

BAKER DESIGN CONSULTANTS  
*Civil, Marine and Structural Engineering*

# Mitchell Field Boat Launch Facility Feasibility Study and Recommended Layout

December 29, 2011



EXISTING CAUSEWAY EXTENDS SEAWARD FROM SHORE

**Submitted To:**

Jim Hays- Harpswell Harbormaster  
Harpswell Town Office  
P. O. Box 39: Harpswell, ME 04079

**Submitted By:**

Barney Baker PE  
Baker Design Consultants  
11 Stony Brook Lane: Yarmouth, Maine 04096

**Project Team:**

*Baker Design Consultants  
Wright-Pierce Engineers  
Terrence J DeWan and Associates  
MER Assessment Corporation*

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## EXECUTIVE SUMMARY

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### 1.1 INTRODUCTION

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The Mitchell Field property is a 120 acre shorefront parcel that was transferred to the Town of Harpswell in 2001 by the US Navy. The site was the location for a marine fuel terminal and tank farm that was constructed in the 1950's to serve Brunswick NAS. Today, the landside fuel tanks are gone and the property has been embraced by the Harpswell community and gradually improved through a process of municipal and volunteer efforts.

The Mitchell Field Masterplan completed in 2007 introduced a concept design for a boat ramp on the North side of the existing causeway (originally constructed to serve the Navy terminal) that extends seaward from shore. In January 2011, the Town was awarded a Maine State Planning Grant to complete a feasibility study for a boat launch facility on the shorefront of the property with the task of looking at multiple locations and developing a design for the preferred option. In June 2011, the Town of Harpswell awarded the project to a team led by Baker Design Consultants (BDC). The BDC team included the engineering, landscape architecture and environmental firms of Wright Pierce, Terrence J DeWan & Associates and MER Assessment Corporation.

### 1.2 ALTERNATIVE BOAT RAMP SITES CONSIDERED

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This report provides a summary of the site survey and investigation, workshop meetings and engineering design undertaken to evaluate options for boat launch facility development. The BDC team worked with the Harbor Master and Mitchell Field Committee to determine the optimum location and configuration for a launch ramp and an upland parking area to best match projected use and to minimize any conflicts with other uses and activities on the Mitchell Field waterfront. The work included a topographic survey and aerial reconnaissance of the beach, intertidal and subtidal resource areas. A benthic survey of the subtidal resource was completed by a dive team to evaluate seabed impacts associated with ramp construction.

A Design Basis Memo located in APPENDIX A provides a summary of parameters for the project that collectively have guided the site survey, design review and workshop discussion for boat ramp placement options. These are discussed in detail in report sections that follow. Using these criteria, two (2) sites were shortlisted for comparison; north and south of the existing connecting causeway that extends from shore to the deepwater terminal pier. Although development costs and environmental impacts are similar, the North ramp location emerges as the preferred alternative. From a coastal exposure perspective, the North side facility is the better location because of superior protection from the prevailing summer southwesterly winds. The north side location also avoids conflict with the public beach that extends from the south side of the causeway.



Aerial View of Causeway at Low water.

### 1.3 RECOMMENDED BOAT LAUNCH FACILITY PLAN

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Appendix D provides plans that show the preliminary design of the north side ramp and an upper area parking for 16 cars and trailers and 15 cars.

**Mitchell Field Boat Ramp and Parking Area**  
Town of Harpswell, Maine

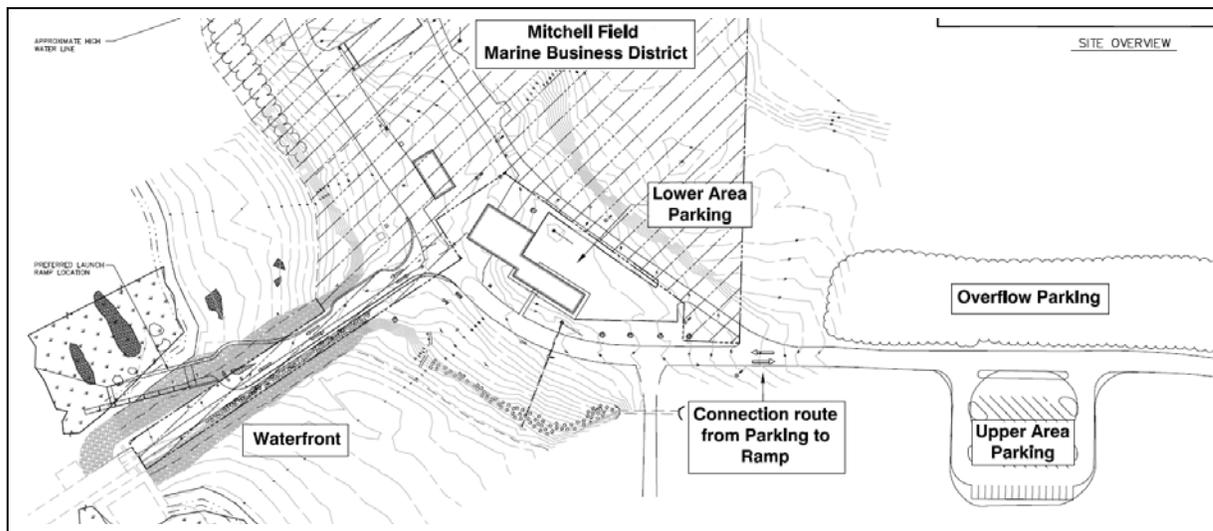


NORTH SIDE OF CAUSEWAY FROM SHORE



PHOTOSIMULATION OF BOAT RAMP INSTALATION

The upper parking area improves the former navy truck turnaround and corresponds to the location shown in the 2007 Masterplan. This could be shared with other Mitchell Field activities in addition to recreational and commercial boating interests that will use the proposed boat ramp. The 'parking' discussion included in the text of this study suggests that peak parking overflow could be provided in the field opposite in a similar manner to that which occurs during Mitchell Field Days. The appended plans do not show any parking on the shore or within the Mitchell Field Marine Business District (MFMBD) although it may be possible to incorporate some shared as these areas are developed. An engineer's estimate of the development cost for the boat ramp and parking is provided in Appendix B. The estimated cost with a 10% contingency is \$290,000 for final engineering and construction. A section of the report provides a list of potential Maine grant opportunities that might support this development.



BOAT RAMP AND PARKING ELEMENTS OF THE LAUNCH FACILITY- SEE SHEET C-1 ON APPENDIX D.

## 1.4 NEXT STEPS

At a combined December 5 presentation to members of the Mitchell Field Committee, the Harbor and Waterfront Committee and the Town Lands Committee, there was consensus agreement that the North side location for the Boat Ramp together with upland parking was the preferred location as presented in the plans provided in Appendix D. It was requested that the project be presented to the Town Selectman in public forum for review and consideration.

With an approval of the proposed ramp layout, Baker Design Consultants recommends the Town consider moving forward with permit applications for the project in anticipation of future grant opportunities with the understanding that a 'permitted' project has a better chance of success in the current competitive grant funding climate. More detail regarding the applicable permits and grant possibilities is provided in the report sections that follow.

## 2 BACKGROUND DATA COLLECTION

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The following sources were used to compile site parameters and design criteria. The collected information is recorded in the Design Basis Memo provided in Appendix A and where applicable indicated in the plans that are located in Appendix D.

### 2.1 EXISTING STUDIES AND SITE DATA

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A records review of information and studies that have been completed on the Mitchell Field property was undertaken from the following reference sources:

- Existing Drawings/documents that record the original construction by the Navy available on file with the Town
- Masterplans, Studies, Surveys, Ordinances that relate to site topography, planning and zoning efforts taken from consultant team records and the Mitchell Field website.
- Published tidal data, FEMA flood studies, Base Flood Elevation, etc.

### 2.2 SITE AND WORKSHOP MEETINGS

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A site meeting and two (2) workshops were held with the Mitchell field Committee and the Harbor Master. These meetings provided the forum to develop the Design Basis Memo located in Appendix A and to review plan concepts in development. At a combined December 5 presentation to members of the Mitchell Field Committee, the Harbor and Waterfront Committee and the Town Lands Committee, there was consensus agreement that the North side location for the Boat Ramp together with upland parking was the preferred location as presented in the plans provided in Appendix D.

