000-193-200 | 044-009-000-193-200-LIC2A | 4913 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Tie-off Piles and Float - Mattapoisett Harbor, MA | 3 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Piles and Floats |
| 044-009-000-193-300 | 044-009-000-193-300-LIC3A | 4913 | DEP | Mattapoisett | October 18, 1995 | Plan Accompanying Petition of Town of Mattapoisett - 16 Main Street, Mattapoisett, MA 02739 - To License and Maintain an Existing Granite Pier, Seawall, Tie-off Piles and Floats, Mattapoisett Harbor, MA | 3 | Water Street and Canon Street | Maintain Existing Pier, Seawall, Piles and Floats |

A

- NOTES:
1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN. PIER 4 WAS RECONSTRUCTED IN 1965, BOAT RAMP AND WOOD BULKHEAD WERE CONSTRUCTED IN 1965, BY MASS. STATE ACCESS BOARD.
 2. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED (LINE SHOWN IS ESTIMATED).
 3. ALL ELEVATIONS REFER TO MEAN LOW WATER
 4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 7400 CU.YD.

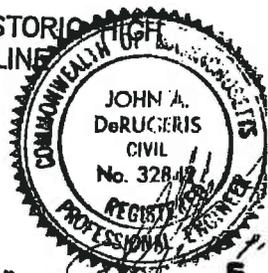
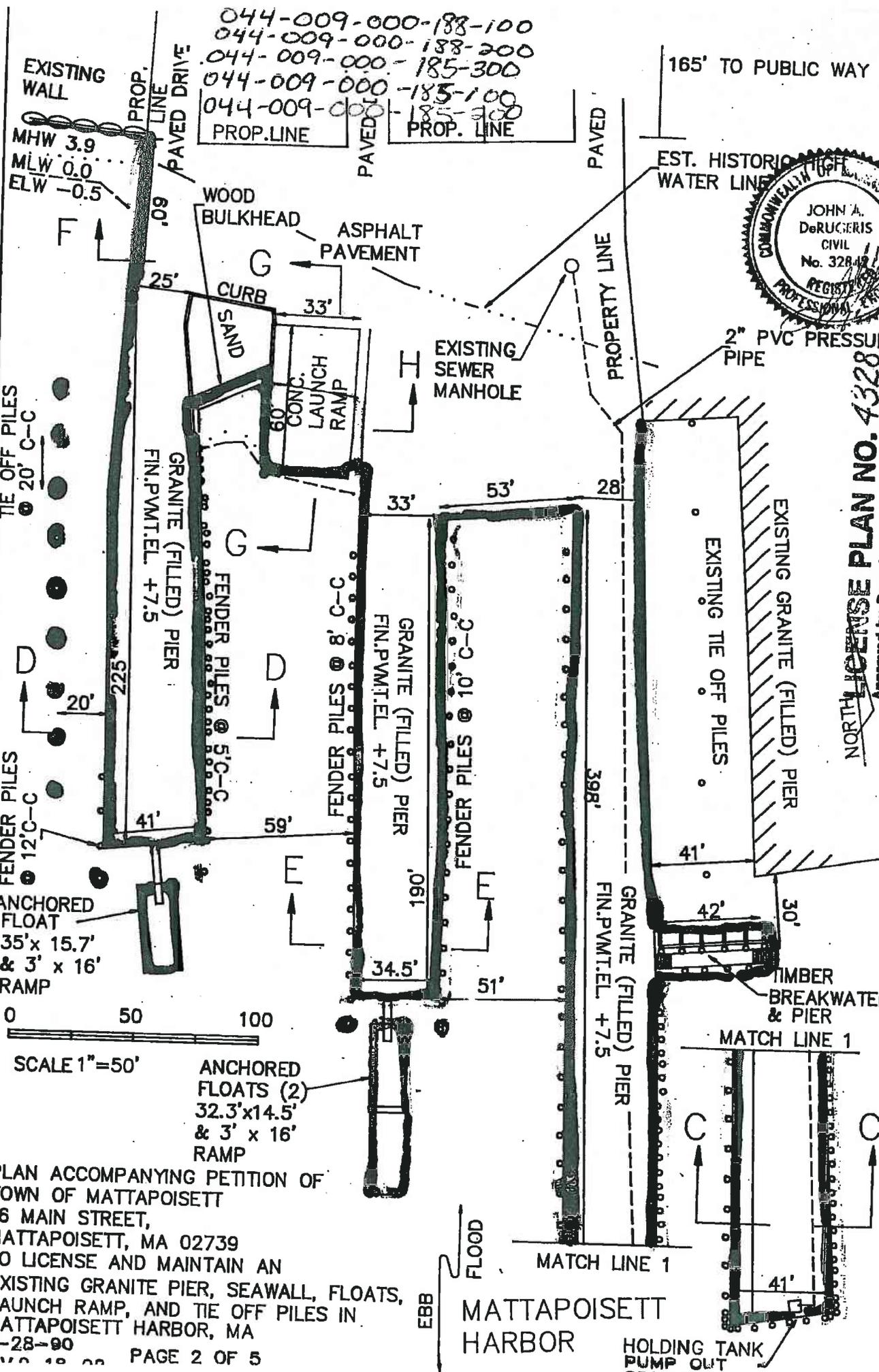


9-28-90



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPoisETT
 16 MAIN STREET,
 MATTAPoisETT, MA 02739
 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, FLOATS, LAUNCH RAMP, AND TIE OFF PILES IN MATTAPoisETT HARBOR, MA

LICENSE PLAN NO. 4.328
 Approved by Department of Environmental Protection of Massachusetts
Thomas B. Powers COMMISSIONER
Carl F. Dineen DIVISION DIRECTOR
John J. ... SECTION CHIEF
 JAN 26 1991

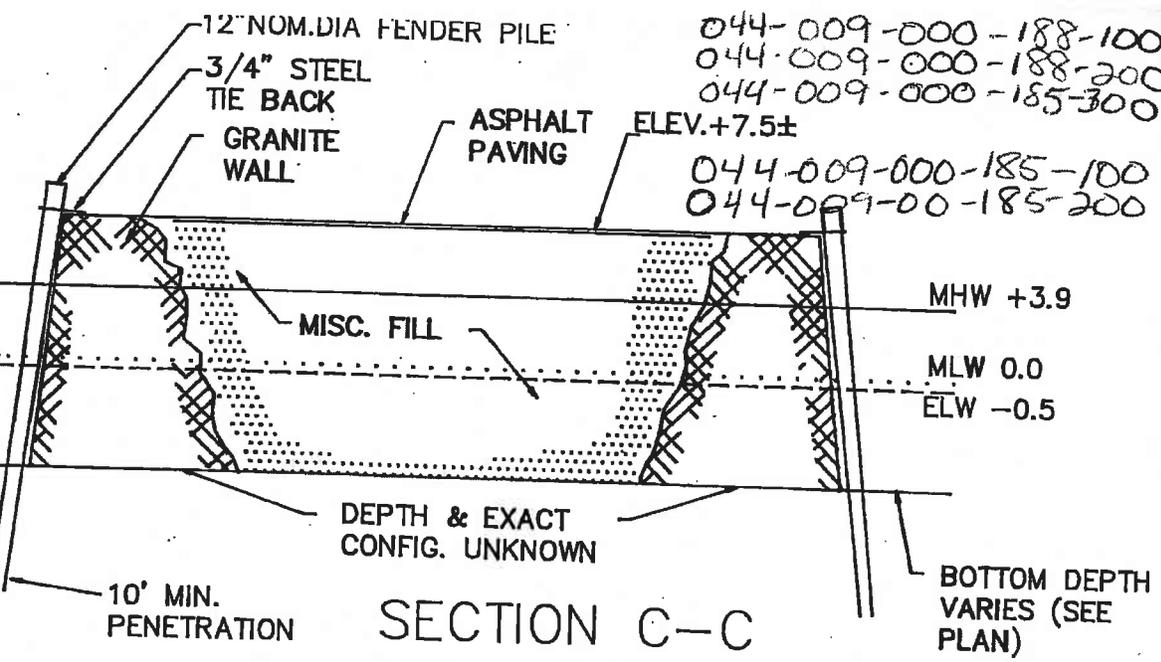


NORTH LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: JAN 26 1990

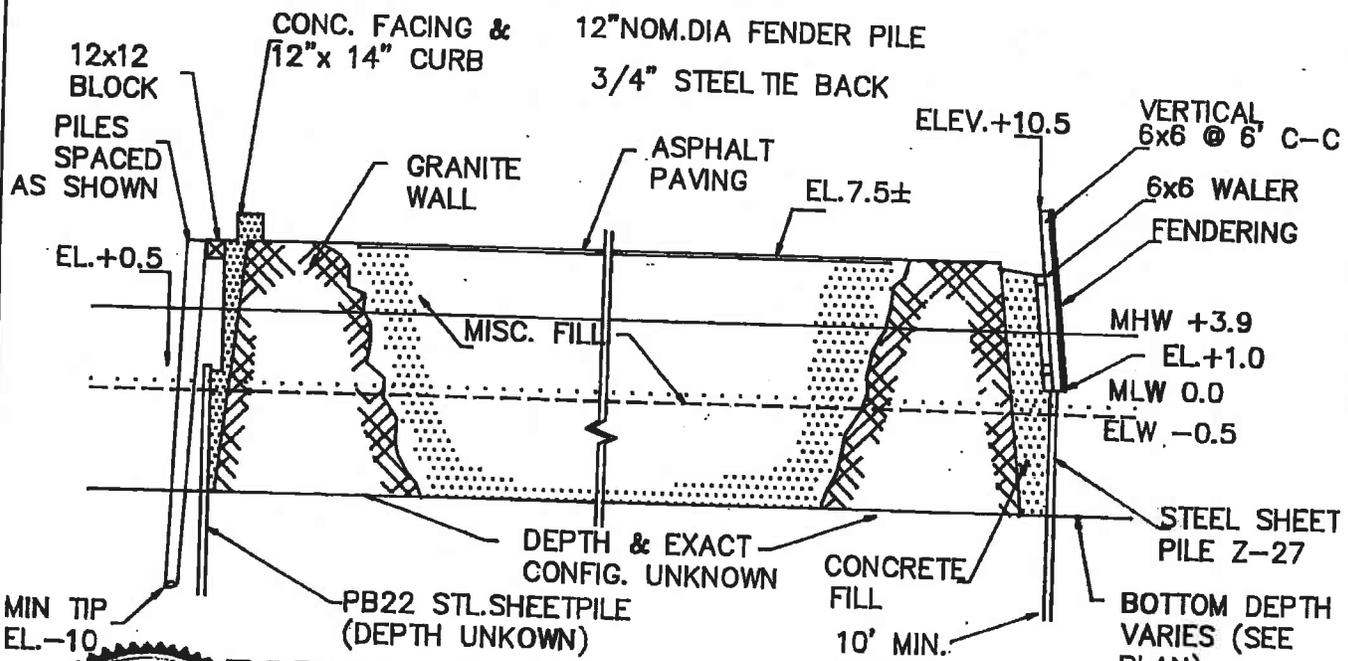
PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA
 9-28-90
 PAGE 2 OF 5

LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**

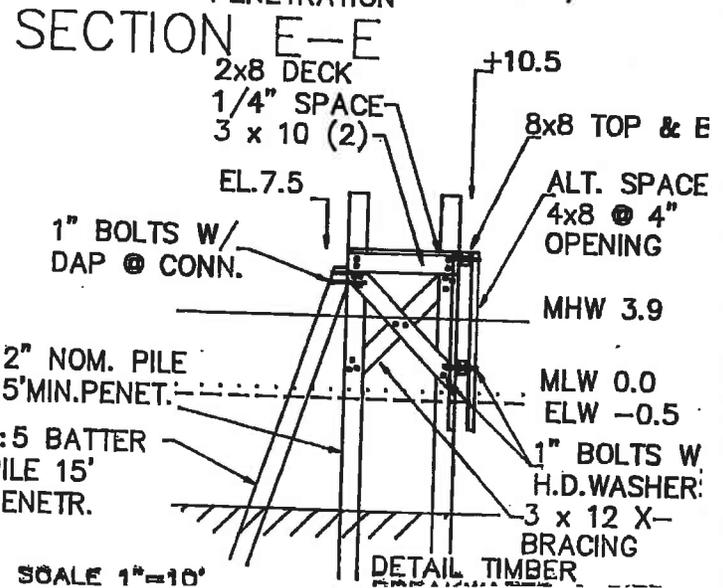
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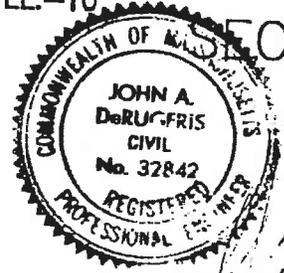
SECTION C-C
 TYP. GRANITE PIER
 SCALE 1"=10'



SECTION D-D
 TYP. GRANITE PIER
 SCALE 1"=10'

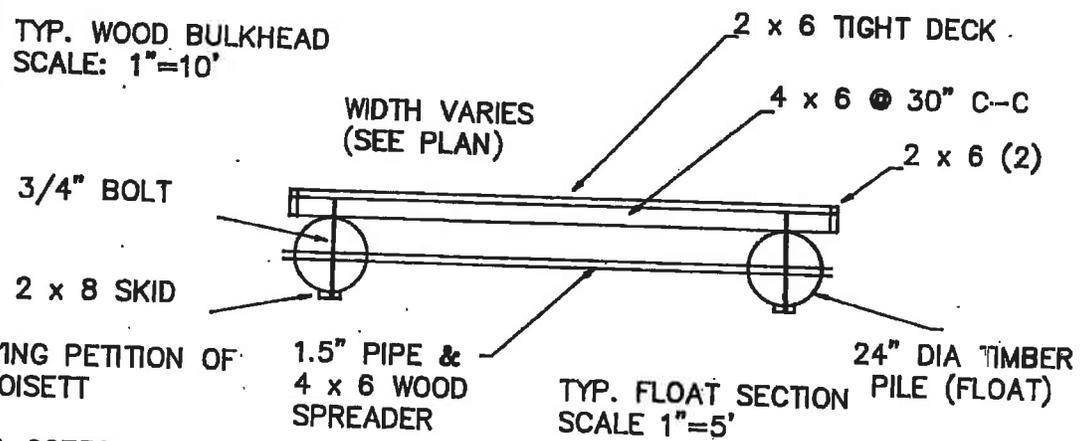
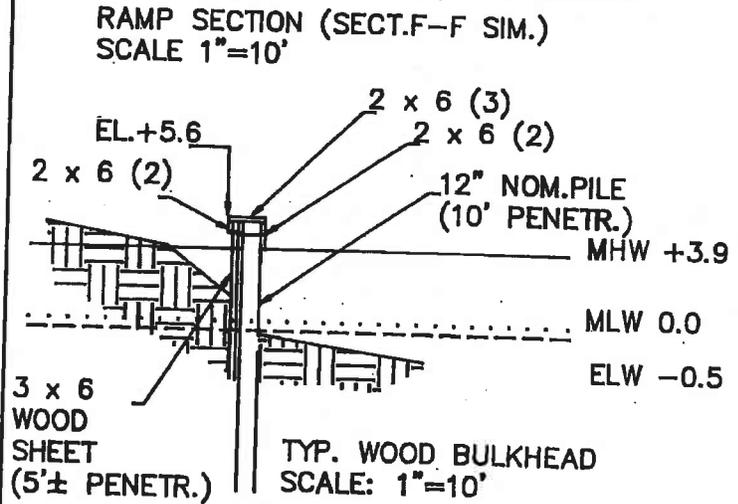
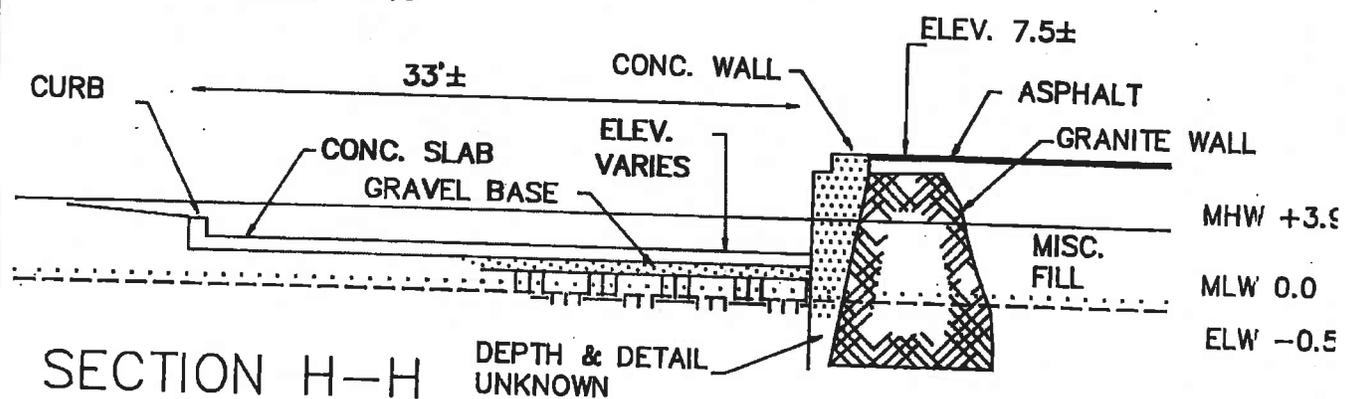
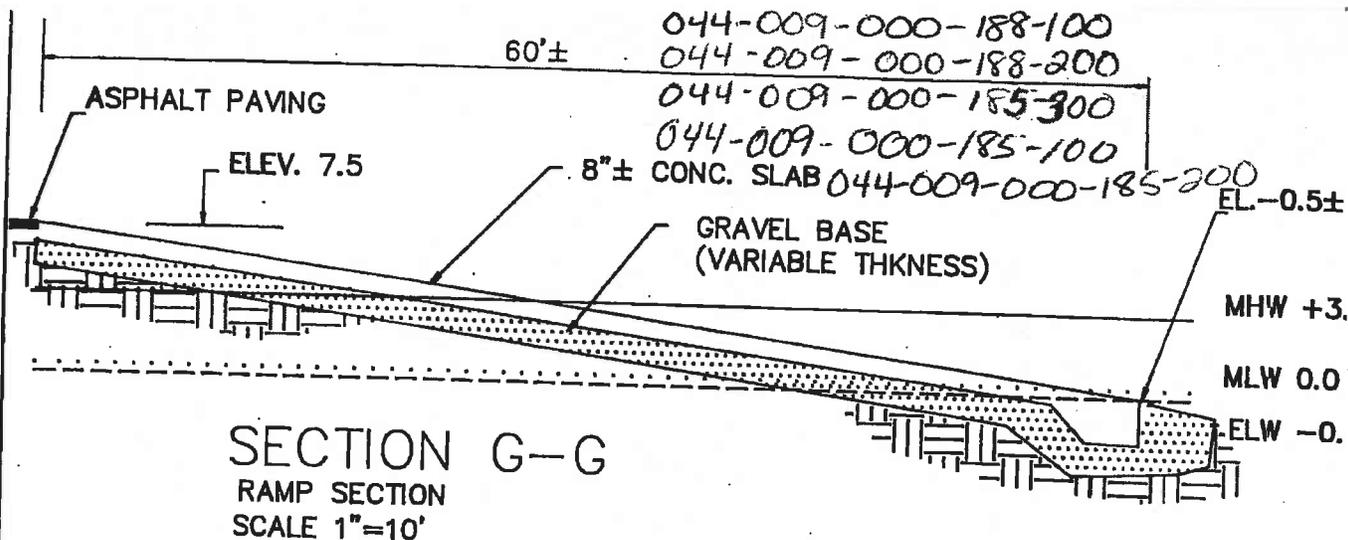


SECTION E-E
 SCALE 1"=10'



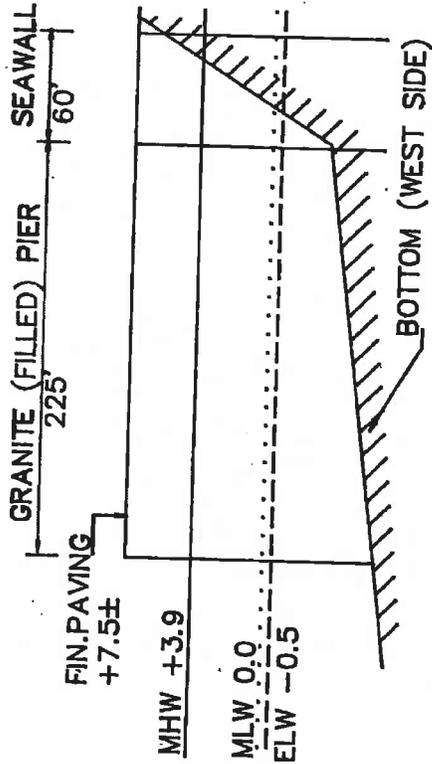
PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA

9-28-90
 REV 9-18-92

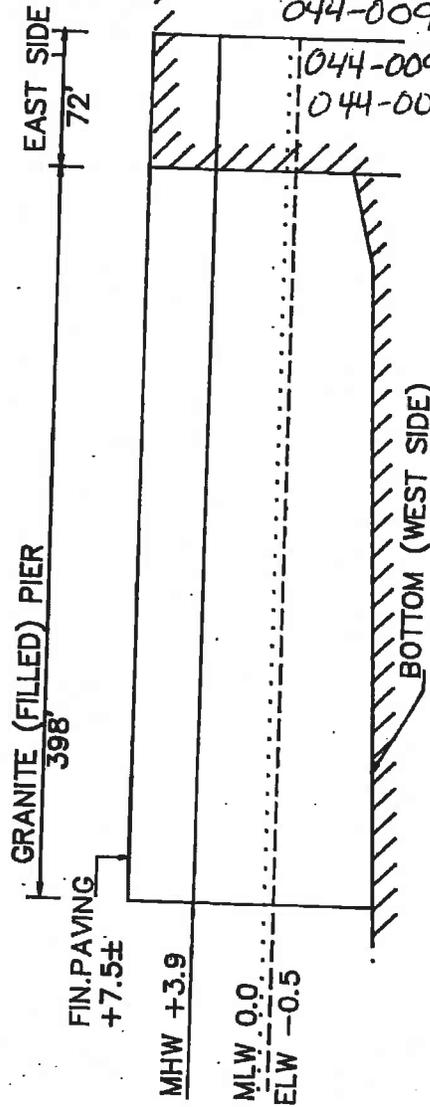


PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA

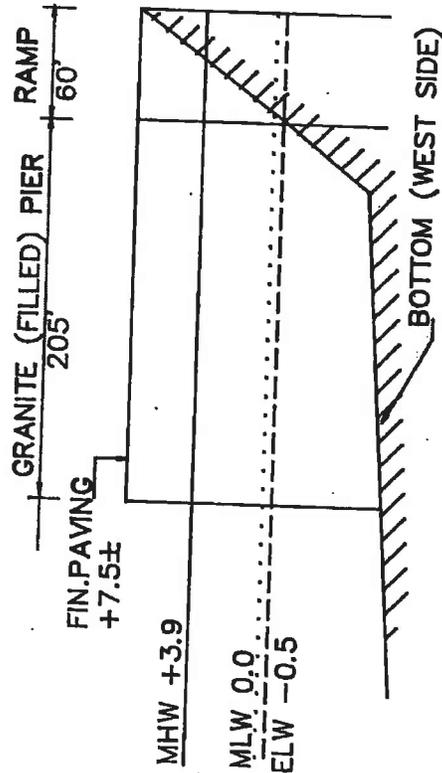
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**



PROFILE PIER 4
SCALE: H: 1"=100'
V: 1"=10'



PROFILE PIER 2
SCALE: H: 1"=100'
V: 1"=10'



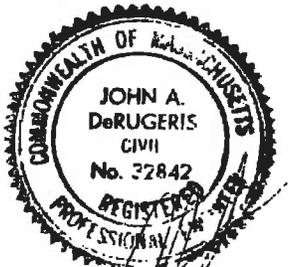
PROFILE PIER 3
SCALE: H: 1"=100'
V: 1"=10'

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

LICENSE PLAN NO. 4328

Approved by Department of Environmental Protection
Date:

JAN 26 1995

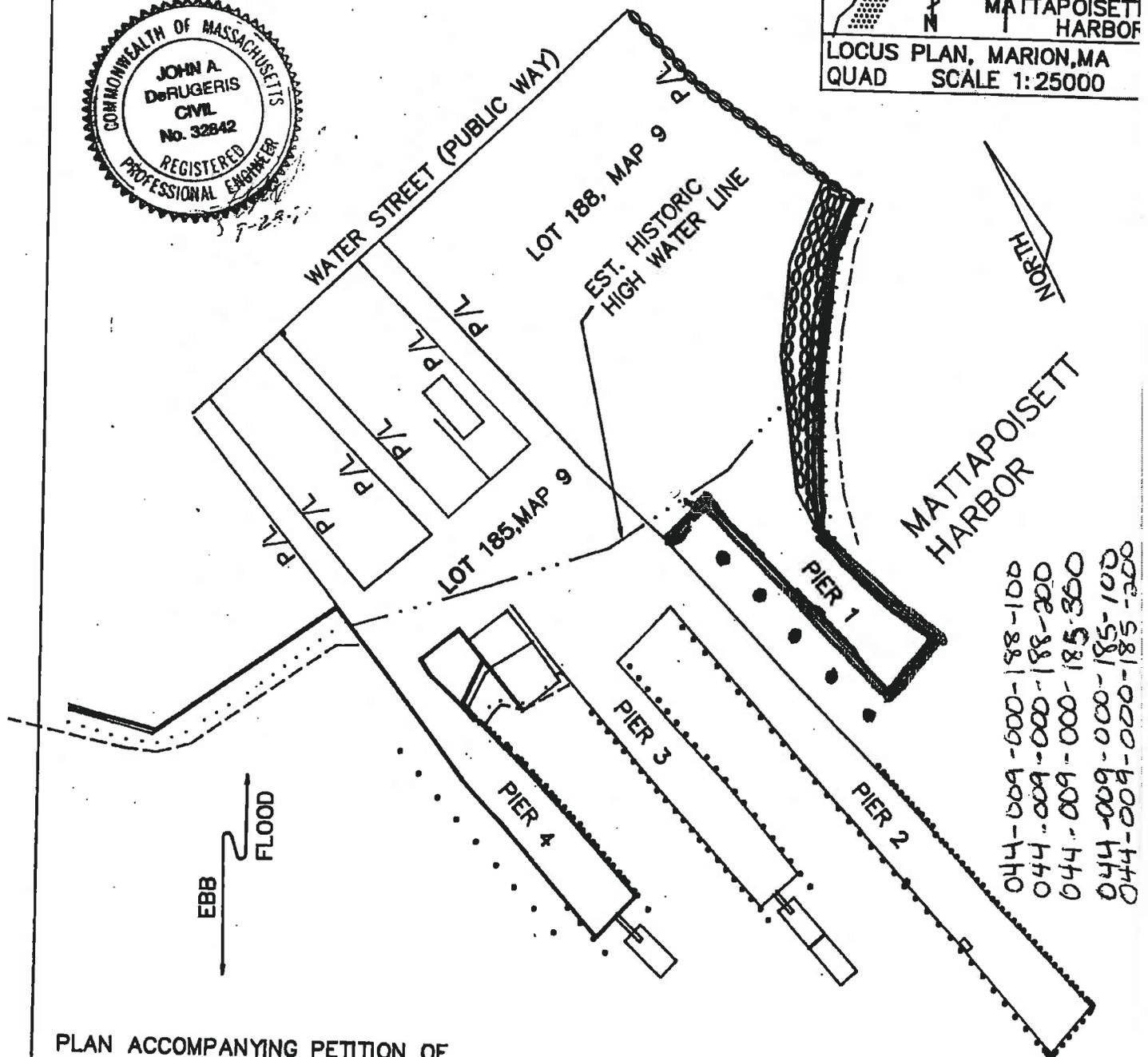
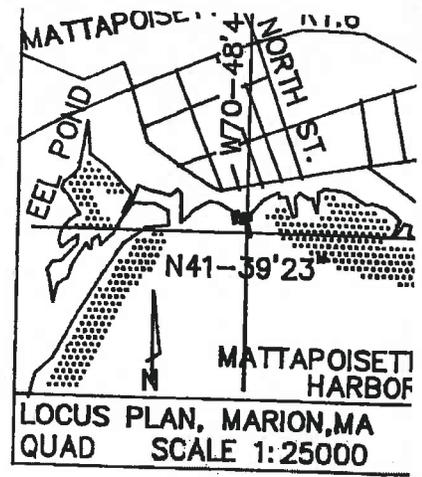


PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL, FLOATS,
LAUNCH RAMP, AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA

B

NOTES:

1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN.
2. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED (LINE SHOWN IS ESTIMATED).
3. ALL ELEVATIONS REFER TO MEAN LOW WATER
4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 2200 CUBIC YARDS.



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPoisETT
 16 MAIN STREET,
 MATTAPoisETT, MA 02739
 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPoisETT HARBOR, MA

LICENSE PLAN NO. 4928
 Approved by Department of Environmental Protection of Massachusetts.
 COMMISSIONER
 DIVISION DIRECTOR
 SECTION CHIEF
 OCT 18 1990

WATER STREET (PUBLIC WAY)

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

EST. HISTORIC HIGH WATER LINE

PROPERTY LINE

LOT 188, MAP 9
WATER STREET

PROPERTY LINE

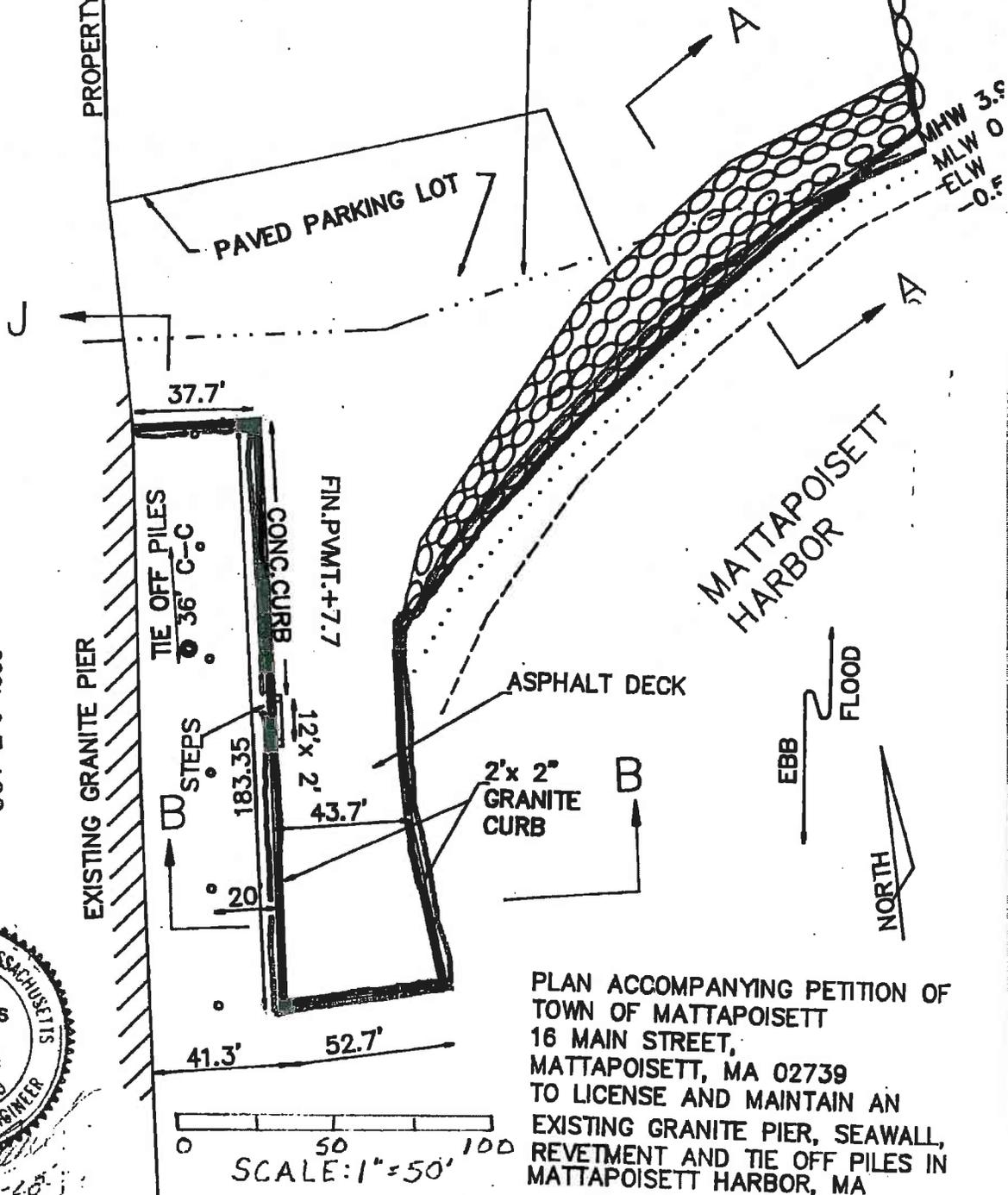
MHW 3.5
MLW 0
ELW -0.5

PAVED PARKING LOT

LICENSE PLAN NO. 4928

Approved by Department of Environmental Protection

Date OCT 18 1995



MATTAPOISETT HARBOR

ASPHALT DECK

2'x 2" GRANITE CURB

CONC. CURB
FIN. PMT. +7.7'

TIE OFF PILES
36' C-C

STEPS

20'

183.35'

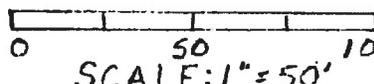
55'

43.7'

41.3'

52.7'

37.7'

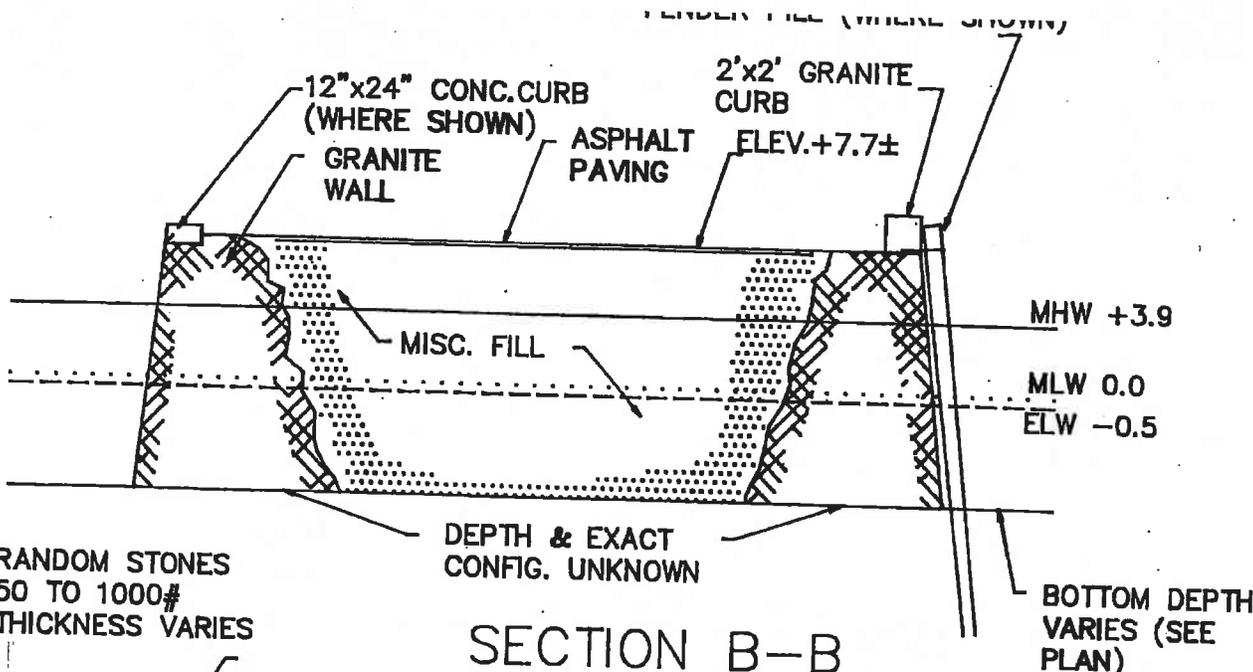


SCALE: 1" = 50'

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

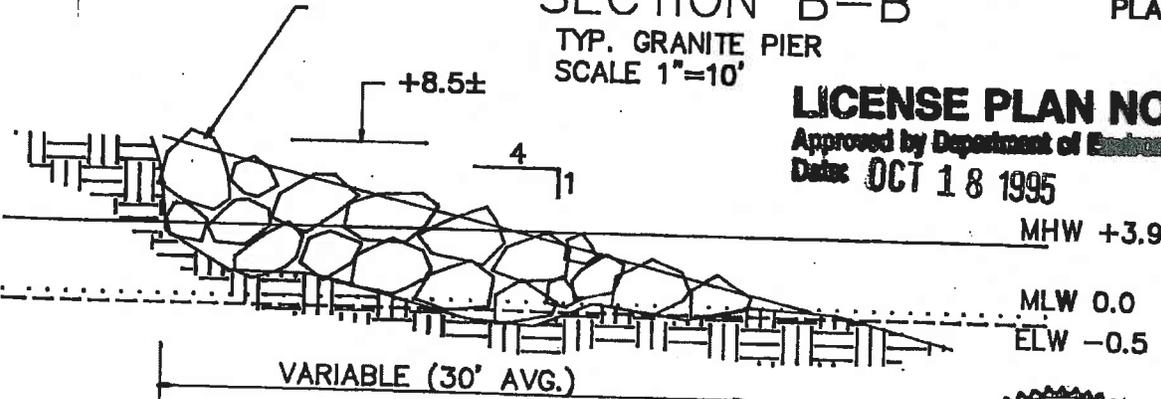
RE 9-28-90

PAGE 2 OF 2

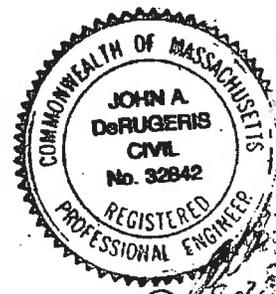


SECTION B-B
TYP. GRANITE PIER
SCALE 1"=10'

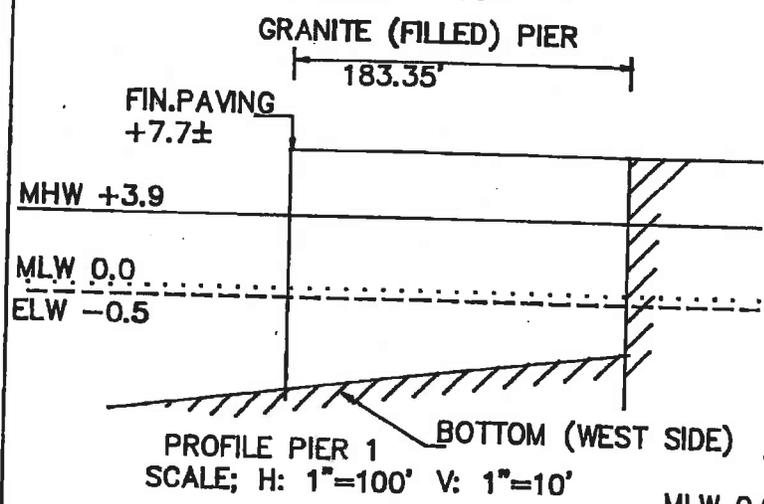
LICENSE PLAN NO. 4928
Approved by Department of Environmental Protection
Date: OCT 18 1995



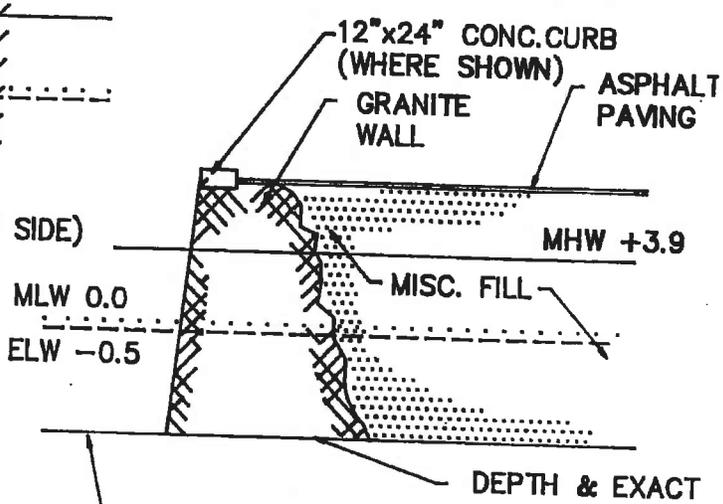
SECTION A-A
SCALE 1"=10'



002-581-000-185-200
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044-009-000-188-200
044-009-000-185-300
044-009-000-185-100

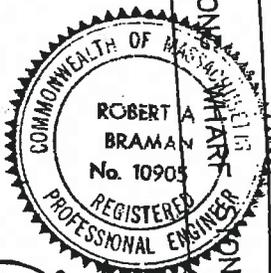


PROFILE PIER 1
SCALE; H: 1"=100' V: 1"=10'



SECTION J
TYP. SEA WALL
SCALE 1"=10'

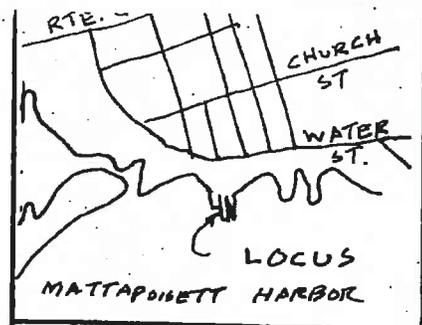
PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL,
REVTMENT AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA



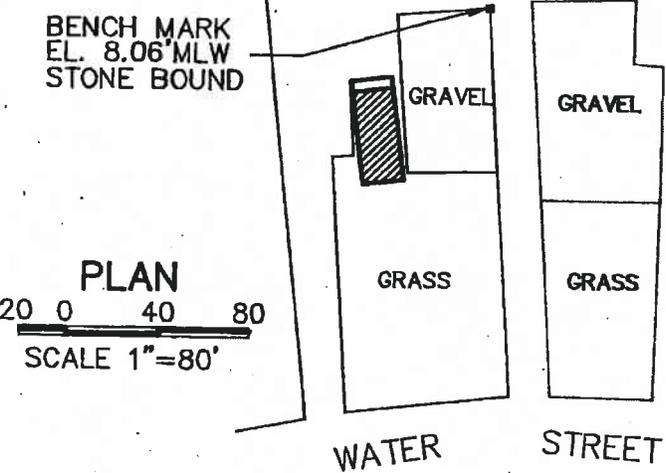
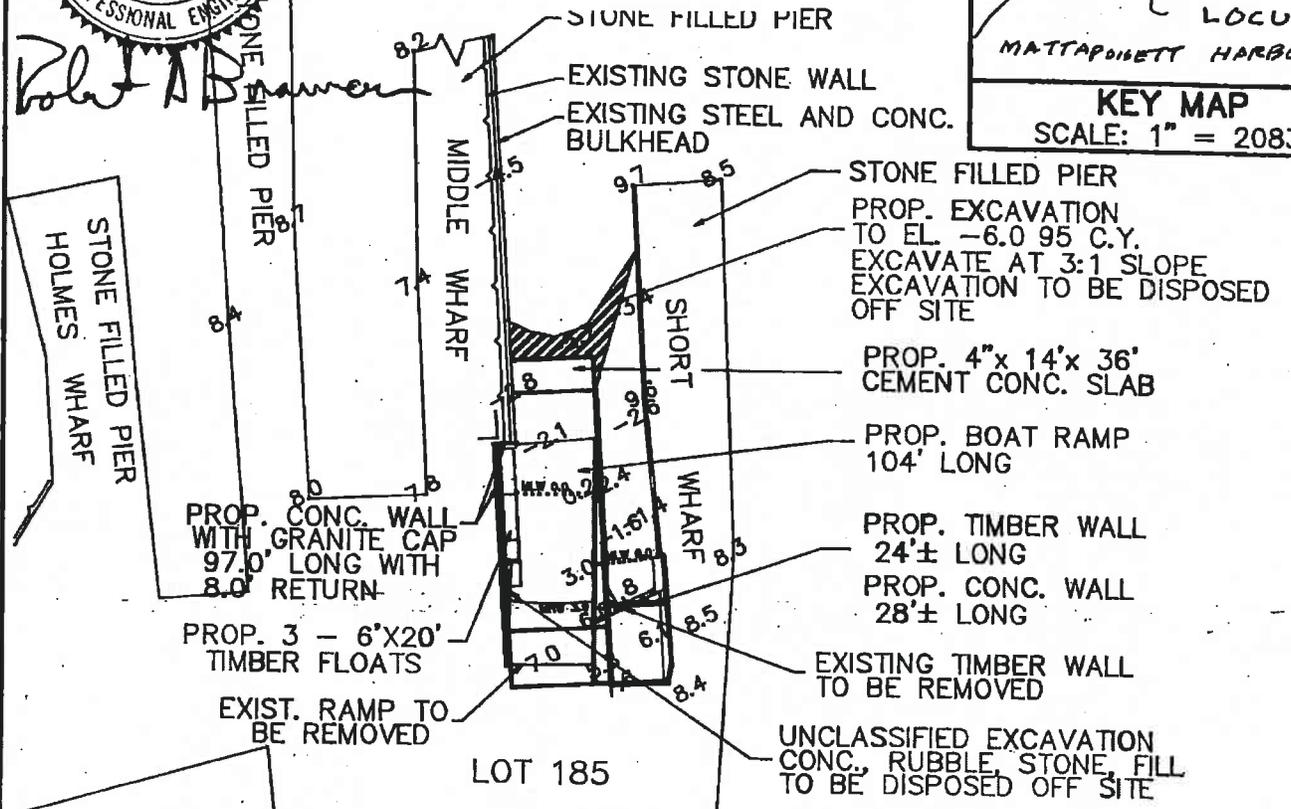
Robert A. Braman

MATTAPOISETT HARBOR

FLOOD
EBB



KEY MAP
SCALE: 1" = 2083'



044-009-000-185-100

NOTE:
ELEVATIONS ARE IN FEET & TENTHS ABOVE THE PLANE OF MEAN LOW WATER. MINUS FIGURES INDICATE DEPTHS BELOW THAT SAME PLANE.

WEST ABUTTER LOT 65
MATTAPOISETT LAND TRUST
PO BOX 31
MATTAPOISETT, MA. 02739

EAST ABUTTER LOT 189
ANNE M. DOWNEY
PO BOX 652
MATTAPOISETT, MA. 02739

PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
TO CONSTRUCT & MAINTAIN CONCRETE
BOAT RAMP, CONCRETE & TIMBER WALLS,
FLOATS & TO EXCAVATE IN
MATTAPOISETT HARBOR
MATTAPOISETT, PLYMOUTH CO., MA.
JUNE 27, 1995 SHEET 1 OF 3
BRAMAN ENGINEERING COMPANY, LTD.
CIVIL ENGINEERS AND SURVEYORS
258 MAIN STREET, BUZZARDS BAY, MA.

LICENSE PLAN NO. 5570
Approved by Department of Environmental Protection
of Massachusetts

Rowley
DIVISION DIRECTOR

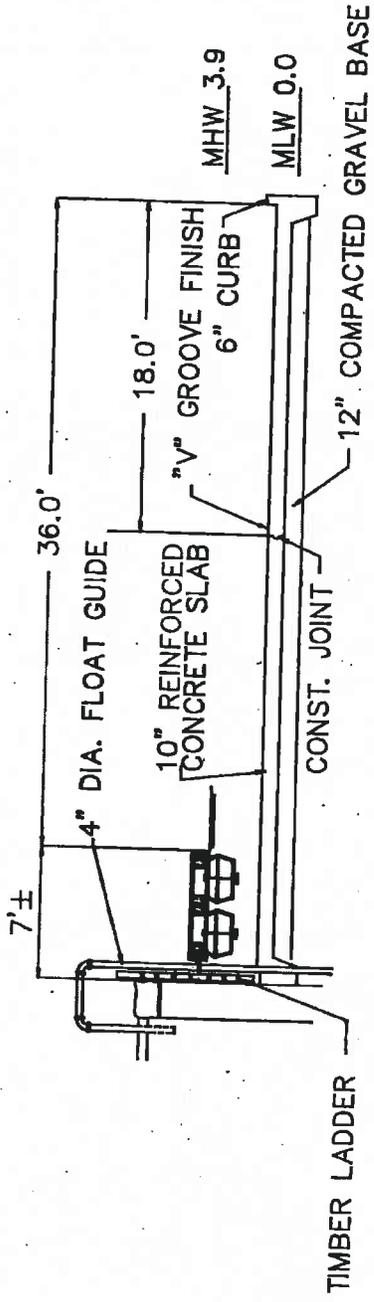
[Signature]
SECTION CHIEF

MAY 01 1995
DATE

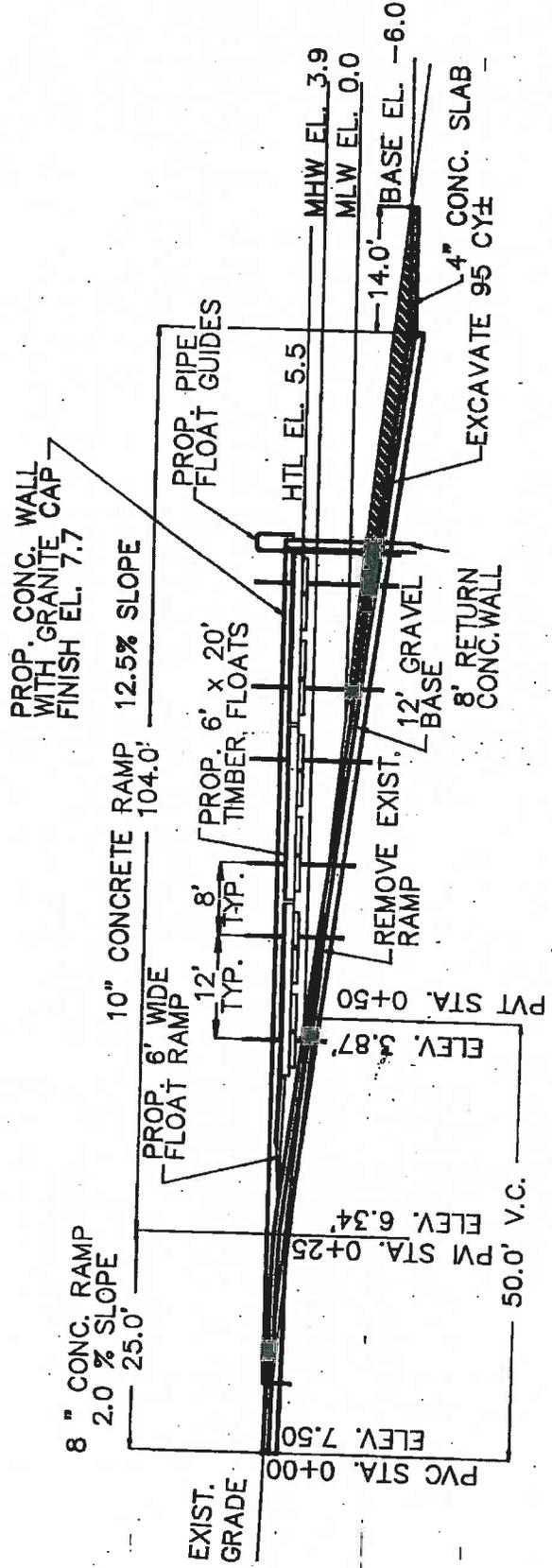


Robert A. Braman

TOWN OF MATTAPOISETT



RAMP CROSS SECTION
SCALE: 1"=10'



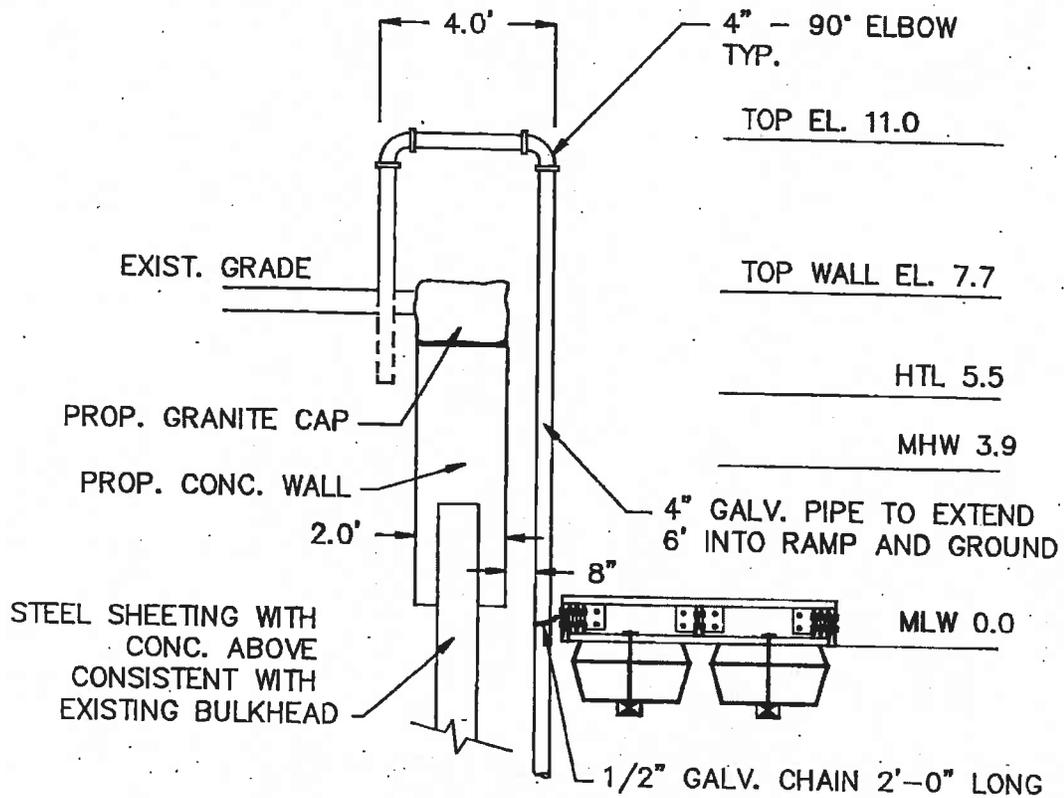
RAMP PROFILE
SCALE: 1"=20'

LICENSE PLAN NO. 5570
Approved by Department of ~~Transportation~~
Date: **MAY 01 1996**

JUNE 27, 1995

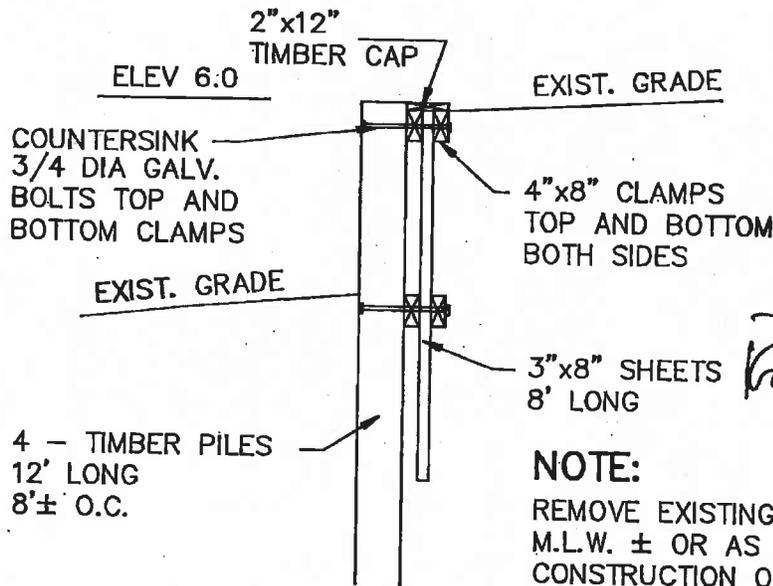
SHEET 2 OF 3

044-009-000-185-100



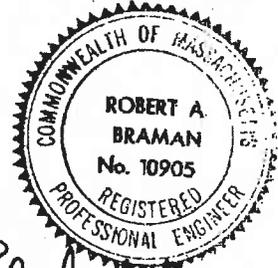
FLOAT GUIDE DETAIL

SCALE: 1" = 4'-0"



TIMBER WALL DETAIL

SCALE: 1" = 4'-0"



Robert A. Braman

NOTE:

REMOVE EXISTING BULKHEAD AT M.L.W. ± OR AS REQ'D FOR CONSTRUCTION OF NEW BULKHEAD

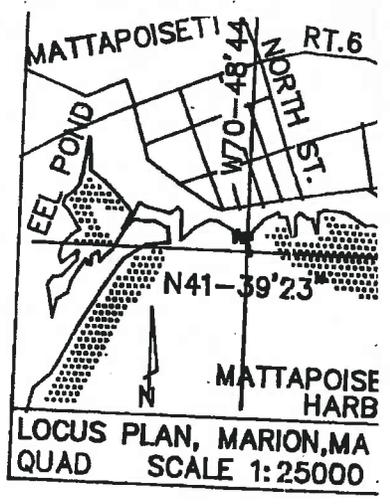
LICENSE PLAN NO. 5570

Approved by Department of Environmental Protection
Date: MAY 01 1996

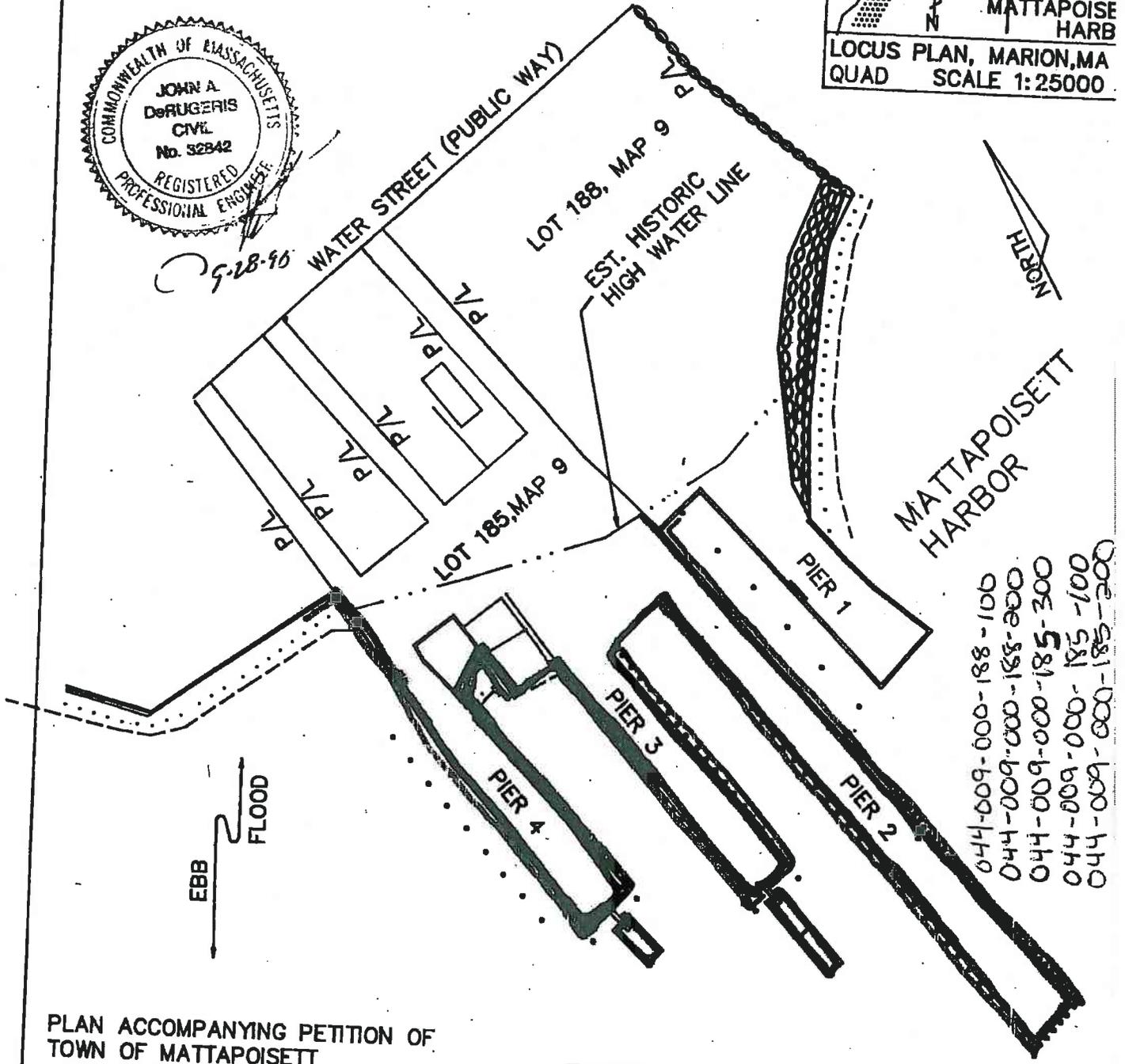
044-009-000-185-100

A

- NOTES:
1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN. PIER 4 WAS RECONSTRUCTED IN 1965, BOAT RAMP AND WOOD BULKHEAD WERE CONSTRUCTED IN 1965, BY MASS. STATE ACCESS BOARD.
 2. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED (LINE SHOWN IS ESTIMATED).
 3. ALL ELEVATIONS REFER TO MEAN LOW WATER
 4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 7400 CU.YD.



9-28-90

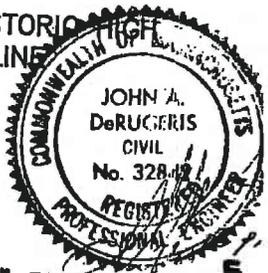
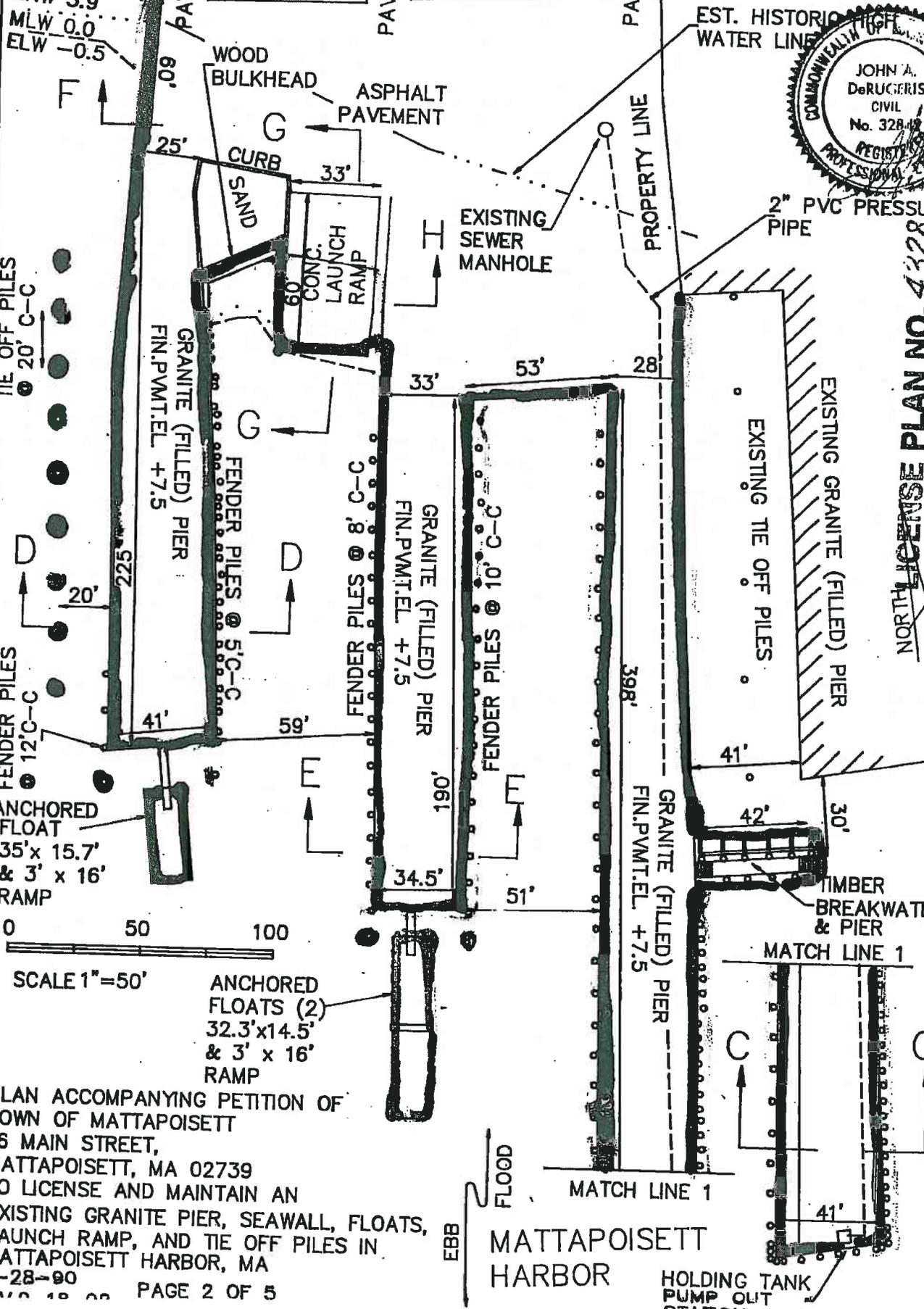


PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPoisETT
 16 MAIN STREET,
 MATTAPoisETT, MA 02739
 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, FLOATS, LAUNCH RAMP, AND TIE OFF PILES IN MATTAPoisETT HARBOR, MA

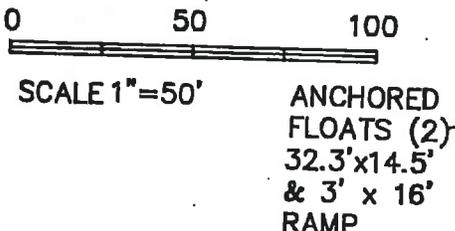
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection of Massachusetts
Thomas B. Powers COMMISSIONER
Carl F. Dineen DIVISION DIRECTOR
[Signature] SECTION CHIEF
 JAN 26 1991

9-28-90

044-009-000-188-100
 044-009-000-188-200
 044-009-000-185-300
 044-009-000-185-100
 044-009-000-185-300



NORTH LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: JAN 26 1005



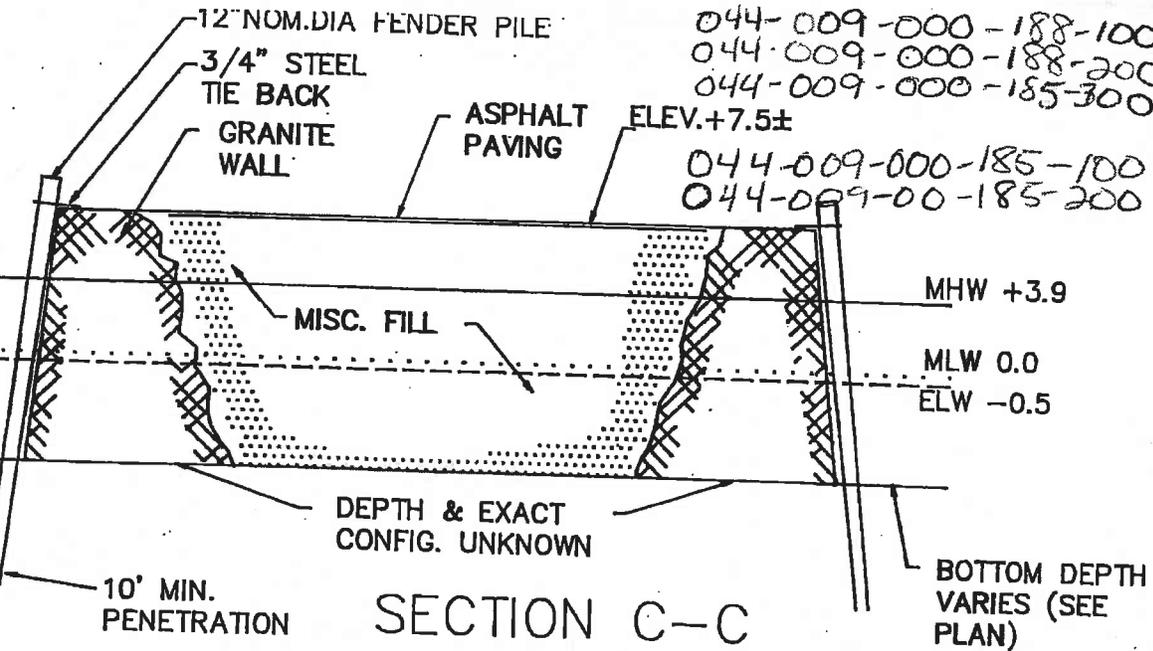
PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA
 9-28-90
 PAGE 2 OF 5

MATTAPOISETT
 HARBOR

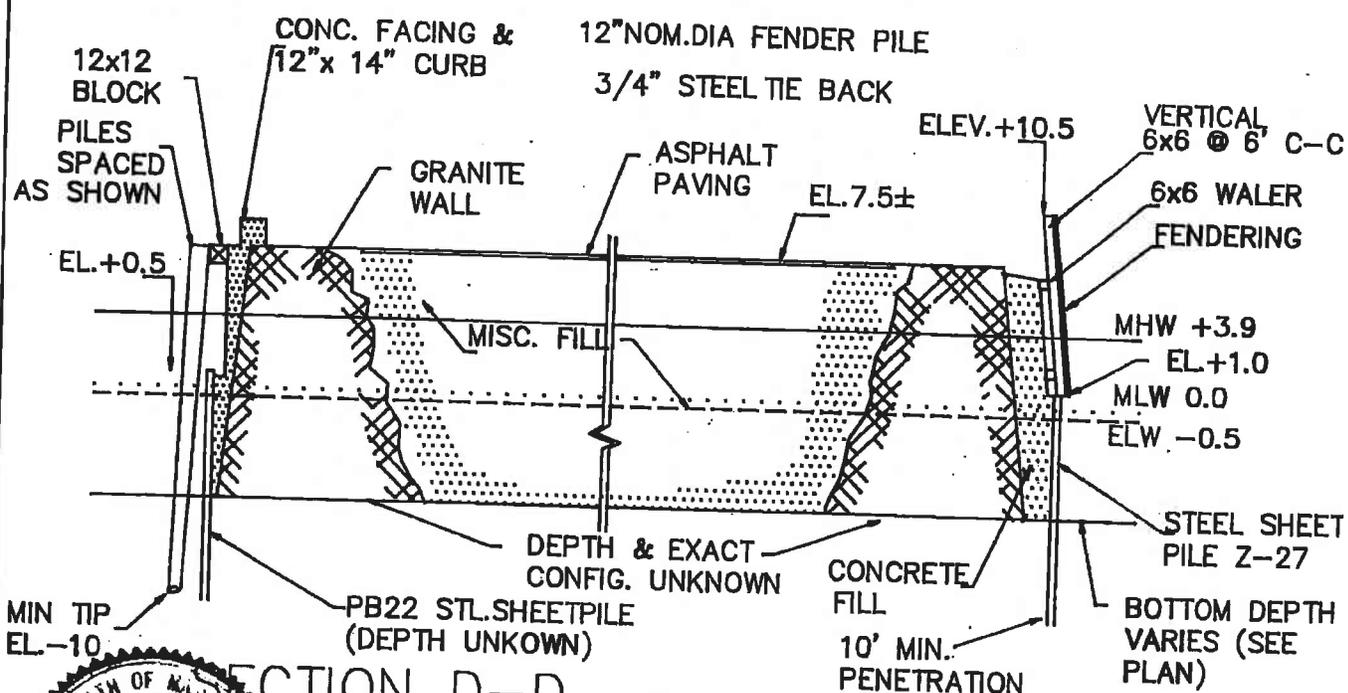
HOLDING TANK
 PUMP OUT

LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: JAN 26 1995

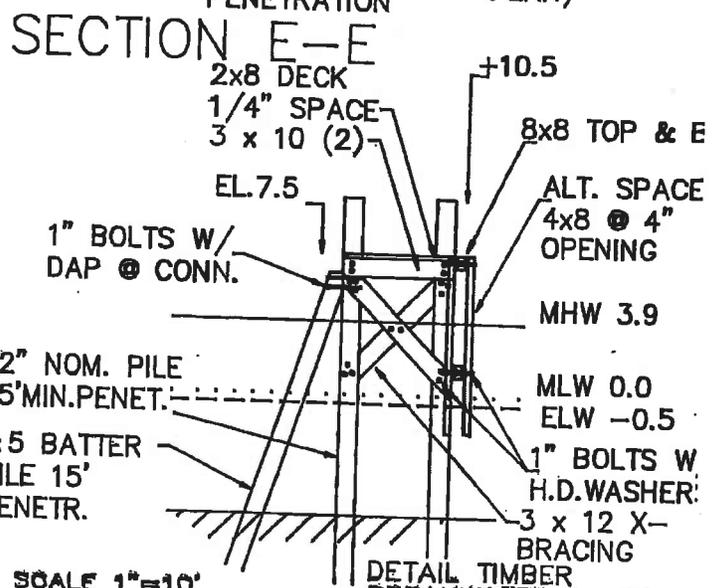
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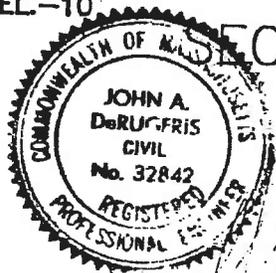
SECTION C-C
 TYP. GRANITE PIER
 SCALE 1"=10'



SECTION D-D
 TYP. GRANITE PIER
 SCALE 1"=10'

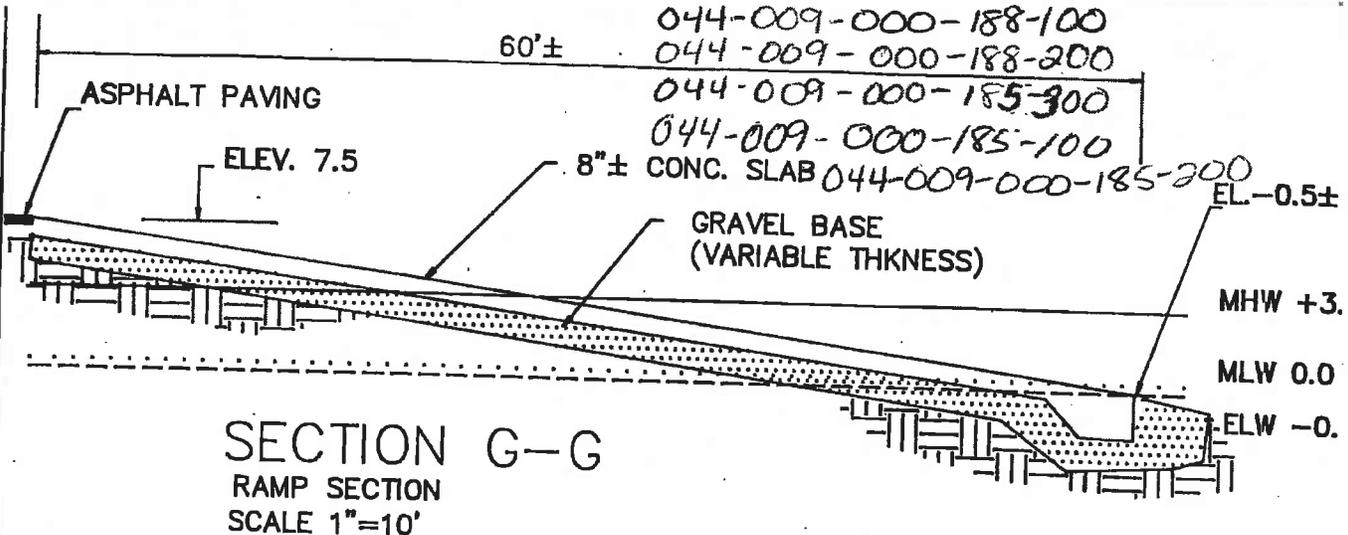


SECTION E-E
 SCALE 1"=10'



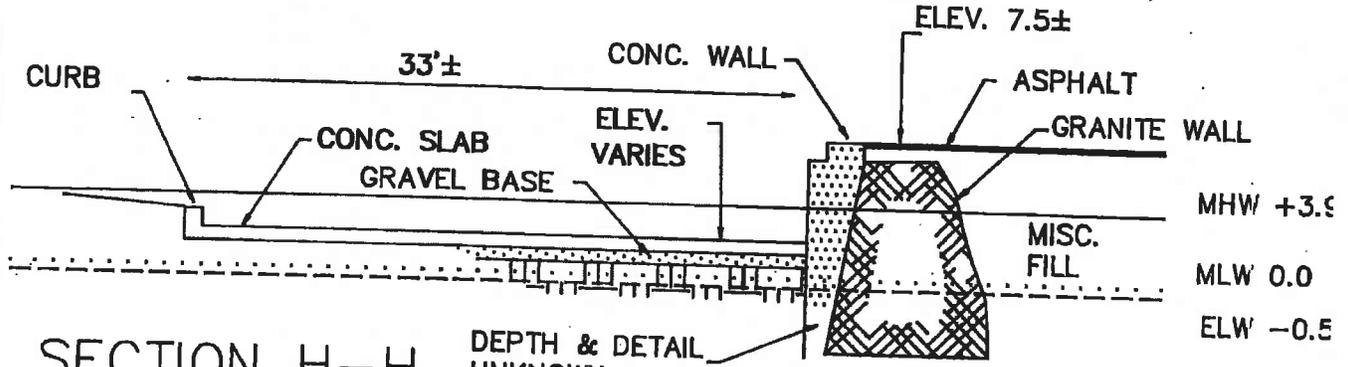
PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA

9-28-90
 REV 9-18-92



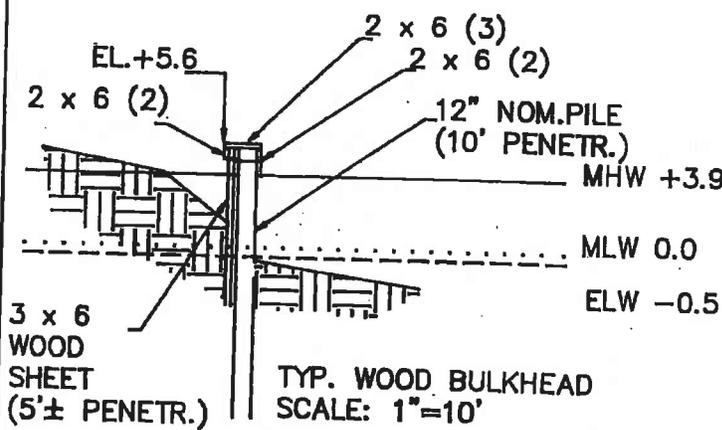
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 044-009-000-188-200
 044-009-000-185-300
 044-009-000-185-100
 044-009-000-185-200

SECTION G-G
 RAMP SECTION
 SCALE 1"=10'

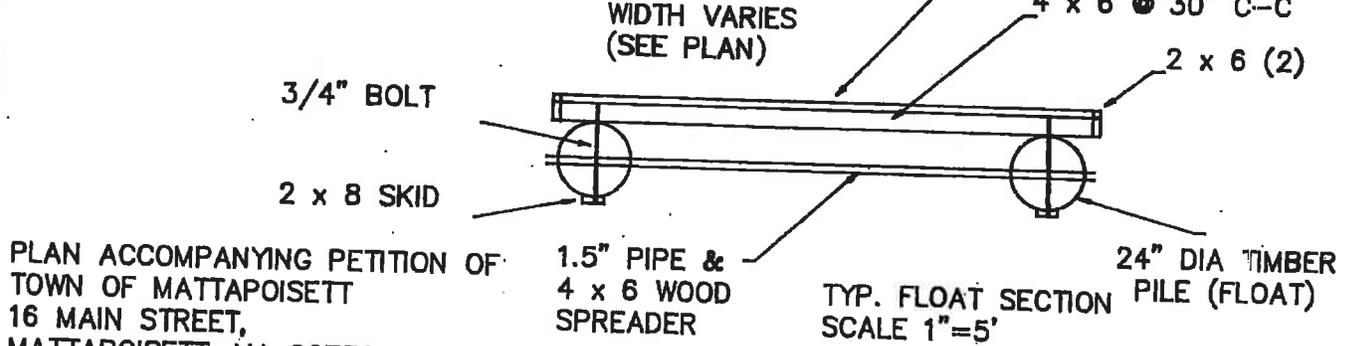
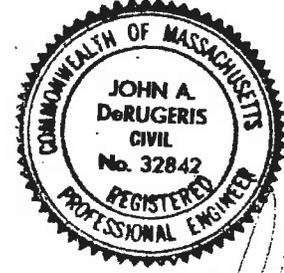


SECTION H-H
 RAMP SECTION (SECT. F-F SIM.)
 SCALE 1"=10'

DEPTH & DETAIL UNKNOWN



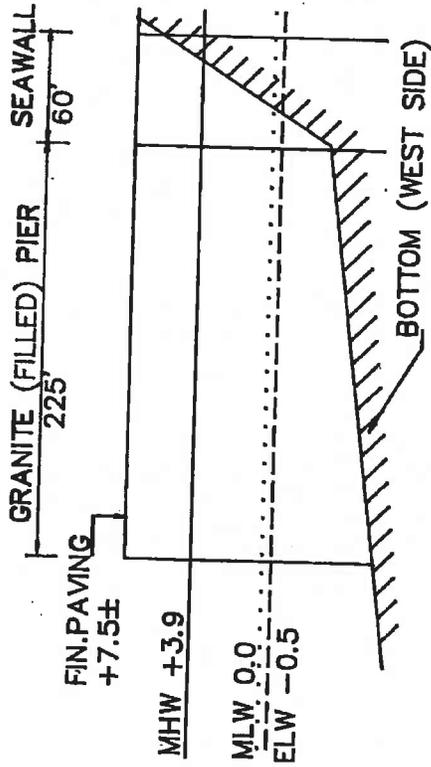
TYP. WOOD BULKHEAD
 SCALE: 1"=10'



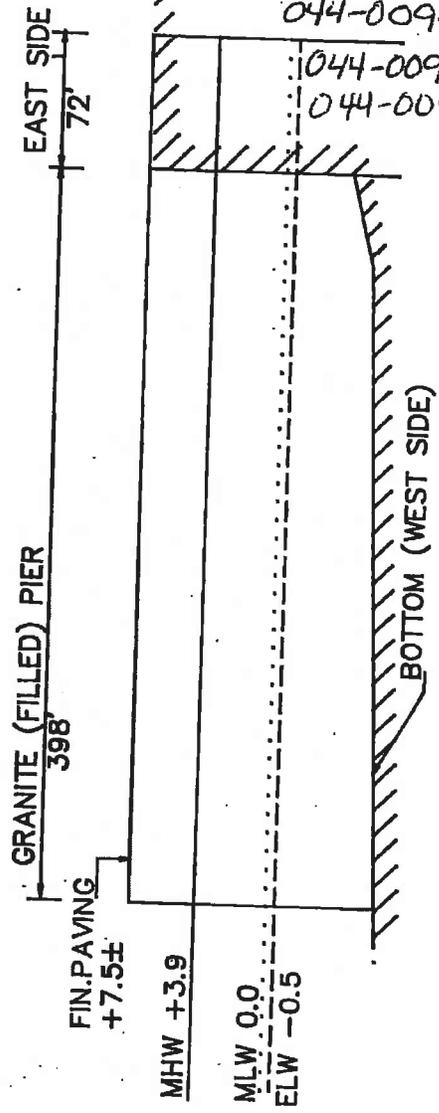
TYP. FLOAT SECTION
 SCALE 1"=5'

PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA

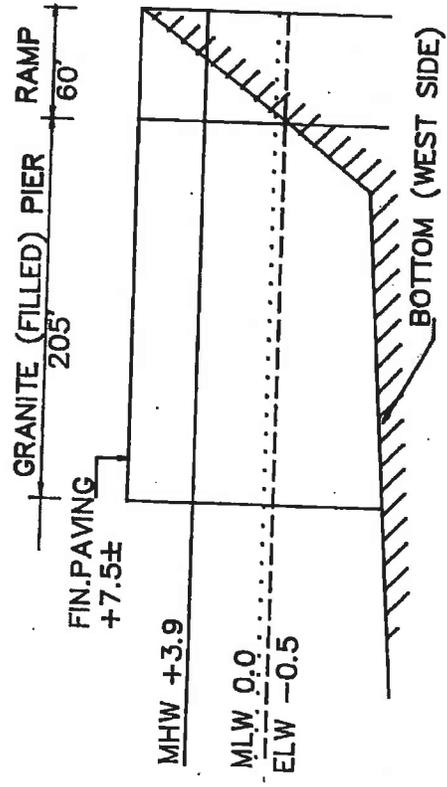
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**



PROFILE PIER 4
SCALE: H: 1"=100'
V: 1"=10'



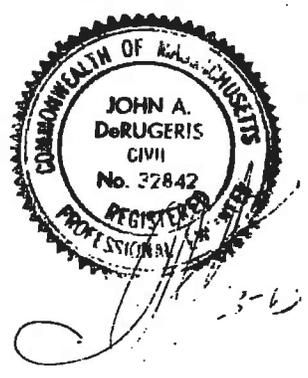
PROFILE PIER 2
SCALE: H: 1"=100'
V: 1"=10'



PROFILE PIER 3
SCALE: H: 1"=100'
V: 1"=10'

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

LICENSE PLAN NO. 4328
Approved by Department of Environmental Protection
Date: **JAN 26 1995**

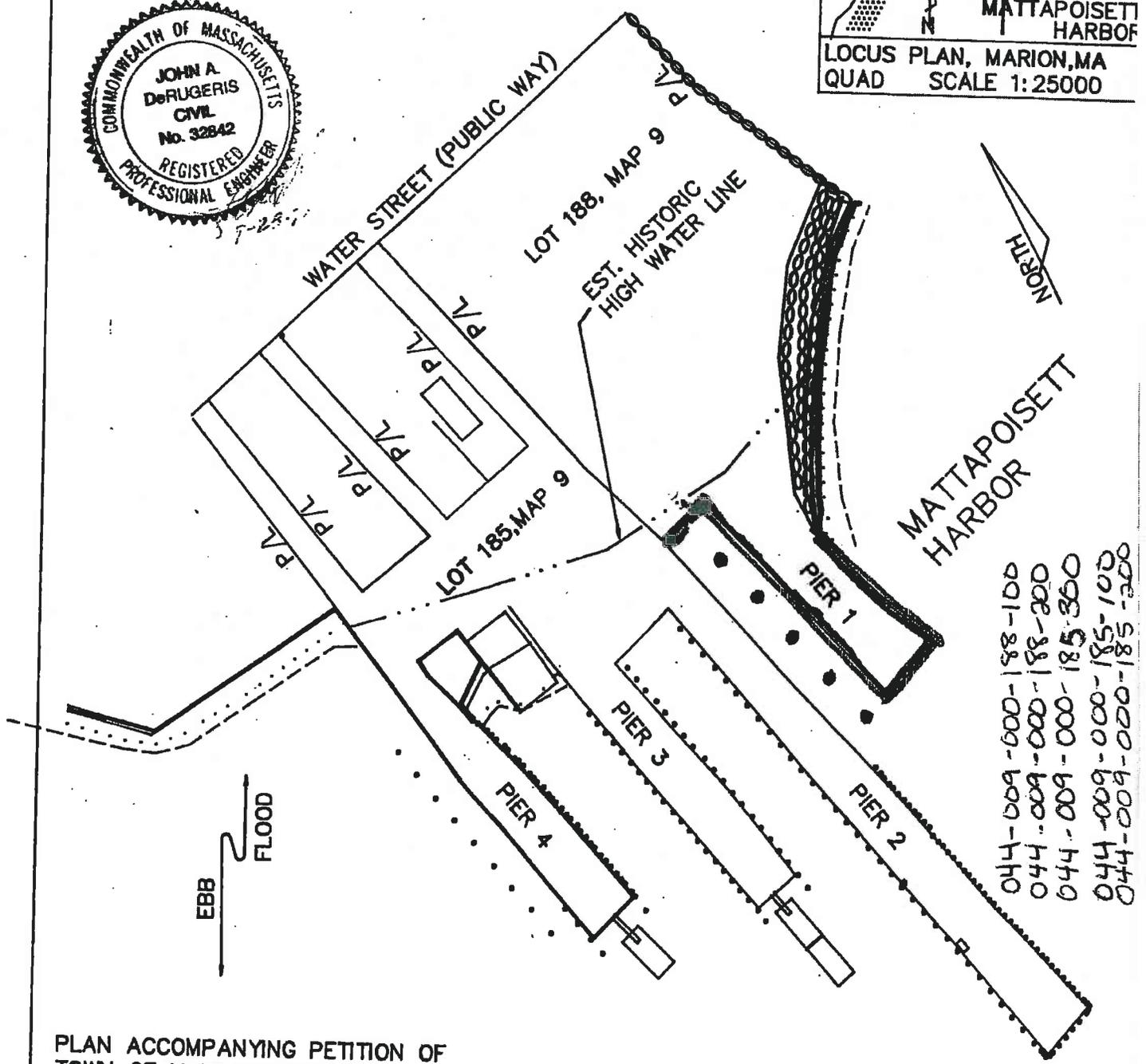
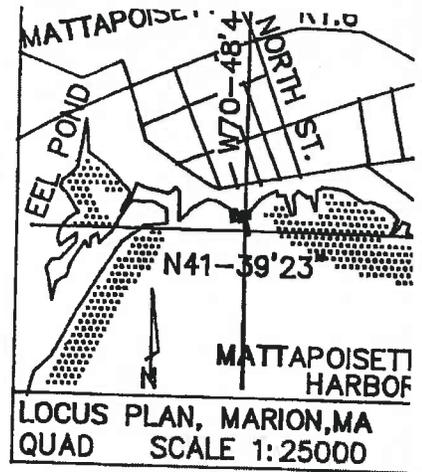


PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL, FLOATS,
LAUNCH RAMP, AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA
9-28-90 PAGE 5 OF 5

B

NOTES:

1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN.
2. PIER 4 WAS RECONSTRUCTED IN 1966, THAT RAMP AND WOOD BULKHEAD WERE CONSTRUCTED IN 1966, BY MASS. STATE ACCESS BOARD.
3. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED (LINE SHOWN IS ESTIMATED).
4. ALL ELEVATIONS REFER TO MEAN LOW WATER
5. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 2200 CUBIC YARDS.



