34A-D-1

1998-0150

Back Cove
Back Cove Park
City of Portland

on Spreadsheet

add to file on G: Drive

HOLOPHANE
LEADER IN LIGHTING SOLUTIONS

Jim Bailey
489 Lewiston Road
W. Gardiner, ME 04345-3301
+1 (207) 582-5106 FAX: +1 (207) 582-8088
JBailey@Holophane.com

Quote To: Frank Liggett
Richardson & Assoc.

Quote Date: 7/20/99
Quote #: **Q206-395-01**
Quote Name: Back Cove Park
Holophane Project #: P206-364
Project Name: City of Portland
Customer Project #:
Project Location: Portland, ME United States of America
Bid Date:

Type	Qty	Description	Unit Price	Extension
A	27	**PR10DMHMTCANP1A GV1A73A S-MP100/U/MED** Prismasphere, 100 Watt Metal Halide Medium Base , Multivolts , Convex Octagonal Housing with 7 Inch Tenon, (Q015543) Fixture Painted Tyger Drylac Ral # 6014, No Refractor , Prismatic Outer Sphere , 18 Inch Diameter Sphere , Acrylic Sphere Material , 3 Inch to 7 Inch Post Capital, Sylvania 100MH Clear Medium base lamp	$783.75	$21,161.25
A	27	**D12/15-CI/RAL6012** Delaware cast iron post, 12 foot, painted City of Portland RAL6012, with anchor bolts	$1,357.50	$36,652.50
		Lead Time: 10 weeks	**Total:**	**$57,813.75**

Notes

Pricing is Budget cost for City of Portland and includes wholesale distributor mark-up as well as contractor mark-up

Note: For cast iron poles a dedicated flat bed truck is required for shipment and cost is $1,800.00 for any number of poles up to a full loaded truck.

UNLESS OTHERWISE NOTED PRICES INCLUDE LAMPS

Terms

Shipment lead times begin the day after the order is released and are based on working days only. FOB Factory on all orders. Freight prepaid on orders of $1,000 or more. Freight Prepaid and added on orders less than $1,000. Invoices dated from the 11th through the 25th of the month are due net on the 10th of the following month. Invoices dated from the 26th through the 10th of the following month are due net on the 25th of the same month. A service charge of one and a half percent per month (or the maximum lawful rate) shall be assessed on all past-due payments and shall be payable on demand. Terms are subject to revision.

Project:	Back Cove Park
Location:	Portland, ME
Section:	pathway lighting
Date:	July 21, 1999

Run: 55880

AREA 1 COMMENT: typical section of path lighting

Avg:0.29 Min:0.13 Max:0.77 Avg/Min:2.28 Max/Min:6.03

TOTAL III. LIGHTMETER:Perpendicular AREA:1 PTS O.C.:2.00

US-Eng
CJ2
UI:73

CALA/Pro

Holophane Corporation Page: 1

214 Oakwood Ave. Newark, OH 43055

July 21, 1999 Version: 1.1 Run : 55880

Client:	**Richardson & Associates**
Attn:	**Frank Liggett**
Project Name:	**Back Cove Park**
Location:	**Portland, ME**
Section:	**pathway lighting**
From:	**Sales- ME and NH** **Holophane Corporation**
Address:	**489 Lewiston Road**
City, ST, Zip:	**West Gardiner, Maine 04345-3301**
Phone Number:	**(207)582-5106**
FAX Number:	**(207)582-8088**
Designer:	**Jim Bailey**

Comments: **maintained footcandles**

General Layout Information:

No. of Luminaire Locations: 5
Total Number of Luminaires: 5

Type	*Qty.*	*Catalog No.*	*Luminaire Desc.*
1	5	PR~~175~~100MH00XXNP1A	PRISMASPHERE

Statistics:

No. Pts	*Pt-Pt oc (ft.)*	*Average (fc.)*	*Minimum (fc.)*	*Maximum (fc.)*	*Avg/Min*	*Max/Min*	*U.I.*
Area: 1 : typical section of path lighting							
635	**2.00**	**0.29**	**0.13**	**0.77**	**2.28**	**6.03**	**73**

Luminaire Palette Used for this lighting study:

Type	File Name	Catalog Number	Test Lumens	Lumens Used	Total LLF
1	**42730.IES**	**PR175MH00XXNP1A**	**14000**	**8500**	**0.68**
	Comments: Prismasphere pro/rata 100 watt metal halide				

CALA/Pro
Holophane Corporation

Project: Back Cove Park
Locatoin: Portland, ME
Section: pathway lighting
Date: July 21, 1999

Ver 1.10

Run Number: 55880

Analysis Area Number: 1 Analysis Points: 635
Distance between analysis points - OC spacing (ft): 2.00
Comment: typical section of path lighting
Statistics (fc):

Average: 0.29	Minimum: 0.13	Maximum: 0.77
Ave/Min: 2.28	Max/Min: 6.03	U.I.: 73

Analysis Area Description:
Output scale (ft/inch): Left to right:
Top to bottom: 4.00
Orientation: 155 Tilt: 0
Location of analysis points:
The decimal of the respective number.
L = Luminaire Location A = Luminaire Aiming Location

919.84
1173.23 -A-
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a b

a b

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0.26

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0.68 0.60 0.53 0.46 0.40

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j k

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s t

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A- 1192.65
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e f

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0.13

0.13

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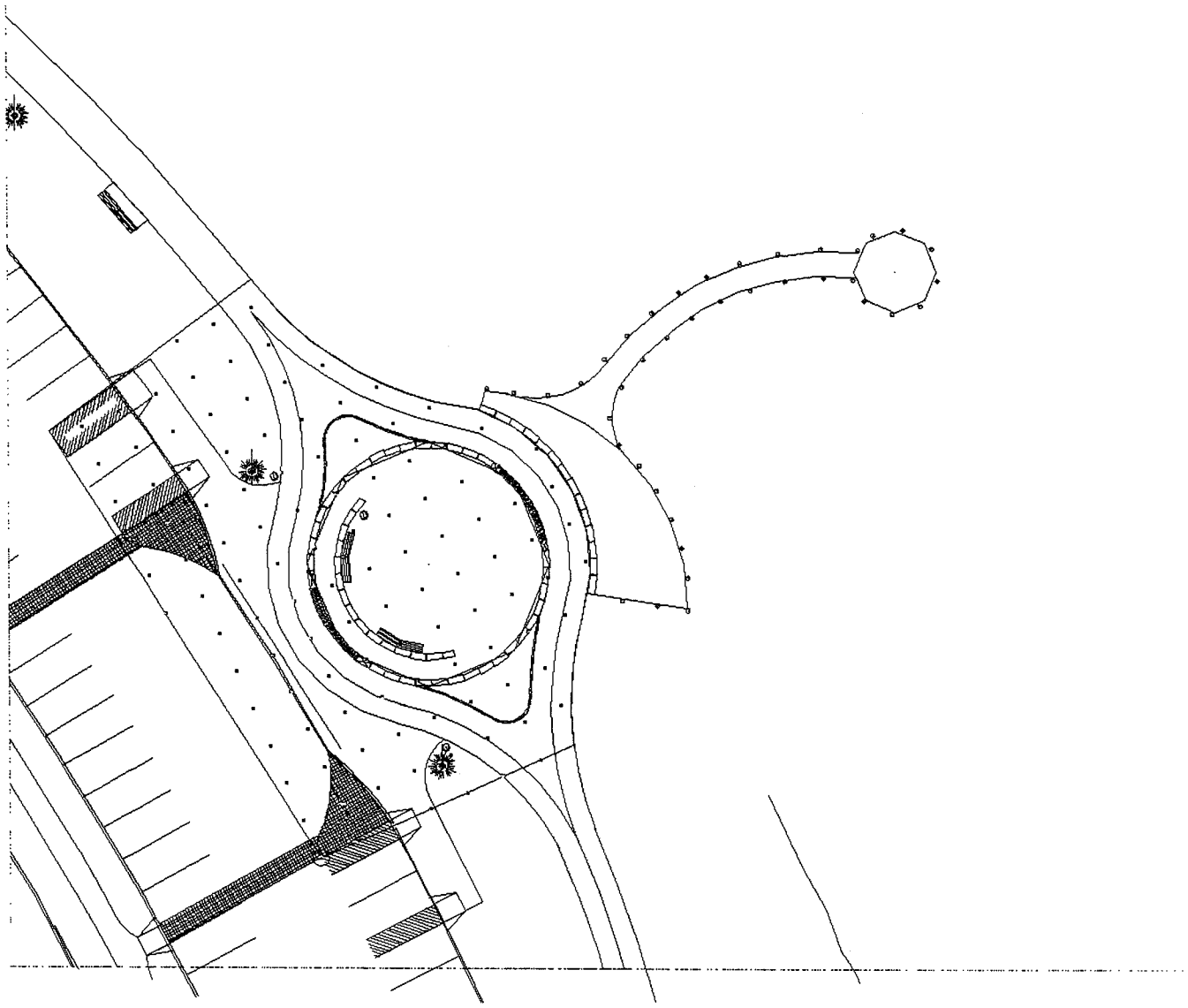
Disclaimer:

The information provided in this report is calculated from assumptions that may differ materially from the actual conditions upon installation. Input photometric data is based on nominal values for voltage, ballasts, and lamps. Input design parameters such as room reflectances, size, mounting height, depreciation factors, orientation, and tilt are supplied by the customer, and are not verified by HOLOPHANE Company, Inc. Variations in these parameters may affect the results obtained.

HOLOPHANE Company, Inc. does not warrant that this report is free from errors or that its lighting products, when installed, will produce measured lighting values matching the projected values shown in this report. THE INFORMATION PROVIDED IN THIS REPORT IS FURNISHED AS IS. HOLOPHANE COMPANY, INC. DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HOLOPHANE COMPANY, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Project:	**Back Cove Park**
Location:	**Portland, ME**
Section:	**pathway lighting**
Date:	**July 21, 1999**

Run: 169049



AREA 1 COMMENT: handicap ramps and entire "roundabout"

Avg:0.33 Min:0.08 Max:0.79 Avg/Min:3.96 Max/Min:9.52

TOTAL III. LIGHTMETER:Perpendicular AREA:1 PTS O.C.:10.00

US-Eng
CJ3
UI:76

CALA/Pro

Holophane Corporation

214 Oakwood Ave. Newark, OH 43055

July 21, 1999 Version: 1.1 Run : 169049

Client:	**Richardson & Associates**
Attn:	**Frank Liggett**
Project Name:	**Back Cove Park**
Location:	**Portland, ME**
Section:	**pathway lighting**
From:	**Sales- ME and NH** **Holophane Corporation**
Address:	**489 Lewiston Road**
City, ST, Zip:	**West Gardiner, Maine 04345-3301**
Phone Number:	**(207)582-5106**
FAX Number:	**(207)582-8088**
Designer:	**Jim Bailey**

Comments: **maintained footcandles**

General Layout Information:

No. of Luminaire Locations: 4
Total Number of Luminaires: 4

Type	*Qty.*	*Catalog No.*	*Luminaire Desc.*
1	4	PR~~175~~100MH00XXNP1A	PRISMASPHERE

Statistics:

No. Pts	*Pt-Pt oc (ft.)*	*Average (fc.)*	*Minimum (fc.)*	*Maximum (fc.)*	*Avg/Min*	*Max/Min*	*U.I.*
Area: 1 : handicap ramps and entire "roundabout"							
116	**10.00**	**0.33**	**0.08**	**0.79**	**3.96**	**9.52**	**76**

Luminaire Palette Used for this lighting study:

Type	File Name	Catalog Number	Test Lumens	Lumens Used	Total LLF
1	42730.IES	PR175MH00XXNP1A	14000	8500	0.68
	Comments: Prismasphere pro/rata 100 watt metal halide				

CALA/Pro
Holophane Corporation

Project: Back Cove Park
Locatoin: Portland, ME
Section: pathway lighting
Date: July 21, 1999

Ver 1.10

Run Number: 169049

Analysis Area Number: 1

Analysis Points: 116
Distance between analysis points - OC spacing (ft): 10.00

Comment: handicap ramps and entire "roundabout"

Statistics (fc):

Average: 0.33	Minimum: 0.08	Maximum: 0.79
Ave/Min: 3.96	Max/Min: 9.52	U.I.: 76

Analysis Area Description:

Output scale (ft/inch): Left to right:
Top to bottom: 20.00

Orientation: 156 Tilt: 0

Location of analysis points:

The decimal of the respective number.