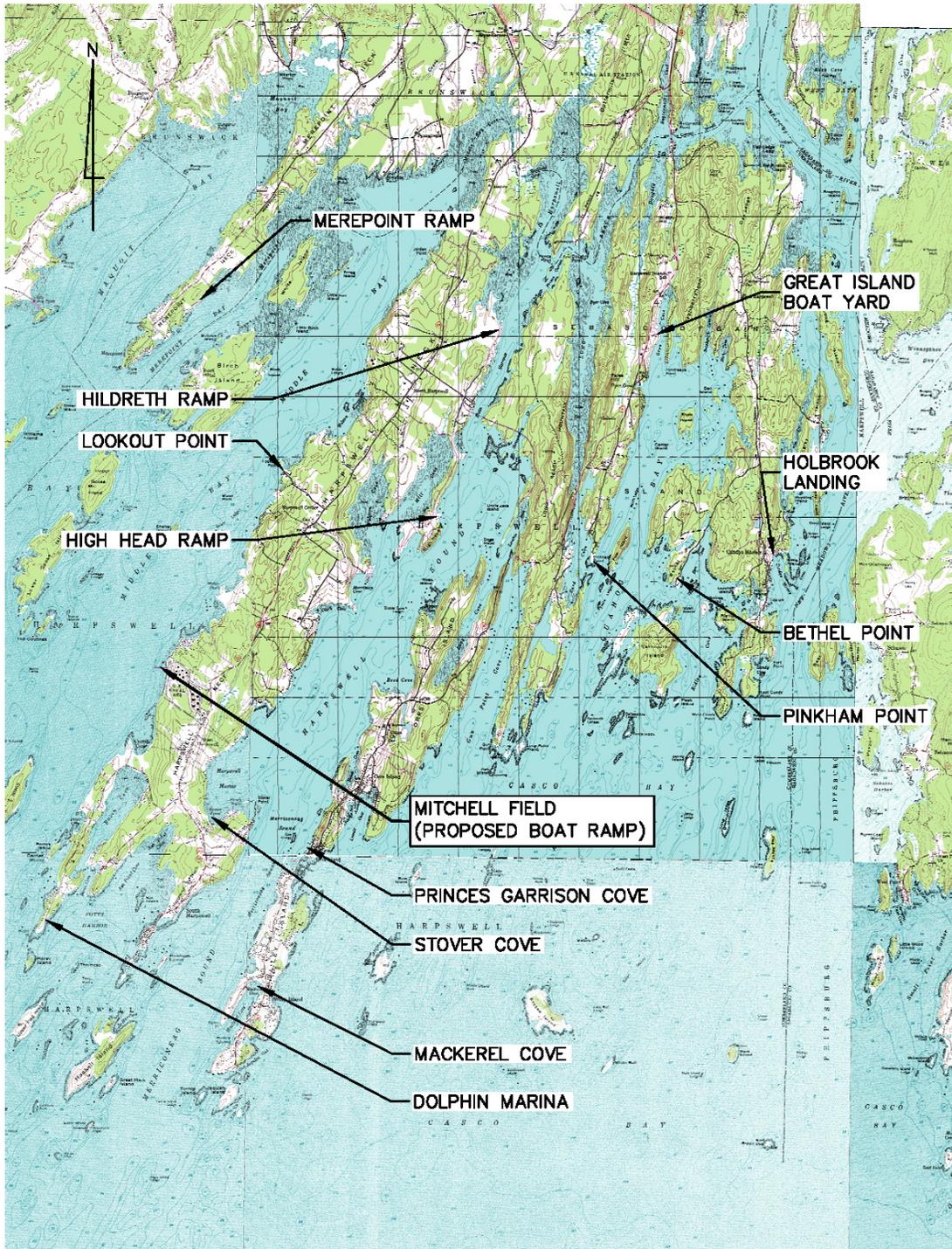
### 2.3 SITE SURVEY

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A comprehensive program of field survey and measurement was undertaken to define the physical features of the site and to investigate potential environmental impacts of boat ramp construction. The work included a topographic survey and a low tide aerial reconnaissance to review potential boat ramp sites and to provide base mapping for plan development. The photo information was used to predict eel grass boundaries and bottom habitat in advance of a dive survey and supplemental bathymetric data measurements.

The intertidal and subtidal areas seaward of boat ramp site options north and south of the causeway were mapped using dive transects and video. Eel grass boundaries were recorded.

## 2.4 REVIEW OF OTHER BOAT RAMP FACILITIES



Although beyond the scope of this study, a general listing of existing boat access facilities in Harpswell and respective attributes was compiled with the aim of defining the goals for the

## **Mitchell Field Boat Ramp and Parking Area**

Town of Harpswell, Maine

Mitchell Field facility by example. This exercise was extended to nearby Towns when it quickly became apparent that there was no facility within the aggregate coastline (250+ miles) that provided a model for the Mitchell Field site based on the desired development criteria for a public, all tide launch facility with adequate parking.

### 3 BOAT LAUNCH FACILITY DESIGN CONSIDERATIONS

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The Drawings in Appendix D are the culmination of the planning and design efforts for the project and reflect the parameters recorded in the Design Basis Memo provided in Appendix A. Key parameters and design features are discussed below.

#### 3.1 SENSITIVITY TO OTHER USES ON THE WATERFRONT

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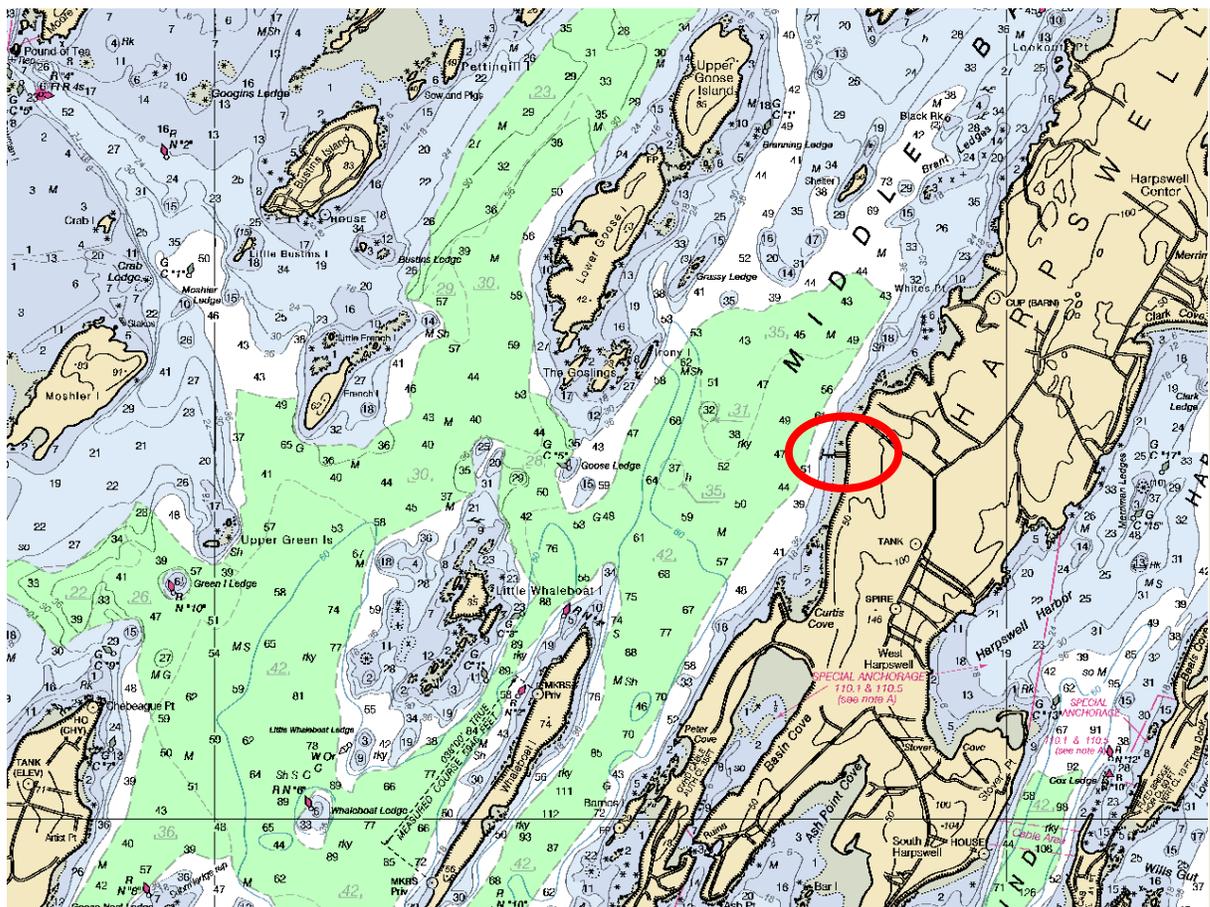


The proposed ramp facility has been designed to minimally impact existing activities at the Mitchell Field waterfront. This is best illustrated by way of defining the other areas activities that currently exist or are being considered.