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

LICENSE PLAN NO. 4928
 Approved by Department of Environmental Protection of Massachusetts.
 [Signature]
 COMMISSIONER
 DIVISION DIRECTOR
 SECTION CHIEF

OCT 18 1990

WATER STREET (PUBLIC WAY)

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

EST. HISTORIC HIGH WATER LINE

PROPERTY LINE

LOT 188, MAP 9
WATER STREET

PROPERTY LINE

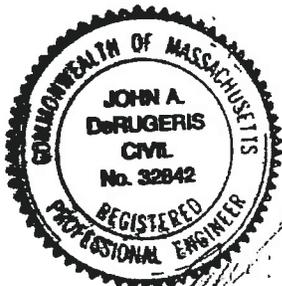
PAVED PARKING LOT

MHW 3.5
MLW 0
ELW -0.5

LICENSE PLAN NO. 4928

Approved by Department of Environmental Protection

Date: OCT 18 1995



C

EXISTING GRANITE PIER

TIE OFF PILES

36' C-C

CONC. CURB

FIN. PAVT. +7.7

STEPS

183.35

20

12' x 2'

43.7'

ASPHALT DECK

2' x 2" GRANITE CURB

MATTAPOISETT HARBOR

EBB FLOOD

NORTH

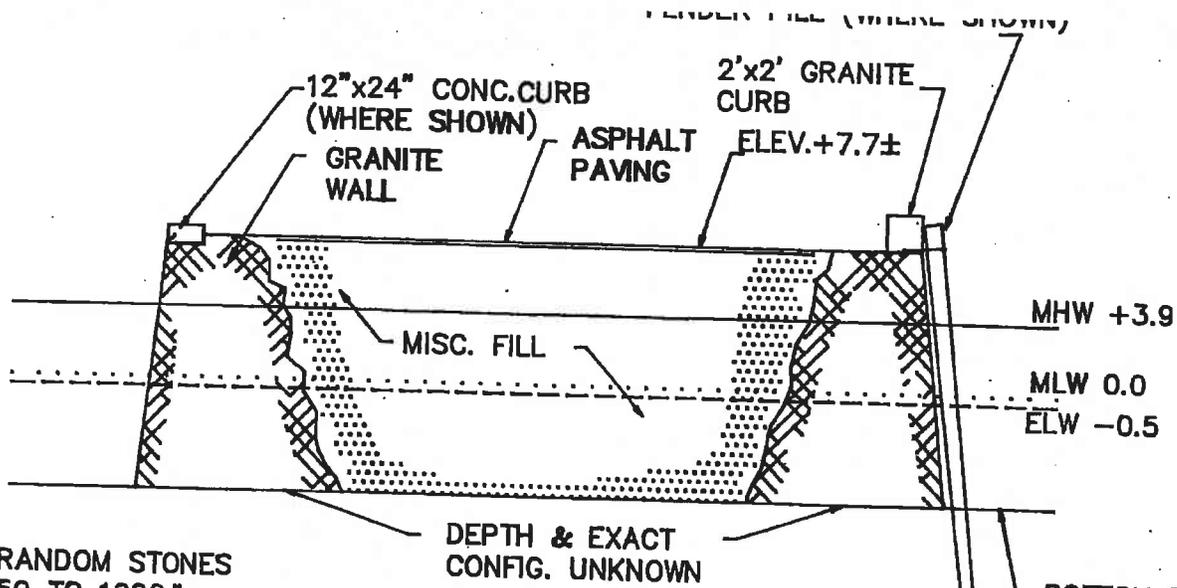
41.3' 52.7'

0 50 100
SCALE: 1" = 50'

PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL,
REVETMENT AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA

RE 11
9-28-00

PAGE 2 OF 2



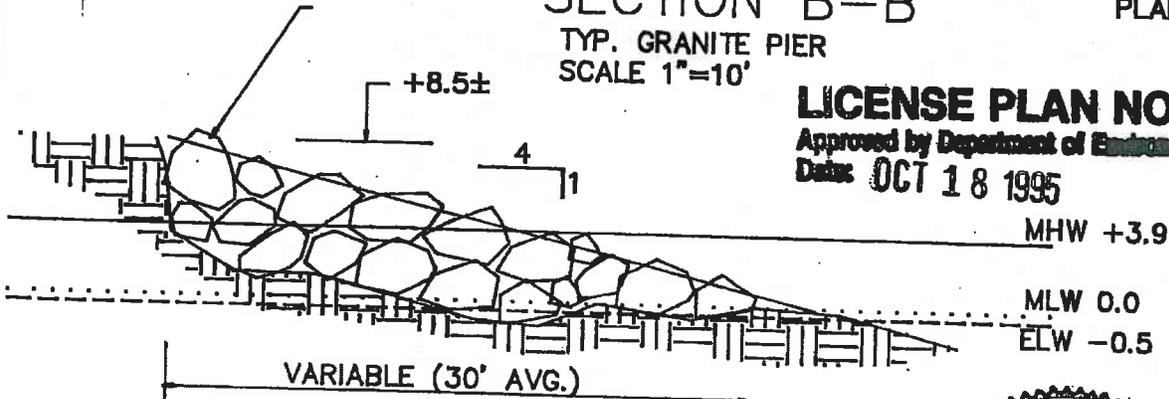
SECTION B-B

TYP. GRANITE PIER
SCALE 1"=10'

LICENSE PLAN NO. 4928

Approved by Department of Environmental Protection

Date: OCT 18 1995



SECTION A-A

SCALE 1"=10'

GRANITE (FILLED) PIER

183.35'

FIN. PAVING
+7.7±

MHW +3.9

MLW 0.0

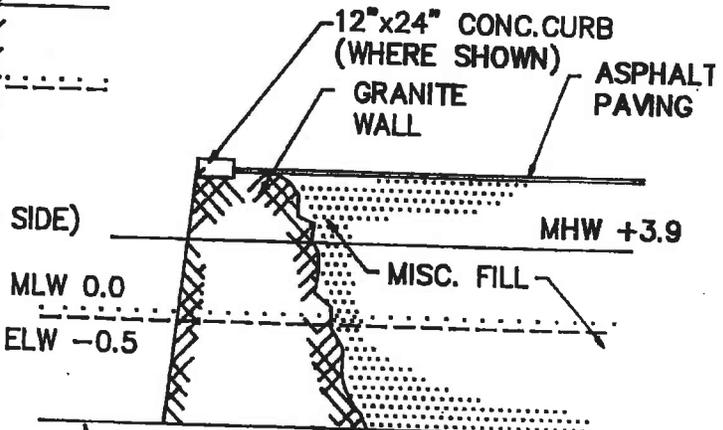
ELW -0.5

PROFILE PIER 1
SCALE; H: 1"=100' V: 1"=10'

PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL,
REVTMENT AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA



044-009-000-185-200
044-009-000-188-100
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044-009-000-185-300
044-009-000-185-100



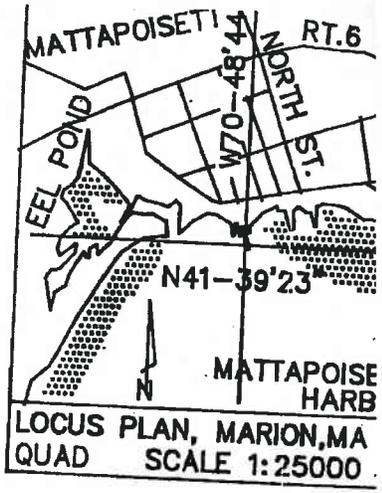
SECTION J

TYP. SEA WALL
SCALE 1"=10'

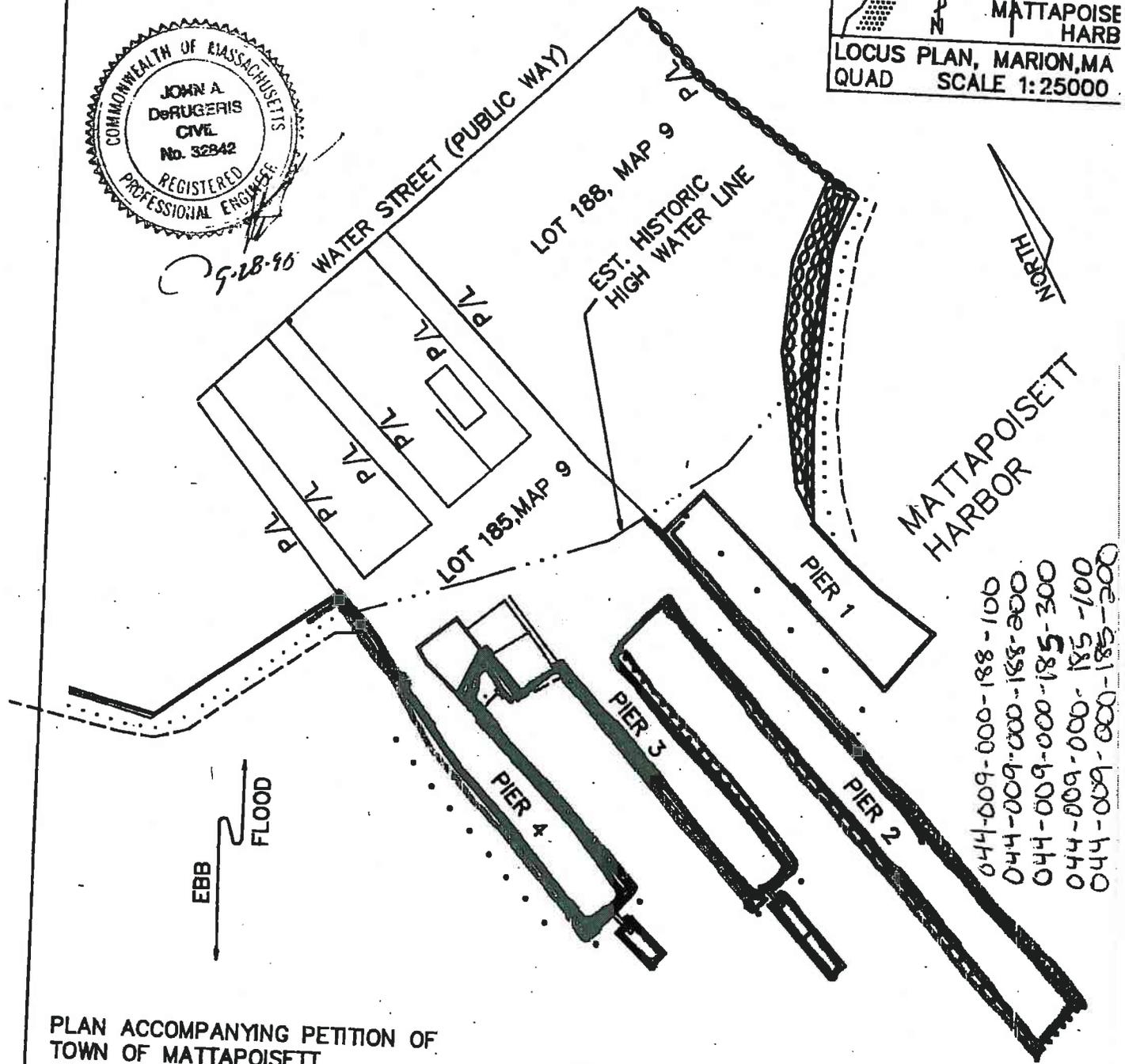
A

NOTES:

1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN. PIER 4 WAS RECONSTRUCTED IN 1965, BOAT RAMP AND WOOD BULKHEAD WERE CONSTRUCTED IN 1965, BY MASS. STATE ACCESS BOARD.
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4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 7400 CU.YD.



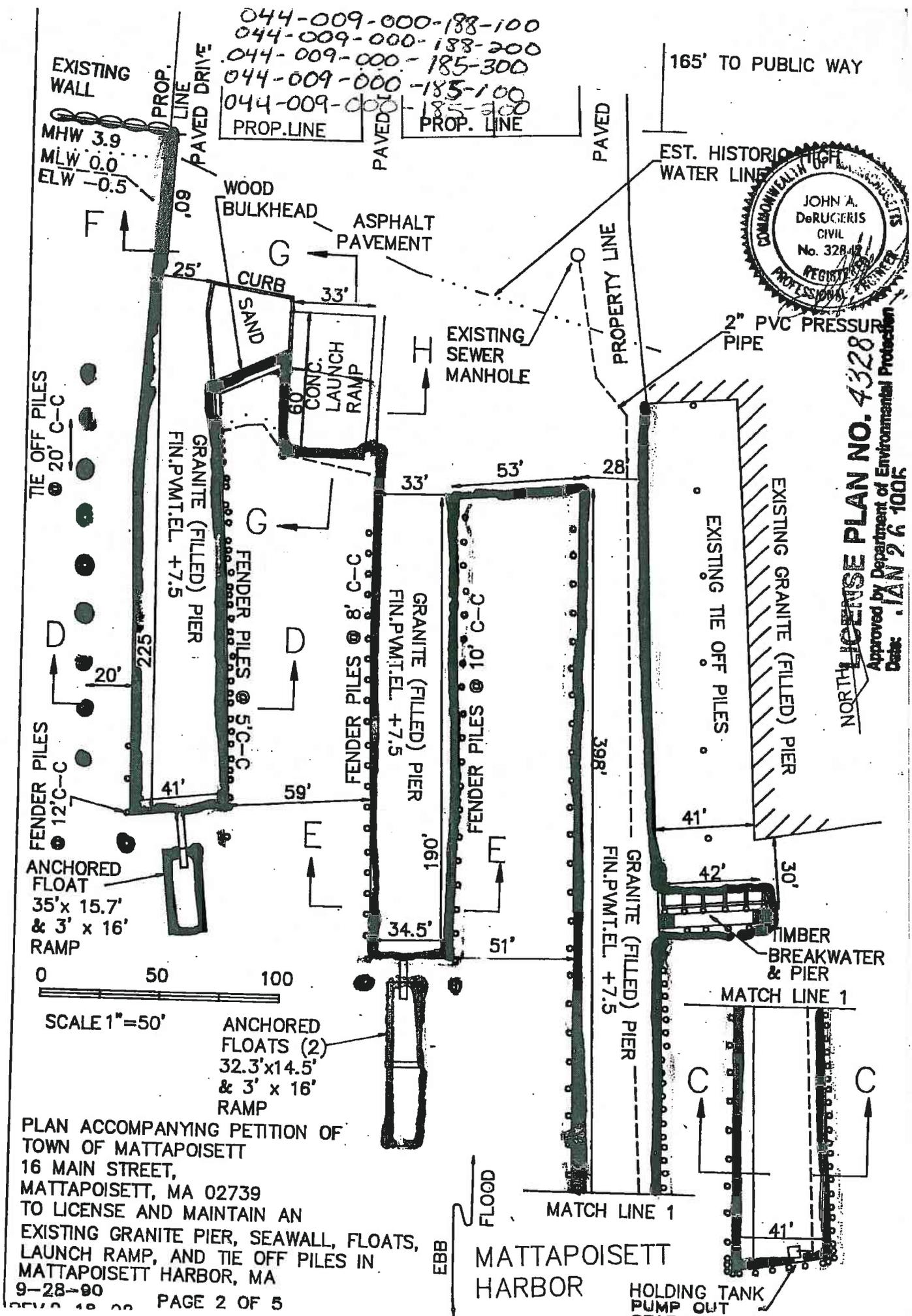
9-28-90



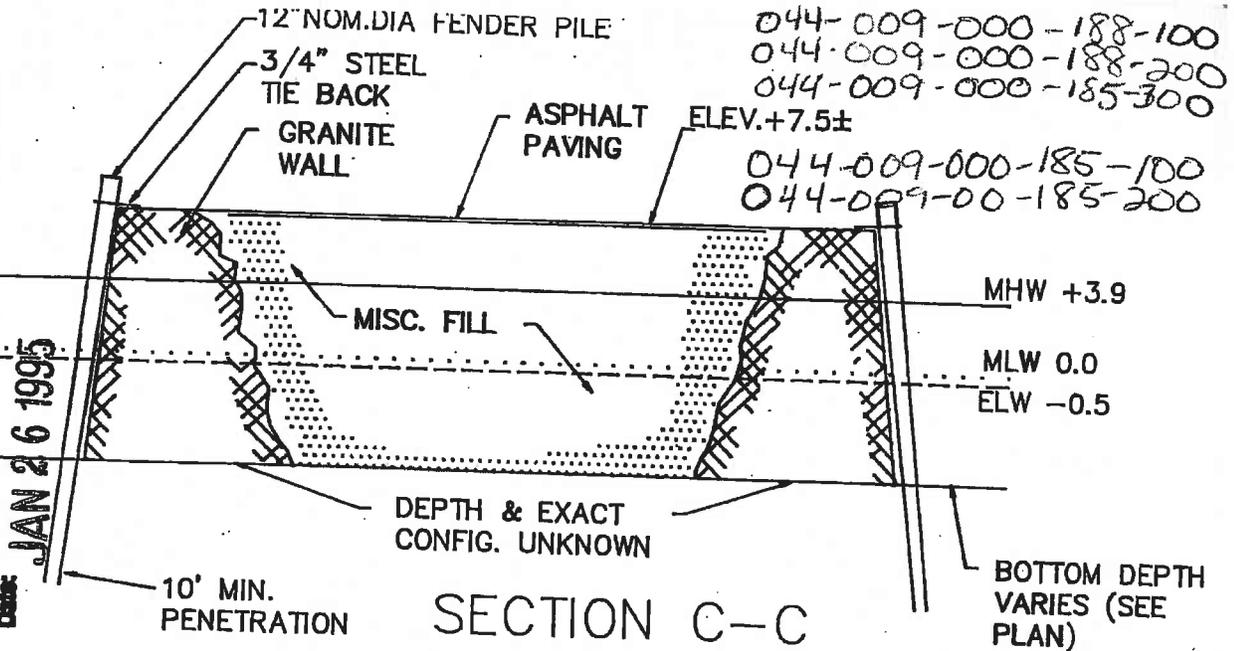
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- 044-009-000-188-200
- 044-009-000-185-300
- 044-009-000-185-100
- 044-009-000-185-200

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA

LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 of Massachusetts
Thomas B. Powers COMMISSIONER
Carl F. Dineen DIVISION DIRECTOR
[Signature] SECTION CHIEF
 JAN 26 1991

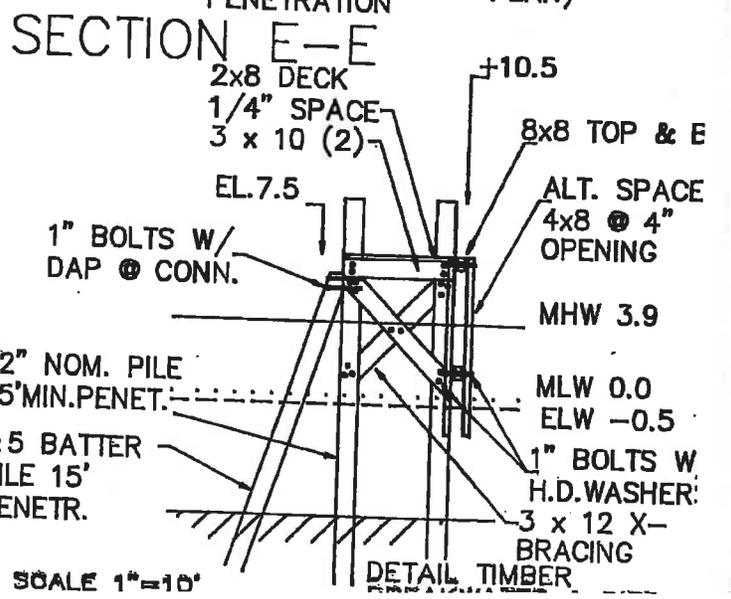
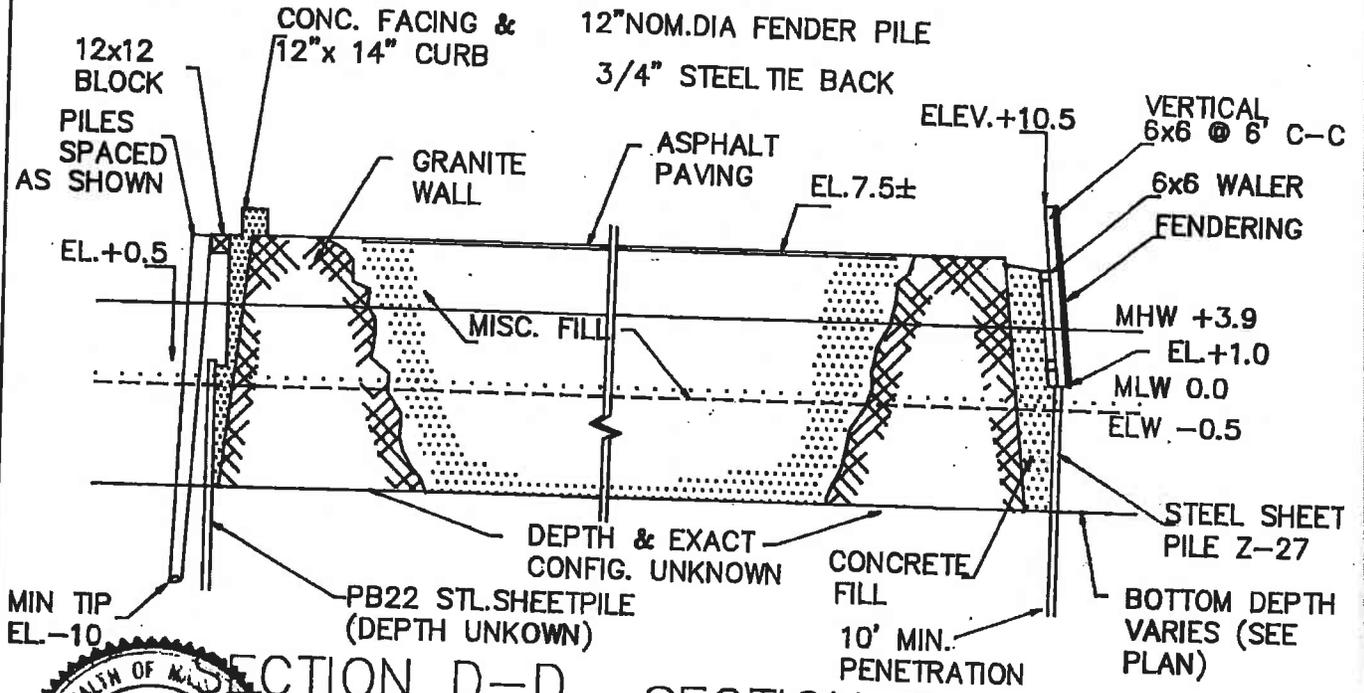


LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: JAN 26 1995



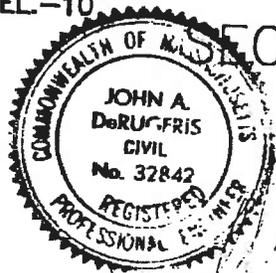
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 044-009-000-185-300
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 044-009-00-185-200

SECTION C-C
 TYP. GRANITE PIER
 SCALE 1"=10'



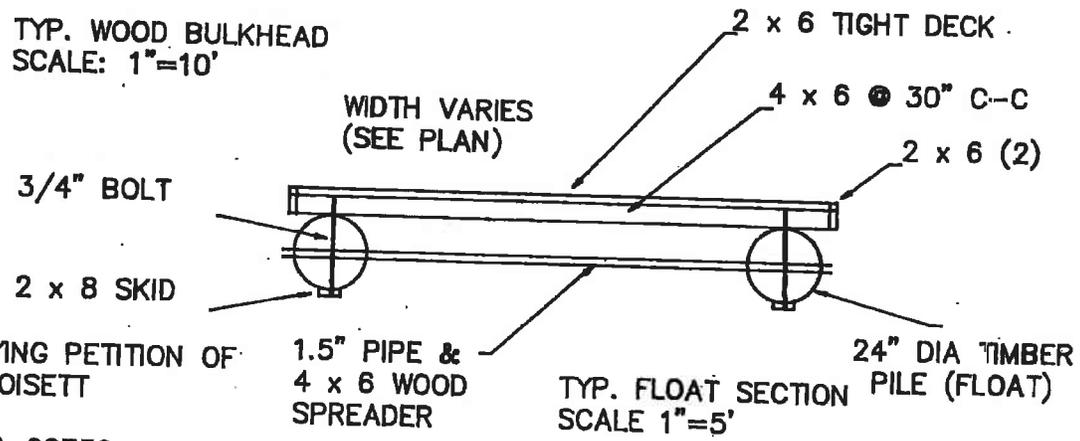
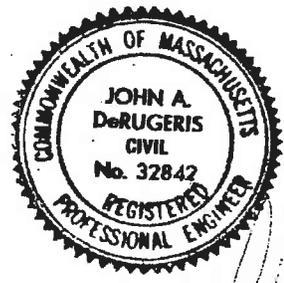
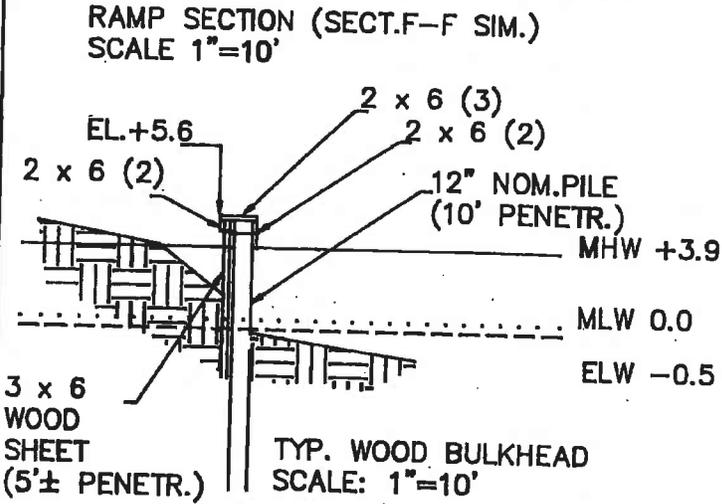
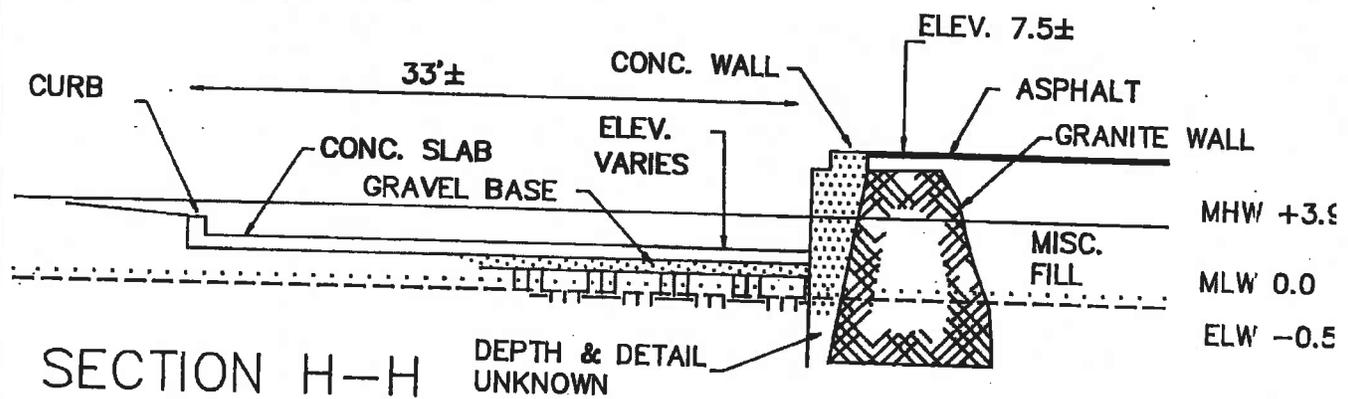
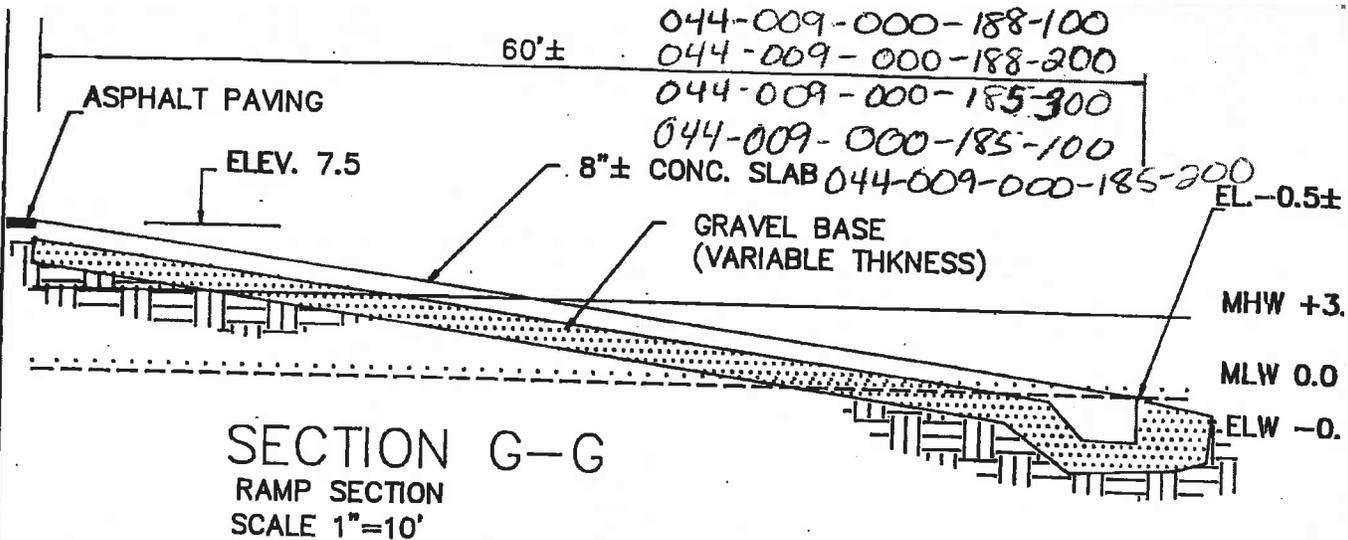
SECTION D-D
 TYP. GRANITE PIER
 SCALE 1"=10'

SECTION E-E



PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
 LAUNCH RAMP, AND TIE OFF PILES IN
 MATTAPOISETT HARBOR, MA

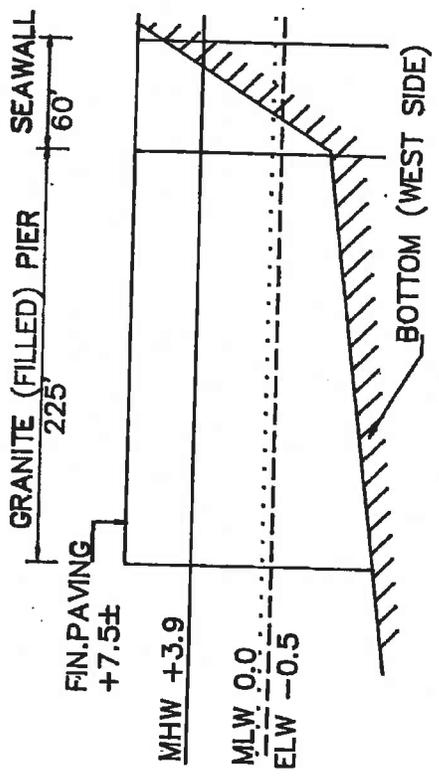
9-28-90
 REV 9-18-92



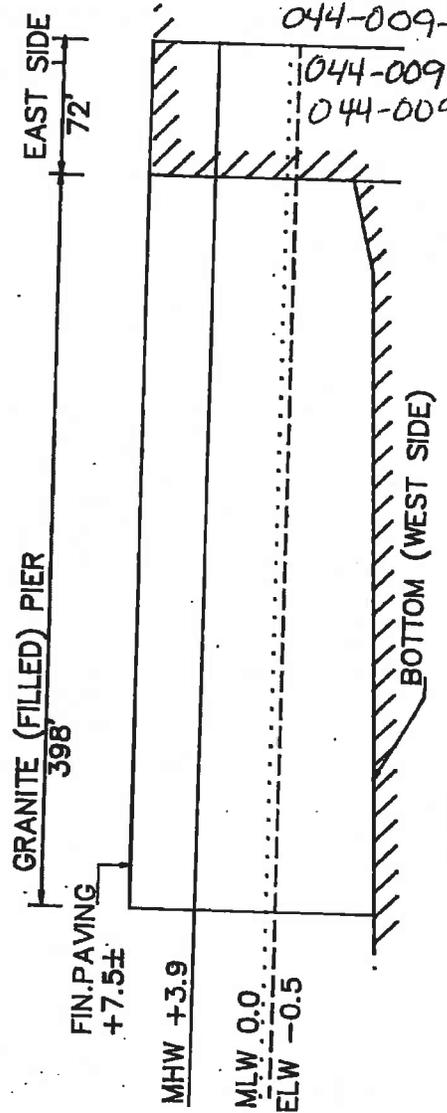
PLAN ACCOMPANYING PETITION OF
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 EXISTING GRANITE PIER, SEAWALL, FLOATS,
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 MATTAPOISETT HARBOR, MA

LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**

044-009-000-188-100
 044-009-000-188-200
 044-009-000-185-300
 044-009-000-185-100
 044-009-000-185-200



PROFILE PIER 4
 SCALE: H: 1"=100'
 V: 1"=10'

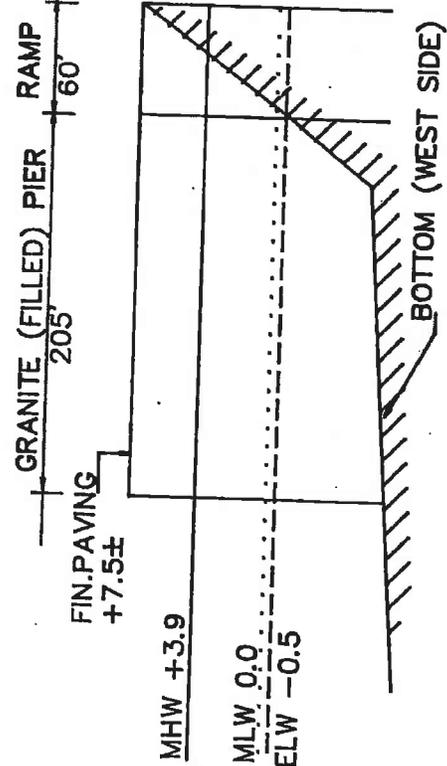
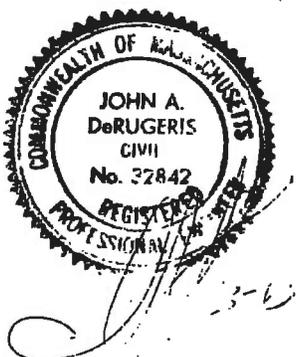


PROFILE PIER 2
 SCALE: H: 1"=100'
 V: 1"=10'

LICENSE PLAN NO. 4328

Approved by Department of Environmental Protection
 Date:

JAN 26 1995



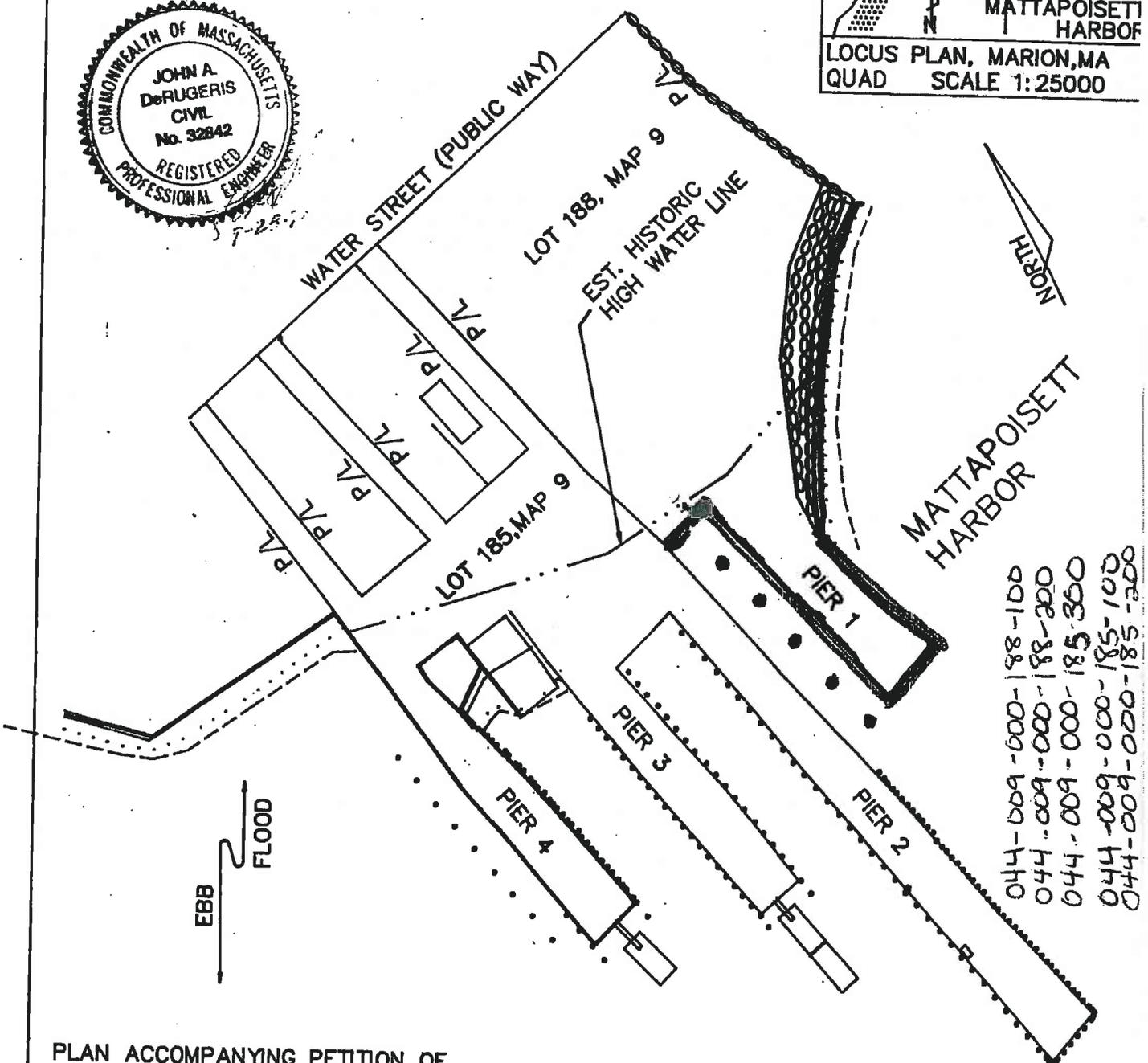
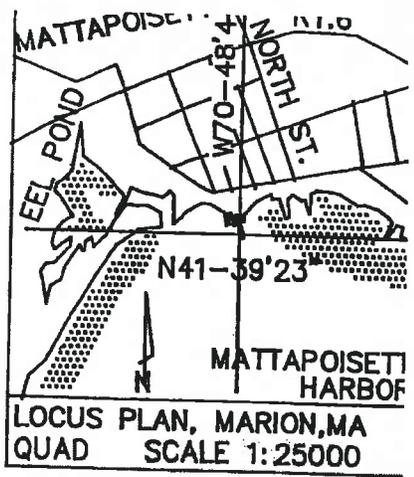
PROFILE PIER 3
 SCALE: H: 1"=100'
 V: 1"=10'

PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN
 EXISTING GRANITE PIER, SEAWALL, FLOATS,
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B

NOTES:

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4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 2200 CUBIC YARDS.



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPoisETT
16 MAIN STREET,
MATTAPoisETT, MA 02739
TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPoisETT HARBOR, MA

LICENSE PLAN NO. 4928
Approved by Department of Environmental Protection of Massachusetts.
[Signature]
COMMISSIONER
DIVISION DIRECTOR
SECTION CHIEF
OCT 18 1990

WATER STREET (PUBLIC WAY)

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

EST. HISTORIC HIGH WATER LINE

PROPERTY LINE

LOT 188, MAP 9
WATER STREET

PROPERTY LINE

PAVED PARKING LOT

MHW 3.5
MLW 0
ELW -0.5

LICENSE PLAN NO. 4928

Approved by Department of Environmental Protection

Date: OCT 18 1995



EXISTING GRANITE PIER

TIE OFF PILES

36" C-C

CONC. CURB

FIN. PAVT. +7.7

STEPS

183.35

12' x 2'

43.7'

2' x 2" GRANITE CURB

ASPHALT DECK

MATTAPOISETT HARBOR

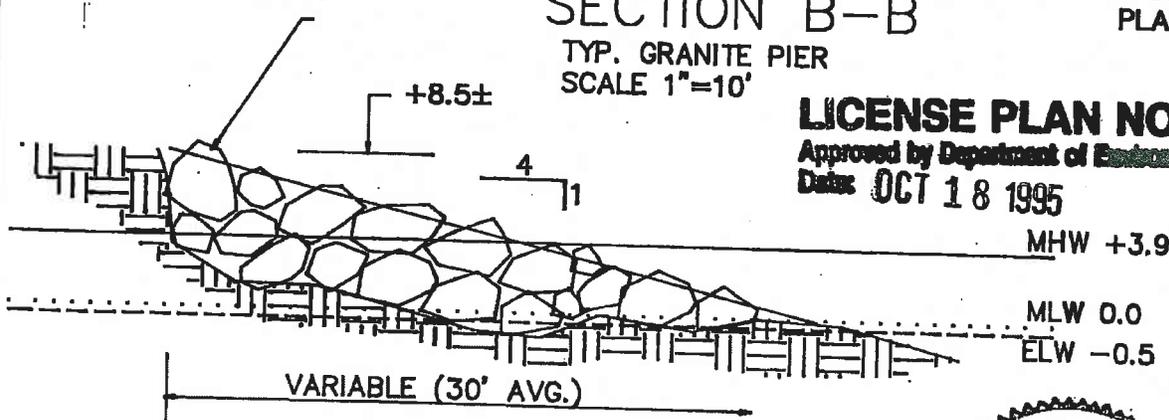
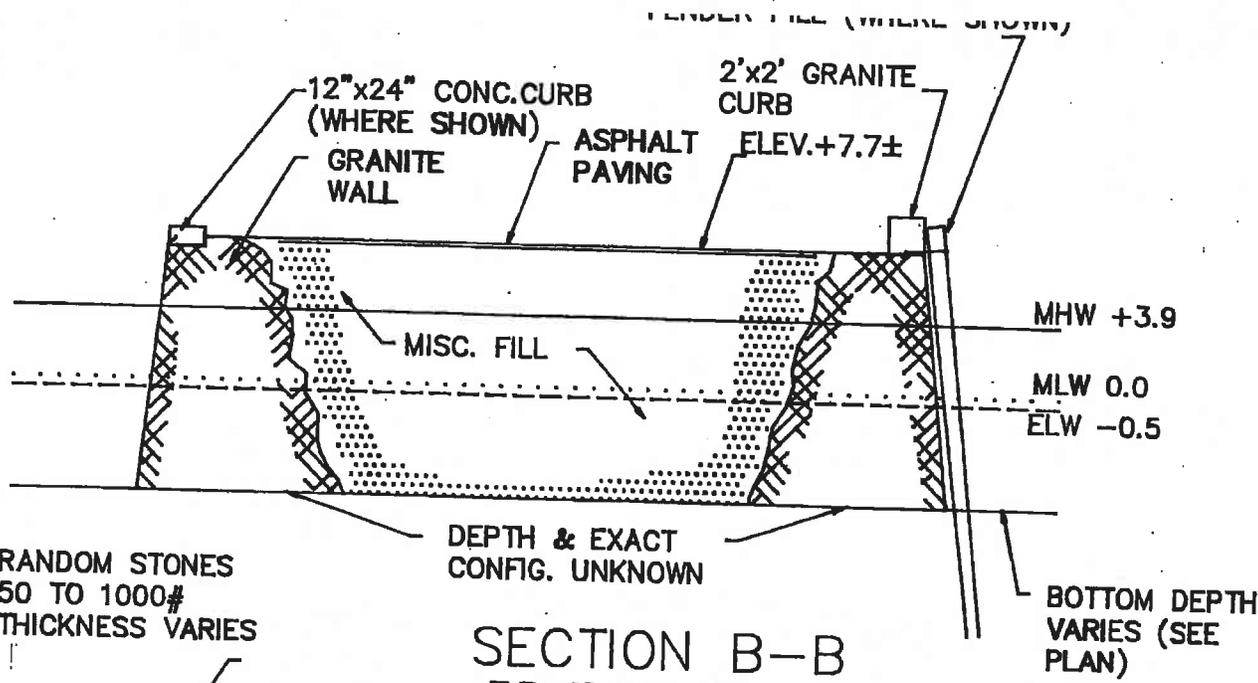
EBB FLOOD

NORTH

41.3' 52.7'

0 50 100
SCALE: 1" = 50'

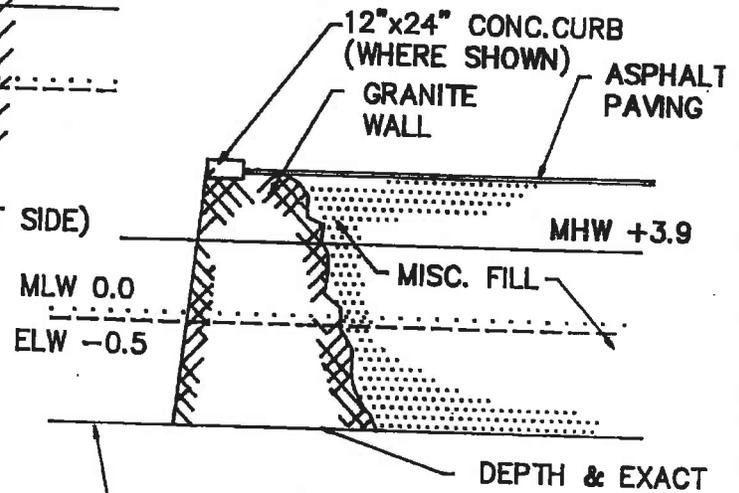
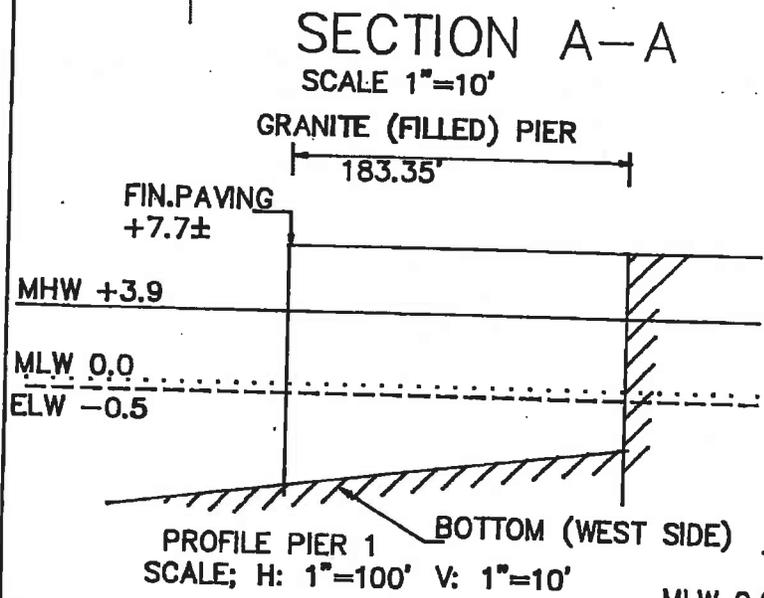
PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA



LICENSE PLAN NO. 4928
 Approved by Department of Environmental Protection
 Date OCT 18 1995



044-009-000-185-200
 044-009-000-188-100
 044-009-000-188-200
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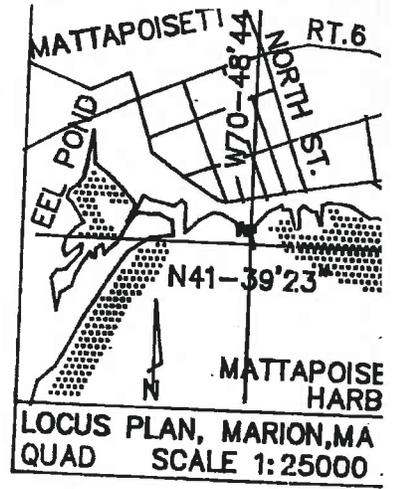


PLAN ACCOMPANYING PETITION OF
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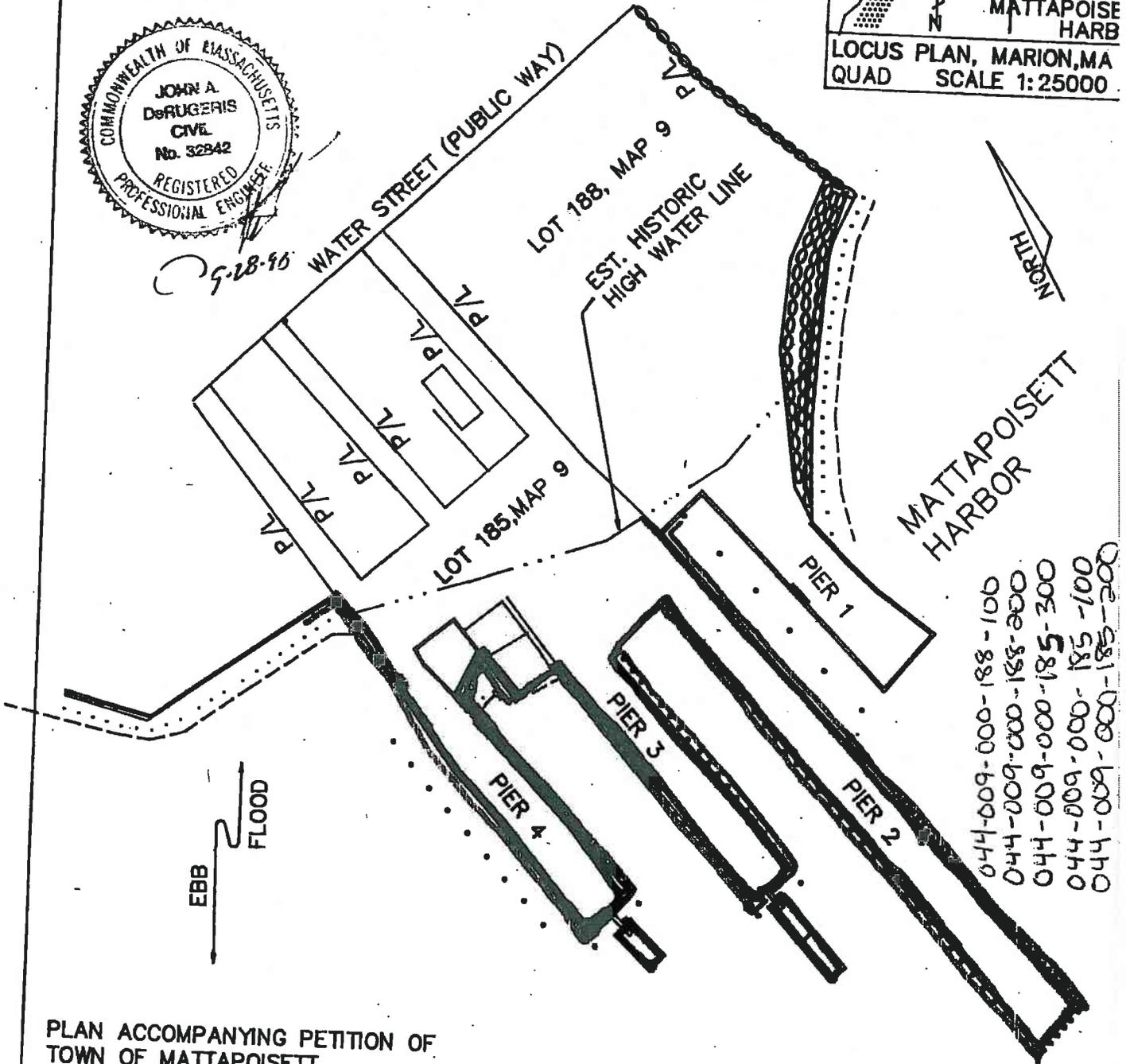
A

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9-28-90

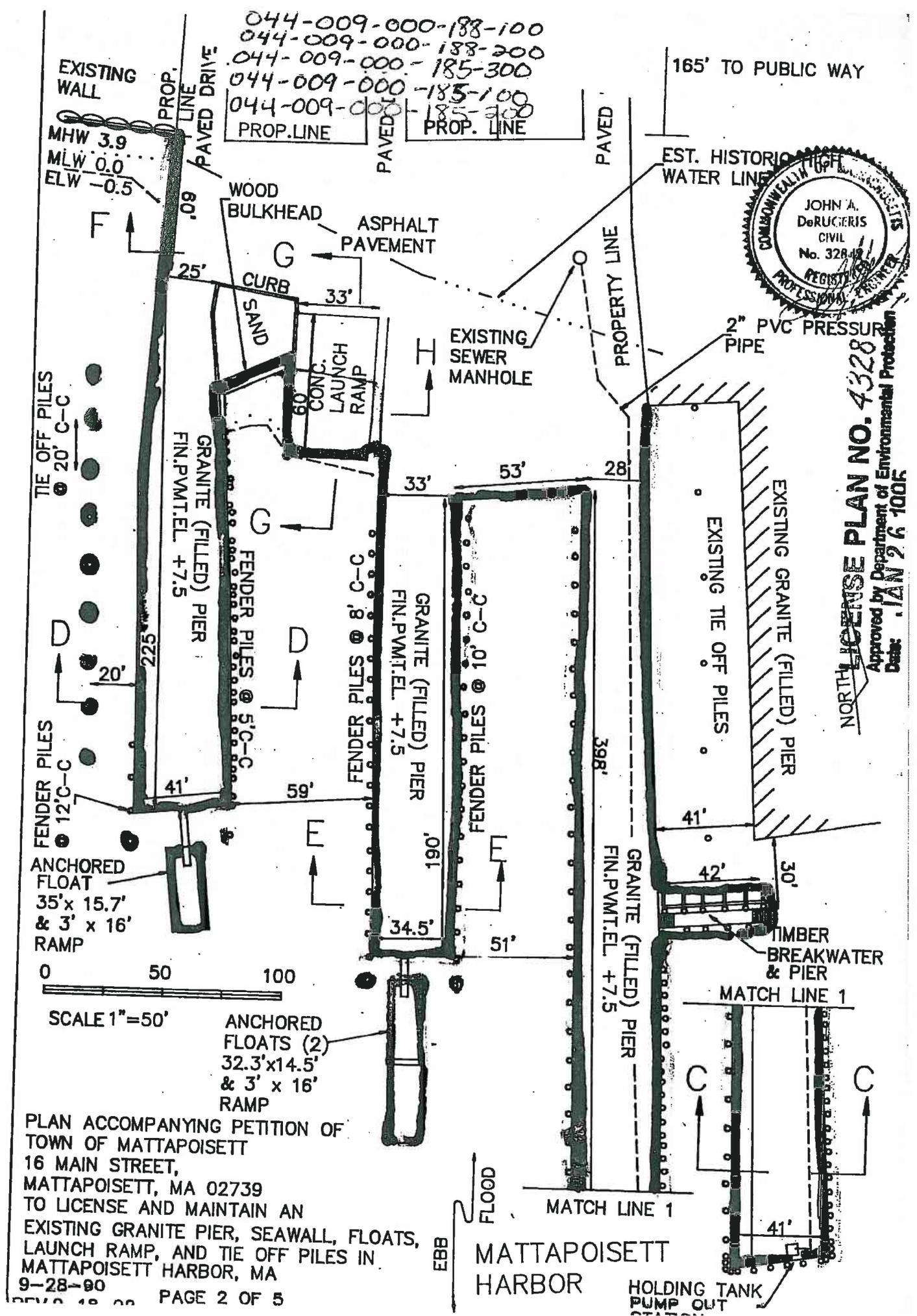


- 044-009-000-188-100
- 044-009-000-188-200
- 044-009-000-185-300
- 044-009-000-185-100
- 044-009-000-185-200

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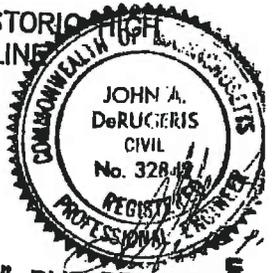
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection of Massachusetts
Thomas B. Poulos COMMISSIONER
Carl J. Di... DIVISION DIRECTOR
... SECTION CHIEF
 JAN 26 1991

9-28-90



044-009-000-188-100
 044-009-000-188-200
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 044-009-000-185-100
 044-009-000-185-200

165' TO PUBLIC WAY

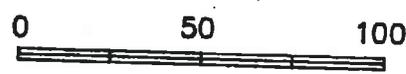


NORTH LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: JAN 26 1996

TIE OFF PILES
 @ 20' C-C

FENDER PILES
 @ 12' C-C

ANCHORED FLOAT
 35' x 15.7'
 & 3' x 16'
 RAMP



SCALE 1"=50'

ANCHORED FLOATS (2)
 32.3' x 14.5'
 & 3' x 16'
 RAMP

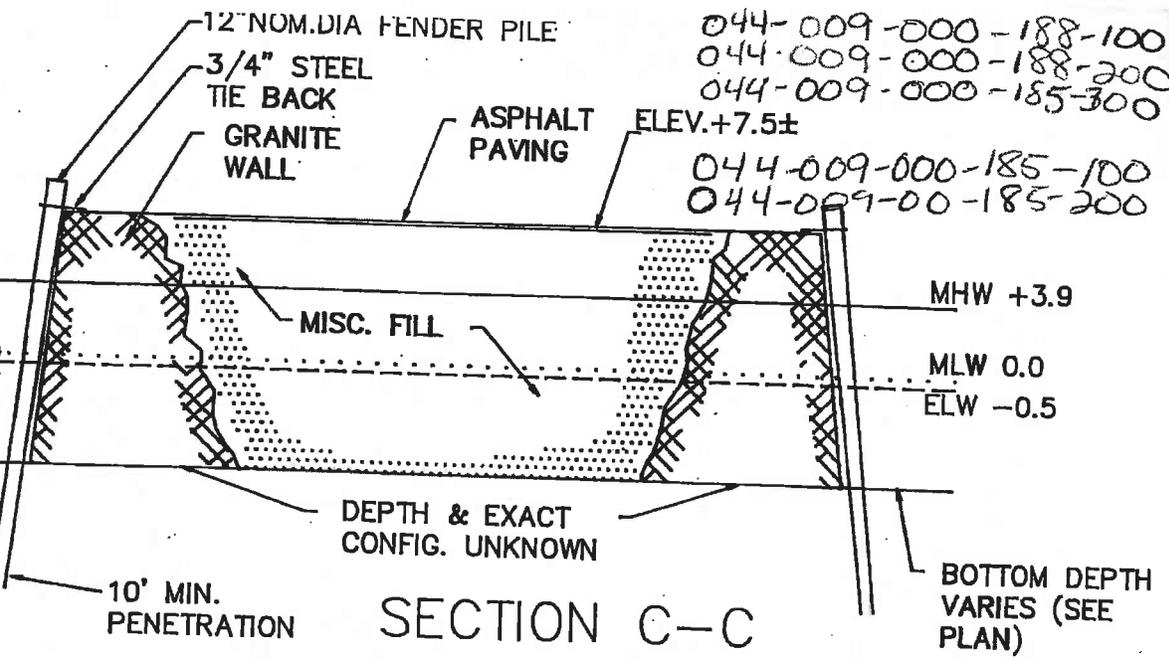
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 9-28-90

MATTAPOISETT HARBOR

HOLDING TANK
 PUMP OUT

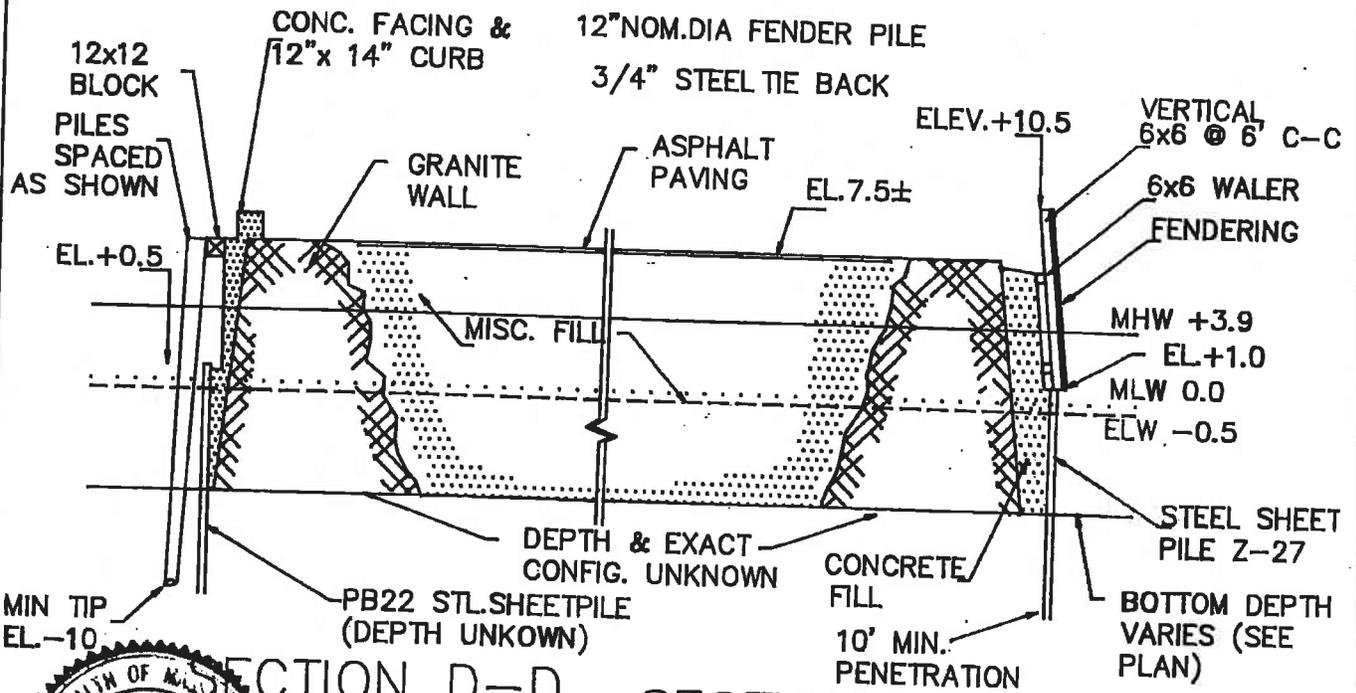
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**

044-009-000-188-100
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 044-009-000-185-300
 044-009-000-185-100
 044-009-00-185-200



SECTION C-C

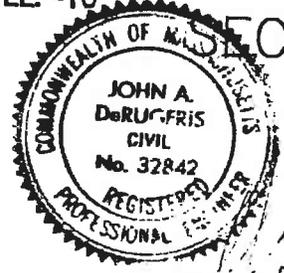
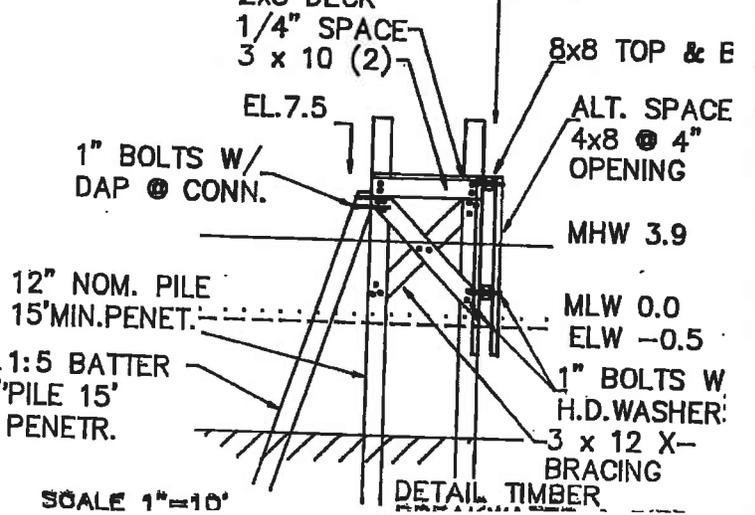
TYP. GRANITE PIER
 SCALE 1"=10'



SECTION D-D

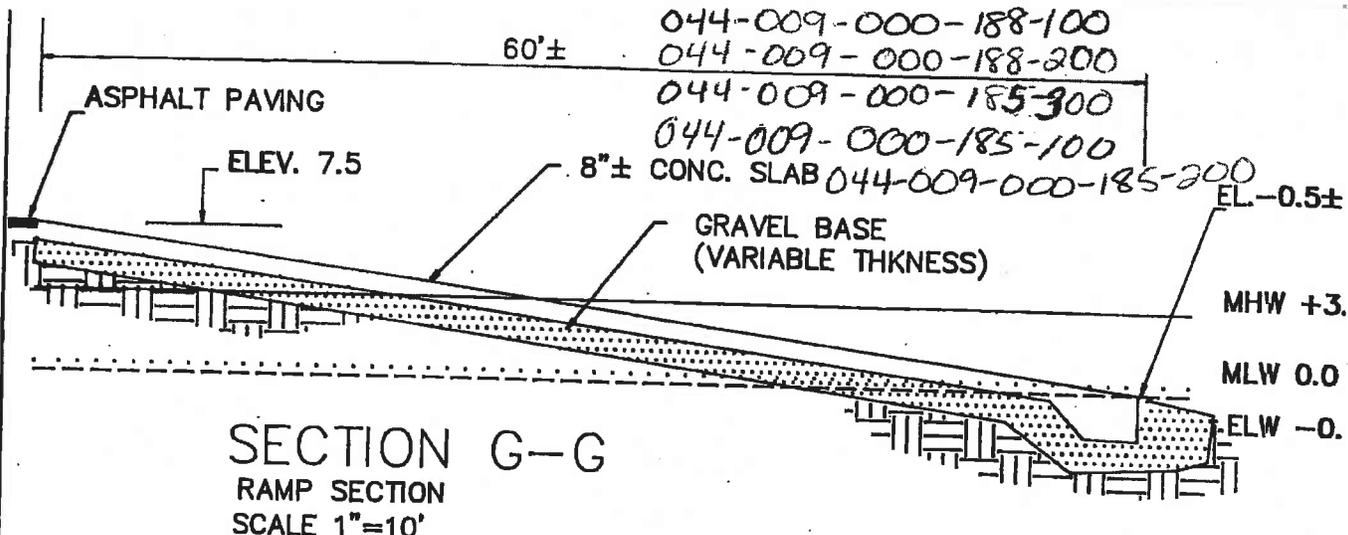
TYP. GRANITE PIER
 SCALE 1"=10'

SECTION E-E



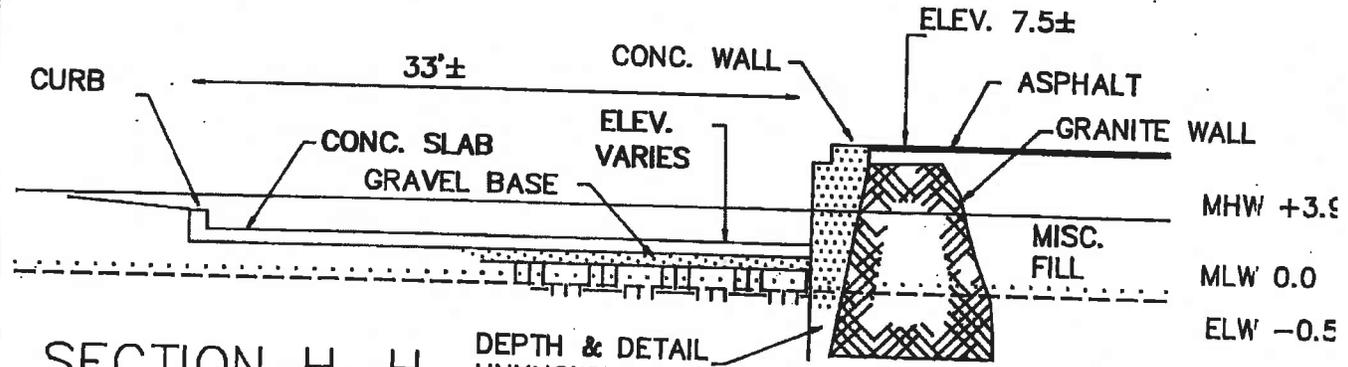
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 MATTAPOISETT HARBOR, MA

9-28-90
 REV 9-18-92

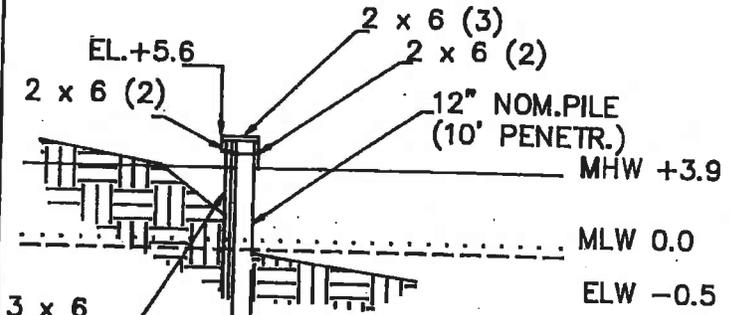
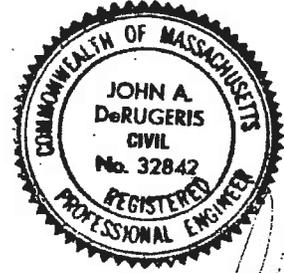


044-009-000-188-100
 044-009-000-188-200
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 044-009-000-185-100
 044-009-000-185-200

SECTION G-G
 RAMP SECTION
 SCALE 1"=10'

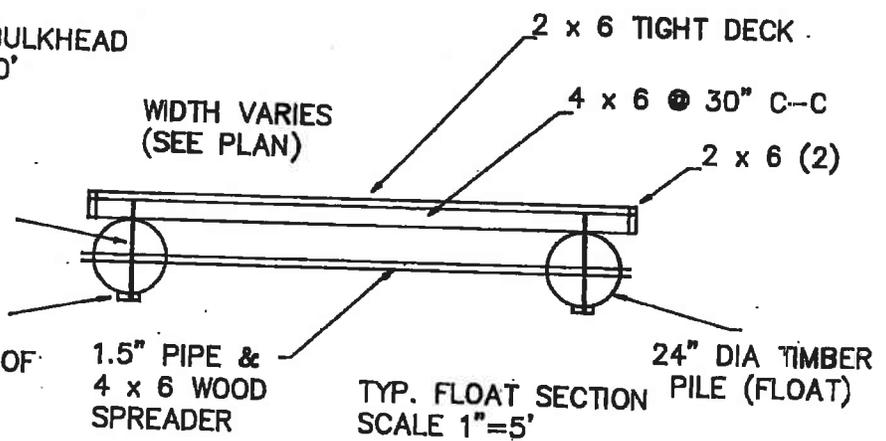


SECTION H-H
 RAMP SECTION (SECT. F-F SIM.)
 SCALE 1"=10'



TYP. WOOD BULKHEAD
 SCALE: 1"=10'

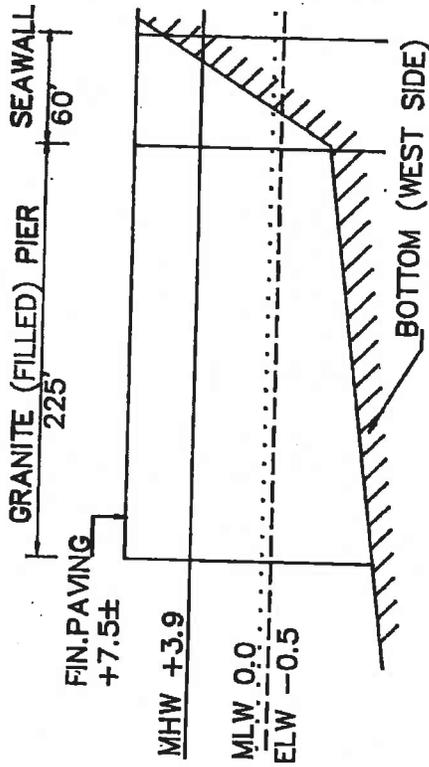
3 x 6 WOOD SHEET (5'± PENETR.)