L = Luminaire Location A = Luminaire Aiming Location

808.04 908.54
1384.72 1429.42
0.00 0.00
V V

0.34 0.33 0.30

0.28 0.32 0.29 0.26 0.26 0.30

0.30 0.26 0.28 0.34 0.32 0.26 0.29

0.31 0.26 0.37 0.61 0.56 0.32 0.25 0.30

0.31 0.26 0.40 0.74 0.64 0.35 0.26 0.31 0.24

0.31 0.26 0.31 0.42 0.40 0.30 0.29 0.31 0.24 0.14

0.29 0.33 0.28 0.31 0.32 0.30 0.36 0.31 0.22 0.13 0.08

0.33 0.39 0.42 0.44 0.44 0.39 0.32 0.20 0.13 0.08

0.32 0.42 0.47 0.48 0.47 0.42 0.33 0.23 0.14 0.09

0.31 0.38 0.43 0.42 0.40 0.38 0.34 0.27 0.18 0.11

a b

a

0.30 0.35 0.30 0.31 0.31 0.29 0.32 0.30 0.23

0.31 0.28 0.30 0.43 0.47 0.33 0.26 0.31

0.30 0.25 0.34 0.64 0.79 0.42 0.25 0.30

0.30 0.24 0.30 0.49 0.56 0.36 0.25

b

^

860.86
1265.94
0.00

^

961.37
1310.64
0.00

Disclaimer:

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CITY OF PORTLAND
MAINE

DEPARTMENT OF PARKS AND RECREATION

CONTRACT DOCUMENTS
FOR

THE RECONSTRUCTION OF BACK COVE PARK AT PREBLE STREET EXTENSION
PHASE ONE

PROJECT NUMBER:

BID NUMBER: 1300

OFFICE OF THE DIRECTOR OF PARKS & RECREATION
AUGUST 8TH 1999

LEGAL SECTION
NOTICE

CITY OF PORTLAND, MAINE
DEPARTMENT OF PARKS AND RECREATION

NOTICE TO CONTRACTORS

BID NO. 1300

Sealed proposals, addressed to Purchasing, Room 103, City Hall, 389 Congress Street, Portland, Maine 04101, and endorsed on the outside of the envelope with the name of the Bidder, Contract Name and Bid number will be received until 2:30P.M. (Prevailing time) on **September 2nd** at which time they will be publicly opened and read.

PROJECT NAME:	Reconstruction of Back Cove Park at Preble Street Extension, Phase One.
LOCATION:	Preble Street Extension between Baxter Blvd. and I-295, Portland, Maine.
OUTLINE OF WORK:	Demolition of existing Athletic fields and Parking Lot. New Pavement, curbing and drainge for Parking Lot, new drainage, irrigation, loam and seed for Athletic Fields, and new stone dust paths, lighting and loam and seed adjacent to Cove. Approximately area of work is 7 acres in size.

The above-named plans, specifications and proposal forms may be seen at the Engineering Office, Department of Parks and Recreation, 16 Arbor Street, Portland, Maine; or in the Purchasing Office, City Hall, Room 103, 389 Congress Street, Portland, Maine, phone (207) 874-8654, fax 874-8652 or e-mail krc@ci.portland.me.us. Plans and proposal books are available for purchase at the Purchasing Office, Room 103, City Hall, upon payment in advance of $50.00 for each set of plans and proposal book or $55.00 for each set of plans and proposal book to be mailed. Such payment will not be refunded. Each prospective bidder will be required to obtain from the City each copy of the proposal form and plan set. Partial sets will not be issued.

A mandatory pre-bid conference will be held on **August 18th** at **8:30 am** at the parking lot (closest to I-295) along Preble Street Extension along Back Cove; which all prospective pre-qualified bidders must attend.

CITY OF PORTLAND, MAINE
Office of Budget & Purchasing

Advertise: Maine Sunday Telegram: August 8th, 1999

Charge to Account No. 97332-34-01-02. Telephone 874-8300

PROPOSAL

Proposal of _____
Name

_____
Address

The name and address shown on the above lines shall be the official name and address of the person, partnership or corporation submitting this bid and shall agree with the "Signature of Bidder" in the case of an individual; the "Name of Firm or Partnership" in the case of a firm or partnership; the "Name of Bidder" in case of a corporation.

TO: Ellen Sanborn, Budget Director
City Hall, Room 103
389 Congress Street
Portland, ME 04101

Dear Ms. Sanborn:

The undersigned having carefully examined the site of the work; the Plans; Standard Specifications, including all current amendments or revisions there of; the Supplemental Specification, Special Provisions; Contract Agreement and Contract Bonds contained herein for the Reconstruction of Back Cove Park at Preble Street Extension, Phase One, /on which proposals will be received until the time specified in the "Notice to Contractors". This work being situated at the location described in the "Notice to Contractors" sheet number one of this book Reconstruction of Back Cove Park at Preble Street Extension, Phase One, and in case of award, do(es) hereby propose and offer to enter into a contract to supply all the materials, tools, equipment and labor required to perform and construct the whole of the work in strict accordance with the terms and conditions of this contract at the unit prices stated in the following "Schedule of Items" submitted by the undersigned.

This Proposal may be accepted by the City of Portland at any time within sixty (60) calendar days after opening of the bids.

(Fill out prices in ink, in writing and in figures; in case of a discrepancy between prices in writing and prices in figures, the writing shall govern. In case of discrepancy between total of items and total of bid amount stated, total of items shall govern. Use the pages in this document when submitting proposal and submit contract document intact.)

The pay items with quantities marked with an asterisk (*) on the bid sheets are for quantities that are indeterminate. The pay items with a quantity of 10* are for work not anticipated at time of bid. These items are part of the Contract Proposal and will also be used should any extra work be necessary. Actual quantities will be measured in the field or calculated from the contract drawings. The unit price will be used regardless of final quantity.

The inclusion or deletion of any or all alternates with the Base Bid will be determined by the bid prices and available funding. Summarize your bid below (written in words and in figures) for convenience during bid opening and review.

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
202.01	1 LS	**Remove Existing Fence** @ _____ _____ **Per Lump Sum**				
202.02	1 LS	**Remove Existing Irrigation System** @ _____ _____ **Per Lump Sum**				
203.2	2627 CY	**Common Excavation** @ _____ _____ **Per Cubic Yard**				
203.24	2806 CY	**Common borrow** @ _____ _____ **Per Cubic Yard**				
203.29	500 CY	**Selected Granular Material** @ _____ _____ **Per Cubic Yard**				
304.09	341 CY	**Aggregate Base Course Crushed Type "B"** @ _____ _____ **Per Cubic Yard**				
403.07	704 TON	**Hot Bituminous Pavement, Grading B** @ _____ _____ **Per Ton**				
403.08	566 TON	**Hot Bituminous Pavement, Grading C** @ _____ _____ **Per Ton**				

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
409.15	100 GAL	Bituminous Tack Coat @ _____ _____ Per Gallon				
411.13	464 TON	Stone Dust Surface Course @ _____ _____ Per Ton				
422.1	6500 LF	Six Inch Metal Edging @ _____ _____ Per Linear Foot				
525.05	645 SF	Cobblestone Pavement @ _____ _____ Per Square Foot				
525.36	4 EA	Granite Masonry Wall (Entry Posts) @ _____ _____ Per Each				
603.05	1180 LF	6 inch PVC Pipe @ _____ _____ Per Linear Foot				
605.08	5141 LF	4 inch Underdrain @ _____ _____ Per Linear Foot				
603.137	325 LF	8 inch PVC Pipe @ _____ _____ Per Linear Foot				

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
603.159	878 LF	12 inch Culvert Pipe Option III (PVC) @ _____ _____ Per Linear Foot				
603.179	95 LF	18 inch Culvert Pipe Option III (PVC) @ _____ _____ Per Linear Foot				
604.05	1 EA	Stormwater Treatment Tank (Vortechnics #7000 installed) @ _____ _____ Per Each				
604.102	4 EA	Catch Basin Type B2-C @ _____ _____ Per Each				
604.2495	1 EA	Catch Basin Type F8-C @ _____ _____ Per Each				
606.364	200 LF	Guardrail Remove, Modify and Reset, Type 3b @ _____ _____ Per Linear Foot				
608.08	51 SY	Reinforced Concrete Sidewalks (ramps) @ _____ _____ Per Square Yard				
609.1	1100 LF	Used Curb Type 1 @ _____ _____ Per Linear Feet				

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
609.11	60 LF	**Vertical Curb Type 1** @ _____ _____ **Per Linear Foot**				
609.12	540 LF	**Vertical Curb Type 1 Circular** @ _____ _____ **Per Linear Foot**				
609.15	44 LF	**Sloped Curb Type 1** @ _____ _____ **Per Linear Foot**				
609.38	540 LF	**Reset Curb Type 1** @ _____ _____ **Per Linear Foot**				
615.07	4017 CY	**Loam** @ _____ _____ **Per Cubic Yard**				
618.13	206 UN	**Seeding Method 1** @ _____ _____ **Per Unit**				
618.14	58 UN	**Seeding Method 2** @ _____ _____ Per Unit				
619.12	268 UN	**Mulch (Cellulose Fiber)** @ _____ _____ **Per Unit**				

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
621.273	12 EA	Large Deciduous Trees (2"-21/2") Group @ _____ _____				
626.31	16 EA	18 inch Foundations (Lighting) @ _____ _____ Per Each				
627.71	3230 LF	4 inch Solid White Pavement Marking Line @ _____ _____ Per Linear Foot				
629.05	10 HR	Hand Labor, Straight Time @ _____ _____ Per Hour				
629.06	10 HR	Mason, Straight Time @ _____ _____ Per Hour				
629.07	10 HR	Foreman, Straight Time @ _____ _____ Per Hour				
631.12	10 HR	All Purpose Excavator, Including Operator @ _____ _____ Per Hour				
631.13	10 HR	Bulldozer, Including Operator @ _____ _____ Per Hour				

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
631.171	10 HR	Small Truck, Including Operator @ _____ _____ Per Hour				
637.07	1000 GAL	Water for Dust Control @ _____ _____ Per Gallon				
637.08	10 TON	Calcium Chloride @ _____ _____ Per Ton				
634.162	1 LS	Electrical System @ _____ _____ Per Lump Sum				
654.08	10 EA	Trench Density Tests @ _____ _____ Per Each				
654.1	10 EA	Embankment Density Tests @ _____ _____ Per Each				
656.5	25 EA	Baled Hay, in place @ _____ _____ Per Each				
656.632	2450 LF	30 inch Temporary Silt Fence @ _____ _____ Per Linear Foot				

Item No.	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
659.10	1 LS	**Mobilization** @ _____ _____ **Per Lump Sum**				
825.5	1 LS	**Park Irrigation-System** @ _____ _____ **Per Lump Sum**				
		TOTAL AMOUNT OF PROPOSAL, WRITTEN AND IN FIGURES BASED ON ESTIMATE OF QUANITIES.				
		ADD-ALTERNATES				
634.161	16 EA	**Light Poles and Fixtures** @ _____ _____ Per Each				
		TOTAL AMOUNT OF PROPOSAL WITH ADD-ALTERNATES , WRITTEN AND IN FIGURES BASED ON ESTIMATE OF QUANITIES.				

NRPA Permit Application
6/8/99

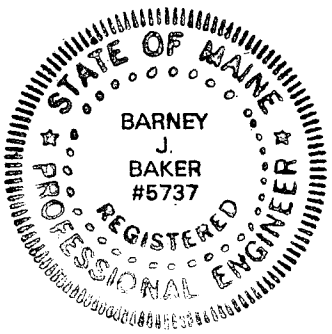
Back Cove Park
Portland, Maine

Applicant:

City of Portland
Parks and Recreation Department
17 Arbor Street
Portland, ME 04103

Submitted To:

DEP
Division of Land Resource
Regulation
312 Canco Drive
Portland, ME 04103



Assembled By:
Baker Design Consultants with Plans prepared by Richardson & Associates

Back Cove Park
Portland, Maine
6/8/99

TABLE OF CONTENTS

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

PART 1

1. Name of Applicant	Portland Parks and Recreation Contact: Chris Di Matteo, LA	2. Name of Agent:	
3. Applicant's Mailing Address:	17 Arbor Street Portland, ME 04103	4. Agent's Mailing Address:	
5. Applicant's Daytime Phone #	207 756-8383	6. Agent's Daytime Phone #	
7. Statement of Authorization	I hereby authorize the above named person to act in my behalf as my Agent in the processing of this application. *Signature of Applicant:*		

RESOURCE INFORMATION

8. Type of Resource: (check all that apply)	☐ River, Stream, or Brook ☐ Lake ☒ Coastal Wetland ☐ Freshwater Wetland ☐ Significant Wildlife Habitat	9. Name or Resource:	Back Cove- Tidal Joins to Casco Bay
		10. Amt. of Impact: (SF)	200 SF Retaining Wall 1350 SF Intertidal Pier Footprint 950 SF Marshland Walkway

PROJECT LOCATION

11. Location of Project: (Nearest Road, Street, Rt. #)	I-295 Preble St. Extension	12. City	Portland	13. County:	Cumberland
14. Detailed Instructions to the Project Site:	Refer to Location Map. From I-295 Exit 6A to Forest Ave (Sth), left on Marginal Way, next left on Preble St. Extension. The site has frontage on Preble St Ext. opposite Shop & Save Shopping Plaza. The site is bound by the intersection of Preble St and Baxter Blvd o the West and I-295 to the East.				