- The Public Beach south of the causeway is a popular destination with Harpswell residents because of the sand flats and the spectacular views of the Middle Bay islands. There was a strong desire to avoid placement of the ramp on this side of the causeway for that reason.
- Mitchell Field Days dominate the entire waterfront for one weekend each year in July. It is understood there will be no boat launching activity during this period although the ramp could provide shore access for visitors to the festival that come by boat.

- The Mitchell Field Marine Business District comprises approximately 9 acres that extends along the shore north of the causeway. Commercial development for this site has yet to be defined. However, the plans prepared for the boat launch do consider the possible need for future access to the existing pier. The North Ramp (preferred Option) does not restrict or change the existing causeway grades so as not to restrict future road access to the pier and to maintain the existing underground utility corridor that runs the entire length of the causeway.
- All vehicle turning movements are currently configured on the causeway adjacent to the boat ramp. This facilitates launching and retrieving boats by avoiding the need to ‘back down’ the length of the causeway and avoids having to provide the land area for this activity on the near shore. Similarly trailer parking is located in an upland area where land use is not at a premium.

### 3.2 SITE EXPOSURE



MITCHELL FIELD- CLOCKWISE SOUTHWEST TO NORTHEAST EXPOSURE ON MIDDLE BAY.

The prevailing winds are southwesterly in the summer when the ramp will be used the most. This is the primary reason (along with the desire not to impact the public beach area) the north ramp is the preferred option.

### 3.3 BOAT RAMP GEOMETRY

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The plans located in Appendix D have optimized ramp geometry for efficient launching and retrieval of boats. The gradient of the ramp is set at 15% in accordance with recognized design standards. The ramp is extended into water depths that are approximately -1.5 feet at Mean Low Water. The depth of water at the base of the ramp almost ensures an 'all tide access'. Deeper draft boats will need to wait on the adjacent floats for a favorable tide. Both options (north or South of the causeway) could be extended into deeper water at a significant premium due to the added costs of construction fill and eel grass impacts. The proposed design keeps fill impacts in the eel grass area to less than 1000 SF to avoid going over a federal regulatory threshold that triggers public hearings and more extensive environmental impact review. That said, the Town will still need to mitigate the eel grass impacts. As discussed with the Harbor Master, we believe that the proposed eel grass impacts can be mitigated by removing one or two moorings from an existing field to reduce eel grass impacts.

### 3.4 VEHICLE GEOMETRICS

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Vehicle geometry has been reviewed to ensure the proposed turning radius at the head of the boat ramp is an adequate compromise to the required fill to form the turnaround. While a fire truck would not be able to turn around, a boat hauler should be able to negotiate the 60-ft diameter area shown on the plans.

Due to the turnaround, there will be no vehicle backing down the causeway and a 'boat ready' lay by has been provided to limit congestions while vehicles wait to launch. A pedestrian walkway has also been added to keep pedestrians clear of the vehicle access.

### 3.5 PARKING

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The 'Lower Area' is intended to refer to area of the property directly landward of the marine causeway that abuts the public beach to the south of the causeway and the Mitchell Field Marine Business District (MFMBD) to the North. While there was some discussion with the Harbor Master and Mitchell Field Committee associated with incorporating vehicle trailer parking in this area, it quickly became apparent that this could not be considered until the MFMBD had been developed and/or separate parking was defined for the Town shorefront. I.e. Shared parking opportunities may be appropriate (and convenient) in this area, but should not drive design development.

Upper Area Parking is shown on Sheet C-4. This develops an area that is approximately 1150 feet from the boat launch site in a location that was the truck turnaround for the navy facility. Overflow parking is provided in the field opposite as shown on plan sheet C-1 in Appendix D.

## 4 REGULATORY PERMITTING AND GRANT OPPORTUNITIES

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Preliminary discussions have been held with the permit agencies and a listing of the required permits has been compiled in the Design Basis Memo. According to discussion with DEP, the work as proposed should qualify for an NRPA Permit By Rule. A draft application is provided in Appendix C.

Grant opportunities to support waterfront access have been compiled on the Design Basis Memo located in Appendix A. Several sources may be available in the near future. Each agency contacted indicated that the opportunity for funding is increased with a project that is designed and permitted and 'shovel ready'. The Mitchell Field Boat Launch Facility is a good candidate.

# APPENDIX A

-Design Basis Memo

**DESIGN BASIS MEMO**

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PLANNING/DESIGN PARAMETER		CONSTRUCTION IMPACT/PROVISIONS
Mitchell Field Property BOAT LAUNCH FACILITY USERS	Commercial Fisherman, Shellfish harvesters.	Middle Bay Access by trailerable boat.
	Recreational Boaters	Size of boat determined by what can be hauled across the road by trailer.
	Town of Harpswell Harbormaster Fire and Rescue services.	Year-round Ramp Access. Seasonal Floats Use. Floats Available for transfer of Fishing gear.
	Stewards of the Environment	Friends of Casco Bay, Casco Bay Estuary Project, The Lobster Conservancy, Clean Casco Bay, the Island Institute, Marine Animal Lifeline, State Agencies, Bowdoin College
	Business Based Users Mitchell Field Marine Business District Other Marine Services	Pending Site Development Commercial Boat Haulers might use facility to haul boats in advance of an approaching storm.
	Mooring Holders	Future mooring area dinghy access to ramp floats would be possible
ADJACENT ACTIVITY	General	Mitchell Field comprises almost 120 acres of multi-use recreation, residential and business spaces adjacent to fields, hiking trails and community gardens.
	Public Beach	Maine summer use! Sunbathers, kids, swimmers, combers.
	Public Pier	Former Navy Terminal now restricted to pedestrian access.
	Mitchell Field Festival	Annual Festival will prohibit launching of boats. Festival organizers may consider ramp as provide landing for boaters attending festival.
	Mitchell Field Marine Business District	Pending -Water dependant development encouraged. Aquaculture, Boat Building, etc.

**DESIGN BASIS MEMO**

Page 2 of 3

PLANNING/DESIGN PARAMETER		CONSTRUCTION IMPACT/PROVISIONS			
BOAT RAMP Design	Gradient- 15 %	Maximum gradient for efficient launch.			
	Distance to Low water	Maximize depth of water for all tide access.			
	Launch Width	20 Feet (2 Lanes)			
	Embankment Slope	2:1 min			
	Shoulder width	2-ft min			
Exposure	Wind /Wave Fetch	Hurricane Coastline			
	Prevailing Winds (ref: Portland Wind Rose Data) -Summer S to SW; Winter NW-NE	<i>Direction</i>	<i>Approximate Fetch (miles)</i>		
		North	2		
		Northwest	1.5		
		West	4		
		Southwest	6		
Icing	None reported				
Tidal /Flood Information	<b>Elevation</b>	<b>Chart Datum</b>	<b>NGVD</b>	<b>Notes</b>	
		(ft)	(ft)		
	<b>FEMA Base Flood</b>	<b>14.57</b>	<b>10.0</b>	<b>FEMA</b>	
	<b>Highest</b>	<b>14.17</b>	<b>9.6</b>	<b>Based on Portland</b>	
	<b>MHHW</b>	<b>9.91</b>	<b>5.3</b>	<b>"</b>	
	<b>MHW</b>	<b>9.45</b>	<b>4.9</b>	<b>"</b>	
	<b>Mean Tide Level</b>	<b>4.90</b>	<b>0.3</b>	<b>"</b>	
	<b>NGVD</b>	<b>4.57</b>	<b>0.0</b>	<b>"</b>	
	<b>MLW</b>	<b>0.34</b>	<b>-4.2</b>	<b>"</b>	
	<b>MLLW</b>	<b>0.00</b>	<b>-4.6</b>	<b>"</b>	
	<b>Lowest</b>	<b>-3.41</b>	<b>-8.0</b>	<b>"</b>	
Float System	Floats	6-ft minimum width, 8-ft better, Seasonal Use, Skids for removal from water			
	Piles	Final Design Consideration (subsurface data available from 1950's plan records.) -North side option has exposed ledge dictates socketed steel piles -South side option has sediment deposits that may allow driven pile			
	RC Bulkhead	Float Transition at shore end. ADA Accessible.			
	Length	Final Design - Extend to deep water to allow boat with 4-ft draft to safely wait for sufficient water at low tide.			
Amenities	Lighting	Final Design Consideration			
	Restrooms	Shared with Beach goers, Trail Users			
	Pump-Out Station	Future Consideration			
	Dinghy Storage Rack	Pending Mooring Field Development			