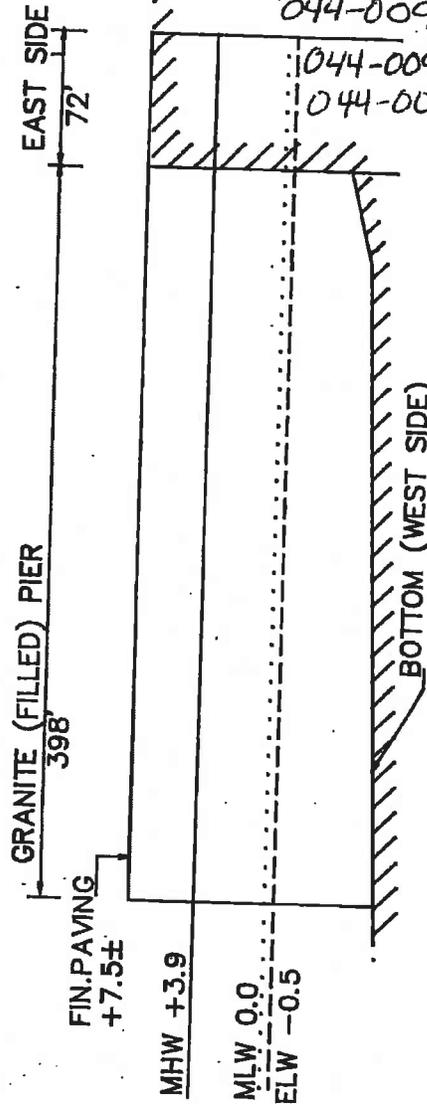
TYP. FLOAT SECTION
 SCALE 1"=5'

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, FLOATS, LAUNCH RAMP, AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

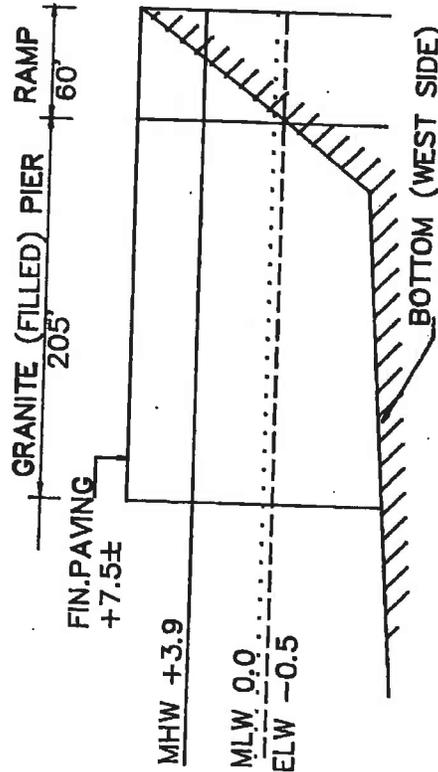
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**



PROFILE PIER 4
SCALE; H: 1"=100'
V: 1"=10'



PROFILE PIER 2
SCALE; H: 1"=100'
V: 1"=10'



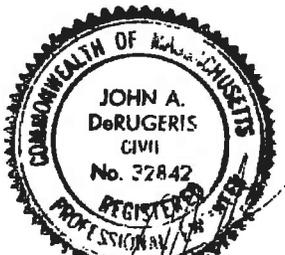
PROFILE PIER 3
SCALE; H: 1"=100'
V: 1"=10'

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

LICENSE PLAN NO. 4328

Approved by Department of Environmental Protection
Date:

JAN 26 1995

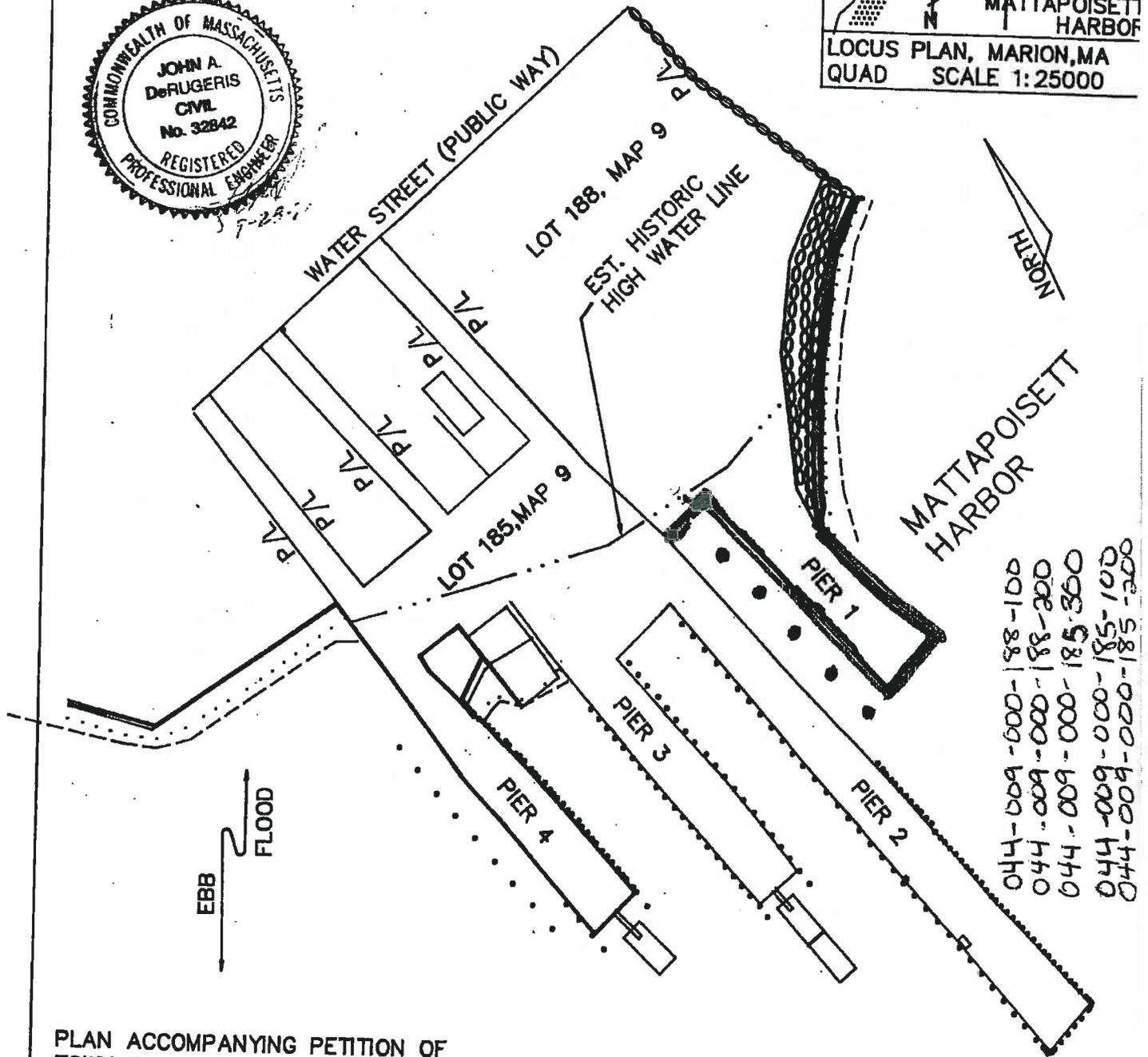
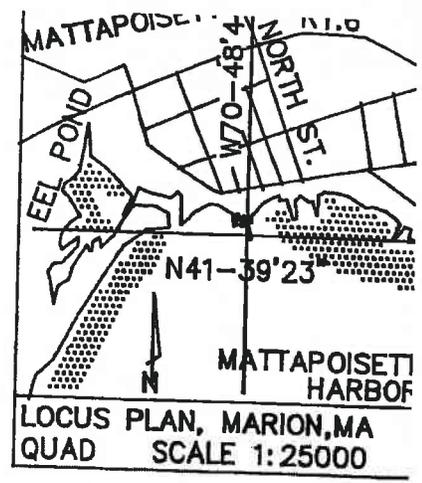


PLAN ACCOMPANYING PETITION OF
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MATTAPOISETT HARBOR, MA

B

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044-009-000-188-100
 044-009-000-188-200
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PLAN ACCOMPANYING PETITION OF
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LICENSE PLAN NO. 4928
 Approved by Department of Environmental Protection
 of Massachusetts
 COMMISSIONER
 DIVISION DIRECTOR
 SECTION CHIEF
 OCT 18 1990

WATER STREET (PUBLIC WAY)

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

EST. HISTORIC HIGH WATER LINE

PROPERTY LINE

LOT 188, MAP 9
WATER STREET

PROPERTY LINE

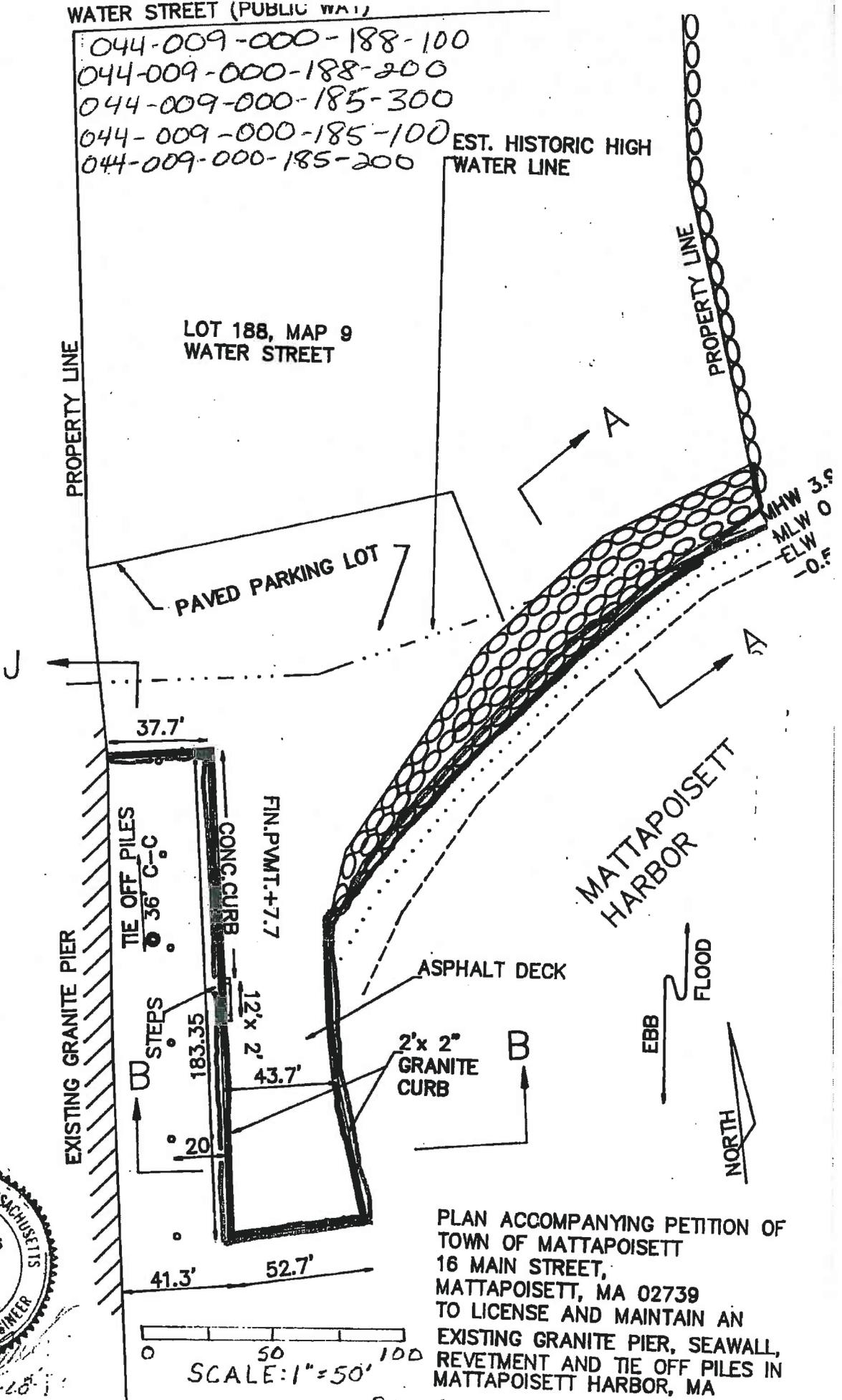
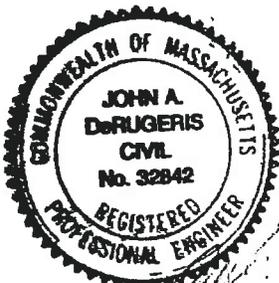
PAVED PARKING LOT

MHW 3.5
MLW 0
ELW -0.5

LICENSE PLAN NO. 4928

Approved by Department of Environmental Protection

Date: OCT 18 1995



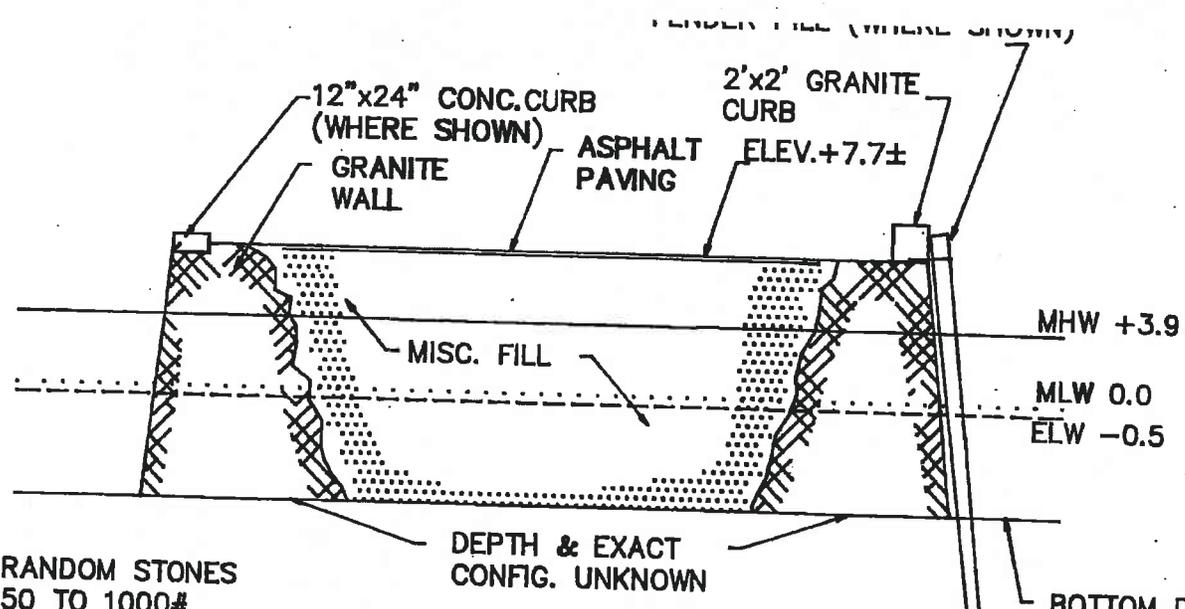
MATTAPOISETT HARBOR

ASPHALT DECK

2' x 2" GRANITE CURB

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

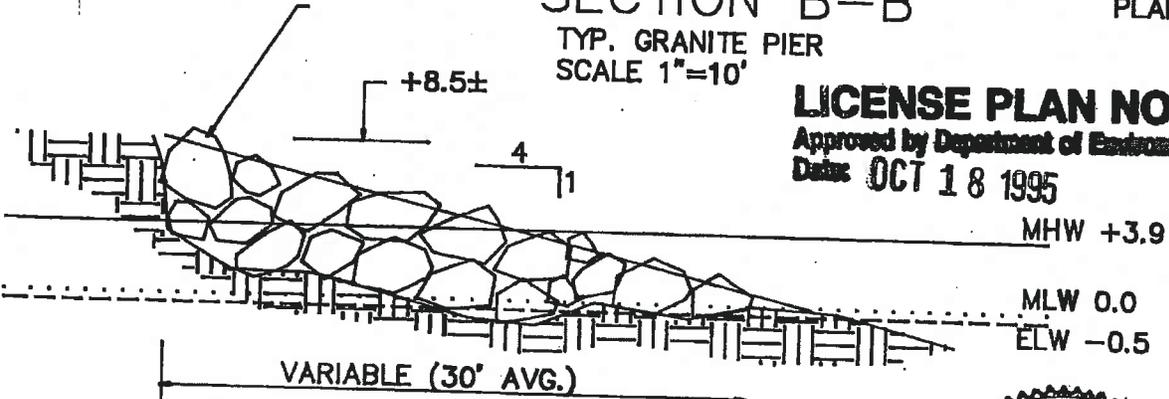
SCALE: 1" = 50'



SECTION B-B

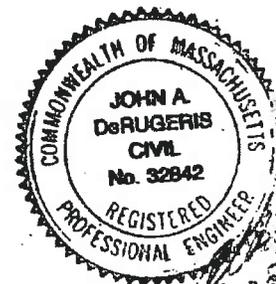
TYP. GRANITE PIER
SCALE 1"=10'

LICENSE PLAN NO. 4928
Approved by Department of Environmental Protection
Date OCT 18 1995

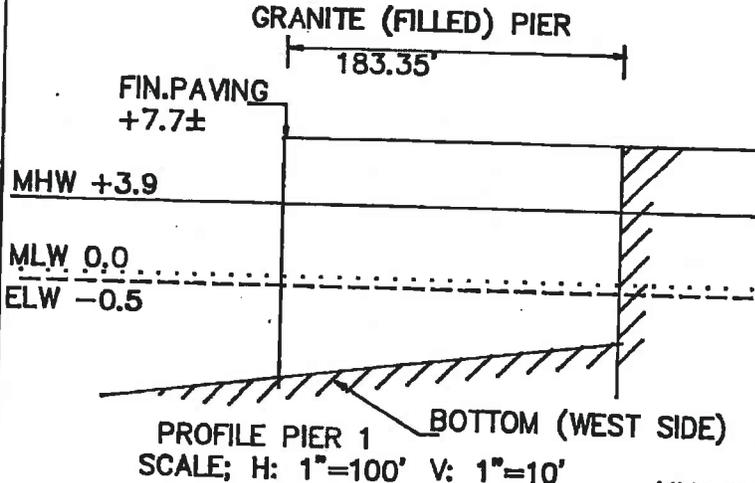


SECTION A-A

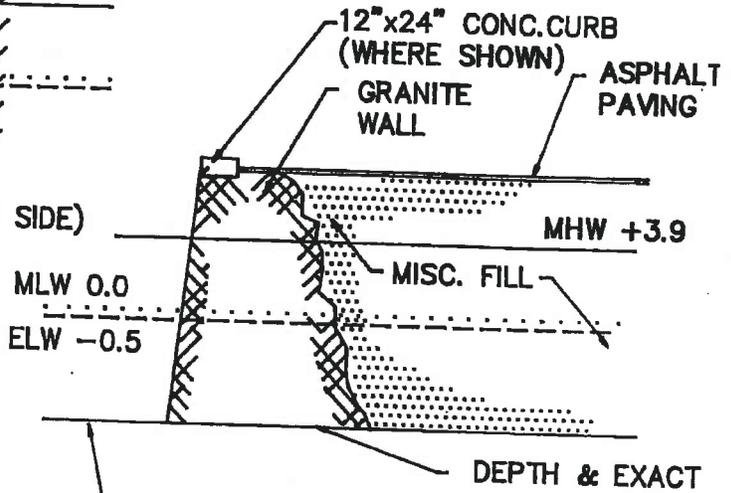
SCALE 1"=10'
GRANITE (FILLED) PIER



044-009-000-185-200
044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100



PROFILE PIER 1
SCALE; H: 1"=100' V: 1"=10'



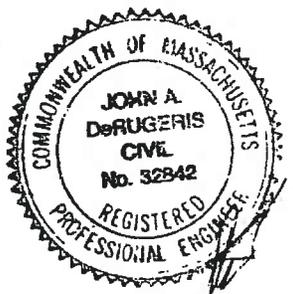
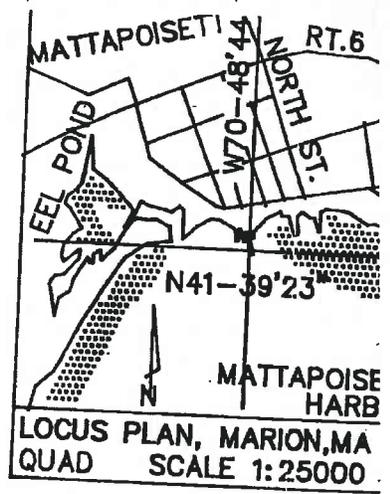
SECTION J

TYP. SEA WALL
SCALE 1"=10'

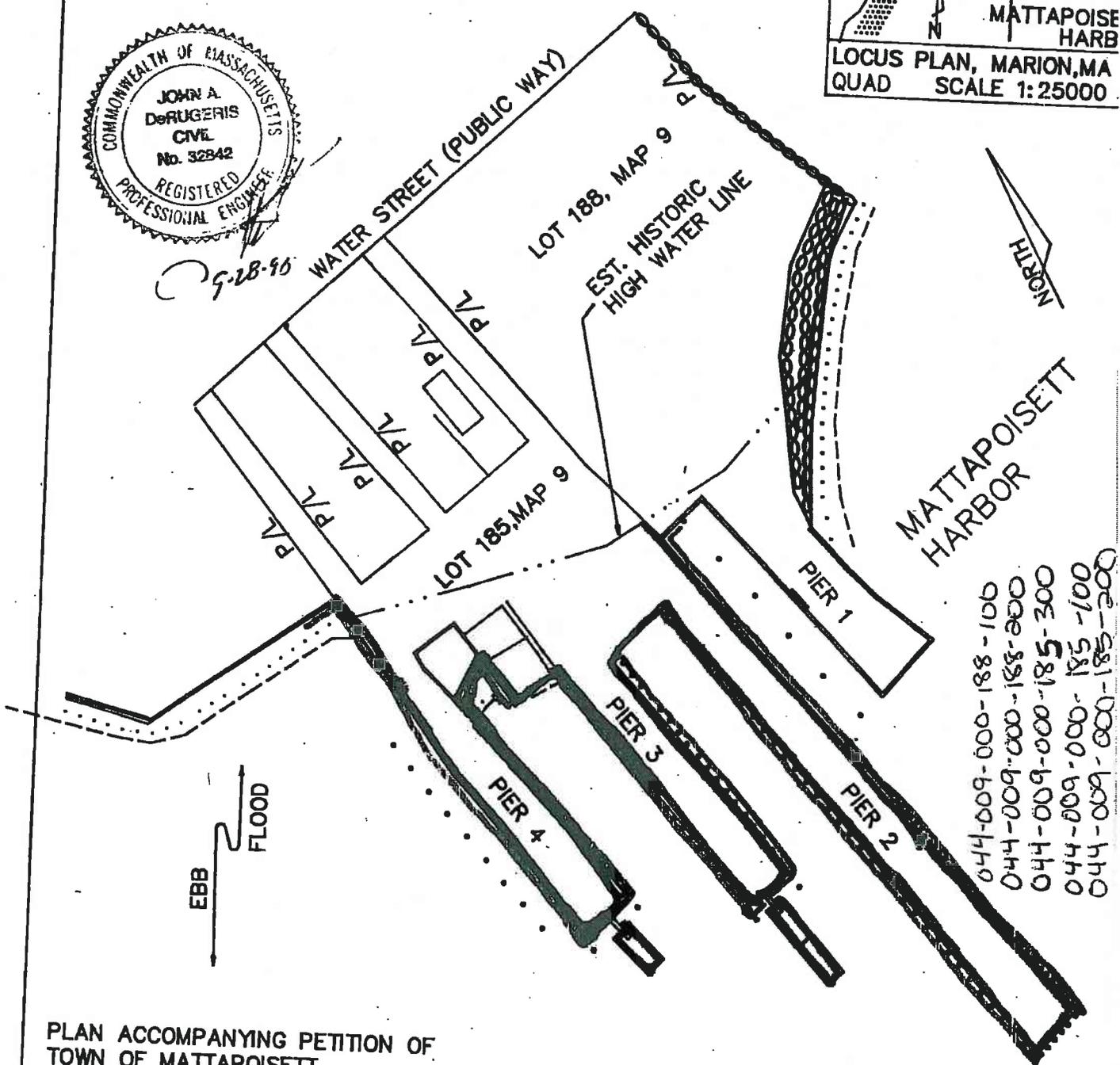
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A

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9-28-90

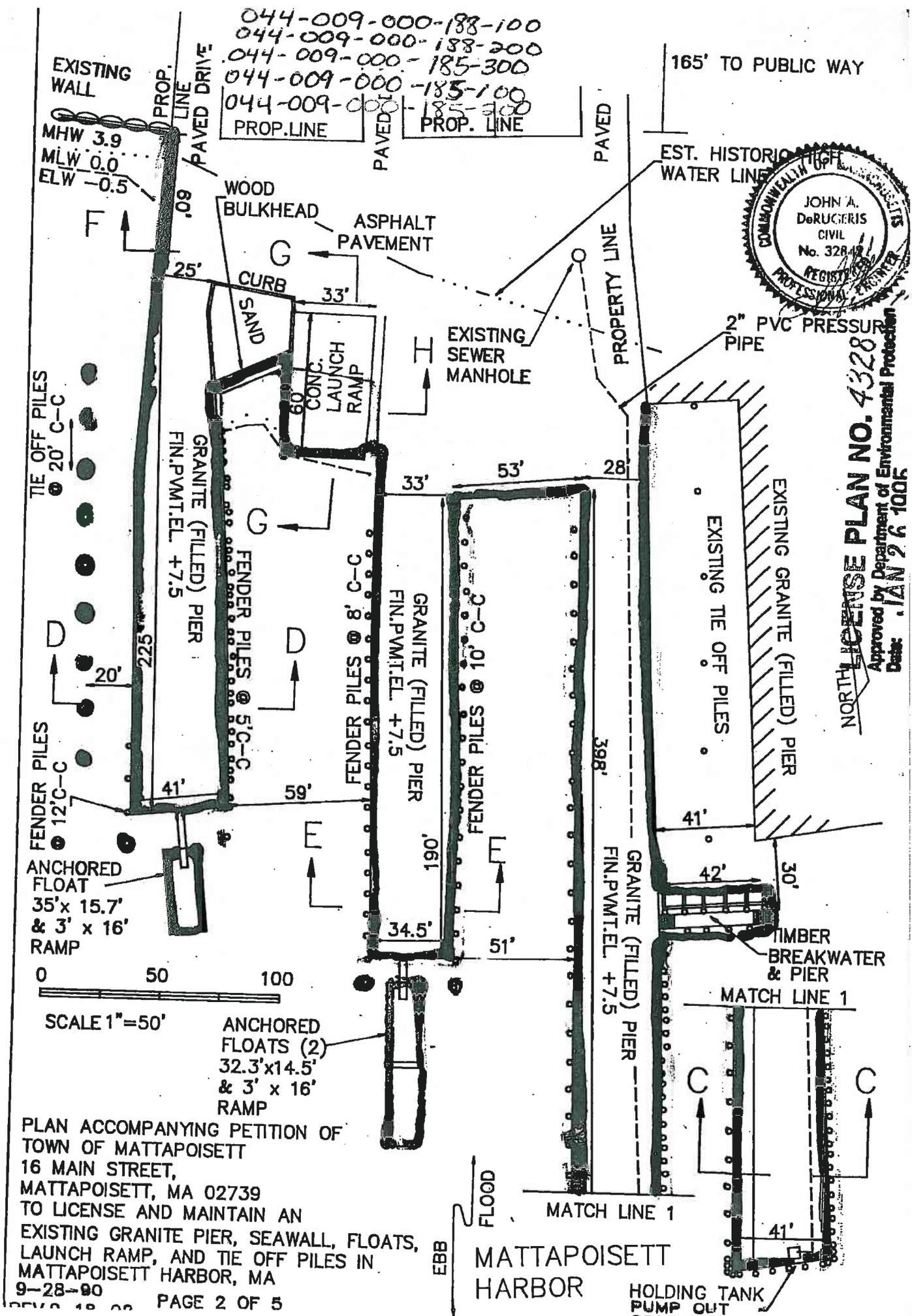


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- 044-009-000-188-200
- 044-009-000-185-300
- 044-009-000-185-100
- 044-009-000-185-200

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LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
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Thomas B. Powers COMMISSIONER
Carl J. Dineen DIVISION DIRECTOR
[Signature] SECTION CHIEF
 JAN 26 1990

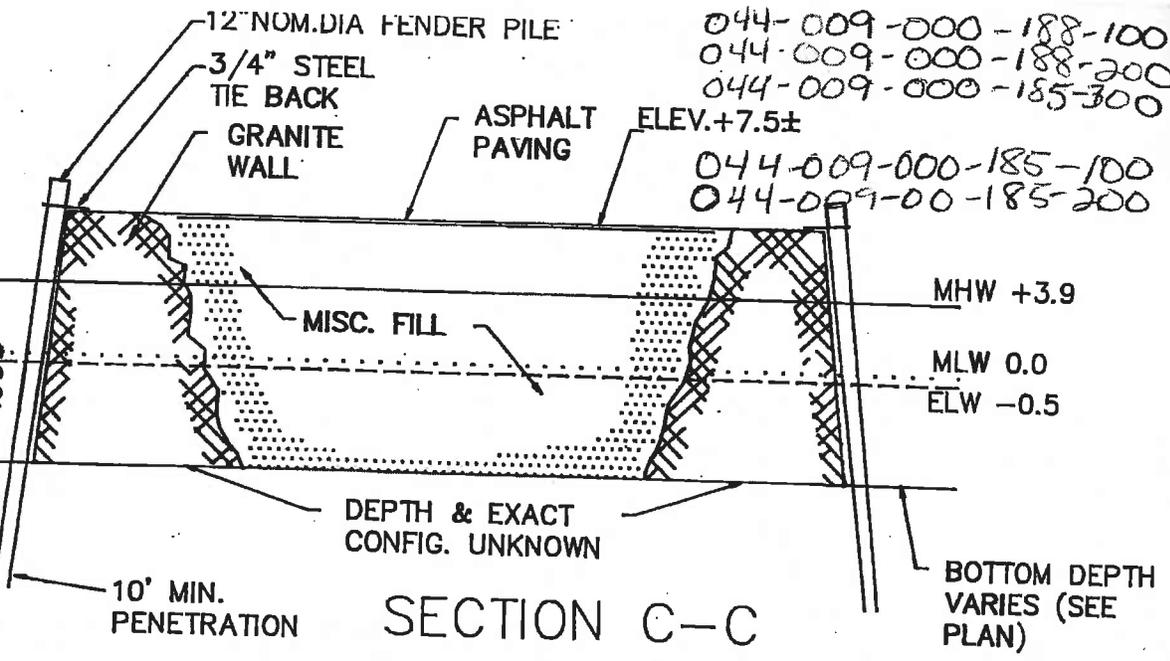
9-28-90



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, FLOATS, LAUNCH RAMP, AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA 9-28-90

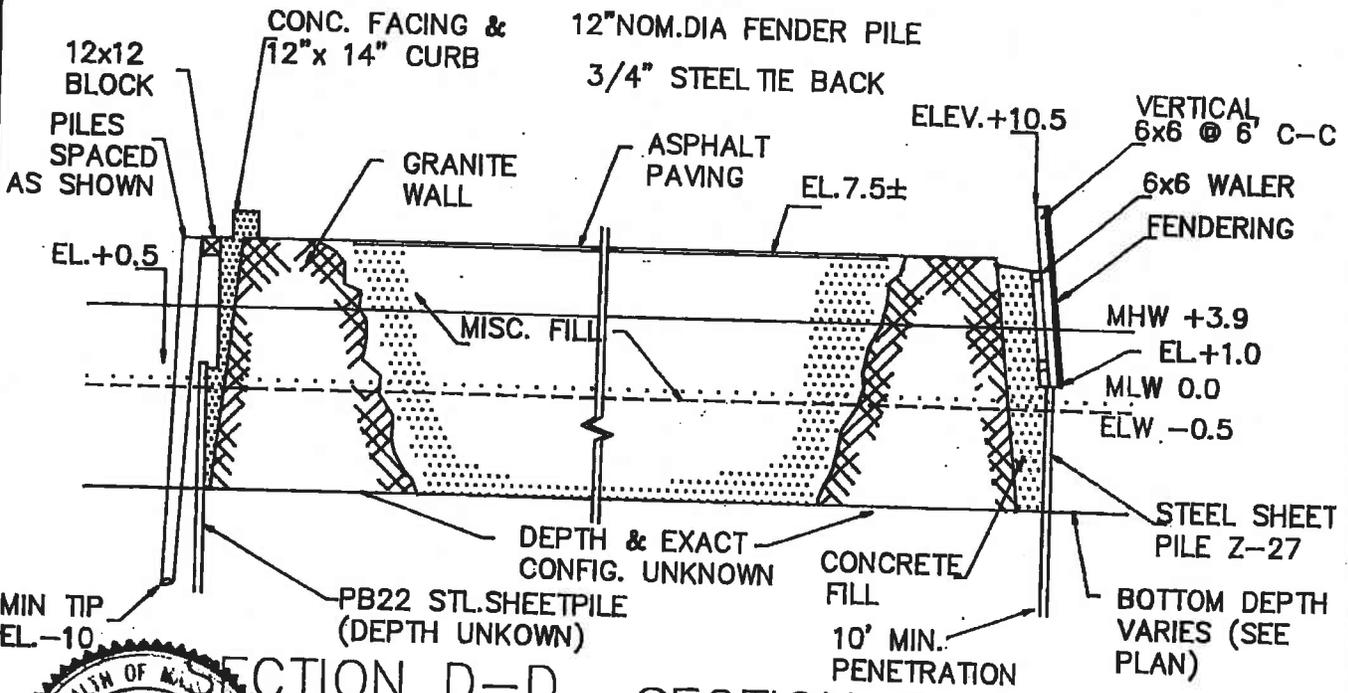
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**

044-009-000-188-100
 044-009-000-188-200
 044-009-000-185-300
 044-009-000-185-100
 044-009-00-185-200



SECTION C-C

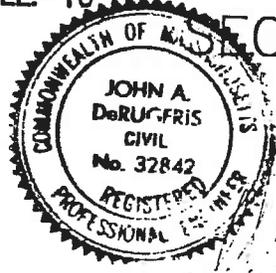
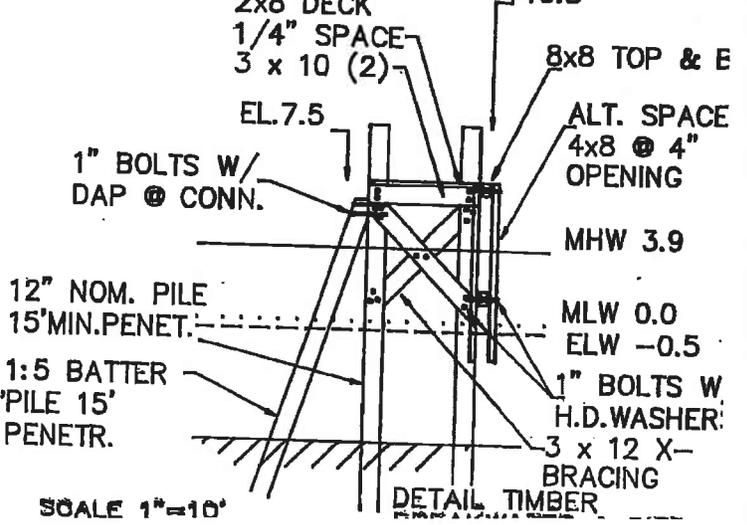
TYP. GRANITE PIER
 SCALE 1"=10'



SECTION D-D

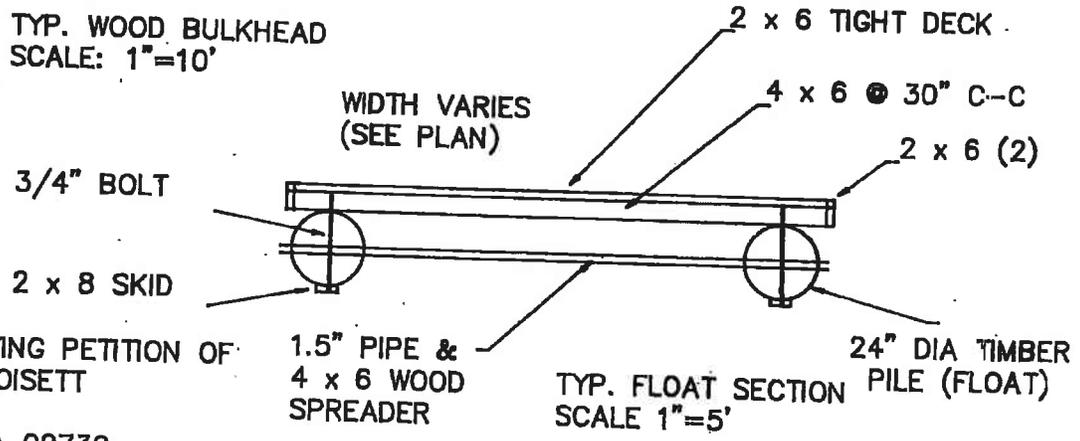
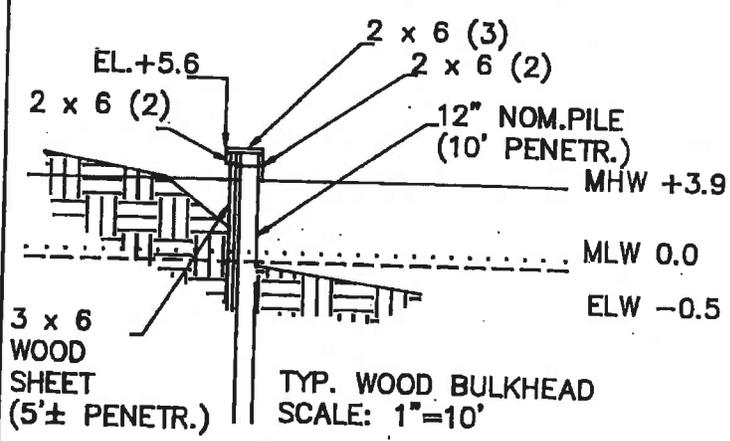
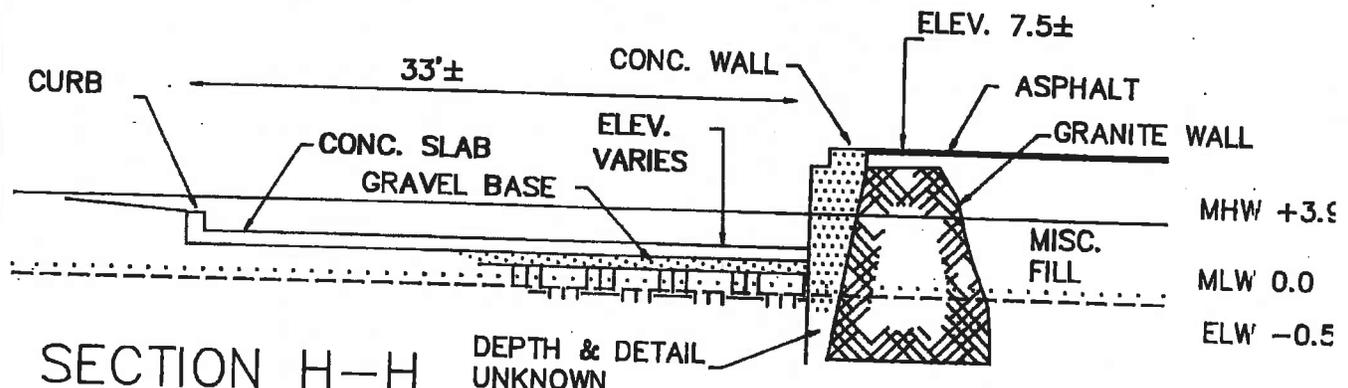
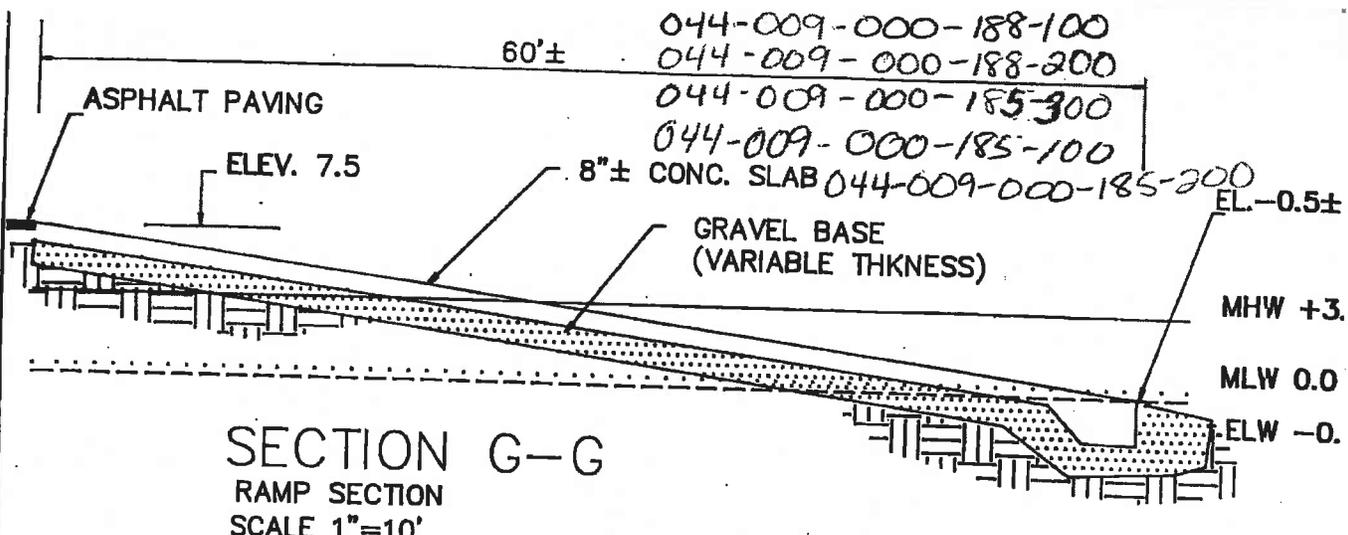
TYP. GRANITE PIER
 SCALE 1"=10'

SECTION E-E



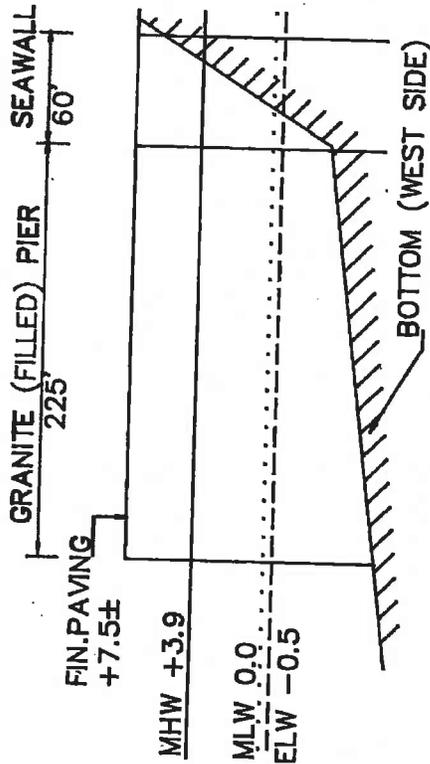
PLAN ACCOMPANYING PETITION OF
 TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
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 EXISTING GRANITE PIER, SEAWALL, FLOATS,
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 MATTAPOISETT HARBOR, MA

9-28-90
 REV 9-18-92

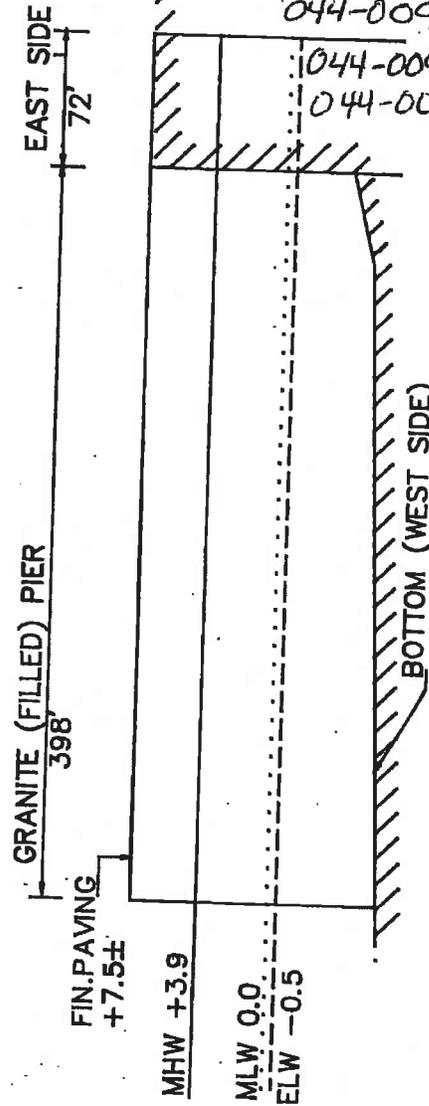


PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, FLOATS, LAUNCH RAMP, AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

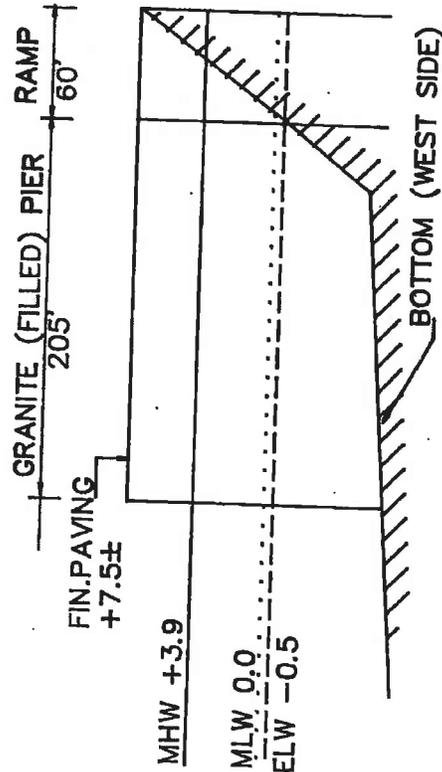
LICENSE PLAN NO. 4328
 Approved by Department of Environmental Protection
 Date: **JAN 26 1995**



PROFILE PIER 4
SCALE: H: 1"=100'
V: 1"=10'



PROFILE PIER 2
SCALE: H: 1"=100'
V: 1"=10'



PROFILE PIER 3
SCALE: H: 1"=100'
V: 1"=10'

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

LICENSE PLAN NO. 4328

Approved by Department of Environmental Protection
Date:

JAN 26 1995

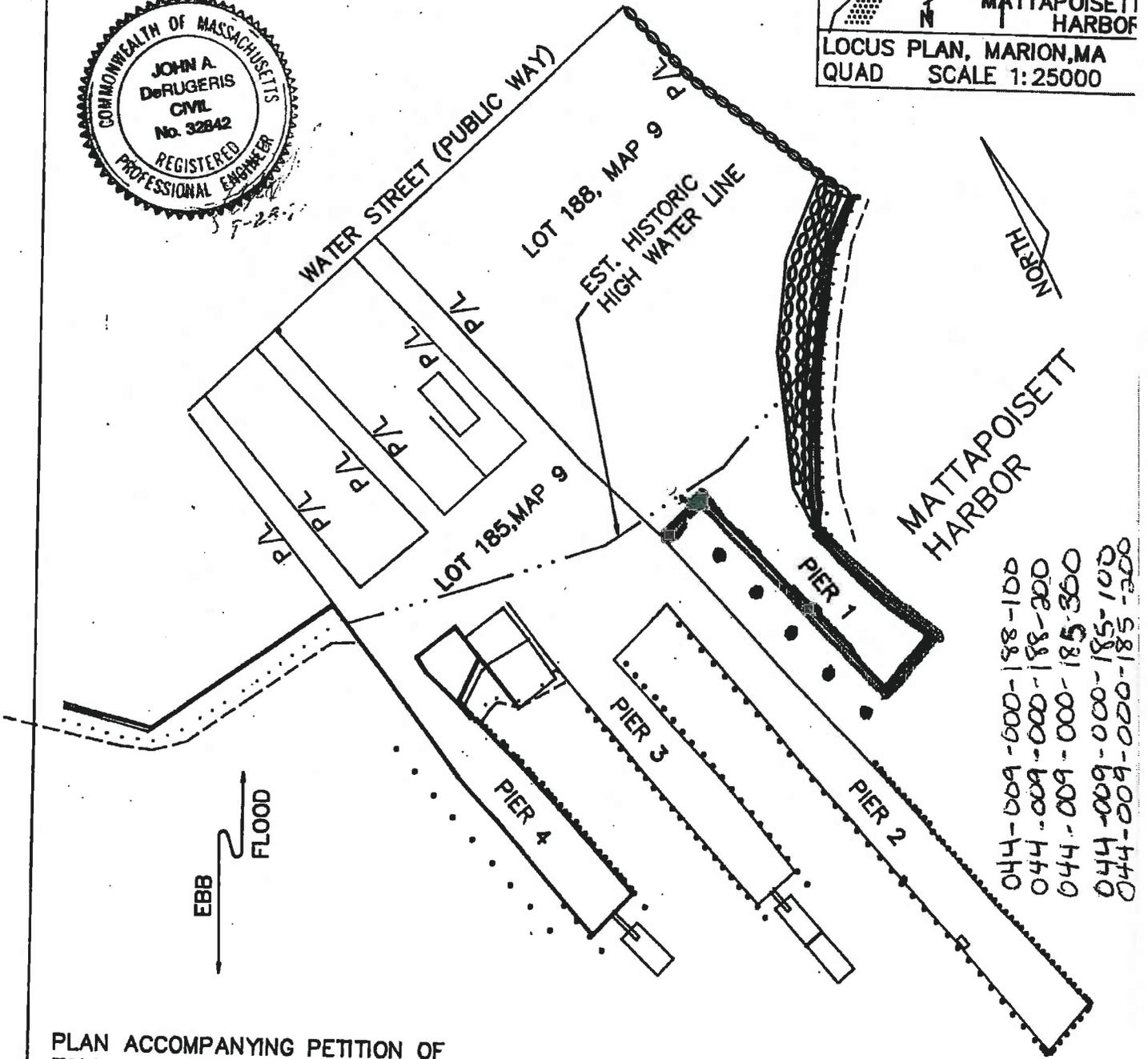
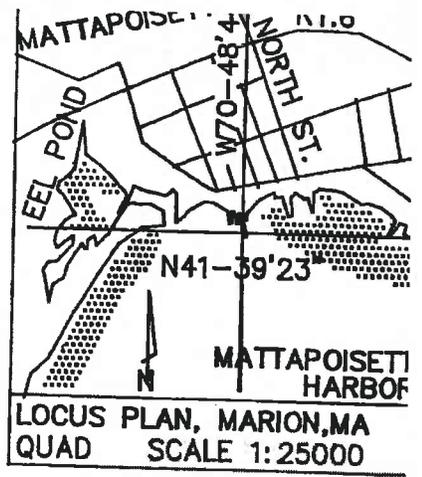


PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL, FLOATS,
LAUNCH RAMP, AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA

B

NOTES:

1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN.
PIER 4 WAS RECONSTRUCTED IN 1966, THAT RAMP AND WOOD BULKHEAD WERE CONSTRUCTED IN 1966, BY MASS. STATE ACCESS BOARD.
2. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED (LINE SHOWN IS ESTIMATED).
3. ALL ELEVATIONS REFER TO MEAN LOW WATER
4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 2200 CUBIC YARDS.



044-009-000-188-100
 044-009-000-188-300
 044-009-000-185-300
 044-009-000-185-100
 044-009-000-185-300

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT
 16 MAIN STREET,
 MATTAPOISETT, MA 02739
 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

LICENSE PLAN NO. 4928
 Approved by Department of Environmental Protection of Massachusetts.
 COMMISSIONER
 DIVISION DIRECTOR
 SECTION CHIEF
 OCT 18 1990

WATER STREET (PUBLIC WAY)

044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100
044-009-000-185-200

EST. HISTORIC HIGH WATER LINE

PROPERTY LINE

LOT 188, MAP 9
WATER STREET

PROPERTY LINE

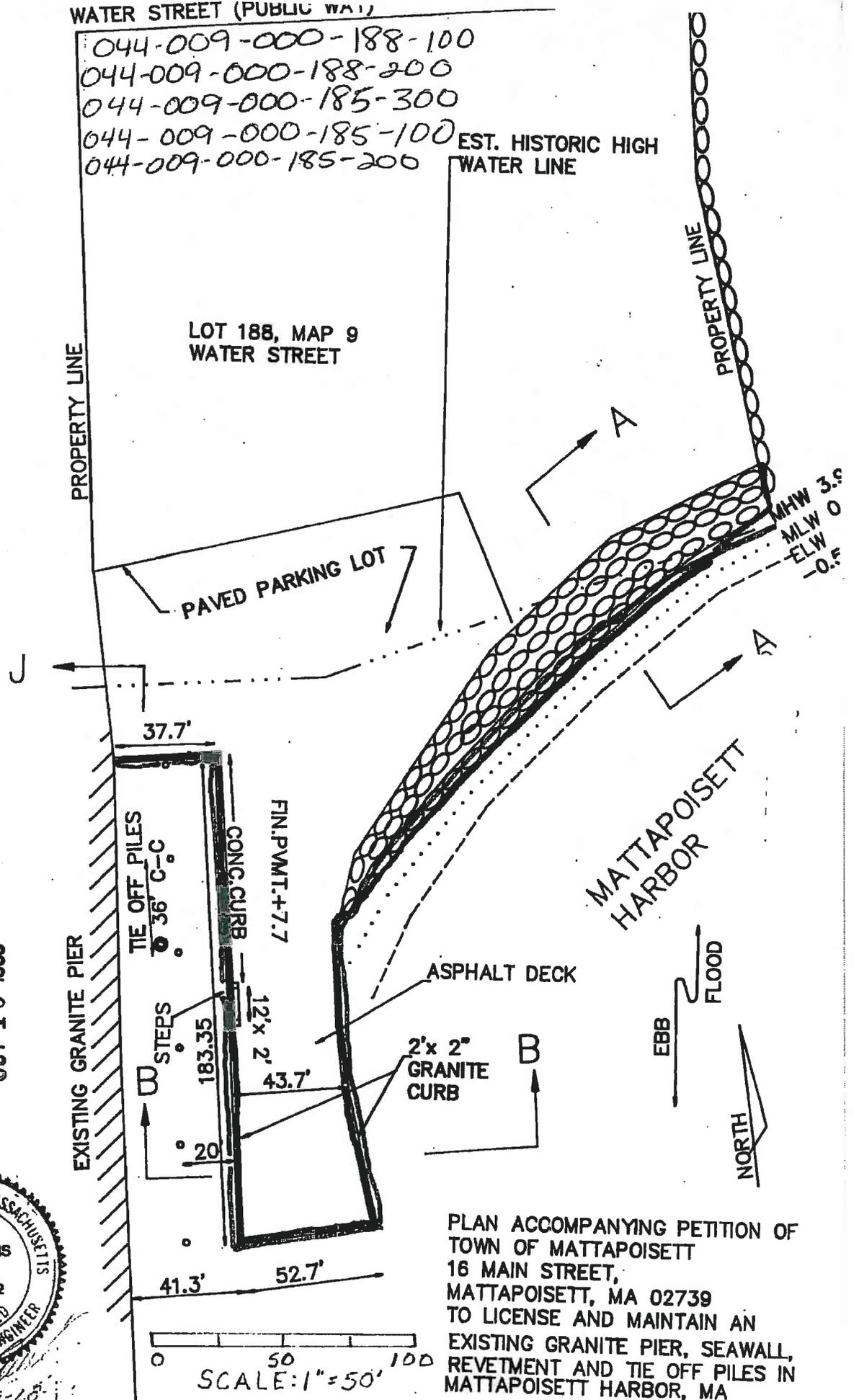
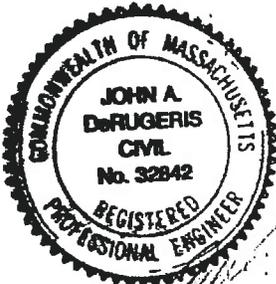
PAVED PARKING LOT

MHW 3.9
MLW 0
ELW -0.5

LICENSE PLAN NO. 4928

Approved by Department of Environmental Protection

Date: OCT 18 1995



MATTAPOISETT HARBOR

ASPHALT DECK

2'x 2' GRANITE CURB

EXISTING GRANITE PIER

TIE OFF PILES
36' C-C

CONC. CURB

FIN. P.W.M.T. +7.7

STEPS

183.35

43.7'

20'

41.3'

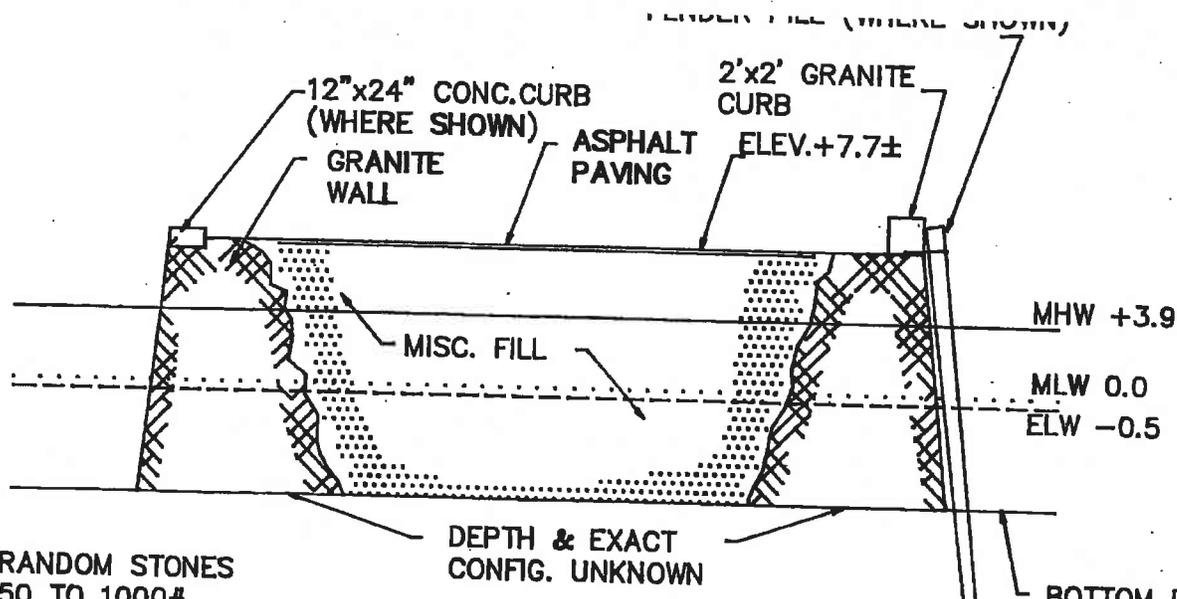
52.7'

SCALE: 1" = 50'

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, REVETMENT AND TIE OFF PILES IN MATTAPOISETT HARBOR, MA

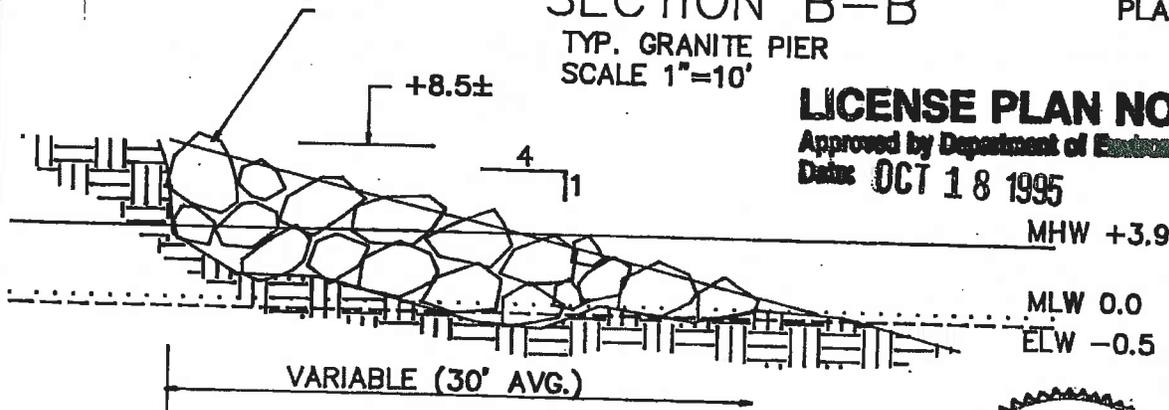
REVISIONS
9-28-90

PAGE 2 OF 2



SECTION B-B
TYP. GRANITE PIER
SCALE 1"=10'

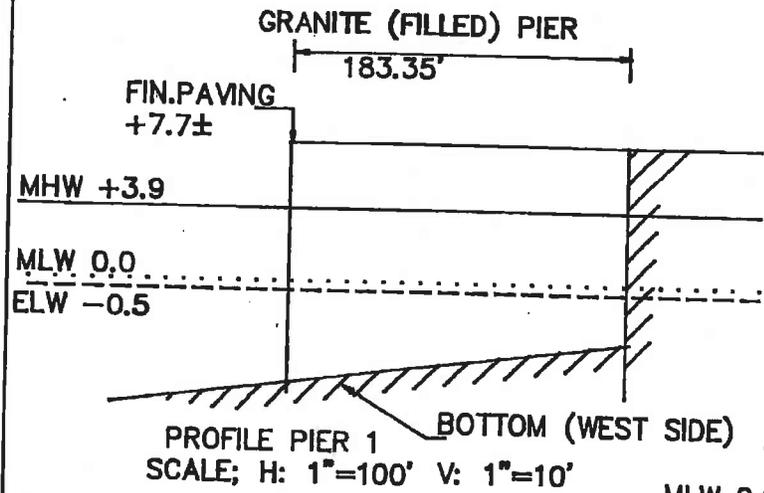
LICENSE PLAN NO. 4928
Approved by Department of Environmental Protection
Date OCT 18 1995



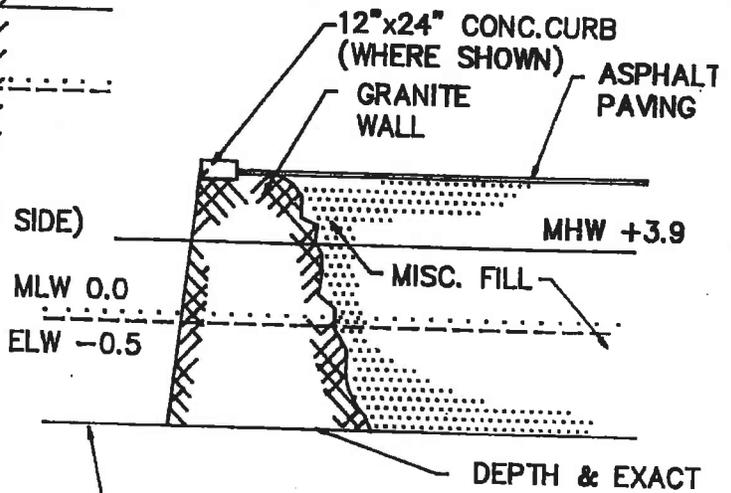
SECTION A-A
SCALE 1"=10'



044-009-000-185-200
044-009-000-188-100
044-009-000-188-200
044-009-000-185-300
044-009-000-185-100



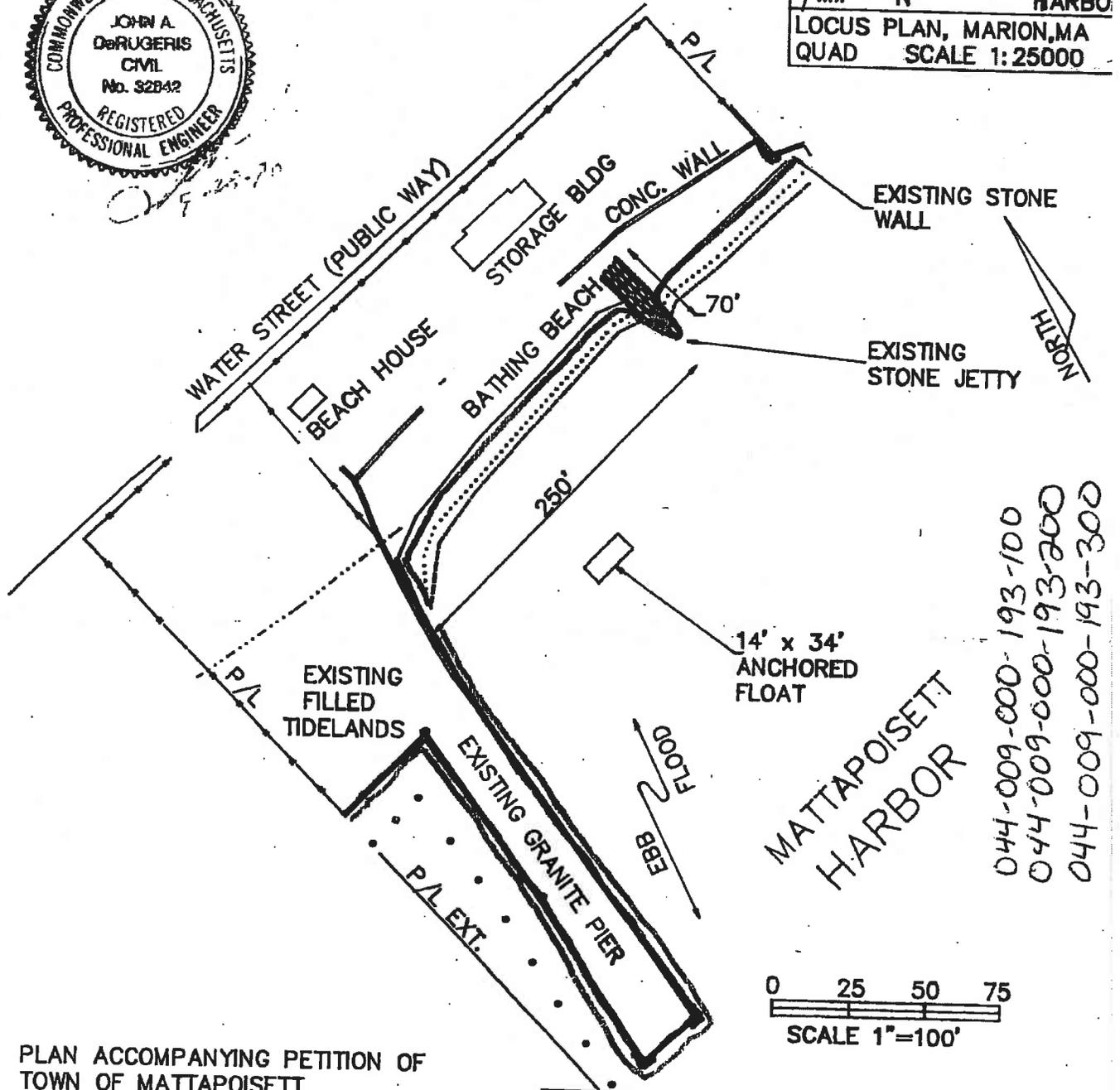
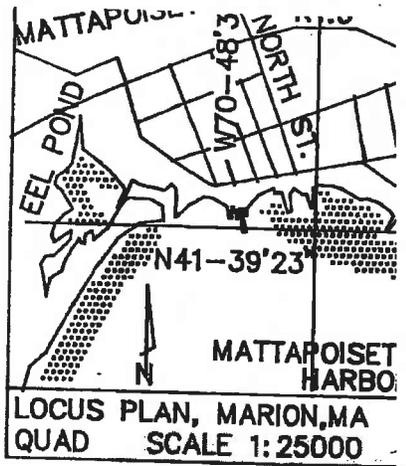
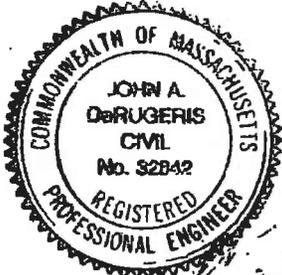
PROFILE PIER 1
SCALE; H: 1"=100' V: 1"=10'



SECTION J
TYP. SEA WALL
SCALE 1"=10'

PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL,
REVTMENT AND TIE OFF PILES IN
MATTAPOISETT HARBOR, MA

1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN.
 2. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED (LINE SHOWN IS ESTIMATED).
 3. ALL ELEVATIONS REFER TO MEAN LOW WATER
 4. ESTIMATED VOLUME OF FILL BELOW MEAN HIGH WATER IS 3415 CUBIC YARDS.
- ESTIMATED VOLUME OF JETTY IS 180 CU.YD.

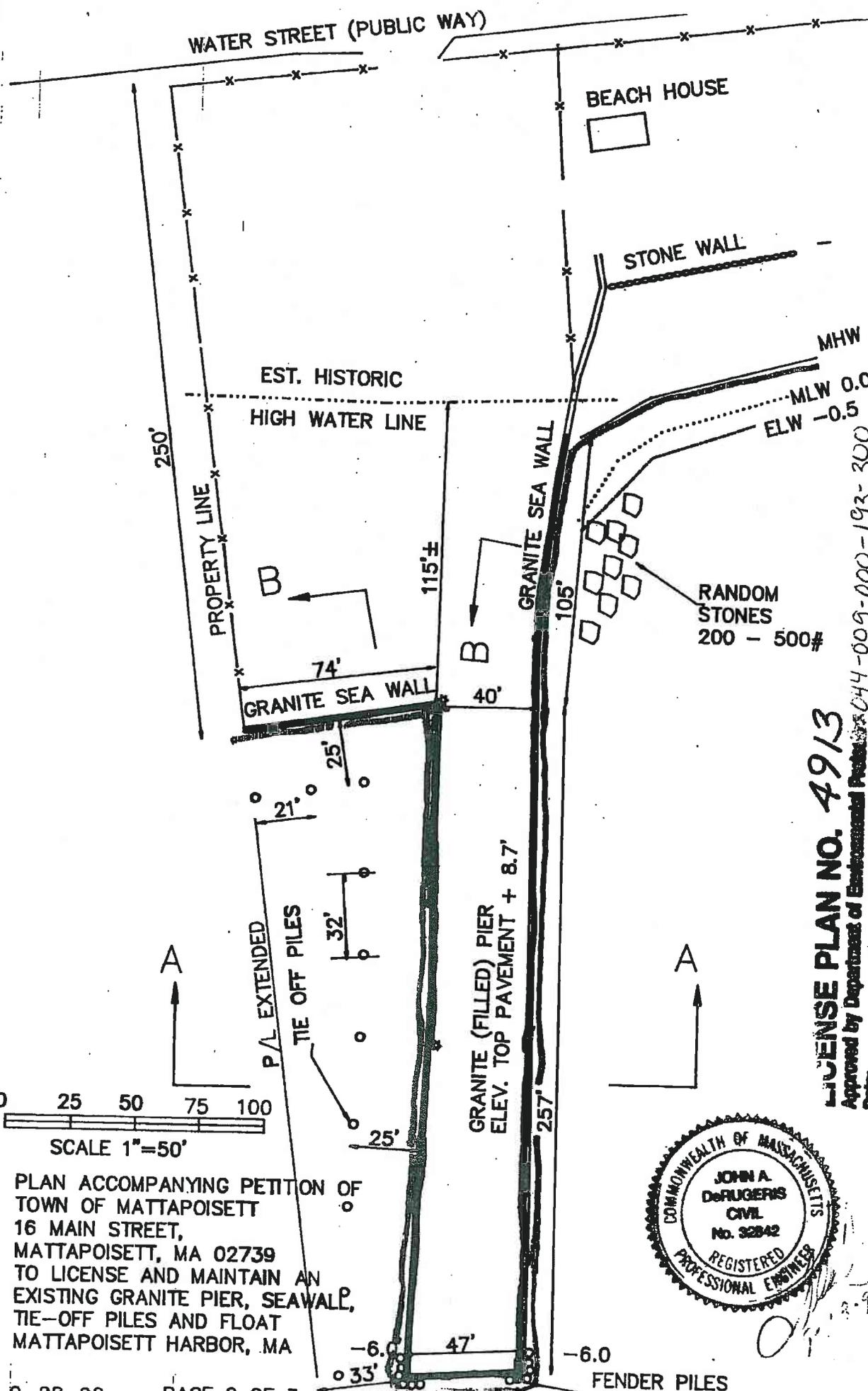


MATTAPUISETT HARBOR

044-009-000-193-100
044-009-000-193-200
044-009-000-193-300

PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPUISETT
16 MAIN STREET,
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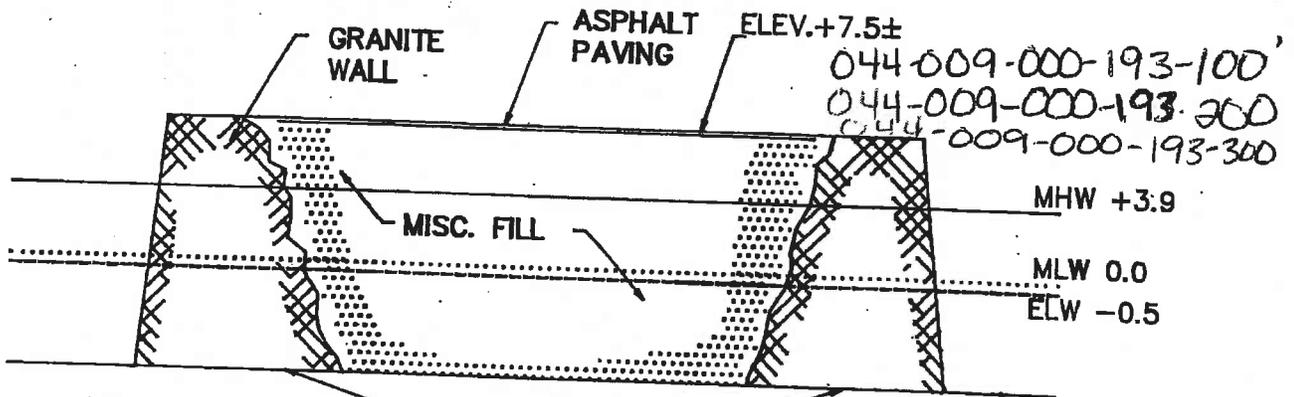
LICENSE PLAN NO. 4913
Approved by Department of Environmental Protection of Massachusetts
[Signature]
SECTION CHIEF
OCT 18 1995



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, TIE-OFF PILES AND FLOAT MATTAPOISETT HARBOR, MA

LICENSE PLAN NO. 4913
 Approved by Department of Environmental Protection 044-009-000-193-300
 Date: OCT 18 1995
 044-009-000-193-100
 044-009-000-193-200



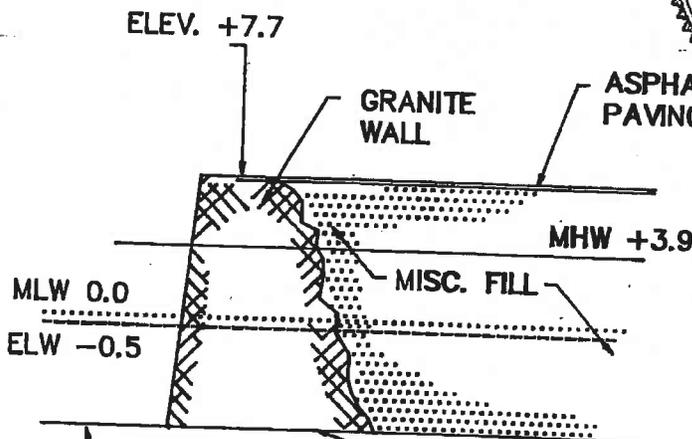
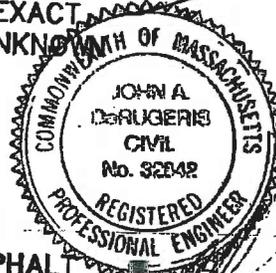


SECTION A-A

TYP. GRANITE PIER
SCALE 1"=10'

DEPTH & EXACT
CONFIG. UNKNOWN

BOTTOM DEPTH
VARIES (SEE
PLAN)



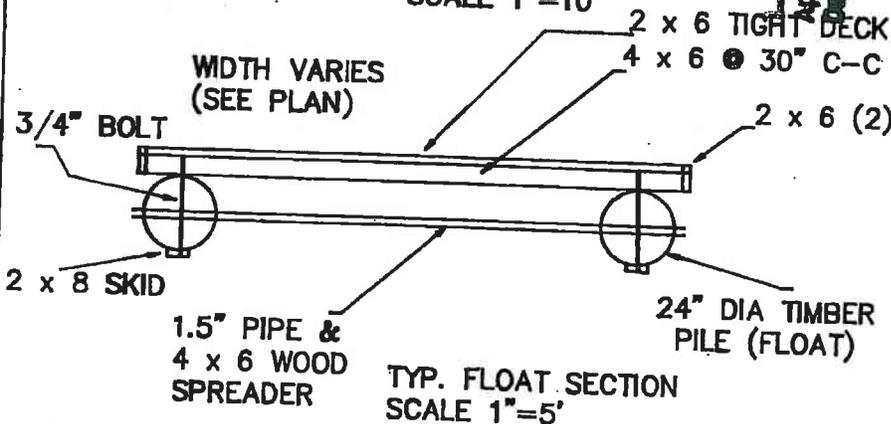
SECTION B

TYP. SEA WALL
SCALE 1"=10'

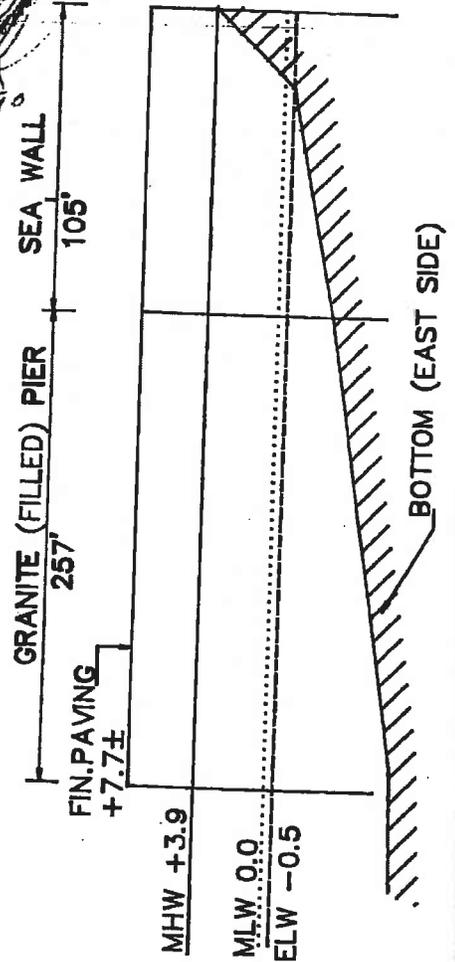
DEPTH & EXACT

BOTTOM DEPTH
VARIES (SEE
PLAN)

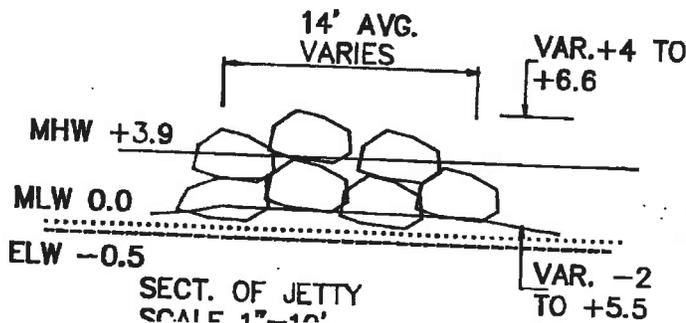
LICENSE PLAN NO. 4913
 Approved by Department of Environmental Protection
 OCT 18 1995



TYP. FLOAT SECTION
SCALE 1"=5'



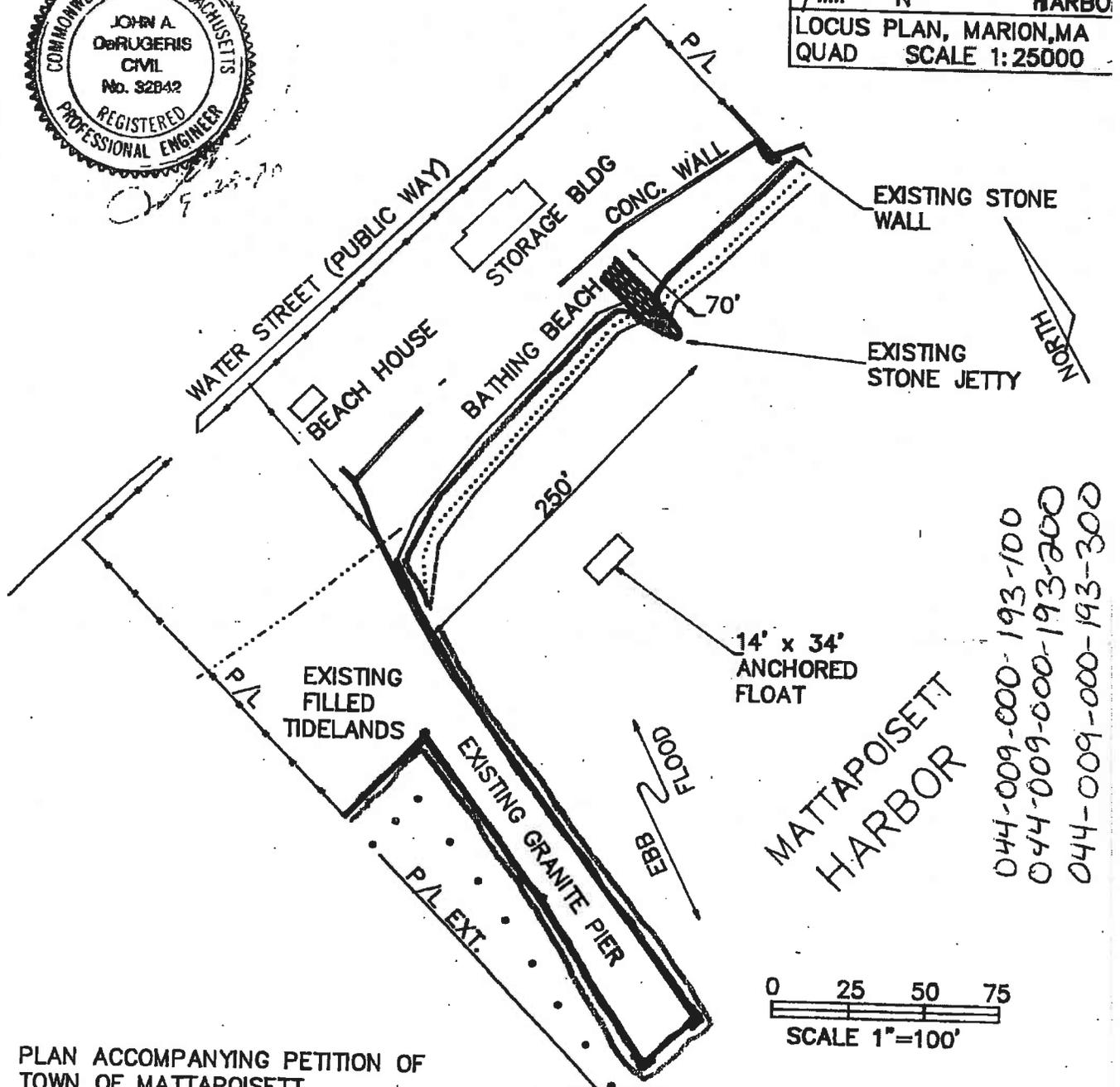
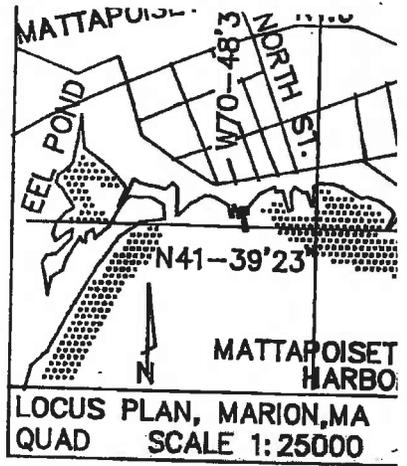
PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
16 MAIN STREET,
MATTAPOISETT, MA 02739
TO LICENSE AND MAINTAIN AN
EXISTING GRANITE PIER, SEAWALL,
TIE-OFF PILES AND FLOAT
MATTAPOISETT HARBOR, MA



SECT. OF JETTY
SCALE 1"=10'

PROFILE PIER 3
 SCALE: H: 1"=100'
 V: 1"=10'

1. ORIGINAL PIERS WERE CONSTRUCTED IN THE LATE 1700s EXACT DATES ARE UNKNOWN.
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- ESTIMATED VOLUME OF JETTY IS 180 CU.YD.