LOT INFORMATION

15. Size of Lot or Parcel:	☐ square feet, or approx. 15 ☒ acres				
16. Title Right or Interest:	☒ Own ☐ Lease ☐ Purchase Option ☐ Written Agreement				
17. Deed Reference Numbers	Book # 9084	Page # 26-29	18. Town Map and Lot Numbers	Map # 34A/442	Lot # *City*

PROJECT HISTORY

19. DEP Staff Previously Contacted:	Doug Burdick, Site Walk on 27JUL98, Meeting 18Nov98, MTG. 29 MARCH99				
20. Resubmission of Application?	☐ Yes → ☒ No	If Yes, Previous application #		Previous Project Manager	
21. Written Notice of Violation?	☐ Yes → ☒ No	If Yes, name of DEP enforcement staff involved:			

PROJECT INFORMATION

22. Brief Project Description:	Pedestrian Overlook & Marshland Boardwalk as part of an upland pedestrian pathway, plaza, soccer field and parking improvements.
23. FEES, Amount Enclosed:	$251 + $63 = $314

FOR DEP USE	L-_____ ATS #_____ Total FEES: _____ CK#: _____ Date Rec'd: _____
FOR CORPS USE	App #: _____ Office Code: _____ Date Rec'd: _____ Date Completed: _____

Adapted from 10/15/97 application by Baker Design Consultants)

SIGNATURE PAGE

By signing below the applicant (or authorized agent), certifies that he or she has:

☒ Completed all of the public notice requirements listed on the next page of this application.

☒ Read and understood the following:

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in, or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the Untied States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine Uses: Information provided on this form will be used in evaluating the application for a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application can not be processed nor can a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whocver, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fined not more than $10,000 or imprisoned not more than five years or both.

DEP SIGNATORY REQUIREMENT

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

"I hereby authorize the person named below to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application."

Chris Gallatin — 6/8/1999

SIGNATURE OF APPLICANT — Date

"Application is hereby made for a permit or permits to authorize the work described in this application I certify that the information in the application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant."

SIGNATURE OF AGENT — Date

NOTE: Any changes in project plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the project changes.

INFORMATION CONCERNING THE FILING OF PUBLIC NOTICE

The Department of Environmental Protection requires that an applicant provide public notice in which he/she describes the project activity and where it is located. Three notices all using the same form (see Notice of Intent to File, page 15) are required. The notice requirements are as follows:

1. Newspaper

   You must publish the Notice of Intent to File in a Newspaper circulated in the area where the project is Located. The notice must appear in the newspaper within 30 days prior to your filing the application with this Department.

2. Abutting Property Owners

   You must send a copy of the Notice of Intent to File by Certified mail to the Owners of property abutting the project. Their names and addresses can be obtained from town tax maps or local officials. They must receive notice within 30 days prior to your filing the application with this Department.

   List below the names and addresses of the owners of abutting property *(use* additional sheet *if necessary).*

NAME	ADDRESS
Lot 34AC-Lot 2 Hannaford Bros. Co.	Hannaford Bros. Co. PO Box 1000 MS 6000 Portland, ME 04101
Lot 34AC- Lot 1 Analytical Services Inc.	Analytical Services Inc, 54 Hannaford St. South Portland, ME 04106
I-295 Corridor State of Maine	Right of Way Section Attn Fred Paganucci 16 State House Station Augusta, ME 04333-0016

3. Municipal Office

   You must send a copy of the Notice of Intent to File and a DUPLICATE OF THE ENTIRE APPLICATION to the Municipal Office.

4. Water Company/District

   If the river, stream, or brook is used by a water company, municipality, or water district as a source of water supply, you must also, at the time of filing the application, forward a copy of the application to the water company, municipality, or water district by certified mail.

NOTE: The applicant shall use the Notice of Intent to File form on the next page or one containing identical information to notify abutters, municipal officials1 and local newspapers.

EXHIBITS

Exhibit 1 Project Description

This project is a capital improvement program undertaken by the City of Portland and is part of a long-range plan that includes improvements and additions to the existing Back Cove park infrastructure. Refer to project plans for proposed construction. Elements of the project include improvements to existing facilities and proposed new facilities. Project impacts are limited to coastal wetland impact by a Marshland Boardwalk and a Marine Overlook pier structure.

The site topography ranges from upland lawn on fill to coastal wetlands with vegetation dominated by salt intolerant species on fill, to a band of wetland with salt tolerant species to a tidal marsh. The wetlands are characterized in EXHIBIT 12.

1. Existing Infrastructure Improvements (No wetland Resource Impacts)

    - Revisions to the existing parking lot layout, drainage and pavement and installation of storm water device to remove sediment form parking runoff.

    - Landscape improvements such as: athletic field improvements to existing soccer field; and overall site improvements that include shade tree planting, lawn restoration/reconstruction, and erosion control buffer plantings with corresponding educational signs.

2. New Facilities (No Wetland Resource Impacts)

    - New stone dust paths that connect with a new pedestrian plaza.

    - Single story building that will be used as a comfort station. Location selected for future design.

3. New Facilities with Wetland Resource Impacts

    - A Marine Overlook adjacent to plaza which comprises a boardwalk overlook and a pedestrian pier.

      The proposed structure is a piled wooden structure to minimize impact to the intertidal area. The pier portion extends to an overlook platform. No part of the structure extends beyond the low water mark. The function of the pier is to increase the depth of the park experience and to enhance the connection with the marine environment. The pier is intended for pedestrians. Boat landings will not be accommodated.

      Impact to the intertidal area is minimized by support on timber piles. Some fill/shoreline protection is required to accommodate an abutment wall that supports the marine structure and delineates the new plaza area.

    - Marshland Boardwalk that incorporates a viewing platform and educational signage at existing wetlands.

The boardwalk spur is an elevated 6-foot wide wooden walkway that enables park visitors to experience a closer look at the wetland flora and wildlife that is established along the shoreline of Back Cove. The boardwalk terminates at a viewing platform that effectively accommodates seating and educational signage.

The design width of the walkway was chosen to accommodate wheelchair access.

The design height of the boardwalk eliminates the need for handrail and the associated visual obtrusiveness to the wetland. Impact to the existing flora beneath the boardwalk is minimized by discrete footings at 10-foot centers.

Exhibit 2 Project Need

The existing facilities are deficient in providing opportunities for environmental education. This factor together with the desire to enhance the park experience is the driving force behind the development of the Marshland Boardwalk and Marine Overlook. Both of these improvements help to satisfy regional plans to establish and promote educational and historical features of the Back Cove area. The Cove area is an opportune place for educational information, such as the type of wetland plants growing along the Cove's edge and what benefits it provides to wildlife and potential shoreline erosion. Signage that records the history of the Cove, recent and long past, allows for a greater understanding of Portland's development and a larger appreciation of Back Cove itself.

The success of outside educational signage, however, is greatly increased when it is coupled with well-designed and interesting public out-door spaces. The boardwalk and overlook additions are designed to provide visitors with a close vantage point in which to appreciate the Cove's assets that are easily accessible and do not require trespassing on the wetland and intertidal habitat.

As part of the project, Portland Parks and Recreation is committed to working with the Friends of Casco Bay to establish vegetative buffers along the Cove's edge. With the help of grant funding they have secured, a native plant buffer between the soccer field/parking lot area and the Back Cove will be undertaken. In addition, the area between the Cove and parking lot will be planted with native vegetation.

The Parks and Recreation Department will work with the Friends of Casco Bay to provide educational signage specific to the benefits of vegetative buffers to Back Cove and all our natural resources.

Exhibit 3 Location Map

PURPOSE Park Improvements

Location Map

1 inch = 1 mile

APPLICANT Parks & Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
City of Portland

COUNTY OF Cumberland

DATE May 1999

SHEET NO. 1 OF 1

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Exhibit 4 Color Photographs

South- Wetland Adjacent to Playing Field 7/97

Intertidal Beach at LW 7/97

West- along Shore of Back Cove 7/97

Exhibit 4 Color Photographs

East- Across existing Parking 7/97

West- towards Preble St Extension 7/97

Site of Marine Overlook at HW 7/97

Northeast- Site from Preble St Ext 7/97

Back Cove Park
Portland, Maine

Exhibit 5 Project Plans

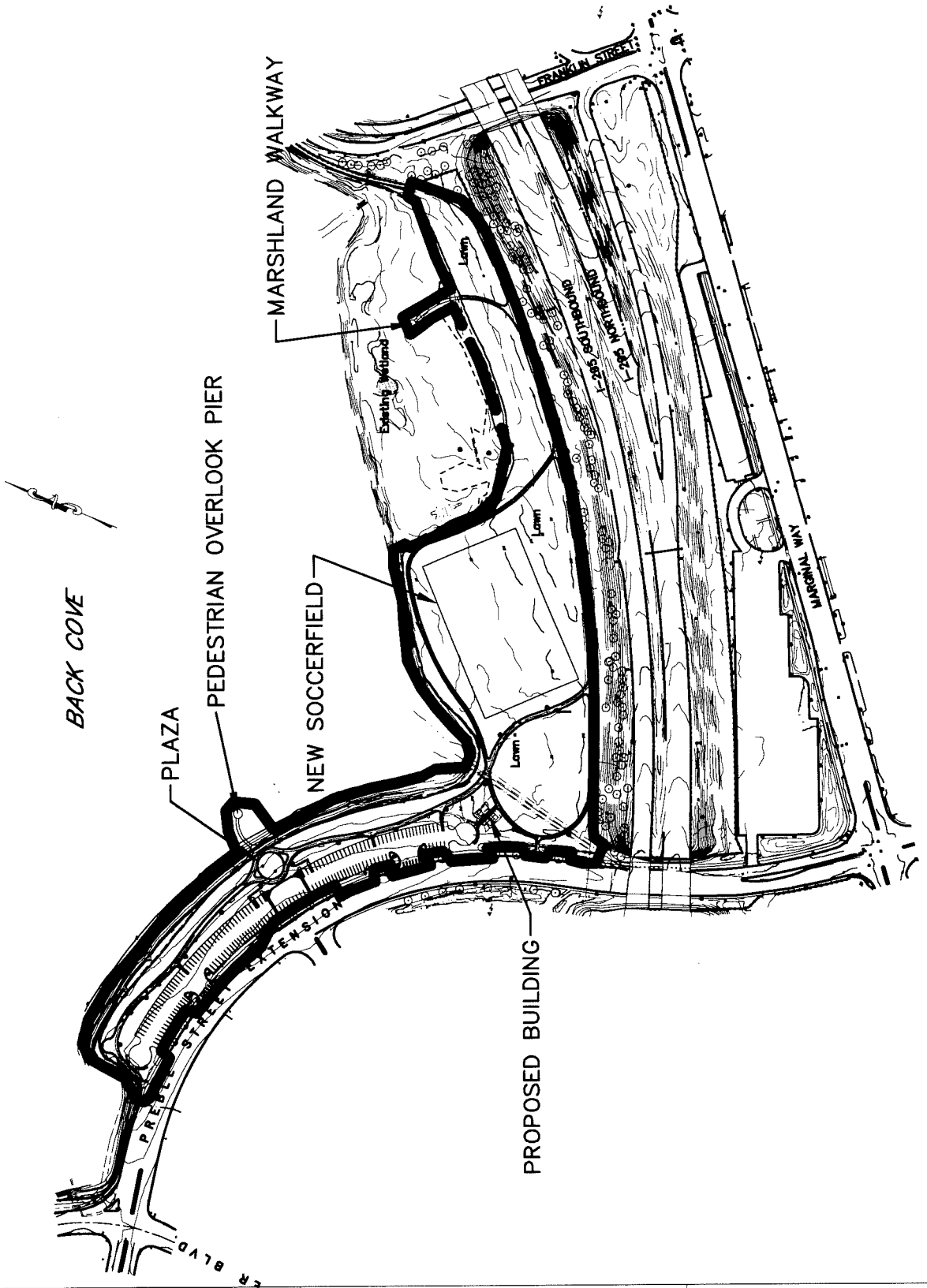
A complete Half Size set of Project Plans is appended as prepared by Landscape Architect: Richardson and Associates. These plans were reviewed and approved by the Planning Board on 26 April 99.

Detailed plans in 8.5 x 11 format in compliance with Army Corps of Engineers criteria are provided in Exhibit 6 as prepared by Baker Design Consultants.