**DESIGN BASIS MEMO**

Page 3 of 3

PLANNING/DESIGN PARAMETER		CONSTRUCTION IMPACT/PROVISIONS
VEHICLE Approach Geometry	Lane Width	10-ft
	Shoulder Width	3-ft
	Pedestrian Walkway	4-ft
	Boat Ready Lay by	10-ft wide, 75-ft Long
	Turn-around Radius	30-ft, allow for boat overhang
Parking	General	Lane Width 24-ft (2 way) 9 x 18 car space 10 x 50 car/Trailer Space
	Lower Parking Area	Undefined pending shared Use and MFMBD development
	Upper Parking Area	16 Boat/Trailer spaces shown 15 Cars
	Overflow Parking	Peak parking limited to dryer summer months. Note use during Mitchell Field Days.
PERMITTING	MeDEP Maine Department of Environmental Protection	Preapplication discussion with the DEP indicated project would qualify for review under NRPA PBR under Section 15. 'Public Boat Ramps' provided provisions met. Timing of Activity will be dictated by DMR and DIFW
	ACOE Army Corps of Engineers	Preapplication discussion with the ACOE indicated project would qualify for review under Maine General Program Permit Category 2 provided impacts were kept below thresholds.  - Maximum Eel Grass Impact < 1000 SF -Intertidal Fill/Float Impacts minimized
	Town of Harpswell	Shoreland Permit
	Maine Bureau of Public Lands	Notification Required for footprint beyond low water
GRANT/ FUNDING Opportunities	Maine State Planning Office	Harbor and Waterfront Grant provided funding for this Boat Launch Feasibility Study
	Maine Dept of Conservation	Provide funding programs for public waterfront access. Pending 2012 program ~ \$500k (\$250k Max)
	Maine Inland Fisheries and Wildlife	Outboard Excise Tax Program
	MDOT SHIP (Small Harbor Improvement)	Funding Pending State Budget- July 2012?
	Vocational Schools	Float Construction

# APPENDIX B - Preliminary Cost Estimate

**Mitchell Field Boat Ramp and Parking Area**

Town of Harpswell, Maine

The cost estimate provided below is based on the design plans located in Appendix C for the North Ramp option.

<b>Construction Costs</b>	Unit	Unit Cost	Quantity	Total
<i>Bonds and Insurance</i>	%	2%		\$5,000
<i>Mobilization</i>	LS	\$5,000	1	\$5,000
<i>Boat Ramp Construction</i>				
Precast Planks	SF	\$8	3220	\$25,760
Crushed Stone Base	CY	\$25	179	\$4,472
Geotextile	SY	\$2	716	\$1,431
Stone Fill	CY	\$25	2059	\$51,485
Riprap	CY	\$75	686	\$51,485
Floats	SF	\$30	840	\$25,200
Piles (12-inch steel)	EA	\$3,000	7	\$21,000
Socketing or Pinning	EA	\$990	7	\$6,930
<i>Causeway Improvements</i>				
Gravel Base/Regrading	CY	\$25	516	\$12,906
Paved Surface				
Causeway	Tons	\$80	92	\$7,333
Pedestrian Walkway	Tons	\$80	12	\$978
Boat Ready	Tons	\$80	15	\$1,173
Turn around Diameter	Tons	\$80	52	\$4,145
Lighting/Amenities	LS	\$10,000	1	\$10,000
<i>Parking Improvements (Upper Area)</i>				
Demolition/Grading/Gravel	LS	\$1,000	1	\$1,000
Planting Allowance	LF	\$1,000	1	\$1,000
Gravel	LS	\$2,500	1	\$2,500
Signage/Posts	EA	\$1,000	1	\$1,000
<b>Engineering Services</b>				
Permitting	LS	\$3,000	1	\$3,000
Design and Construction Support	%	7%	1	\$17,500
<b>Fees and Advertising</b>				
Permit Fees	Est	\$65	1	\$65
Bid Printing and Advertising	Est	\$1,200	1	\$1,200
Subtotal				\$261,564
10% Contingency				\$26,156
<b>Budget Estimate</b>				<b>\$287,720</b>
Based on Feasibility Study				

# APPENDIX C

-NRPA PERMIT APPLICATION (without attachments)

Mitchell Field Boat Ramp and Parking Area  
Town of Harpswell, Maine

12/01/2008

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**PERMIT BY RULE NOTIFICATION FORM**

(For use with DEP Regulation, Chapter 305)

PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

<b>Name of Applicant: (owner)</b>	Attn: Jim Hayes- Harpswell Town Harbor Master	<b>Name of Agent:</b>	Barney Baker PE- Baker Design Consultants 11 Stony Brook Ln, Yarmouth, ME 04096		
<b>Applicant Mailing Address:</b>	P. O. Box 39	<b>Agent Phone #: (include area code)</b>	(207)846-9724		
<b>Town/City:</b>	Harpswell	<b>Project Location: (town)</b>	Harpswell		
<b>State and Zip Code:</b>	ME 04079	<b>Name of Wetland or Waterbody:</b>	Casco Bay		
<b>Daytime Phone #: (include area code)</b>	Contact Agent	<b>Map #:</b>	13	<b>Lot #:</b>	4
<b>Detailed Directions to Site:</b>	Take I-295 to Brunswick to Route 1 to Brunswick Route ME-24 to Harpswell Route ME-123. Keep on 123 for approximately 11 miles. Mitchell Field is on the right hand side. Turn in before you pass the water tower and head down the site road all the way to the shore.				
	<b>Latitude:</b>	43° 46.6' N	<b>Longitude:</b>	70° 01.1' W	
<b>Description of Project:</b>	Municipal boat launch Facility				
<b>Part of a larger project?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>After the Fact? (check one)</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Check one →</b> This project <input checked="" type="checkbox"/> does (or) <input type="checkbox"/> does not involve work below mean low water (average low water)	

**PERMIT BY RULE (PBR) SECTIONS: (Check at least one)**

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Rules, Chapter 305. I and my agents, if any, **have read** and will comply with all of the standards in the Sections checked below.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Sec. (2) Act. Adj. to Protected Natural Res. | <input type="checkbox"/> Sec. (10) Stream Crossing                                | <input type="checkbox"/> Sec. (17) Transfers/Permit Extension   |
| <input type="checkbox"/> Sec. (3) Intake Pipes                        | <input type="checkbox"/> Sec. (11) State Transportation Facil.                    | <input type="checkbox"/> Sec. (18) Maintenance Dredging   |
| <input type="checkbox"/> Sec. (4) Replacement of Structures           | <input type="checkbox"/> Sec. (12) Restoration of Natural Areas                   | <input type="checkbox"/> Sec. (19) Activities in/on/over significant vernal pool habitat  |
| <input type="checkbox"/> Sec. (5) REPEALED                            | <input type="checkbox"/> Sec. (13) F&W Creation/Enhance/Water Quality Improvement | <input type="checkbox"/> Sec. (20) Activities in existing dev. areas located in/on/over high or moderate value inland waterfowl & wading bird habitat or shorebird nesting, feeding & staging areas |
| <input type="checkbox"/> Sec. (6) Movement of Rocks or Vegetation     | <input type="checkbox"/> Sec. (14) REPEALED                                       |   |
| <input type="checkbox"/> Sec. (7) Outfall Pipes                       | <input checked="" type="checkbox"/> Sec. (15) Public Boat Ramps                   |   |
| <input type="checkbox"/> Sec. (8) Shoreline stabilization             | <input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects                     |   |
| <input type="checkbox"/> Sec. (9) Utility Crossing                    |   |   |

I have attached the following required submittals. **NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:**

- Attach a check for \$65 made payable to: "Treasurer, State of Maine".**
- Attach a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.**
- Attach Proof of Legal Name.** If applicant is not an individual or municipality, provide a copy of Secretary of State's registration information (available at <http://icrs.informe.org/nei-sos-icrs/ICRS?Mainpage=x>)
- Attach photos of the proposed site where activity will take place as outlined in PRB sections checked above.**
- Attach all other required submissions as outlined in the PBR Sections checked above.**

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that **this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.**

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in the rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