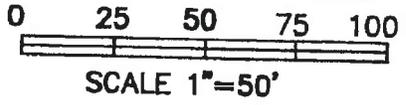
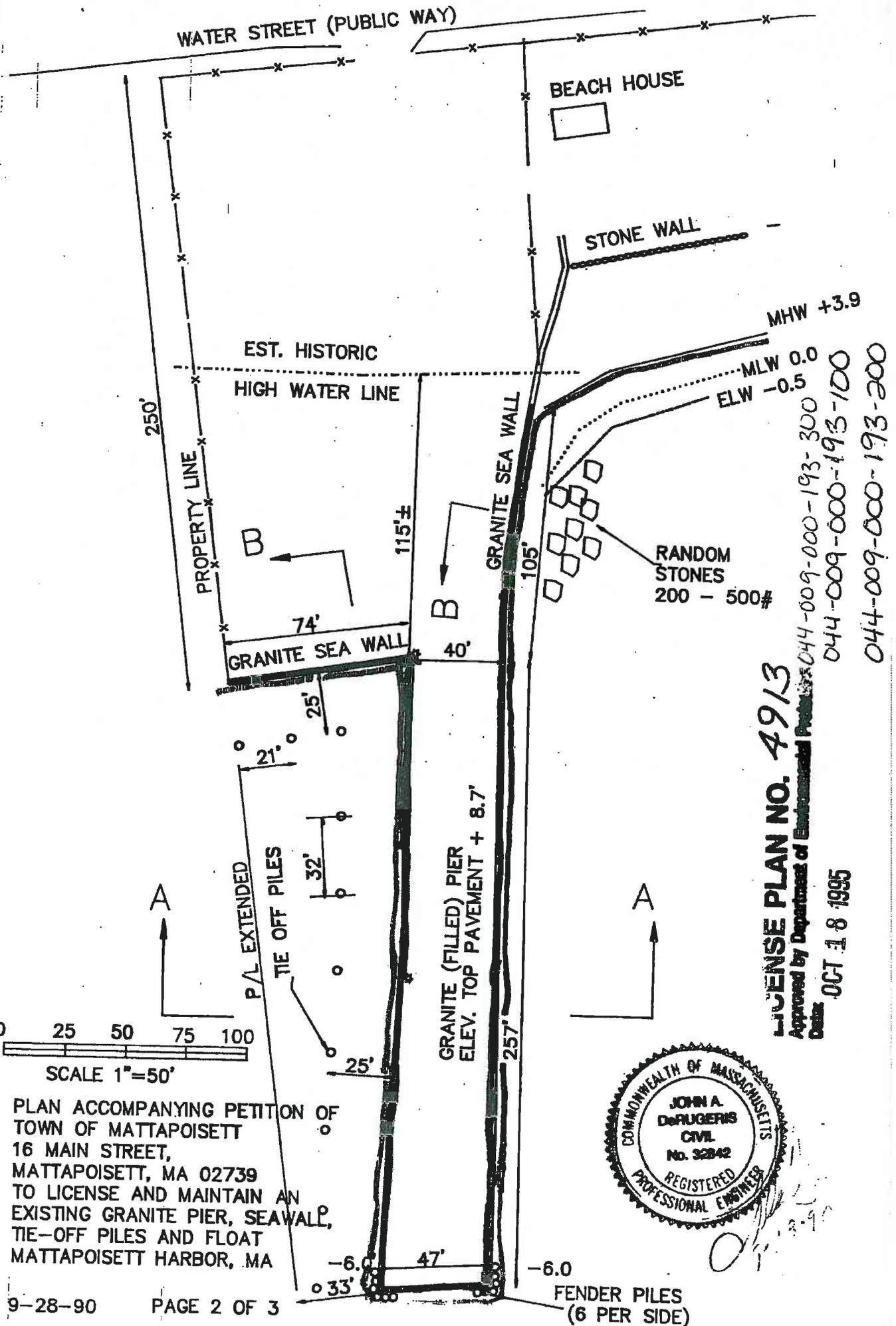
044-009-000-193-100
 044-009-000-193-200
 044-009-000-193-300

PLAN ACCOMPANYING PETITION OF
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 TIE-OFF PILES AND FLOAT
 MATTAPUISETT HARBOR, MA

LICENSE PLAN NO. 4913
 Approved by Department of Environmental Protection
 of Massachusetts

[Signature]
 DIVISION CHIEF
 SECTION CHIEF

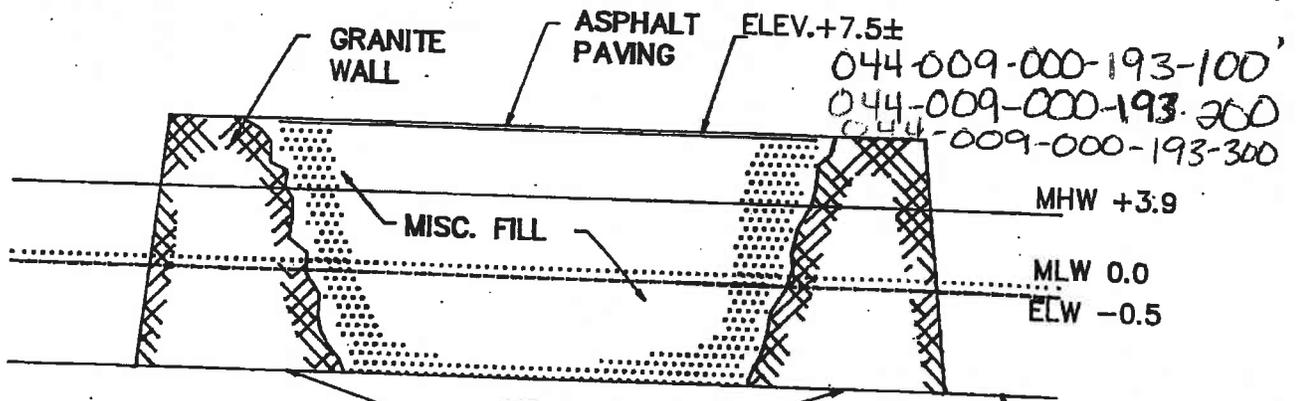
OCT 18 1995



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, TIE-OFF PILES AND FLOAT MATTAPOISETT HARBOR, MA

LICENSE PLAN NO. 4913
 Approved by Department of Environmental Protection 044-009-000-193-300
 Date: OCT 18 1995
 044-009-000-193-100
 044-009-000-193-200





SECTION A-A

TYP. GRANITE PIER
SCALE 1"=10'

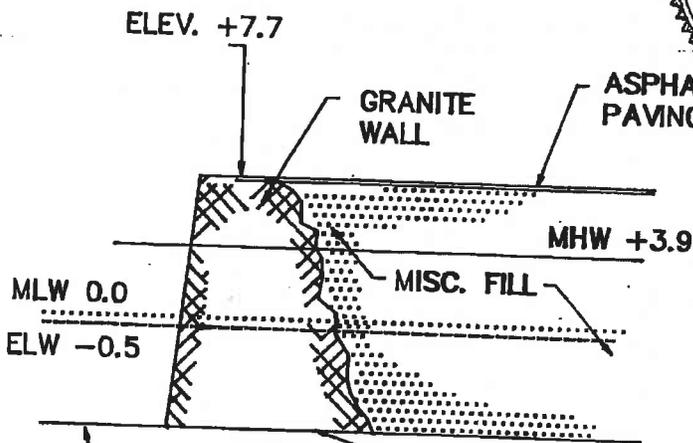
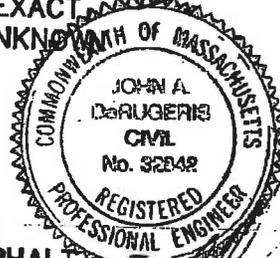
DEPTH & EXACT
CONFIG. UNKNOWN

MHW +3.9

MLW 0.0

ELW -0.5

BOTTOM DEPTH
VARIES (SEE
PLAN)



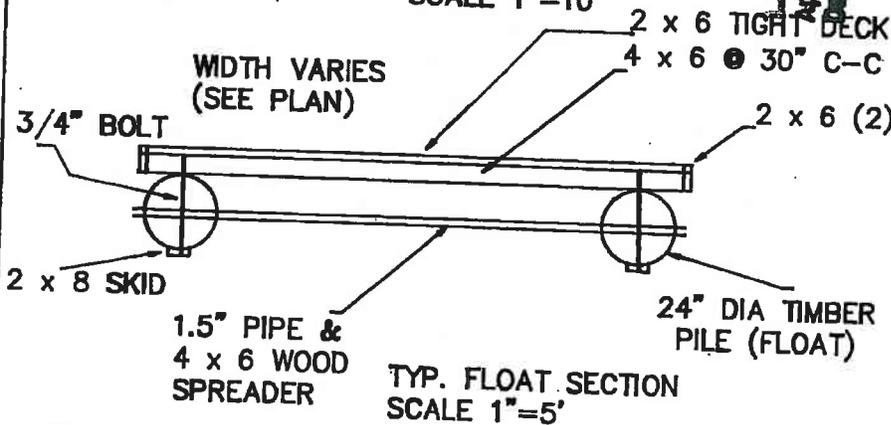
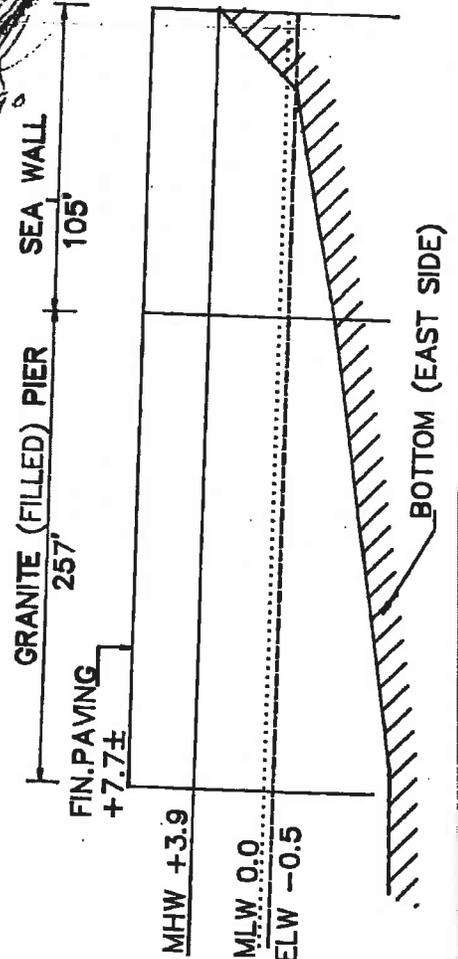
SECTION B

TYP. SEA WALL
SCALE 1"=10'

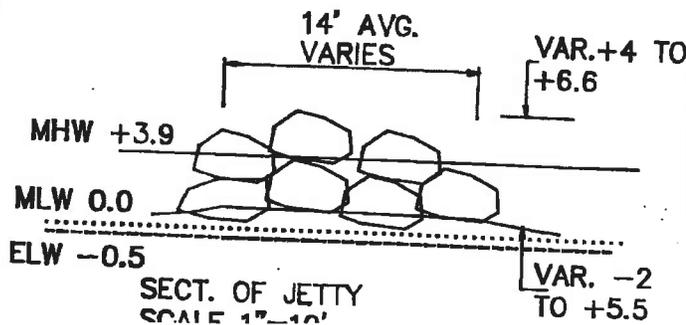
DEPTH & EXACT

BOTTOM DEPTH
VARIES (SEE
PLAN)

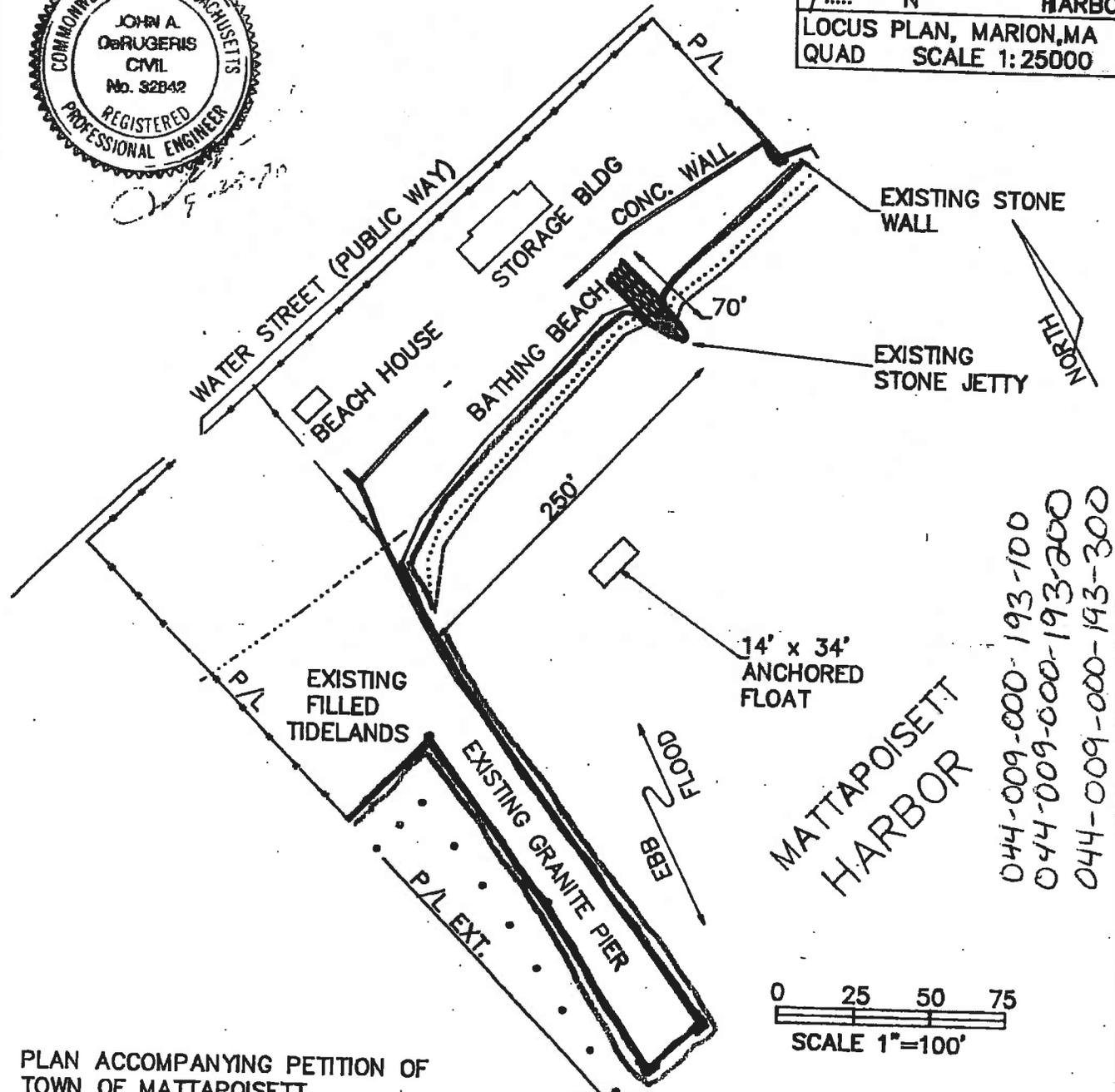
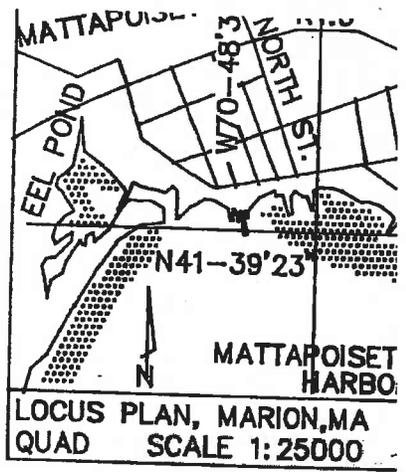
LICENSE PLAN NO. 4913
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PLAN ACCOMPANYING PETITION OF
TOWN OF MATTAPOISETT
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TIE-OFF PILES AND FLOAT
MATTAPOISETT HARBOR, MA



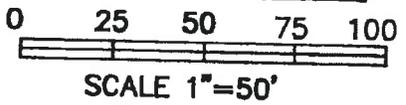
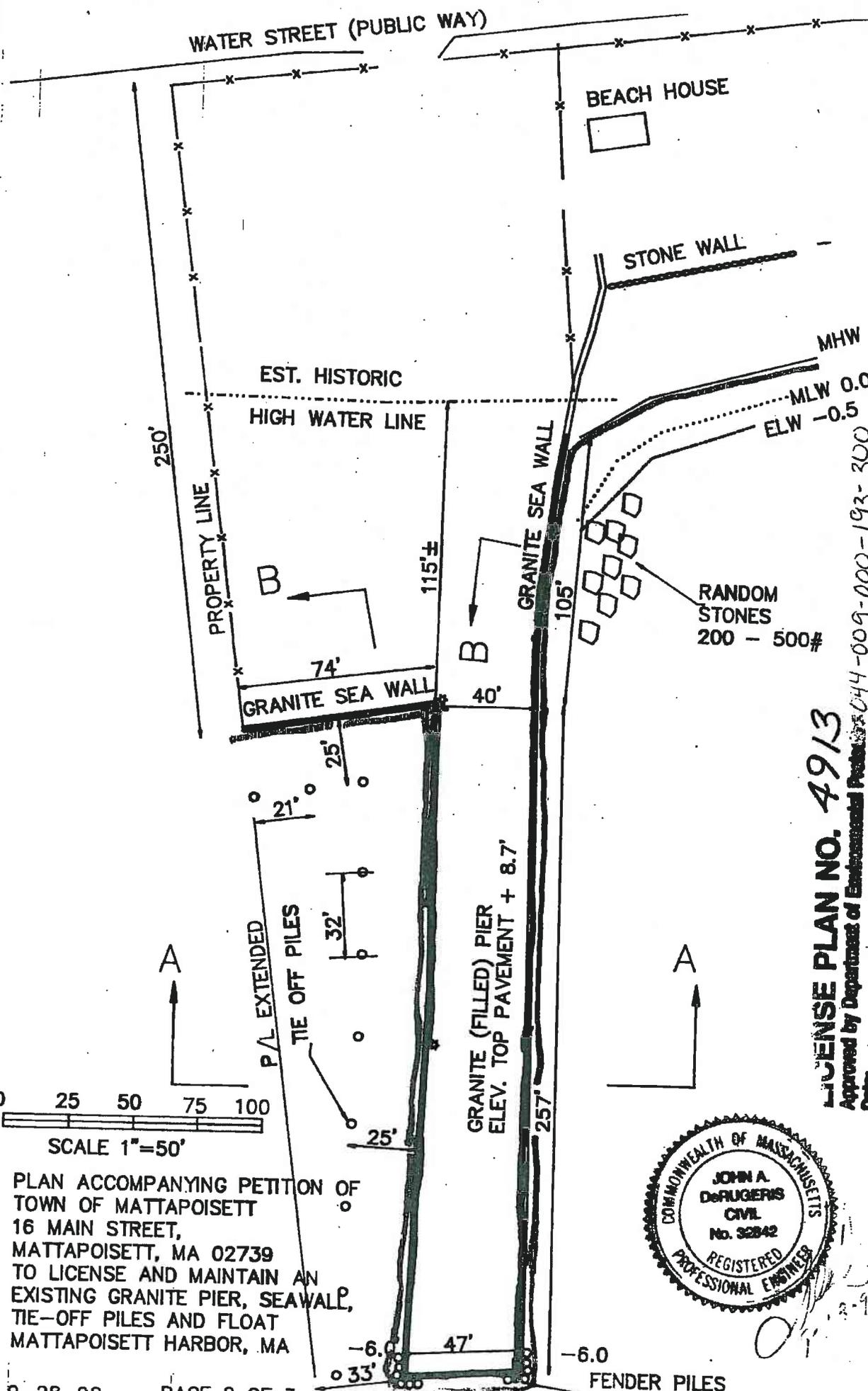
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044-009-000-193-100
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 MATTAPoisETT HARBOR, MA

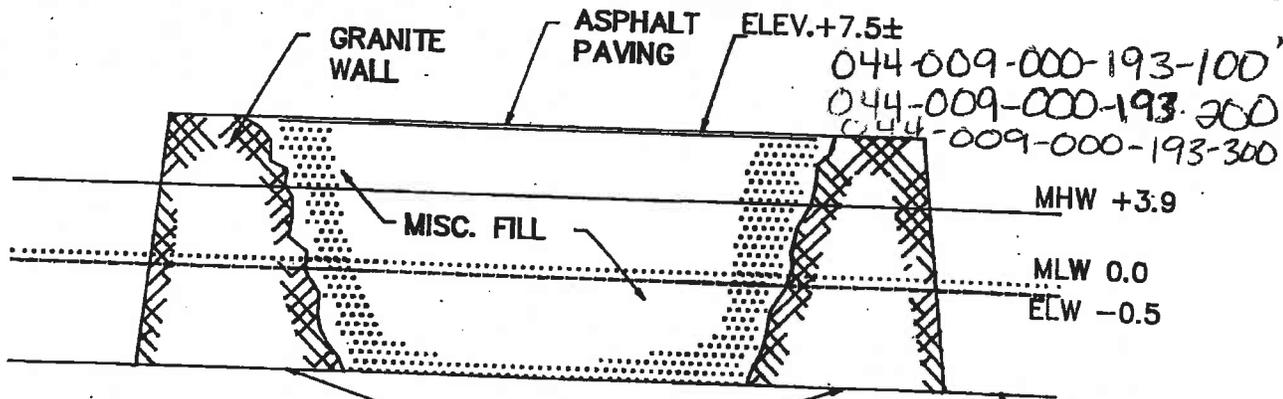
LICENSE PLAN NO. 4213
 Approved by Department of Environmental Protection
 of Massachusetts
 Commissioner
 Division Chief
 Section Chief
 OCT 18 1995



PLAN ACCOMPANYING PETITION OF TOWN OF MATTAPOISETT 16 MAIN STREET, MATTAPOISETT, MA 02739 TO LICENSE AND MAINTAIN AN EXISTING GRANITE PIER, SEAWALL, TIE-OFF PILES AND FLOAT MATTAPOISETT HARBOR, MA

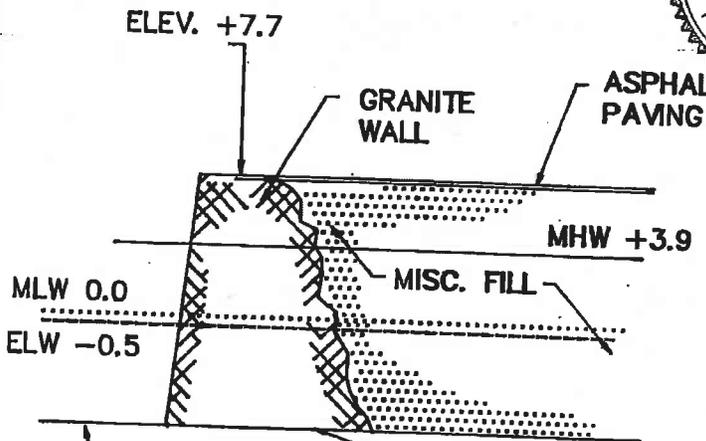
LICENSE PLAN NO. 4913
 Approved by Department of Environmental Protection 044-009-000-193-300
 Date: OCT 18 1995 044-009-000-193-100 044-009-000-193-200





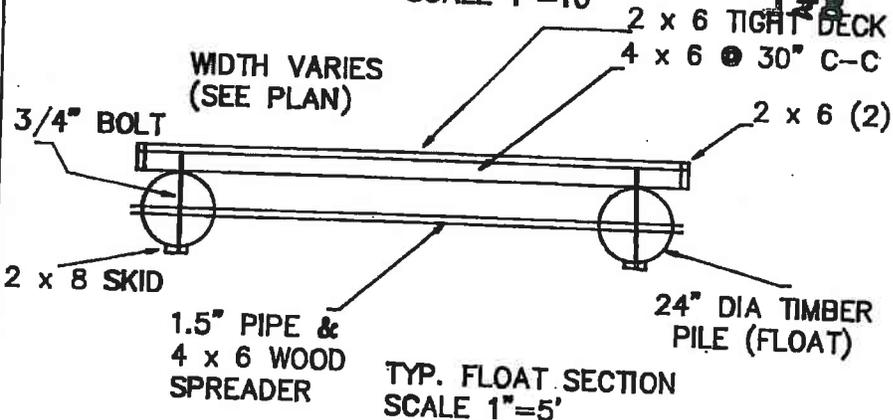
SECTION A-A

TYP. GRANITE PIER
SCALE 1"=10'



SECTION B

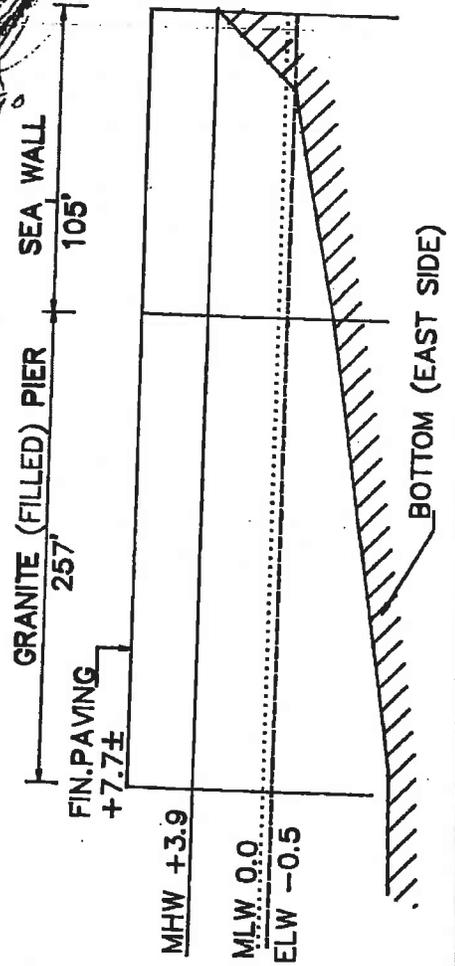
TYP. SEA WALL
SCALE 1"=10'



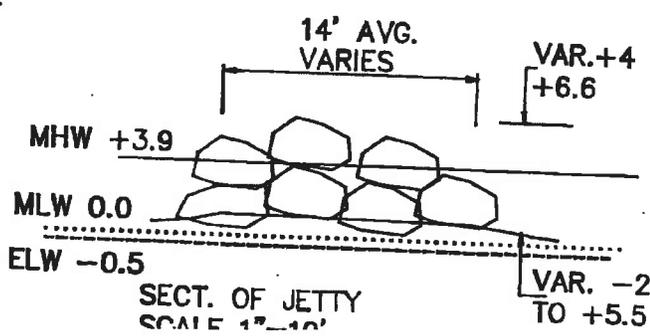
TYP. FLOAT SECTION
SCALE 1"=5'



LICENSE PLAN NO. 4913
 Approved by Department of Environmental Protection
 DATE: OCT 18 1995



PLAN ACCOMPANYING PETITION OF
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 TIE-OFF PILES AND FLOAT
 MATTAPOISETT HARBOR, MA



PROFILE PIER 3
 SCALE: H: 1"=100'
 V: 1"=10'

TOWN: MATTAPOISETT
 SOURCE: US ACOE
 LOCATION: CONCORD, MA
 DATE OF RESEARCH: AUGUST 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|---------------------------|--------------------------------|--------|--------------|---------------|---|--------|--------------------|---------------------|
| 044-14B-000-019-100 | 044-14B-000-019-100-COE1A | 61-40 | USACE | Mattapoisett | November 1960 | Proposed Groins and Sand Fill - Vicinity of Brandt Island Road, Buzzards Bay, Mattapoisett, Massachusetts | 1 | Brandt Island Road | Groin and Sand Fill |

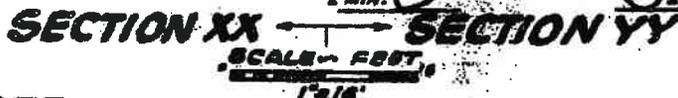
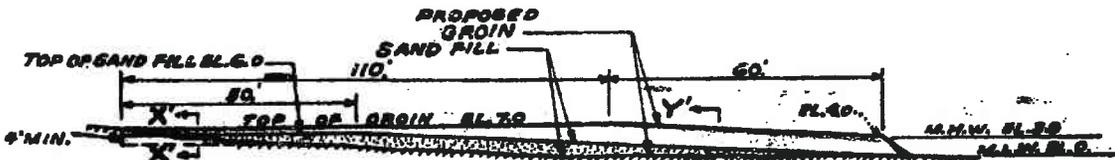
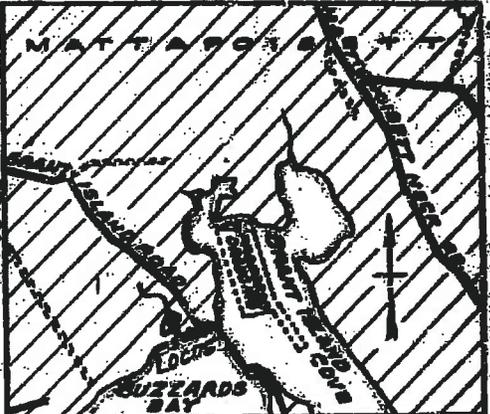
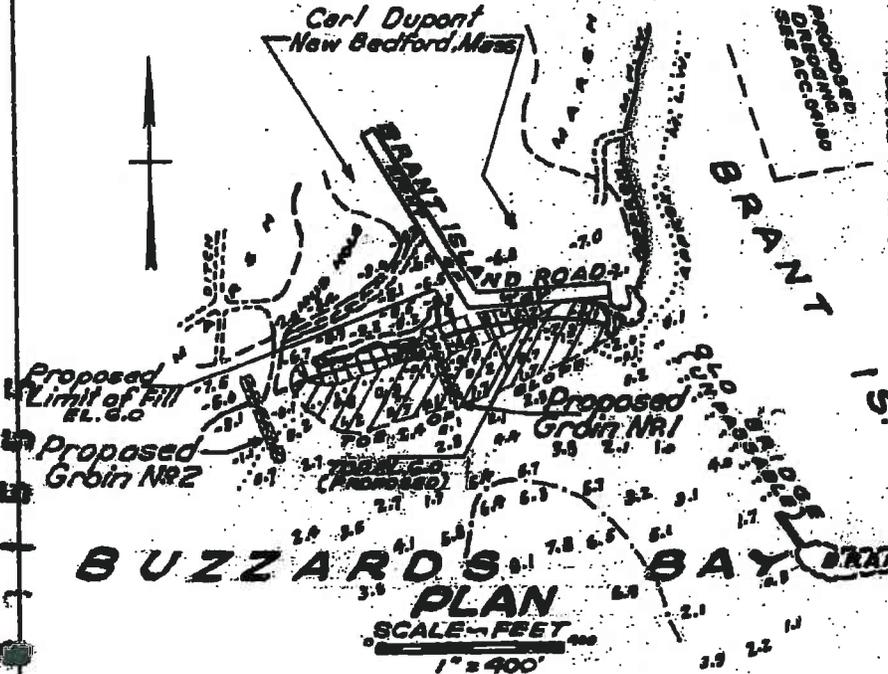
079 0738

044-14B-000-019-100

MATTAPoisETT

MATTAPoisETT

Carl Dupont
New Bedford, Mass.



NOTE

SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO PLANE OF MEAN LOW WATER. MINUS FIGURES SHOW ELEVATIONS ABOVE THE SAME PLANE. SIDE AND END SLOPES FOR GROINS ARE 1.5 TO 1.0 APPROX. EXISTING GROUND SHOWN THUS FILL USED IS SUITABLE DREDGED MATERIAL FROM AREA NO. EAST OF BRANT ISLAND BRIDGE. SEE U.S. PERMIT PLAN ACC. 04180 LOCATION PROPOSED WORK SHOWN IN RED.

PROPOSED GROINS AND SAND FILL VICINITY OF BRANT ISLAND RD. BUZZARDS BAY MATTAPoisETT - MASS.

APPLICATION BY DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS DIVISION OF WATERWAYS NOVEMBER 1960

R.B. McKinnon
CHIEF WATERWAYS ENGINEER

Section IV

Marion

Section IV – Community Findings – Town of Marion

COMMUNITY DESCRIPTION

The Town of Marion consists of a land area of 14.63 square miles out of a total area of 26.69 square miles and had a population of 5,123 in the 2000 census. The Town is located on the south coast of Massachusetts and its location can be seen on this report's cover. The estimated length of shoreline that is directly exposed to open ocean waves is 12.6 miles with the remaining shoreline semi-protected by offshore structures or landforms. The Town is protected from major coastal storms by both natural and man-made shoreline structures that require maintenance to insure the long term protection of its coastline. The man-made and publicly owned structures that protect the Town were investigated for their ability to provide adequate protection from major coastal storms. Structures have been identified as publicly owned, including coastal dunes and beaches, based on evidence of investment of public funds made to create/enhance/maintain these structures. The assessment did not include floating or pile supported structures as they are assumed not to provide any significant coastal protection from major storm events.

STRUCTURE INVENTORY

Within the Town of Marion, there were 12 structures which had public or unknown ownership which provide significant coastal protection. The location of the structures can be seen in Sheets 1 through Sheet 5 in Section IV-B of this report. The structures were categorized by their type and by their structural condition based on a preliminary field assessment. The distribution of structures by type and condition can be seen in the following table:

STRUCTURE TYPE AND QUANTITY - Town of Marion

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | Total Length |
|-----------------------|------------------|----------------------------|---|---|---|--------------|
| | | A | B | C | D | |
| Bulkhead / Seawall | 6 | 1 | 1 | 4 | | 1865 |
| Revetment | 4 | 2 | 2 | | | 1605 |
| Breakwater | | | | | | |
| Groin / Jetty | 2 | 2 | | | | 300 |
| Coastal Dune | | | | | | |
| Coastal Beach | | | | | | |
| | 12 | 5 | 3 | 4 | | 3770 |

Within the above table, the total length of each type of structure is also provided. The structures are listed by the type which is providing the primary coastal protection. Many sites have multiple structure types at the same location (i.e. revetment in front of seawall). These secondary structures, although not identified within these tables, are included in the development of repair/rehabilitation costs.

The development of repair costs has been included by structure type and by condition. In the Town of Marion's case there are a total of 7 structures which would require approximately \$ 898,500 to bring all the coastal structures to "A" Rating. Most critical will be the structures in the "D" and "F" classifications as those are assumed to undergo some level of damage or failure during the next major coastal storm event of which Marion has none.

STRUCTURE REPAIR / RECONSTRUCTION COST - Town of Marion

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost |
|-----------------------|------------------|----------------------------|------------|------------|------|------|------------|
| | | A | B | C | D | F | |
| Bulkhead / Seawall | 6 | | \$ 141,933 | \$ 745,325 | | | \$ 887,258 |
| Revetment | 4 | | \$ 11,220 | | | | \$ 11,220 |
| Breakwater | | | | | | | \$ - |
| Groin / Jetty | 2 | | | | | | \$ - |
| Coastal Dune | | | | | | | \$ - |
| Coastal Beach | | | | | | | \$ - |
| | 12 | \$- | \$ 153,153 | \$ 745,325 | \$ - | \$ - | \$ 898,478 |

Based on the limited research within the scope of this project research, the presumed ownership of the structures was established on an initial basis and would be subject to more intense review in future tasks. Structures identified as being owned privately were excluded from further consideration. Although ownership of the land on which the structure was located was a factor, the structure ownership was treated as a separate issue from land ownership. For the Town of Marion the breakdown of structures by assumed ownership is as follows:

STRUCTURE OWNERSHIP / REPAIR COST - Town of Marion

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost |
|-------------------------------|------------------|----------------------------|------------|------------|------|------|------------|
| | | A | B | C | D | F | |
| Town Owned | 9 | | \$ 153,153 | \$ 745,325 | | | \$ 898,478 |
| Commonwealth of Massachusetts | | | | | | | \$ - |
| Federal Government Owned | | | | | | | \$ - |
| Unknown Ownership | 3 | | | | | | \$ - |
| | 12 | \$- | \$ 153,153 | \$ 745,325 | \$ - | \$ - | \$ 898,478 |

The identification of presumed ownership was not based on the investigation of legal documents but relied on property ownership and from construction and regulatory documents that were found. A more detailed investigation of legal documents and agreements would be required where structure ownership is disputed. A more detailed identification of structure type, length, condition and location can be found in Section IV-B which contains Structure Assessment Reports for each individual structure found.

SUMMARY

The enclosed reports and associated documents reflects the Town of Marion's coastal structure information that will eventually be input into a state-wide GIS database and will be accessible through MassGIS. This data, when compiled state-wide, will be critical in the development of both short term and long term planning for maintaining and improving Massachusetts coastal protection.

This database will also provide relatively quick access to identify available documentation for these structures as well as the ability to be updated as coastal structure improvements are made.

Section IV - Marion

Part B

Structure Assessment Reports

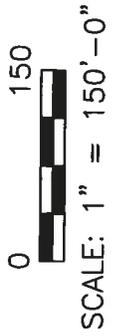




File: X:\27652-27667\South Coast\Marion\dwg\Marion.dwg

COASTAL STRUCTURE LOCATION PLAN

TOWN OF MARION
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT
 JULY 2007



BCE Bourne Consulting Engineering
 3 Paul Davis
 Franklin, MA 01832
 TEL: (978) 682-0000 FAX: (978) 682-0000



File: X:\27652-27667\South Coast\Marion\dwg\Marion.dwg

COASTAL STRUCTURE LOCATION PLAN

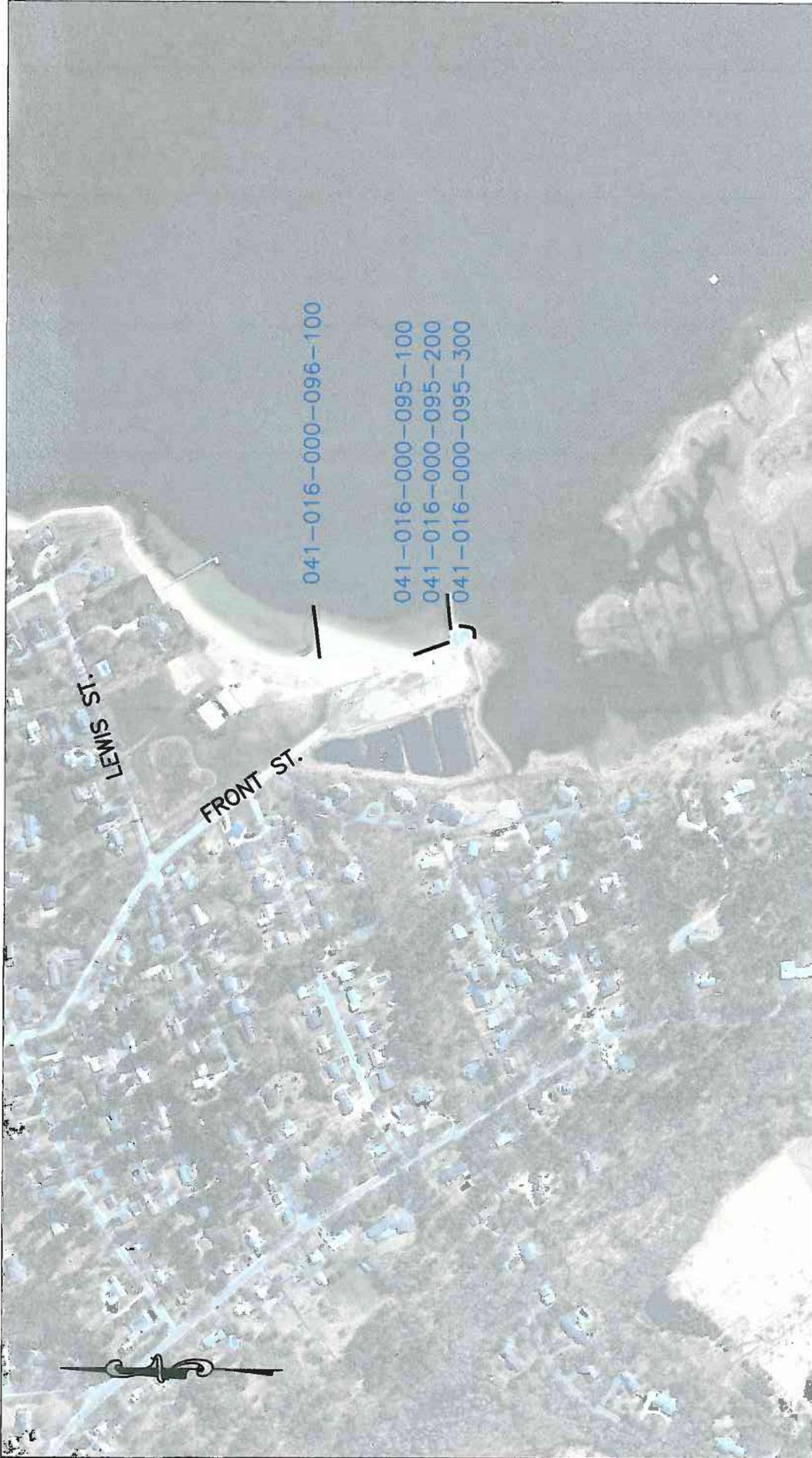
TOWN OF MARION
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

BCE Bourne Consulting Engineering
 3 South Street
 Bourne, MA 01929
 TEL: (508) 835-0000 FAX: (508) 835-0000



File: X:\27652-27667\South Coast\Marion\dwg\Marion.dwg

COASTAL STRUCTURE LOCATION PLAN

TOWN OF MARION
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"





COASTAL STRUCTURE LOCATION PLAN

TOWN OF MARION
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT
 JULY 2007



Bourne Consulting Engineering
 3 East Street
 Bourne, MA 01929
 TEL: (508) 635-4000 FAX: (508) 635-4000



COASTAL STRUCTURE LOCATION PLAN

TOWN OF MARION
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

BCE Bourne Consulting Engineering
 217 South Street
 Bourne, MA 01909
 TEL: (508) 835-0000 FAX: (508) 835-0000

Structure Assessment Form

Property Owner:

Local

Location:

Delano Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Marion

Earliest Structure Record:

1959

Estimated Reconstruction/Repair Cost:

\$5,610.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 85 | | VE | 20 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The stone revetment along side a boat ramp has no visible signs of erosion or stone movement.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

041-002-000-001C-100-PHO1A.JPG

041-002-000-001C-100-PHO1B.JPG

Structure Documents:

USACE

September 1

Proposed Excavation

041-002-000-001C-100-COE1A

Structure Assessment Form

Property Owner:

Local

Location:

Planting Island Road

Date:

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Marion

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 1260 | | VE | 21 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|---------------|-------------------|-----------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |

| | | |
|-----------------|---------------------|-------------------|
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :

There is a stone revetment along the edge of the road. The top of the stone is flush with grade. The revetment is set at a very gradual grade to the beach. The road is the only access for residential area.

| | |
|------------------------|---|
| <i>Condition</i> | A |
| <i>Rating</i> | Excellent |
| <i>Level of Action</i> | None |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. |

| | |
|--------------------|---|
| <i>Priority</i> | I |
| <i>Rating</i> | None |
| <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

041-003-000-001-100-PHO1A.JPG
 041-003-000-001-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|---|
| Property Owner: Local | Location: Old Landing | Date: 6/6/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Marion | Earliest Structure Record: 1974 | Estimated Reconstruction/Repair Cost: \$141,933.00 |

| | | | |
|------------------------|--------------------------------|----------------------|--|
| Length: 935 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 18 Feet NGVD |
|------------------------|--------------------------------|----------------------|--|



| | | |
|------------------------------------|----------------------------|---------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Stone | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :

Two filled wharfs with a mortar stone wall around the perimeter capped with a concrete deck. There are no signs of settlement or loss of fill. Mortared joints exhibit minor spalling. No loss of stone observed

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- 041-014-000-012-100-PHO1A.JPG
- 041-014-000-012-100-PHO1B.JPG

Structure Documents:

| | | | |
|-------|-------------|-------------------|---------------------------|
| USACE | September 2 | Proposed Boat | 041-014-000-012-100-COE1A |
| DEP | January 197 | Plan Accompanying | 041-014-000-012-100-LIC1A |
| DEP | December 1 | Plan Accompanying | 041-014-000-012-100-LIC1B |

Structure Assessment Form

| | | |
|---|---|--|
| Property Owner: Local | Location: Old Landing | Date: 6/6/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Marion | Earliest Structure Record: 1974 | Estimated Reconstruction/Repair Cost: \$0.00 |

| | | | |
|-------------------------------|---|-----------------------------|---|
| Length: 140 Feet | Top Elevation: 18 Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 18 Feet NGVD |
|-------------------------------|---|-----------------------------|---|



| | | |
|---|--------------------------------------|--|
| Primary Type: Bulkhead/ Seawall | Primary Material: Concrete | Primary Height: Under 5 Feet |
| Secondary Type: Revetment | Secondary Material: Stone | Secondary Height: Under 5 Feet |

Structure Summary :
 The boat ramp includes a concrete wall along the edge of it with a stone revetment. 12 inch to 18 inch high concrete wall provides curb down the sides of the boat ramp. The 12 inch revetment stones are found along the base of the walls. No signs of erosion or movement.

| | | | |
|------------------------|--|--------------------|--|
| <i>Condition</i> | A | <i>Priority</i> | I |
| <i>Rating</i> | Excellent | <i>Rating</i> | None |
| <i>Level of Action</i> | None | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

- Structure Images:**
- 041-014-000-012-200-PHO2A.JPG**
 - 041-014-000-012-200-PHO2B.JPG**

Structure Documents:

| | | | |
|--------------|--------------------|----------------------------|----------------------------------|
| USACE | January 197 | Proposed Small Boat | 041-014-000-012-200-COE2A |
| USACE | September 2 | Proposed Boat | 041-014-000-012-200-COE2B |
| DEP | January 197 | Plan Accompanying | 041-014-000-012-200-LIC2A |
| DEP | December 1 | Plan Accompanyinh | 041-014-000-012-200-LIC2B |

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|---|
| Property Owner: Local | Location: Island Wharf | Date: 6/6/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Marion | Earliest Structure Record: 1990 | Estimated Reconstruction/Repair Cost: \$500,016.00 |

| | | | |
|------------------------|--------------------------------|----------------------|--|
| Length: 400 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 18 Feet NGVD |
|------------------------|--------------------------------|----------------------|--|



| | | |
|--------------------------------------|---------------------------------|-----------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Steel | Primary Height: 5 to 10 Feet |
| Secondary Type: Bulkhead/ Seawall | Secondary Material: Concrete | Secondary Height: Under 5 Feet |

Structure Summary :

Filled wharf with a steel bulkhead and concrete wall around the perimeter. There is no settlement or wall movement observed. There is minor cracking on the concrete wall.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

- [041-014-000-076-100-PHO1A.JPG](#)
- [041-014-000-076-100-PHO1B.JPG](#)
- [041-014-000-076-100-PHO1C.JPG](#)

Structure Documents:

- [DEP](#)
- [January 30,](#)
- [Plan Accompanying](#)
- [041-014-000-076-100-LIC1A](#)

Structure Assessment Form

Property Owner:

Local

Location:

Island Wharf Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1990

Estimated Reconstruction/Repair Cost:

\$0.00

| | | | |
|------------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 175 | | 18 | VE |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|--------------------------|---------------------|---------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| Bulkhead/ Seawall | Stone | Under 5 Feet |

Structure Summary :

The stone revetment is located outshore of the stone wall. The revetment reaches the top of the wall. The stones are 18 inches to 24 inches in size and placed to provide a smooth surface.

| | | | |
|------------------------|--|--------------------|--|
| <i>Condition</i> | A | <i>Priority</i> | I |
| <i>Rating</i> | Excellent | <i>Rating</i> | None |
| <i>Level of Action</i> | None | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

041-014-000-076-200-PHO2A.JPG

Structure Documents:

| | | | |
|------------|--------------------|--------------------------|----------------------------------|
| DEP | January 30, | Plan Accompanying | 041-014-000-076-200-LIC2A |
| DEP | November 2 | Plan Accompanying | 041-014-000-076-200-LIC2B |

Structure Assessment Form

Property Owner:

Local

Location:

Island Wharf Road

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Mattapoissett

Earliest Structure Record:

1990

Estimated Reconstruction/Repair Cost:

\$45,540.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 60 | | 18 | VE |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The filled structure includes a stone wall with narrow pedestrian access to the wharf and a concrete deck. The stones are dry stacked with no signs of movement. The structure is 4 feet wide with a 6 feet wide concrete deck surface.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

041-014-000-076-300-PHO3A.JPG

Structure Documents:

DEP | January 30, | Plan Accompanying | 041-014-000-076-300-LIC3A

Structure Assessment Form

Property Owner: Local Location: Island Wharf Road Date: 6/6/2007

Presumed Structure Owner: Local Based On Comment:

Owner Name: Marion Earliest Structure Record: 1990 Estimated Reconstruction/Repair Cost: \$148,764.00

Length: 350 Top Elevation: FIRM Map Zone: 18 FIRM Map Elevation: VE
 Feet Feet NAVD 88 Feet NGVD



Primary Type: Bulkhead/ Seawall Primary Material: Stone Primary Height: Under 5 Feet
 Secondary Type: Secondary Material: Secondary Height:

Structure Summary :
 The stone wall is in fair condition. There is loss of fill behind and throughout the wall. Portions of the wall have concrete fill behind it, but there are still signs of fill loss. The wall is 2 feet wide at the top.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | I |
| <i>Rating</i> | Fair | <i>Rating</i> | None |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:
041-014-000-076-400-PHO4A.JPG
041-014-000-076-400-PHO4B.JPG

Structure Documents:
DEP January 30, Plan Accompanying 041-014-000-076-400-LIC4A

Structure Assessment Form

| | | | | |
|---------------------------|----------------------------|---------------------------------------|--|----------|
| Property Owner: | | Location: | | Date: |
| Local | | Silver Shell Beach | | 6/6/2007 |
| Presumed Structure Owner: | | Based On Comment: | | |
| Local | | | | |
| Owner Name: | Earliest Structure Record: | Estimated Reconstruction/Repair Cost: | | |
| Marion | 1970 | \$0.00 | | |

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 120 | | VE | 20 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Groin/ Jetty | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :
 Stone groin on the beach is in good condition. The stones are approximately 3 feet by 2 feet by 4 feet in size. The top width of the groin is 4 feet. There are no signs of erosion or stone movement. The groin protects a boat ramp and beach.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | A | <i>Priority</i> | I |
| <i>Rating</i> | Excellent | <i>Rating</i> | None |
| <i>Level of Action</i> | None | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

| |
|-------------------------------|
| 041-016-000-095-100-PHO1A.JPG |
| 041-016-000-095-100-PHO1B.JPG |

Structure Documents:

| | | | |
|--------|-------------|-------------------|---------------------------|
| USACE | September 1 | Proposed Stone | 041-016-000-095-100-COE1A |
| USACE | May 8, 1991 | Removal of Debris | 041-016-000-095-100-COE1B |
| MA-DCR | May 1970 | Proposed Shore | 041-016-000-095-100-DCR1A |

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|---|
| Property Owner: Local | Location: Silver Shell Beach | Date: 6/6/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Marion | Earliest Structure Record: 1991 | Estimated Reconstruction/Repair Cost: \$5,610.00 |

| | | | |
|-----------------------|--------------------------------|----------------------|--|
| Length: 85 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 20 Feet NGVD |
|-----------------------|--------------------------------|----------------------|--|



| | | |
|----------------------------|----------------------------|---------------------------------|
| Primary Type: Revetment | Primary Material: Stone | Primary Height: Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :

The stone revetment is in good condition. There is a parking area at the boat ramp. The revetment consists of 18 inch to 24 inch stones that are on a gradual slope. There are no signs of erosion or stone movement.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | I |
| <i>Rating</i> | Good | <i>Rating</i> | None |
| <i>Level of Action</i> | Minor | <i>Action</i> | Long Term Planning Considerations |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | No Inshore Structures or Residential Dwelling Units Present |

Structure Images:

041-016-000-095-200-PHO2A.JPG

Structure Documents:

USACE | May 8, 1991 | Removal of Debris | 041-016-000-095-200-COE2A

Structure Assessment Form

Property Owner:

Local

Location:

Silver Shell Beach

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Marion

Earliest Structure Record:

1991

Estimated Reconstruction/Repair Cost:

\$51,005.00

Length: Top Elevation: FIRM Map Zone: FIRM Map Elevation:

120

Feet Feet NAVD 88

Feet NGVD

Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:



Structure Summary :

Stone wall located at the edge of the beach along the parking area. The wall consists of dry stack stones that are 2 feet wide and 2 to 3 feet in height.

Condition

C

Rating

Fair

Level of Action

Moderate

Description

Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority

I

Rating

None

Action

Long Term Planning Considerations

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

041-016-000-095-300-PHO3A.JPG

041-016-000-095-300-PHO3B.JPG

Structure Documents:

USACE

May 8, 1991

Removal of Debris

041-016-000-095-300-COE3A

Structure Assessment Form

Property Owner:

Local

Location:

Silver Shell Beach

Date:

6/6/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Marion

Earliest Structure Record:

1954

Estimated Reconstruction/Repair Cost:

\$0.00

Length: Top Elevation: FIRM Map Zone: FIRM Map Elevation:

180
Feet Feet NAVD 88

VE 20
Feet NGVD

Primary Type:

Groin/ Jetty

Primary Material:

Stone

Primary Height:

5 to 10 Feet

Secondary Type:

Secondary Material:

Secondary Height:



Structure Summary :

The stone groin on the beach is in good condition. The stons are approximately 3 feet by 2 feet by 4 feet in size. The top width of the groin is 4 feet. There are no signs of erosion or stone movement.

Condition A
Rating Excellent
Level of Action None
Description Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm.

Priority I
Rating None
Action Long Term Planning Considerations
Description No Inshore Structures or Residential Dwelling Units Present

Structure Images:

041-016-000-096-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|--------------|----------------|---------------------------|
| USACE | July 16, 195 | Proposed Pier | 041-016-000-096-100-COE1A |
| USACE | September 1 | Proposed Stone | 041-016-000-096-100-COE1B |
| MA-DCR | May 1970 | Proposed Shore | 041-016-000-096-100-DCR1A |

Section IV - Marion

Part C

Structure Photographs

TOWN: MARION
 SOURCE: BCE - FIELD PHOTOGRAPHS
 LOCATION: Bourne Consulting Engineering
 DATE OF RESEARCH: SEPTEMBER 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|--------------------------------|--------------------------------|-------------------------------|--------------|-------------|---------------|--------|--------------------|---|
| 041-002-000-001C-100 | 041-002-000-001C-100-POH1A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-002-000-001C-100 | 041-002-000-001C-100-POH1B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-003-000-001-100 | 041-003-000-001-100-POH1A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-003-000-001-100 | 041-003-000-001-100-POH1B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-012-100 | 041-014-000-012-100-POH1A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-012-100 | 041-014-000-012-100-POH1B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-012-200 | 041-014-000-012-200-POH2A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-012-200 | 041-014-000-012-200-POH2B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-100 | 041-014-000-076-100-POH1A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-100 | 041-014-000-076-100-POH1B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-100 | 041-014-000-076-100-POH1C.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-200 | 041-014-000-076-200-POH2A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-300 | 041-014-000-076-200-POH3A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-400 | 041-014-000-076-400-POH4A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-014-000-076-400 | 041-014-000-076-400-POH4B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-016-000-095-100 | 041-016-000-095-100-POH1A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-016-000-095-100 | 041-016-000-095-100-POH1B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-016-000-095-200 | 041-016-000-095-200-POH2A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-016-000-095-300 | 041-016-000-095-300-POH3A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-016-000-095-300 | 041-016-000-095-300-POH3B.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 041-016-000-095-100 | 041-016-000-095-100-POH1A.JPG | | Bourne Consulting Engineering | Marion | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |

Massachusetts Coastal Infrastructure and Assessment



041-002-000-001C-100-PHO1A



041-002-000-001C-100-PHO1B



041-003-000-001-100-PHO1A



041-003-000-001-100-PHO1B



041-014-000-012-100-PHO1A



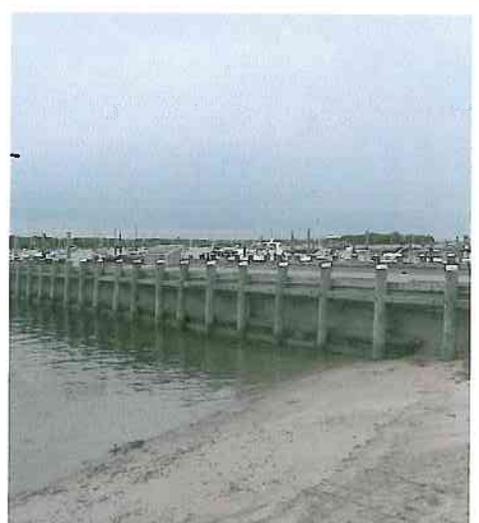
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041-014-000-012-200-PHO2A

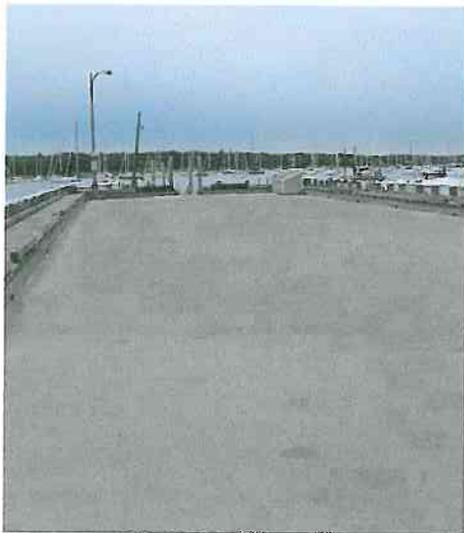


041-014-000-012-200-PHO2B



041-014-000-076-100-PHO1A

Massachusetts Coastal Infrastructure and Assessment



041-014-000-076-100-PHO1B



041-014-000-076-100-PHO1C



041-014-000-076-200-PHO2A



041-014-000-076-300-PHO3A



041-014-000-076-400-PHO4A



041-014-000-076-400-PHO4B



041-016-000-095-100-PHO1A



041-016-000-095-100-PHO1B



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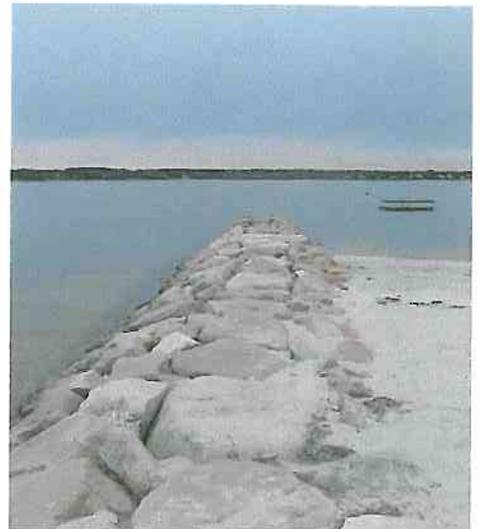
Massachusetts Coastal Infrastructure and Assessment



041-016-000-095-300-PHO3A



041-016-000-095-300-PHO3B



041-016-000-096-100-PHO1A

Section IV - Marion

Part D

Structure Documents

TOWN DOCUMENT LIST

MA DCR - DOCUMENT LIST

MA DEP – Ch 91 DOCUMENT LIST

- Copies of License Documents

USACE – PERMIT DOCUMENT LIST

- Copies of Permit Documents

No Town Documents for the Town of Marion

TOWN: MARION
SOURCE: TOWN OF MARION
LOCATION: TOWN
DATE OF RESEARCH: JUNE 2007

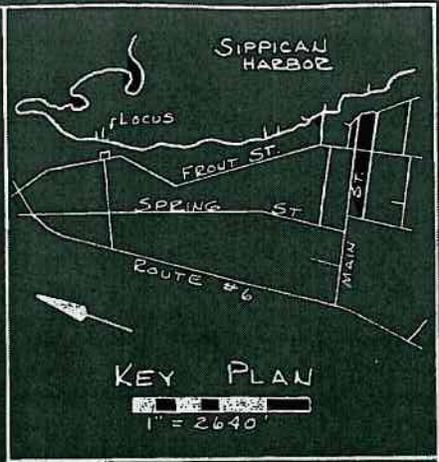
| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|------------------|-------------|--------------------------------|--------|--------------|------|-------|--------|----------|-------------|
|------------------|-------------|--------------------------------|--------|--------------|------|-------|--------|----------|-------------|

TOWN: MARION
 SOURCE: MA - DCR
 LOCATION: MA - DCR BOSTON and HINGHAM, MA
 DATE OF RESEARCH: JULY 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|---------------------------|--------------------------------|--------|--------------|----------|---|--------|---------------------|-------------|
| 041-016-000-095-100 | 041-016-000-095-100-DCR1A | 2705 | MA-DCR | Marion | May 1970 | Proposed Shore Protection - Reconstruction and Extension of Stone Groin - Sippican Harbor | 1 | End of Front Street | Groin |
| 041-016-000-096-100 | 041-016-000-096-100-DCR1A | 2705 | MA-DCR | Marion | May 1970 | Proposed Shore Protection - Reconstruction and Extension of Stone Groin - Sippican Harbor | 1 | End of Front Street | Groin |

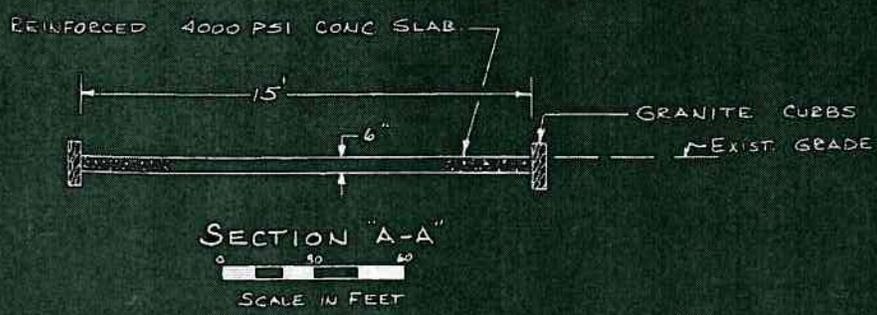
TOWN: MARION
 SOURCE: DEP
 LOCATION: BOSTON, MA
 DATE OF RESEARCH: JULY 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|---------------------|---------------------------|--------------------------------|--------|--------------|-------------------|---|--------|-------------------|---|
| 041-014-000-012-100 | 041-014-000-012-100-LIC1A | 6325 | DEP | Marion | January 1974 | Plan Accompanying Petition of Town of Marion to Construct a Small Boat Launching Ramp - Sippican Harbor at Marion, Massachusetts | 1 | Front Street | Construct Boat Ramp along Existing Wharfs |
| 041-014-000-012-100 | 041-014-000-012-100-LIC1B | 7267 | DEP | Marion | December 1998 | Plan Accompanying Petition of Town of Marion to License and Maintain a Boat Ramp, Pier, Float and Associated Protection Stone Around Ramp | 5 | Front Street | Protection Stone |
| 041-014-000-012-200 | 041-014-000-012-200-LIC2A | 6325 | DEP | Marion | January 1974 | Plan Accompanying Petition of Town of Marion to Construct a Small Boat Launching Ramp - Sippican Harbor at Marion, Massachusetts | 1 | Front Street | Construct Boat Ramp Along Existing Wharfs |
| 041-014-000-012-200 | 041-014-000-012-200-LIC2B | 7267 | DEP | Marion | December 16, 1998 | Plan Accompanying Petition of Town of Marion To License and Maintain a Boat Ramp, Pier, Float and Associated Protection Stone Around Ramp | 5 | Front Street | Protection Stone |
| 041-014-000-076-100 | 041-014-000-076-100-LIC1A | 2184 | DEP | Marion | January 30, 1990 | Plan Accompanying Petition of Town of Marion to Reface the Walls of the Existing Island Wharf in Sippican Harbor, Town of Marion, County of Plymouth, Massachusetts | 3 | Island Wharf Road | Refacing Bulkhead |
| 041-014-000-076-200 | 041-014-000-076-200-LIC2A | 2184 | DEP | Marion | January 30, 1990 | Plan Accompanying Petition of Town of Marion to Reface the Walls of the Existing Island Wharf in Sippican Harbor, Town of Marion, County of Plymouth, Massachusetts | 3 | Island Wharf Road | Reface Bulkhead |
| 041-014-000-076-200 | 041-014-000-076-200-LIC2B | 11552 | DEP | Marion | November 2006 | Plan Accompanying Petition of Town of Marion Mr. Michael Cormier, Harbormaster to License and Maintain Existing Seawall, Proposed Riprap and Beach Nourishment | 3 | Front Street | Riprap and Beach Nourishment |
| 041-014-000-076-300 | 041-014-000-076-300-LIC3A | 2184 | DEP | Marion | January 30, 1990 | Plan Accompanying Petition of Town of Marion to Reface the Walls of the Existing Island Wharf in Sippican Harbor, Town of Marion, County of Plymouth, Massachusetts | 3 | Island Wharf Road | Reface Bulkhead |
| 041-014-000-076-400 | 041-014-000-076-400-LIC4A | 2184 | DEP | Marion | January 30, 1990 | Plan Accompanying Petition of Town of Marion to Reface the Walls of the Existing Island Wharf in Sippican Harbor, Town of Marion, County of Plymouth, Massachusetts | 3 | Island Wharf Road | Reface Bulkhead |



Arthur C. Thompson

NOTE: ALL ELEVATIONS ARE IN FEET AND TENTHS AND REFER TO MEAN LOW WATER.



PLAN ACCOMPANYING PETITION OF
TOWN OF MARION
CONSTRUCT A SMALL BOAT LAUNCHING RAMP
SIPPICAN HARBOR
AT
MARION, MASS.
JANUARY 1974
ARTHUR C. THOMPSON, INC., ENGINEERS & SURVEYORS, MARION, MASS.

LICENSE PLAN NO. 6325
APPROVED BY DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
JANUARY 22, 1975
COMMISSIONER DEPT OF PUBLIC WORKS
ASSOCIATE COMMISSIONERS

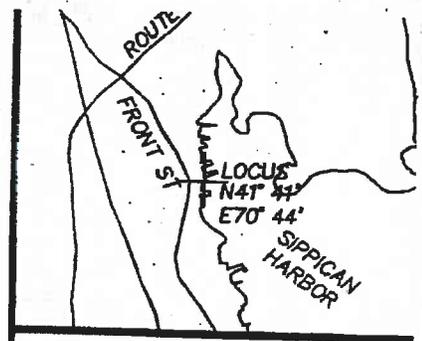
Bruce Campbell
Malcolm E. Hall
R. D. ...
James J. ...

041-014-000-012-100
041-014-000-012-200

041-014-000-011-100
-200

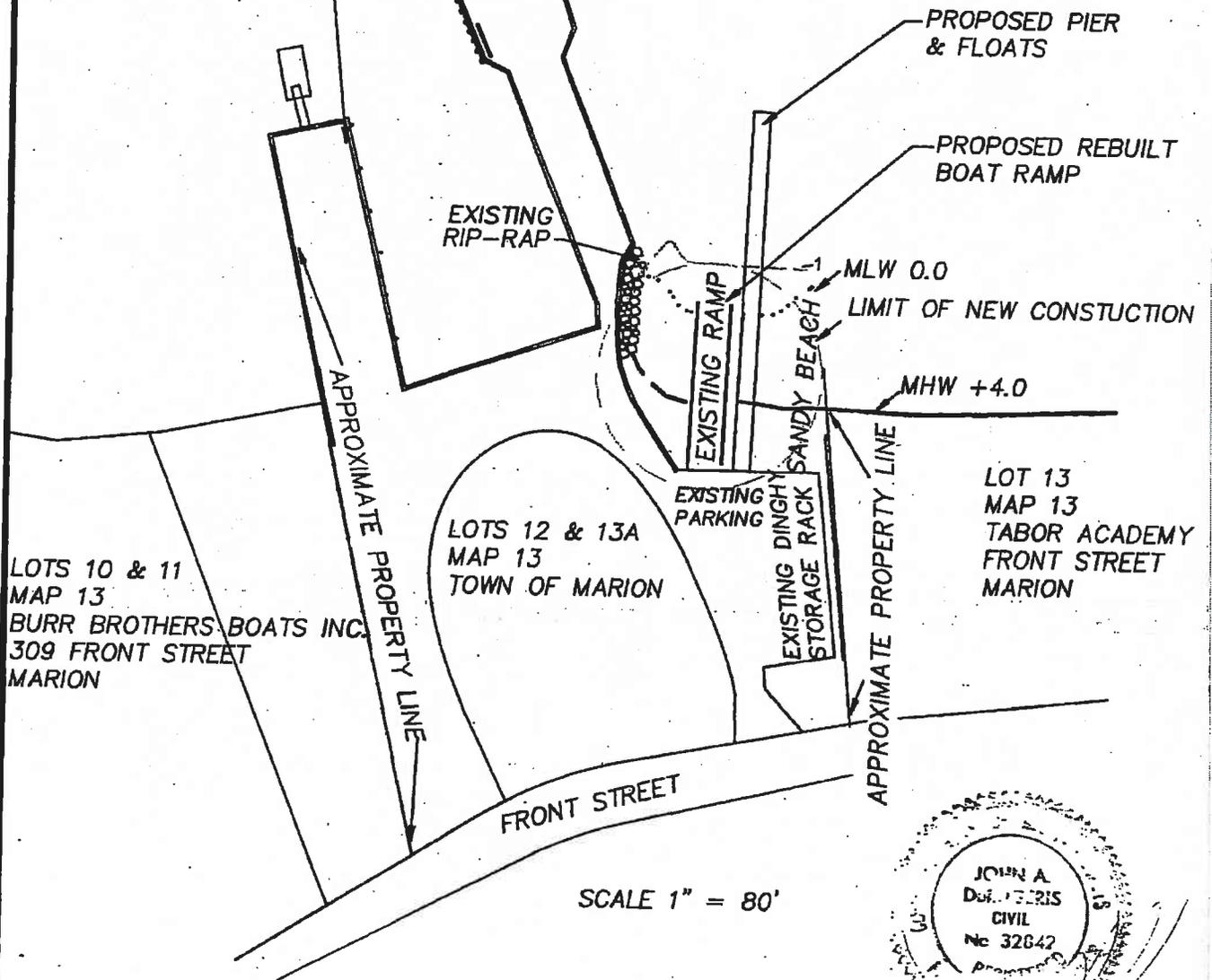
NOTES:

1. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED.
2. ALL ELEVATIONS REFER TO MEAN LOW WATER.
3. FLOOD ZONE = VE 18.



LOCUS PLAN
MARION QUAD

EXISTING WHARVES
NO OTHER STRUCTURAL
ALTERATIONS SINCE
JANUARY 1, 1984

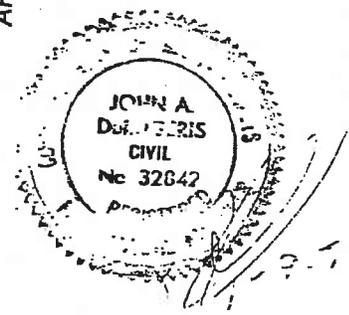


LOTS 10 & 11
MAP 13
BURR BROTHERS BOATS INC.
309 FRONT STREET
MARION

LOTS 12 & 13A
MAP 13
TOWN OF MARION

LOT 13
MAP 13
TABOR ACADEMY
FRONT STREET
MARION

SCALE 1" = 80'

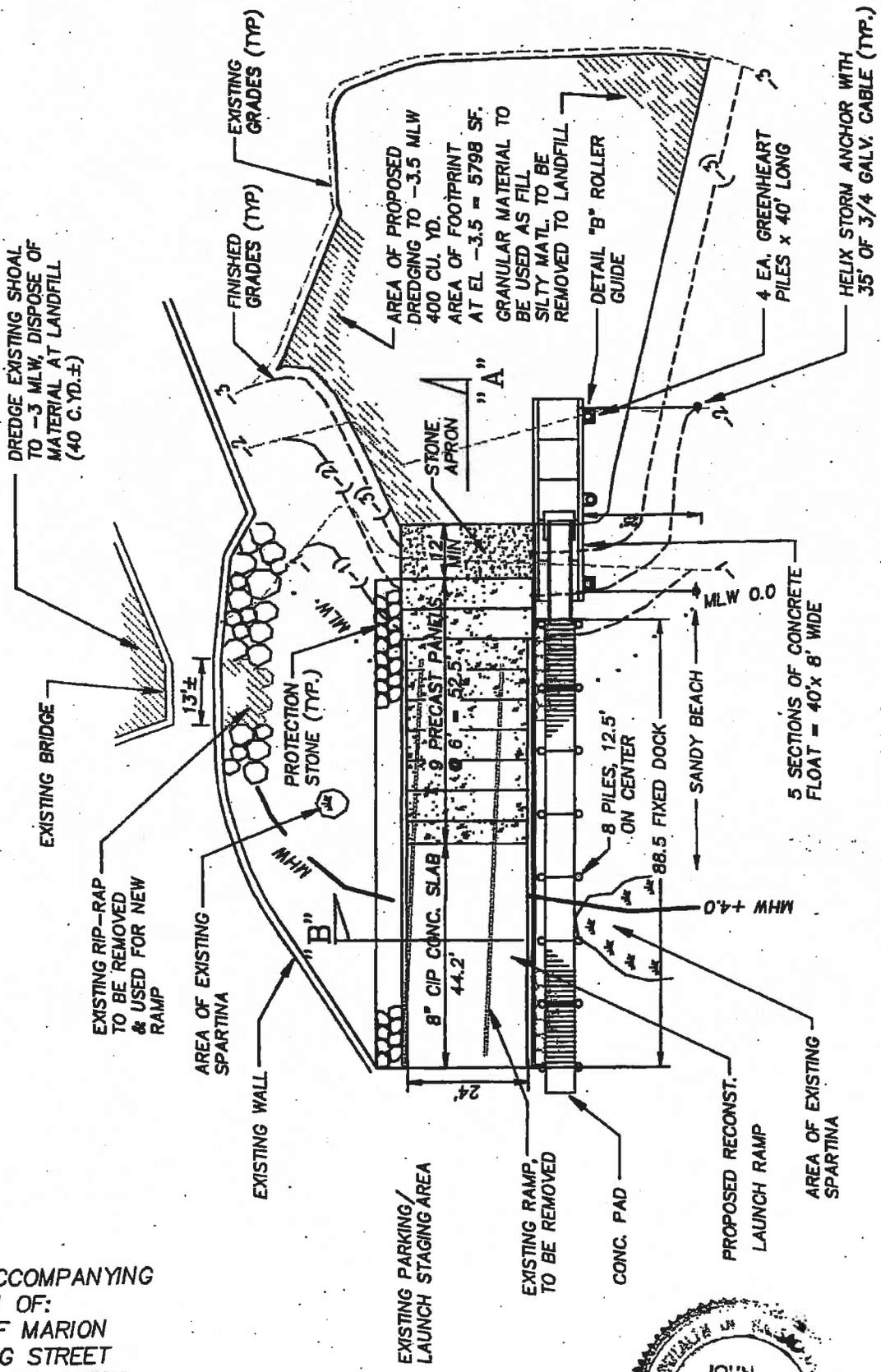


PLAN ACCOMPANYING
PETITION OF:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

TO LICENSE AND MAINTAIN A
BOAT RAMP, PIER, FLOAT
AND ASSOCIATED PROTECTION
STONE AROUND RAMP

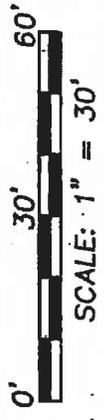
SEPT 2, 1996 PAGE 1 OF 6
REV: 1/7/98

LICENSE PLAN NO. **7267**
 Approved by Department of Environmental Protection
 of Massachusetts
Elizabeth A. Koubesca
David S. Smith
DEC 16 1998



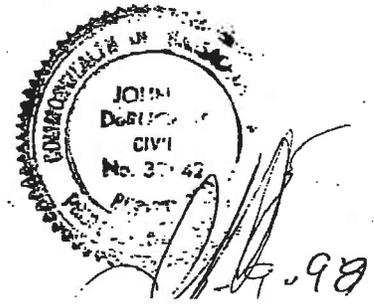
LICENSE PLAN NO. 7267
 Approved by Department of Environmental Protection
 Date:

SITE PLAN



PLAN ACCOMPANYING
 PETITION OF:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

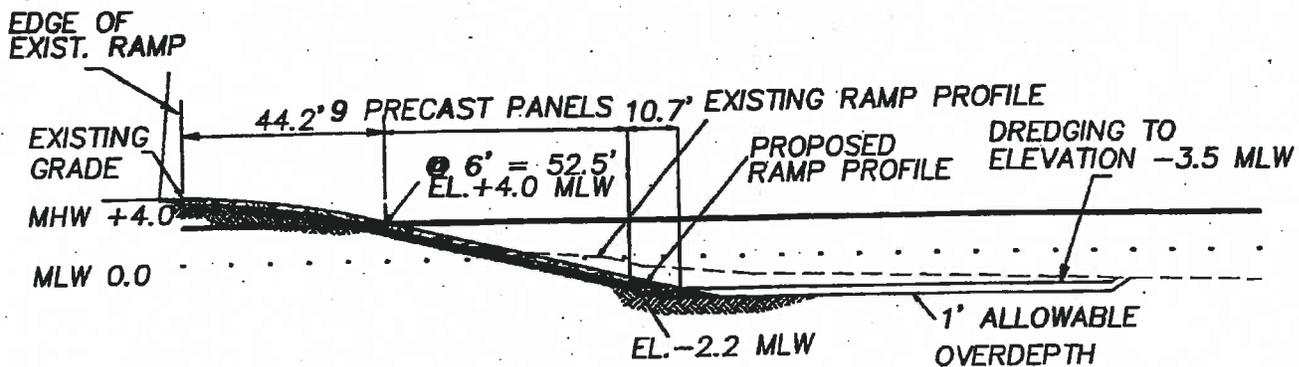
TO LICENSE AND MAINTAIN A
 BOAT RAMP, PIER, FLOAT
 AND ASSOCIATED PROTECTION
 STONE AROUND RAMP



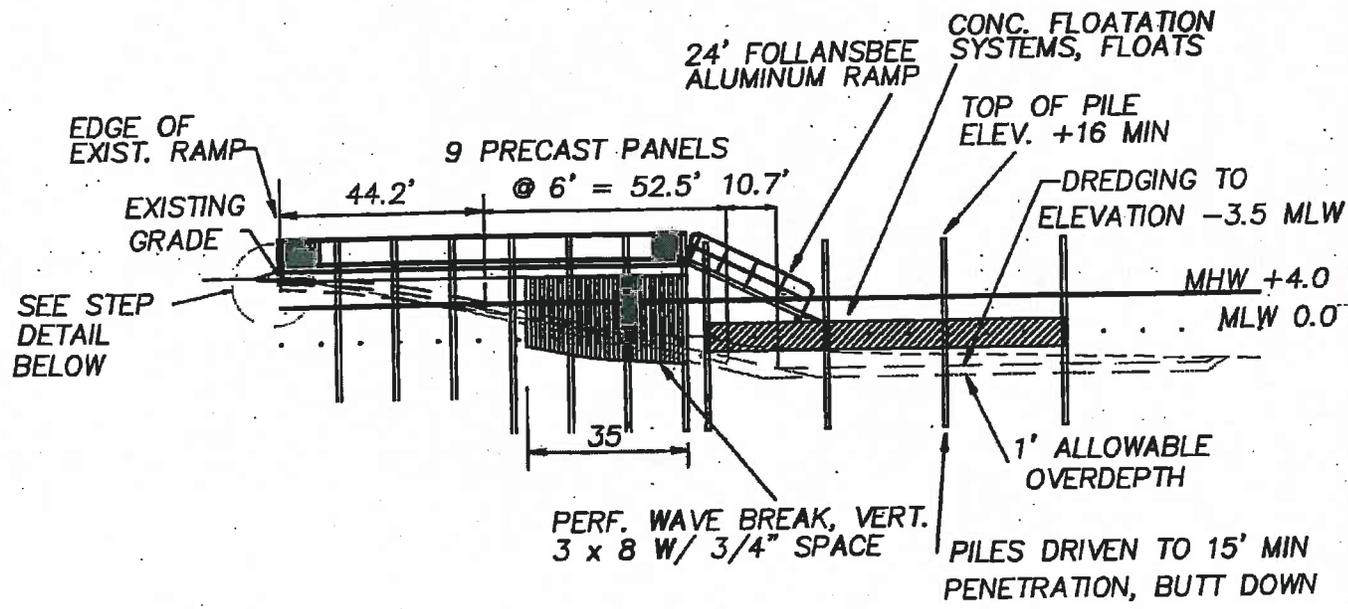
LICENSE PLAN NO. 7267

Approved by Department of Environmental Protection

Date: DEC 16 1998



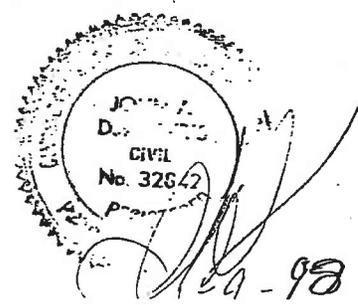
PROFILE of PROPOSED RAMP (SECTION "A")
SCALE 1" = 40' (VERT 1" = 20')



PROFILE of PROPOSED PIER (SECTION "A")
SCALE 1" = 40' (VERT 1" = 20')

PLAN ACCOMPANYING PETITION OF:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

TO LICENSE AND MAINTAIN A BOAT RAMP, PIER, FLOAT AND ASSOCIATED PROTECTION STONE AROUND RAMP

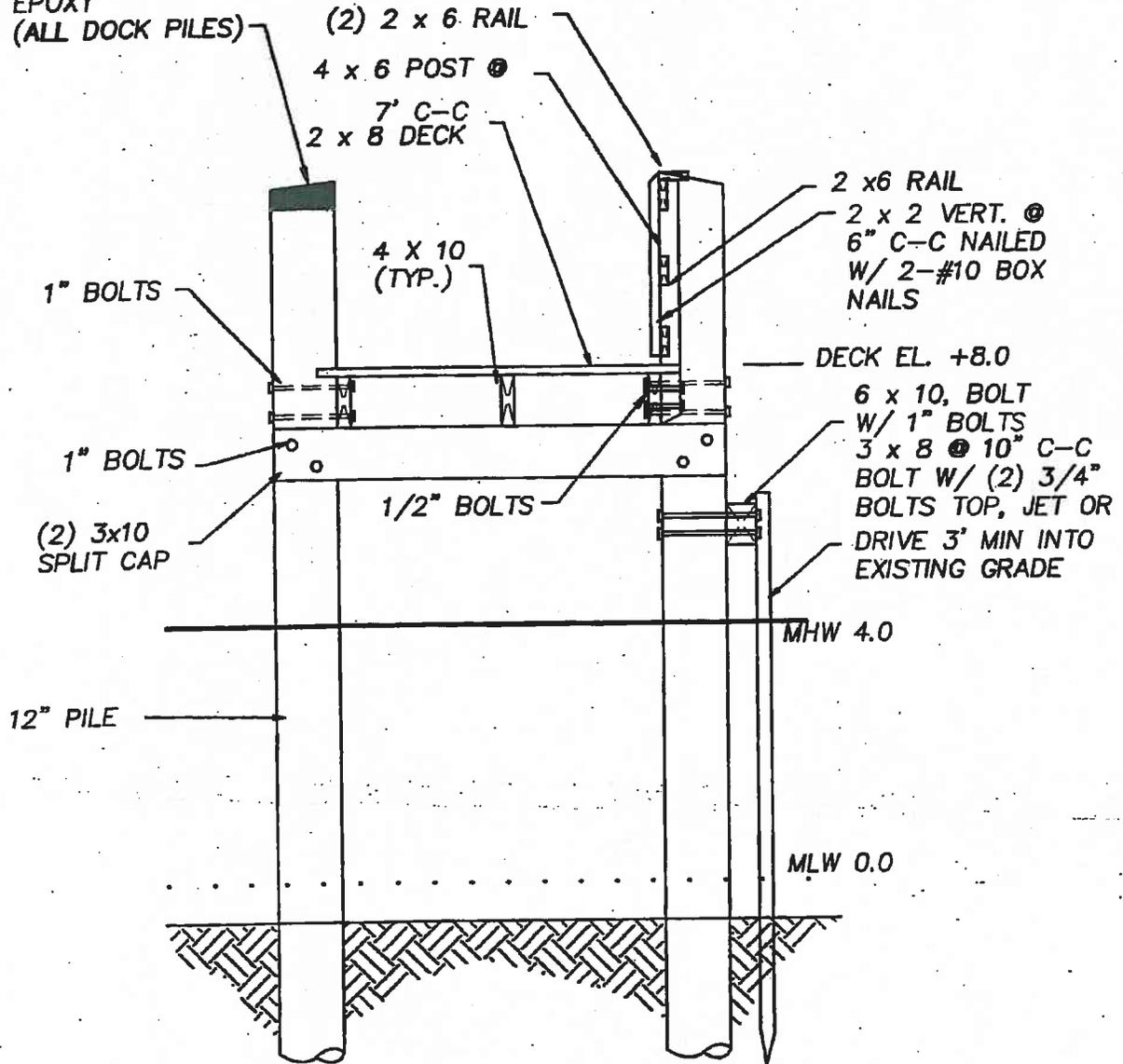


LICENSE PLAN NO. 7267

Approved by Department of Environmental Protection

Date: **DEC 16 1998**

ONE LAYER FIBERGL
MAT W/ 3 COATS
WHITE EPOXY
RESIN (ALL DOCK PILES)

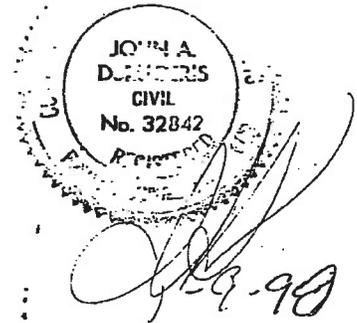


**PIER SECTION
WITH PERF. BREAKWATER**

SCALE 1" = 3/8"

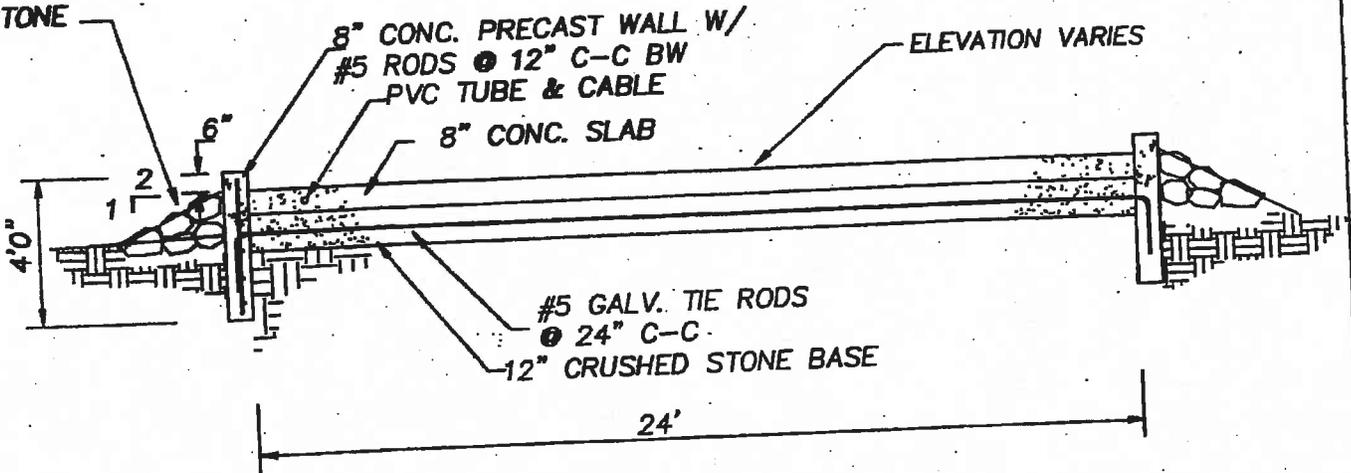
PLAN ACCOMPANYING
PETITION OF:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

TO LICENSE AND MAINTAIN A
BOAT RAMP, PIER, FLOAT
AND ASSOCIATED PROTECTION
STONE AROUND RAMP

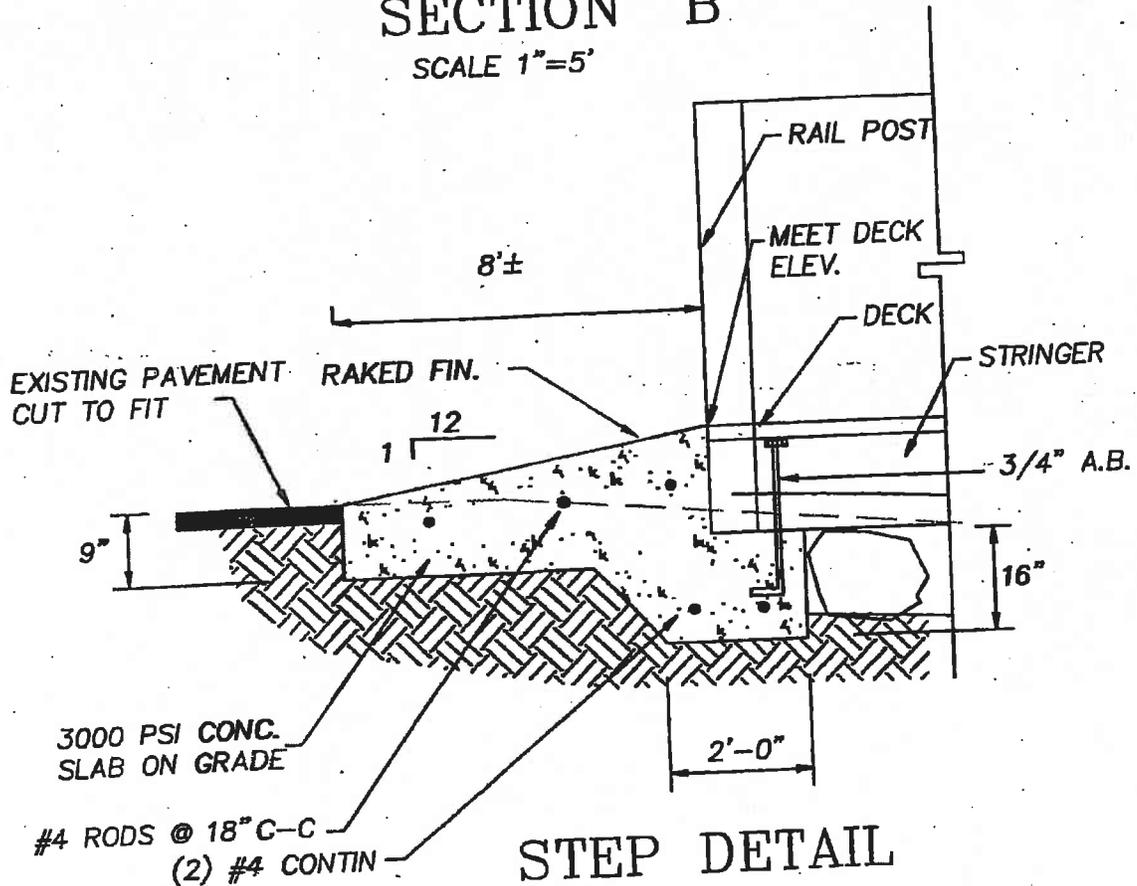


LICENSE PLAN NO. 7261
 Approved by Department of Environmental Protection
 Date: DEC 16 1998

100 - 150#
 PROTECTION
 STONE



SECTION "B"
 SCALE 1"=5'

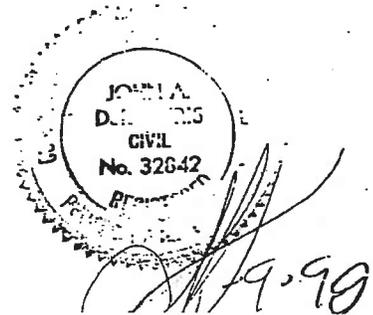


STEP DETAIL

NTS

PLAN ACCOMPANYING
 PETITION OF:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

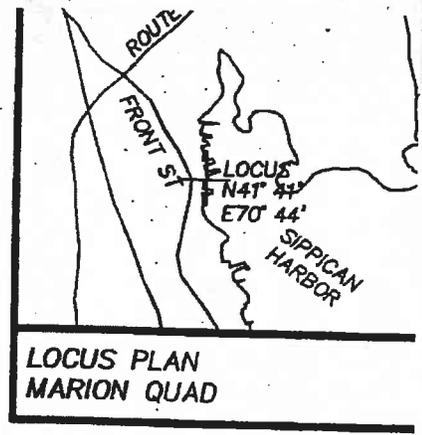
TO LICENSE AND MAINTAIN A
 BOAT RAMP, PIER, FLOAT
 AND ASSOCIATED PROTECTION
 STONE AROUND RAMP



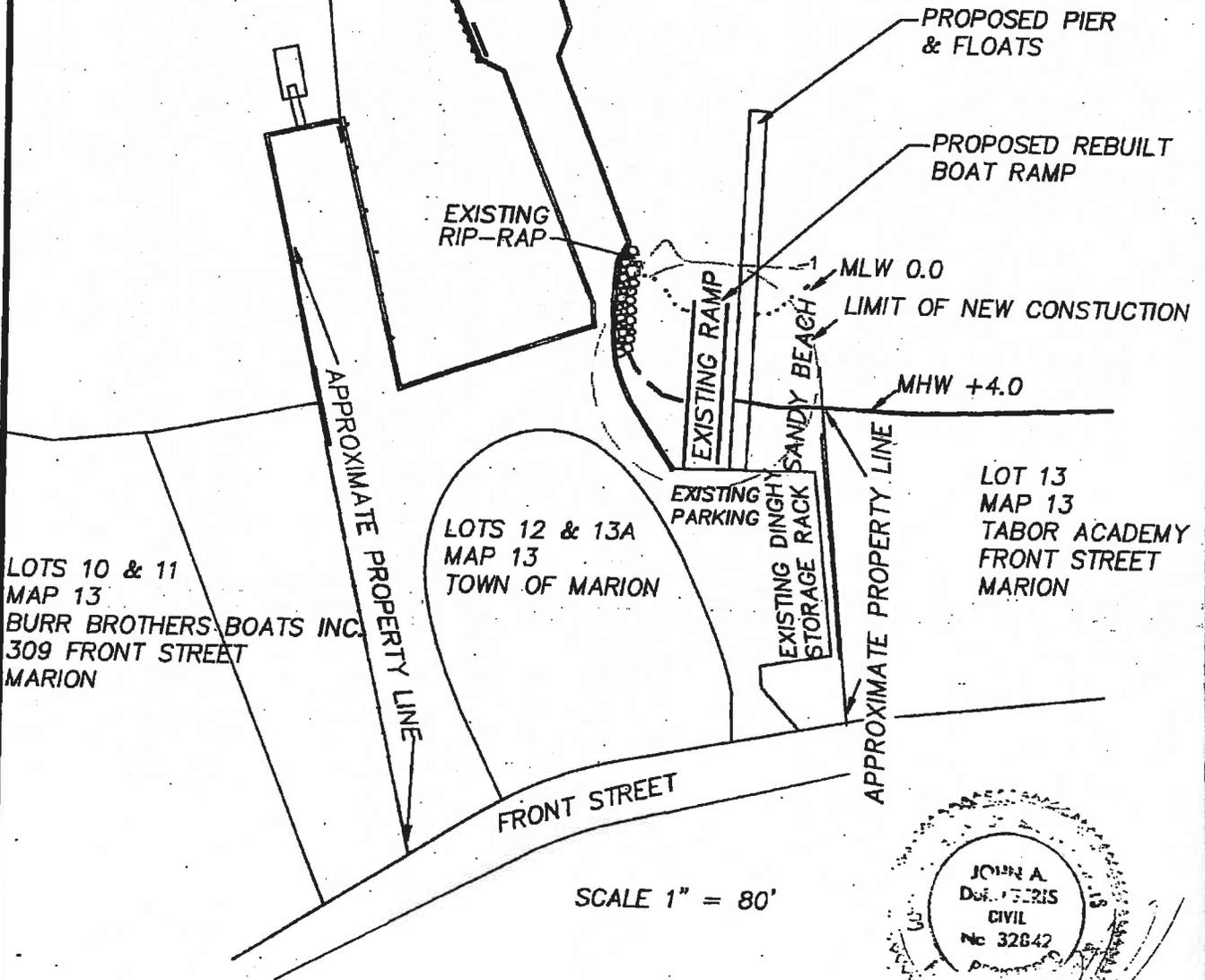
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NOTES:

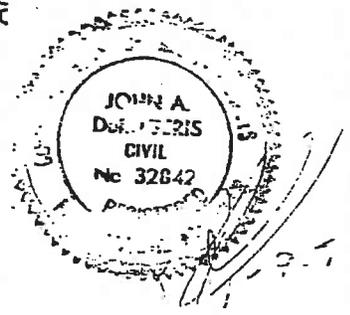
- 1. NO RECORD OF HISTORIC HIGH WATER LINE COULD BE LOCATED.
- 2. ALL ELEVATIONS REFER TO MEAN LOW WATER.
- 3. FLOOD ZONE = VE 18.