Exhibit 6 Additional Plans

Sheet 1 of 7	General Plan
Sheet 2 of 7	Marine Overlook
Sheet 3 of 7	Marshland Walkway
Sheet 4 of 7	Overlook Layout
Sheet 5 of 7	Marshwalk Layout
Sheet 6 of 7	Pier Section
Sheet 6 of 7	Walkway Section

BASE INFORMATION TAKEN FROM PLANS BY RICHARDSON & ASSOCIATES- LA



PURPOSE **Public Waterfront Park**

(Elevations to NGVD)

10.0	FEMA Base Flood
4.88	Mean High Water
−4.23	Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

General Plan

1 inch = 250 feet

APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE
May 99

SHEET NO.
1 OF 7

PURPOSE **Public Waterfront Park**

(Elevations to NGVD)

10.0	FEMA Base Flood
4.88	Mean High Water
−4.23	Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Marine Overlook

1 inch = 40 feet

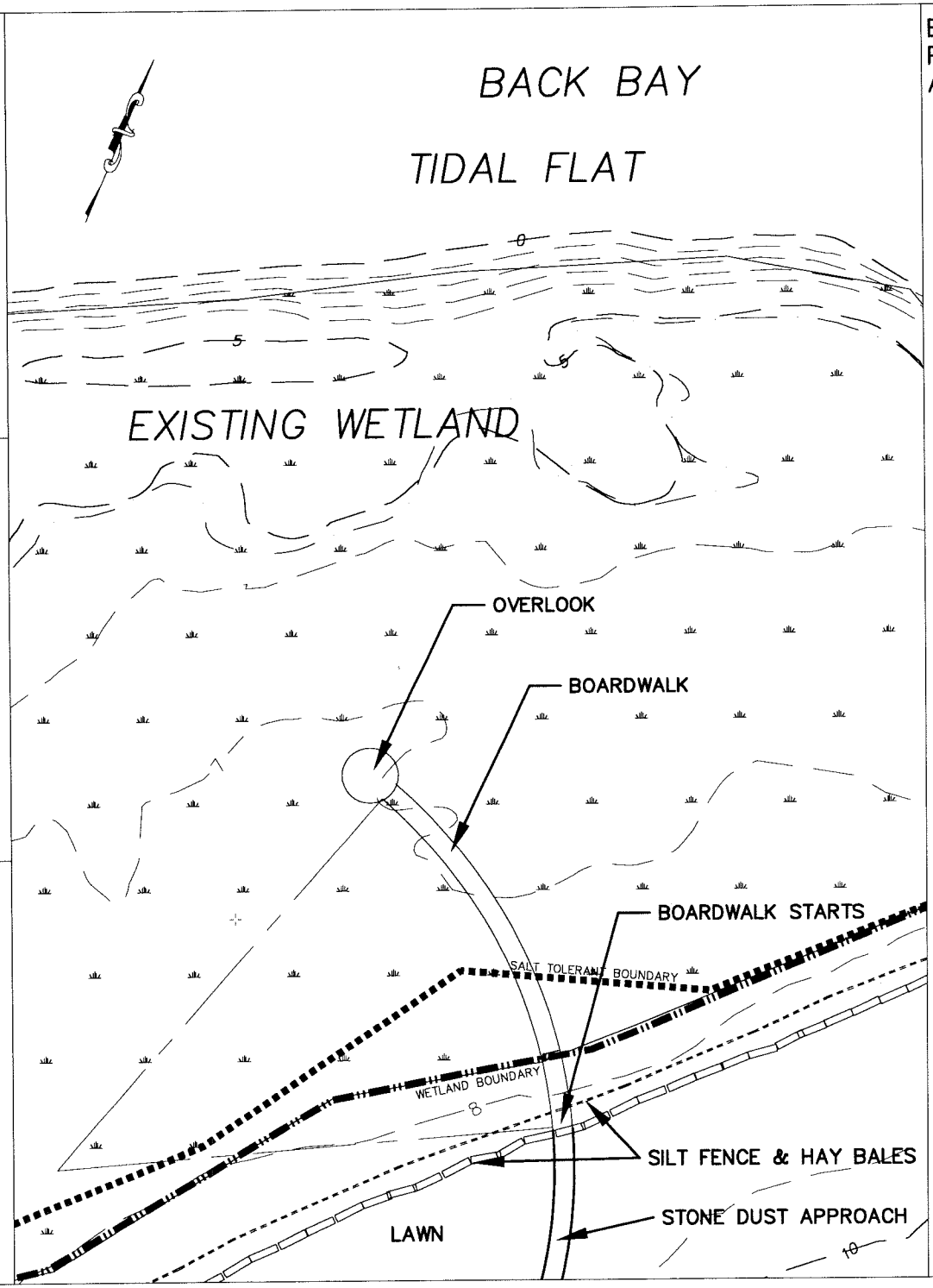
APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE
May 99

SHEET NO.
2 OF 7



BASE INFORMATION TAKEN FROM PLANS BY RICHARDSON & ASSOCIATES– LA

EXISTING

—Contour

+(24.50) —Spot Elevation

—Tree

—Shrub

—Underground Electric

—Existing Utility Connection

PROPOSED

—Contour

+27.30 —Spot Elevation

—Tree

—Shrub

—Pole Light (Future Location)

—Wetland Survey Test Location

PURPOSE **Public Waterfront Park**

(Elevations to NGVD)
10.0 FEMA Base Flood
4.88 Mean High Water
-4.23 Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Marshland Walkway

1 inch = 40 feet

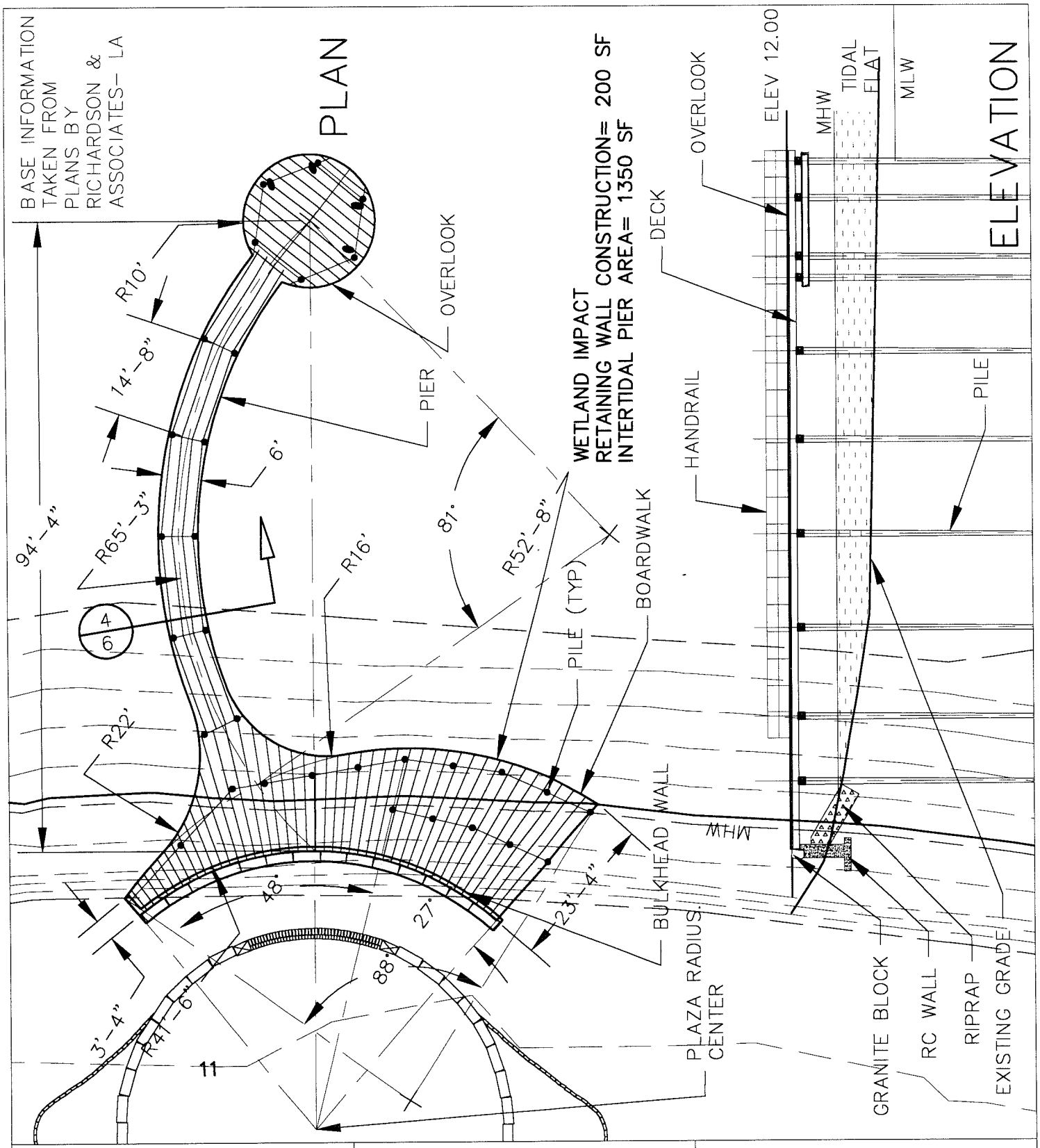
APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE May 99

SHEET NO. 3 OF 7



PURPOSE **Public Waterfront Park**

(Elevations to NGVD)

10.0	FEMA Base Flood
4.88	Mean High Water
−4.23	Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Overlook Layout

1 inch = 20 feet

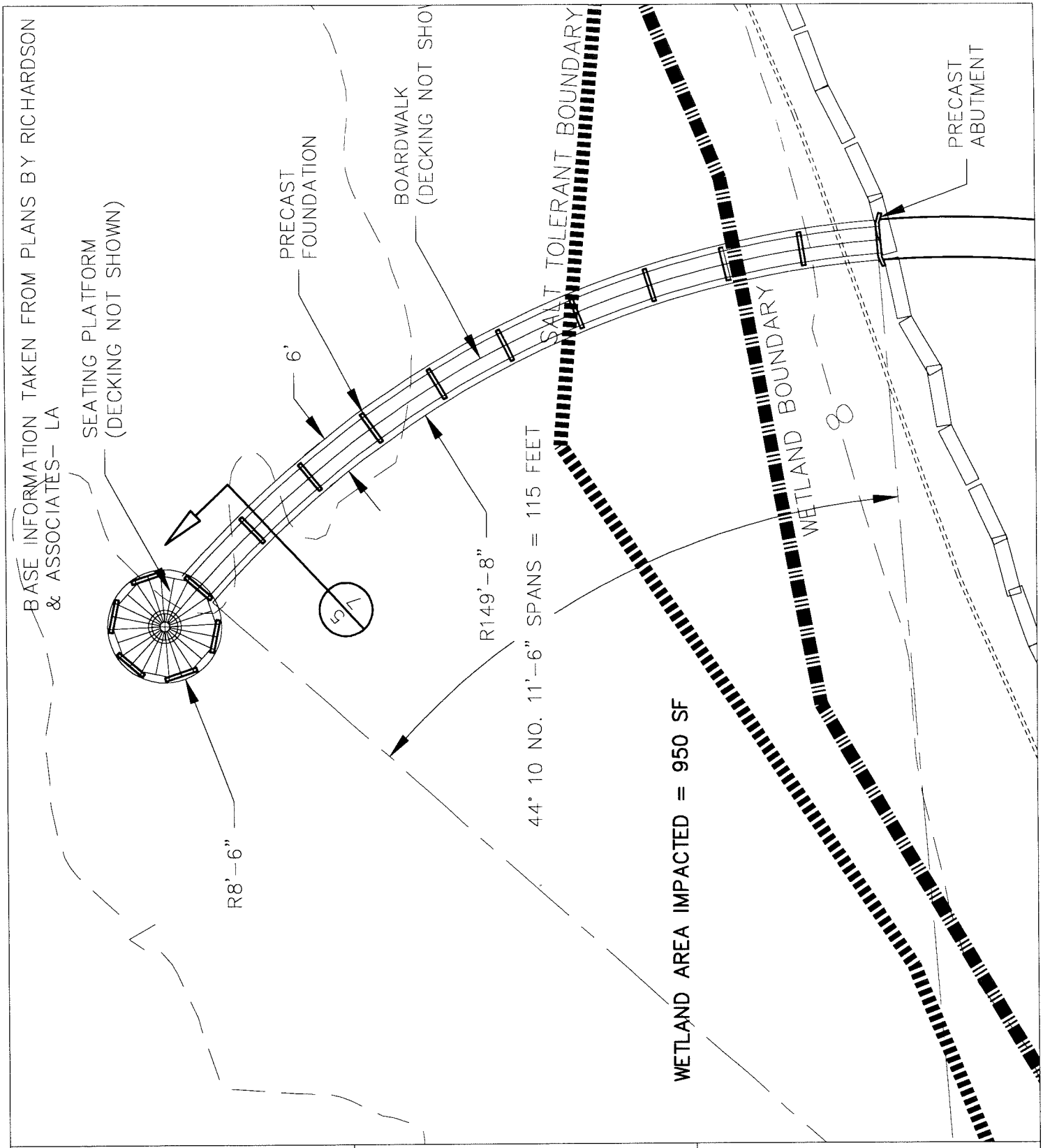
APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE
May 99