<b>Signature of Agent or Applicant:</b>		<b>Date:</b>	December 13, 2011
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*Keep a copy as a record of permit.* Send the form with attachments via certified mail or hand deliver to the Maine Dept. of Environmental Protection **at the appropriate regional office listed below.** The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP 17 STATE HOUSE STATION AUGUSTA, ME 04333-0017 (207)287-3901	PORTLAND DEP 312 CANCO ROAD PORTLAND, ME 04103 (207)822-6300	BANGOR DEP 106 HOGAN ROAD BANGOR, ME 04401 (207)941-4570	PRESQUE ISLE DEP 1235 CENTRAL DRIVE PRESQUE ISLE, ME 04769 (207)764-0477
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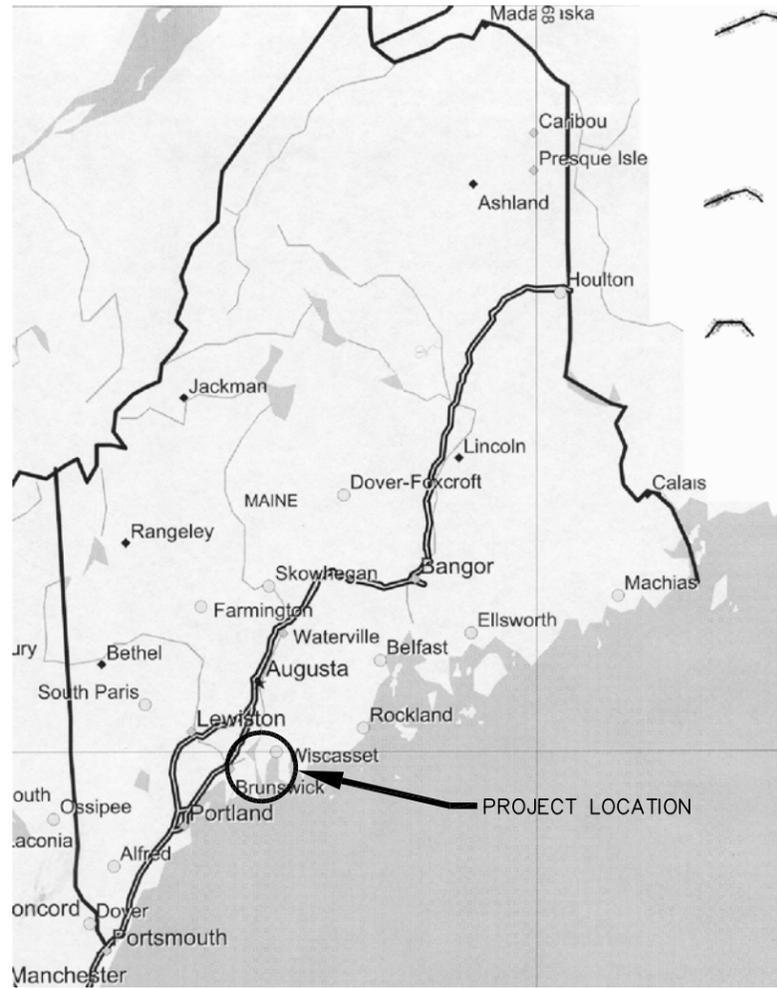
OFFICE USE ONLY	Ck.#	Date	Staff	Staff	After Photos
PBR #	FP		Acc. Date	Def. Date	

DEPLW0309-N2008

# APPENDIX D -Preliminary Plans

# MITCHELL FIELD BOAT RAMP TOWN OF HARPSWELL

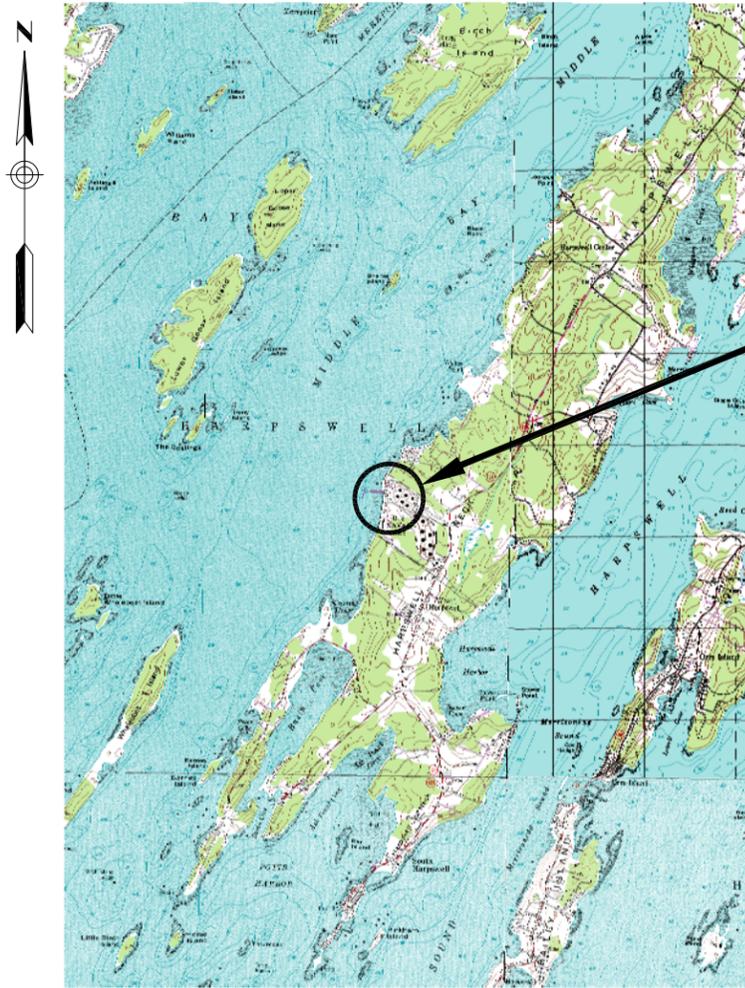
## HARPSWELL, MAINE PROJECT NO. 11-16



VICINITY MAP

### INDEX OF SHEETS

SHEET NO.	DESCRIPTION
G-1	COVERSHEET
C-1	PROJECT OVERVIEW PLAN
C-2	EXISTING WATERFRONT PLAN
C-3A	NORTH RAMP PLAN & ELEVATION
C-3B	SOUTH RAMP OPTION
C-4	UPPER PARKING AREAS
C-5	TYPICAL SECTIONS



LOCATION MAP



NO.	A	Feasibility Study SUBMISSION
DATE	12-05-11	BJB INT.

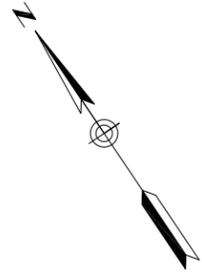
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DRAWN BY:	MSH
CHECKED BY:	BJB
SCALE:	AS SHOWN

SHEET TITLE:	TITLE SHEET
PROJECT:	TOWN OF HARPSWELL MITCHELL FIELD BOAT RAMP HARPSWELL, MAINE

DATE	8/5/11
CONTRACT NO.	11016
SHEET NO.	G-1
REV.	A

\\Eng-sta1\projects\11-16 Mitchell Field Boat Ramp\CAD\11-16 MF General.dwg, C-1, 12/12/2011 4:28:57 PM, Jeff, 1:2

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725'±

APPROXIMATE HIGH WATER LINE

PREFERRED LAUNCH RAMP LOCATION

Waterfront

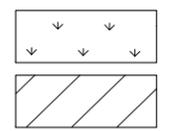
Mitchell Field Marine Business District

Lower Area Parking

Connection route from Parking to Ramp

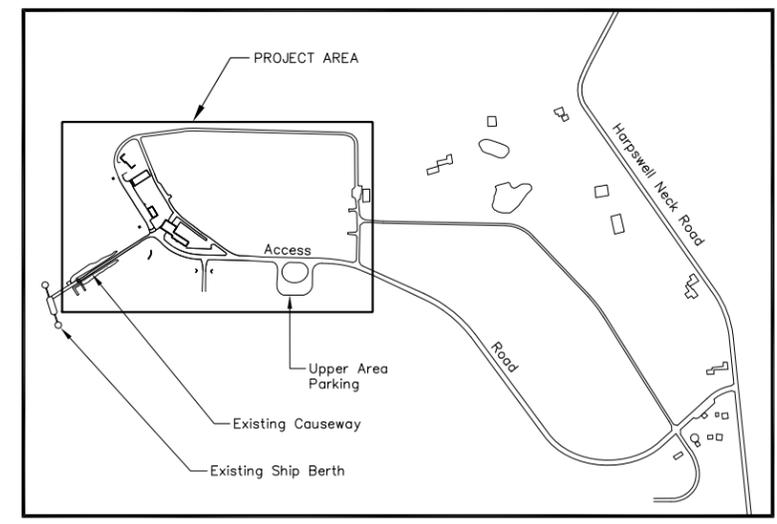
Overflow Parking

Upper Area Parking



↓ ↓ ↓  
EEL GRASS SURVEY BY MER ASSESSMENT IN AUGUST 2011.