EXISTING WHARVES
NO OTHER STRUCTURAL
ALTERATIONS SINCE
JANUARY 1, 1984



SCALE 1" = 80'



PLAN ACCOMPANYING
PETITION OF:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

TO LICENSE AND MAINTAIN A
BOAT RAMP, PIER, FLOAT
AND ASSOCIATED PROTECTION
STONE AROUND RAMP

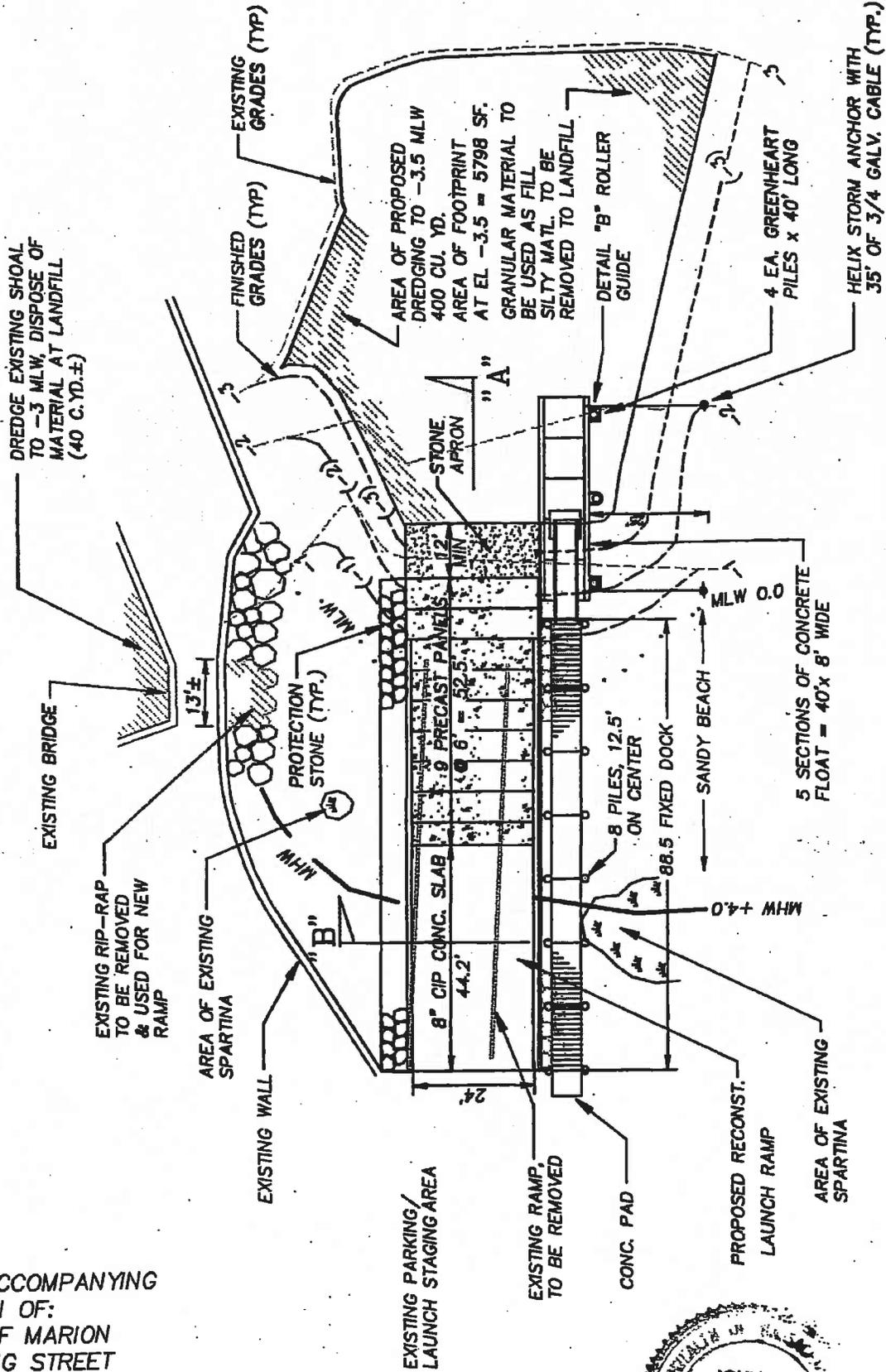
SEPT 2, 1996 PAGE 1 OF 6
REV: 1/7/98

LICENSE PLAN NO. **7267**

Approved by Department of Environmental Protection
of Massachusetts

Elizabeth A. Kulisheras
David S. Smith

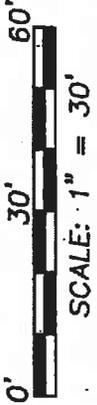
DEC 16 1998



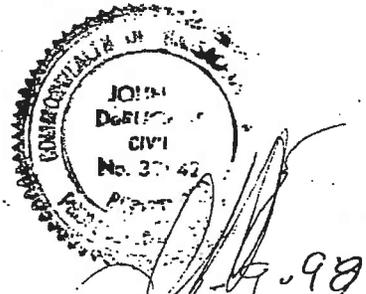
PLAN ACCOMPANYING
 PETITION OF:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

TO LICENSE AND MAINTAIN A
 BOAT RAMP, PIER, FLOAT
 AND ASSOCIATED PROTECTION
 STONE AROUND RAMP

SITE PLAN



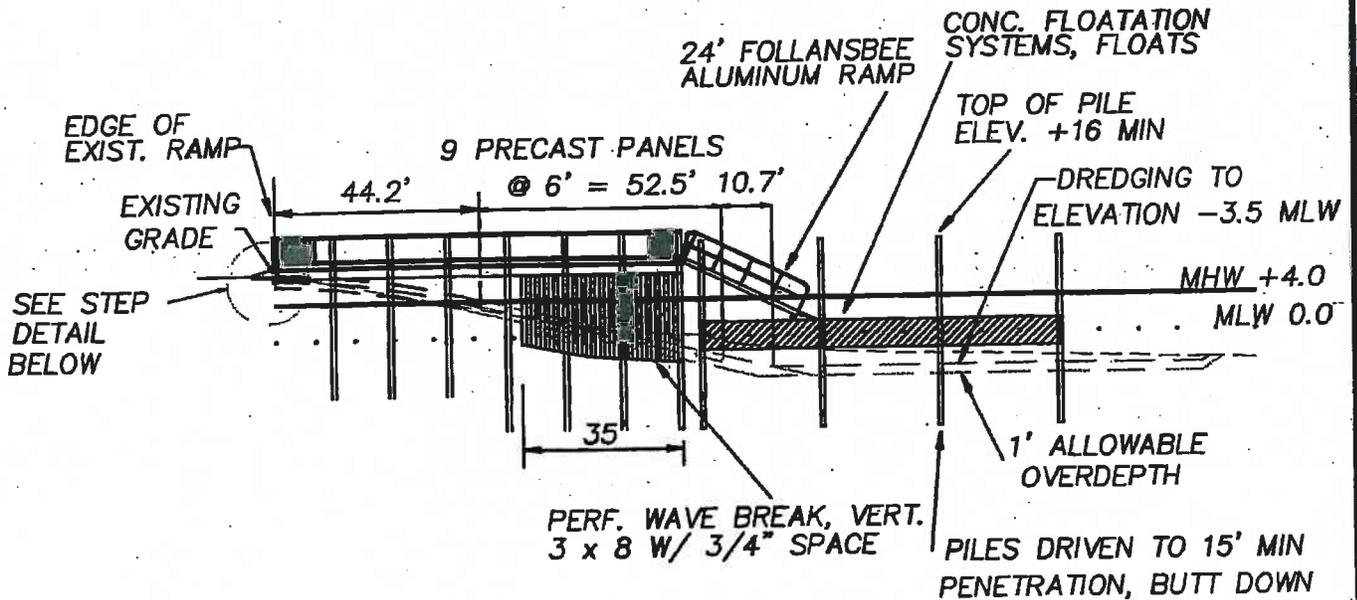
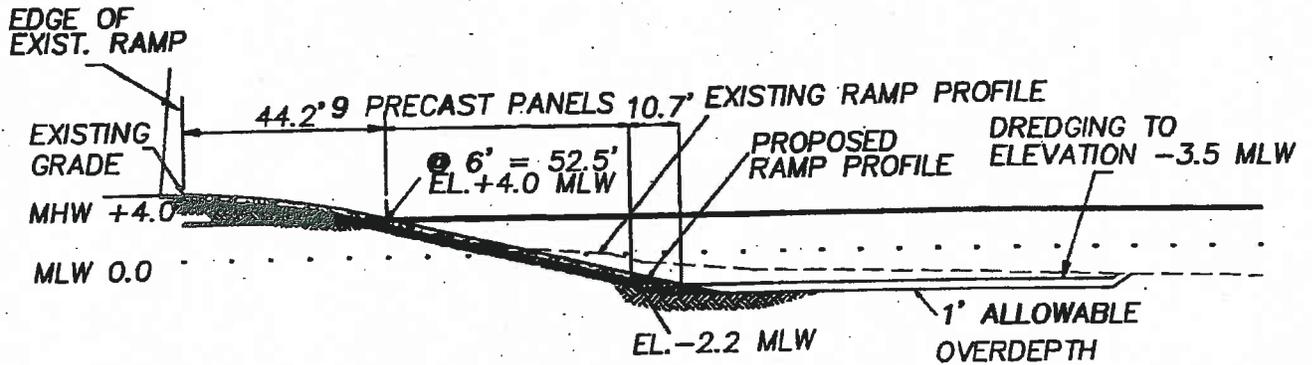
LICENSE PLAN NO. 7267
 Approved by Department of Environmental Protection
 Date:



LICENSE PLAN NO. 7267

Approved by Department of Environmental Protection

Date: DEC 16 1998



PLAN ACCOMPANYING
PETITION OF:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

TO LICENSE AND MAINTAIN A
BOAT RAMP, PIER, FLOAT
AND ASSOCIATED PROTECTION
STONE AROUND RAMP

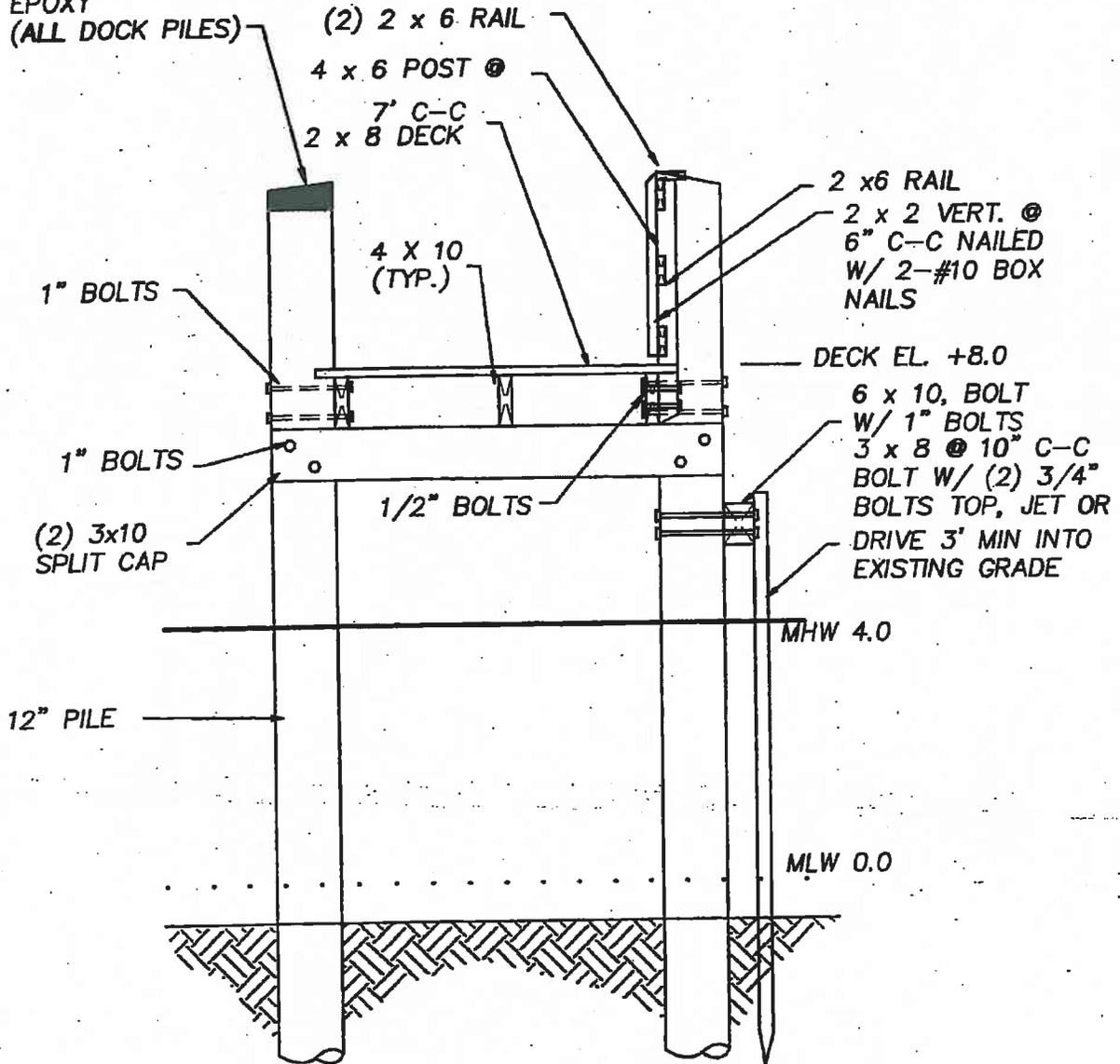


LICENSE PLAN NO. 7261

Approved by Department of Environmental Protection

Date: **DEC 16 1998**

ONE LAYER FIBERGL
MAT W/ 3 COATS
WHITE EPOXY
RESIN (ALL DOCK PILES)

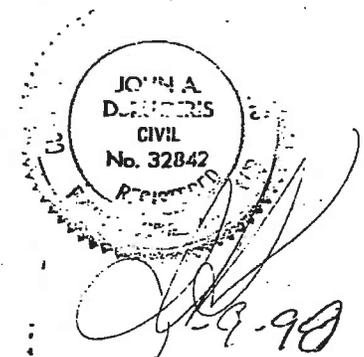


**PIER SECTION
WITH PERF. BREAKWATER**

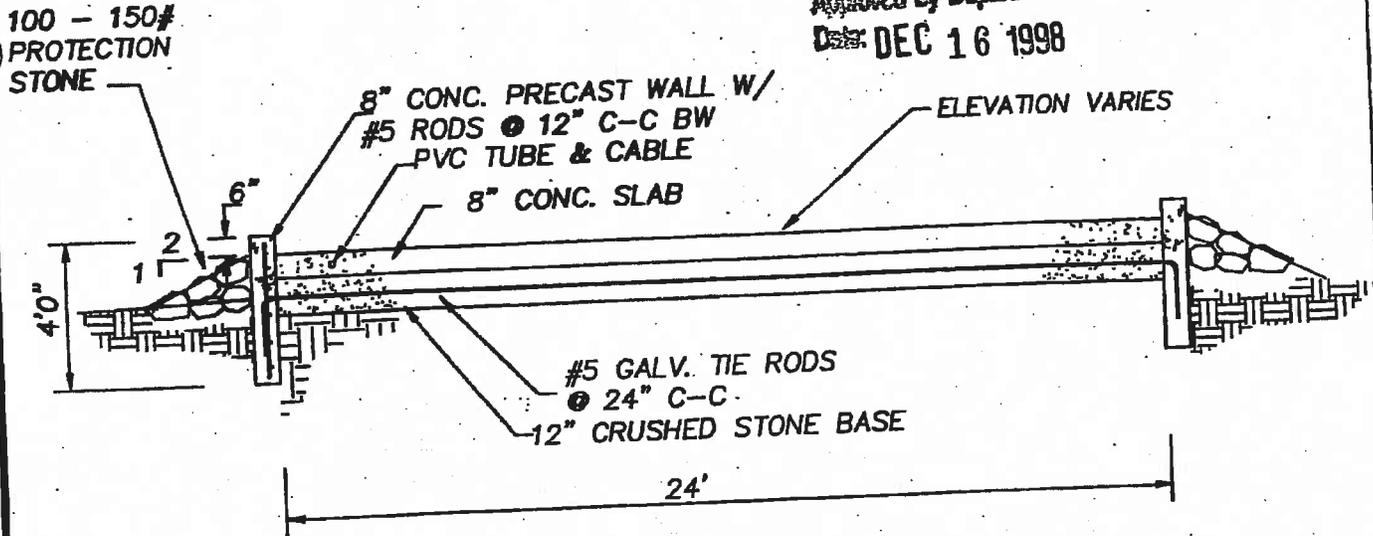
SCALE 1" = 3/8"

PLAN ACCOMPANYING
PETITION OF:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

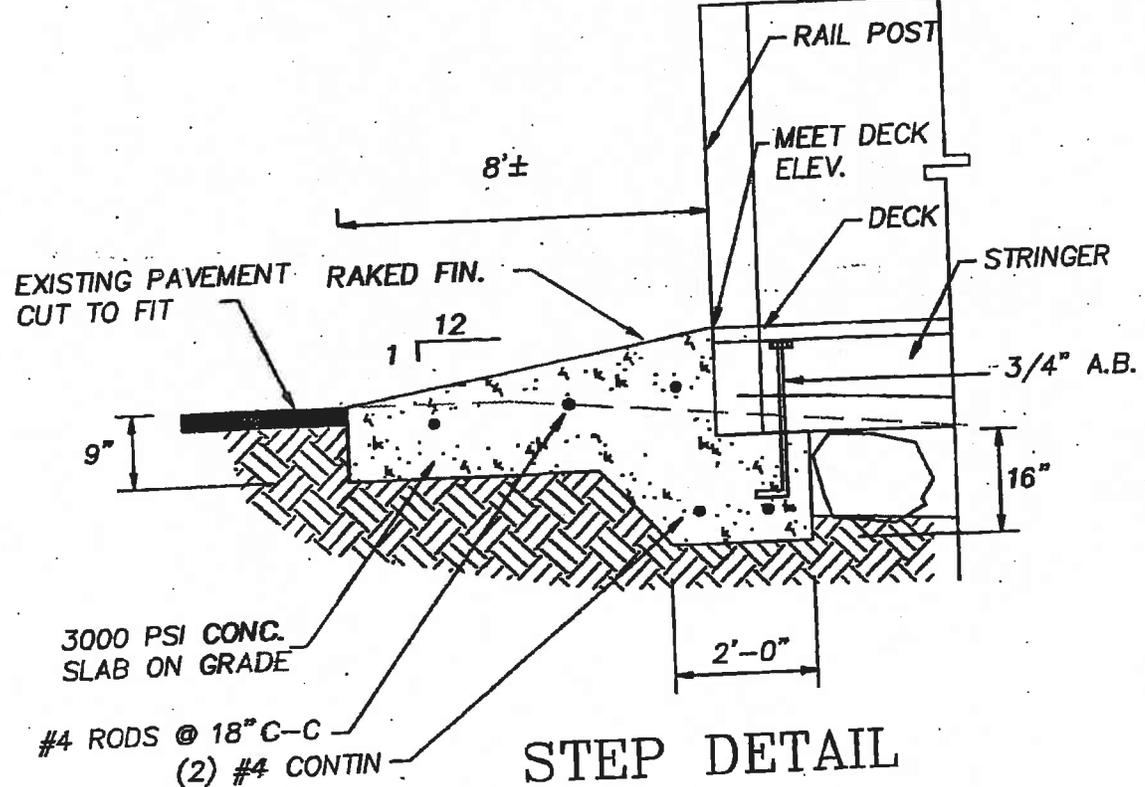
TO LICENSE AND MAINTAIN A
BOAT RAMP, PIER, FLOAT
AND ASSOCIATED PROTECTION
STONE AROUND RAMP



LICENSE PLAN NO. 7261
 Approved by Department of Environmental Protection
 Date: DEC 16 1998



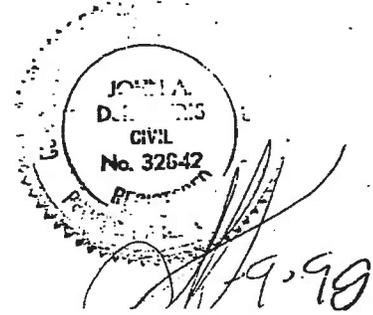
SECTION "B"
 SCALE 1"=5'

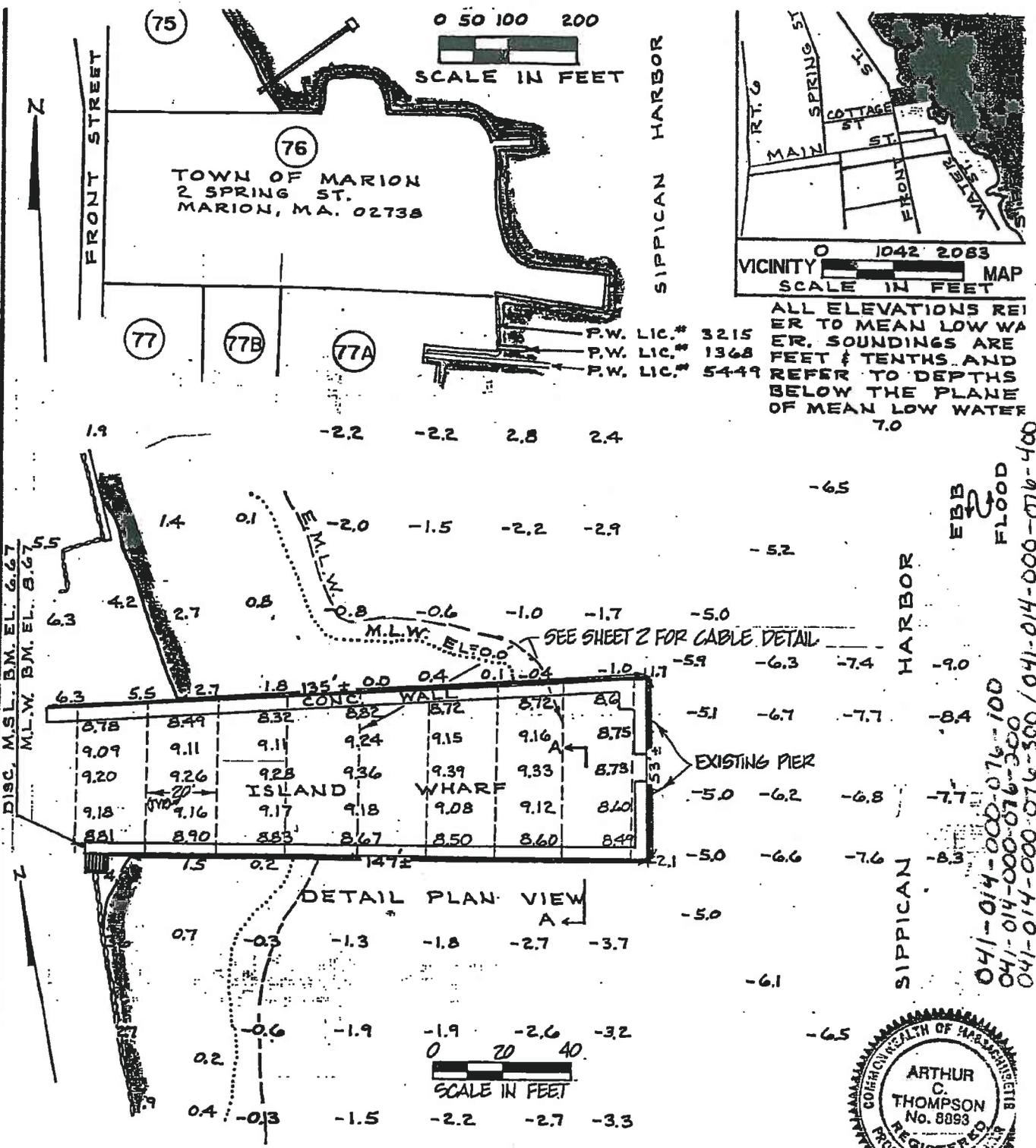


STEP DETAIL
 NTS

PLAN ACCOMPANYING
 PETITION OF:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

TO LICENSE AND MAINTAIN A
 BOAT RAMP, PIER, FLOAT
 AND ASSOCIATED PROTECTION
 STONE AROUND RAMP





PLAN ACCOMPANYING PETITION OF
TOWN OF MARION
 TO REFACE THE WALLS OF
 THE EXISTING ISLAND WHARF
 IN
SIPPICAN HARBOR
 TOWN OF MARION
 COUNTY OF PLYMOUTH, MA.
 OCTOBER 17, 1988 SCALE AS NOTED.
 ARTHUR C. THOMPSON, INC.
 ENGINEERS & SURVEYORS
 MARION, MA.

SHEET 1 OF 3 SHEETS
 LICENSE PLAN NO. 2184
 Approved by Department of Environmental Protection
 of Massachusetts
 [Signature]
 COMMISSIONER
 [Signature]
 DEPUTY DIRECTOR
 [Signature]
 SECTION CHIEF
 JAN 30 1990



REV. OCT. 13, 1989
 REV. MAR. 10, 1989
 REV. DEC. 14, 1988

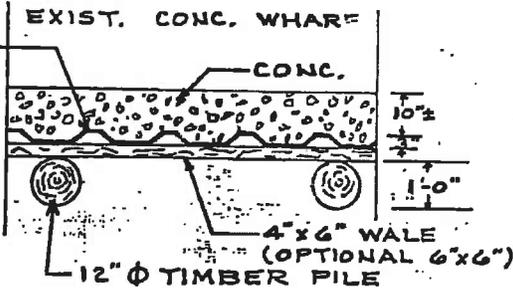
EBB FLOOD
 041-014-000-076-100
 041-014-000-076-300
 041-014-000-076-500 / 041-014-000-076-400

SECTION B-B

0 2 4

SCALE IN FEET

STEEL 3" SHEETPIILING
2 COATS COAL TAR EPOXY
OUTSIDE SURF.
I 22 (INLAND STL.) OR EQUAL
375 LINEAL FT.



NOTE:
ALL FENDER SYSTEM BOLTS TO BE 1" Ø AND HAVE WASHERS UNDER NUT AND HEAD AND ASTM A325 HI-STRENGTH.

CLIP ANGLE W/ CONC. ANCHOR & BOLT.

CAP FILES TO 4" BELOW TOP WITH EPOXY-FIBERGLASS

WOOD DECK PRESS. TREATED 100%

SEE SECTION C-C ON SHEET 3 FOR DETAIL.

EXIST. SURFACE OF WHARF TO BE REMOVED, ALL VOIDS FILLED WITH CRUSHED STONE & REPAVED

10" x 10" WALE
12" Ø TIMBER PILE @ 6'-0" O.C. PRESS. 1' TREATED SOUTHERN YELLOW PINE (TYP.) 24±

UNDERCUT & SLOPE TO SHED WATER

4" x 6" WALE (TYP.)

STL. SHEET PILING (3") APPROX. 230 SECTIONS 13'-6" LONG (I 22)

LENGTH OF PILING B 20' (TYPICAL)

3000 P.S.I. CONC. PUMP OR TREMIE AS REQ'D.

2.0 M.S.L.

0.0 M.L.W.

8'-0" MIN.

NOTE:
CABLE TIE EYE BOLTS TO BE 1 5/8" Ø.

NOTE: A

SEMI FLEXIBLE CABLE DATA IS A GALVANIZED, FLOW STEEL, 6x7 CLASS STANDARD COARSE CABLE W/ 1x7 WIRE STRAND CORE. THE WIRE ENDS WILL BE ATTACHED TO EYE BOLTS W/ MINIMUM OF 4 U-BOLT CLIPS 1 1/2" Ø SPACED 8 3/4" APART W/ SUITABLE THIMBLES. AFTER INSTALLATION A OVERCOATING W/ EPOXY WILL BE ADDED FOR ADDITIONAL PROTECTION.

**TOWN OF MARION
SIPPICAN HARBOR
MARION, MA.**

OCTOBER 17, 1988

REVISED: DECEMBER 14, 1988
REVISED: MARCH 10, 1989
REVISED: JULY 11, 1989
REVISED: OCTOBER 13, 1989

ADJACENT PROPERTY OWNERS

MARION ASSESSORS PLAT 14

LOT 75

TITUS, DAVID B. & SUSAN H.

173 FRONT STREET

MARION, MA. 02738

LOT 76

TOWN OF MARION

LOT 77

DAVIS, EVERETT M. & PHYLLIS J.

43 COVE STREET

MARION, MA. 02738

LOT 77A

COULSON, ELIZABETH B. &

FIRST NATIONAL BANK OF NEW

BEDFORD TR., 31 SOUTH STREET

MARION, MA. 02738

LOT 77B

HILLER, JAY E. &

HILLER, BRUCE T., TRUSTEES

54 PLEASANT STREET

MARION, MA. 02738

NOTE: ALL FASTENERS & HARDWARE SHOULD BE HOT-DIPPED GALVANIZED AND COATED WITH A PROTECTIVE PAINT AFTER INSTALLATION.

SECTION A-A

0 2 4

SCALE IN FEET

4.0 M.H.W.

2.0 M.S.L.

0.0 M.L.W.



Arthur C. Thompson

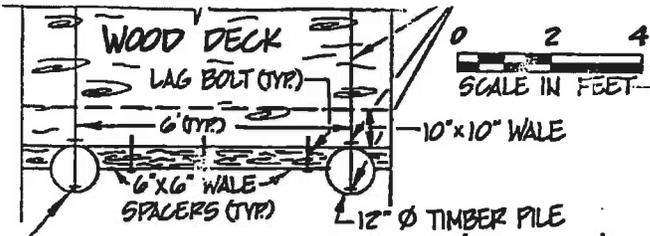
SHEET 2 OF 3 SHEETS

LICENSE PLAN NO. 2184

Approved by Department of Environmental Protection

Date: **JAN 30 1990**

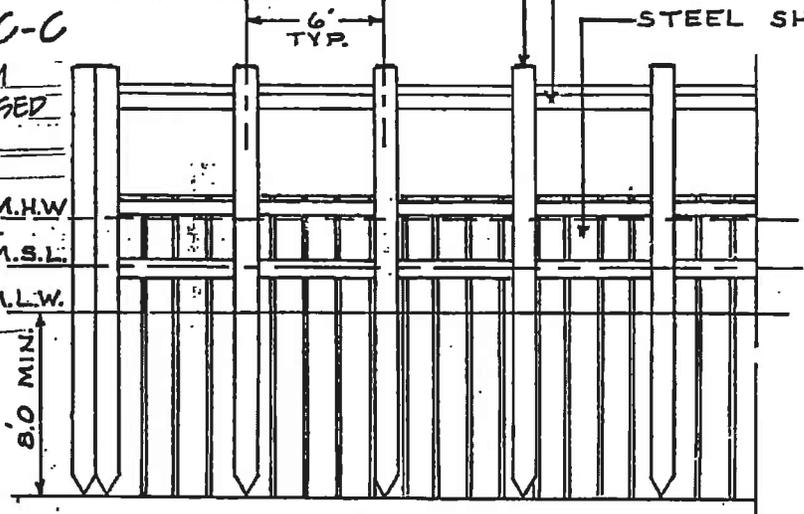
041-014-000-076-100 / 041-014-000-076-300 / 041-014-000-076-400



PILE FOR UNDER 6' O.C. FOR OVER 6' O.C. INCREASE TO 1" Ø THREADED ROD. DRILL THRU CONCRETE WITH 10"x10"x1/2" STEEL PLATE AGAINST CONCRETE.

SECTION C-C
NOTE: 2" MINIMUM WASHER TO BE USED ON EACH END OF THREADED ROD

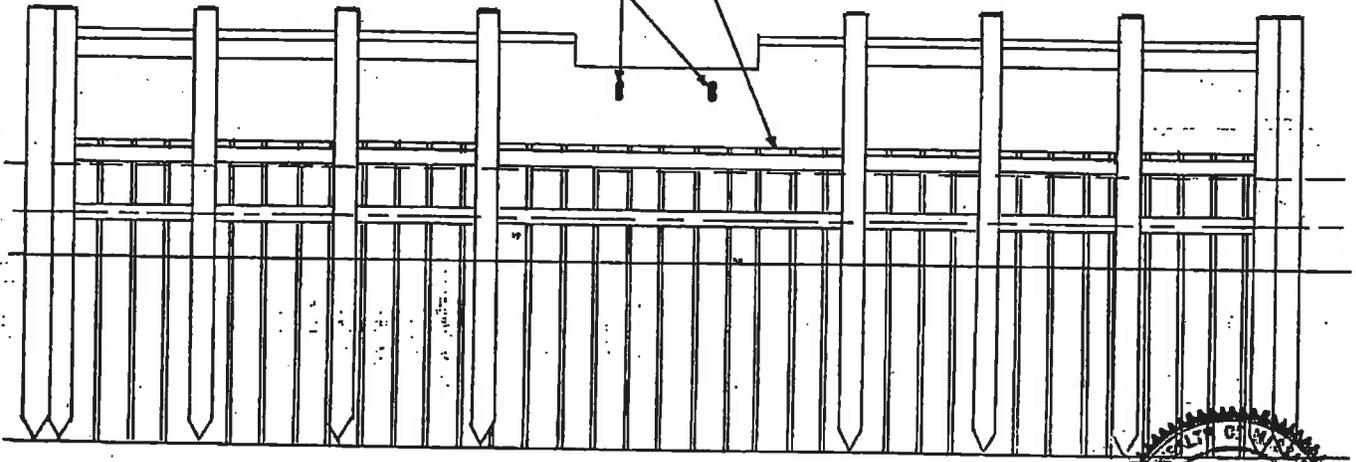
4.0 M.H.W.
2.0 M.S.L.
0.0 M.L.W.
8.0 MIN.



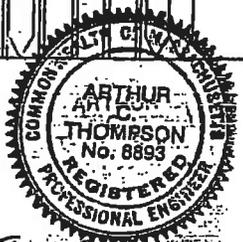
PROFILE-NORTH SIDE



PILE CAP ELEVATION
EYE BOLTS



PROFILE-EAST SIDE

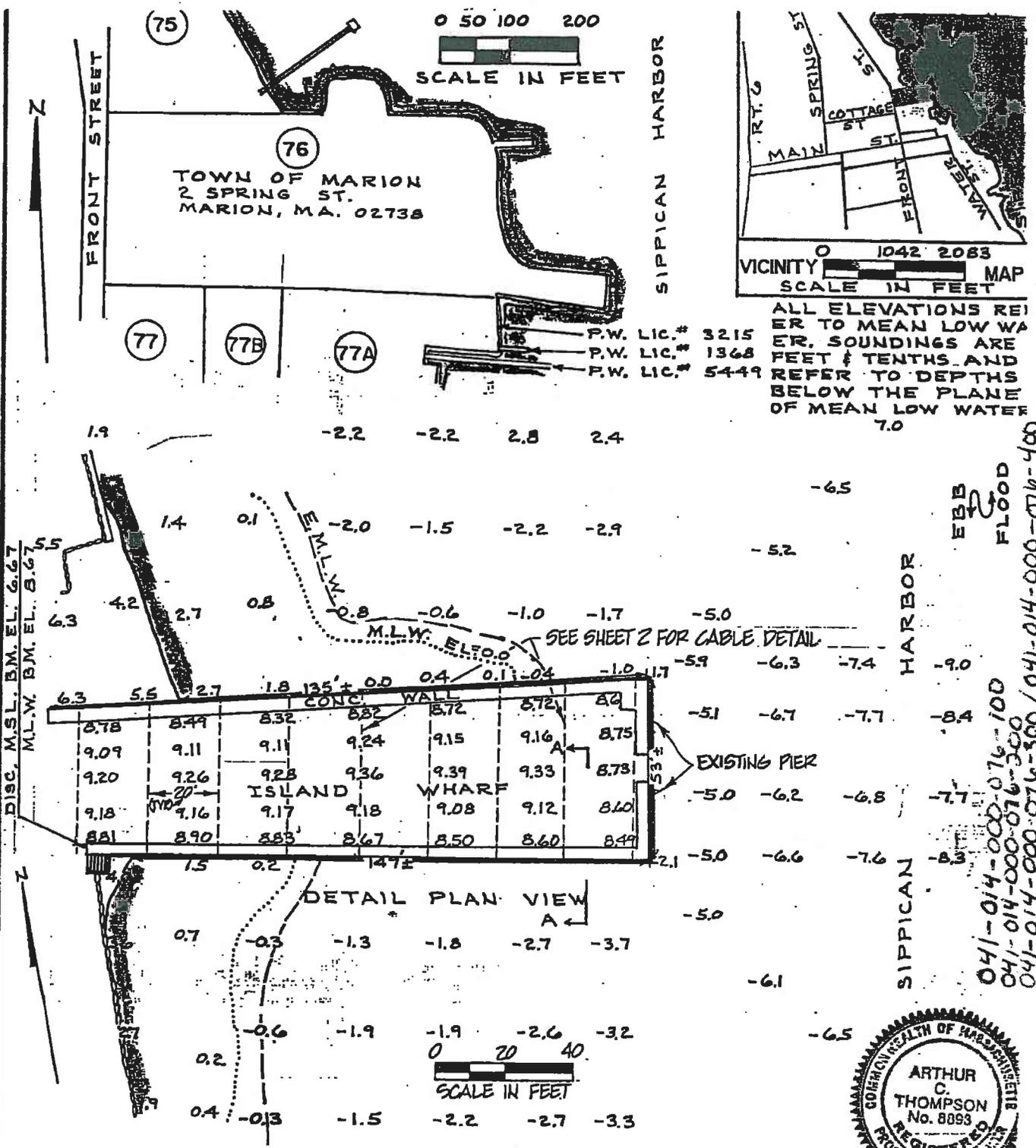


041-014-000-076-100
041-014-000-076-200
041-014-000-076-300
041-014-000-076-400

SHEET 3 OF 3 SHEETS

REVISED: DECEMBER 15, 1989
TOWN OF MARION
SIPPICAN HARBOR
MARION, MA.
OCTOBER 17, 1988
REVISED: DECEMBER 14, 1988
REVISED: MARCH 10, 1989
REVISED: OCTOBER 12, 1989

LICENSE PLAN NO. 2184
Approved by Department of Environmental Protection
Date: JAN 30 1990



PLAN ACCOMPANYING PETITION OF
TOWN OF MARION
 TO REFACE THE WALLS OF
 THE EXISTING ISLAND WHARF
 IN
SIPPICAN HARBOR
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 COUNTY OF PLYMOUTH, MA.
 OCTOBER 17, 1988 SCALE AS NOTED
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 ENGINEERS & SURVEYORS
 MARION, MA.

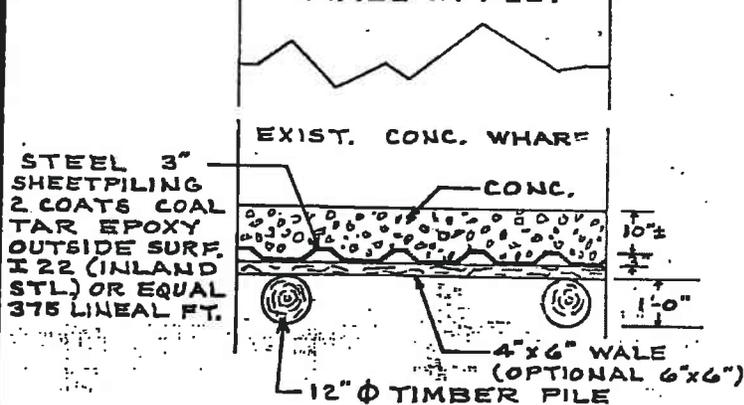
SHEET 1 OF 3 SHEETS
 LICENSE PLAN NO. 2184
 Approved by Department of Environmental Protection
 of Massachusetts
 COMMISSIONER
 EMILSON DIRECTOR
 SECTION CHIEF
 JAN 30 1990

REV. OCT. 13, 1989
 REV. MAR. 10, 1989
 REV. DEC. 14, 1988

SECTION B-B

0 2 4

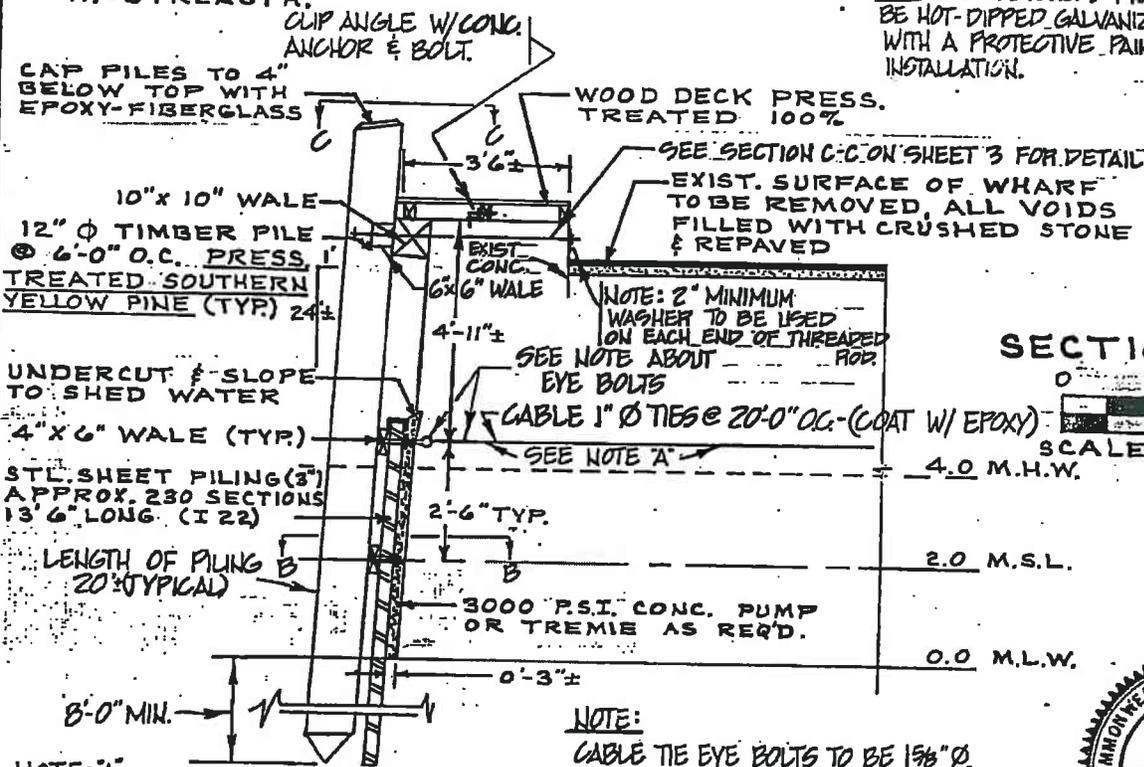
SCALE IN FEET



NOTE:
ALL FENDER SYSTEM BOLTS TO BE 1" Ø AND HAVE WASHERS UNDER NUT AND HEAD AND ASTM A325 HI-STRENGTH.

ADJACENT PROPERTY OWNERS
 MARION ASSESSORS PLAT 14
 LOT 75
 TITUS, DAVID B. & SUSAN H.
 173 FRONT STREET
 MARION, MA. 02738
 LOT 76
 TOWN OF MARION
 LOT 77
 DAVIS, EVERETT M. & PHYLLIS J.
 43 COVE STREET
 MARION, MA. 02738
 LOT 77A
 COULSON, ELIZABETH B. &
 FIRST NATIONAL BANK OF NEW
 BEDFORD TR., 31 SOUTH STREET
 MARION, MA. 02738
 LOT 77B
 HILLER, JAY E. &
 HILLER, BRUCE T., TRUSTEES
 54 PLEASANT STREET
 MARION, MA. 02738

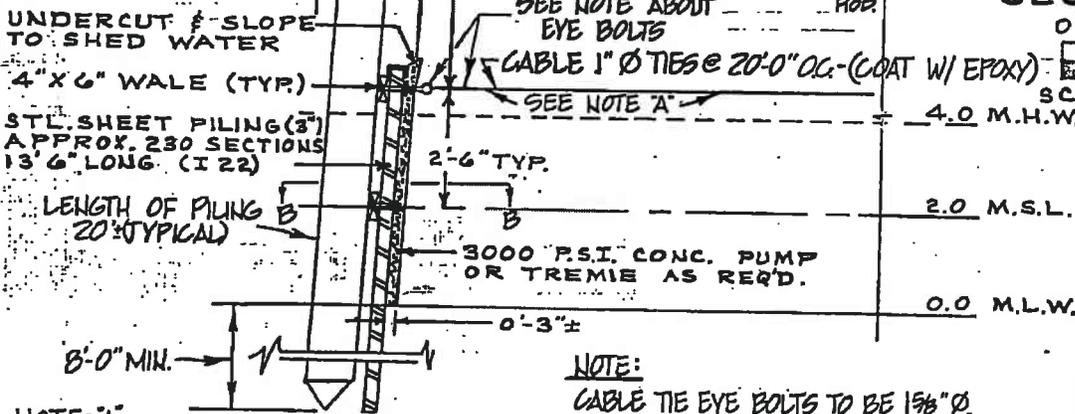
NOTE: ALL FASTENERS & HARDWARE SHOULD BE HOT-DIPPED GALVANIZED AND COATED WITH A PROTECTIVE PAINT AFTER INSTALLATION.



SECTION A-A

0 2 4

SCALE IN FEET



NOTE: A

SEMI FLEXIBLE CABLE DATA IS A GALVANIZED, FLOW STEEL, 6x7 CLASS STANDARD COARSE CABLE W/1x7 WIRE STRAND CORE. THE WIRE ENDS WILL BE ATTACHED TO EYE BOLTS W/MINIMUM OF 4 U-BOLT CLIPS 1 1/2" Ø SPACED 8 3/4" APART W/ SUITABLE THIMBLES. AFTER INSTALLATION A OVERCOATING W/ EPOXY WILL BE ADDED FOR ADDITIONAL PROTECTION.

NOTE:
CABLE TIE EYE BOLTS TO BE 1 1/2" Ø.



Arthur C. Thompson

SHEET 2 OF 3 SHEETS

LICENSE PLAN NO. 2184

Approved by Department of Environmental Protection

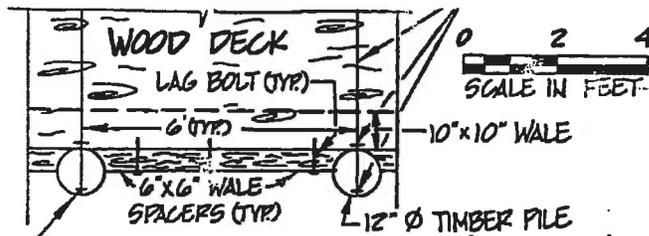
Date: **JAN 30 1990**

**TOWN OF MARION
 SIPPICAN HARBOR
 MARION, MA.**

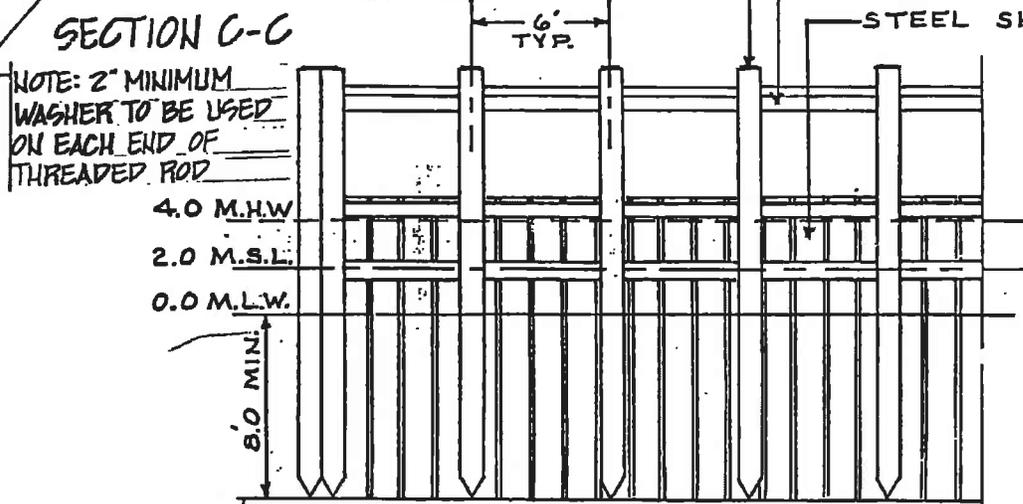
OCTOBER 17, 1988

REVISED: DECEMBER 14, 1988
 REVISED: MARCH 10, 1989
 REVISED: JULY 11, 1989
 REVISED: OCTOBER 13, 1989

041-014-000-076-100 / 041-014-000-076-300 / 041-014-000-076-400



PILE FOR UNDER 6' O.C. FOR OVER 6' O.C. INCREASE TO 1" Ø THREADED ROD. DRILL THRU CONCRETE WITH 10" x 10" x 1/2" STEEL PLATE AGAINST CONCRETE.

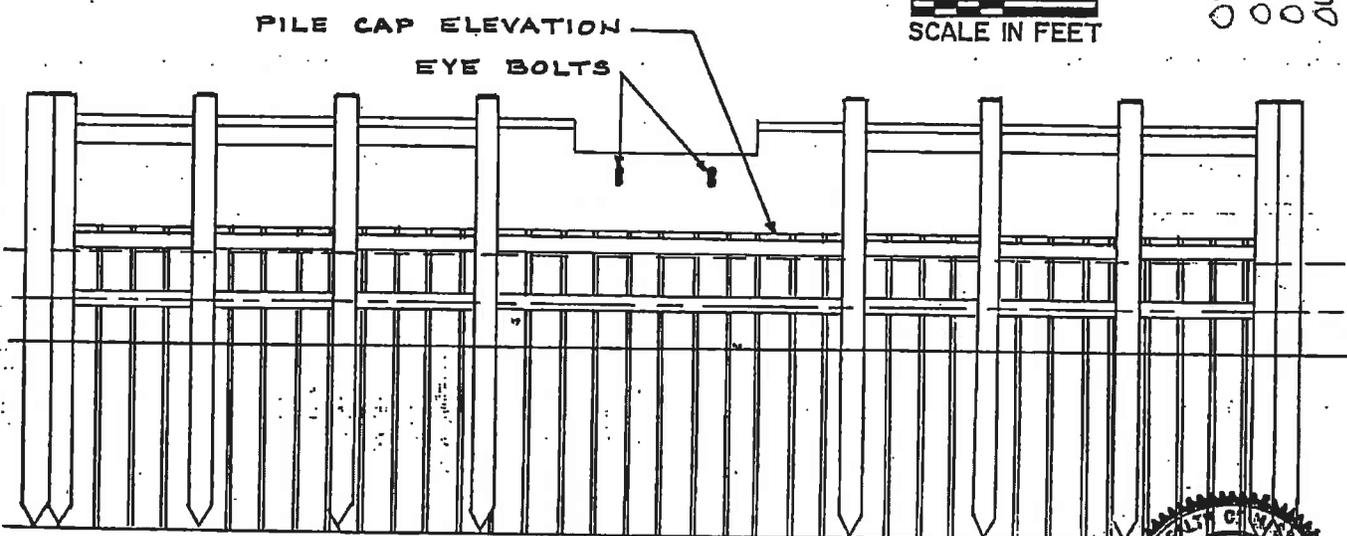


NOTE: 2" MINIMUM WASHER TO BE USED ON EACH END OF THREADED ROD

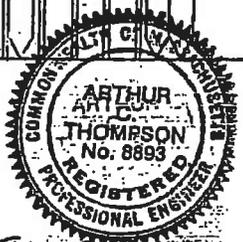
4.0 M.H.W.
2.0 M.S.L.
0.0 M.L.W.

8.0 MIN.

PROFILE-NORTH SIDE



PROFILE-EAST SIDE



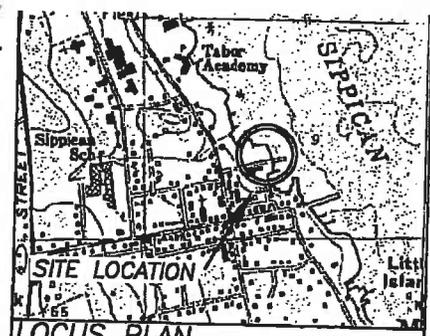
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041-014-000-076-200
041-014-000-076-300
041-014-000-076-400

SHEET 3 OF 3 SHEETS

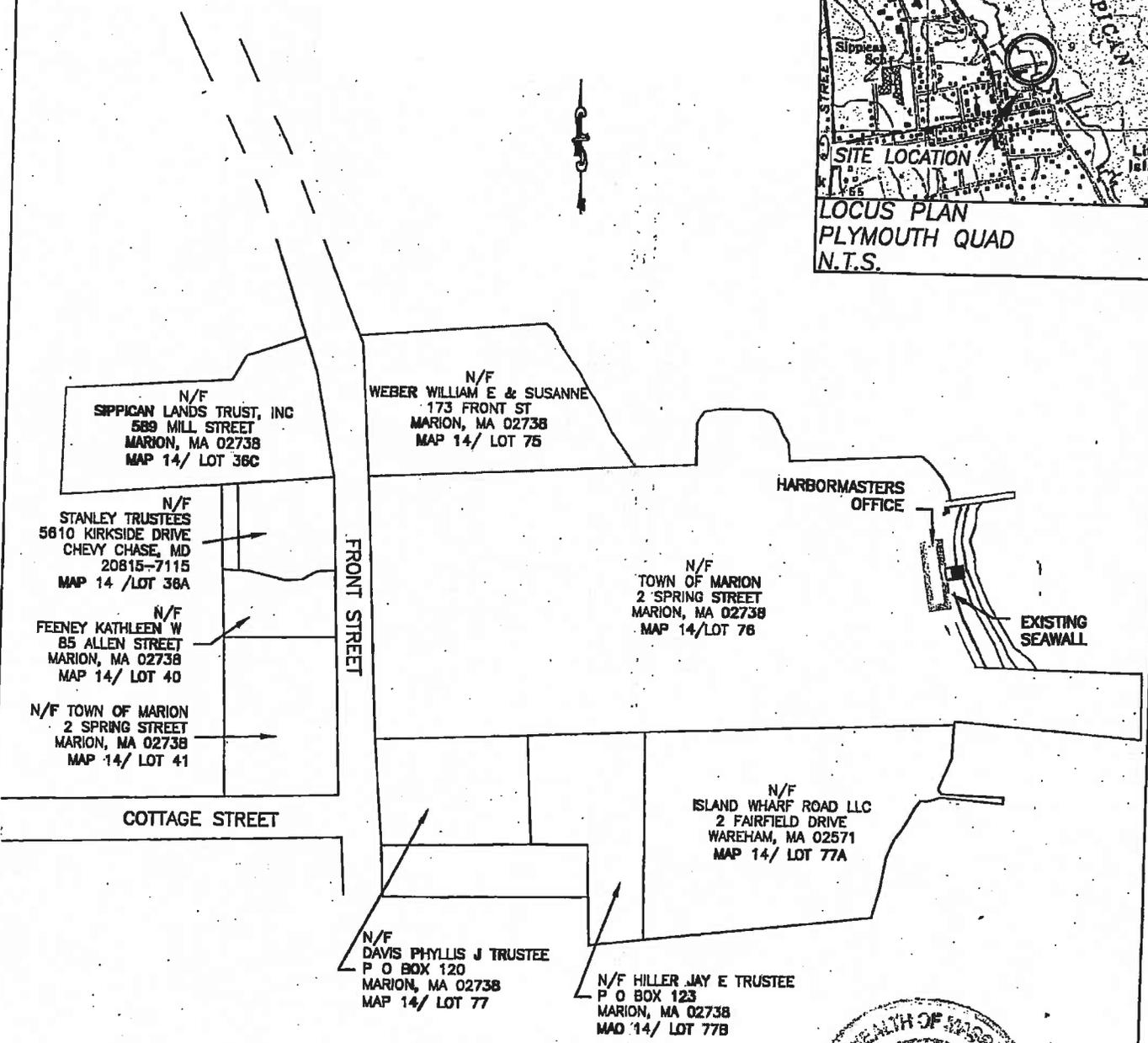
REVISED: DECEMBER 15, 1989
TOWN OF MARION
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MARION, MA.
OCTOBER 17, 1988
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LICENSE PLAN NO. 2184
Approved by Department of Environmental Protection
Date: **JAN 30 1990**

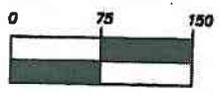
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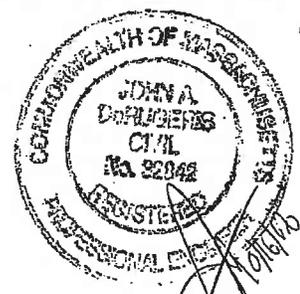
LOCUS PLAN
PLYMOUTH QUAD
N.T.S.



SITE PLAN VIEW
GRAPHIC SCALE



1 INCH = 150 FEET



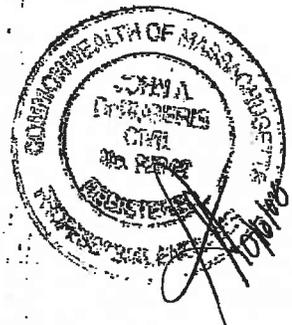
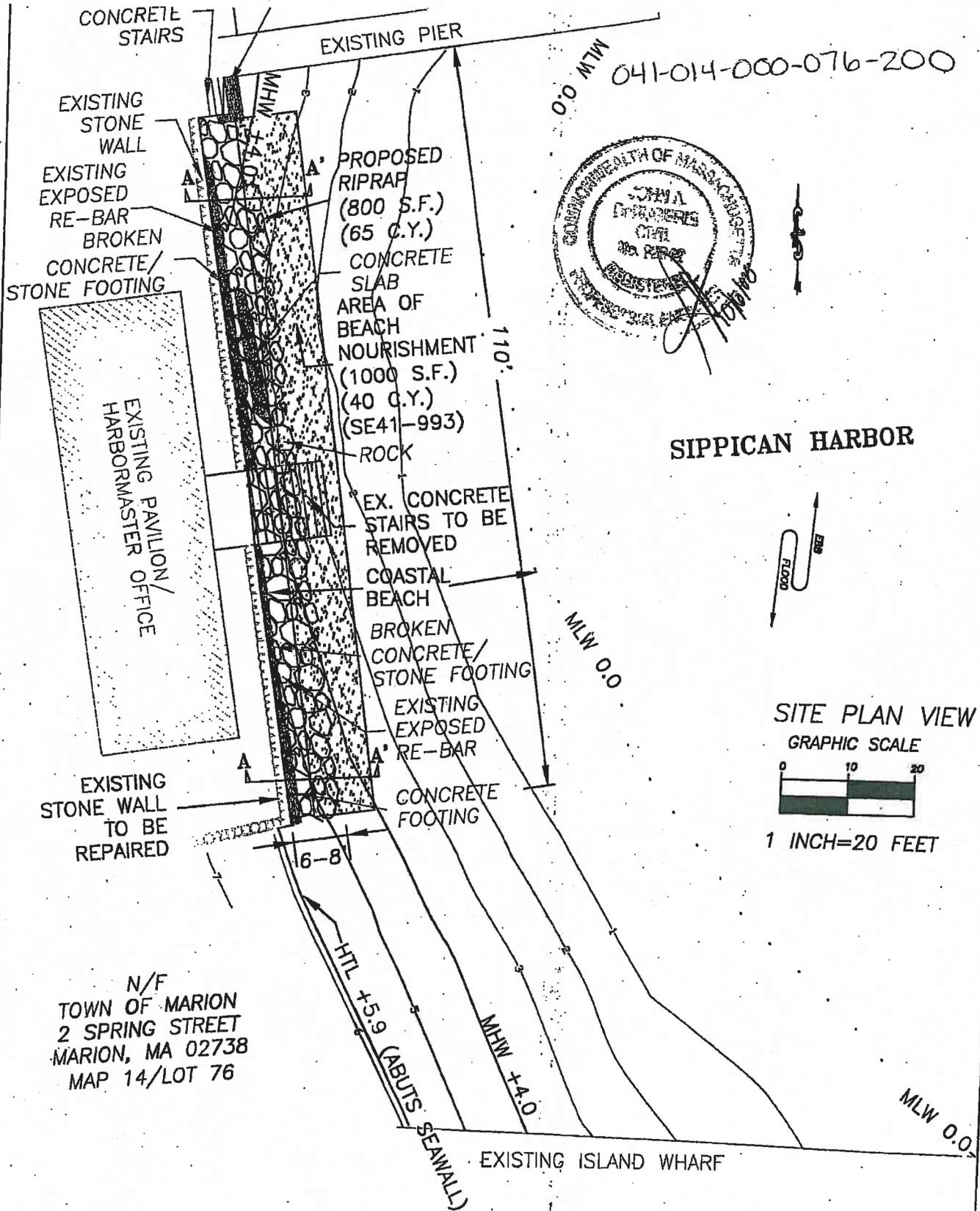
PLAN ACCOMPANYING PETITION OF:
TOWN OF MARION
MR. MICHAEL CORMIER, HARBORMASTER
TO LICENSE & MAINTAIN EXISTING
SEAWALL, PROPOSED RIP RAP AND
BEACH NOURISHMENT

MARION HARBORMASTER'S OFFICE
MARION, MA

PAGE 1 OF 3, DATE: 09/12/06

LICENSE PLAN NO. 11552
Approved by Department of Environmental Protection
of Massachusetts
Mitch Zencivera

NOV 20 2006

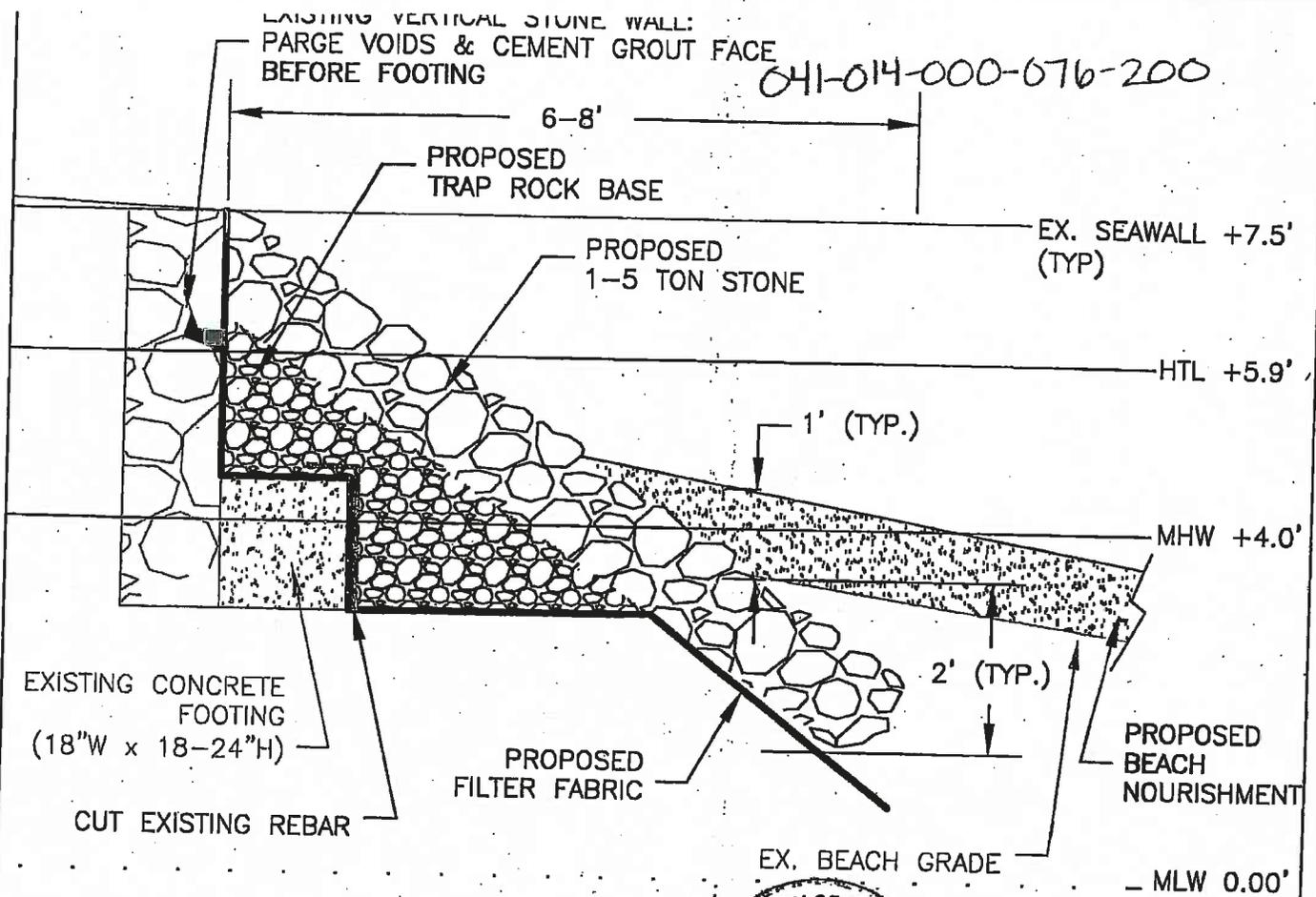


PAGE 2 OF 3, DATE 09/12/06

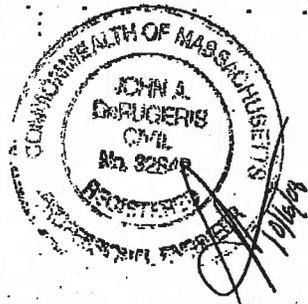
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 MR. MICHAEL CORMIER, HARBORMASTER
 TO LICENSE & MAINTAIN EXISTING
 SEAWALL, PROPOSED RIP RAP AND
 BEACH NOURISHMENT

MARION HARBORMASTER'S OFFICE
 MARION, MA

LICENSE PLAN NO. 11552
 Approved by Department of Environmental Protection
 Date: NOV 20 2006



041-014-000-076-200



SECTION A-A'
GRAPHIC SCALE
0 1 2
1 INCH=2 FEET

- NOTES:
1. RESULTS OF TOPOGRAPHIC SHOTS FROM SURVEY DATED 08-22-06 BY CLE ENGINEERING, INC., REFERENCED TO BENCHMARK 7385 H 1977, ELEV. 6.29 MLW.
 2. ADDITIONAL DETAIL INFORMATION COMPILED FROM SKETCH PLAN PROVIDED BY C.F. BRIGGS, INC.
 3. PROJECT SITE IS LOCATED IN FEMA FLOOD ZONE VE, EL. 18', BASED ON FIRM COMMUNITY-PANEL No. 255213 0004 D, DATED FEBRUARY 17, 1988.
 4. THE INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF TOPOGRAPHIC SURVEYS PERFORMED ON THE DATES SHOWN.
 5. POSSESSION AND USE OF THE MATERIAL CONTAINED ON THESE DRAWINGS IS GRANTED ONLY IN CONNECTION WITH ITS USE AS IT RELATES TO THE TITLED PROJECT, ANY OTHER USE, REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED HEREON IS EXPRESSLY PROHIBITED WITHOUT THE WRITTEN CONSENT OF CLE ENGINEERING INC.
- © COPYRIGHT 2006, CLE ENGINEERING, INC.

PLAN ACCOMPANYING PETITION OF:
TOWN OF MARION
MR. MICHAEL CORMIER, HARBORMASTER

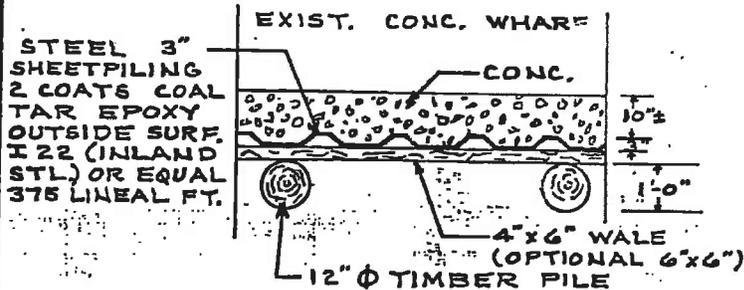
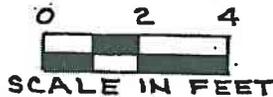
TO LICENSE & MAINTAIN EXISTING
SEAWALL, PROPOSED RIP RAP AND
BEACH NOURISHMENT

MARION HARBORMASTER'S OFFICE
MARION, MA

PAGE 3 OF 3, DATE 09/12/06

LICENSE PLAN NO. 11552
Approved by Department of Environmental Protection
Date: NOV 20 2006

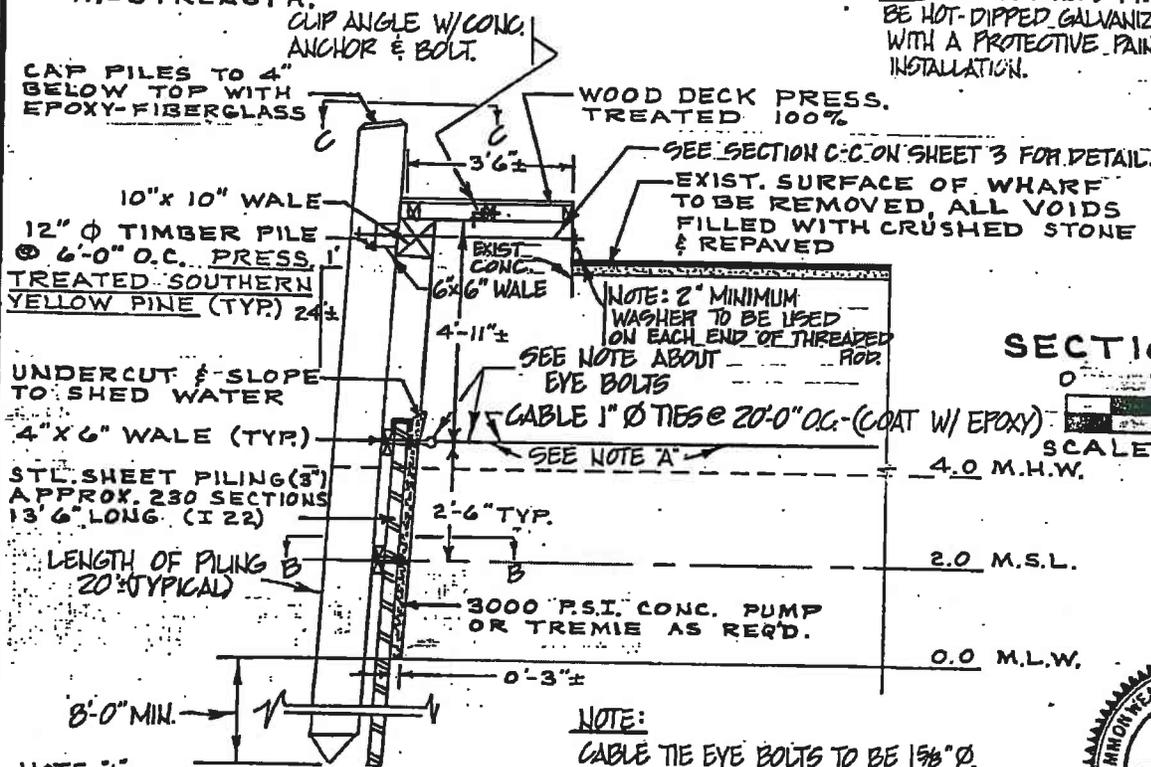
SECTION B-B



NOTE:
ALL FENDER SYSTEM BOLTS TO BE 1" ϕ AND HAVE WASHERS UNDER NUT AND HEAD AND ASTM A325 HI-STRENGTH.

ADJACENT PROPERTY OWNERS:
MARION ASSESSORS PLAT 14:
LOT 75
TITUS, DAVID B. & SUSAN H.
173 FRONT STREET
MARION, MA. 02738
LOT 76
TOWN OF MARION
LOT 77
DAVIS, EVERETT M. & PHYLLIS J.
43 COVE STREET
MARION, MA. 02738
LOT 77A
COULSON, ELIZABETH B. &
FIRST NATIONAL BANK OF NEW
BEDFORD TR., 31 SOUTH STREET
MARION, MA. 02738
LOT 77B
HILLER, JAY E. &
HILLER, BRUCE T., TRUSTEES
54 PLEASANT STREET
MARION, MA. 02738

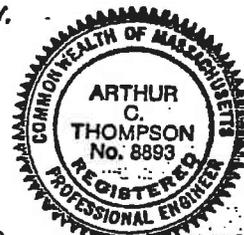
NOTE: ALL FASTENERS & HARDWARE SHOULD BE HOT-DIPPED GALVANIZED AND COATED WITH A PROTECTIVE PAINT AFTER INSTALLATION.



NOTE: A

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NOTE:
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Arthur C. Thompson

SHEET 2 OF 3 SHEETS

LICENSE PLAN NO. 2184

Approved by Department of Environmental Protection

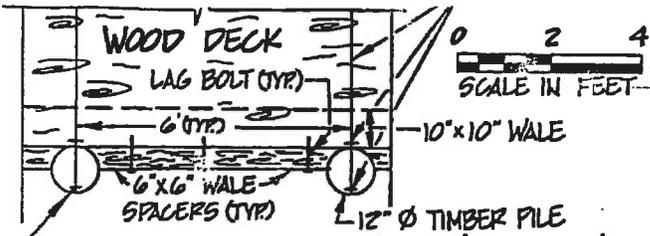
Date: **JAN 30 1990**

**TOWN OF MARION
SIPPICAN HARBOR
MARION, MA.**

OCTOBER 17, 1988

REVISED: DECEMBER 14, 1988
REVISED: MARCH 10, 1989
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041-014-000-076-100 / 041-014-000-076-300 / 041-014-000-076-400



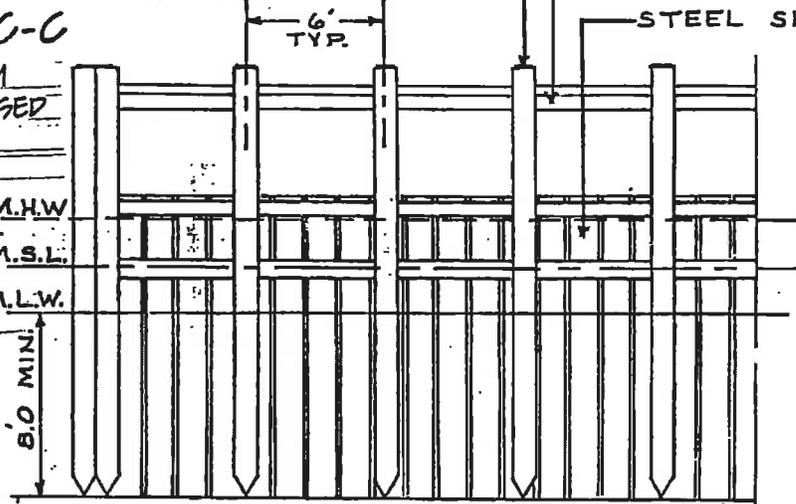
PILE FOR UNDER 6' O.C. FOR OVER 6' O.C. INCREASE TO 1" Ø THREADED ROD. DRILL THRU CONCRETE WITH 10" x 10" x 1/2" STEEL PLATE AGAINST CONCRETE.



SECTION C-C

NOTE: 2" MINIMUM WASHER TO BE USED ON EACH END OF THREADED ROD

4.0 M.H.W.
2.0 M.S.L.
0.0 M.L.W.

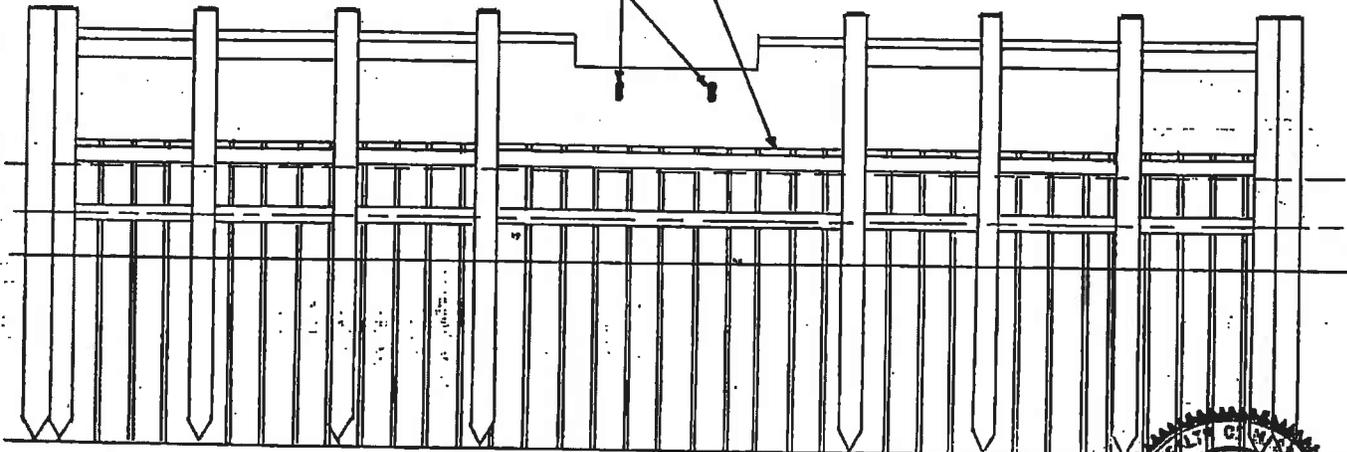


PROFILE-NORTH SIDE

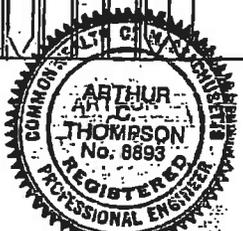
041-014-000-076-100
041-014-000-076-200
041-014-000-076-300
041-014-000-076-400



PILE CAP ELEVATION
EYE BOLTS



PROFILE-EAST SIDE



Arthur A. C. Thompson

SHEET 3 OF 3 SHEETS

REVISED: DECEMBER 15, 1989

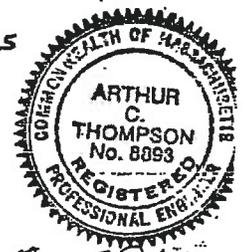
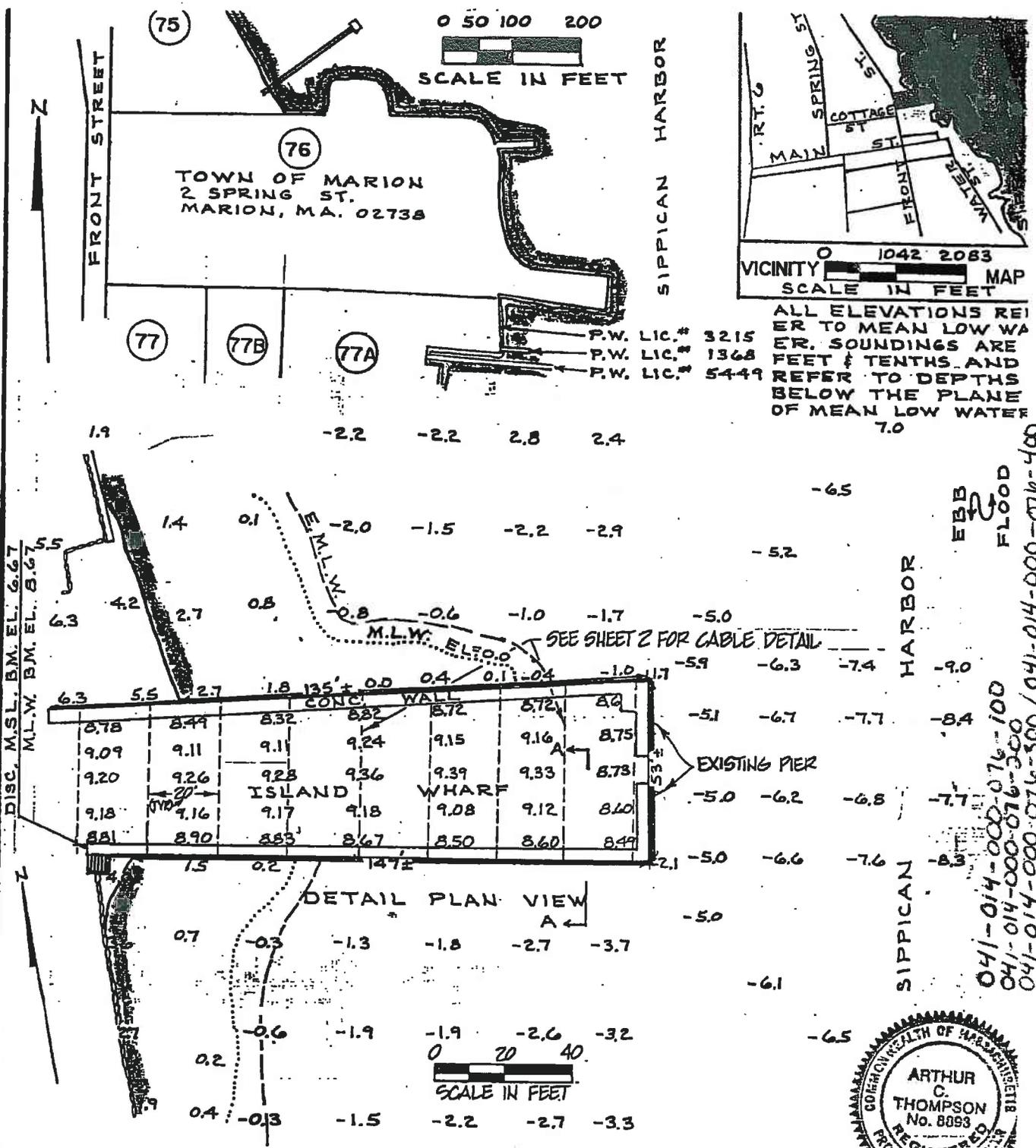
TOWN OF MARION
SIPPICAN HARBOR
MARION, MA.