SHEET NO.
4 OF 7



PURPOSE **Public Waterfront Park**

(Elevations to NGVD)

10.0	FEMA Base Flood
4.88	Mean High Water
−4.23	Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Marshwalk Layout

1 inch = 20 feet

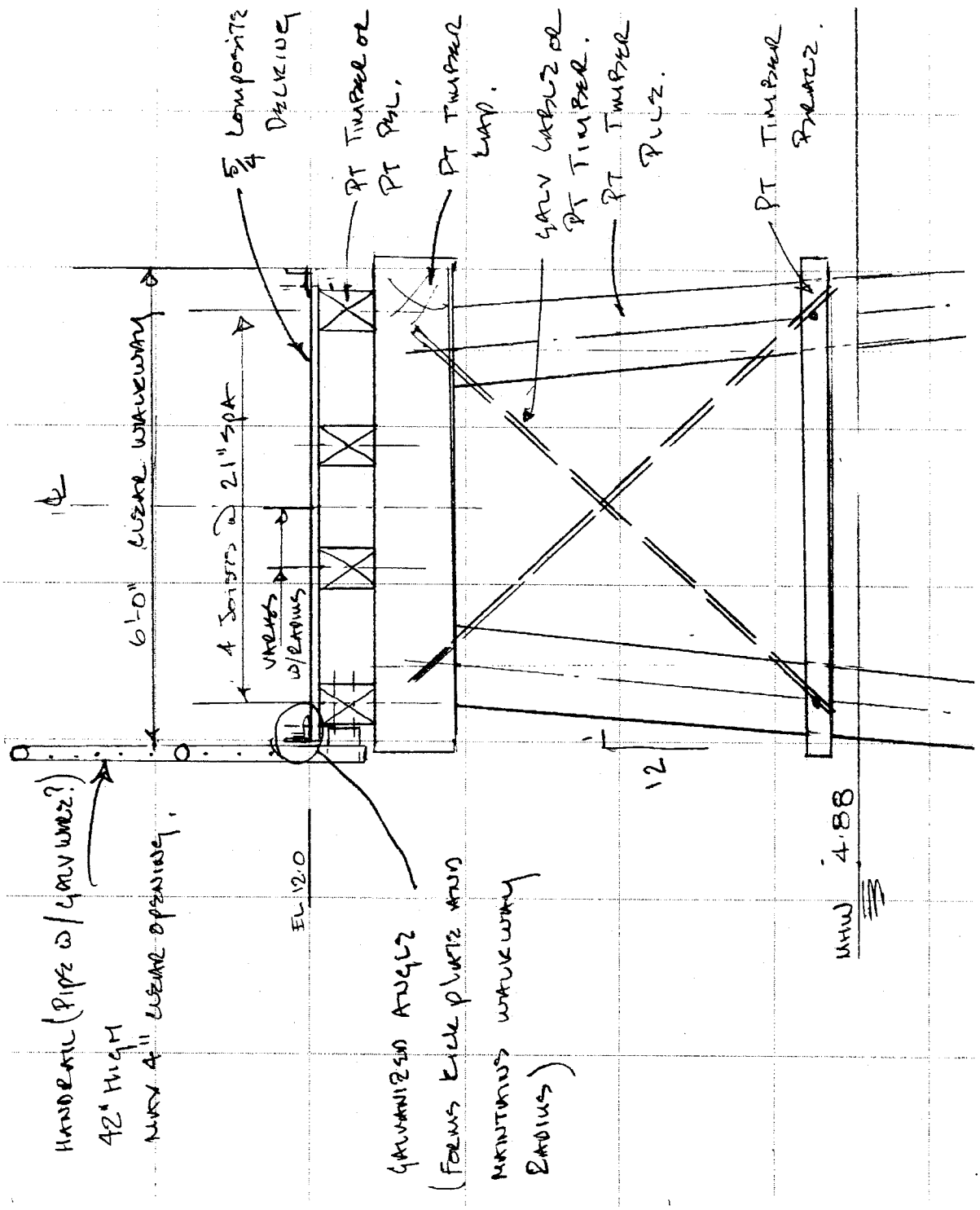
APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE
May 99

SHEET NO.
5 OF 7



PURPOSE **Public Waterfront Park**

(Elevations to NGVD)

10.0	FEMA Base Flood
4.88	Mean High Water
−4.23	Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Pier Section

1/2 inch = 1 foot

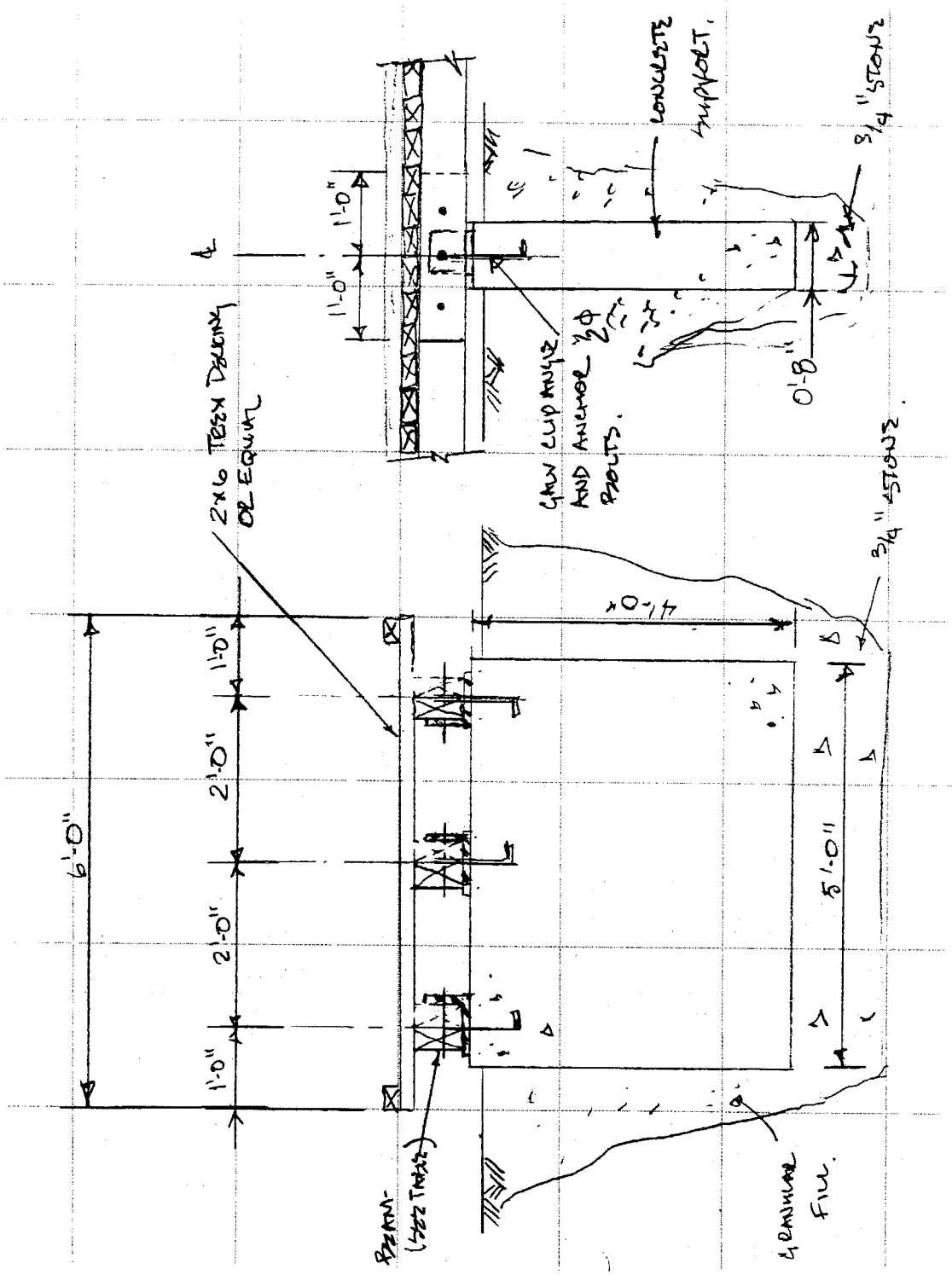
APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE
May 99

SHEET NO.
6 OF 7



PURPOSE **Public Waterfront Park**

(Elevations to NGVD)

10.0	FEMA Base Flood
4.88	Mean High Water
−4.23	Mean Low Water

Baker Design Consultants
11 Stony Brook Lane Yarmouth, ME 04096 (207) 846-9724

Walkway Section

1/2 inch = 1 foot

APPLICANT Parks and Recreation
17 Arbor Street
Portland, ME 04103

PROJECT
Back Cove Park
Portland, Maine

COUNTY OF Cumberland

DATE
May 99

SHEET NO.
7 OF 7

Exhibit 7 Construction Plan

The construction plan considers the public use of the site in addition to ensuring protection of the coastal wetland habitat. The contract will be put out for public bid and therefore must be flexible to accommodate Contractors with different specialization. For example, pier construction may be from a barge-mounted crane or from a temporary shore trestle.

The outline below presents contract process requirements and reviews material specification designed to ensure that the Contractor maintains site safety and limits impact to the natural environment. Refer to Exhibit 8 for Erosion Control Measures.

1. Progress Meetings

   - A pre-construction meeting will be held to review the Contractors construction schedule and plans for traffic and pedestrian segregation at each stage of the work.

   - Regular meetings will be held with Parks and Recreation to review changes in work activity and associated measures to ensure site safety.

2. Site Access

   - A staging area will be set aside in the parking lot for the arrival of equipment and for the contractor trailer.

   - Access to the site will be from Preble Street extension into the existing parking area. Room will be allocated for truck turn-around and material storage.

   - Movement through the site will be restricted to construction vehicles. The Contractor will be required to place signs and construction fence to prevent public access.

3. Pedestrian Overlook Construction.

   - The shoreside abutment/retaining wall will be reinforced concrete. The wall forms in the intertidal will be left in place for a minimum period of 3 days to minimize exposure to the tidal area during the curing process.

   - All piles will be pressure treated timber friction piles. Disturbance to the beach will be limited to a short period of driving. Soft soil conditions allow placement with a vibratory hammer. Noise and shock waves (associated with impact hammers will be minimal). If the Contractor elects to use a crane-mounted barge, he will be required to complete all barge activities within a 3-week period to minimize stress on the tidal flat.

   - Deck joists will be pressure-treated. The timber deck will be a composite material for long-term decay resistance. Handrail will be galvanized steel or fusion bonded paint.

4. Marshland Walkway

   - The walkway will be constructed within its own footprint to minimize impact to the wetland habitat.

   - In order to provide appropriate ballast and stability to a structure that may be flooded during a significant storm event, the foundation units are constructed of precast concrete. Casting off site will eliminate contact with the sensitive wetland during curing.

Exhibit 8 Erosion Control Plan

The Erosion Control Plan has been established under the premise that there will be no sediment discharged into Back Cove as a direct result of construction activity in upland areas. In addition, the impact of placement of piles and foundations within the coastal wetland shall be expedited to limit stress on the fragile coastal wetland.

In addition to the Erosion Control measures noted on the plans, the Contractor will be required to maintain a copy of the Maine Erosion and Sediment Control Handbook For Construction: Best Management Practices on site. In this way there will be no shortage of resource material available to establish and monitor effective erosion control.

1. General

    - Prior to any disturbances on site, silt fence and hay bales shall be installed as shown on the plans. All erosion control devices shall be inspected and/or replaced daily and immediately after any significant rainfall.

    - As much of existing vegetation shall be left in the construction area to maintain natural erosion control.

    - Topsoil shall be removed from areas undergoing construction and stockpiled on site for reuse as loam. The topsoil shall be placed out of natural drainage ways in piles with side slopes no steeper than 2:1. Topsoil piles shall be surrounded by silt fence. Piles not intended for reuse within two weeks shall be covered with mulch and temporarily re-seeded. Topsoil piles shall be placed within the limits of construction and shall be located a minimum of 40 ft from coastal wetlands.

    - Temporary seeding shall be applied to exposed areas within two days of completing interim grading operations with seeding and heavy mulch. In addition to silt barriers, hay bales shall be placed where runoff is concentrated.

    - All disturbed areas shall be permanently re-seeded following construction.

2. Marine Overlook

    - No equipment will be allowed in the intertidal area with the exception of a crane-mounted barge for pile placement. The barge shall be tethered in one place with spuds to minimize impact to the tidal flats. Access to the barge shall be by boat or gangway from shore.