▨  
MITCHELL FIELD MARINE BUSINESS DISTRICT, AS SHOWN FROM PRELIMINARY MAPPING LOCATED ON TOWN OF HARPSWELL WEBSITE AND IS APPROXIMATE ONLY.

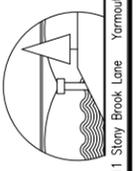


SITE OVERVIEW

**NOTES:**

1. BASE MAPPING PLANIMETRICS & TOPOGRAPHY IN "WATERFRONT" DEVELOPMENT AREA IS FROM TOPOGRAPHIC GROUND SURVEY PREPARED BY WRIGHT-PIERCE DATED JULY 2001. SURVEY IS ON AN ASSUMED VERTICAL DATUM, SO A VERTICAL ADJUSTMENT WAS MADE, BASED ON TIDAL OBSERVATIONS, TO MATCH THE LOCAL TIDAL DATUM ("MLW" MEAN LOW WATER EQUAL TO ZERO).
2. MAPPED PLANIMETRICS OUTSIDE WRIGHT-PIERCE GROUND SURVEY WERE DIGITIZED FROM MEGIS WEBSITE GEOREFERENCED ORTHOGRAPHIC IMAGERY.
3. FOR FINAL DESIGN, A CONTROL SURVEY SHOULD BE PERFORMED TO SET SURVEY CONTROL BENCHMARKS ON SITE IN NAVD88 SO THAT ACCURATE ADJUSTMENTS CAN BE MADE BETWEEN TIDAL DATUM, NGVD29, AND NAVD88 AS NEEDED. EXISTING WRIGHT-PIERCE SURVEY CONTROL POINTS SHOULD BE INCLUDED IN CONTROL SURVEY WITH DELTAS NOTED.

**BAKER DESIGN CONSULTANTS**  
Civil, Marine, and Structural Engineering  
11 Story Brook Lane  
Yarmouth, Maine 04096  
Tel: (207) 846-9724 Fax: (207) 846-3820



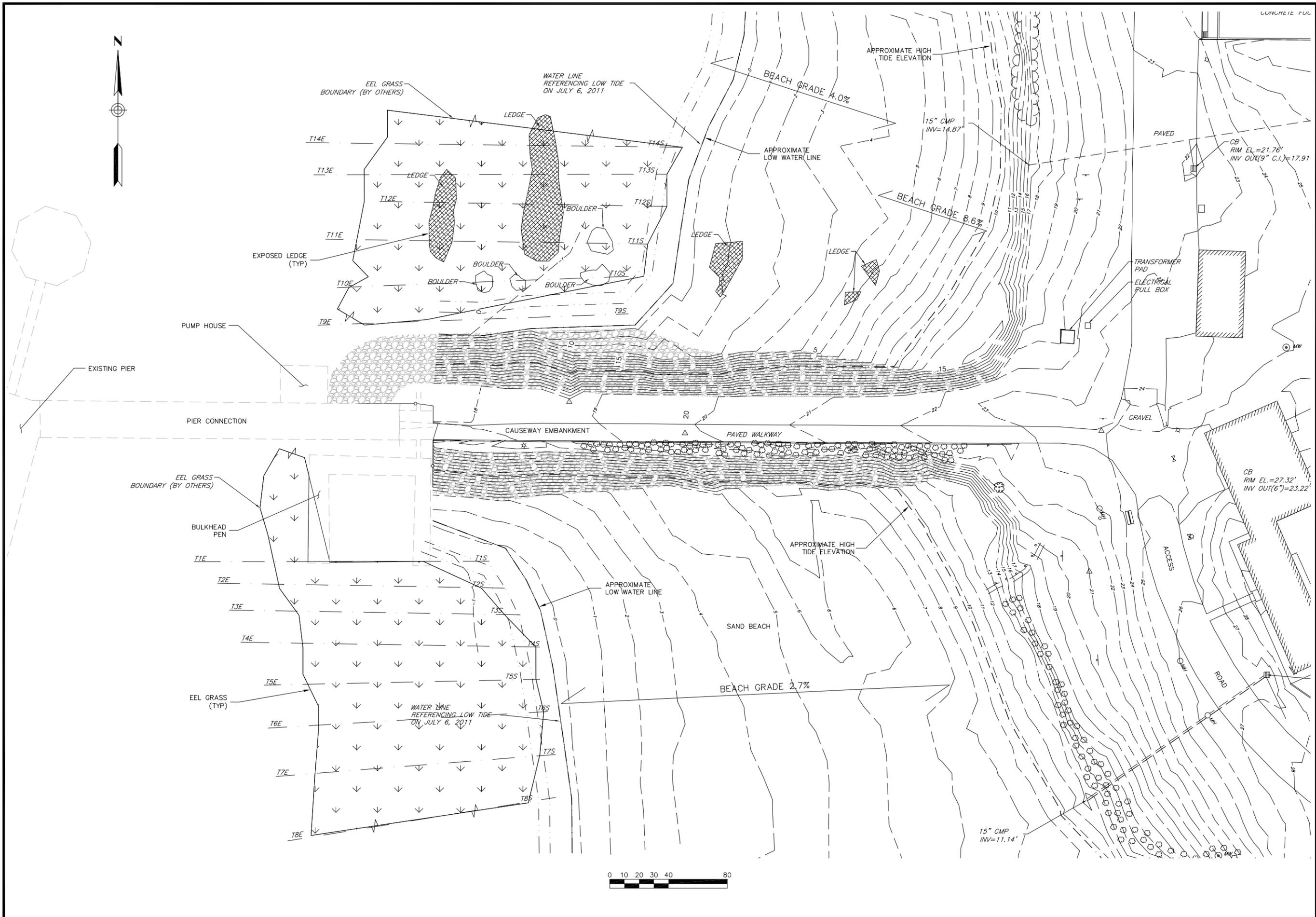
NO.	1	DATE	12-05-11	BY	BJB
SUBMISSION		Feasibility Study		INT.	