OCTOBER 17, 1988
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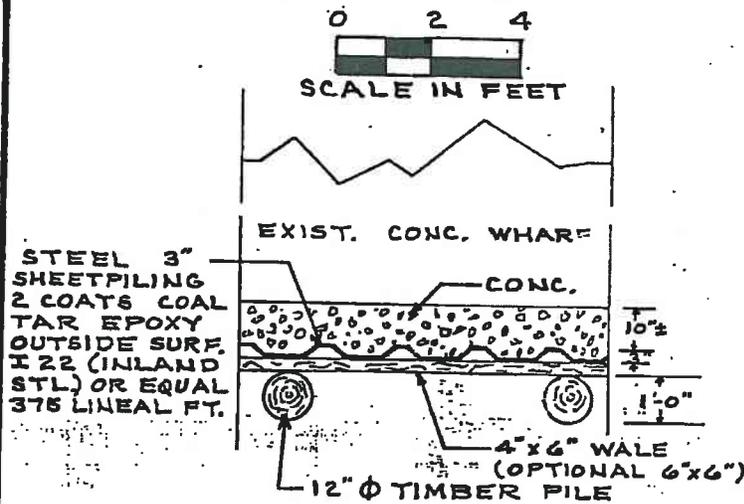
Arthur C. Thompson

PLAN ACCOMPANYING PETITION OF
TOWN OF MARION
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OCTOBER 17, 1988 SCALE AS NOTED.
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JAN 30 1990

REV. OCT. 13, 1989
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SECTION B-B

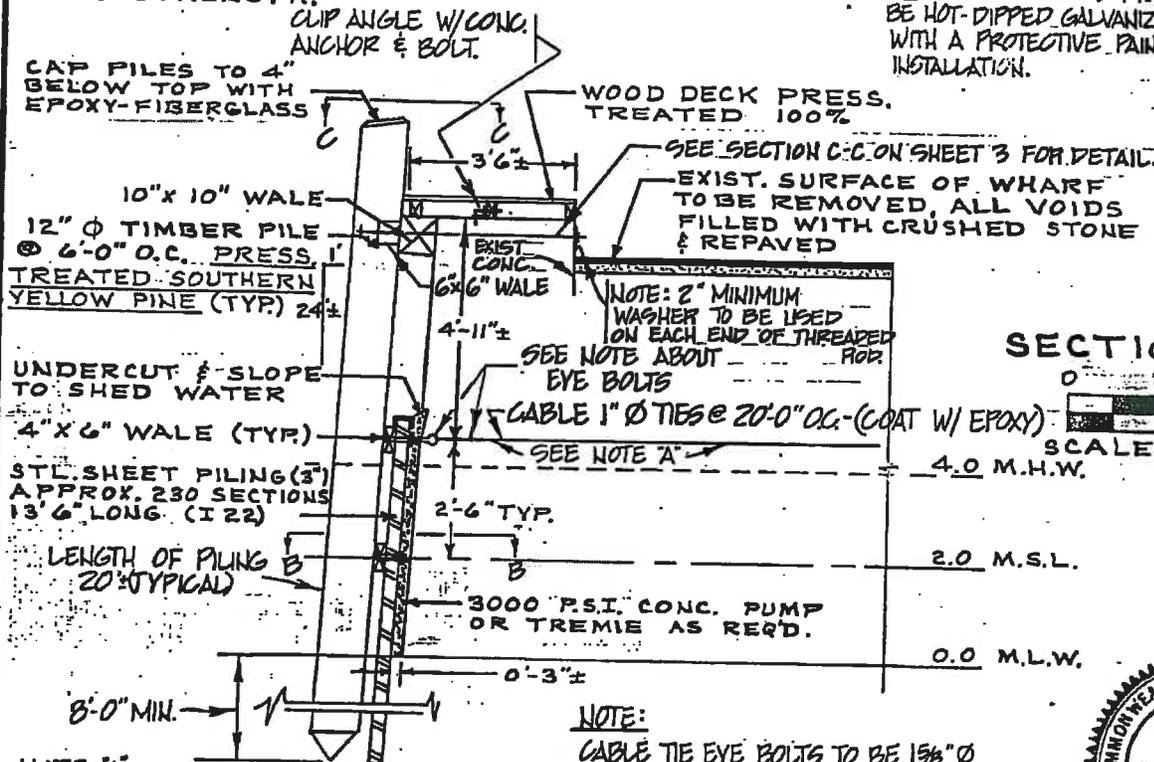


NOTE:
ALL FENDER SYSTEM BOLTS TO BE 1" Ø AND HAVE WASHERS UNDER NUT AND HEAD AND ASTM A325 HI-STRENGTH.

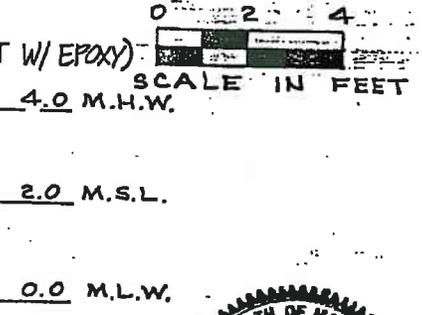
CLIP ANGLE W/ CONC. ANCHOR & BOLT.

CAP FILES TO 4" BELOW TOP WITH EPOXY-FIBERGLASS

WOOD DECK PRESS. TREATED 100%



SECTION A-A



NOTE:
CABLE TIE EYE BOLTS TO BE 1 1/8" Ø.

NOTE: A
SEMI FLEXIBLE CABLE DATA IS A GALVANIZED, FLOW STEEL, 6x7 CLASS STANDARD COARSE CABLE W/1x7 WIRE STRAND CORE. THE WIRE ENDS WILL BE ATTACHED TO EYE BOLTS W/MINIMUM OF 4 U-BOLT CLIPS 1/8" Ø SPACED 8 3/4" APART W/SUITABLE THIMBLES. AFTER INSTALLATION A OVERCOATING W/ EPOXY WILL BE ADDED FOR ADDITIONAL PROTECTION.



Arthur C. Thompson

SHEET 2 OF 3 SHEETS

LICENSE PLAN NO. 2184

Approved by Department of Environmental Protection

Date: **JAN 30 1990**

**TOWN OF MARION
SIPPICAN HARBOR
MARION, MA.**

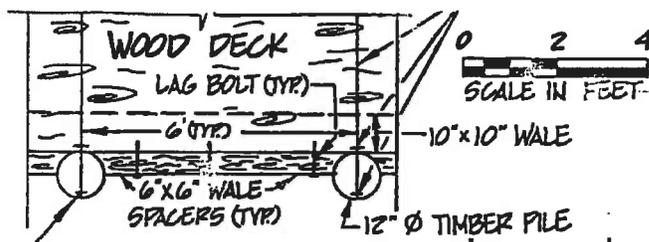
OCTOBER 17, 1988

REVISED: DECEMBER 14, 1988
REVISED: MARCH 10, 1989
REVISED: JULY 11, 1989
REVISED: OCTOBER 13, 1989

041-014-000-076-100 / 041-014-000-076-300 / 041-014-000-076-400

ADJACENT PROPERTY OWNERS
MARION ASSESSORS PLAT 14:
LOT 75
TITUS, DAVID B. & SUSAN H.
173 FRONT STREET
MARION, MA. 02738
LOT 76
TOWN OF MARION
LOT 77
DAVIS, EVERETT M. & PHYLLIS J.
43 COVE STREET
MARION, MA. 02738
LOT 77A
COULSON, ELIZABETH B. &
FIRST NATIONAL BANK OF NEW
BEDFORD TR., 31 SOUTH STREET
MARION, MA. 02738
LOT 77B
HILLER, JAY E. &
HILLER, BRUCE T., TRUSTEES
54 PLEASANT STREET
MARION, MA. 02738

NOTE: ALL FASTENERS & HARDWARE SHOULD BE HOT-DIPPED GALVANIZED AND COATED WITH A PROTECTIVE PAINT AFTER INSTALLATION.



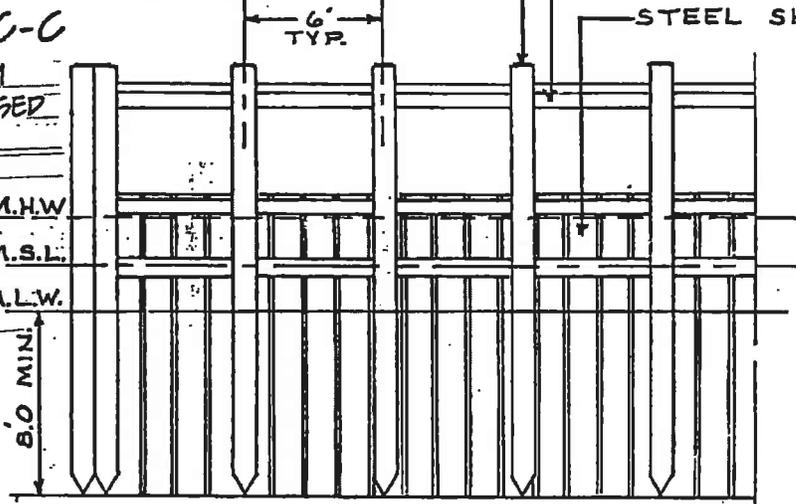
PILE FOR UNDER 6' O.C. FOR OVER 6' O.C. INCREASE TO 1" Ø THREADED ROD. FALL THRU CONCRETE WITH 10" x 10" x 1/2" STEEL PLATE AGAINST CONCRETE.



SECTION C-C

NOTE: 2" MINIMUM WASHER TO BE USED ON EACH END OF THREADED ROD

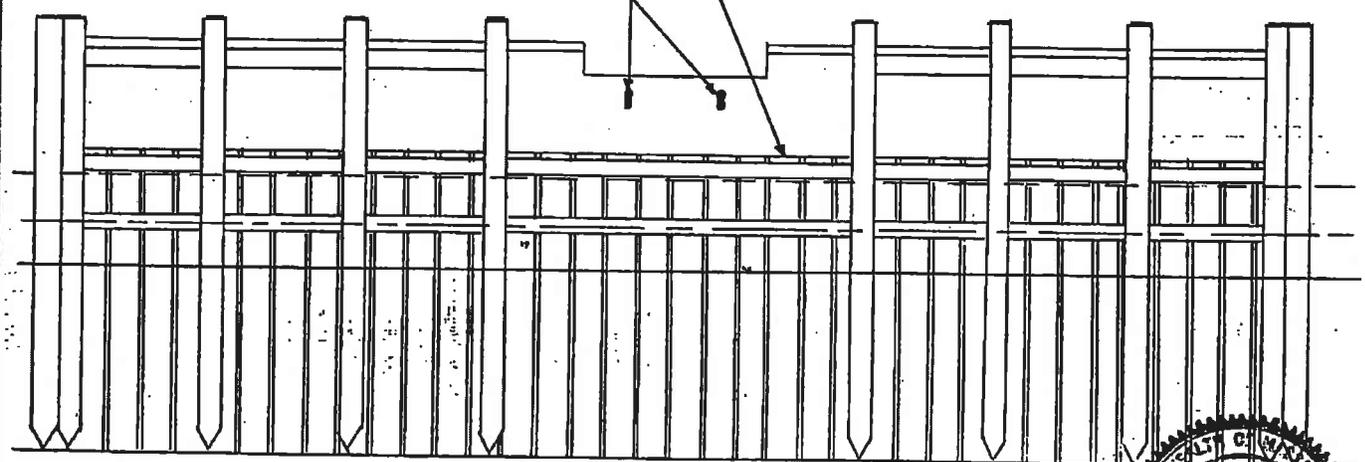
4.0 M.H.W.
2.0 M.S.L.
0.0 M.L.W.



PROFILE-NORTH SIDE

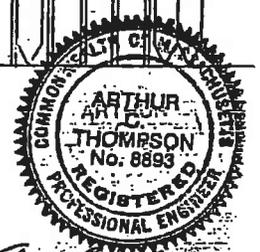


PILE CAP ELEVATION
EYE BOLTS



PROFILE-EAST SIDE

041-014-000-076-100
041-014-000-076-200
041-014-000-076-300
041-014-000-076-400



Arthur L. Thompson

SHEET 3 OF 3 SHEETS

REVISED: DECEMBER 15, 1989
TOWN OF MARION
SIPPICAN HARBOR
MARION, MA.
OCTOBER 17, 1988
REVISED: DECEMBER 14, 1988
REVISED: MARCH 10, 1989
REVISED: OCTOBER 12, 1989

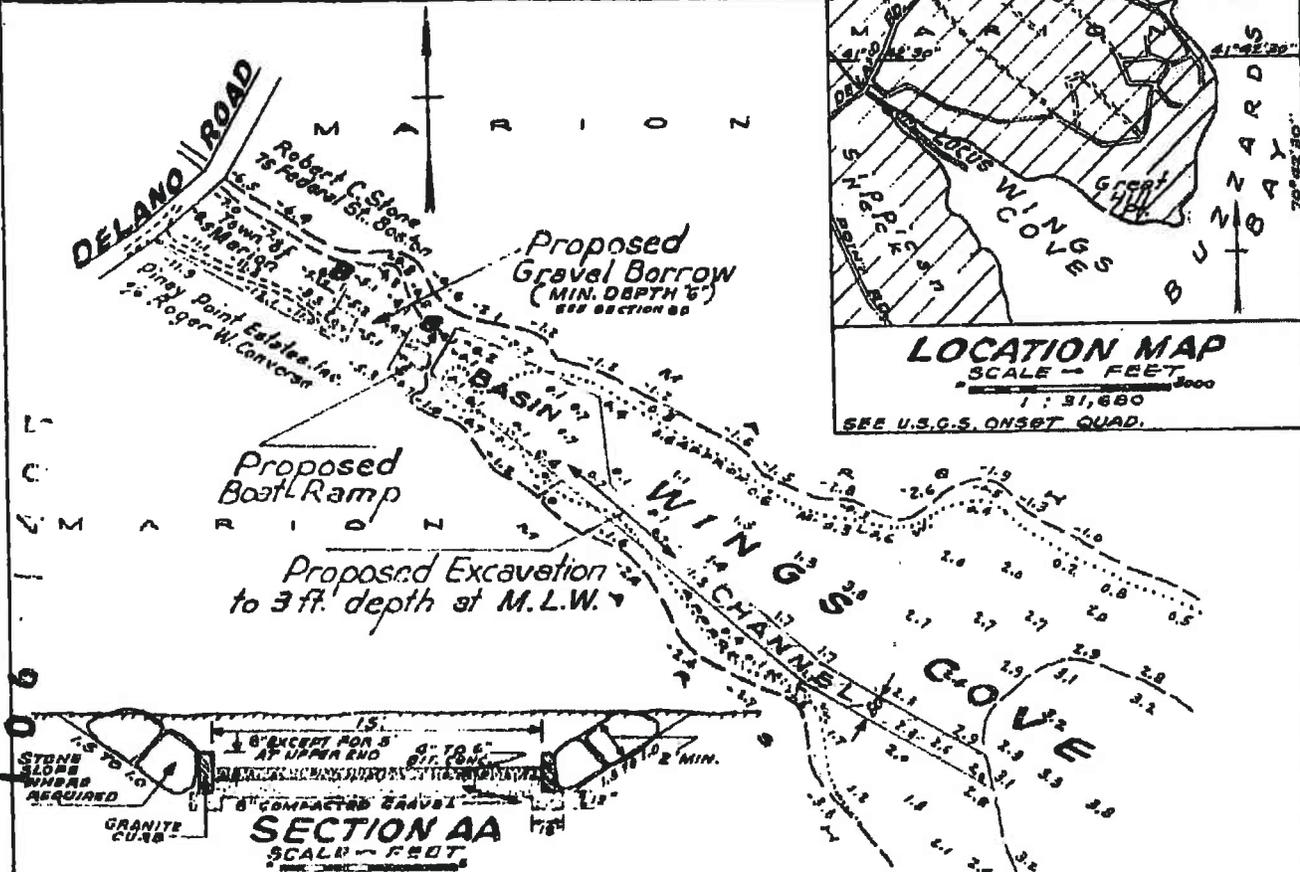
LICENSE PLAN NO. 2184
Approval by Department of Environmental Protection
Date: **JAN 30 1990**

TOWN: MARION
 SOURCE: US ACOE
 LOCATION: CONCORD, MA
 DATE OF RESEARCH: AUGUST 2007

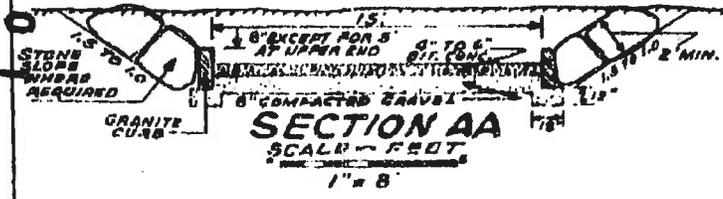
| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|--------------------|--|--------|----------------------------|----------------------------|
| 041-002-000-001C-100 | 041-002-000-001C-100-COE1A | 59-275 | USACE | Marion | September 15, 1955 | Proposed Excavation and Boat Ramp - Wings Cove, Marion, Mass. | 1 | Delano Road in Wings Cove | Boat Ramp |
| 041-014-000-012-100 | 041-014-000-012-100-COE1A | N/A | USACE | Marion | September 2, 1996 | Proposed Boat Ramp, Pier and Float - In Sippican Harbor, Marion, Plymouth County, Massachusetts | 8 | Spring Street | Boat Ramp, Pier and Floats |
| 041-014-000-012-200 | 041-014-000-012-200-COE2A | 75-64 | USACE | Marion | January 1974 | Proposed Small Boat Launching Ramp in Sippican Harbor at Marion, County of Plymouth, Massachusetts | 1 | Front Street Wharfs | Boat Ramp |
| 041-014-000-012-200 | 041-014-000-012-200-COE2B | N/A | USACE | Marion | September 2, 1996 | Proposed Boat Ramp, Pier and Float - In Sippican Harbor, Marion, Plymouth County, Massachusetts | 8 | Spring Street | Boat Ramp, Pier and Floats |
| 041-016-000-095-100 | 041-016-000-095-100-COE1A | 70-228 | USACE | Marion | September 1970 | Proposed Stone Groin Construction and Reconstruction - Sippican Harbor, Marion, Massachusetts | 1 | Front Street - Parking Lot | Groin |
| 041-016-000-095-100 | 041-016-000-095-100-COE1B | N/A | USACE | Marion | May 8, 1991 | Removal of Debris and Rocks, Marion, Massachusetts | 3 | Front Street | Groin and Wall |
| 041-016-000-095-200 | 041-016-000-095-200-COE2A | N/A | USACE | Marion | May 8, 1991 | Removal of Debris and Rocks, Marion, Massachusetts | 3 | Front Street | Groin and Wall |
| 041-016-000-095-300 | 041-016-000-095-300-COE3A | N/A | USACE | Marion | May 8, 1991 | Removal of Debris and Rocks, Marion, Massachusetts | 3 | Front Street | Groin and Wall |
| 041-016-000-096-100 | 041-016-000-096-100-COE1A | 54-177 | USACE | Marion | July 16, 1954 | Proposed Pier Removal and Stone Groin Construction - Sippican Harbor, Marion, Massachusetts | 1 | Silvershell Road | Groin |
| 041-016-000-096-100 | 041-016-000-096-100-COE1B | 70-228 | USACE | Marion | September 1970 | Proposed Stone Groin Construction and Reconstruction, Sippican Harbor, Marion, Massachusetts | 1 | Front Street - Parking Lot | Groin |

0840570

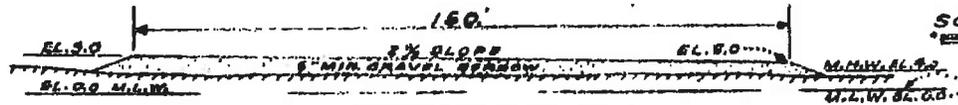
041-002-000-001C-100



LOCATION MAP
 SCALE - FEET
 1" = 31,680
 SEE U.S.G.S. ONSSET QUAD.

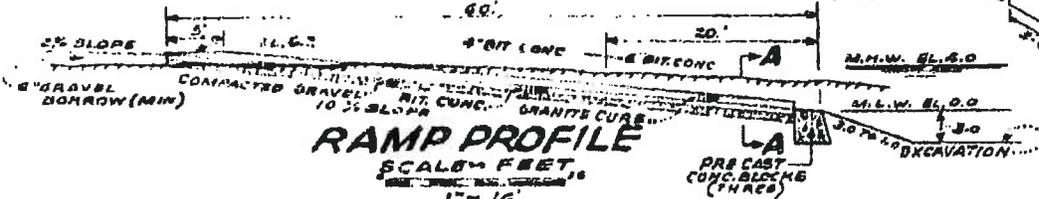


SECTION AA
 SCALE - FEET
 1" = 8'

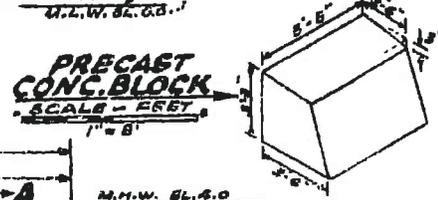


SECTION 88
 SCALE - FEET
 1" = 40'

PLAN
 SCALE - FEET
 1" = 400'



RAMP PROFILE
 SCALE - FEET
 1" = 16'



PRECAST CONG. BLOCK
 SCALE - FEET
 1" = 8'

NOTE
 SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO PLANS OF MEAN LOW WATER. MINUS FIGURES SHOW HEIGHTS ABOVE THE SAME PLANE.
 APPROX. EXISTING GROUND THUS EXCAVATED MATERIAL APPROX. 13,500 CY TO BE DISPOSED OF ABOVE M.M.W. IN LOCATIONS APPROVED BY ENGINEER.
 GRAVEL BORROW AREA TO BE GRADED AT EDGES TO MEET EXISTING SURFACES.
 LOCATION OF WORK TO BE DONE IS SHOWN IN RED.

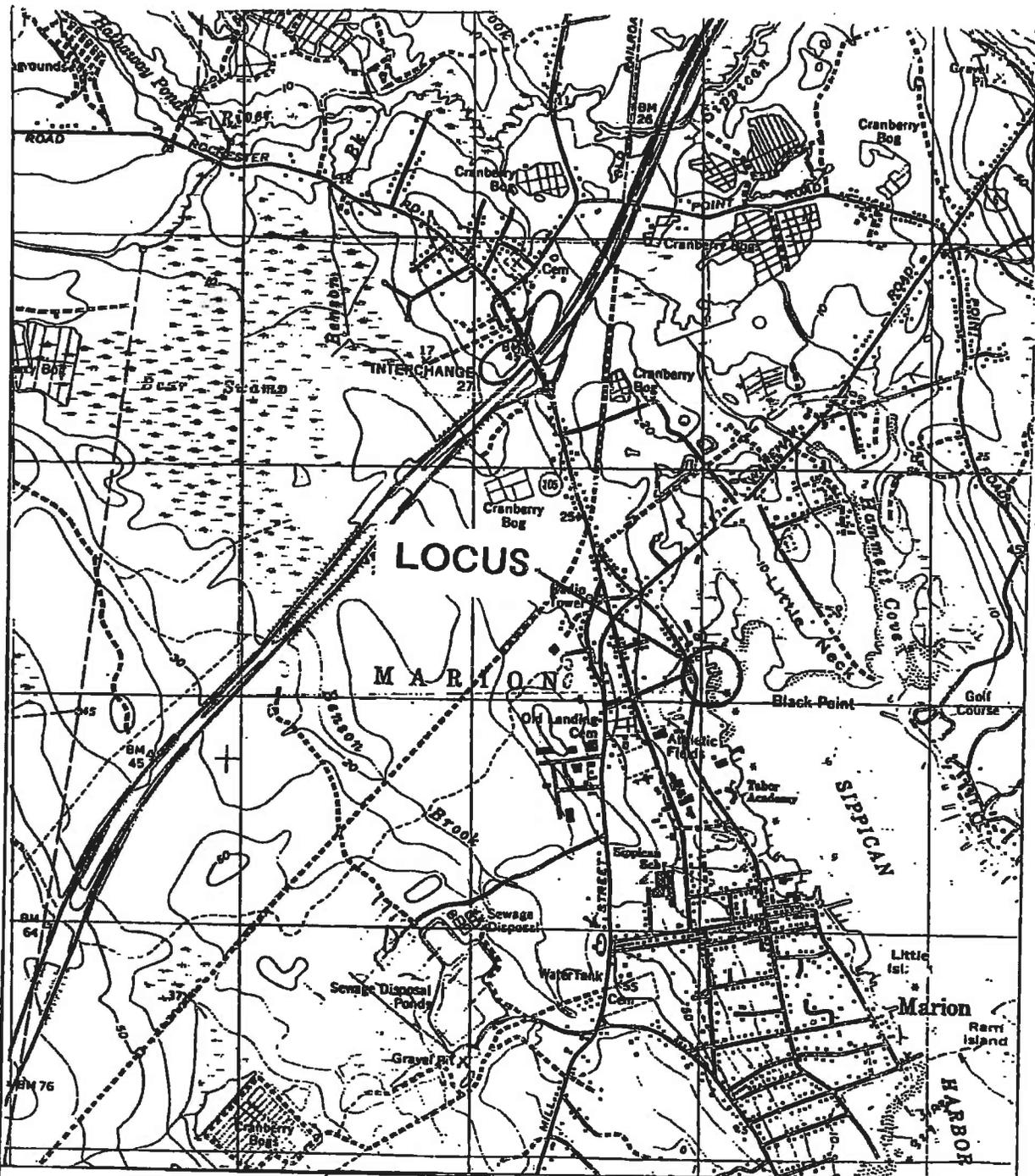
PROPOSED EXCAVATION AND BOAT RAMP WINGS COVE
 MARION - MASS.
 DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
 DIVISION OF WATERWAYS
 AUGUST 1959

Robert B. MacKinnon
 CHIEF WATERWAYS ENGINEER

ACC. 04040

041-014-000-012-100

041-014-000-012-200



PROPOSED BOAT RAMP,
PIER AND FLOAT

IN: SIPPICAN HARBOR
MARION, PLYMOUTH CO,
MASSACHUSETTS

DATE: SEPT 2 1996
SHEET 1 OF 8

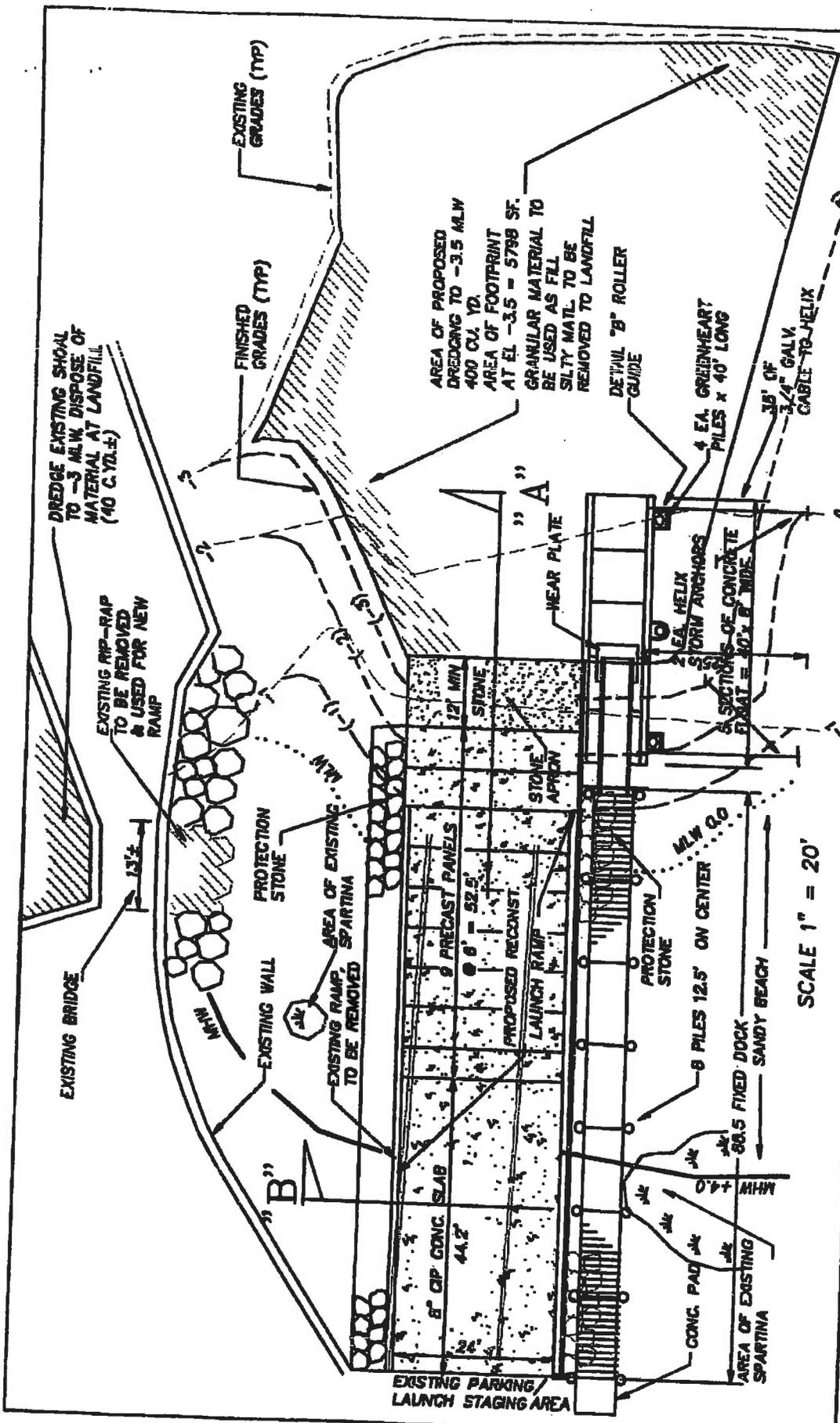
LOCUS PLAN

APPLICATION BY:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

PURPOSE: REPLACE
EXISTING BOAT RAMP
AND PROVIDE BETTER
ACCESS
DATUM MLW 0.0
MHW 4.0

COAST LINE ENGINEERING
15 CREEK ROAD
MARION, MA 02738

041-014-000-012-100
 041-014-000-012-200



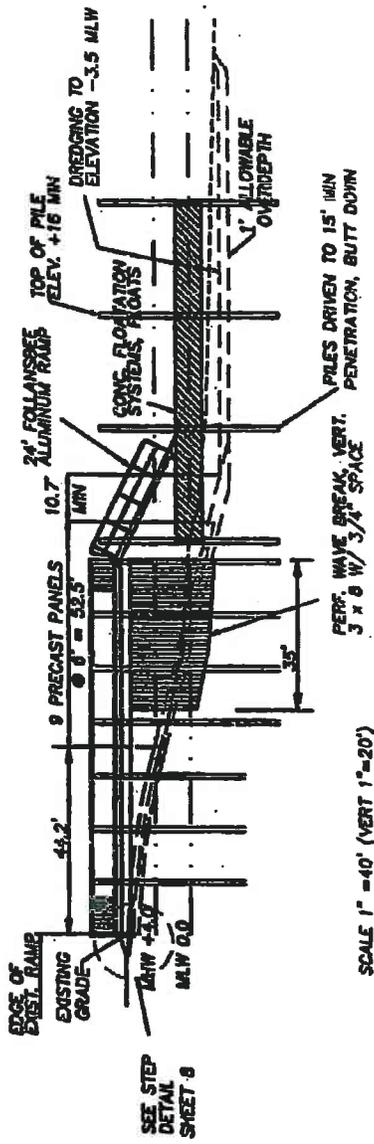
PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS
 COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738
 DATUM MLW G.O MHW 4.0

PLAN VIEW
 APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

PURPOSE: PROPOSED BOAT RAMP, PIER, AND FLOAT
 IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO.
 MASSACHUSETTS
 SHEET 2 OF 8
 DATE: SEPT. 2, 1996
 REV. 6-30-97

SCALE 1" = 20'

041-014-000-012-100
 041-014-000-012-200



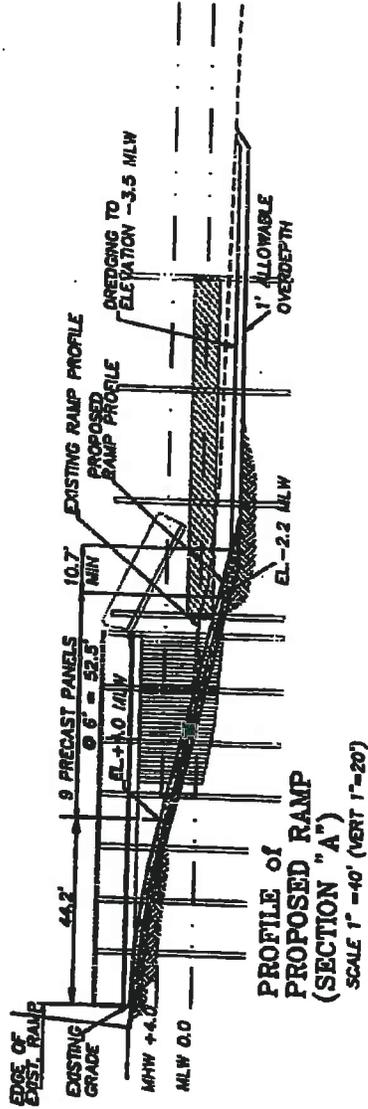
PROFILE OF PROPOSED PIER

PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS
 DATUM MLW 0.0
 MHW 4.0
 COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738

PROPOSED BOAT RAMP, PIER AND FLOAT
 IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO,
 MASSACHUSETTS
 DATE: SEPT 2 1996
 SHEET 3 OF 8

APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

041-014-000-012-100
 041-014-000-012-200



PROPOSED BOAT RAMP,
 PIER AND FLOAT

IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO.,
 MASSACHUSETTS

DATE: SEPT 2 1996
 SHEET 4 OF 8

PROFILE OF PROPOSED RAMP

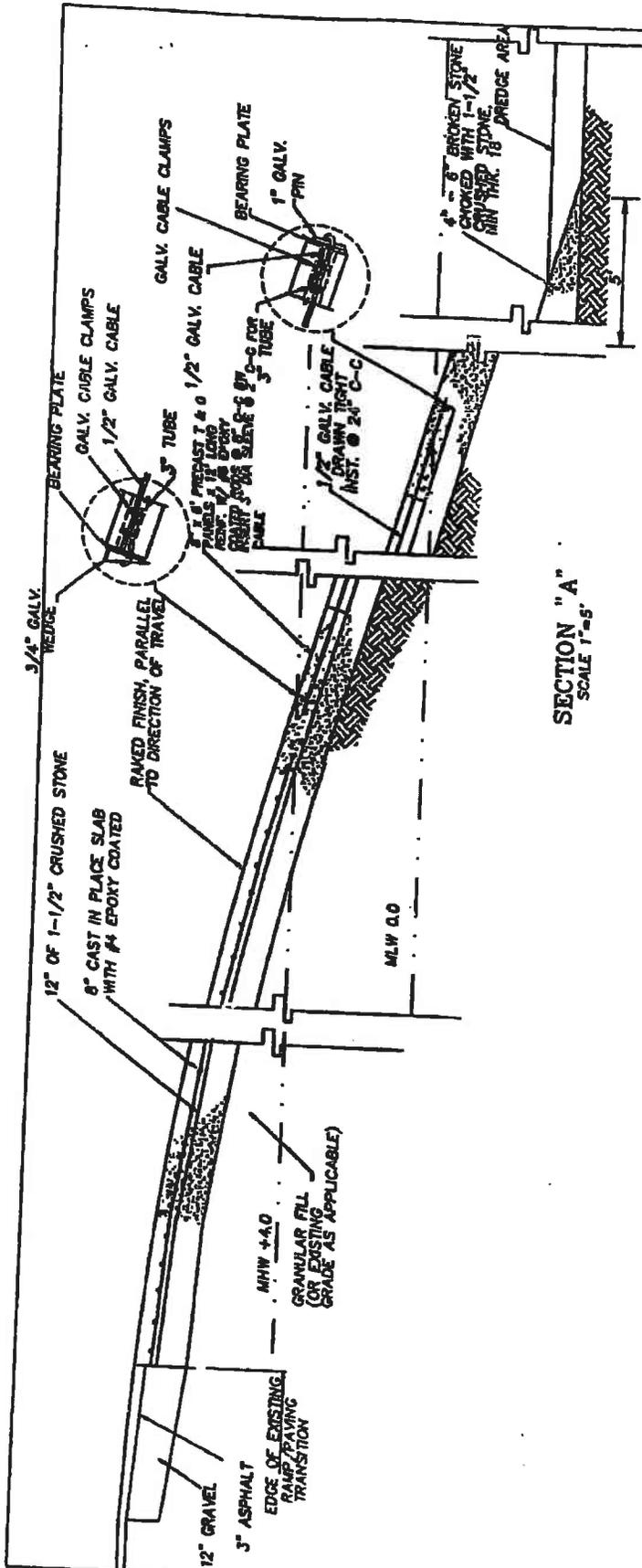
APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

PURPOSE: REPLACE
 EXISTING BOAT RAMP
 AND PROVIDE BETTER
 ACCESS

DATUM MLW 0.0
 MHW 4.0

COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738

041-014-000-012-100
 041-014-000-012-200



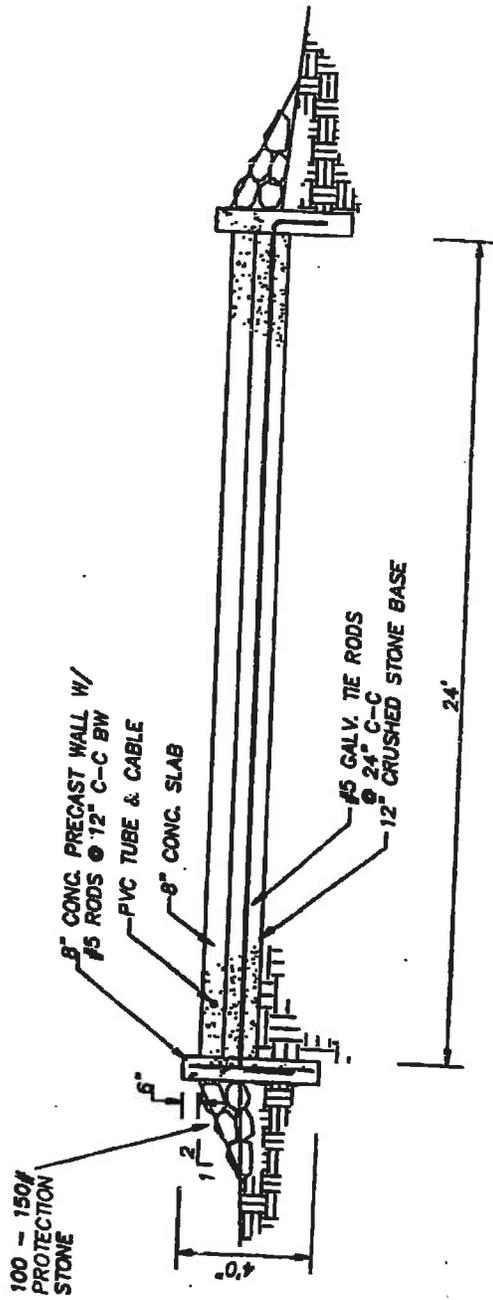
PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS
 DATUM MLW 0.0
 MHW 4.0
 COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738

RAMP CROSS SECTION

APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

PROPOSED BOAT RAMP, PIER AND FLOAT
 IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO., MASSACHUSETTS
 DATE: SEPT 2 1996
 SHEET 5 OF 8

041-014-000-012-100
 041-014-000-012-200



SECTION "B"
 SCALE 1"=5'

RAMP CROSS SECTION

PROPOSED BOAT RAMP,
 PIER AND FLOAT

IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO,
 MASSACHUSETTS

DATE: SEPT 2 1996
 SHEET 6 OF 8

PURPOSE: REPLACE
 EXISTING BOAT RAMP
 AND PROVIDE BETTER
 ACCESS

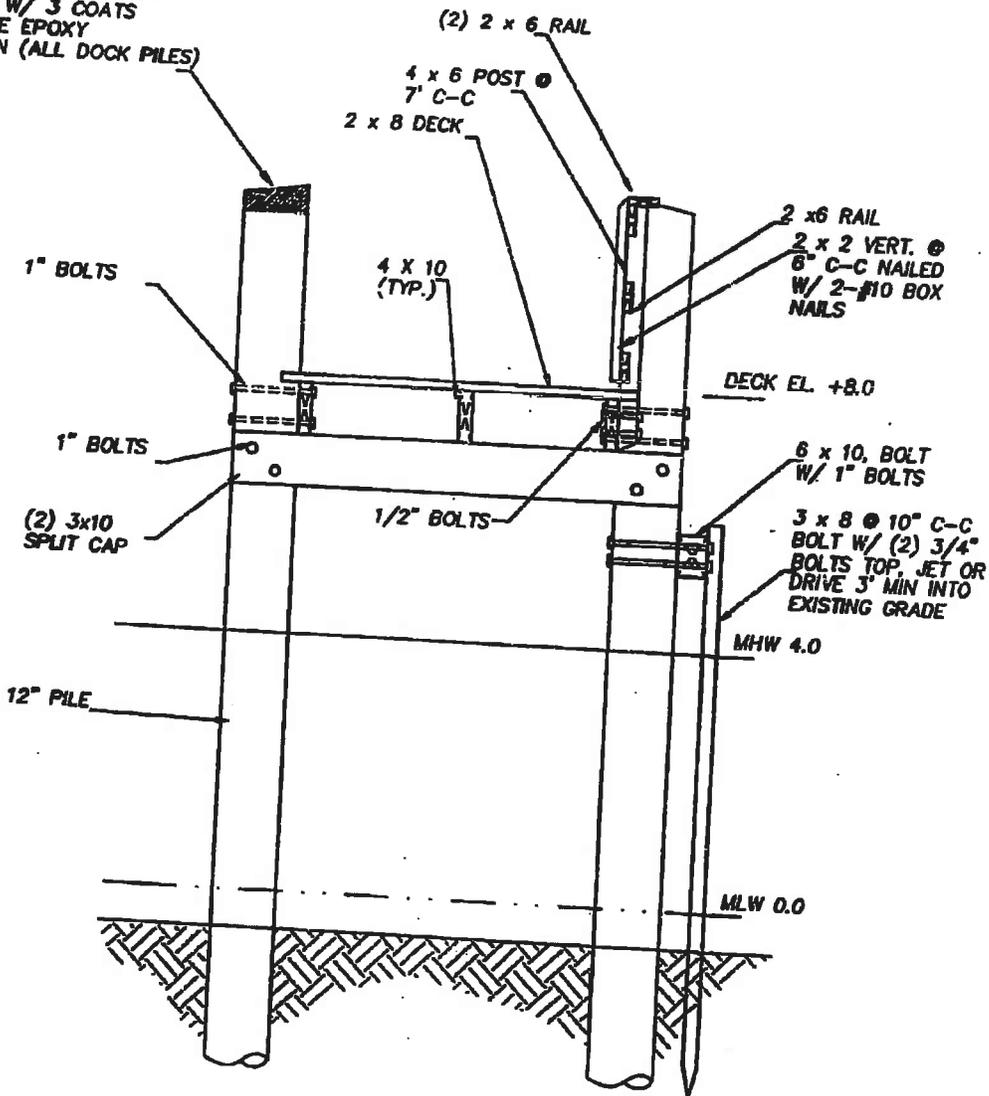
DATUM MLW 0.0
 MHW 4.0

COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738

APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

041-014-000-012-100
 041-014-000-012-200

ONE LAYER FIBERGL.
 MAT W/ 3 COATS
 WHITE EPOXY
 RESIN (ALL DOCK PILES)



SCALE 1"=5'

PROPOSED BOAT RAMP,
 PIER AND FLOAT

IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO,
 MASSACHUSETTS

DATE: SEPT 2 1996
 SHEET 7 OF 8

PIER SECTION
 W/BREAKWATER

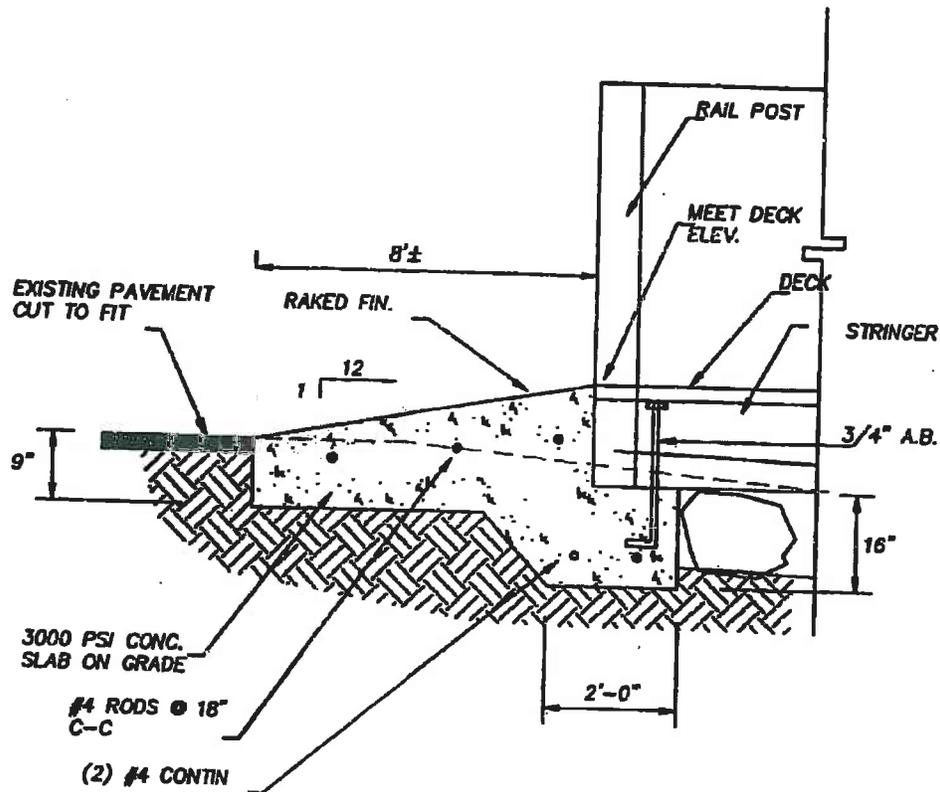
APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

PURPOSE: REPLACE
 EXISTING BOAT RAMP
 AND PROVIDE BETTER
 ACCESS

DATUM MLW 0.0
 MHW 4.0

COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738

041-014-000-012-100
041-014-000-012-200



NOT TO SCALE

PROPOSED BOAT RAMP,
PIER AND FLOAT

IN: SIPPICAN HARBOR
MARION, PLYMOUTH CO,
MASSACHUSETTS

DATE: SEPT 2 1996
SHEET 8 OF 8

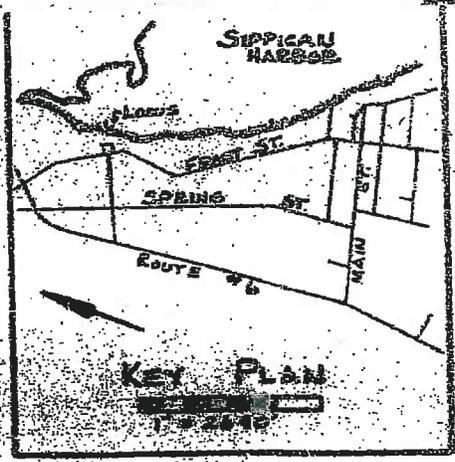
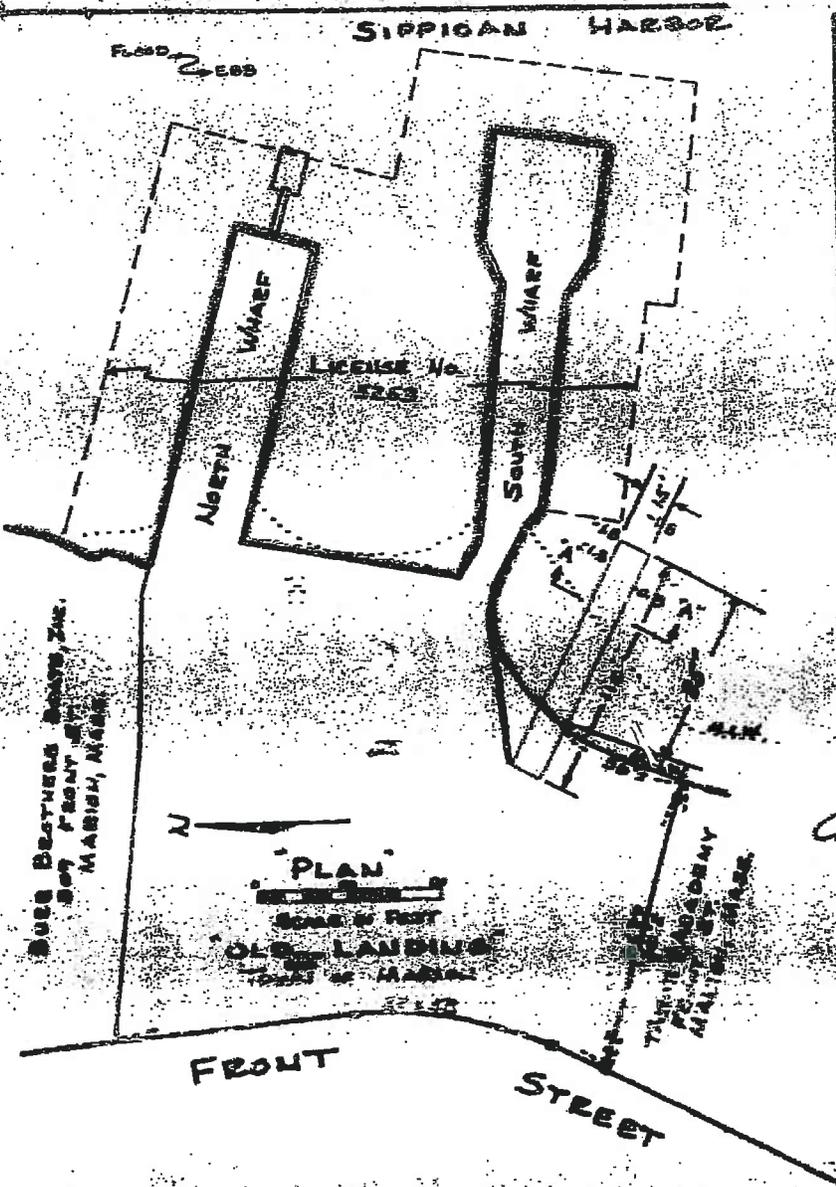
STEP DETAIL

APPLICATION BY:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

PURPOSE: REPLACE
EXISTING BOAT RAMP
AND PROVIDE BETTER
ACCESS
DATUM MLW 0.0
MHW 4.0

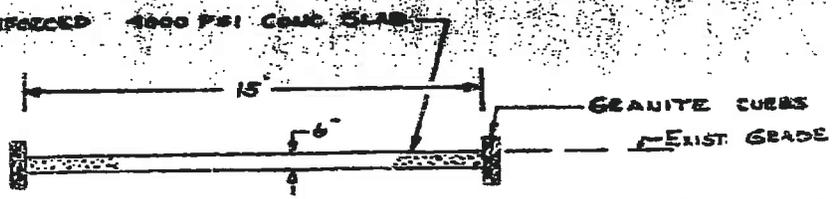
COAST LINE ENGINEERING
15 CREEK ROAD
MARION, MA 02738

041-014-000-012-200



Arthur C. Thompson

NOTE: ALL DIMENSIONS ARE IN FEET AND DECIMALS AND SHOULD BE MEAN LOW WATER.



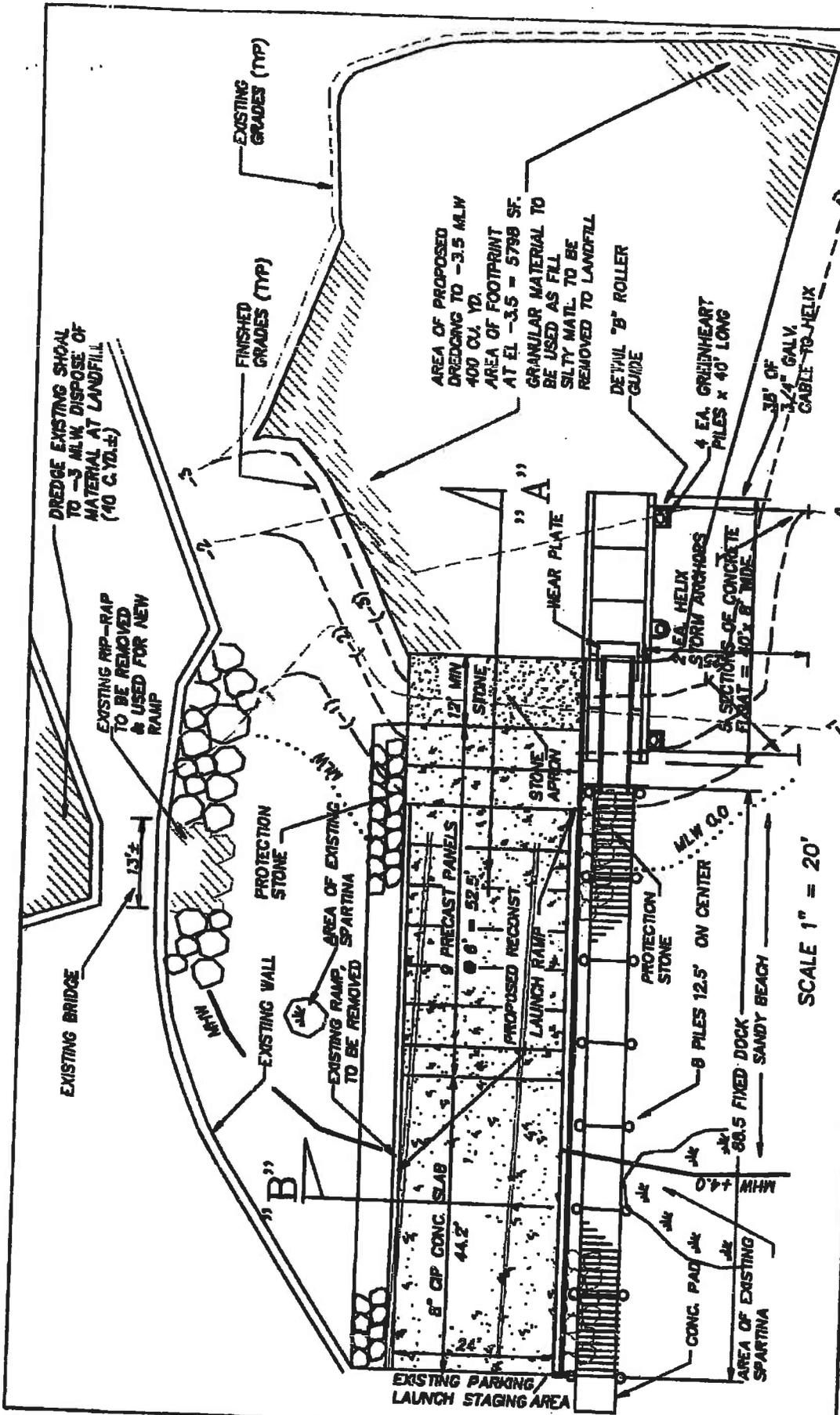
SECTION A-A
SCALE IN FEET

PROPOSED SMALL BOAT LAUNCHING RAMP
IN SIPPICAN HARBOR
AT MARION
COUNTY OF PLYMOUTH
STATE OF MASSACHUSETTS
APPLICATION BY
TOWN OF MARION
JANUARY 1974
ARTHUR C. THOMPSON, INC., ENG. (SUR., MARION, MASS.)

1677117A6

BUSS BROTHERS ENGINEERS, INC.
309 FRONT ST.
MARION, MASS.

041-014-000-012-100
 041-014-000-012-200



PURPOSE: PROPOSED BOAT RAMP, PIER, AND FLOAT

IN: SIPPICAN HARBOR MARION, PLYMOUTH CO. MASSACHUSETTS

DATE: SEPT. 2, 1996

REV. 6-30-97

APPLICATION BY: TOWN OF MARION 2 SPRING STREET MARION, MA 02738

PLAN VIEW

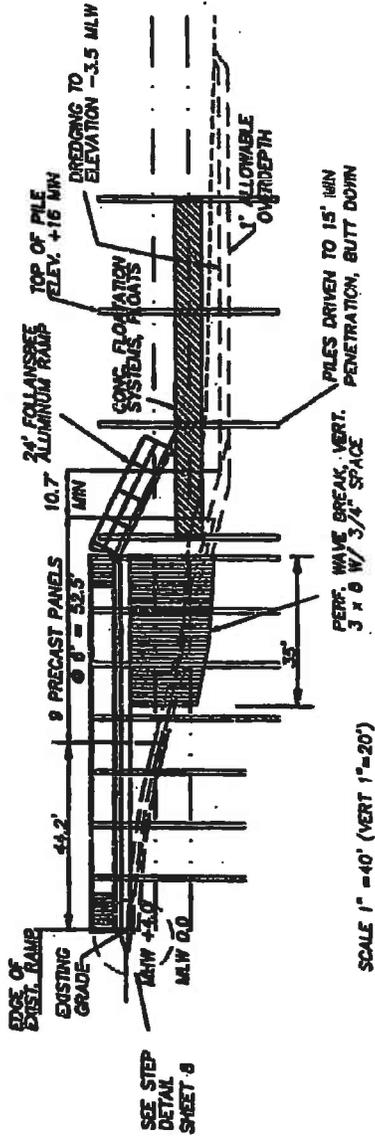
PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS

COAST LINE ENGINEERING 15 CREEK ROAD MARION, MA 02738

DATUM MLW 0.0 MHW 4.0

SCALE 1" = 20'

041-014-000-012-100
 041-014-000-012-200



PROFILE OF PROPOSED PIER

PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS

DATUM MLW 0.0
 MHW 4.0

COAST LINE ENGINEERING
 15 CREEK ROAD
 MARION, MA 02738

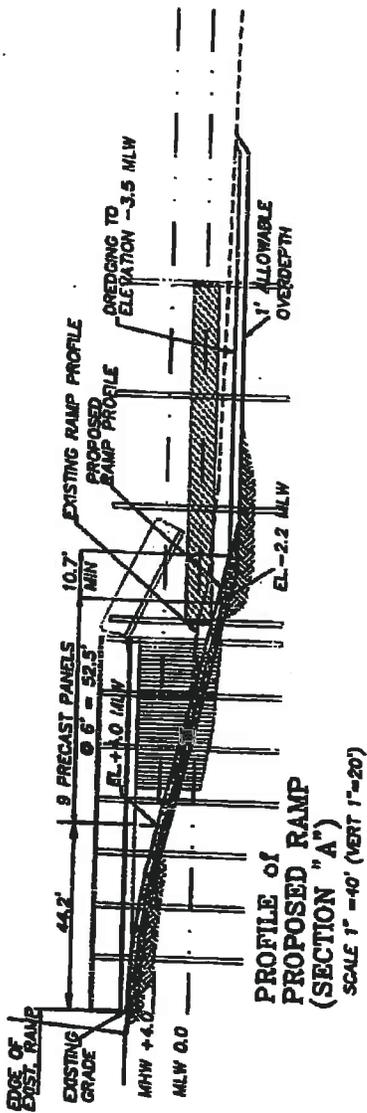
PROPOSED BOAT RAMP, PIER AND FLOAT

IN: SIPPICAN HARBOR
 MARION, PLYMOUTH CO,
 MASSACHUSETTS

DATE: SEPT 2 1996
 SHEET 3 OF 8

APPLICATION BY:
 TOWN OF MARION
 2 SPRING STREET
 MARION, MA 02738

041-014-000-012-100
041-014-000-012-200



PROPOSED BOAT RAMP,
PIER AND FLOAT

IN: SIPPICAN HARBOR
MARION, PLYMOUTH CO.,
MASSACHUSETTS

DATE: SEPT 2 1996
SHEET 4 OF 8

PROFILE OF PROPOSED RAMP

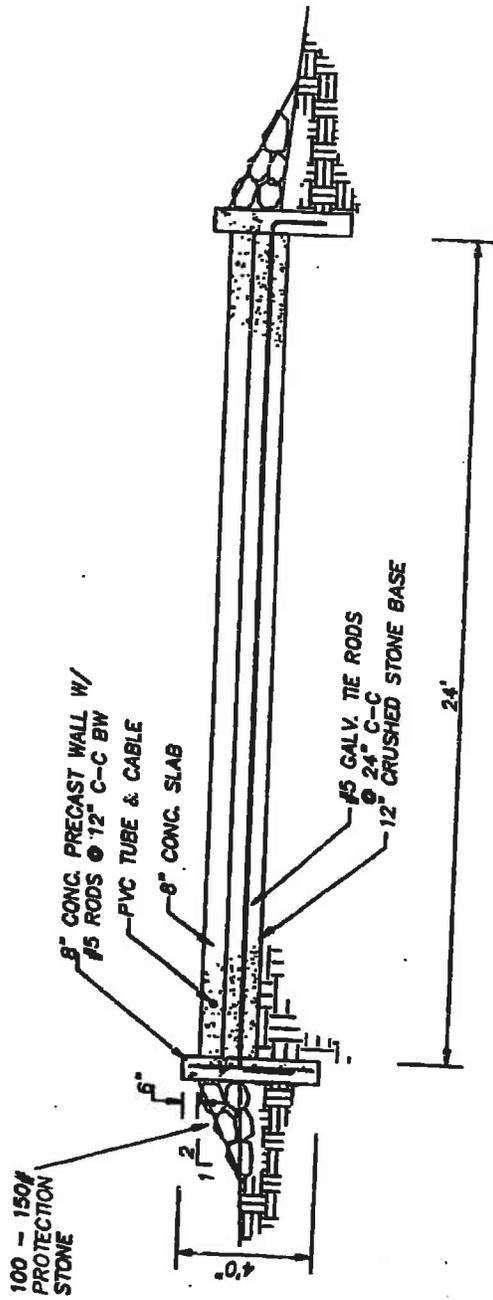
APPLICATION BY:
TOWN OF MARION
2 SPRING STREET
MARION, MA 02738

PURPOSE: REPLACE
EXISTING BOAT RAMP
AND PROVIDE BETTER
ACCESS

DATUM MLW 0.0
MHW 4.0

COAST LINE ENGINEERING
15 CREEK ROAD
MARION, MA 02738

041-014-000-012-100
041-014-000-012-200



SECTION "B"
SCALE 1"=5'

RAMP CROSS SECTION

PROPOSED BOAT RAMP,
PIER AND FLOAT

IN: SIPPICAN HARBOR
MARION, PLYMOUTH CO,
MASSACHUSETTS

DATE: SEPT 2 1996
SHEET 6 OF 8

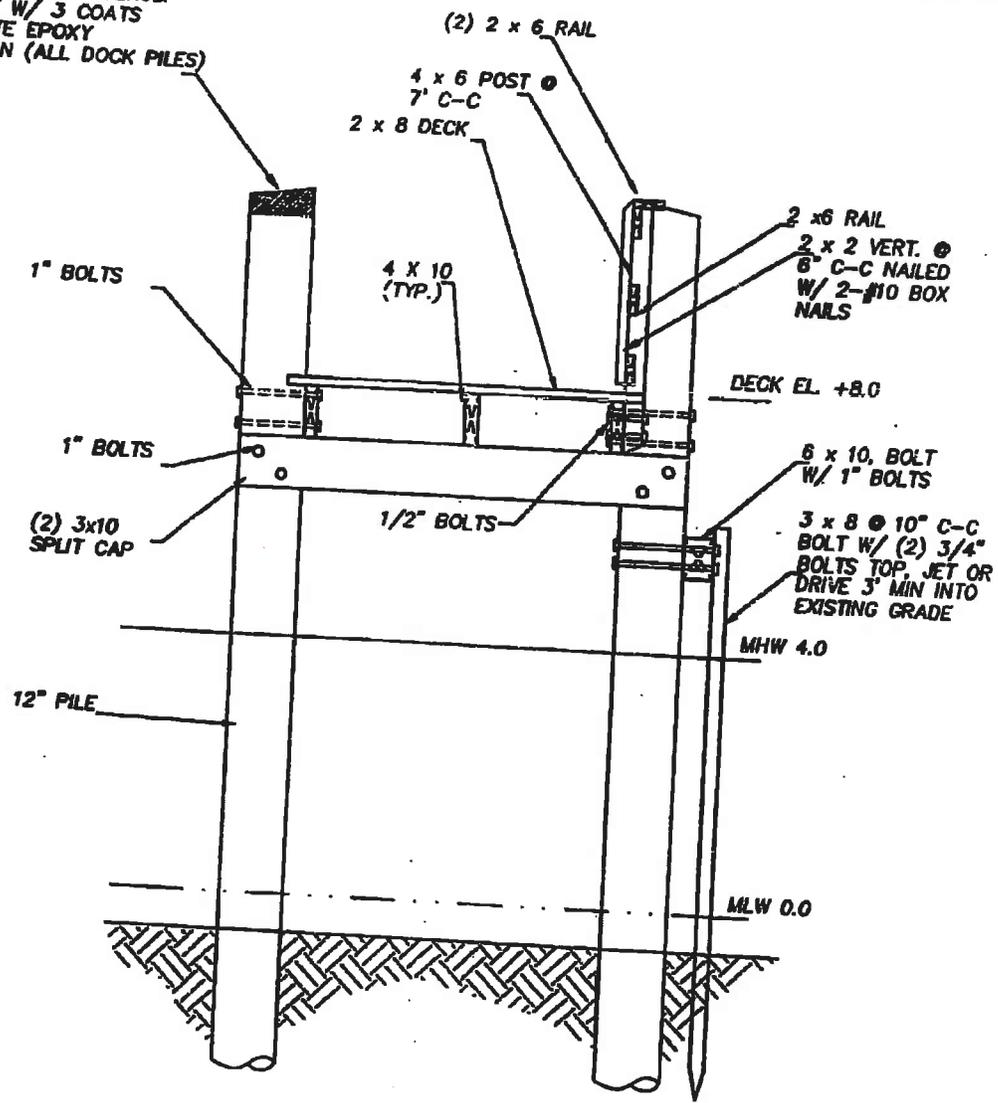
PURPOSE: REPLACE
EXISTING BOAT RAMP
AND PROVIDE BETTER
ACCESS

DATUM MLW 0.0
MHW 4.0

COAST LINE ENGINEERING
15 CREEK ROAD
MARION, MA 02738

041-014-000-012-100
 041-014-000-012-200

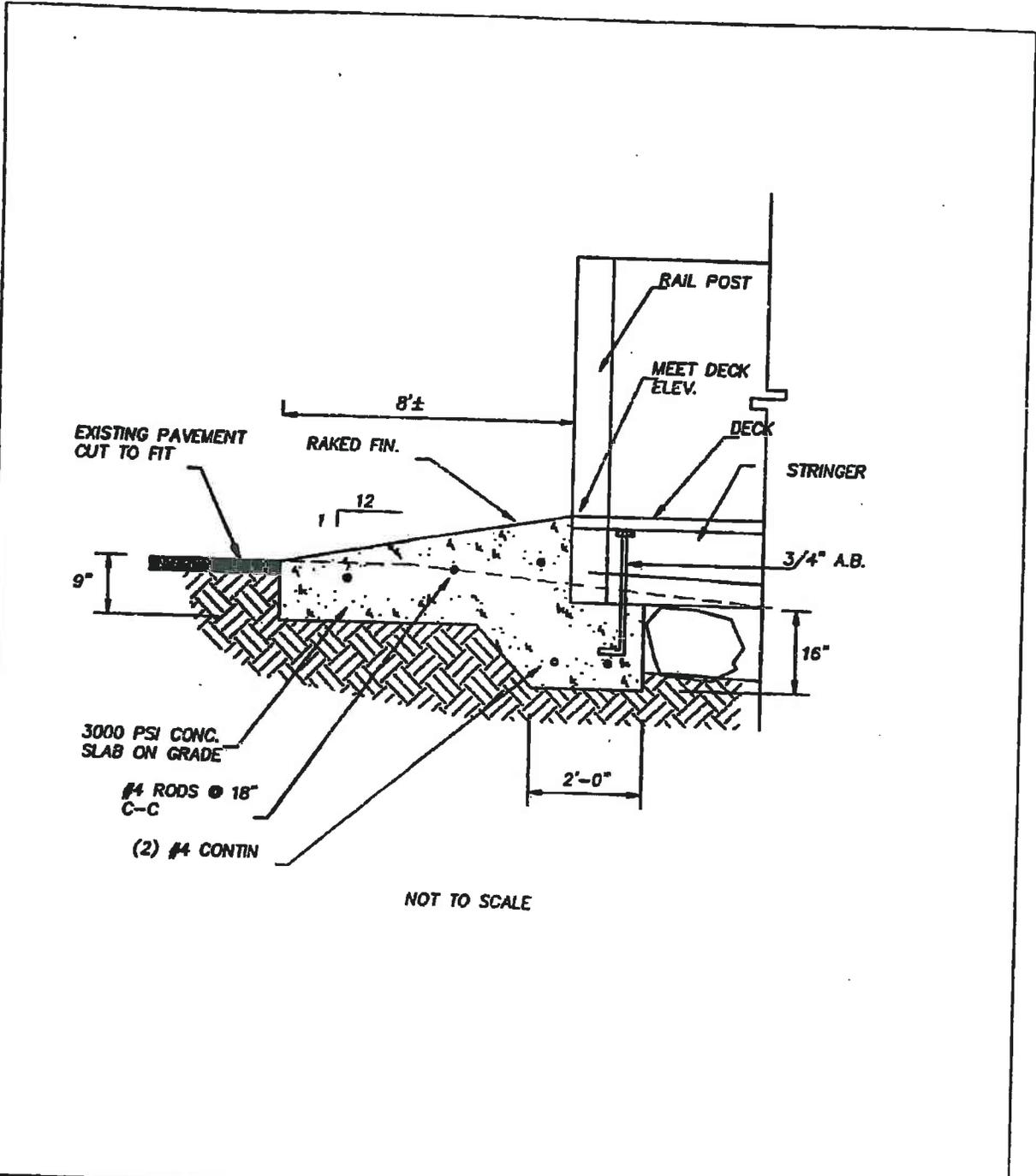
ONE LAYER FIBERGL.
 MAT W/ 3 COATS
 WHITE EPOXY
 RESIN (ALL DOCK PILES)



SCALE 1"=5'

| | | |
|---|---|--|
| <p>PROPOSED BOAT RAMP, PIER AND FLOAT</p> <p>IN: SIPPICAN HARBOR MARION, PLYMOUTH CO, MASSACHUSETTS</p> <p>DATE: SEPT 2 1996 SHEET 7 OF 8</p> | <p>PIER SECTION W/BREAKWATER</p> <p>APPLICATION BY: TOWN OF MARION 2 SPRING STREET MARION, MA 02738</p> | <p>PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS</p> <p>DATUM MLW 0.0 MHW 4.0</p> <p>COAST LINE ENGINEERING 15 CREEK ROAD MARION, MA 02738</p> |
|---|---|--|

041-014-000-012-100
041-014-000-012-200



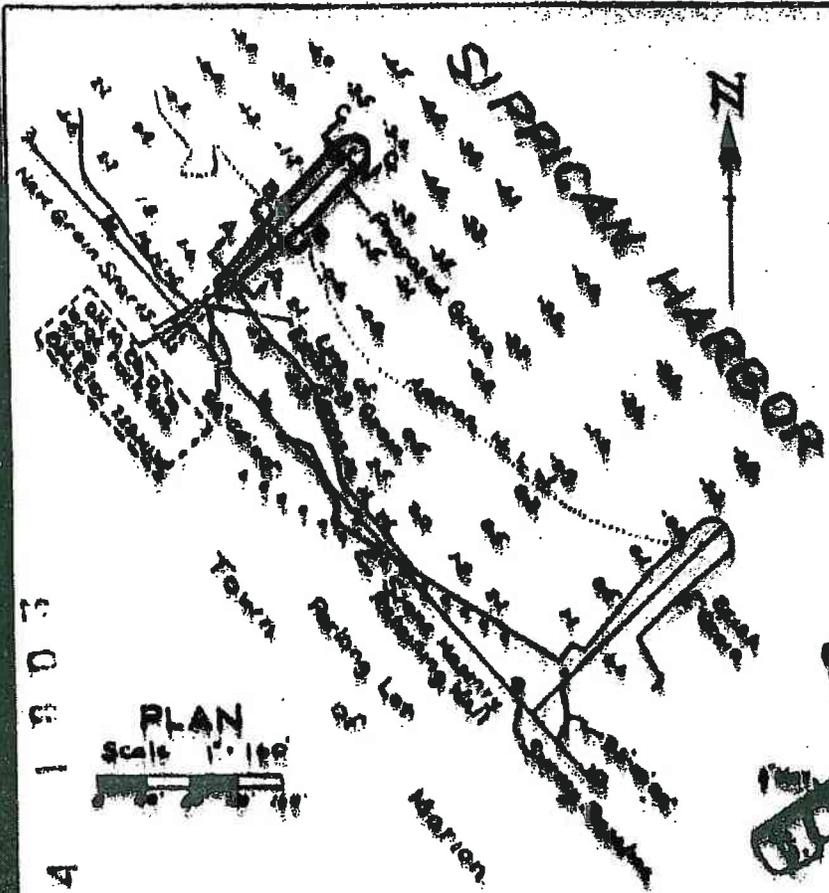
NOT TO SCALE

| | | |
|---|---|--|
| <p>PROPOSED BOAT RAMP, PIER AND FLOAT</p> <p>IN: SIPPICAN HARBOR MARION, PLYMOUTH CO, MASSACHUSETTS</p> <p>DATE: SEPT 2 1996 SHEET 8 OF 8</p> | <p>STEP DETAIL</p> <p>APPLICATION BY: TOWN OF MARION 2 SPRING STREET MARION, MA 02738</p> | <p>PURPOSE: REPLACE EXISTING BOAT RAMP AND PROVIDE BETTER ACCESS</p> <p>DATUM MLW 0.0 MHW 4.0</p> <p>COAST LINE ENGINEERING 15 CREEK ROAD MARION, MA 02738</p> |
|---|---|--|

057 0569

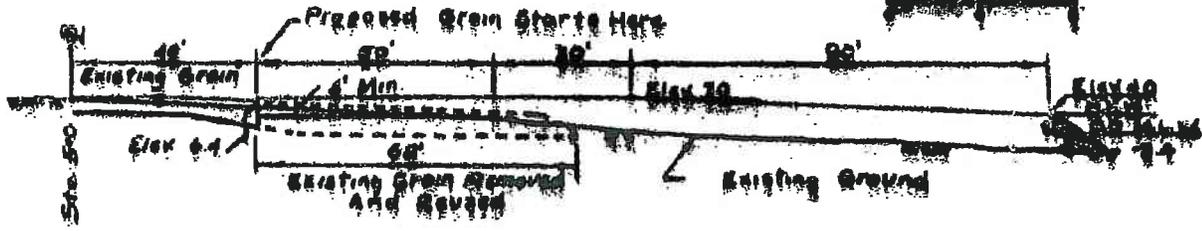
041-016-000-096-100
041-016-000-095-100

SHEET 1 OF 1



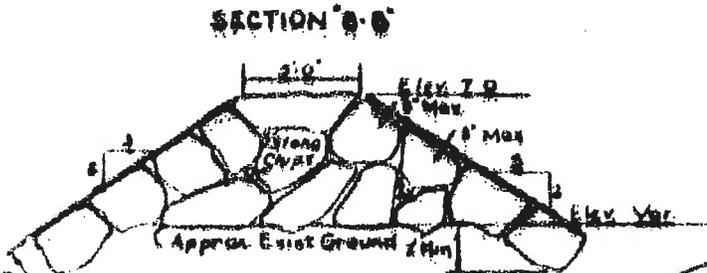
134 1903

PLAN
Scale 1" = 100'



PROPOSED GRAIN PROFILE
Scale 1" = 40'

NOTE
ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE MEAN OF M.C.W. MEAN TIDES 1-0' ON THE WATER SIDE AND 2-0' ON THE LAND SIDE.
PROPOSED WORK SHOWN IN RED.



SECTION 'B-B'
Scale 1" = 8'

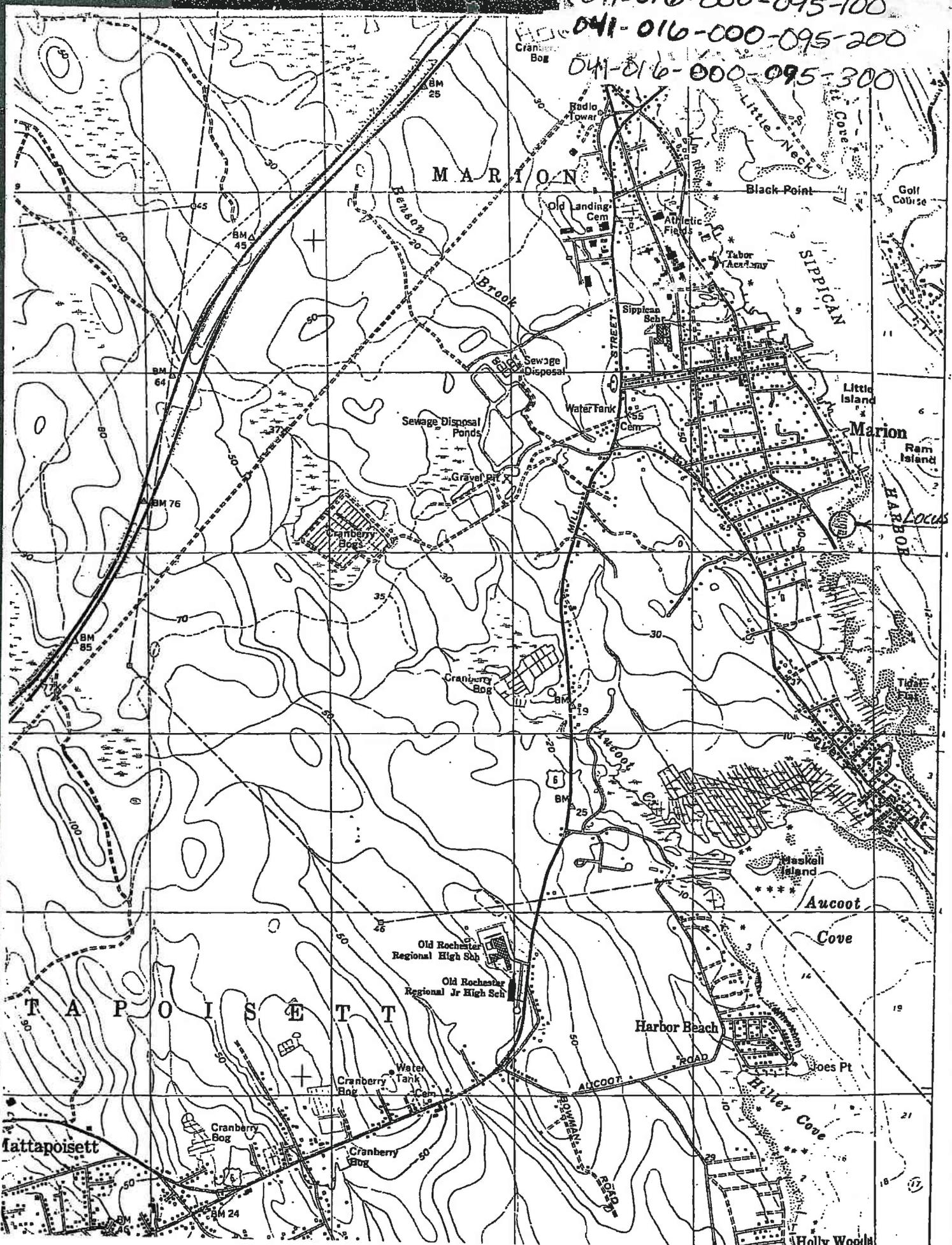
PROPOSED STONE GRAIN CONSTRUCTION / RECONSTRUCTION SIPPICAN HARBOR MARION, MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
SEPTEMBER 1970

John F. [Signature]
DEPUTY CHIEF ENGINEER - WATERWAYS

041-016-000-095-100

041-016-000-095-200

041-016-000-095-300



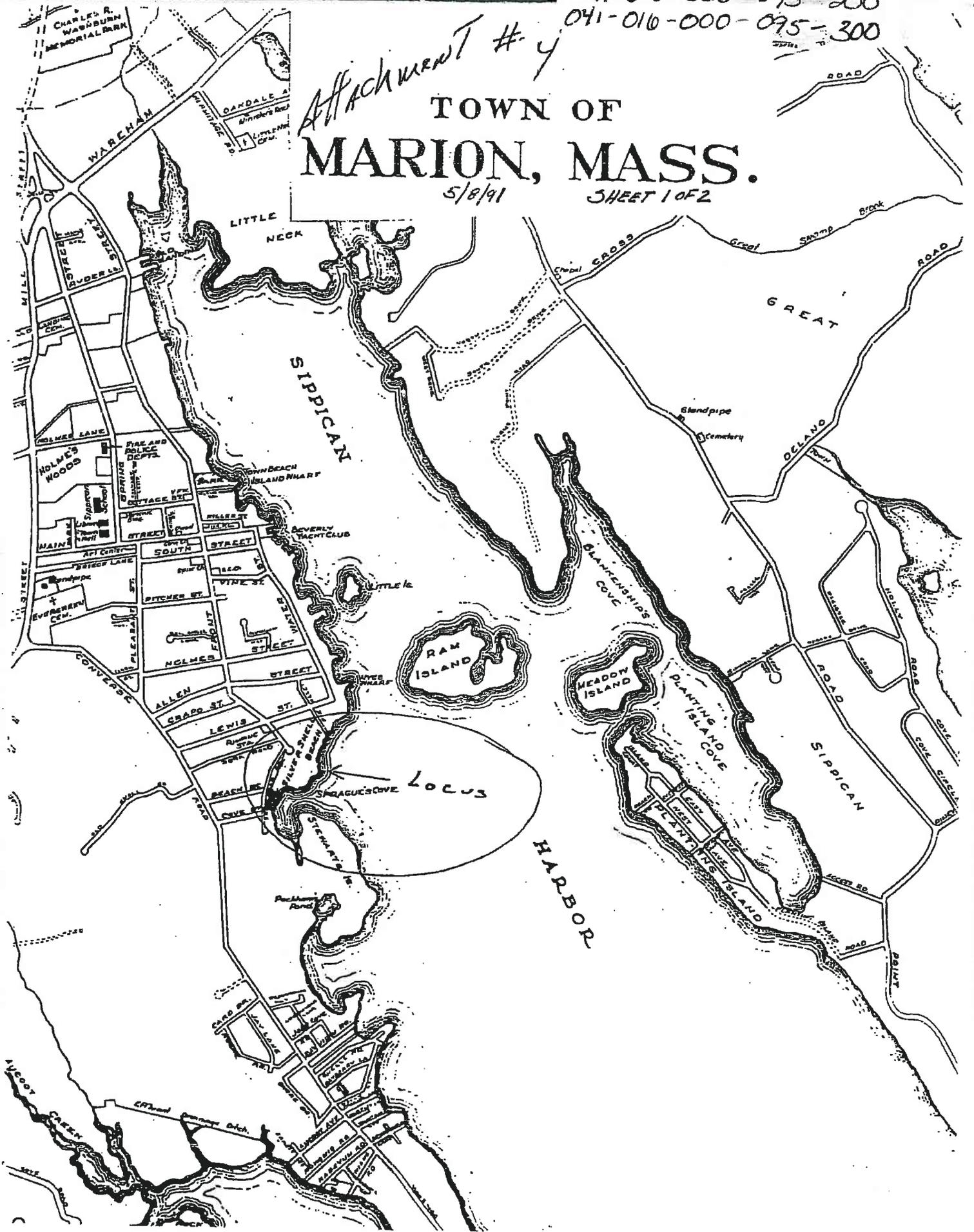
041-016-000-095-100
041-016-000-095-200
041-016-000-095-300

Attachment # 4

TOWN OF MARION, MASS.

5/8/91

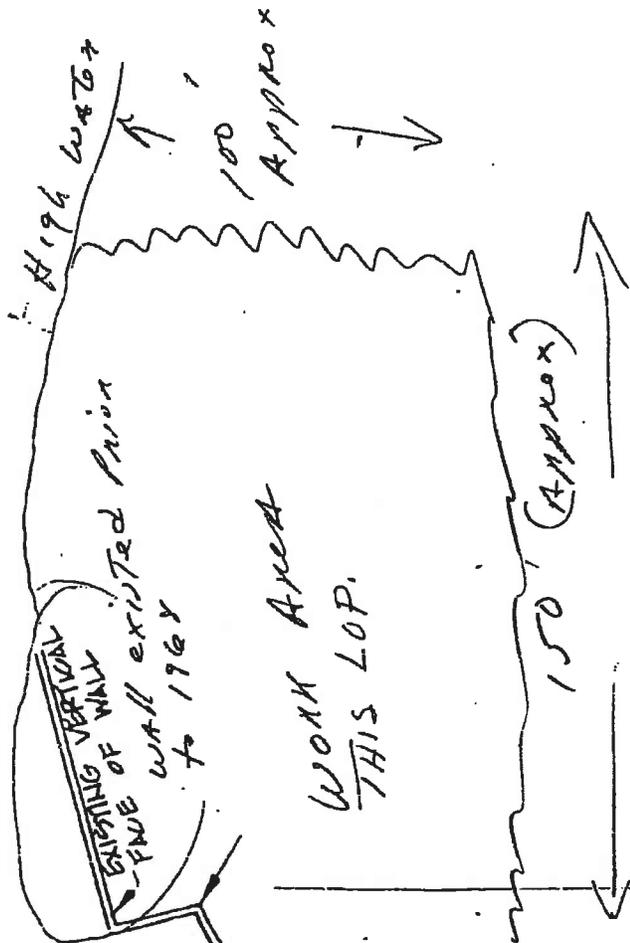
SHEET 1 OF 2



041-016-000-095-100

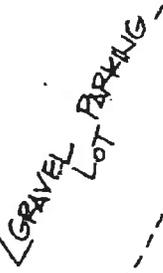
041-016-000-095-200

041-016-000-095-300



Attachment 5

SILVERSHELL BEACH.



SEE NOTE BELOW FOR RAMP

TOWN OF MARION, MA.

5/8/91

SHEET 2 OF 2

RELOCATE ROCKS +/- 125' SOUTH OF GROIN STRUCTURE.