    - A Silt boom shall be installed around the barge and seaward of any embankment construction from shore. The boom shall be inspected and maintained on a daily basis and after any storm event.

3. Marshland Walkway

    - Equipment shall be limited to a tractor and trailer with appropriate wheel

extensions/attachments to spread load on fragile march.

- An access path for the tractor and workman shall be constructed in the footprint of the proposed boardwalk. Boardwalk construction shall begin at the outlook and retreat to the upland connection. In this way, areas outside the walkway footprint will not be disturbed.

- Marshland vegetation in the path of the tractor shall be carefully removed and set aside for replanting. The path shall be reinforced with a geotextile and temporary subbase material sufficient to support the tractor and foot traffic during walkway construction.

- All material excavated during placement of precast foundations and not scheduled for reuse shall be removed to an upland location.

- Upon completion of placement of foundations and prior to construction of the boardwalk, all temporary subbase and geotextile shall be removed and disturbed areas shall be reinstated with native soil, mulch and native plantings.

Exhibit 9 Notice of Intent to File

PUBLIC NOTICE:
NOTICE OF INTENT TO FILE

Please take notice that

City of Portland Parks and Recreation Department
17 Arbor St.; Portland, ME 04103; (207) 756-8383

(Name, Address and Phone of Applicant)

is intending to file a Natural Resources Protection Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 480-A through 480-V on or about June 1, 1999

(anticipated filing date)

The application is for

Construction of a Pedestrian Marine Overlook pier structure and a Marshland Boardwalk as part of Back Cove Park improvements that include pedestrian pathways and plaza, a soccerfield and parking modifications.

(description of the project)

at the following location:

Property Bordered by Back Cove, Preble Street Extension and I-295.

(project location)

A request for a public hearing or a request that the Board of Environmental assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in *Portland* during normal working hours. A copy of the application may also be seen at the municipal offices in

Parks and Recreation Department; City of Portland

(location)

Written public comments may be sent to the Department of Environmental Protection, Bureau of Land and Water Quality, 17 State House Station, Augusta, Maine 04333-0017.

Exhibit 10 Maine Historic Preservation

BAKER DESIGN CONSULTANTS
Civil, Marine and Structural Engineering

05/26/99

Earle G. Shettleworth Jr.
Maine Historic Preservation Commission
65 State House Station
Augusta, ME
04333-0065

Subject: Back Cove Park Project; Portland Parks and Recreation

Dear Mr Shettleworth,

I am currently preparing a Maine Department of Environmental NRPA application for the subject project. The project includes improvements to existing City owned land between Back Bay and I-295 and Preble Street Extension. The site is on filled land created by construction activities in the past.

A description of the project and a location map are attached.

Please indicate by letter or phone call as to whether the MHPC requires a copy of the application.

Sincerely,

BAKER DESIGN CONSULTANTS, Inc.

Barney Baker PE
Principal

BJB
JN: 99018

Copy: Chris Di Matteo- Portland City Parks and Recreation

11 STONY BROOK LANE, YARMOUTH, ME 04096 PHONE: (207) 846-9724 FAX: (207) 846-3620 EMAIL: bakerdesign@compuserve.com

Received 6/9/99 BRB

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

ANGUS S. KING, JR.
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

June 7, 1999

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

Project: MHPC # 991 - Back Cove Park Project
Location: Portland, Maine

Dear Mr. Baker:

In response to your recent request, I have reviewed the information received June 1, 1999 on the above referenced project.

I find that there are no properties in the project impact area of historic, architectural or archaeological significance as defined by the National Historic Preservation Act of 1966 (as amended).

Please contact Dana R. Vaillancourt of my staff if you require further assistance in this matter.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer

EGS/drv

Exhibit 11 Alternatives Analysis

In the course of developing the Marshland Walkway and Marine Overlook several alternatives were considered. The designs developed are considered the most practicable in responding to the need for these facilities in a manner that is sensitive to the natural resource that they effectively promote. Reference should be made to the EXHIBIT 13 Functional Assessment, which evaluates the functions and values of the wetlands in the vicinity of the proposed structures.

1. Marshland Walkway

- Do Nothing

  To do nothing would be a great loss of opportunity that would provide visitors to Back Cove a unique perspective to learn more about and gain a greater appreciation of natural resources, specifically coastal wetland flora and fauna.

  Without a walkway there is the option to walk indiscriminately across the wetland rather than on a designated route.

- Elevate the Structure

  In order to limit damage to the wetland plants and habitat due to lack of sunlight, the overlying structure would need to be elevated by at least one and a half times its width. The width is dictated by ADA guidelines at 6 ft. A height approaching 9 ft is clearly not practical. Elevating the structure will also require a handrail to be added which further serves to isolate the observer.

  An elevated structure becomes a visual structure that contradicts the natural landscape. The elevation chosen is at or below the height of the vegetation bringing the observer in close proximity to the resource and effectively screens the walkway from other sections of the park.

- Alternate Location Opportunities

  The location chosen is unique in maximizing the experience of wetland study in relative seclusion away from the main travel path. And does not create a visual compromise to the appealing natural wetland.

  The site is also within the public park with established parking nearby.

  An alternative configuration of the Marshland Walkway ran parallel with the shore. This route was found to have a greater wetland impact, and did not have range of wetland experience and seclusion of the chosen configuration.

2. Marine Overlook

- Do Nothing

  To do nothing would be a great loss of opportunity that would provide visitors to Back Cove a unique perspective to learn more about and gain a greater appreciation of the natural tidal resource.

  Without the pier, the opportunity to experience this unique setting in the historical/geological setting of Portland is diminished.

- Reduce the size/length of the Structure

  The dimensions of the structure were developed to provide sufficient travel out over the intertidal habitat and to provide a perspective of the shoreline left behind. Reducing the length reduces the experience and separation form activity on shore.

  The proposed size of this marine overlook is also desired for the large numbers of people that currently use the site. A simpler and smaller overlook would be crowded in terms of the current number of visitors, notwithstanding the inevitable increase of people using the new waterfront park.

- Alternate Location Opportunities

  The site chosen is anchored to the new plaza, which is a focal point of the proposed improvements. The overlook and plaza are mutually supportive providing a setting for a host of activities for the park visitor. Music on the pier… an opportunity to study shore birds while waiting for a friend.....less active family members rest while others explore the beach floor from the pier. No other site has these amenities.

Exhibit 12 Site Conditions

- Wetland Delineation Report

Back Cove Parcel
Preble St Extension
Portland, ME

By: Carex Ecosystem Sciences
9A French Cross Rd.
Madbury, NH 03820

Date: 27 October 1998
Revised May 4 ,1999

CAREX ECOSYSTEM SCIENCES
Natural Resource
Assessment & Management

603-742-6665 PHONE/FAX

538 CENTRAL AVE, SUITE B
DOVER, NEW HAMPSHIRE 03820

WETLAND DELINEATION REPORT

BACK COVE PARCEL
PREBLE STREET EXTENSION
PORTLAND, MAINE

PREPARED FOR

CITY OF PORTLAND
DEPARTMENT OF PARKS & RECREATION
17 ARBOR STREET
PORTLAND, MAINE 04103

PREPARED BY

CAREX ECOSYSTEM SCIENCES
9A FRENCH CROSS ROAD
MADBURY, NH 03820

October 27, 1998
Revised
May 4, 1999
981005

Introduction and Methods

On 26 October 1998, I conducted an on-site delineation of wetlands at the subject parcel located off of Preble Street Extension in Portland. Wetlands under state and federal jurisdiction were identified based on the *Corps of Engineers Wetlands Delineation Manual* (Dept. of the Army, 1987). Except in special circumstances, these criteria require that indicators of wetland soils, vegetation, and hydrology all be present for an area to be considered a wetland. Additional supporting documents used include:

Classification of Wetlands and Deepwater Habitats of the United States, US Fish and Wildlife Service, 1979.
Field Indicators for Identifying Hydric Soils in New England, Version 2, New England Interstate Water Pollution Control commission, 1998.
National List of Plant Species that Occur in Wetlands: 1988, US Fish and Wildlife Service, 1988.
Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping, Maine Association of Professional Soil Scientists, 1995.

The site borders the ocean and has been the site of significant disturbance. Much of the area has been filled, at least along the upper edges of the wetland. The area grades from tidal marsh on fill that is dominated by salt tolerant high marsh species in lower elevations, to a band of wetland dominated by salt intolerant species on fill, to upland lawn on fill. The wetland dominated by salt intolerant species includes many weedy and cultivated species. All of the wetland areas are assumed to be under the influence of the maximum spring tides and, therefore, to meet the state definition of coastal wetlands.

The upper edge of the wetland dominated by salt intolerant species and the area dominated by salt tolerant species were marked separately with wooden stakes and sequentially numbered plastic flagging. In the vicinity of the proposed impact I completed Corps of Engineers data forms for each of the two wetland zones, as well as for the upland. In areas of mowed vegetation, soils were relied upon as the primary indicator of wetland conditions.

Wetland Characteristics

Salt Tolerant Zone

Wetland Classification: Estuarine, intertidal, emergent, persistent, irregularly flooded (E2EM1P)
Flag Numbers: Salt-1 to Salt-16
Soils: Poorly drained fill
Representative Plant Species:

Saltmeadow cordgrass	*Spartina patens*
Black grass	*Juncus gerardii*
Spike grass	*Distichlis spicata*

Seaside alkali grass	*Puccinellia maritima*
Saltmarsh sand-spurrey	*Spergularia marina*
Seaside goldenrod	*Solidago sempervirens*

Hydrological Indicators:

Debris line
Saturation at <12" from soil surface

*****

Salt Intolerant Zone

Wetland Classification: Palustrine, emergent, persistent, saturated (PEM1B)
Flag Numbers: Wet-1 to Wet-16
Soils: Poorly drained fill
Representative Plant Species:

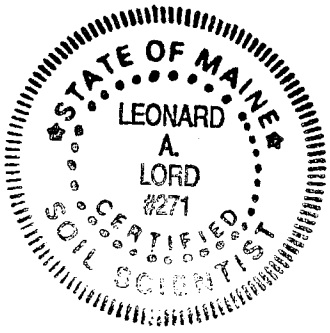
Meadow fescue	*Festuca pratensis*
Poverty grass drop-seed	*Sporobolis vaginiflorus*
Reed canary grass	*Phalaris arundinacea*
Eastern lined aster	*Aster lanceolatus*
Flat-top goldenrod	*Euthamia graminifolia*
Fall dandelion	*Leontodon autumnalis*

Hydrological Indicators:

Saturation at <12" from soil surface

Notes:

- Highly disturbed vegetation includes some upland species but area has good hydric soil indicators.



Leonard A. Lord, Ph.D.
Wetland Ecologist
ME Certified Soil Scientist #271

Exhibit 13 Functional Assessment

- Wetland Assessment

Back Cove Park
Preble St Extension
Portland, ME

By: Carex Ecosystem Sciences
9A French Cross Rd.
Madbury, NH 03820

Date: May 4, 1999

CAREX ECOSYSTEM SCIENCES
Natural Resource
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WETLAND ASSESSMENT

BACK COVE PARK
PREBLE STREET EXTENSION
PORTLAND, MAINE

PREPARED FOR

CITY OF PORTLAND
DEPARTMENT OF PARKS & RECREATION
17 ARBOR STREET
PORTLAND, MAINE 04103

PREPARED BY

CAREX ECOSYSTEM SCIENCES
9A FRENCH CROSS ROAD
MADBURY, NH 03820

May 4, 1999
990403/4

1.0 Introduction and Methods

On April 25, 1999, I conducted an on-site assessment of wetland functions and values in two locations at the subject parcel. The parcel borders the southern perimeter of Back Cove along Preble Street and I-295 in Portland. The city has proposed improvements to Back Cove Park that include a 5-7' wide pier terminating in a 20' diameter overlook above a 400 +/- acre tidal flat, and a 4' wide boardwalk terminating in an 8' diameter platform into a 6 +/- acre tidal marsh. Each extend approximately 100' into areas defined by the Maine DEP as coastal wetlands.

I delineated wetlands in the vicinity of the boardwalk with wooden grade stakes October 26, 1998 (see separate revised report dated May 4, 1999). The edge of the coastal wetland in the vicinity of the overlook is clearly visible as the highest drift line, which occurs approximately 4' horizontally from the top of the fill slope. Brief descriptions of wetland characteristics in the impact areas were made along 100' transects into both of these areas. The tidal marsh is also described in my delineation report. Most of the intertidal species from the tidal flats were identified by Alison Bowden, a graduate student specializing in marine invertebrates in the Water Resources Program at the University of New Hampshire. US Fish and Wildlife Service (USFWS) classifications for the two impact areas were assigned based on *Classification of Wetlands and Deepwater Habitats of the United States* (USFWS, 1979).