DESIGNED BY:	BJB
DRAWN BY:	MSH
CHECKED BY:	BJB
SCALE:	AS SHOWN

**PROJECT OVERVIEW**  
TOWN OF HARPSWELL  
**MITCHELL FIELD BOAT RAMP**  
HARPSWELL, MAINE

SHEET TITLE:	PROJECT OVERVIEW
DATE:	12-05-11
CONTRACT NO.:	11016
SHEET NO.:	C-1
REV.:	A

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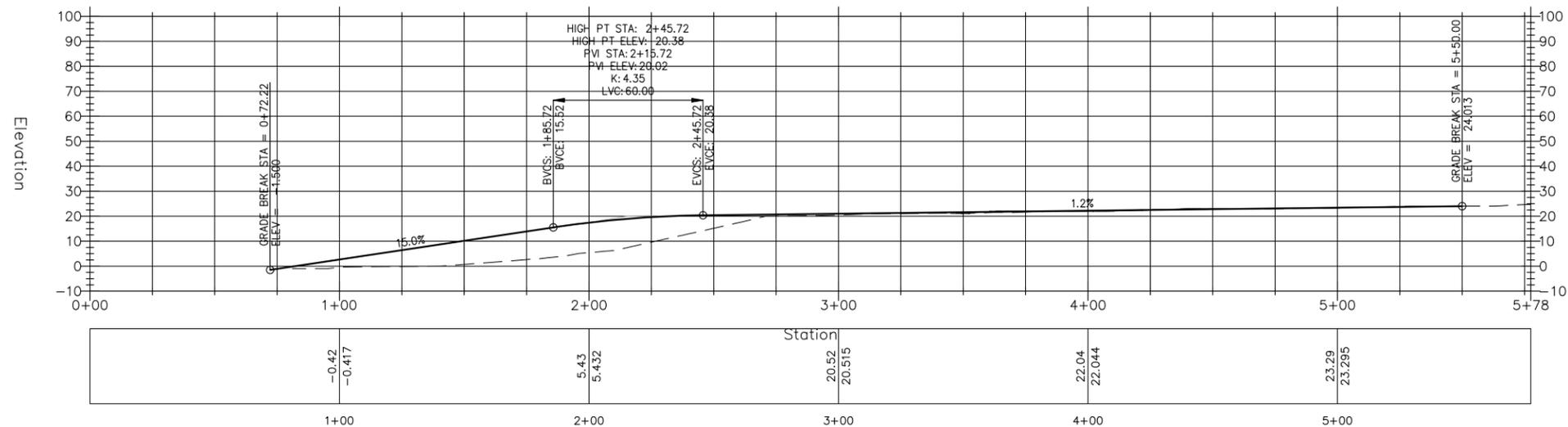
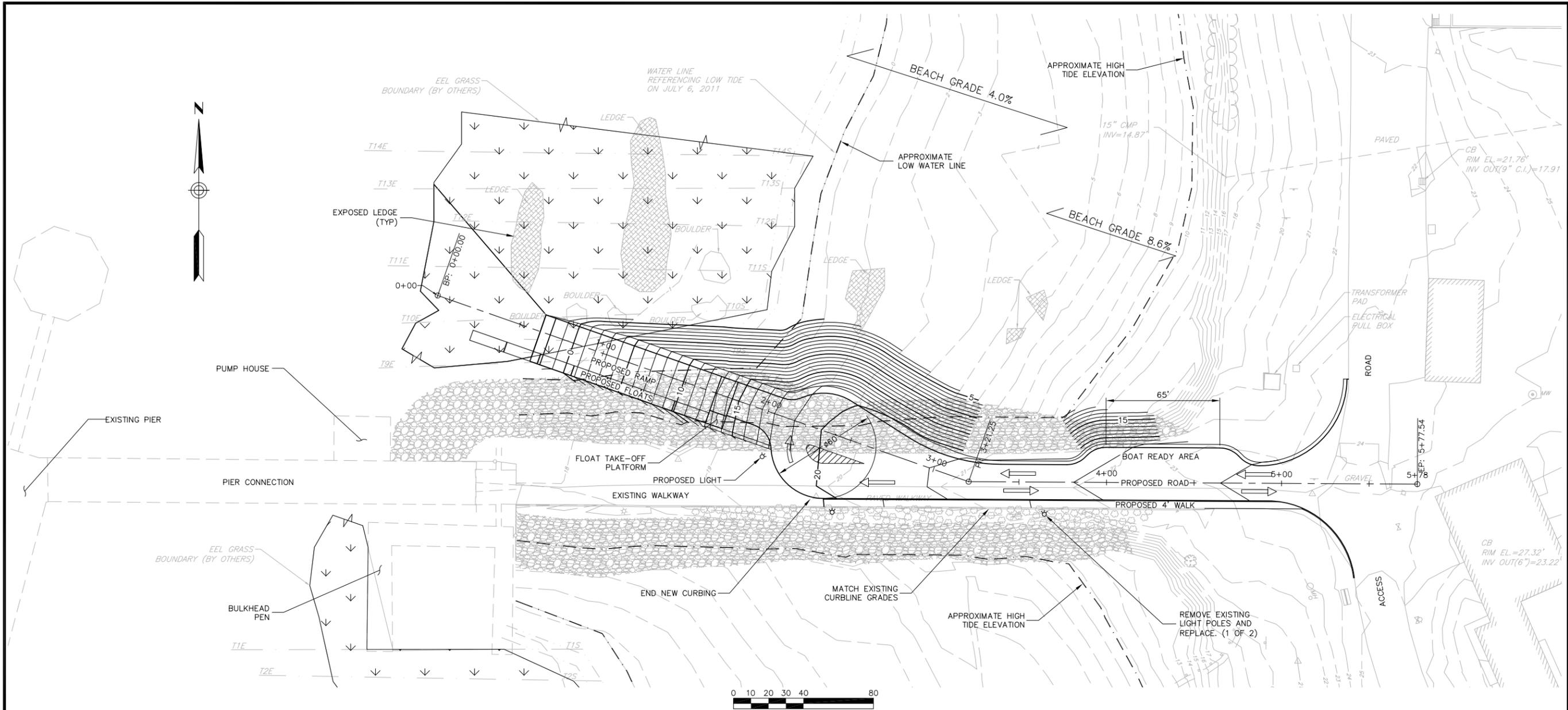
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CHECKED BY:	BJB
SCALE:	AS SHOWN

NO.	A	Feasibility Study SUBMISSION	DATE	12-05-11	BJB INT.
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SHEET TITLE: **EXISTING WATERFRONT PLAN**  
PROJECT: **MITCHELL FIELD BOAT RAMP**  
Town of Harpswell  
HARPSWELL, MAINE

DATE: 12-05-11  
CONTRACT NO.: 11-16  
SHEET NO.: C-2  
REV.: A

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**IMPACTS**

985 SF	EELGRASS DIRECT
4,537 SF	EELGRASS INDIRECT
3,441 CY	FILL
1,766 SF	IMPERVIOUS AREA INCREASE (RAMP)
5,670 SF	IMPERVIOUS AREA INCREASE (EMBANKMENT)

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11 Story Brook Lane Yarmouth, Maine 04096 Tel: (207) 846-9724 Fax: (207) 846-3820

DESIGNED BY:	BUB
DRAWN BY:	MSH
CHECKED BY:	BUB
SCALE:	AS SHOWN

NO.	DATE	INT.	BUB
A	12-05-11	BUB	
B	12-08-11	BUB	

MF workshop updates  
Feasibility Study  
SUBMISSION

**SHEET TITLE:** NORTH RAMP PLAN & ELEVATION  
**PROJECT:** TOWN OF HARPSWELL MITCHELL FIELD BOAT RAMP HARPSWELL, MAINE

**DATE:** 12-05-11  
**CONTRACT NO.:** 11-16  
**SHEET NO.:** C-3  
**REV.:** B

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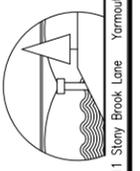
**NOTE:**

1. TWO OPTIONS WERE CONSIDERED FOR PROPOSED BOAT RAMP, NORTH SIDE OF CAUSEWAY AND SOUTH SIDE. THE NORTH SIDE (PREFERRED OPTION) WAS CHOSEN FOR DETAIL DESIGN DEVELOPMENT AND ENDORSED BY THE MITCHELL FIELD COMMITTEE.

**IMPACTS**

129 SF	EELGRASS DIRECT
11,834 SF	EELGRASS INDIRECT
3,430 CY	FILL
3,994 SF	IMPERVIOUS AREA INCREASE (RAMP)
6,820 SF	IMPERVIOUS AREA INCREASE (EMBANKMENT)

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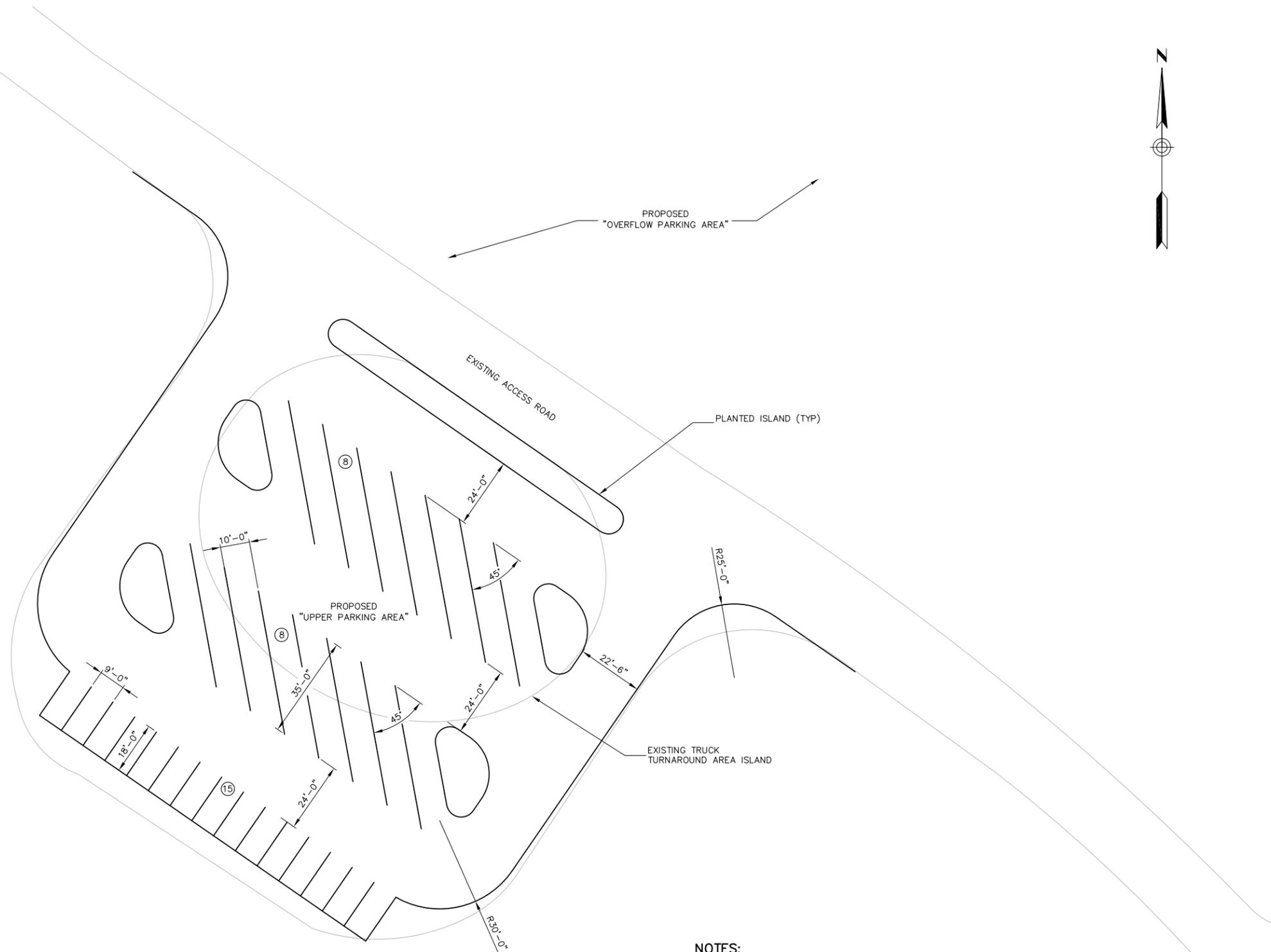
NO.	SUBMISSION	DATE	INT.