AREA OF BULDERS & STONES TO BE REMOVED (NOT THIS LOP)

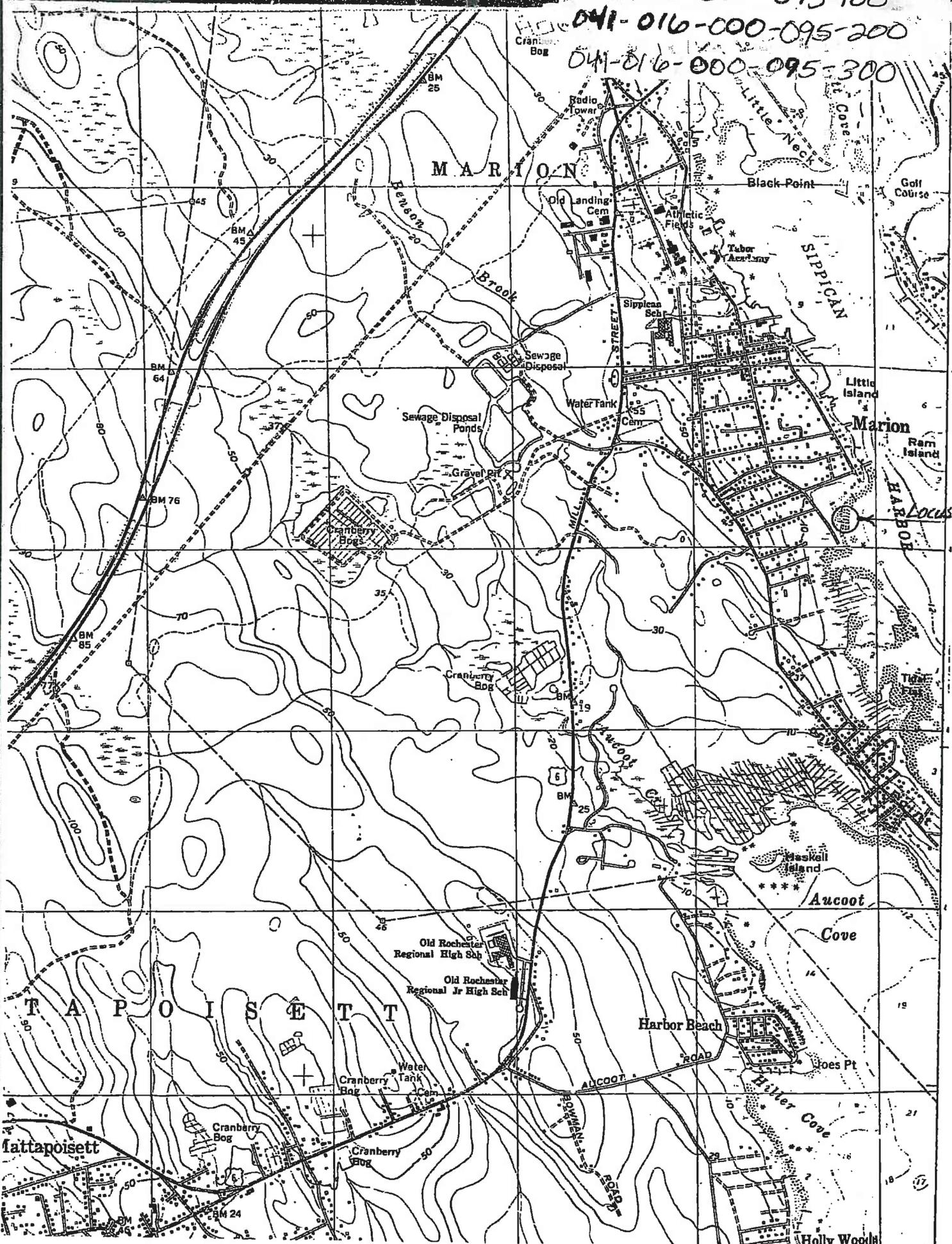
BULDER (TYP.)

EBB FLOOD

HARBOR

AN

041-016-000-095-100
041-016-000-095-200
041-016-000-095-300



Tappanissett

Holly Woods

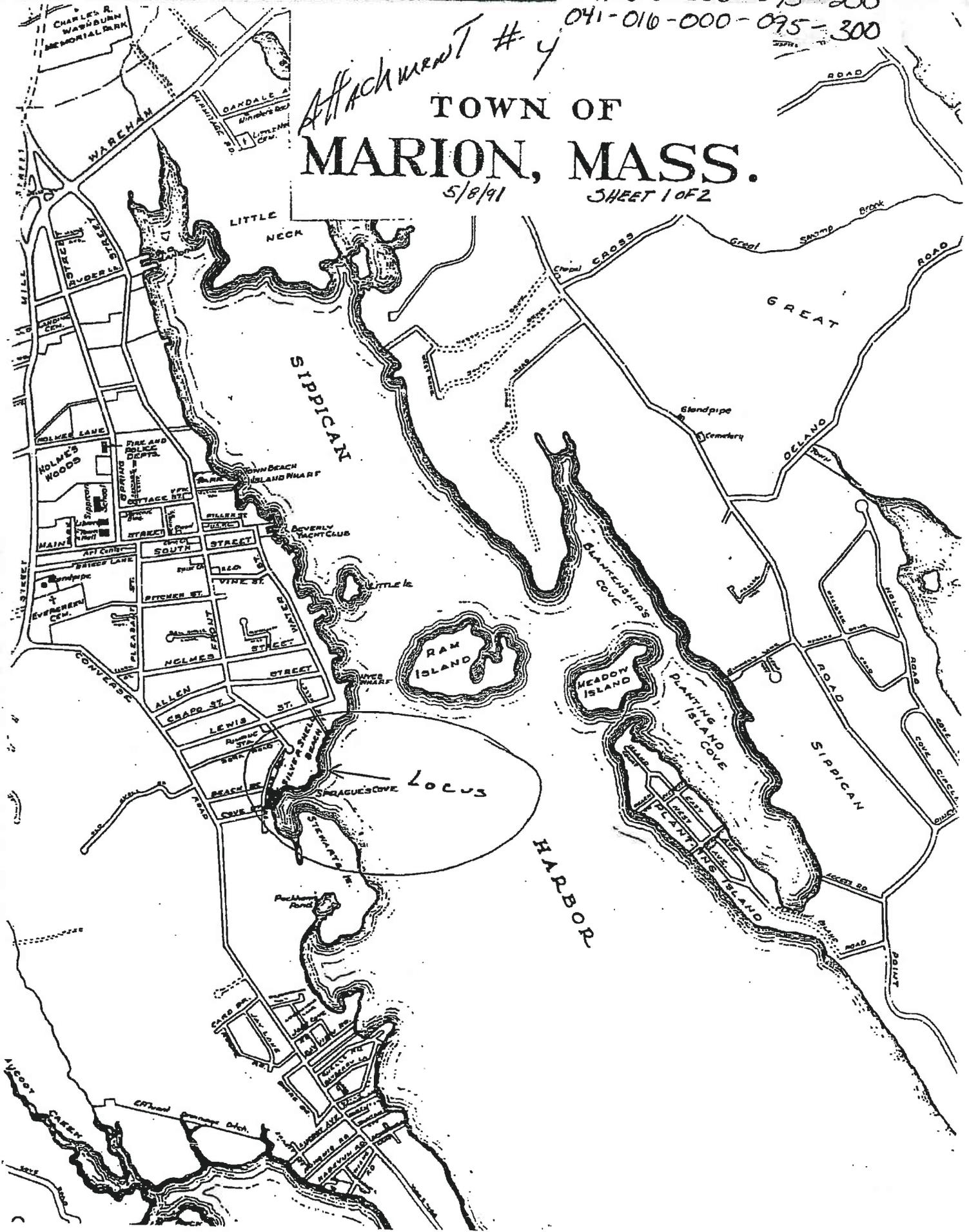
041-016-000-095-100
041-016-000-095-200
041-016-000-095-300

Attachment # 4

TOWN OF MARION, MASS.

5/8/91

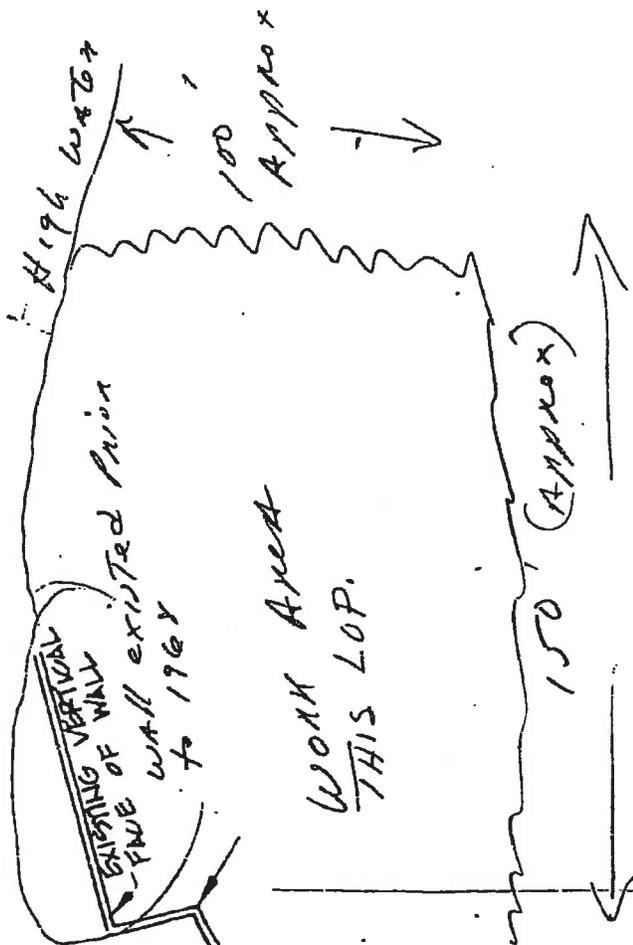
SHEET 1 OF 2



041-016-000-095-100

041-016-000-095-200

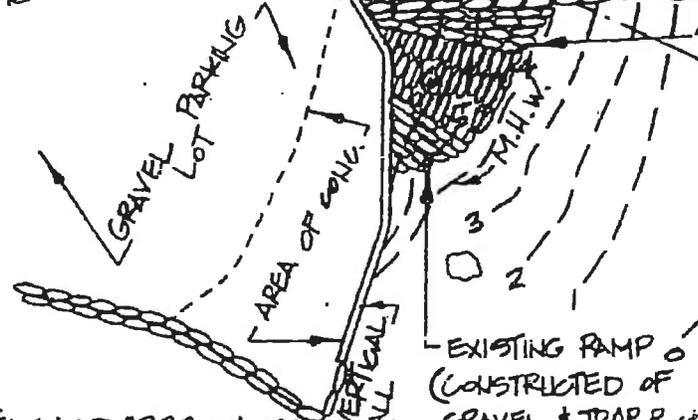
041-016-000-095-300



SILVERSHHELL BEACH.



SEE NOTE BELOW FOR RAMP



BOULDER (TYP.)

HARBOR

EBB FLOOD

TOWN OF MARION, MA.

5/8/91

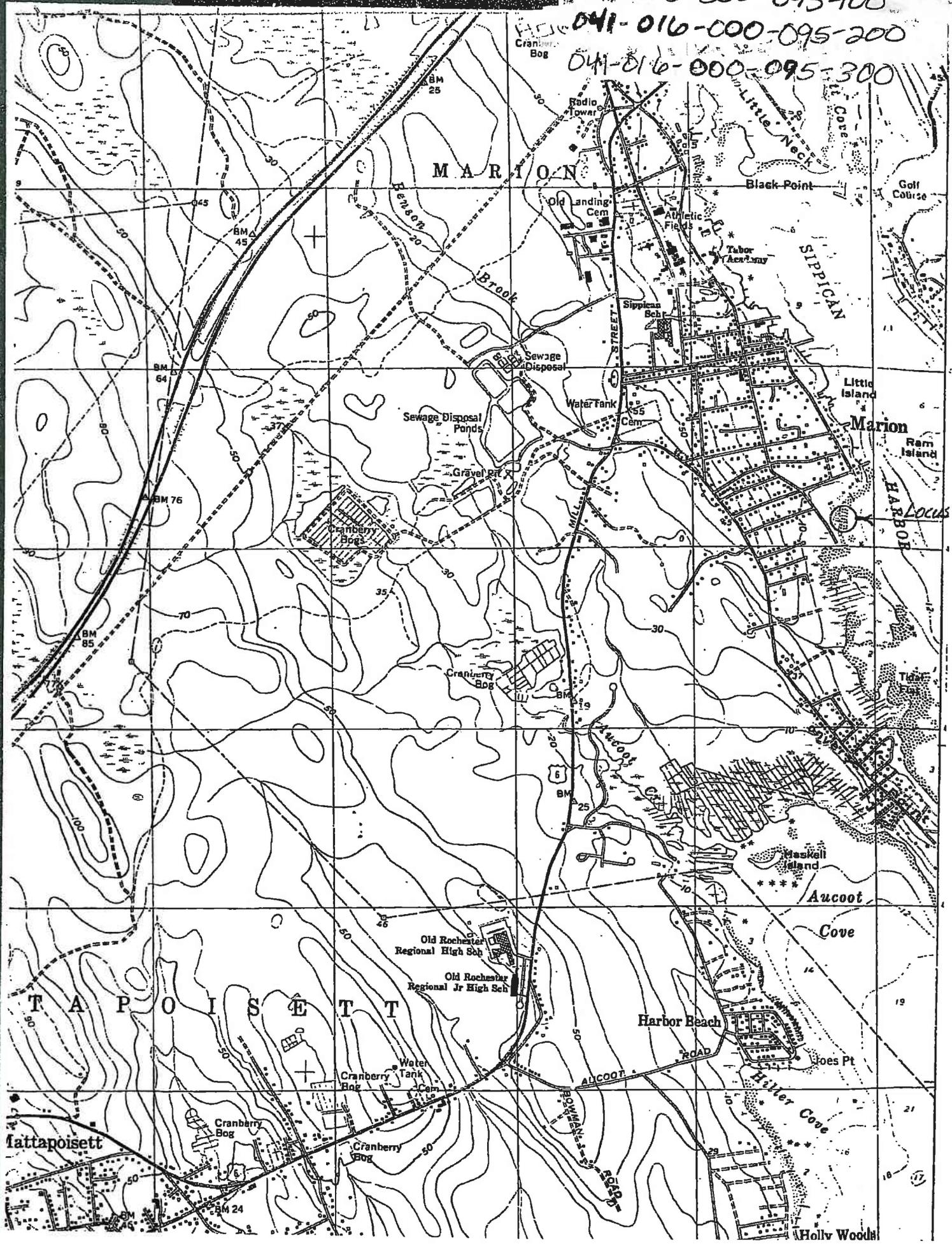
SHEET 2 OF 2

RELOCATE ROCKS +/- 125' SOUTH OF GRID STRUCTURE.

AREA OF BOULDERS STONES TO BE REMOVED. (NOT THIS LOP)

AN

041-016-000-095-100
041-016-000-095-200
041-016-000-095-300



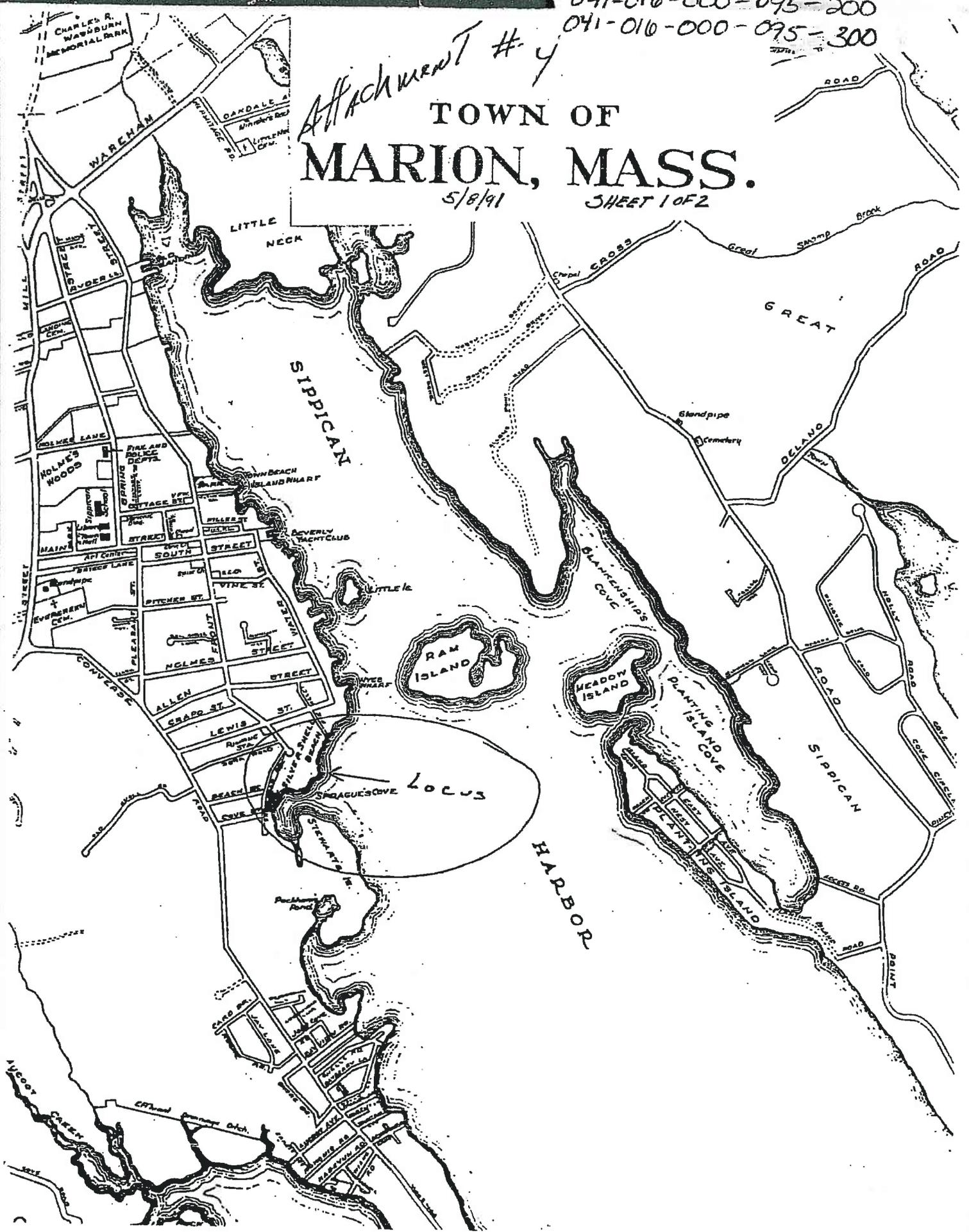
041-016-000-095-100
041-016-000-095-200
041-016-000-095-300

Attachment # 4

TOWN OF MARION, MASS.

5/8/91

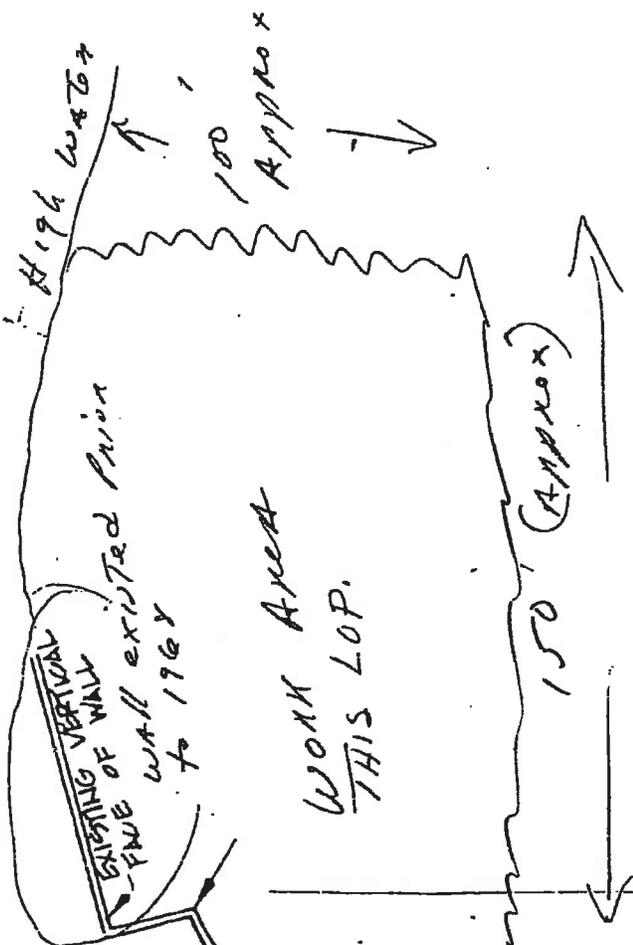
SHEET 1 OF 2



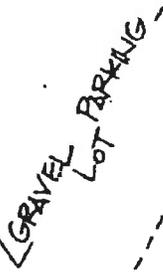
041-016-000-095-100

041-016-000-095-200

041-016-000-095-300



SILVERSHELL BEACH.



SEE NOTE BELOW FOR RAMP

EXISTING RAMP (CONSTRUCTED OF GRAVEL & TRAP ROCK)

RELOCATE ROCKS +/- 125' SOUTH OF GROIN STRUCTURE.

AREA OF Boulders & STONES TO BE REMOVED (W/ THIS LOP.)

Boulder (TYP.)

EBB FLOOD

HARBOR

TOWN OF MARION, MA.

5/8/91

SHEET 2 OF 2

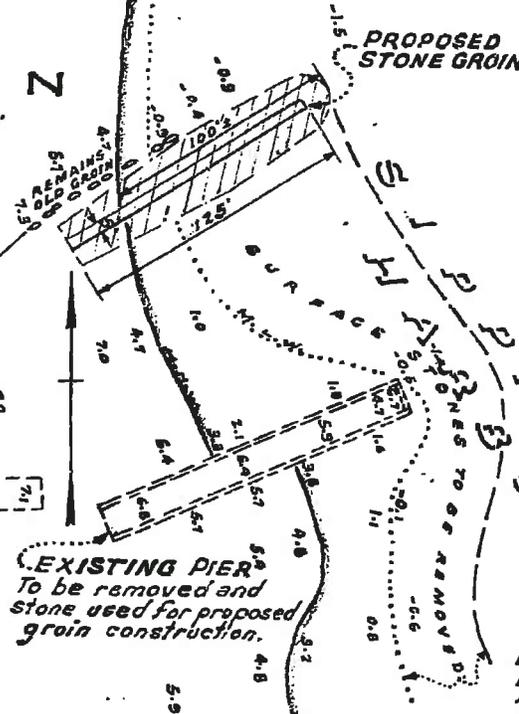
0 9 2 0 0 9 5

041-016-000-096-100

MARION

Estate of
Jane W. Hobbs
192 Comm. Ave. Boston, Mass.

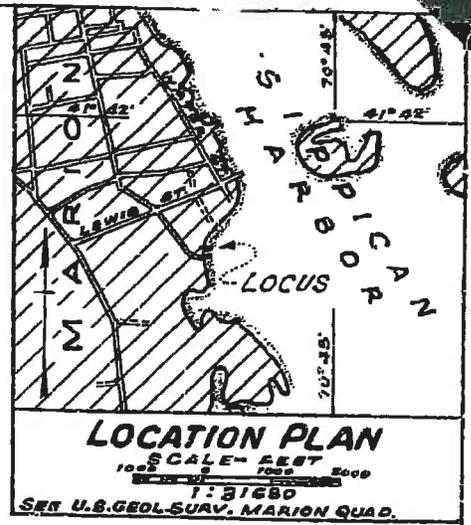
SILVERSHILL RD.
SURPLUS TOWNS DISPOSAL AREA



EXISTING PIER
To be removed and
stone used for proposed
groin construction.

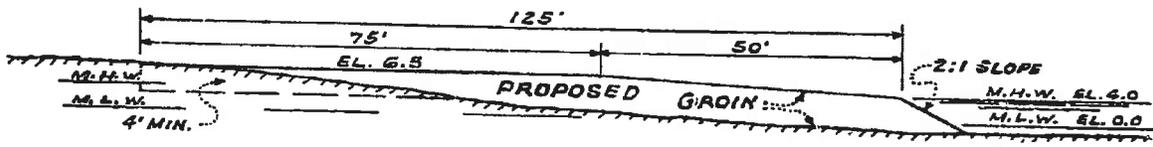
BATH HOUSE

PLAN
SCALE - FEET
1" = 80'

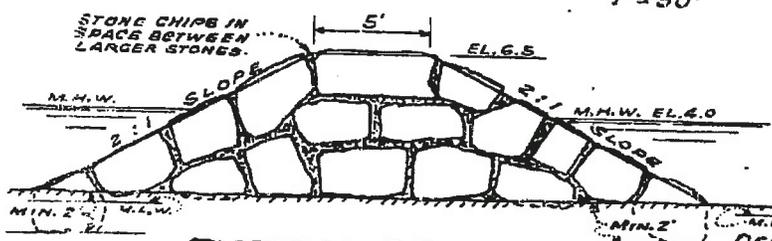


LOCATION PLAN
SCALE - FEET
1" = 200'

NOTE
ELEVATIONS ARE IN FEET AND TENTHS
ABOVE THE PLANE OF MEAN LOW WATER.
MINUS FIGURES SHOW DEPTHS BELOW
THE SAME PLANE.
LOCATION OF WORK TO BE DONE IS
SHOWN IN RED.



PROFILE - PROPOSED GROIN
SCALE - FEET
1" = 30'



TYPICAL SECTION
SCALE - FEET
1" = 8'

PROPOSED
PIER REMOVAL AND
STONE GROIN CONSTRUCTION
SIPPICAN HARBOR
MARION - MASS.

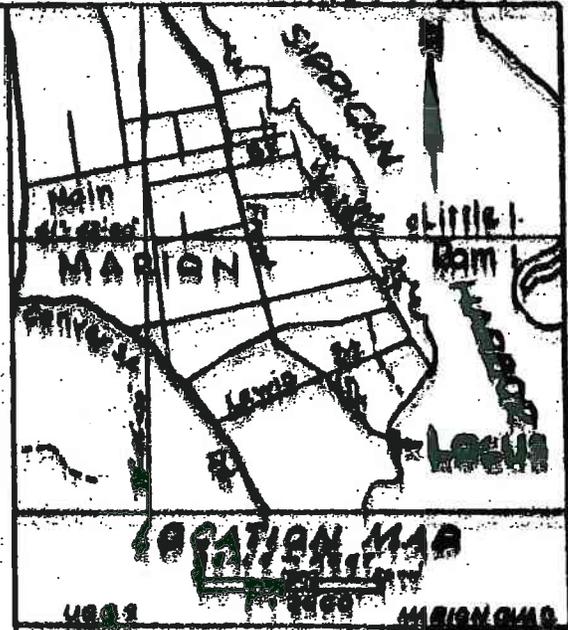
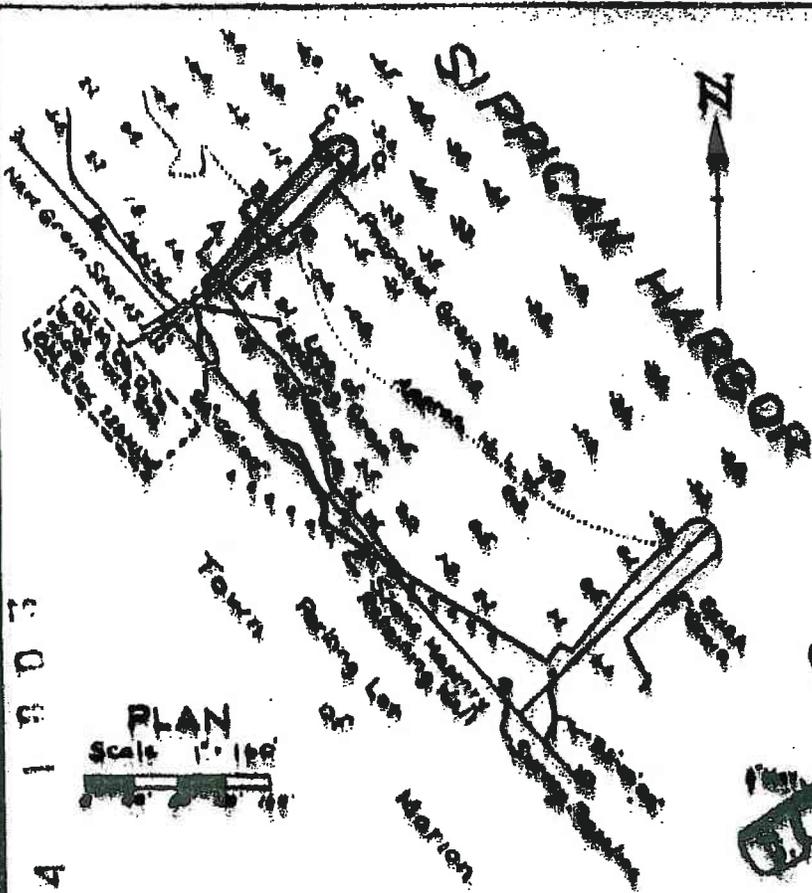
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
JULY 1954
SCALES SHOWN

Handwritten signature

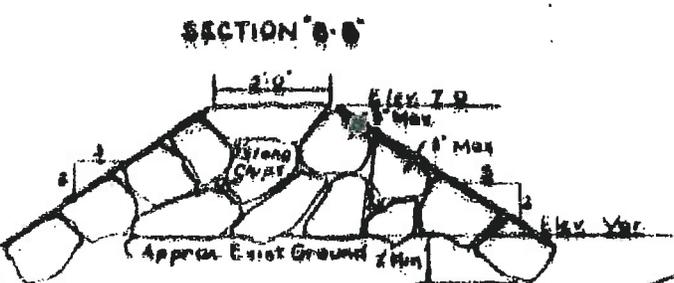
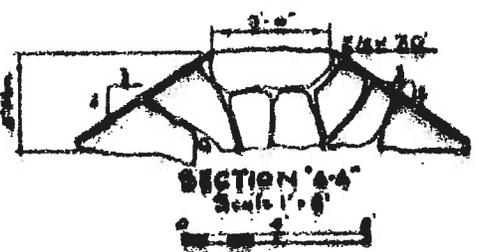
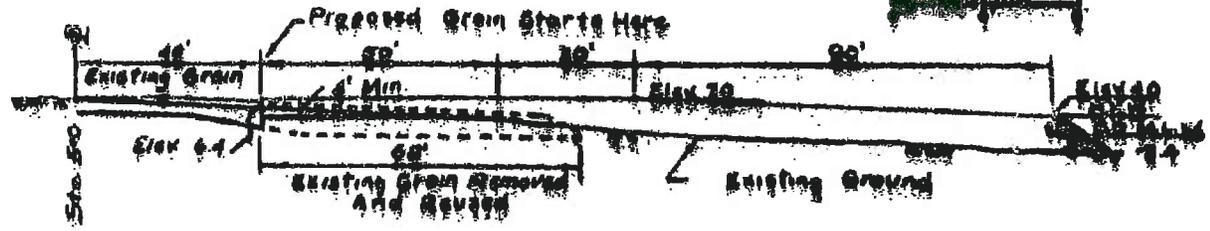
057 0569

041-016-000-096-100
041-016-000-095-100

SHEET 1 OF 1



134 1903



PROPOSED GRAIN PROFILE
Scale 1"=10'

NOTE
ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE MEAN OF LOW WATER. STROUDES 2'-0" ON THE WATER SIDE. PROPOSED WORK SHOWN IN RED.

PROPOSED STONE GROIN CONSTRUCTION / RECONSTRUCTION SIPPICAN HARBOR MARION, MASS.
APPROVED BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
SEPTEMBER 1970

[Signature]
DEPUTY CHIEF ENGINEER - WATERWAYS

Section V

Wareham

Section V – Community Findings – Town of Wareham

COMMUNITY DESCRIPTION

The Town of Wareham consists of a land area of 35.79 square miles out of a total area of 46.27 square miles and had a population of 20,335 in the 2000 census. The Town is located on the south coast of Massachusetts and its location can be seen on this report’s cover. The estimated length of shoreline that is directly exposed to open ocean waves is 26.6 miles with the remaining shoreline semi-protected by offshore structures or landforms. The Town is protected from major coastal storms by both natural and man-made shoreline structures that require maintenance to insure the long term protection of its coastline. The man-made and publicly owned structures that protect the Town were investigated for their ability to provide adequate protection from major coastal storms. Structures have been identified as publicly owned, including coastal dunes and beaches, based on evidence of investment of public funds made to create/enhance/maintain these structures. The assessment did not include floating or pile supported structures as they are assumed not to provide any significant coastal protection from major storm events.

STRUCTURE INVENTORY

Within the Town of Wareham, there were 17 structures which had public or unknown ownership which provide significant coastal protection. The location of the structures can be seen in Sheets 1 through Sheet 5 in Section V-B of this report. The structures were categorized by their type and by their structural condition based on a preliminary field assessment. The distribution of structures by type and condition can be seen in the following table:

STRUCTURE TYPE AND QUANTITY - Town of Wareham

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Length |
|-----------------------|------------------|----------------------------|---|---|---|---|--------------|
| | | A | B | C | D | F | |
| Bulkhead / Seawall | 8 | | 3 | 3 | 1 | 1 | 2115 |
| Revetment | 3 | | 2 | 1 | | | 795 |
| Breakwater | | | | | | | |
| Groin / Jetty | 2 | | | 1 | 1 | | 190 |
| Coastal Dune | | | | | | | |
| Coastal Beach | 4 | | 2 | 2 | | | 2095 |
| | 17 | | 7 | 7 | 2 | 1 | 5195 |

Within the above table, the total length of each type of structure is also provided. The structures are listed by the type which is providing the primary coastal protection. Many sites have multiple structure types at the same location (i.e. revetment in front of seawall). These secondary structures, although not identified within these tables, are included in the development of repair/rehabilitation costs.

The development of repair costs has been included by structure type and by condition. In the Town of Wareham’s case there are a total of 17 structures which would require approximately \$ 3.1 million to bring all the coastal structures to “A” Rating. Most critical will be the structures in the “D” and “F” classifications as those are assumed to undergo some level of damage or failure during the next major coastal storm event. To reconstruct these structures, identified in the preliminary survey as being in poor condition, an estimated \$ 1.4 million would be required to upgrade the Town’s coastal protection.

STRUCTURE REPAIR / RECONSTRUCTION COST - Town of Wareham

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost | | | | | |
|-----------------------|------------------|----------------------------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|-----------|
| | | A | B | C | D | F | | | | | | |
| Bulkhead / Seawall | 8 | \$ | 303,105 | \$ | 151,120 | \$ | 759,000 | \$ | 467,115 | \$ | 1,680,340 | |
| Revetment | 3 | \$ | 57,262 | \$ | 58,608 | | | | | \$ | 115,870 | |
| Breakwater | | | | | | | | | | \$ | - | |
| Groin / Jetty | 2 | | | \$ | 79,680 | \$ | 168,168 | | | \$ | 247,848 | |
| Coastal Dune | | | | | | | | | | \$ | - | |
| Coastal Beach | 4 | \$ | 392,832 | \$ | 727,980 | | | | | \$ | 1,120,812 | |
| | 17 | \$- | \$ | 753,199 | \$ | 1,017,388 | \$ | 927,168 | \$ | 467,115 | \$ | 3,164,870 |

Based on the limited research within the scope of this project research, the presumed ownership of the structures was established on an initial basis and would be subject to more intense review in future tasks. Structures identified as being owned privately were excluded from further consideration. Although ownership of the land on which the structure was located was a factor, the structure ownership was treated as a separate issue from land ownership. For the Town of Wareham the breakdown of structures by assumed ownership is as follows:

STRUCTURE OWNERSHIP / REPAIR COST - Town of Wareham

| Primary Structure (1) | Total Structures | Structure Condition Rating | | | | | Total Cost | | | | | |
|-------------------------------|------------------|----------------------------|---------|---------|-----------|-----------|------------|---------|---------|---------|-----------|-----------|
| | | A | B | C | D | F | | | | | | |
| Town Owned | 14 | \$ | 695,937 | \$ | 1,017,388 | \$ | 759,000 | \$ | 467,115 | \$ | 2,939,440 | |
| Commonwealth of Massachusetts | 2 | \$ | 57,262 | | | | | | | \$ | 57,262 | |
| Federal Government Owned | | | | | | \$ | 168,168 | | | \$ | 168,168 | |
| Unknown Ownership | 1 | | | | | | | | | \$ | - | |
| | 17 | \$- | \$ | 753,199 | \$ | 1,017,388 | \$ | 927,168 | \$ | 467,115 | \$ | 3,164,870 |

The identification of presumed ownership was not based on the investigation of legal documents but relied on property ownership and from construction and regulatory documents that were found. A more detailed investigation of legal documents and agreements would be required where structure ownership is disputed. A more detailed identification of structure type, length, condition and location can be found in Section V-B which contains Structure Assessment Reports for each individual structure found.

SUMMARY

The enclosed reports and associated documents reflects the Town of Wareham's coastal structure information that will eventually be input into a state-wide GIS database and will be accessible through MassGIS. This data, when compiled state-wide, will be critical in the development of both short term and long term planning for maintaining and improving Massachusetts coastal protection.

This database will also provide relatively quick access to identify available documentation for these structures as well as the ability to be updated as coastal structure improvements are made.

Section V - Wareham

Part B

Structure Assessment Reports





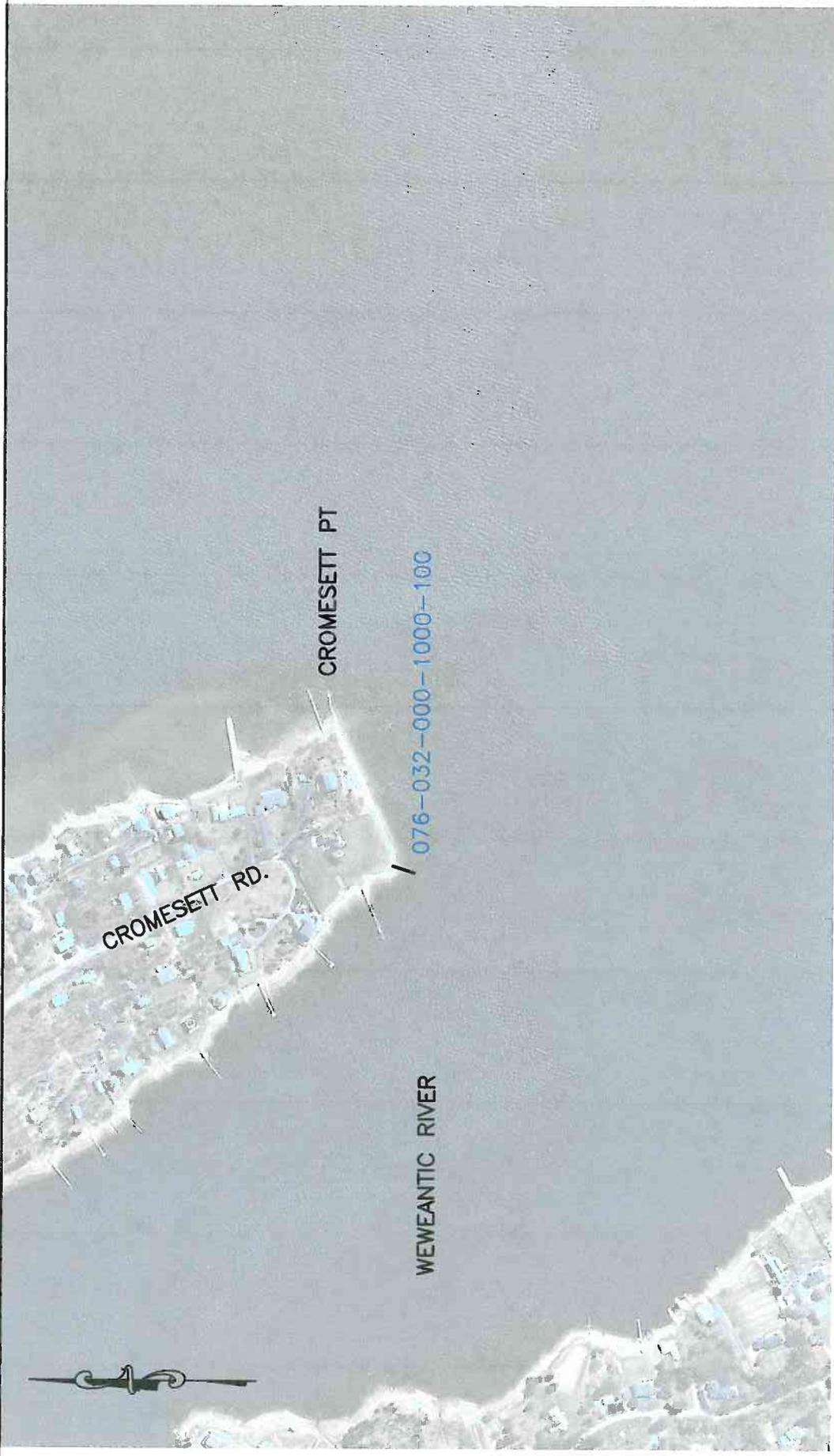
COASTAL STRUCTURE LOCATION PLAN

TOWN OF WAREHAM
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



BCE Bourne Consulting Engineering
 100 Main Street
 Wareham, MA 02561
 TEL: (508) 552-0000 FAX: (508) 552-0000



COASTAL STRUCTURE LOCATION PLAN

TOWN OF WAREHAM
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

BCE Bourne Consulting Engineering
 3 Paul Drive
 Bourne, MA 01909
 TEL: (508) 833-4444 FAX: (508) 833-4444



COASTAL STRUCTURE LOCATION PLAN

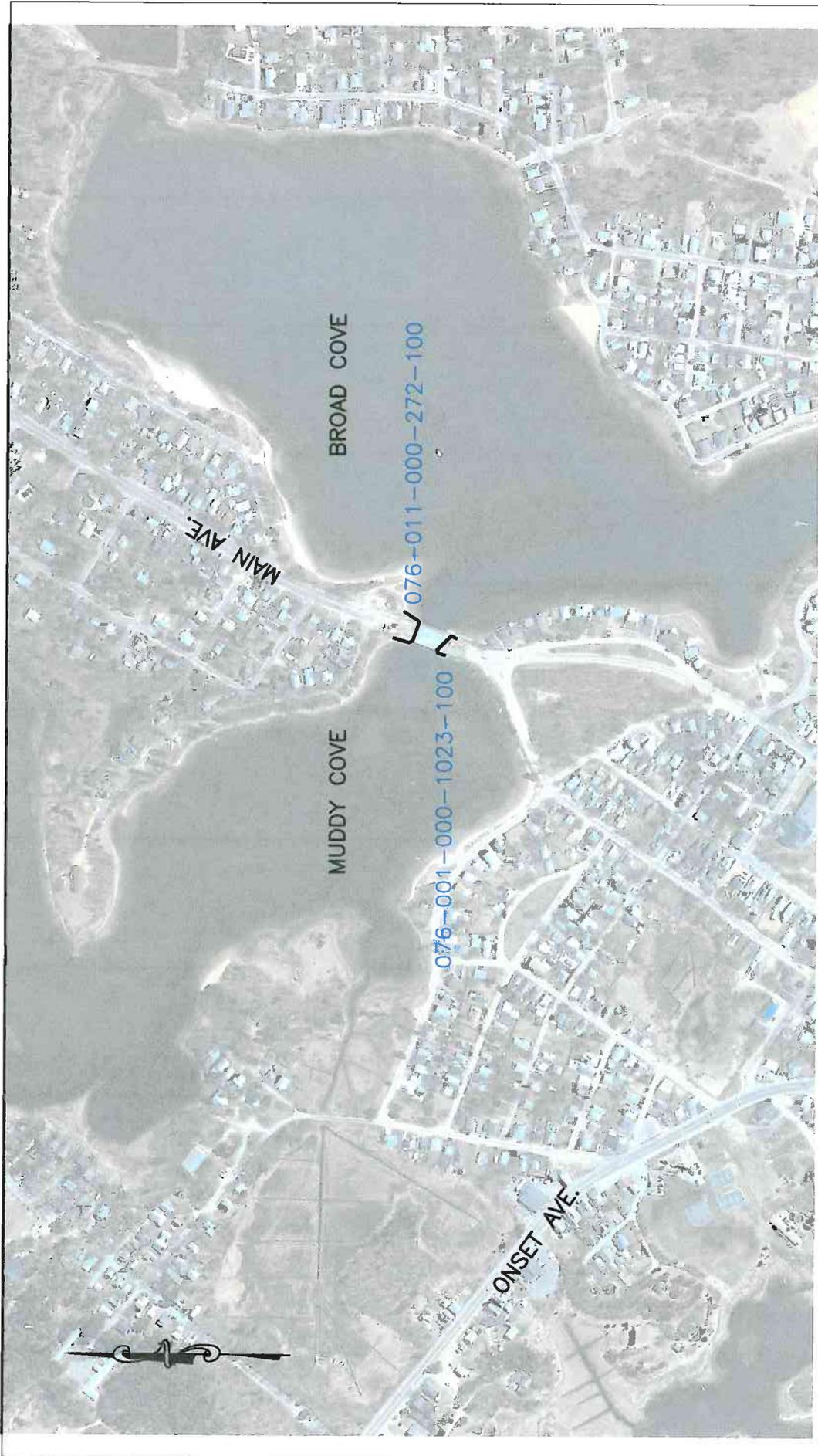
TOWN OF WAREHAM
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

Bourne Consulting Engineering
 3 Park St.
 Bourne, MA 01909
 TEL: (508) 833-4000 FAX: (508) 833-3000



COASTAL STRUCTURE LOCATION PLAN

TOWN OF WAREHAM
 COASTAL INFRASTRUCTURE INVENTORY
 AND ASSESSMENT PROJECT

JULY 2007



SCALE: 1" = 150'-0"

Bourn Consulting Engineering
 3 East Main Street
 Wareham, MA 02566
 Tel: (508) 552-4444 Fax: (508) 552-4444

Structure Assessment Form

Property Owner:

Local

Location:

Onset Beach - West

Date:

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$253,440.00

Length: 2000 Feet
 Top Elevation: Feet NAVD 88
 FIRM Map Zone: VE
 FIRM Map Elevation: 18 Feet NGVD



Primary Type: Coastal Beach
 Primary Material: Sand
 Primary Height: 5 to 10 Feet

Secondary Type:
 Secondary Material:
 Secondary Height:

Structure Summary :

Sand beach that show signs of recent nourishment and maintenance. There is houses, a park and a road behind. Beach is very has a very steep drop off.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | II |
| <i>Rating</i> | Good | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

076-001-000-042-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Location:

Date:

Local

Shell Point

4/26/2009

Presumed Structure Owner:

Based On Comment:

Local

Owner Name:

Earliest Structure Record:

Estimated Reconstruction/Repair Cost:

Wareham

Unkown

\$570,240.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 900 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Primary Material:

Primary Height:

Coastal Beach

Sand

5 to 10 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

Sandy beach at the mouth of a cove. There is sign of erosion from tidal current. Behind is house

Condition

C

Priority

II

Rating

Fair

Rating

Low Priority

Level of Action

Moderate

Action

Future Project Consideration

Description

Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Description

Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

076-001-000-047-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Onset Avenue Bridge

Date:

7/18/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$32,749.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 30 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

5 to 10 Feet

Secondary Type:

Revetment

Secondary Material:

Stone

Secondary Height:

Under 5 Feet



Structure Summary :

The stone block seawall has stones that are approximately 4 feet by 1 foot by 2 feet in size. The stones have been mortared together. Most of the mortar has fallen out. The stones have moderate signs of rotation and settling. The riprap at the base of the wall is mostly buried or missing. The stones average 3 feet by 2 feet by 1 foot in size.

Condition

C

Rating

Fair

Level of Action

Moderate

Description

Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority

II

Rating

Low Priority

Action

Future Project Consideration

Description

Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

076-001-000-1006-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Main Avenue Bridge

Date:

7/18/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$50,985.00

Length: Top Elevation: FIRM Map Zone: FIRM Map Elevation:

125

AE

15

Feet Feet NAVD 88

Feet NGVD

Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

10 to 15 Feet

Secondary Type:

Revetment

Secondary Material:

Stone

Secondary Height:

10 to 15 Feet



Structure Summary :

The stone block seawall has stones that average 3 feet by 2 feet by 2 feet in size. The stones have been placed tightly together and have a concrete cap. The wall is approximately 4 feet wide. Behind the wall is dumped riprap with on average 100 pound stones. The stones are at a 1 on 2 slope. There is no visible scour. There is minor section loss. Behind the structures is the bridge abutment for the bridge over East River.

Condition

B

Priority

II

Rating

Good

Rating

Low Priority

Level of Action

Minor

Action

Future Project Consideration

Description

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Description

Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

076-001-000-1023-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Shell Point

Date:

7/18/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unkown

Estimated Reconstruction/Repair Cost:

\$467,115.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 475 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



Primary Type:

Bulkhead/ Seawall

Primary Material:

Stone

Primary Height:

Under 5 Feet

Secondary Type:

Secondary Material:

Secondary Height:

Structure Summary :

The stone block seawall is made up of stones that are 2 feet by 1 foot by 1 foot in size. The stones have been mortared together. Most of the wall has collapsed and failed. There is a sandy beach in front and a parking lot behind the structure. There is no visible sign of scour. There are many areas of erosion.

Condition

F

Rating

Critical

Level of Action

Immediate

Description

Conditions of structure/landform may warrant emergency stabilization as failure may result in potential loss of property and/or life. Landform eroded, loss of integrity. Structure exhibits critical levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure provides little or no protection from a major coastal storm. Actions taken to totally reconstruct structure to regain full capacity. Landform stability is severely compromised, rate of erosion/material loss may be increasing, and landform does not provide adequate protection from a major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.

Priority

I

Rating

None

Action

Long Term Planning Considerations

Description

No Inshore Structures or Residential Dwelling Units Present

Structure Images:

076-001-000-1048-100-PHO1A.JPG

076-001-000-1048-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

| | | |
|------------------------------------|------------------------------------|---|
| Property Owner: Local | Location: Bayview Park | Date: 7/18/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Wareham | Earliest Structure Record: 1956 | Estimated Reconstruction/Repair Cost: \$170,544.00 |

| | | | |
|------------------------|--------------------------------|----------------------|--|
| Length: 680 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 20 Feet NGVD |
|------------------------|--------------------------------|----------------------|--|

| | | |
|------------------------------------|----------------------------|----------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Steel | Primary Height: 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |



Structure Summary :
The sheet pile bulkhead with a cast in place concrete wall behind it. There is minor corrosion on the steel at the tidal zone. There is a parking lot and the harbor masters office on top of the structure. There are beaches adjacent to it.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | IV |
| <i>Rating</i> | Good | <i>Rating</i> | High Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Consider for Next Project Construction Listing |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | High Value Inshore Structures with Potential for Infrastructure Damage and/or Moderate Density Residential Dwellings (1-10 dwellings impacted / 100 feet of shoreline) |

Structure Images:

- 076-001-000-1052-100-PHO1A.JPG
- 076-001-000-1052-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|-------------|-------------------|----------------------------|
| USACE | December 3 | Proposed Harbor | 076-001-000-1052-100-COE1A |
| MA-DCR | July 1956 | Proposed Wharf | 076-001-000-1052-100-DCR1A |
| MA-DCR | March 1961 | Proposed Shore | 076-001-000-1052-100-DCR1B |
| DEP | October 30, | Plan Accompanying | 076-001-000-1052-100-LIC1A |
| DEP | October 14, | Plan Accompanying | 076-001-000-1052-100-LIC1B |

Structure Assessment Form

| | | |
|------------------------------------|--------------------------------------|---|
| Property Owner: Local | Location: Onset Beach | Date: |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Wareham | Earliest Structure Record: Unkown | Estimated Reconstruction/Repair Cost: \$139,700.00 |

| | | | |
|-------------------------|--------------------------------|----------------------|--|
| Length: 1100 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 18 Feet NGVD |
|-------------------------|--------------------------------|----------------------|--|

| | | |
|--------------------------------|---------------------------|---------------------------------|
| Primary Type: Coastal Beach | Primary Material: Sand | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |



Structure Summary :
Sandy beach that shows signs of recent beach nourishment. Behind is houses and a hotel. Beach is well maintained.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | II |
| <i>Rating</i> | Good | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:
076-001-000-139-100-PHO1A.JPG
076-001-000-139-100-PHO1B.JPG

Structure Documents:

Structure Assessment Form

| | | |
|------------------------------------|---------------------------------------|---|
| Property Owner: Local | Location: Point Independence Beach | Date: |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Wareham | Earliest Structure Record: Unkown | Estimated Reconstruction/Repair Cost: \$157,740.00 |

| | | | |
|-------------------------|--------------------------------|----------------------|--|
| Length: 1195 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 18 Feet NGVD |
|-------------------------|--------------------------------|----------------------|--|



| | | |
|--------------------------------|---------------------------|---------------------------------|
| Primary Type: Coastal Beach | Primary Material: Sand | Primary Height: Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |

Structure Summary :
Very flat sand beach with area of scattered stones at the point. Dunes and houses behind. No signs of erosion. Signs of recent sand in fill.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | III |
| <i>Rating</i> | Fair | <i>Rating</i> | Moderate Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Consider for Active Project Improvement Listing |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline) |

Structure Images:
076-002-000-055-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Onset Avenue Bridge

Date:

7/18/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$27,291.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 25 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| Revetment | Stone | Under 5 Feet |

Structure Summary :

The stone block seawall has stones that are approximately 4 feet by 1 foot by 2 feet in size. The stones have been mortared together. Most of the mortar has fallen out. The stones have signs of rotation and settling. The riprap at the base of the wall is mostly buried or missing. The stones average 3 feet by 2 feet by 1 foot in size.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | II |
| <i>Rating</i> | Fair | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

076-002-000-1010-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Onset Avenue Bridge

Date:

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$58,608.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 75 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :

The revetment is made up of dumped riprap with concrete mortar. The stones average 4 feet by 2 feet by 1 foot in size and are at a 1 on 1 slope. There is visible scour and section loss. Mean low water extends out plus or minus 5 feet past the toe.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | II |
| <i>Rating</i> | Fair | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

076-002-000-1015-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Main Avenue Bridge

Date:

7/18/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

Unknown

Estimated Reconstruction/Repair Cost:

\$81,576.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 200 | | AE | 15 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-------------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Bulkhead/ Seawall | Stone | 10 to 15 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| Revetment | Stone | 10 to 15 Feet |

Structure Summary :

The approximately 3 feet by 2 feet by 2 feet stones make up the stone block bulkhead. The stones have been placed tightly together with a concrete cap. The wall is 4 feet wide. Dumped riprap is behind the bulkhead. The stones average 100 pounds and are at a 1 on 2 slope. There is no scour. There is minor section loss. The bridge abutment for the bridge over the East River is behind the structures.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | II |
| <i>Rating</i> | Good | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

076-011-000-272-100-PHO1A.JPG

Structure Documents:

Structure Assessment Form

Property Owner:

Local

Location:

Little Harbor Beach

Date:

7/18/2007

Presumed Structure Owner:

Local

Based On Comment:

Owner Name:

Wareham

Earliest Structure Record:

1952

Estimated Reconstruction/Repair Cost:

\$79,680.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 120 | | VE | 22 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Groin/ Jetty | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The set of 3 stone mound groins that has stones that are approximately 3 feet by 2 feet by 2 feet in size. There is moderate stone movement and section loss. There is no visible scour. The groins extend to about 20 feet past mean low water. There is a sandy beach located between the groins.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | II |
| <i>Rating</i> | Fair | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

076-028-000-1004-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|-------------|--------------------|----------------------------|
| USACE | January 15, | Proposed Jetty and | 076-028-000-1004-100-COE1A |
| USACE | December 1 | Proposed Groin and | 076-028-000-1004-100-COE1B |
| MA-DCR | December 1 | Town of Wareham - | 076-028-000-1004-100-DCR1A |
| MA-DCR | January 195 | Proposed Hurricane | 076-028-000-1004-100-DCR1B |
| MA-DCR | November 1 | Proposed Town | 076-028-000-1004-100-DCR1C |
| MA-DCR | August 1957 | Proposed Beach | 076-028-000-1004-100-DCR1D |

Structure Assessment Form

Property Owner:

Unknown

Location:

Indian Neck - Wassen Point

Date:

7/18/2007

Presumed Structure Owner:

Unknown

Based On Comment:

Owner Name:

Unknow

Earliest Structure Record:

1956

Estimated Reconstruction/Repair Cost:

\$168,168.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 70 | | VE | 22 |
| Feet | Feet NAVD 88 | | Feet NGVD |



| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Groin/ Jetty | Stone | 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |

Structure Summary :

The placed stone groin has stones that are approximately 4 feet by 2 feet by 2 feet in size. There are many areas of stone movement, section loss, and failure.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | D | <i>Priority</i> | II |
| <i>Rating</i> | Poor | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Major | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

076-032-000-1000-100-PHO1A.JPG

Structure Documents:

MA-DCR July 1956 Proposed Shore 076-032-000-1000-DCR1A

Structure Assessment Form

Town: **Wareham**

Structure ID: 076-039-000-1001-100

Key: community-map-block-parcel-structure

Property Owner:

State

Location:

Tempest Knob Boatramp

Date:

7/18/2007

Presumed Structure Owner:

State

Based On Comment:

Owner Name:

DCR

Earliest Structure Record:

1957

Estimated Reconstruction/Repair Cost:

\$35,640.00

| | | | |
|---------|----------------|----------------|---------------------|
| Length: | Top Elevation: | FIRM Map Zone: | FIRM Map Elevation: |
| 540 | | VE | 18 |
| Feet | Feet NAVD 88 | | Feet NGVD |

| | | |
|-----------------|---------------------|-------------------|
| Primary Type: | Primary Material: | Primary Height: |
| Revetment | Stone | Under 5 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |
| | | |



Structure Summary :

The revetment is made up of dumped riprap. The stones are approximately 3 feet by 2 feet by 2 feet placed along the side of the boat ramp.

Condition B
Rating Good
Level of Action Minor
Description Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority II
Rating Low Priority
Action Future Project Consideration
Description Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:

076-039-000-1001-100-PHO1A.JPG

Structure Documents:

| | | | |
|-------|-------------|-------------------|----------------------------|
| USACE | September 6 | Proposed Dredging | 076-039-000-1001-100-COE1A |
| DEP | February 7, | Plan Accompanying | 076-039-000-1001-100-LIC1A |

Structure Assessment Form

| | | |
|------------------------------------|--------------------------------------|--|
| Property Owner: State | Location: Tempest Knob Boatramp | Date: 7/18/2007 |
| Presumed Structure Owner: State | Based On Comment: | |
| Owner Name: DCR | Earliest Structure Record: Unkown | Estimated Reconstruction/Repair Cost: \$21,622.00 |

| | | | |
|----------------------------|--------------------------------|---------------------------------|--|
| Length: 180 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: VE | FIRM Map Elevation: 18 Feet NGVD |
| Primary Type: Revetment | Primary Material: Stone | Primary Height: 5 to 10 Feet | |
| Secondary Type: | Secondary Material: | Secondary Height: | |



Structure Summary :
 The placed stone revetment has stones that are approximately 5 feet by 3 feet by 2 feet in size. The stones have been placed tightly together. There is no sign of movement or scour. There is a sandy beach in front of the stones and a parking lot behind the structure.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | B | <i>Priority</i> | II |
| <i>Rating</i> | Good | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Minor | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:
 076-039-000-1001-200-PHO1A.JPG

Structure Documents:

Structure Assessment Form

| | | |
|------------------------------------|--|---|
| Property Owner: Local | Location: Wareham River - Main Street | Date: 7/18/2007 |
| Presumed Structure Owner: Local | Based On Comment: | |
| Owner Name: Wareham | Earliest Structure Record: 1974 | Estimated Reconstruction/Repair Cost: \$759,000.00 |

| | | | |
|------------------------|--------------------------------|----------------------|--|
| Length: 460 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: AE | FIRM Map Elevation: 16 Feet NGVD |
|------------------------|--------------------------------|----------------------|--|

| | | |
|------------------------------------|----------------------------|---------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Steel | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |



Structure Summary :

The bulkhead is made up of a concrete panel with steel frames and a precast walkway on the top. There are many areas of erosion behind the walkway which have been filled with crushed gravel. The walkway is heaving and collapsing. There is a parking lot behind the structure and floats in front.

| | | | |
|------------------------|--|--------------------|---|
| <i>Condition</i> | D | <i>Priority</i> | II |
| <i>Rating</i> | Poor | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Major | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:

- 076-047-000-1127-100-PHO1A.JPG
- 076-047-000-1127-100-PHO1B.JPG

Structure Documents:

| | | | |
|--------|---------------|-----------------------|----------------------------|
| USACE | March 20, 19 | Proposed Bulkhead | 076-047-000-1127-100-COE1A |
| MA-DCR | January 197 | Proposed Shore | 076-047-000-1127-100-DCR1A |
| MA-DCR | February 19 | Proposed Bulkhead | 076-047-000-1127-100-DCR1B |
| DEP | April 23, 198 | Construct a Platform, | 076-047-000-1127-100-LIC1A |

Structure Assessment Form

| | | |
|--------------------------|--|--------------------|
| Property Owner: Local | Location: Wareham River/Main Street | Date: 7/18/2007 |
|--------------------------|--|--------------------|

| | |
|------------------------------------|-------------------|
| Presumed Structure Owner: Local | Based On Comment: |
|------------------------------------|-------------------|

| | | |
|------------------------|------------------------------------|--|
| Owner Name: Wareham | Earliest Structure Record: 1974 | Estimated Reconstruction/Repair Cost: \$91,080.00 |
|------------------------|------------------------------------|--|

| | | | |
|------------------------|--------------------------------|----------------------|--|
| Length: 120 Feet | Top Elevation: Feet NAVD 88 | FIRM Map Zone: AE | FIRM Map Elevation: 16 Feet NGVD |
|------------------------|--------------------------------|----------------------|--|

| | | |
|------------------------------------|----------------------------|---------------------------------|
| Primary Type: Bulkhead/ Seawall | Primary Material: Stone | Primary Height: 5 to 10 Feet |
| Secondary Type: | Secondary Material: | Secondary Height: |



Structure Summary :
The stone mortared seawall has a cast in place walkway on top of it. The stones are approximately 2 feet by 1 foot by 1 foot in size. There are signs of mortar loss, and stone movement and rotation.

| | | | |
|------------------------|---|--------------------|---|
| <i>Condition</i> | C | <i>Priority</i> | II |
| <i>Rating</i> | Fair | <i>Rating</i> | Low Priority |
| <i>Level of Action</i> | Moderate | <i>Action</i> | Future Project Consideration |
| <i>Description</i> | Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life. | <i>Description</i> | Inshore Structures Present with Limited potential for Significant Infrastructure Damage |

Structure Images:
076-047-000-1128-100-PHO1A.JPG

Structure Documents:

| | | | |
|--------|-------------|-------------------|----------------------------|
| MA-DCR | January 197 | Proposed Shore | 076-047-000-1128-100-DCR1A |
| MA-DCR | February 19 | Proposed Bulkhead | 076-047-000-1128-100-DCR1B |

Section V - Wareham

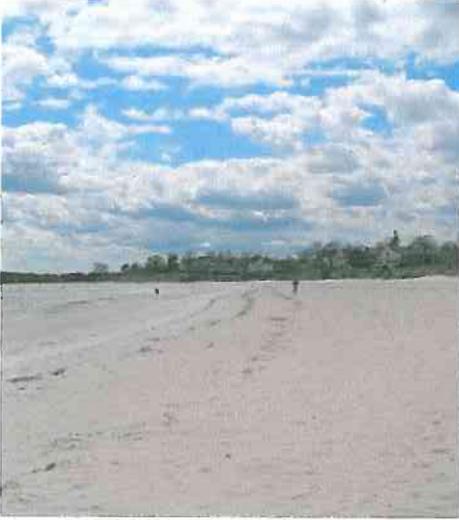
Part C

Structure Photographs

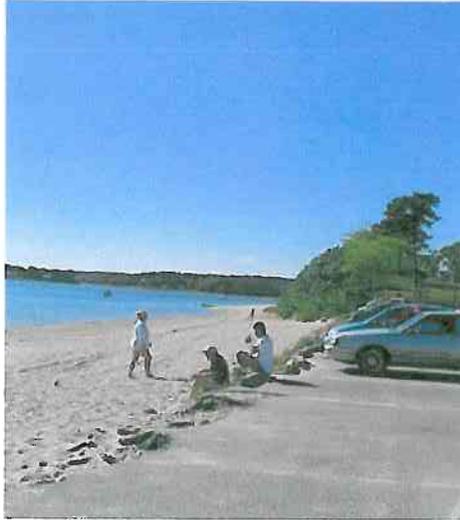
TOWN: WAREHAM
 SOURCE: BCE - FIELD PHOTOGRAPHS
 LOCATION: Bourne Consulting Engineering
 DATE OF RESEARCH: SEPTEMBER 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|--------------------------------|--------------------------------|-------------------------------|--------------|-------------|---------------|--------|--------------------|---|
| 076-001-000-042-100 | 076-001-000-042-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | April 2009 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-047-100 | 076-001-000-047-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | April 2009 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-139-100 | 076-001-000-139-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | April 2009 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-139-100 | 076-001-000-139-100-PHO1B.jpg | | Bourne Consulting Engineering | Wareham | April 2009 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-1006-100 | 076-001-000-1006-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-1023-100 | 076-001-000-1023-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-1048-100 | 076-001-000-1048-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-1048-100 | 076-001-000-1048-100-PHO1B.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-1052-100 | 076-001-000-1052-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-001-000-1052-100 | 076-001-000-1052-100-PHO1B.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-002-000-055-100 | 076-002-000-055-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | April 2009 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-002-000-1010-100 | 076-002-000-1010-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-002-000-1015-100 | 076-002-000-1015-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-011-000-272-100 | 076-011-000-272-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-028-000-1004-100 | 076-028-000-1004-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-032-000-1000-100 | 076-032-000-1000-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-039-000-1001-100 | 076-039-000-1001-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-039-000-1001-200 | 076-039-000-1001-200-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-047-000-1127-100 | 076-047-000-1127-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-047-000-1127-100 | 076-047-000-1127-100-PHO1B.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |
| 076-047-000-1128-100 | 076-047-000-1128-100-PHO1A.jpg | | Bourne Consulting Engineering | Wareham | August 2007 | DIGITAL IMAGE | 1 | Structure Location | Structure Condition Photo at Time of Survey |

Massachusetts Coastal Infrastructure and Assessment



076-001-000-042-100-PHO1A



076-001-000-047-100-PHO1A



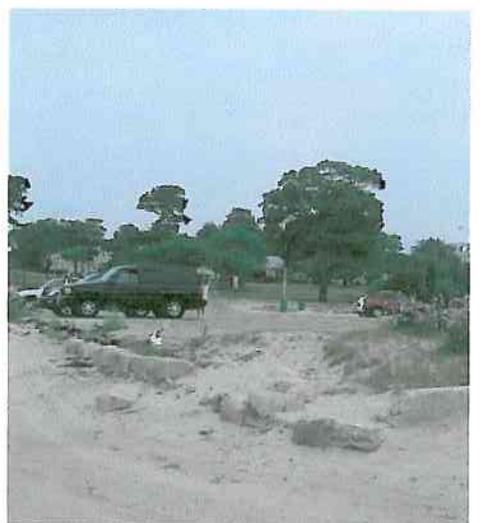
076-001-000-1006-100-PHO1A



076-001-000-1023-100-PHO1A



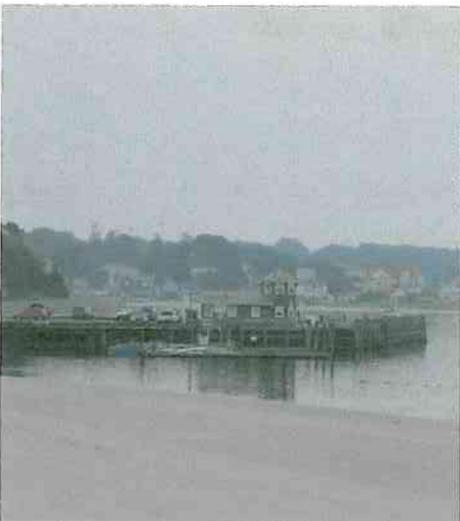
076-001-000-1048-100-PHO1A



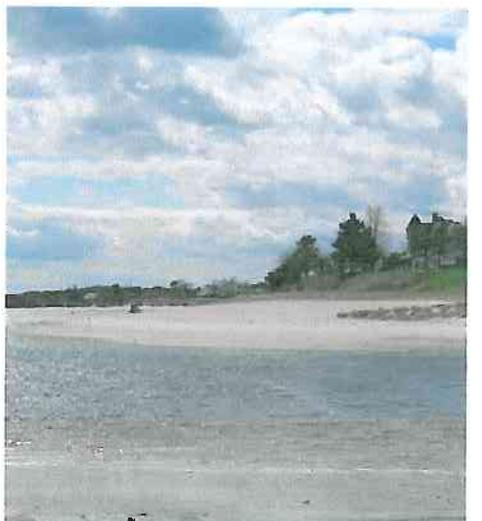
076-001-000-1048-100-PHO1B



076-001-000-1052-100-PHO1A



076-001-000-1052-100-PHO1B



076-001-000-139-100-PHO1A

Massachusetts Coastal Infrastructure and Assessment



076-001-000-139-100-PHO1B



076-002-000-055-100-PHO1A



076-002-000-1010-100-PHO1A



076-002-000-1015-100-PHO1A



076-011-000-272-100-PHO1A



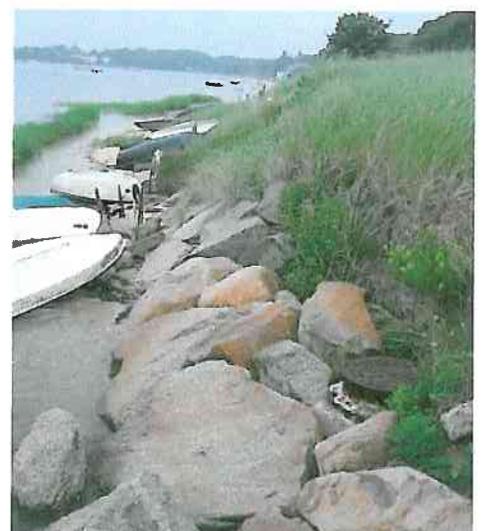
076-028-000-1004-100-PHO1A



076-032-000-1000-100-PHO1A



076-039-000-1001-100-PHO1A



076-039-000-1001-200-PHO2A

Massachusetts Coastal Infrastructure and Assessment



076-047-000-1127-100-PHO1A



076-047-000-1127-100-PHO1B



076-047-000-1128-100-PHO1A

Section V - Wareham

Part D

Structure Documents

TOWN DOCUMENT LIST

MA DCR - DOCUMENT LIST

MA DEP – Ch 91 DOCUMENT LIST

- Copies of License Documents

USACE – PERMIT DOCUMENT LIST

- Copies of Permit Documents

No Town Documents for the Town of Wareham

TOWN: WAREHAM
SOURCE: TOWN OF WAREHAM
LOCATION: TOWN
DATE OF RESEARCH: JUNE 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|------------------|-------------|--------------------------------|--------|--------------|------|-------|--------|----------|-------------|
|------------------|-------------|--------------------------------|--------|--------------|------|-------|--------|----------|-------------|

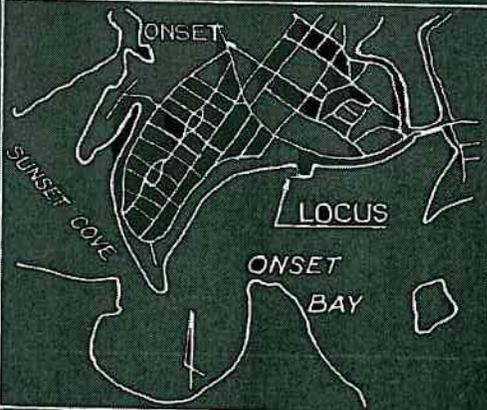
TOWN: WAREHAM
 SOURCE: MA - DCR
 LOCATION: MA - DCR BOSTON and HINGHAM, MA
 DATE OF RESEARCH: JULY 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|---------------|---|--------|------------------------------|------------------------------|
| 076-001-000-1052-100 | 076-001-000-1052-100-DCR1A | 1649 | MA-DCR | Wareham | July 1966 | Proposed Wharf Improvements - Wall Repairs and Flinger Piers - Town Wharf - Wareham - Prepared for DPW of MA - Division of Waterways | 1 | Town Wharf | Wall Repairs |
| 076-001-000-1052-100 | 076-001-000-1052-100-DCR1B | 2262 | MA-DCR | Wareham | March 1961 | Proposed Shore Protection - Concrete Seawall - Crisnet Beach - Wareham - Prepared for DPW of MA - Division of Waterways | 1 | Next to Pier on Onset Avenue | Concrete Seawall |
| 076-028-000-1004-100 | 076-028-000-1004-100-DCR1A | 1283 | MA-DCR | Wareham | December 1952 | Town of Wareham - Proposed Jetty and Beach Improvements - at Little Harbor - Prepared for DPW of MA - Division of Waterways | 1 | Willow Harbor | Jetty and Beach Improvements |
| 076-028-000-1004-100 | 076-028-000-1004-100-DCR1B | 1460 | MA-DCR | Wareham | January 1955 | Proposed Hurricane Repairs - Restoration of Town Beach - Little Harbor, Wareham - Prepared for DPW of MA - Division of Waterways | 1 | Little Harbor | Fill |
| 076-028-000-1004-100 | 076-028-000-1004-100-DCR1C | 1557 | MA-DCR | Wareham | November 1955 | Proposed Town Beach Restoration - Stone Groin and Sand Fill - Little Harbor, Wareham - Prepared for DPW of MA - Division of Waterways | 1 | | Fill and Groins |
| 076-028-000-1004-100 | 076-028-000-1004-100-DCR1D | 1792 | MA-DCR | Wareham | August 1957 | Proposed Beach Improvements - Sand Fill and Little Harbor Beach - Prepared for DPW of MA - Division of Waterways | 1 | Little Harbor Beach | Sand Fill |
| 076-032-000-1000-100 | 076-032-000-1000-100-DCR1A | 1634 | MA-DCR | Wareham | July 1956 | Proposed Shore Protection - Jetty Construction - Nobiska Point - Wareham - Prepared for DPW of MA - Division of Waterways | 1 | Nobiska Point | Jetty |
| 076-047-000-1127-100 | 076-047-000-1127-100-DCR1A | 2780 | MA-DCR | Wareham | January 1974 | Proposed Shore Protection, Bulkhead Reconstruction and Pier Reconstruction - Mary Bess | 5 | Main Street | Bulkhead |
| 076-047-000-1127-100 | 076-047-000-1127-100-DCR1B | 2892 | MA-DCR | Wareham | February 1978 | Proposed Bulkhead Repairs - Mary Besse Park - Wareham - Prepared for DPW of MA - Division of Waterways | 3 | Mary Besse Park | Bulkhead |
| 076-047-000-1128-100 | 076-047-000-1128-100-DCR1A | 2780 | MA-DCR | Wareham | January 1974 | Proposed Shore Protection, Bulkhead Reconstruction and Pier Reconstruction - Mary Bess | 5 | Main Street | Bulkhead |
| 076-047-000-1128-100 | 076-047-000-1128-100-DCR1B | 2892 | MA-DCR | Wareham | February 1978 | Proposed Bulkhead Repairs - Mary Besse Park - Wareham - Prepared for DPW of MA - Division of Waterways | 3 | Mary Besse Park | Bulkhead |

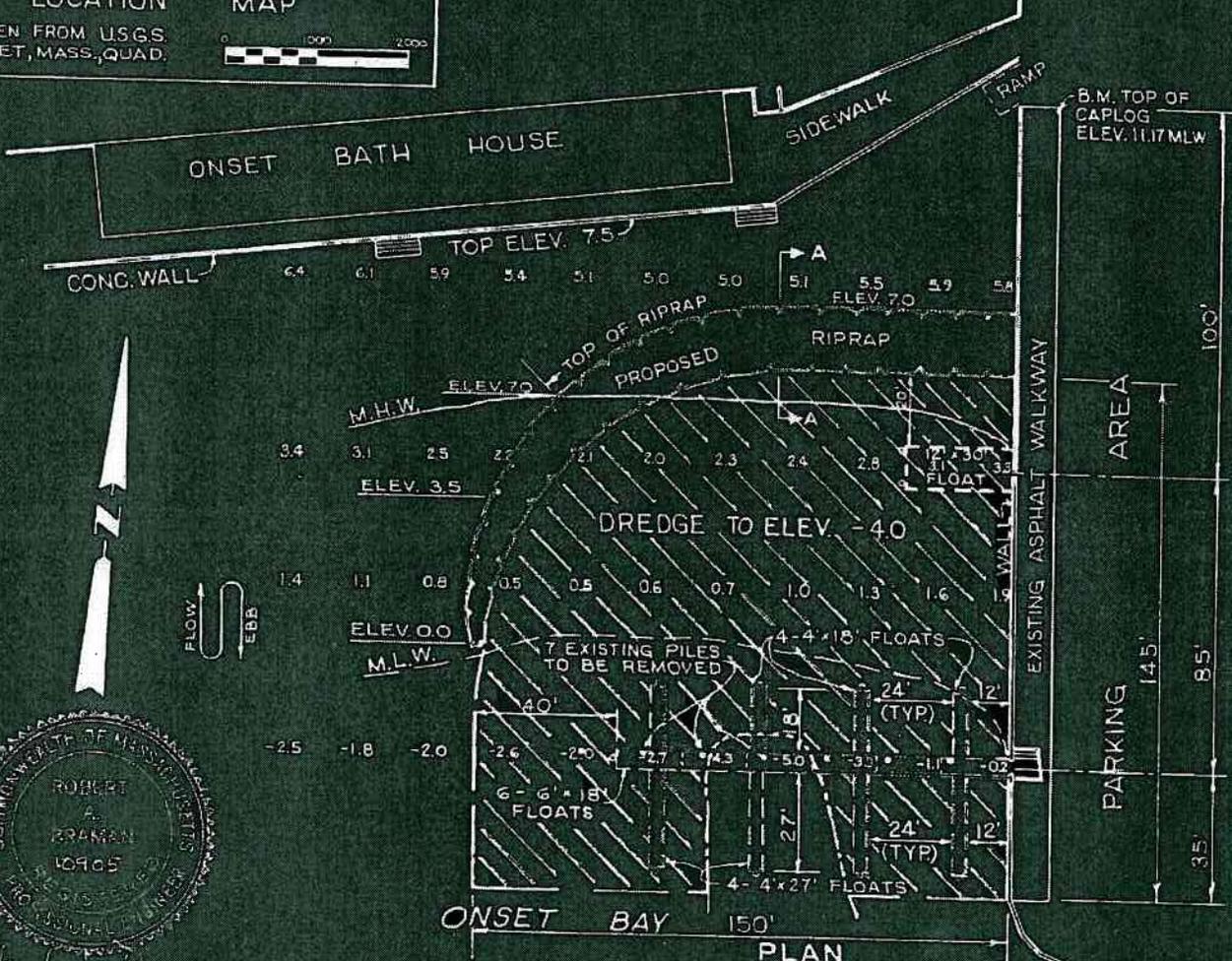
TOWN: WAREHAM
 SOURCE: DEP
 LOCATION: BOSTON, MA
 DATE OF RESEARCH: JULY 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|------------------|--|--------|--------------|---|
| 076-001-000-1052-100 | 076-001-000-1052-100-LIC1A | 50 | DEP | Wareham | October 30, 1975 | Plan Accompanying Petition of Town of Wareham to Dredge, Place Riprap, Floats and Piles in Onset Bay, Wareham, Massachusetts | 2 | Onset Avenue | Dredge, Place Riprap, Floats and Piles |
| 076-001-000-1052-100 | 076-001-000-1052-100-LIC1B | 1660 | DEP | Wareham | October 14, 1987 | Plan Accompanying Petition of Town of Wareham to make Harbor Improvements and Rehabilitation of Town Pier, Bulkhead, Floats, Paving, Pump Station, Harbor Master's Office and Sewer Connection in Onset Bay, Onset, Wareham, Massachusetts | 2 | Onset Avenue | Improvements and Rehabilitation of Town Pier |
| 076-039-000-1001-100 | 076-039-000-1001-100-LIC1A | 3231 | DEP | Wareham | February 7, 1995 | MA Department of Fisheries, Wildlife and Environmental Law Enforcement Public Access Board - To Construct a Timber Pier, Gangway, Floats, Piles, Boat Ramp and Excavate Wareham River, Wareham, Plymouth Co., MA | 5 | Oak Street | Construct Boat Ramp |
| 076-047-000-1127-100 | 076-047-000-1127-100-LIC1A | 1128 | DEP | Wareham | April 23, 1984 | Construct a Platform, Floats, and Gangways in the Wareham River, Wareham, Plymouth County, Massachusetts | 3 | Main Street | Construct Gangway and Platform on Existing Bulkhead |

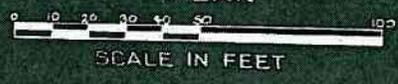
076-001-000-1052-106



LOCATION MAP
TAKEN FROM USGS
ONSET, MASS., QUAD.



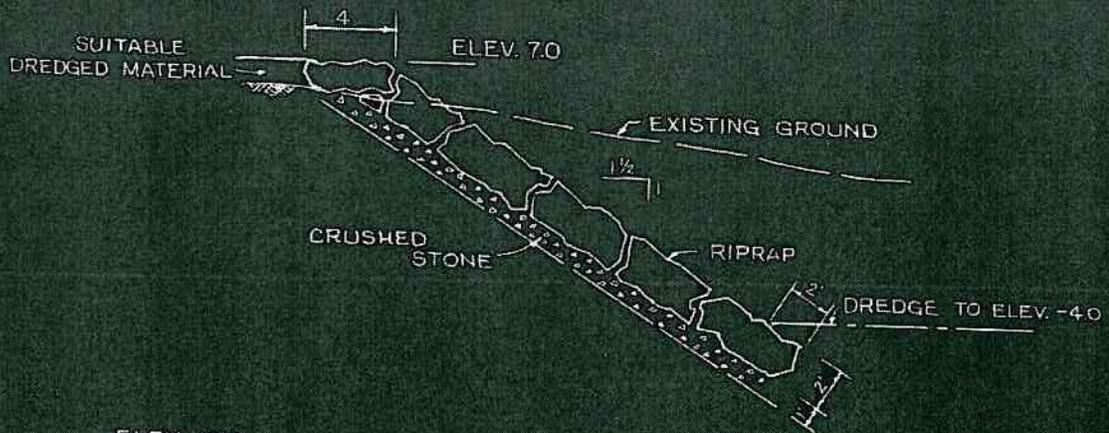
Robert A. Braman



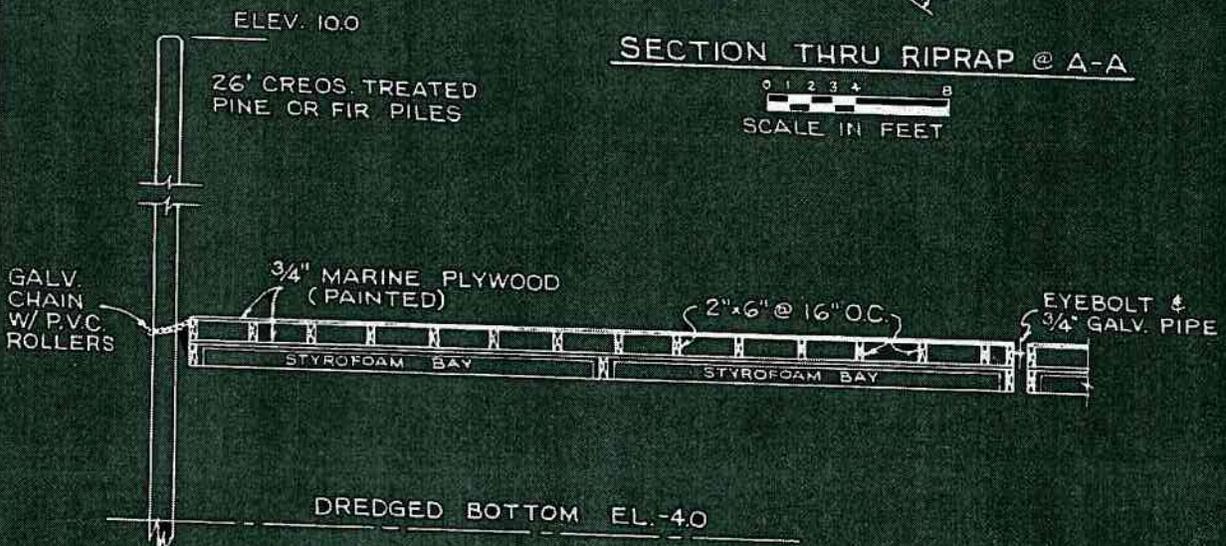
PLAN ACCOMPANYING PETITION OF
TOWN OF WAREHAM
TO DREDGE, PLACE RIPRAP, FLOATS & PILES IN
ONSET BAY
WAREHAM, MASS.
JANUARY 7, 1974 SHEET 1 OF 2
WALTER E. ROWLEY & ASSOCIATES INC.
CIVIL ENGINEERS & SURVEYORS
WEST WAREHAM, MASS.

APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS
OF MASSACHUSETTS
David Handley
October 30, 1975
QUALITY ENGINEERING
(BY THE CONTRACTOR)

076-001-000-1052-100



SECTION THRU RIPRAP @ A-A



TYPICAL LONGITUDINAL SECTION OF 6'x18' MAIN FLOAT WITH 6 BAYS @ 2'x9'

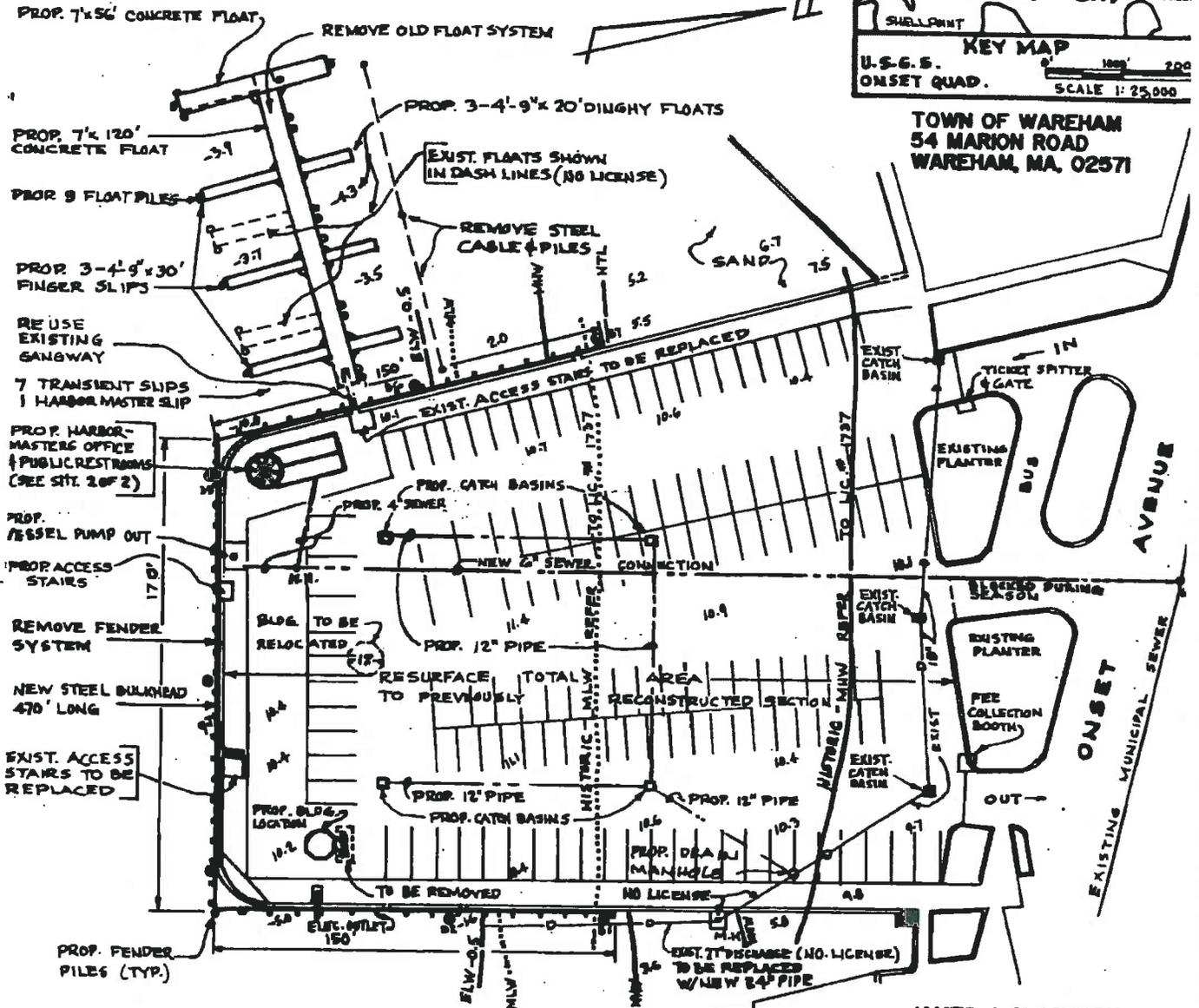
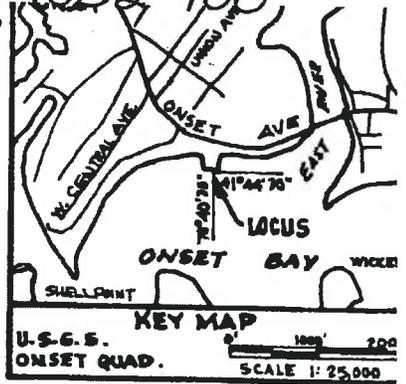
NOTE: FINGER FLOATS SIMILAR CONSTRUCTION WITH EITHER 4'x18' W/ 4-2'x9' BAYS OR 4'x27' W/ 6-2'x9' BAYS.



LICENSE PLAN NO. 50
REGISTERED PROFESSIONAL CIVIL ENGINEER
October 30, 1975

1. REFER TO DEPARTMENT OF PUBLIC WORKS LIC. #1737 DATED DEC. 10, 1935
2. ALL TIMBER TO BE CCA TREATED
3. ELEVATIONS ARE BASED ON THE PLANE OF MEAN LOW WATER.
4. \odot B-1 DENOTES BORING #1
5. PROPOSED USE - PUBLIC

076-001-000-1052-100
 ○ EXISTING PILE TO BE REMOVED
 ● PROPOSED PILES



PLAN
 0' 20' 60'
 SCALE: 1" = 60'

PLAN ACCOMPANYING PETITION OF TOWN OF WAREHAM TO MAKE HARBOR IMPROVEMENTS & REHABILITATION OF TOWN PIER, BULKHEAD, FLOATS, PAVING, PUMP STATION, HARBORMASTERS OFFICE AND SEWER CONNECTION IN ONSET BAY ONSET, WAREHAM, MASS.

REV. JUN. 29, 1987
 FEB. 18, 1987

SHEET 1 OF 2

BRAMAN ENGINEERING COMPANY
 CIVIL ENGINEERS & SURVEYORS
 252 MAIN ST BILTZARDS BAY MA

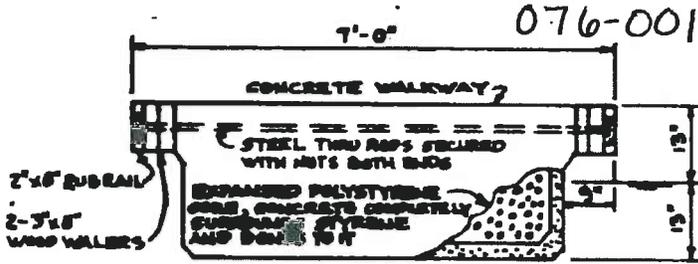
JAMES J. CLARKSON
 STARR LANE
 BETHEL CT. 06801



87W-088
 Robert A. Braman

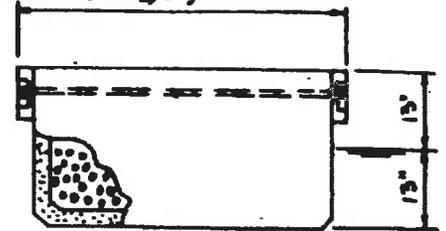
LICENSE PLAN NO. 1680
 Approved by Department of Environmental Quality Engineering of Massachusetts
 Approved by
 Gary Clanton
 Charles Nadeau
 COMMISSIONER
 DIVISION DIRECTOR
 SECTION CHIEF
 DATE OCT 1 1987

076-001-000-1052-1004-9



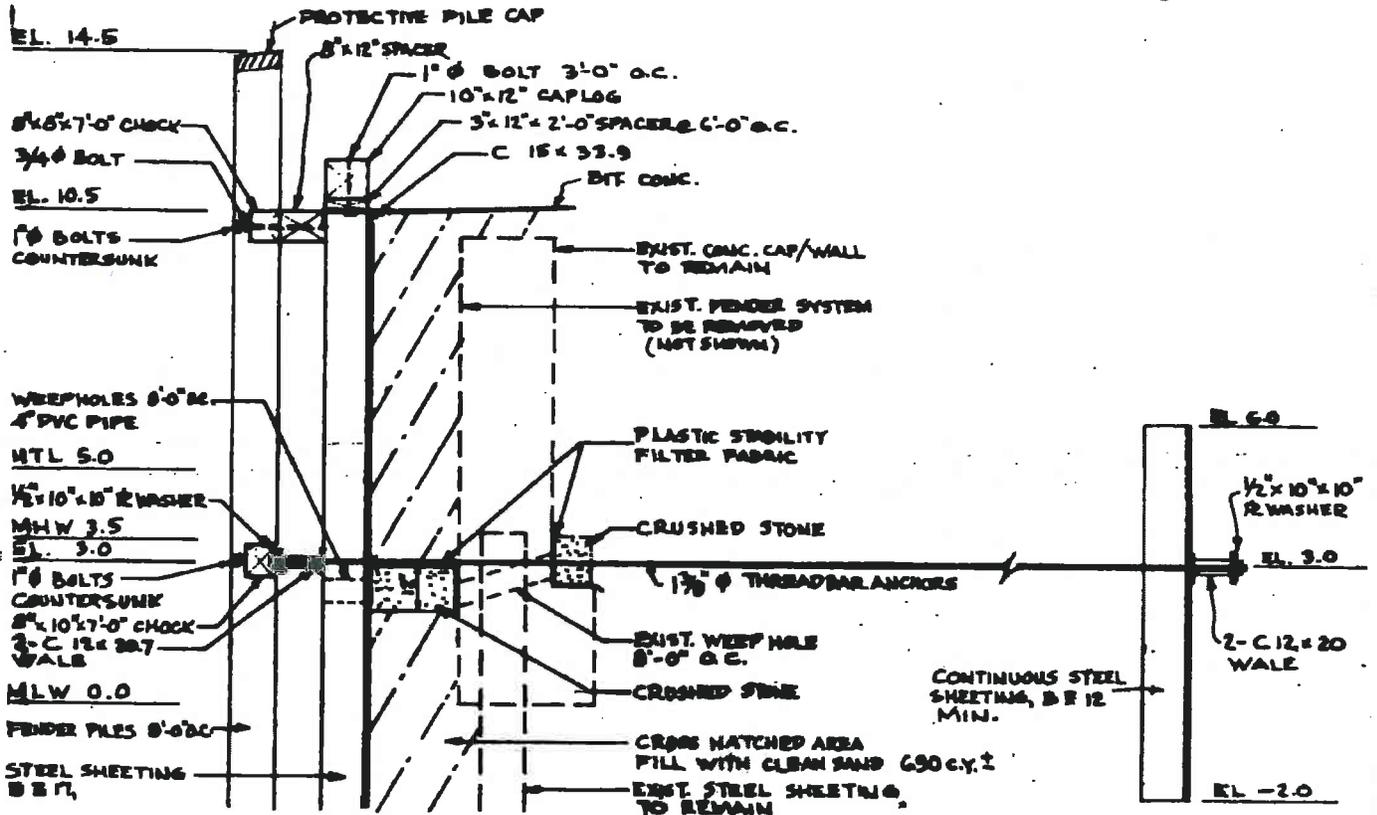
CONCRETE WALKWAY FLAT SECTION

SCALE: 3/8" = 1'-0"

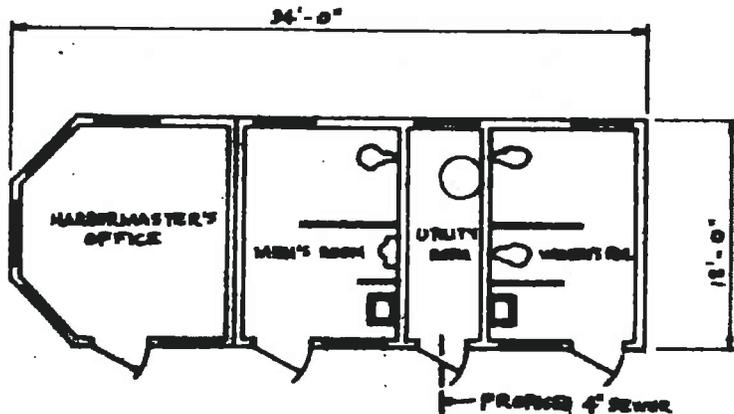


FINGER FLOAT SECTION
← FINGER CONSTRUCTION SAME AS 7' FLOAT SECTION

SCALE: 3/8" = 1'-0"



SECTION
PROPOSED BULKHEAD
SCALE: 1/4" = 1'-0"



PROPOSED BUILDING
SCALE: 1" = 10'

LICENSE PLAN NO. 7680

Approved by Department of Environmental Quality Engineering

DATE: OCT 14 1987

TOWN OF WAREHAM

REV. June 29, 1987

FEB. 17, 1987

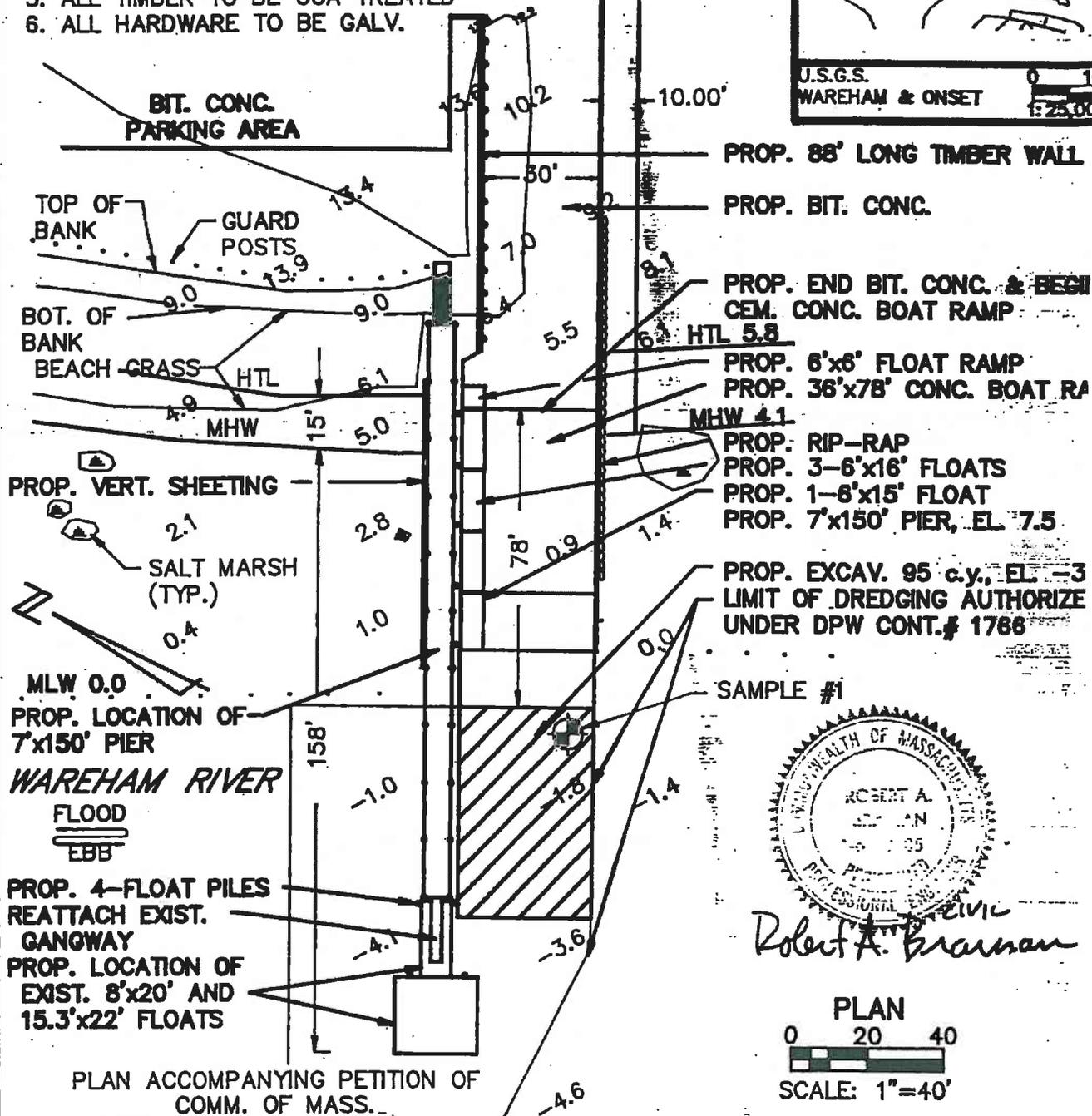
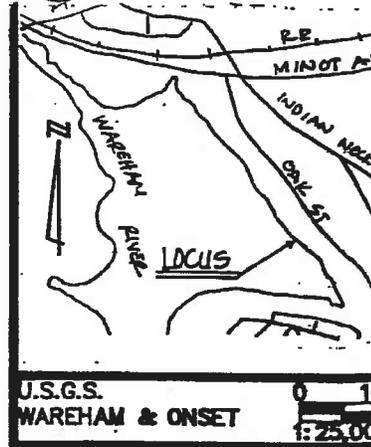


Robert A. Braman

076-039-000-1001-100

NOTES:

1. USE: PUBLIC
2. ELEVATIONS ARE BASED ON THE PLANE OF MEAN LOW WATER.
3. EXIST. PIER, BOAT RAMP, PILES, FLOAT, DREDGING & FILL, REFER TO DPW CONTRACT #1766, DATED JUNE 1957
4. PROP. EXCAV. MATERIAL TO BE DISPOSED OF AT THE TOE OF THE BANK ABOVE THE HTL
5. ALL TIMBER TO BE CCA TREATED
6. ALL HARDWARE TO BE GALV.



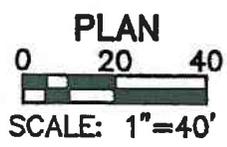
U.S.G.S. WAREHAM & ONSET 1:25,000

PROF. EXCAV. 95 c.y., EL. -3
LIMIT OF DREDGING AUTHORIZED
UNDER DPW CONT. # 1766

SAMPLE #1

PROFESSIONAL ENGINEER
ROBERT A. BRAMAN
1955

Robert A. Braman



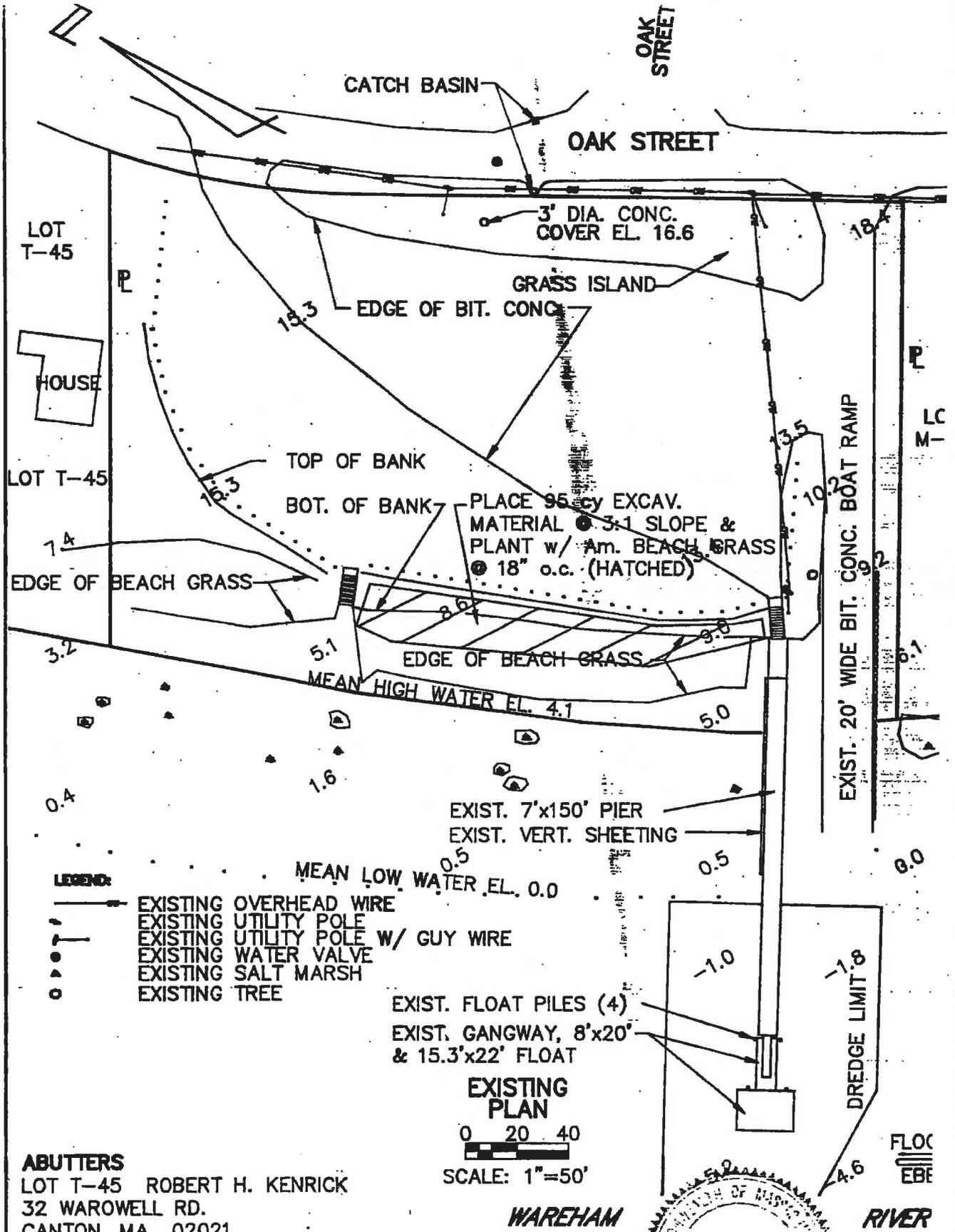
PLAN ACCOMPANYING PETITION OF
COMM. OF MASS.
DEPT. OF FISH., WILDLIFE, AND
ENVIRON. LAW ENFORCEMENT
PUBLIC ACCESS BOARD
TO CONSTRUCT A TIMBER PIER, GANGWAY,
FLOATS, PILES, BOAT RAMP & EXCAVATE
WAREHAM RIVER
WAREHAM, PLYMOUTH CO., MA
JULY 10, 1991 SHEET 1 OF 5
BRAMAN ENGINEERING COMPANY
CIVIL ENGINEERS & SURVEYORS

LICENSE PLAN NO. 3231

Approved by Department of Environmental Protection
of Massachusetts

COMMISSIONER
DIVISION DIRECTOR
SECTION CHIEF

076-039-000-1001-100



LEGEND:

- EXISTING OVERHEAD WIRE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE W/ GUY WIRE
- EXISTING WATER VALVE
- ▲ EXISTING SALT MARSH
- EXISTING TREE

EXIST. FLOAT PILES (4)
 EXIST. GANGWAY, 8'x20'
 & 15.3'x22' FLOAT

EXISTING PLAN



SCALE: 1"=50'

ABUTTERS
 LOT T-45 ROBERT H. KENRICK
 32 WAROWELL RD.
 CANTON, MA 02021

LOT M-10 WILLIAM J. MURRAY
 130 RICHMOND ST.
 DORCHESTER, MA 02124

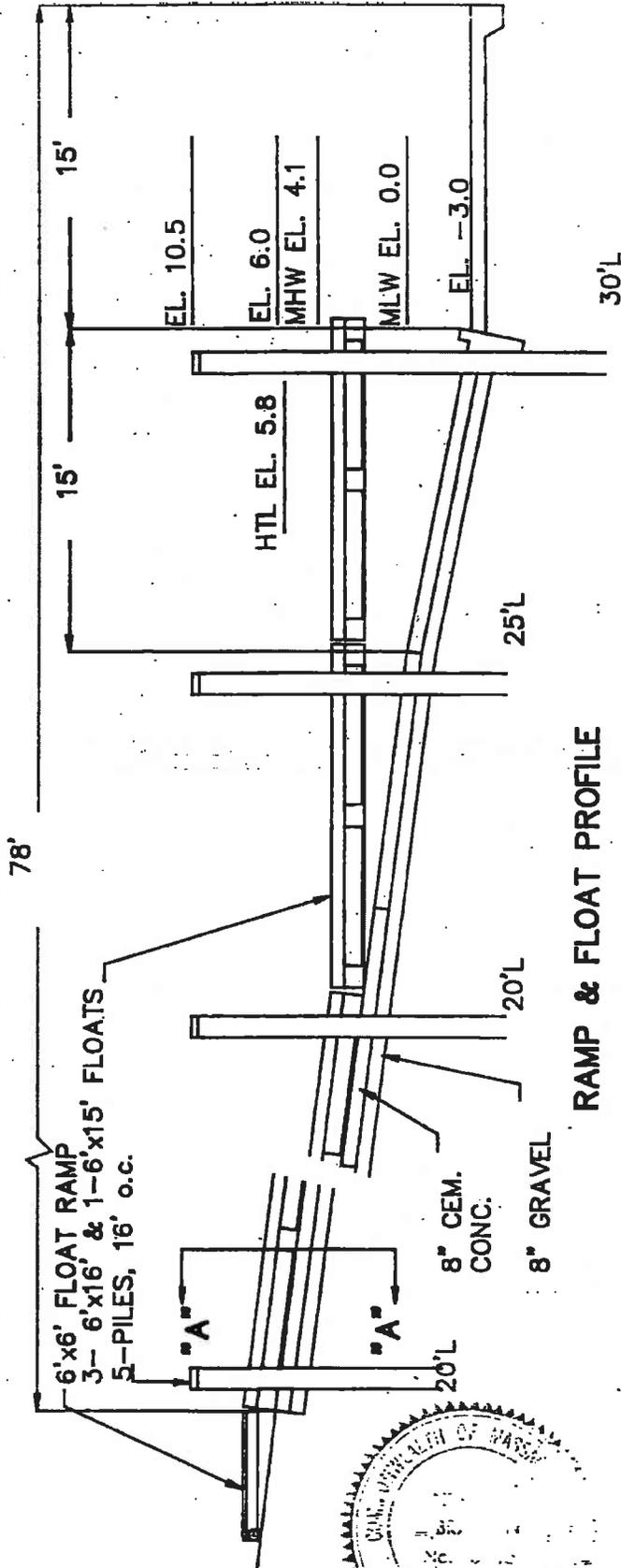
LICENSE PLAN NO. 32 31

Approved by Department of Environmental Protection
 FEB 26 1993

WAREHAM RIVER

Robert A. Brawan

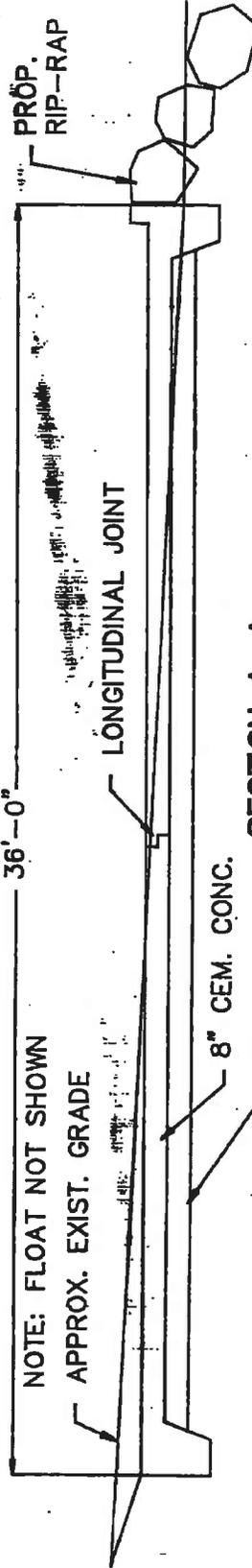
076-039-000-1001-100



RAMP & FLOAT PROFILE

SCALE: 1"=60'

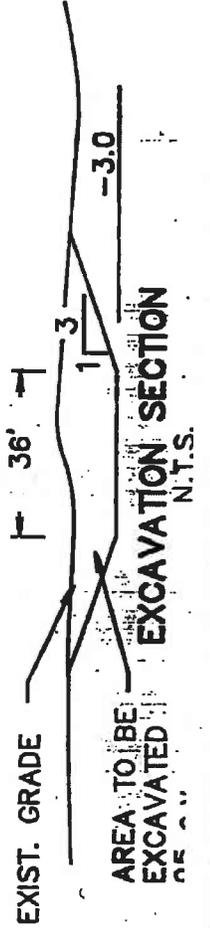
NOTE: FLOAT NOT SHOWN
APPROX. EXIST. GRADE



SECTION A-A
SCALE: 1"=5'

VOLUME OF MATERIAL
BELOW H.T.L.

| | |
|------------|---------|
| GRAVEL | 78 c.y. |
| CEM. CONC. | 78 c.y. |
| RIP-RAP | 6 c.y. |



EXCAVATION SECTION
N.T.S.

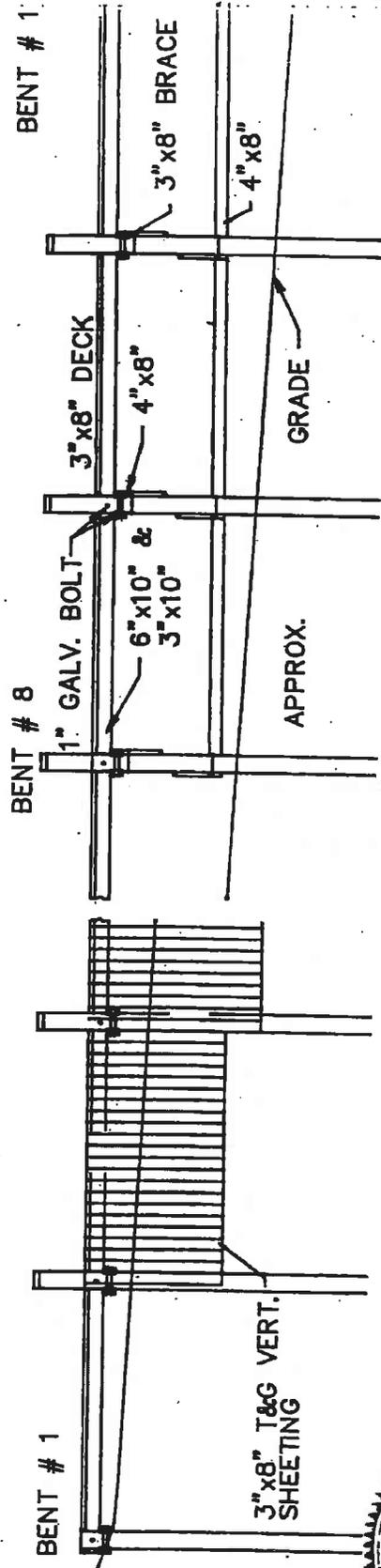


Robert A. Braman

LICENSE PLAN NO. 3231
Approved by Department of Environmental Protection
Date FEB 26 1993

076-039-000-1001-100

11 BENTS @ 15'-0" o.c. = 150'-0"

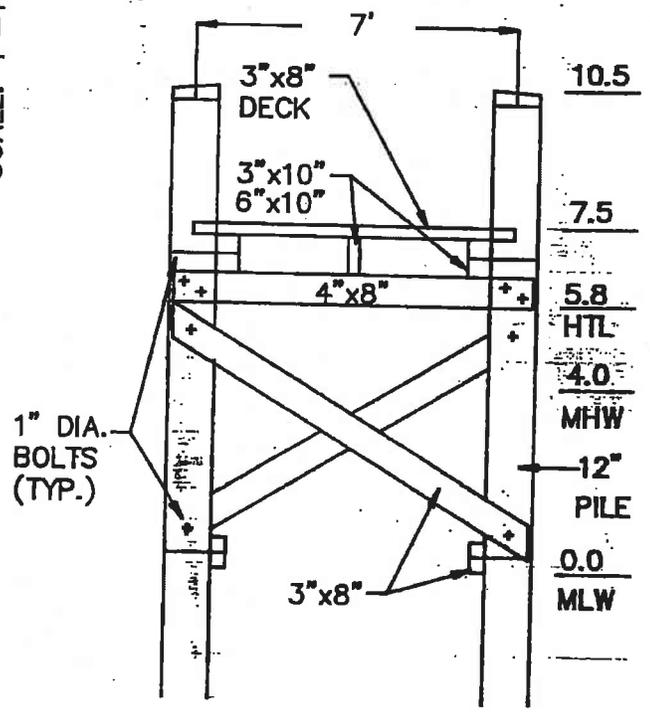


| LENGTH VERT. SHEETING | BENT # |
|-----------------------|--------|
| 8 FT. | 2-3 |
| 10 FT. | 3-5 |
| 12 FT. | 5-7 |

| PILE LENGTH | BENT # |
|-------------|--------|
| 15 FT. | 1 |
| 20 FT. | 2-4 |
| 25 FT. | 5 |
| 30 FT. | 6-11 |

TIMBER STAIRWAY AND PIER PROFILE

SCALE: 1"=10'



TYPICAL BENT SECTION

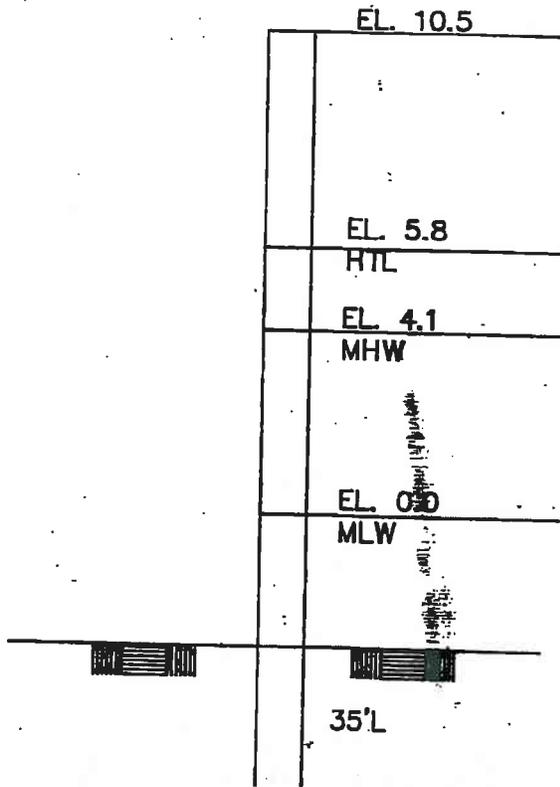
SCALE: 1"=4'



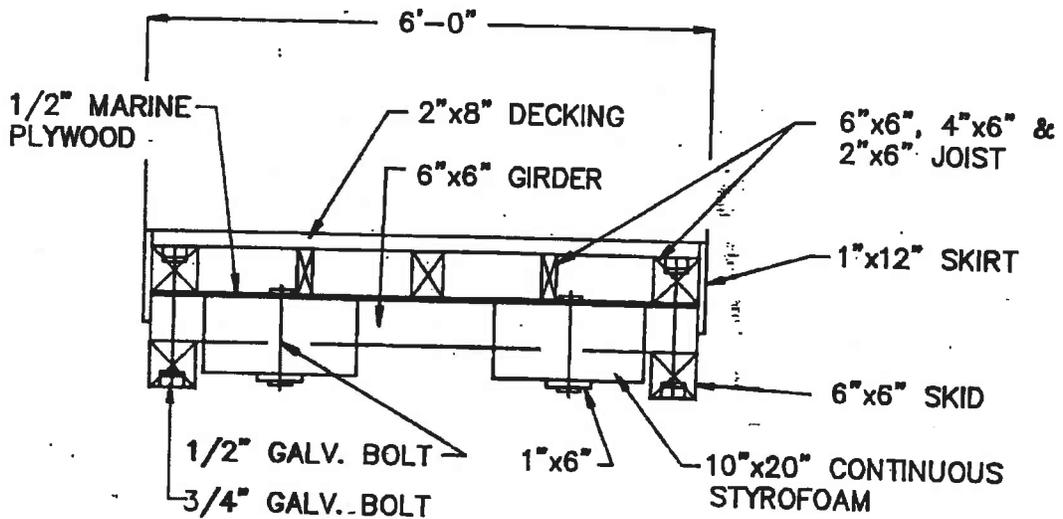
LICENSE PLAN NO. 3231
 Approved by Department of Environmental Protection
 Date: **FEB 26 1993**

Robert A. Braman

076-039-000-1001-160



PIER
FLOAT PILE DETAIL
NOT TO SCALE



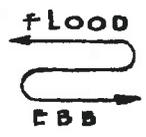
TIMBER FLOAT SECTION

SCALE: 1"=2'

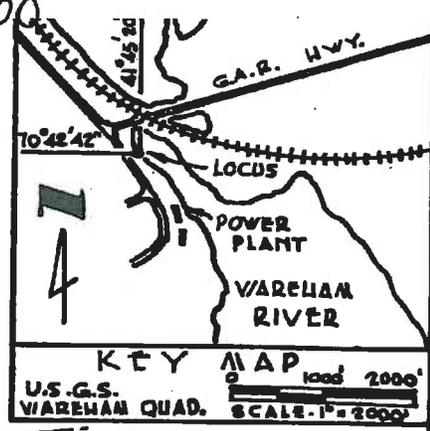
Robert A. Braman

LICENSE PLAN NO. 3231
Approved by Department of Environmental Protection
Date: **FEB 26 1993**

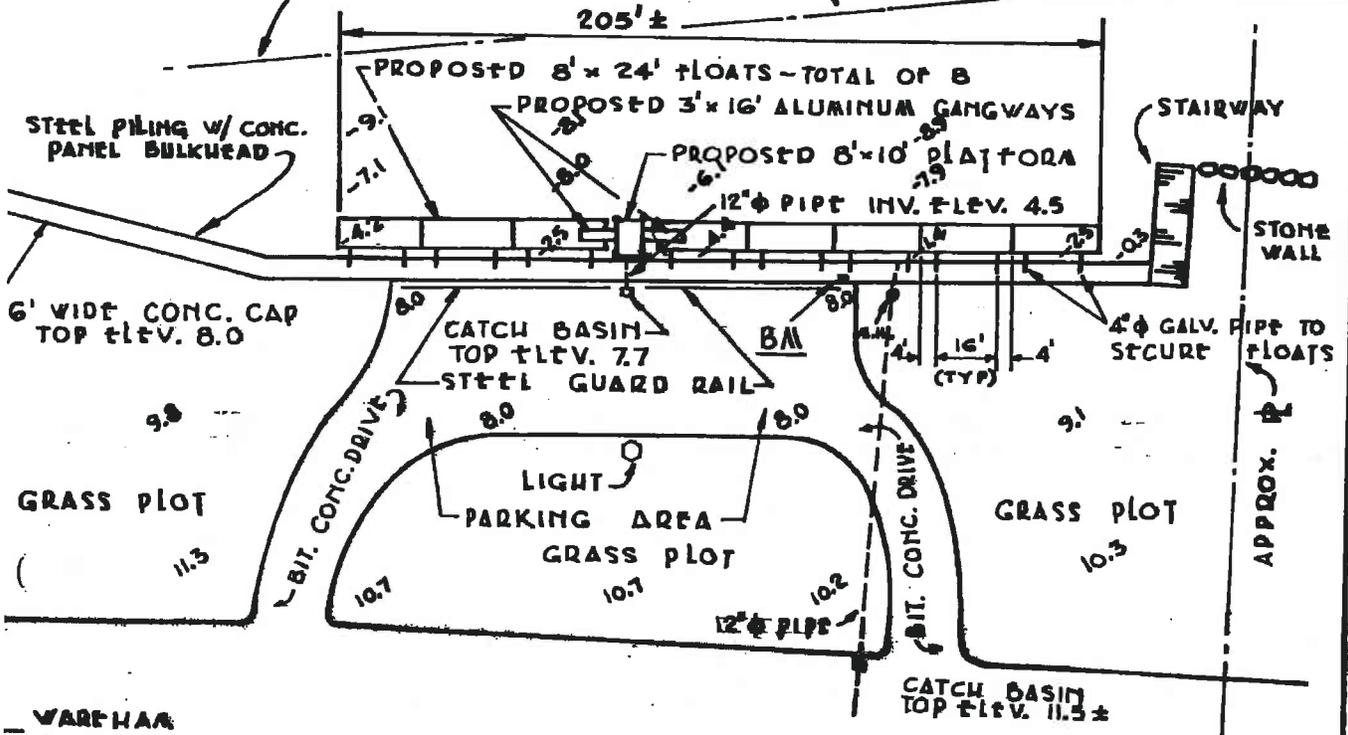
076-047-000-1127-100



WAREHAM RIVER

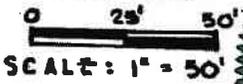


CHANNEL LIMIT



WAREHAM CENTER

PLAN



SCALE: 1" = 50'



Robert A. Braman

MAIN STREET

ABUTTERS

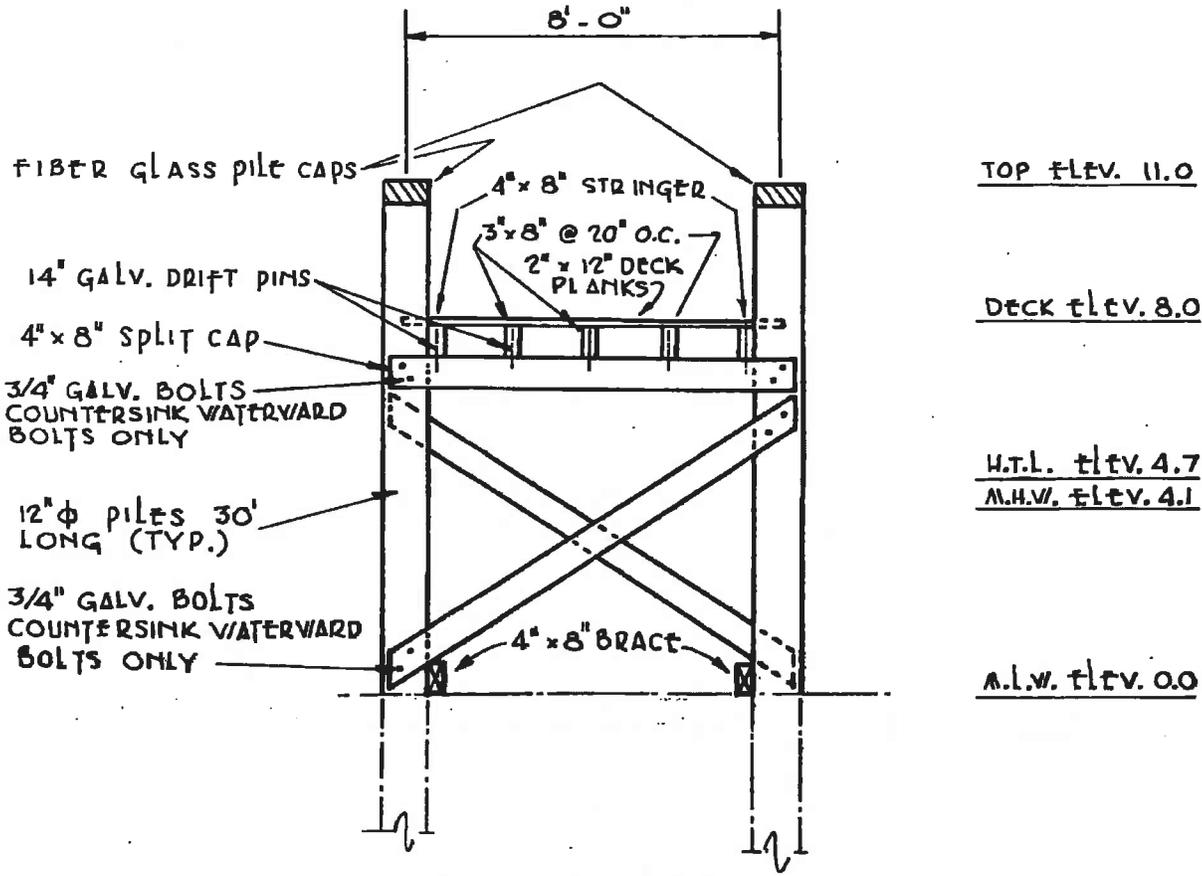
NORTH: COMMONWEALTH OF MASS. DEPT. OF PUBLIC WORKS 100 MASHUA ST. BOSTON, MA. 02114 SOUTH: GREER LUMBER CO. POB # 426 WAREHAM, MA. 02571

NOTES:

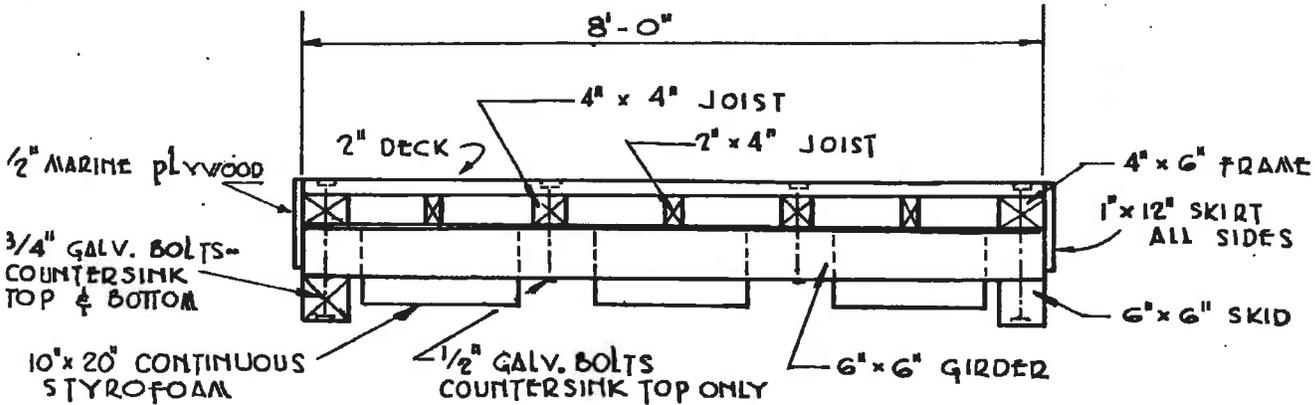
ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOW WATER. MINUS FIGURES INDICATE DEPTHS BELOW THAT SAME PLANE. PROP. TIMBER PILES TO BE CCA TREATED @ 25 pcf ALL OTHER TIMBERS TO BE CCA TREATED @ 1.0 pcf BENCH MARK TOP OF EXISTING CONC. CAP ELEV. 8.0 M.L.V.

84w-077 CONSTRUCT A PLATFORM, FLOATS AND GANGWAYS IN THE WAREHAM RIVER WAREHAM, PLYMOUTH Co. MA. APPLICATION BY THE TOWN OF WAREHAM APRIL 23, 1984 SHEET 1 OF 3 ROBERT A. BRAMAN ENGINEERING CO. CIVIL ENGINEERS & SURVEYORS 8 MAIN ST. BUZZARDS BAY, MA.

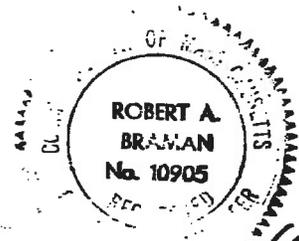
LICENSE PLAN NO. 1128 approved by Department of Environmental Quality Engineering of Massachusetts. Commissioner of Environmental Quality Engineering, Chief Engineer, Division Director.



BARGE SEC.
SCALE ~ 1/4" = 1'-0"



FLOAT SECTION
SCALE ~ 1/2" = 1'-0"

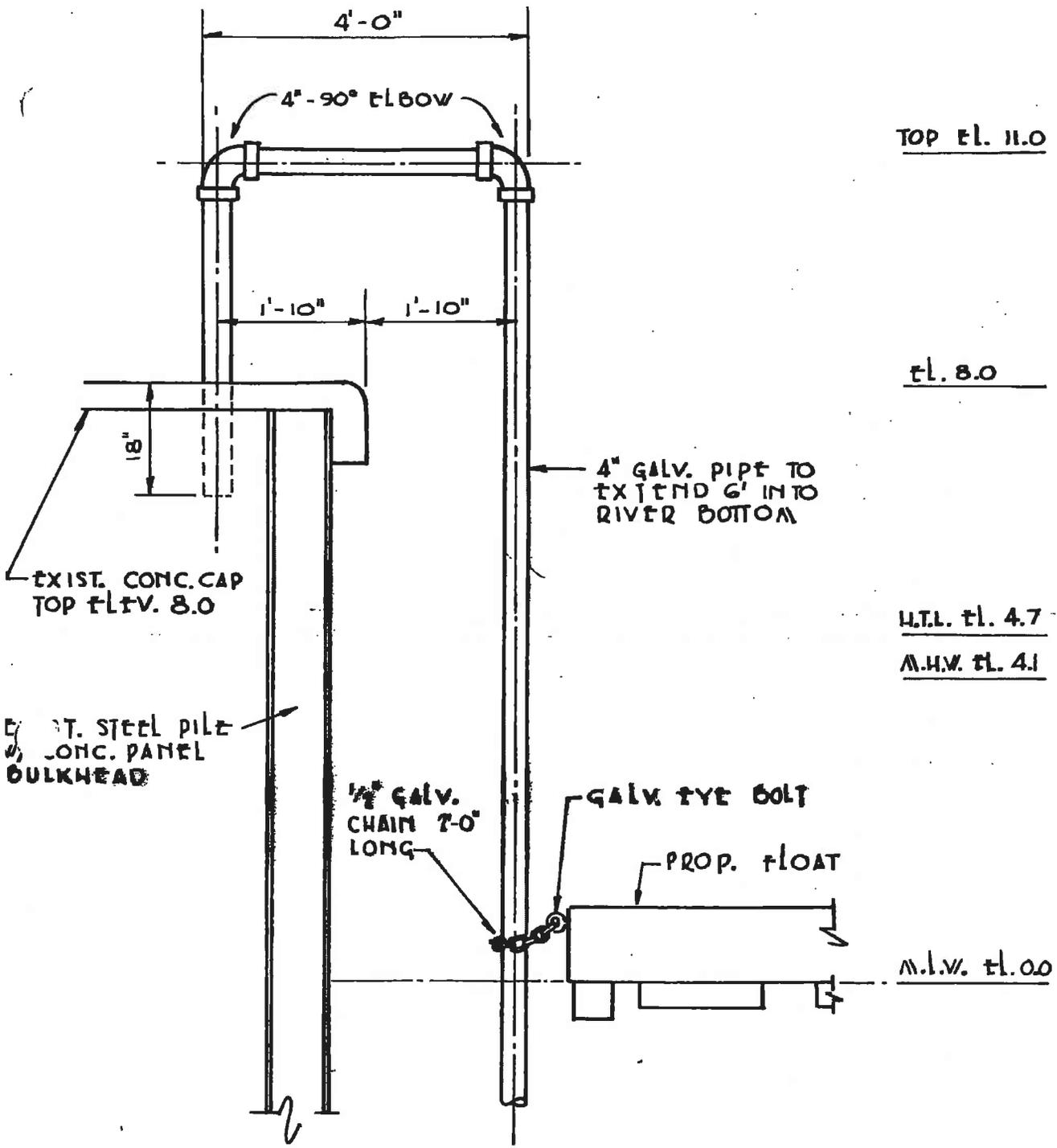


Robert A. Branam

84w-077

LICENSE PLAN NO. H28

Approved by Department of Environmental Quality Engineering
August 24, 1984



TOP EL. 11.0

EL. 8.0

H.T.L. EL. 4.7

M.H.W. EL. 4.1

M.L.W. EL. 0.00

EXIST. CONC. CAP
TOP ELEV. 8.0

EXIST. STEEL PILE
CONC. PANEL
BULKHEAD

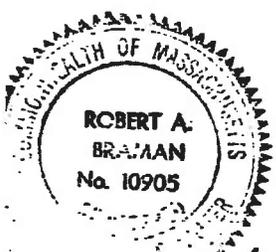
4" GALV. PIPE TO
EXTEND 6' INTO
RIVER BOTTOM

1/2" GALV.
CHAIN 7'-0"
LONG

GALV EYE BOLT

PROP. FLOAT

84w-077



FLOAT CONNECTION

SCALE: 1/2"=1'-0"

LICENSE PLAN NO. 1128

Approved by Department of Environmental Quality Engineering
August 27, 1984

Robert A. Braman

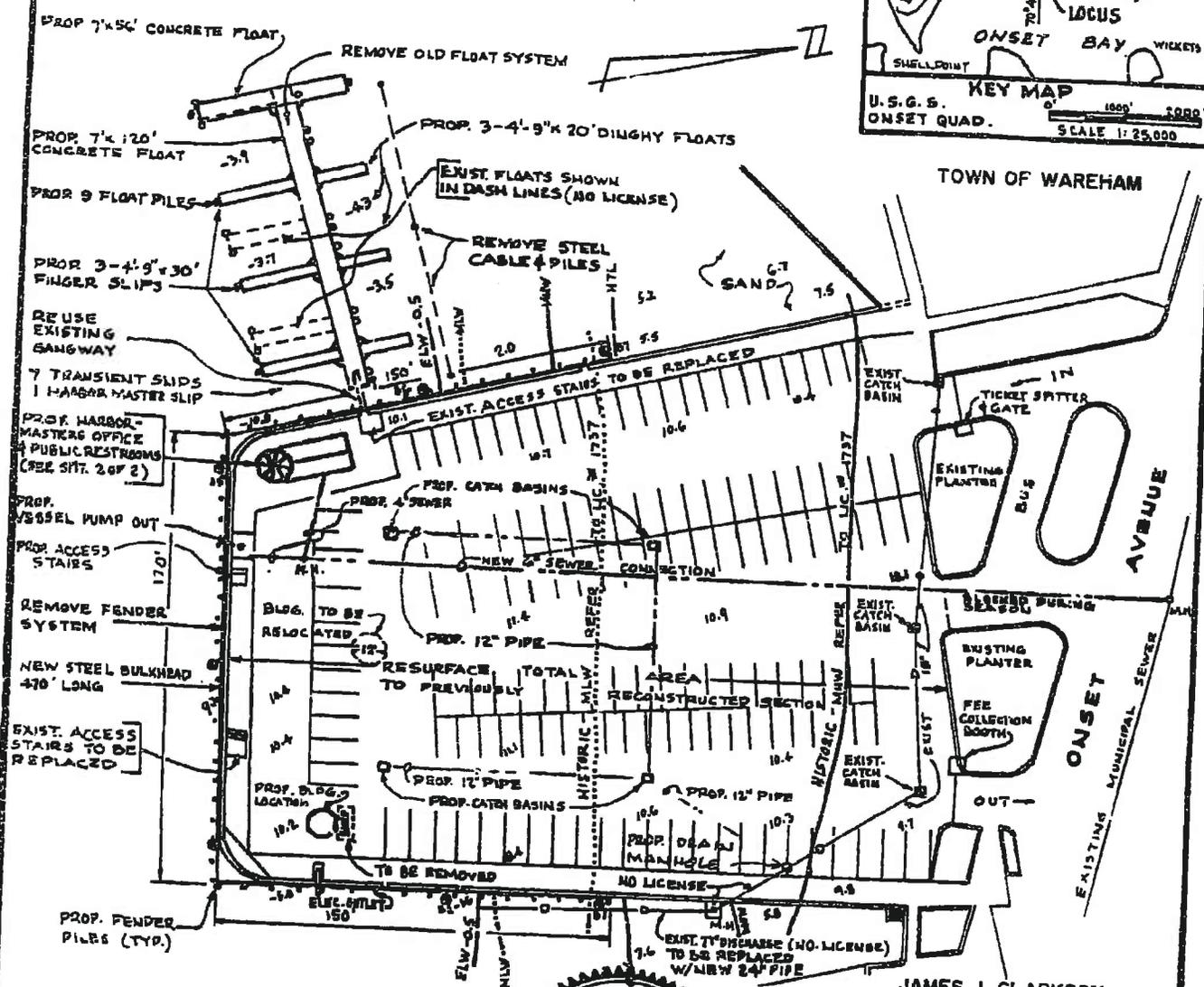
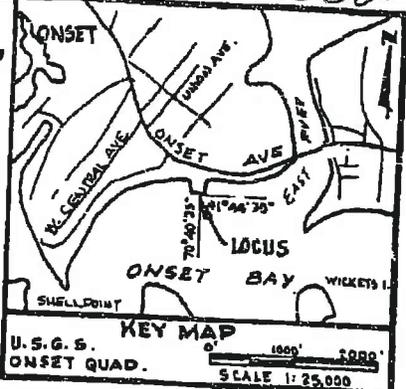
TOWN: WAREHAM
 SOURCE: US ACOE
 LOCATION: CONCORD, MA
 DATE OF RESEARCH: AUGUST 2007

| BCE Structure No | Document No | Contract/ Drawing Number | Entity | Municipality | Date | Title | Sheets | Location | Description |
|----------------------|----------------------------|--------------------------------|--------|--------------|-------------------|--|--------|--|-----------------------|
| 076-001-000-1052-100 | 076-001-000-1052-100-COE1A | 87-242 | USACE | Wareham | December 31, 1990 | Proposed Harbor Improvements Rehabilitation of Town Pier, Bulkhead, Floats, Paving, Pump Station, Harbor Master's Office and Sewer Connection in Onset Bay, Onset, Wareham, Plymouth County, Massachusetts | 2 | Onset Avenue at Harbor Master's Office | Bulkhead |
| 076-028-000-1004-100 | 076-028-000-1004-100-COE1A | 53-19 | USACE | Wareham | January 15, 1953 | Proposed Jetty and Beach Improvement - Little Harbor, Wareham, Massachusetts | 1 | Little Harbor Road | Jetty and Sand Fill |
| 076-028-000-1004-100 | 076-028-000-1004-100-COE1B | 56-1 | USACE | Wareham | December 14, 1955 | Proposed Groin and Sand Fill - Little Harbor, Buzzards Bay, Wareham, Massachusetts | 1 | Little Harbor Road | Groin and Sand Fill |
| 076-039-000-1001-100 | 076-039-000-1001-100-COE1A | 57-285 | USACE | Wareham | September 6, 1957 | Proposed Dredging and Construction in the Vicinity of Forest Beach, Wareham River, Wareham, Massachusetts | 2 | Oak Street at Oak Terrace | Boat Ramp with Riprap |
| 076-047-000-1127-100 | 076-047-000-1127-100-COE1A | 74-2 | USACE | Wareham | March 20, 1974 | Proposed Bulkhead and Pier in Wareham River, Wareham, Plymouth County, Mass. | 2 | Main Street | Bulkhead |

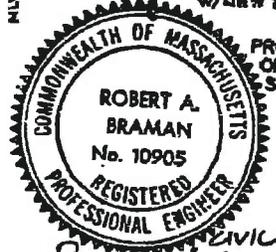
076-001-000-1052-100

- NOTES:**
1. REFER TO DEPARTMENT OF PUBLIC WORKS LIC. #1737 DATED DEC. 10, 1975
 2. ALL TIMBER TO BE CCA TREATED
 3. ELEVATIONS ARE BASED ON THE PLANE OF MEAN LOW WATER.
 4. B-1 DENOTES BORING #1
 5. PROPOSED USE - PUBLIC

- LEGEND**
- EXISTING PILE TO BE REMOVED
 - PROPOSED PILES



PLAN
0' 30' 60'
SCALE 1" = 60'



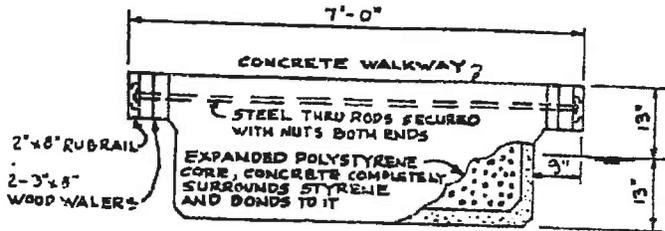
JAMES J. CLARKSON
PROPOSED HARBOR IMPROVEMENTS REHABILITATION OF TOWN PIER, BULKHEAD, FLOATS, PAVING, PUMP STATION, HARBOR MASTERS OFFICE AND SEWER CONNECTION IN ONSET BAY
ONSET, WAREHAM, PLYMOUTH CO., MA.
APPLICATION BY
TOWN OF WAREHAM

JUNE 9, 1987 SHEET 1 OF 2
BRAMAN ENGINEERING COMPANY
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST. BUZZARDS BAY, MA.

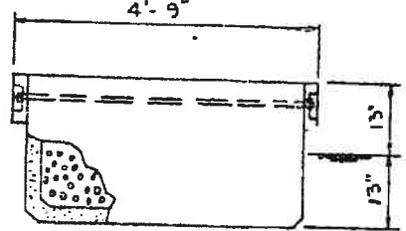
Robert A. Braman

revised June 29, 1987

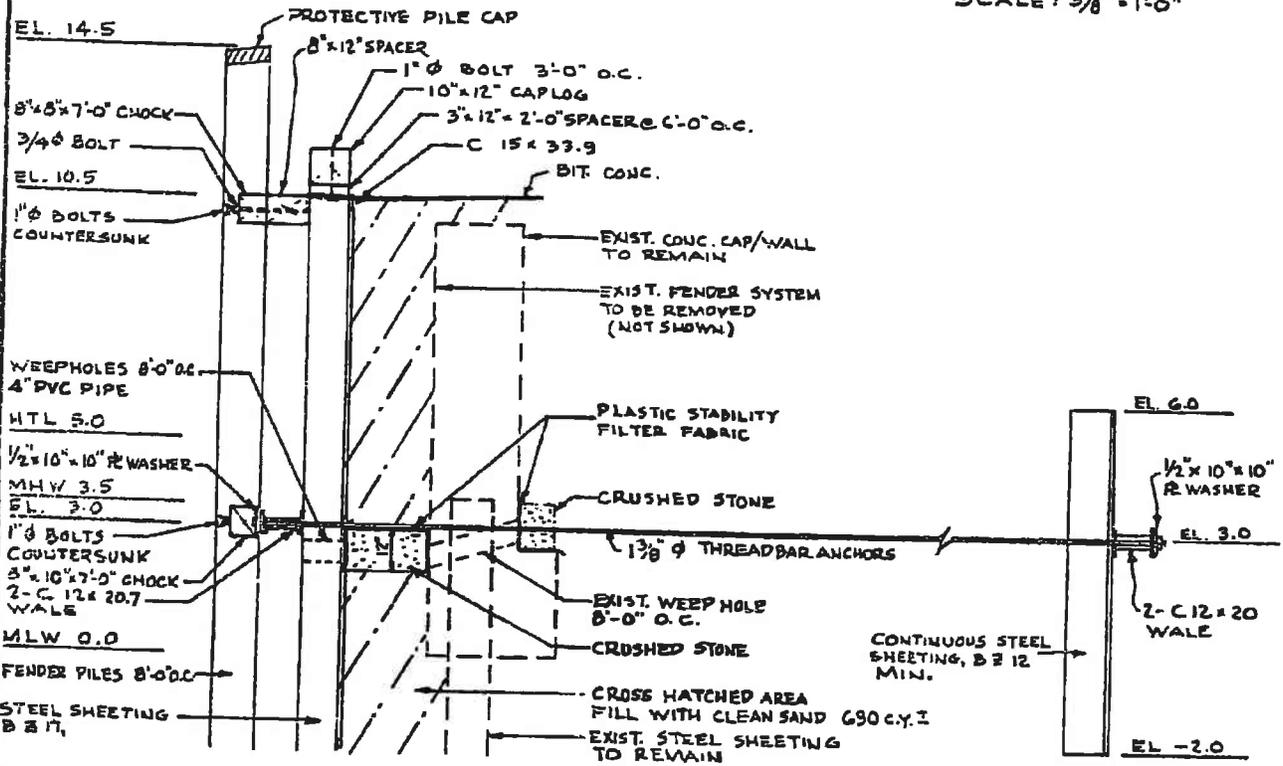
016-001-000-1052-100



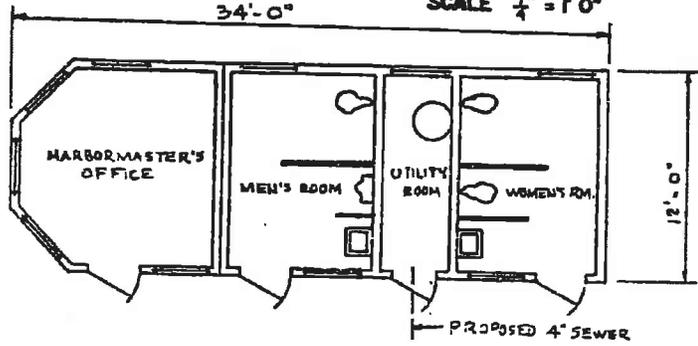
CONCRETE WALKWAY FLOAT SECTION
SCALE: 3/8" = 1'-0"



← FLOAT CONSTRUCTION SAME AS 7' FLOAT SECTION
FINGER FLOAT SECTION
SCALE: 3/8" = 1'-0"

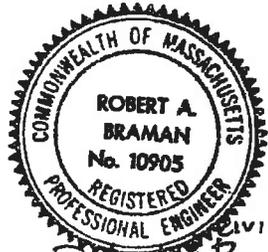


SECTION PROPOSED BULKHEAD
SCALE: 1/8" = 1'-0"



TOWN OF WAREHAM PROPOSED BUILDING
SCALE: 1" = 10' FEB. 17, 1987

REVISED JUNE 29, 1987

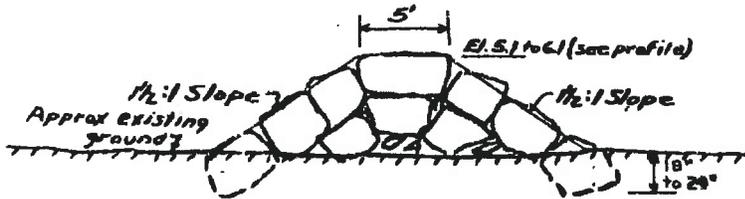


Robert A. Braman

0920981

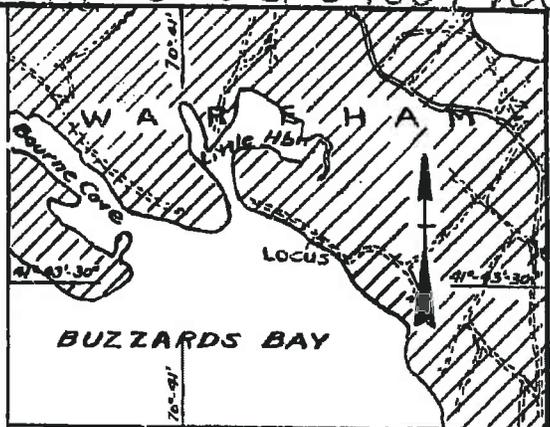
NEW ENGLAND DISTRICT

076-028-000-1004-100



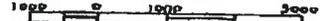
SECTION A-A (TYPICAL)

SCALE - IN FEET

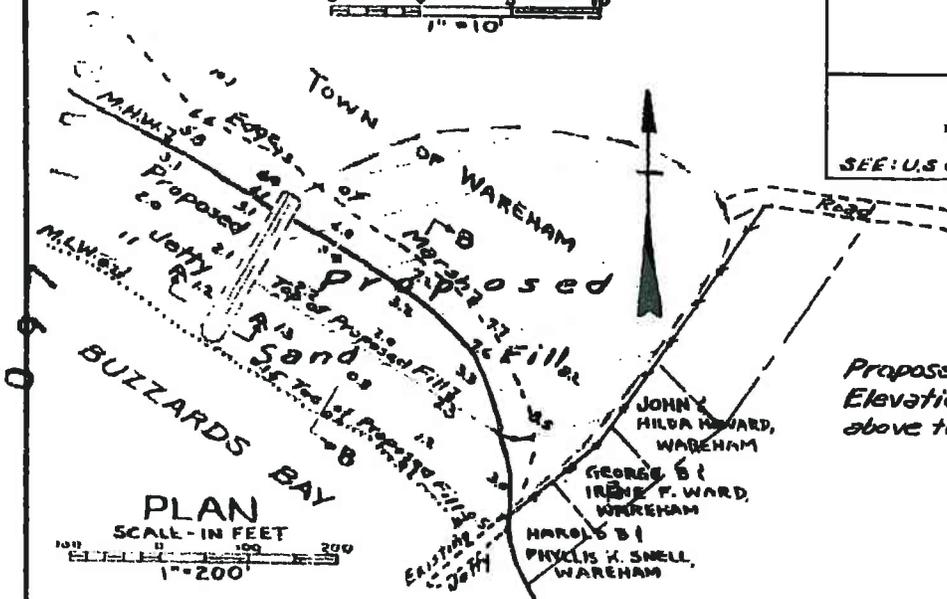


LOCATION PLAN

SCALE - IN FEET



SEE U.S. GEOL. SURVEY CHART SCALE 1:31600



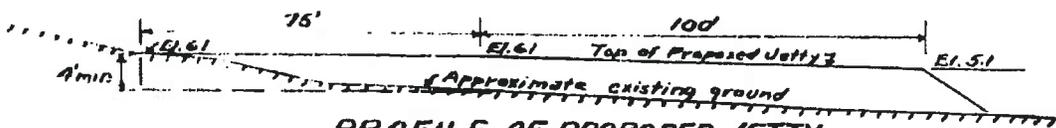
PLAN

SCALE - IN FEET



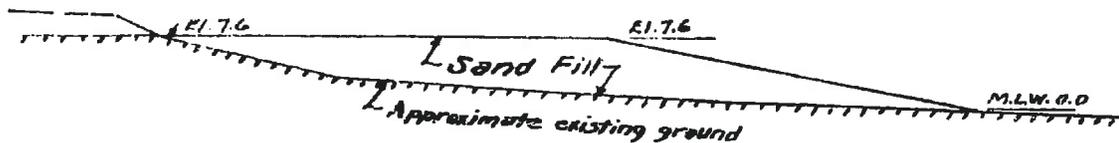
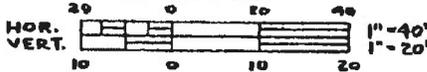
NOTE

Proposed work shown in red.
Elevations are in feet and tenths
above the plane of mean low water.



PROFILE OF PROPOSED JETTY

SCALE - IN FEET



SECTION B-B

SCALE

(same as Profile of
Proposed Jetty)

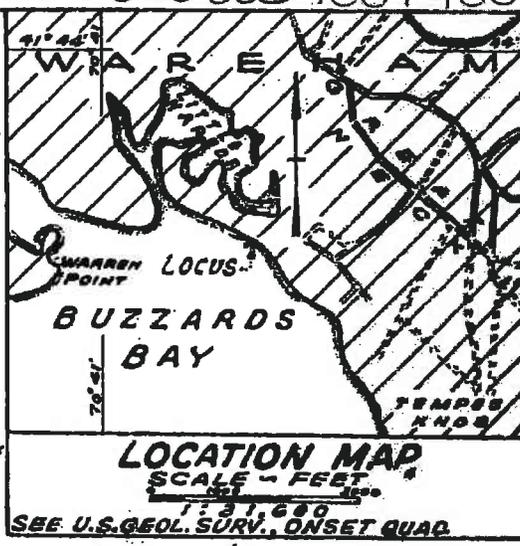
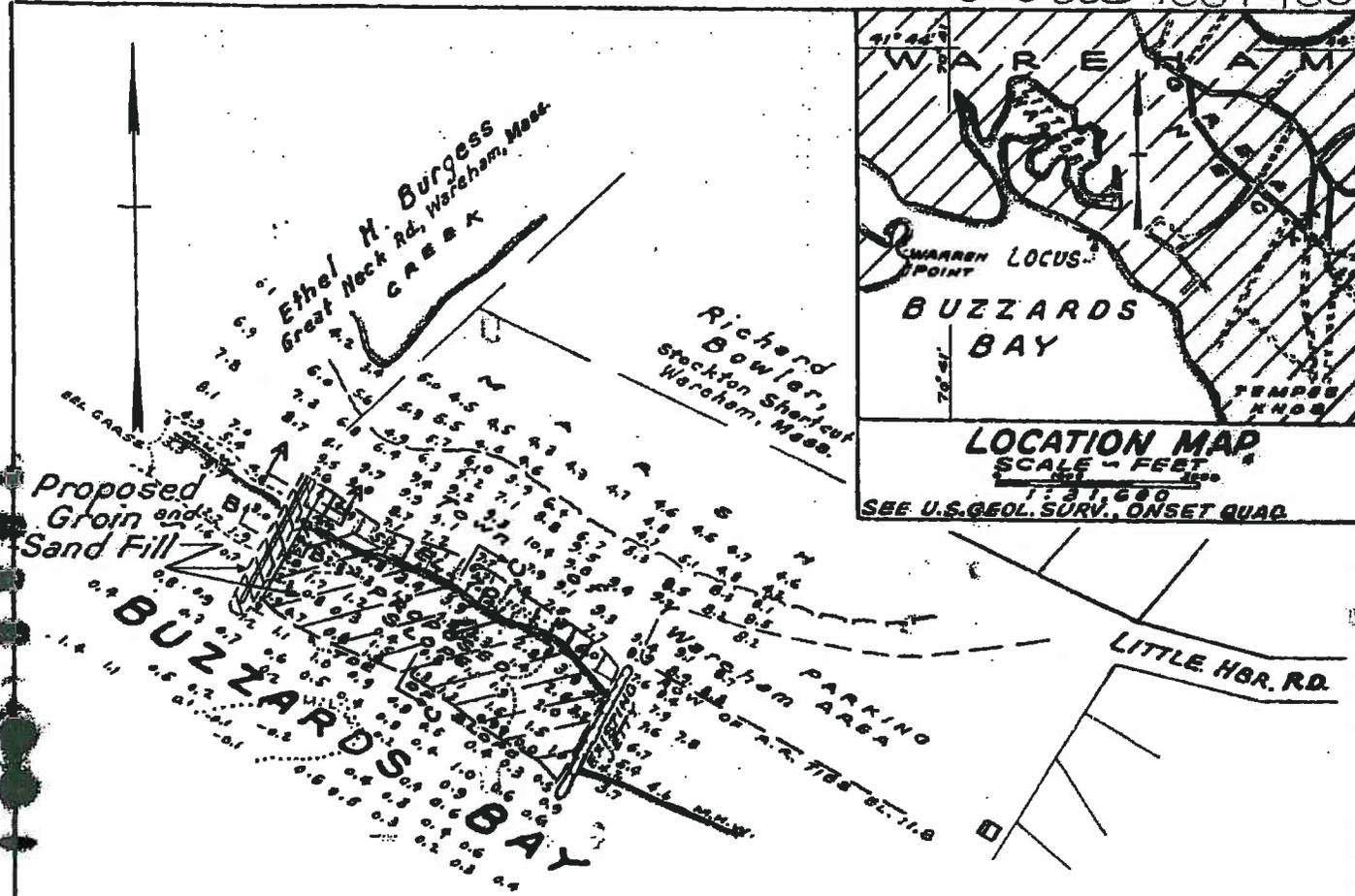
PROPOSED JETTY & BEACH IMPROVEMENT
LITTLE HARBOR
WAREHAM, MASS.
 APPLICATION BY
 DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
 DIVISION OF WATERWAYS
 DECEMBER 1952

Everett M. Littlefield
 DISTRICT WATERWAYS ENGINEER

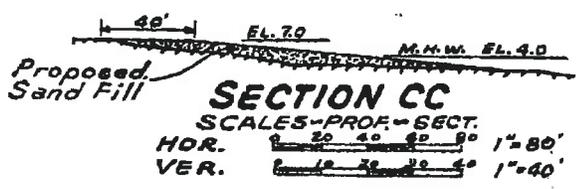
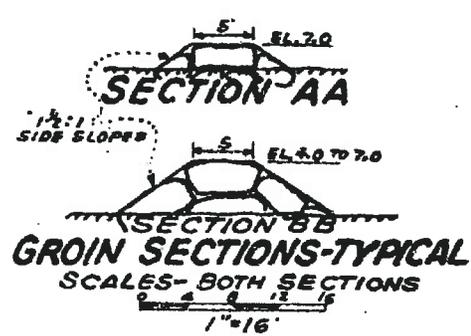
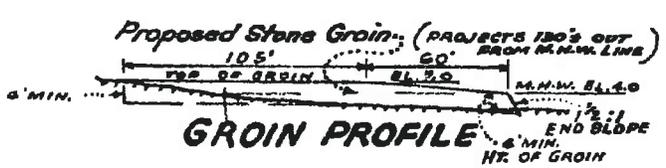
ACC. 03071

NEW ENGLAND
088 0895

076-028-000-1004-100



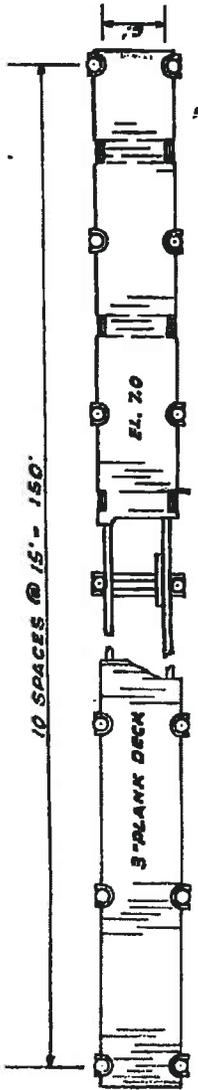
PLAN
SCALE - FEET
1" = 200'



NOTE
ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOW WATER. MINUS FIGURES SHOW DEPTHS BELOW THE SAME PLANE
LOCATION OF PROPOSED WORK IS SHOWN IN R&D.

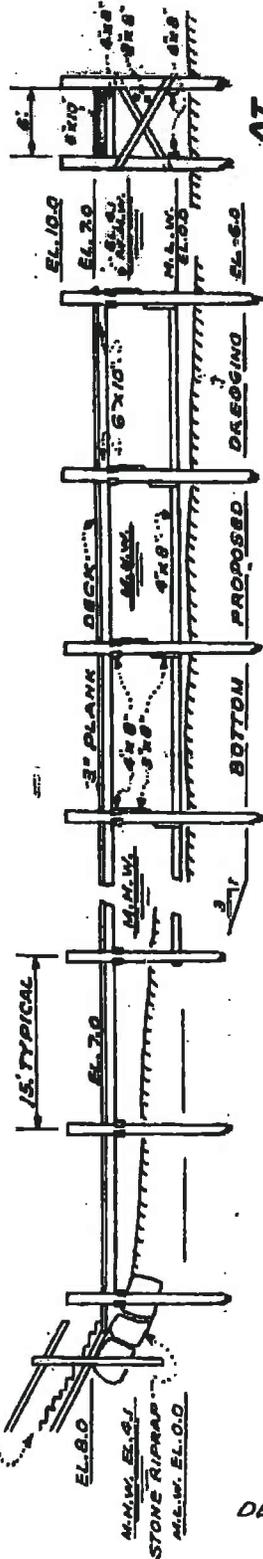
PROPOSED GROIN AND SAND FILL LITTLE HARBOR BUZZARDS BAY WAREHAM - MASS.
DEPARTMENT OF PUBLIC WORKS - MASSACHUSETTS
DIVISION OF WATERWAYS
DECEMBER 1955
Robert B. MacKenzie
DISTRICT WATERWAYS ENGINEER

SEE SHEET 1 FOR LOCATION PLAN



TIMBER PIER PLAN

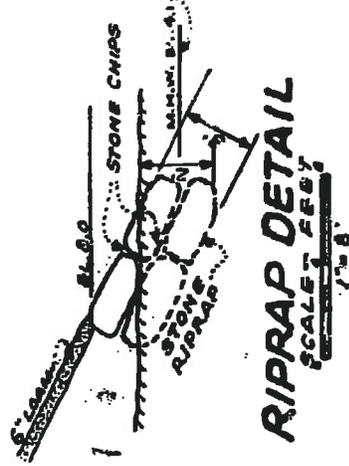
SCALE 1/4" = 16'



AT BENT

SECTION

SCALE 1/4" = 16'



RIPRAP DETAIL

SCALE 1/4" = 8'

NOTE
 APPROX. SURFACE EXISTING GROUND SHOWN
 THIS SURFACE
 METHODS OF BRACING AND FASTENING AND
 TIMBER AND HARDWARE FOR SAME ARE TO BE
 IN ACCORDANCE WITH BEST CURRENT USAGE.
 PILES TO BE 6" DIA. OF STANDARD DIAMETER
 AND FROM 20 TO 30 FEET LONG AS REQUIRED
 PROPERLY DRIVEN FOR BEARING AND STIFFNESS.
 ELEVATIONS ARE REFERRED TO PLANE OF
 MEAN LOW WATER.

PROPOSED
 DREDGING AND CONSTRUCTION
 VICINITY OF FOREST BEACH
 WAREHAM RIVER

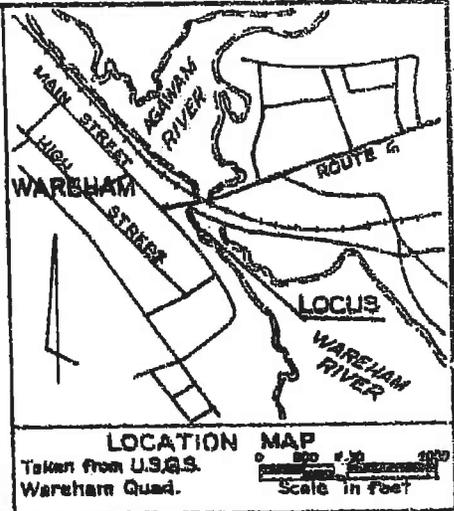
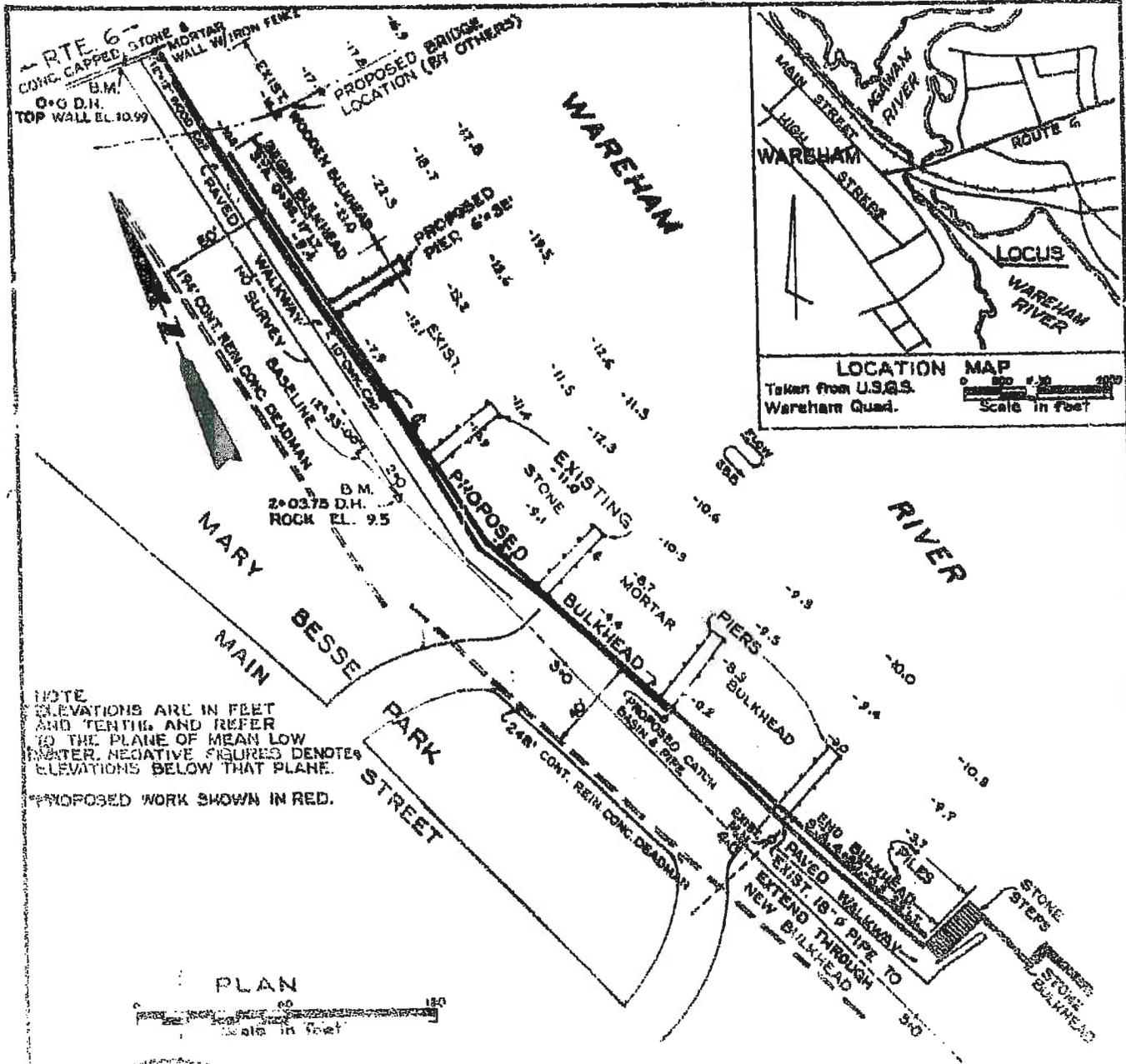
WAREHAM - MASS.
 APPLICATION BY
 DEPARTMENT OF PUBLIC WORKS - MASSACHUSETTS
 DIVISION OF WATERWAYS

AUGUST 1957

Robert B. MacKinnon

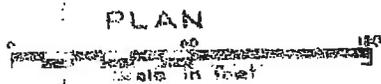
03-2 1240

076-047-000-1127-100



NOTE
 ELEVATIONS ARE IN FEET
 AND TENTHS, AND REFER
 TO THE PLANE OF MEAN LOW
 WATER. NEGATIVE FIGURES DENOTES
 ELEVATIONS BELOW THAT PLANE.

PROPOSED WORK SHOWN IN RED.



PROPOSED BULKHEAD & PIER IN
 WAREHAM RIVER
 WAREHAM, PLYMOUTH COUNTY, MASS.
 (CONTRACT NO. 7780)
 APPLICATION BY
 DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
 DIVISION OF WATERWAYS
 MARCH 20, 1974 SHEET 1075

Frederic C. Schwaner
 DEPUTY CHIEF ENGINEER FOR WATERWAYS