The functions and values of the wetlands in the vicinity of the overlook and the boardwalk were evaluated using the *Maine Citizens Guide to Evaluating, Restoring, and Managing Tidal Marshes* (Maine Audubon Society, 1997). This method utilizes a numerical scoring system to generate an Average Functional Index (AFI) for each of seven functions and values. The AFI ranges from 0.1 (low functioning) to 1.0 (high functioning). The AFI can then be multiplied by the acreage of the wetland for inventories that compare the functioning of multiple wetlands. This last step was not completed because it was not applicable to this evaluation. The *Maine Citizens Guide* method was intended to evaluate tidal marshes. I also used this method to evaluate the tidal flats because there is no other method designed for evaluating these areas, and because many of the questions relate well to tidal flat functioning. As there are some commonly recognized problems with numerically scored evaluation methods, the *Maine Citizens Guide* evaluation was used primarily to provide structure to a narrative evaluation. The data sheets for the evaluations are found in Appendices I & II.

A preliminary field search for the rare tidal marsh species American sea-blite (*Sueda calceoliformis*) was conducted in the vicinity of the boardwalk based on the findings of a data base search by the Maine Natural Areas Program (Appendix III). This species was last recorded at a site within four miles of Back Cove in 1932. The search for the annual was inconclusive due to the time of year and the presence of dried remains of a related common species, southern sea-blite. Identification of the southern sea-blite was made by microscopic examination of plant remains; a more conclusive search would need to be made during the flowering of these species in late summer or early fall. It is unlikely that American sea-blite is present in the marsh because it does not closely fit the type preferred by the rare sea-blite, which is rocky or gravelly tidal marshes and sea-strands.

The Maine Natural Areas Program database search did not reveal any rare plants known to exist within the Back Cove tidal marsh.

Information on important wildlife habitat in the area was obtained from the Maine Department of Inland Fisheries, which indicated that the Back Cove wetlands are a Candidate Significant Habitat for Coastal Wading Birds and Waterfowl under the state Natural Resources Protection Act (Appendix III).

2.0 Overlook (Tidal Flat)

2.1 Wetland Characteristics

The USFWS classification for portion of the impact area beyond the base of the shoreward fill slope is: estuarine, intertidal, unconsolidated shore, mud, regularly flooded (E2US3N). Below is a brief description of wetland characteristics along a transect at the location of the overlook, beginning at the highest drift line (approximately 4' horizontally from the top of the slope). The tidal flats probably once extended further shoreward, but were filled in the area of the current parking lot.

0-21' Riprap, approximately 12-18" average diameter.

21-49' Riprap, approximately 6" average diameter grading downslope to gravel and then to coarse sand. Species noted include:

Polychaetes (segmented worms with appendages, found at high densities)

Nereis succinea	Yellow-jawed clam worm
Syllidae	(common name unknown)
Spio sp.	(common name unknown)
Drilonereis sp.	Opal worm
Capitella capitata	Thread worm

Mollusks & Gastropods

Mytilus edulis	Blue mussel
Mya arenaria	Softshell clam
Littorina littorea	Common perriwinkle
Nucella lapillus	New England dogwhelk
Semibalanus balanoides	Northern rock barnacle
Idotea sp.	Pill bug/wood louse

Algae

Enteromorpha intestinalis	Water gut
Fucus vesiculosus	Rock weed
Ulva lactuca	Sea lettuce
Ulvaria cf. obscura	(common name unknown)
Chorda filum	Mermaid's hair
Capsosiphon sp.	(common name unknown)

49-100'Silt and clay.

Polychaetes (less common than in sandy area)

Oligochaetes (segmented worms without appendages)

Tubificidae	(common name unknown)
Cerebratulus sp.	Ribbon worm

Mollusks & Gastropods (see above)
Algae (see above, less common)

2.2 Function & Value Assessment

The following is a discussion of each of the seven functions evaluated. The AFI scores are given as a reference, but the evaluation was primarily based on professional opinion and includes factors that were not adequately addressed by the evaluation method.

2.2.1 Ecological Integrity of the Wetland (AFI=0.53)

Functioning: The ecological integrity of the tidal flats is low to intermediate. The integrity of the tidal flows in and out of the cove appears to be relatively uncompromised by human structures. On the negative side, however, is relatively low water quality in Back cove, and the occurrence of significant past filling (15 +/- acres?) along the southern perimeter of Back Cove.

Project Impacts: The project is not expected to compromise the ecological integrity of the tidal flats. It will increase human activity in a limited area. This minimal impact, however, is expected to be offset by the increased awareness and enjoyment of the tidal flats, which in turn may foster public support for responsible stewardship of the resource.

2.2.2 Ecological Integrity of the Zone of Influence (AFI=0.10)

Functioning: The ecological integrity in the area bordering the tidal flats is low. It is an urban area with a high proportion of buildings, roads, and parking lots. The area directly bordering the outlook is a parking lot build on fill.

Project Impacts: The project is not expected to have an effect on the ecological integrity of the surrounding area other than to make it aesthetically more pleasing by including landscaping between the parking lot and the overlook.

2.2.3 Wildlife, Finfish, & Shellfish Habitat (AFI=0.39)

Functioning: The value of the tidal flats as wildlife habitat is intermediate to high. On the positive side, Back Cove includes nearly 400 acres of exposed tidal flats during low tide. This habitat type is important to many species, including fish, shellfish, and shore birds. Our inventory of species in the vicinity of the overlook indicated high densities of soft-bodied invertebrates, which are an important food source for many shore birds. Although only herring gulls (*Laras argentatus*) were observed on the day of the investigation, many other shore birds have been observed at Back Cove (see Appendix III, Dept of Inland Fish and Wildlife letter and species list). The area is also a Candidate Significant Habitat for Coastal Wading Birds and Waterfowl under the state Natural Resources Protection Act. Detractors to the value of the tidal flats include the lack of an upland buffer, lack of variation in natural habitat types in and around the flats, and having a location in an urban setting with high human activity and pollution.

Project Impacts: The project may disrupt the feeding of some shore bird species within a limited area around the overlook. This would be a very small proportion of the tidal flat system and is expected to be offset by an increased awareness and enjoyment of this

habitat, which in turn may foster public support for responsible stewardship of the resource.

2.2.4 Recreational and Commercial Potential (AFI=0.42)

Functioning: The recreational and commercial potential of the tidal flats is low to intermediate. Contributors to the function include parking, accessibility, and opportunities for wildlife observation, particularly shore birds. There is also the potential for non-motorized boating during high tide; however, no boat access was noted in the vicinity, and boating is limited by the large horizontal variation in water levels between tides. Detractors to the function are related to pollution and the urban setting, which have resulted in closing of the flats for shellfish harvesting, and which eliminate the possibility of hunting in the area.

Project Impacts: The project is expected to enhance this function by providing better viewing of shore birds and other wildlife. This is particularly valuable in an urban context.

2.2.5 Aesthetic Quality (AFI=0.35)

Functioning: The project area has intermediate aesthetic quality. Contributors to the function include a large panoramic view of the tidal flats and Back Cove and good opportunities for wildlife viewing. Detractors to the function include the urban context with sights, noises, and smells from the city and I-295, and by the presence of large sewage overflow outlet pipes. The urban context increases the value of the aesthetic qualities, however, because there are few opportunities for viewing natural landscapes in the city and there are more people that benefit from the function.

Project Impacts: The project is expected to enhance this function by providing better viewing of the tidal flats, and by providing landscaping around the park. As discussed above, this is particularly valuable in an urban context. In addition, the project may lead to increased public awareness and support for responsible stewardship of the aesthetics of Back Cove.

2.2.6 Educational Potential (AFI=0.47)

Functioning: The project area has intermediate to high educational potential. There is a large population of school aged children nearby, there is good parking, and there are opportunities for viewing natural habitats and wildlife. Detractors to the function include the presence of pollution which severely limits "hands-on" studies of tidal flat organisms.

Project impacts: The project is expected to enhance this function by providing better viewing of the tidal flats.

2.2.7 Noteworthiness (AFI=0.46)

Functioning: The project area is noteworthy because it is a Candidate Significant Habitat for Coastal Wading Birds and Waterfowl (see Appendix III).

Project impacts: The project is expected to help preserve the area for shore birds by increasing awareness and helping to foster a sense of stewardship for the resource.

3.0 Boardwalk (Tidal Marsh)

3.1 Wetland Characteristics

The USFWS classification of the tidal marsh is: estuarine, intertidal, emergent, persistent, irregularly flooded (E2EM1P). Below is a brief description of wetland characteristics along a transect at the location of the boardwalk, beginning at the wetland/upland boundary. The tidal marsh is located on fill, but may resemble tidal marshes that probably existed along the perimeter of Back Cove prior to human alteration. Unlike most tidal marshes, there is no low marsh associated with this wetland. What would be the low marsh area is a steep fill slope covered with riprap. Please also refer to the Wetland Delineation Report for additional information.

0-24' Occasionally mowed, salt intolerant species dominated by quackgrass (*Elytrigia repens*), with Canada bluegrass (*Poa compressa*) and a few scattered rosettes of seaside goldenrod (*Solidago sempervirens*). This area has approximately 2-5% bare ground.

24-39' Highest drift line

39-75' Salt tolerant vegetation dominated by stiff-leaf quackgrass (*Elytrigia pungens*) and tufts of seaside alkali grass (*Puccinellia maritima*), with seaside goldenrod, black grass (*Juncus gerardii*), sea lavender (*Limonium carolinainum*), common glasswort (*Salicornia europaea*), and sea blite (*Sueda linearis*). At the time of the study there was approximately 10-15% bare ground, but much of this was being colonized by annuals (sea blite and common glasswort).

75-100' Dense stand of black grass, with some sea lavender. In addition, there was evidence of sea blite and common glasswort colonizing small disturbed patches nearby.

Soils throughout the transect were found to be poorly drained compact gravelly sandy loam fill. Organic accumulations on top of the fill were in the range of 2-3".

3.2 Function & Value Assessment

The following is a discussion of each of the seven functions evaluated. The AFI scores are given as a reference, but the evaluation was primarily based on professional opinion and includes factors that were not adequately addressed by the evaluation method.

3.2.1 Ecological Integrity of the Wetland (AFI=0.59)

Functioning: The ecological integrity of the tidal marsh is relatively low. Contributing to the function is that the integrity of the tidal flows in and out of the Back Cove appear to be relatively uncompromised by human structures, and the marsh does not include populations of invasive plant species. Detractors to the function include that the marsh has developed on compact fill, relatively poor water quality in Back Cove, and moderate levels of litter in the marsh.

Project Impacts: The project is not expected to compromise the ecological integrity of the tidal marsh. Approximately 425 ft^2 of vegetation will be covered by the boardwalk in a 6 +/- acre tidal marsh, and will increase human activity in a limited area. This minimal

impact, however, will help to contain human activity (on the day of the investigation, people were observed walking their dogs through the marsh). In addition, the boardwalk and interpretive signs are expected to result in increased awareness and enjoyment of the tidal marsh, which in turn may help to foster public support for responsible stewardship of the resource.

3.2.2 Ecological Integrity of the Zone of Influence (AFI=0.10)

Functioning: The ecological integrity in the area bordering the tidal flats is low. It is an urban area with a high proportion of buildings, roads, and parking lots. The area directly bordering the marsh is lawn approximately 120' wide to the base of the fill for I-295.

Project Impacts: The project is not expected to have an effect on the ecological integrity of the surrounding area other than to make it aesthetically more pleasing by including landscaping in the lawn between the marsh and I-295.

3.2.3 Wildlife, Finfish, & Shellfish Habitat (AFI=0.18)

Functioning: The value of the tidal marsh as wildlife habitat is intermediate. The location next to nearly 400 acres of tidal flats makes it attractive to wildlife that utilize both habitat types. In addition, flushing of the tidal marsh during extreme tides may provide carbon and nutrients to the tidal flats. The marsh contains two pannes that may provide food for shore birds and is also within an area that is a Candidate Significant Habitat for Coastal Wading Birds and Waterfowl under the state Natural Resources Protection Act. Detractors to the value of the tidal marsh as wildlife habitat include the relatively small size (6 +/- acres), lack of an upland buffer, lack of variation in natural habitat types in and around the marsh, human and pet activity within the marsh, urban noises, and low water quality in Back Cove.

Project Impacts: The project will increase human activity in a limited area, but will help to restrict activity to that area. In addition, the boardwalk and interpretive signs are expected to result in increased awareness and enjoyment of this habitat, which in turn may foster public support for responsible stewardship of the resource as wildlife habitat.

3.2.4 Recreational and Commercial Potential (AFI=0.40)

Functioning: The recreation and commercial potential of the tidal flats is low to intermediate. Contributors to the function include parking, accessibility, and opportunities for wildlife observation, particularly of shore birds in the adjacent tidal flats. Detractors to the function are related to pollution and the activity of an urban setting, which could disrupt wildlife viewing within the marsh.