DESIGNED BY:	BUB
DRAWN BY:	MSH
CHECKED BY:	BUB
SCALE:	AS SHOWN

SHEET TITLE: **SOUTH RAMP OPTION**  
PROJECT: **TOWN OF HARPSWELL  
MITCHELL FIELD BOAT RAMP  
HARPSWELL, MAINE**

DATE	12-05-11
CONTRACT NO.	11-16
SHEET NO.	REV.
<b>C-3A</b>	

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UPPER PARKING AREA PLAN

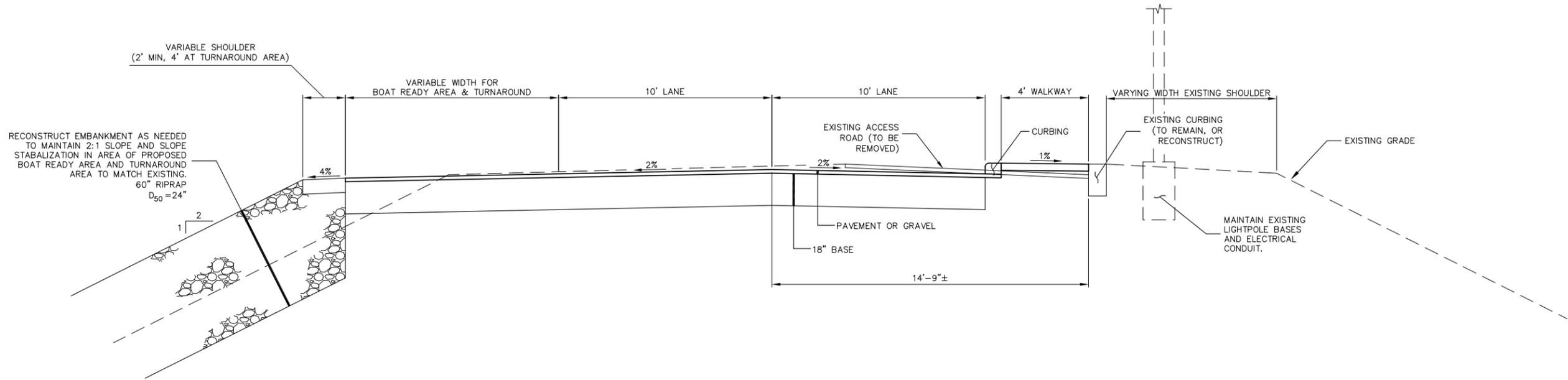


**NOTES:**

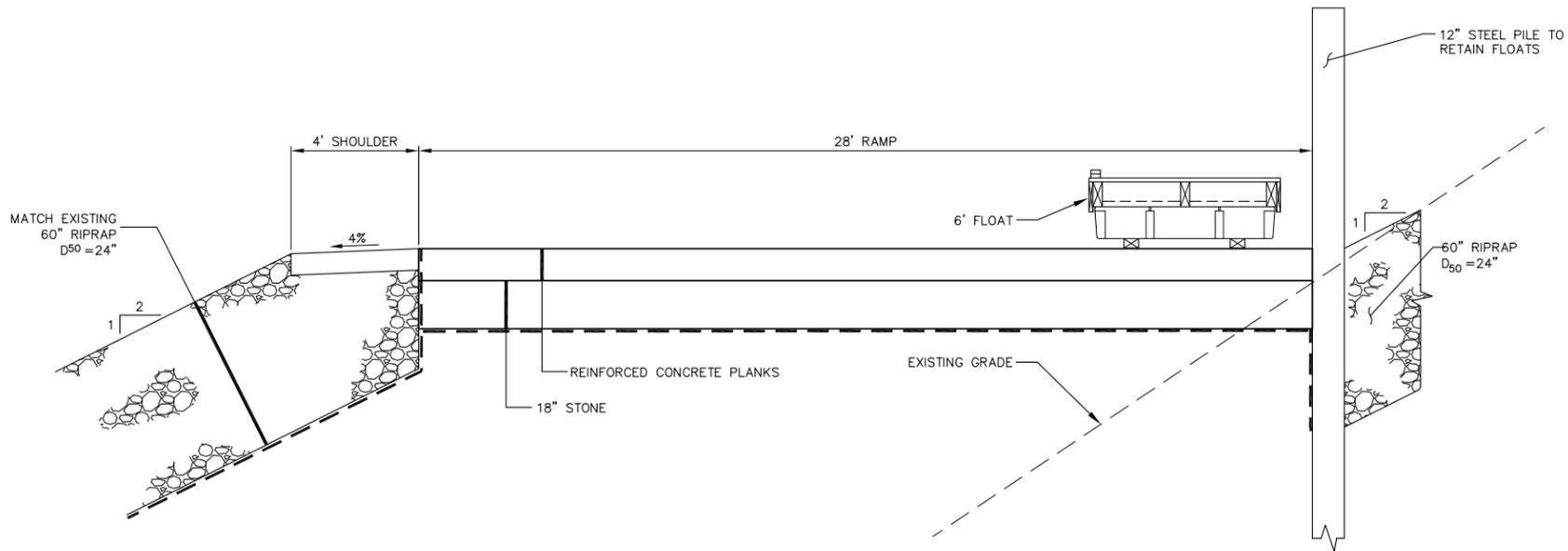
1. PARKING SHOWN FOR 16 CAR/TRAILER RIGS (ANGLED) AND 15 CARS (PERPENDICULAR).
2. EACH ANGLED PARKING SPACE COULD ALSO BE USED FOR TWO CARS FOR A TOTAL CAR CAPACITY OF 47 CAR SPACES.

SHEET TITLE: <b>UPPER PARKING AREA</b>		DESIGNED BY: BJB DRAWN BY: MSH CHECKED BY: BJB SCALE: AS SHOWN
PROJECT: TOWN OF HARPSWELL <b>MITCHELL FIELD BOAT RAMP</b> HARPSWELL, MAINE		NO. A SUBMISSION Feasibility Study
DATE: 12-05-11	CONTRACT NO. 11-16	NO. BJB DATE 12-05-11 INT.
SHEET NO. <b>C-4</b>	REV. A	BAKER DESIGN CONSULTANTS Civil, Marine, and Structural Engineering 11 Story Brook Lane Yarmouth, Maine 04096 Tel: (207) 846-9724 Fax: (207) 846-3820

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**TYPICAL CAUSEWAY SECTION**  
SCALE: 3/8" = 1'-0"



**TYPICAL RAMP SECTION**  
SCALE: 3/8" = 1'-0"

NO.	A	Feasibility Study SUBMISSION	DATE	12-12-11	BJB INT.
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DESIGNED BY:	BJB
DRAWN BY:	MSH
CHECKED BY:	BJB
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**TYPICAL SECTIONS**  
PROJECT: TOWN OF HARPSWELL  
MITCHELL FIELD BOAT RAMP  
HARPSWELL, MAINE

DATE	12-05-11
CONTRACT NO.	11-16
SHEET NO.	C-5
REV.	A