Project Impacts: The project is expected to enhance this function by providing better opportunities for viewing shore birds and other wildlife. This is particularly valuable in an urban context.

3.2.5 Aesthetic Quality (AFI=0.33)

Functioning: The project area has intermediate aesthetic quality. Contributors to the function include a large panoramic view of the marsh and adjacent tidal flats of Back Cove with good opportunities for wildlife viewing. Detractors to the function include the urban context with sights, noises, and smells from the city and I-295. The urban context increases the value of the aesthetic qualities, however, because there are few

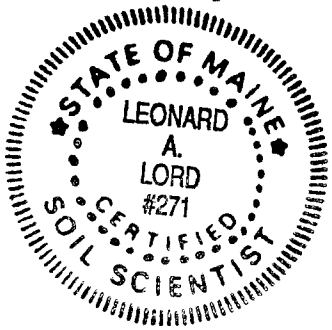
opportunities for viewing natural landscapes in the city and there are more people that benefit from the function.
Project Impacts: The project is expected to enhance this function by providing better viewing of the marsh, and by providing landscaping in and around the upland portions of the park. As discussed above, this is particularly valuable in an urban context. In addition, the project may lead to increased public awareness and support for responsible stewardship of the aesthetics of Back Cove.

3.2.6 Educational Potential (AFI=0.40)
Functioning: The project area has intermediate to high educational potential. There is a large population of school aged children nearby, there is good parking, and there are opportunities for viewing natural habitats and wildlife. Detractors to the function include the presence of pollution in the cove and nails present in drift wood that could be hazardous.
Project impacts: The project is expected to enhance this function by providing better viewing of the marsh along with interpretive signs.

3.2.7 Noteworthiness (AFI=0.46)
Functioning: The project area is noteworthy because it is a Candidate Significant Habitat for Coastal Wading Birds and Waterfowl (see Inland Fisheries and Wildlife letter, Appendix III). A number of rare plant species have been noted within four miles of the site (see Natural Areas Program letter, Appendix III), however only one of these American sea-blite (*Sueda calceoliformis*) is a tidal marsh species. A preliminary field search did not reveal the presence of this species (see Introduction and Methods).
Project impacts: The project is expected to help preserve the area for shore birds by increasing awareness and helping to foster a sense of stewardship for the resource.

Summary

The most important functions and values provided by the tidal flats and tidal marsh are wildlife habitat, aesthetic quality, and education potential. The proposed projects are expected to have negligible impacts to wildlife habitat and will improve the aesthetic quality and education potential of the wetlands. In addition, the projects are likely to foster public awareness and support for maintaining responsible stewardship of the resource.



Leonard A. Lord, Ph.D.
Wetland Ecologist
Maine Certified Soil Scientist #271

APPENDIX I

TIDAL FLAT EVALUATION FORMS

WHERE APPROPRIATE, EVALUATION IS FOCUSED ON DIRECT VICINITY OF PROPOSED OVERLOOK

Marsh System: BACK COVE TIDAL FLAT **Evaluation Unit** OVERLOOK ~~of~~ _____

Assessment 1 *(Page 1 of 3)*
Ecological Integrity of the Marsh System

FIELD VISIT:
Date: 4/25/99 Time: ~1:00 PM
Tide: LOW
Weather: SUNNY
Observers: LL

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Note: *Results should be based on evaluation units and placed in the summary table on Page D-14.*			
Questions that may require field observation:			
1.1. Number of tidal restrictions.		a. no tidal restrictions b. one tidal restriction c. more than one tidal restriction	1.0 0.5 0.1
1.2. Type of tidal restriction.		a. headland to headland bridge or no restriction b. free flow over marsh surface obstructed by road but bridge or culverts not restricting flow through tidal creek c. tidal gate, culvert, road or bridge on the marsh surface that significantly restricts tidal flow including through creeks and channels	1.0 0.5 0.1 .75
1.3. Fill on marsh surface (spoils, crossroads, etc.).		a. < 5% of EU filled b. 5% - 15% filled c. > 15% filled	1.0 0.5 0.1 .75
1.4. Ditching on surface of the EU.		a. no ditching within EU b. ditches affect ≤ 20% of EU c. ditches affect > 20% of EU	1.0 0.5 0.1
1.5. Alteration of the natural marsh plant community: dominance of invasive species within EU	ALGAE ONLY. STATUS UNKNOWN	a. < 5% of EU dominated by invasive species b. 5% - 20% c. > 20%	1.0 0.5 0.1

EVALUATION DOES NOT CONSIDER SEWAGE OVERFLOWS

AVERAGE FUNCTIONAL INDEX for Assessment 1 = Average of Column D = 1.6/3 = 0.53.

Marsh System _____ **Evaluation Unit** _____ **of** _____

Assessment 1 *(Page 2 of 3)*

Ecological Integrity of the Marsh System

Narrative Description of Restoration Potential

1. Describe the exact locations and types of restrictions affecting the evaluation unit. Include a description of the extent of the flow that is restricted (e.g., culvert restricting flow at mid-tide).

TUKEY BRIDGE - SOME FILL WAS PLACED IN COVE AT BRIDGE, BUT DOES NOT APPEAR TO INTERFERE WITH COMPLETE TIDAL FLUCTUATION

ALSO RAILROAD CROSSING EAST OF TUKEY BRIDGE

NO TIDE GATES NOTED BETWEEN LOCAL TIDE IN BACK COVE AND THAT REALIZED IN THE CHANNEL FOR CASCO BAY, INDICATING LACK OF SIGNIFICANT RESTRICTION

2. Describe the area of the evaluation unit that was filled including current uses, approximate acreage, and plant community.

MUCH OF SOUTHERN PERIMETER OF BACK COVE IS FILLED. AREA ADJACENT TO OUTLOOK IS A PARKING LOT.

Marsh System: _____ **Evaluation Unit** _____ **of** _____

Assessment 1 *(Page 3 of 3)*

Ecological Integrity of the Marsh System

Narrative Description of Restoration Potential *(Continued)*

3. Describe the exact location and arrangement of ditching relative to the tidal flow and apparent impact (area, affect on evaluation unit hydrology). Supplement with sketch map or photos.

N/A

4. Describe the area of the evaluation unit with invasive plant species by estimating the size of the area, listing the species present and the relative proportion of each species.

N/A

Marsh System: TIDAL FLAT

Assessment 2
Ecological Integrity of the Zone of Influence

FIELD VISIT:
Date: 4/25/99 Time:
Tide:
Weather:
Observers: LC

A **Evaluation Questions**	B **Dates, Calculations, and Notes**	C **Evaluation Criteria**	D **Functional Index (FI)**
Questions that may require field observation:			
2.1. Dominant land use in the ½ mile Zone of Influence surrounding the marsh system.		a. forests, fields, dune/beach, freshwater wetlands, open water or similar open space b. agricultural or rural residential (ave. lot size > 2 acres) c. commercial, industrial, high density residential or heavily used highways	1.0 0.5 (0.1)
2.2. Ratio of the number of buildings within the marsh system **and/or** within the 250 foot Shoreland Zone to the total area of marsh system.	URBAN - SHOP'N SAVE PLAZA	a. < 0.1 building/acre b. from 0.1 - 0.5 building/acre c. > 0.5 building/acre (EQUIVALENT)	0.1 0.5 0.1
2.3. Percent of the marsh system/upland boundary that has a buffer of woodland or idle land at least 250 feet in width.		a. > 70% b. from 30% - 70% c. < 30%	1.0 ~~0.5~~ (0.1)

AVERAGE FUNCTIONAL INDEX for Assessment 2 = Average of Column D = .3/3 = 0.1.

Marsh System: _____

Assessment 3 *(Page 1 of 2)*
Wildlife, Finfish & Shellfish Habitat

FIELD VISIT:
Date: 4/25/99 Time: _____
Tide: _____
Weather: _____
Observers: LL

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
3.1. Acreage of the ~~marsh~~ system.	TIDAL FLAT - ENTIRE BACK COVE	a. > 100 acres b. from 10 - 100 acres c. < 10 acres	(1.0) 0.5 0.1
3.2. Ecological Integrity of the marsh system.		Record the Marsh System AFI for Assessment 1	0.53
Questions that may require field observation:			
3.3. Diversity of habitat types. See Page 2 of Assessment 3.		a. 8 - 10 types present b. 4 - 7 types present c. < 4 types present	1.0 0.5 (0.1)
3.4. Submerged (aquatic bed) vegetation expressed as percent of submerged habitat.	NONE IN VICINITY	a. >25% b. from 5% - 25% c. < 5%	1.0 0.5 (0.1)
3.5. Percent of marsh system edge bordered by a buffer of woodland, idle land, or agricultural land at least 250 feet in width.		a. > 70% b. from 30% - 70% c. < 30%	1.0 0.5 (0.1)
3.6. Proximity to perennial stream or freshwater wetlands.	2 PERENNIAL STREAMS ON NORTH SIDE OF COVE ~½ mi AWAY FROM PROJECT	a. marsh system connected to a perennial stream or freshwater wetland b. marsh not connected to a perennial stream but within ¼ mile of freshwater wetland c. marsh not connected to a perennial stream and not within ¼ mile of freshwater wetland	1.0 (0.5) 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 3 = Average of Column D = 2.33/6 = 0.39

Marsh System: _____

Assessment 3 *(Page 2 of 2)*

Wildlife, Finfish & Shellfish Habitat

Diversity of Habitat Types (Check presence or estimate percent)

high marsh		pannes	
low marsh		freshwater source	
open water		tidal creek	
tidal flats	✓	natural transition zone	
upland islands		freshwater tidal marsh	

Comments:

NEARLY ENTIRE COVE IS A TIDAL FLAT

Presence of submerged vegetation

Observations and comments:

ALGAE ALONG MARGINS AND ATTACHED TO STRAY STONES ON FLAT

Wildlife Observations:

BACK COVE IS A CANDIDATE SIGNIFICANT HABITAT FOR COASTAL WADING BIRDS AND WATERFOWL. SEE REPORT

Marsh System: _____

Assessment 4 *(Page 1 of 2)*
Recreational and Commercial Potential

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

A **Evaluation Questions**	B **Dates, Calculations, and Notes**	C **Evaluation Criteria**	D **Functional Index (FI)**
Questions that may require field observation:			
4.1. Presence of shellfish beds.	COVE CONTAINS COMBINED SEWER OVERFLOWS	a. shellfish beds present and all are open for harvest	1.0
		b. shellfish beds present but some currently closed to harvest	0.5
		c. no shellfish beds present or all currently closed	(0.1)
4.2. Presence of marine worms.		a. marsh system used by worm diggers	1.0
		b. marsh system not used by worm diggers ASSUMED	(0.1)
4.3. Waterfowl hunting.		a. marsh system accessible and currently used by hunters	1.0
		b. marsh system accessible, but no evidence of use	0.5
		c. marsh system not easily accessible, **or** hunting not permitted	(0.1)
4.4. Opportunities for wildlife observation.		Record the AFI for Assessment 3	0,39
4.5. Canoe, kayak or other non-motorized boat passage in or adjacent to the marsh system.		a. watercourses within marsh system at least 10 feet wide and 3 feet deep at high tide and free of obstructions, **or** marsh system adjacent to canoeable waterway	(1.0)
		b. watercourses within marsh system contain some exposed obstructions and/or shallow areas, **and** marsh system not adjacent to canoeable waterway	0.5
		c. watercourses too small and shallow or non-existent, has obstructions, **and** marsh system not adjacent to canoeable waterway	0.1

Continued on next page . . .

Marsh System: _____

Assessment 5
Aesthetic Quality

FIELD VISIT:
Date: 4/25/99 Time: _____
Tide: _____
Weather: _____
Observers: LC

VIEWING LOCATION(S): _____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
5.1. Ecological Integrity of the marsh system.		Record the AFI for Assessment 1	.53
5.2. Opportunities for wildlife observation.		Record the AFI for Assessment 3	.39
Questions that may require field observation:			
5.3. Dominant visible land use surrounding the marsh system from primary viewing location(s).		a. woodland, agricultural land, or similar open space b. rural residential c. commercial, industrial, transportation use, or high density residential use dominates the visible area	1.0 0.5 (0.1)
5.4. General appearance of the marsh system from primary viewing location(s).	DETRACTORS PRESENT, BUT IN CONTEXT OF SURROUNDING URBAN ENVIRONMENT VISUAL QUALITY IS GOOD.	a. undisturbed and natural with no visual detractors present b. limited disturbance; minor visual detractors present c. severe detractors present	1.0 (0.5) 0.1
5.5. Noise level at the primary viewing location(s).		a. low: natural sounds predominate b. moderate: some traffic or other noise audible c. loud: continuous traffic, industrial or other noise	1.0 0.5 (0.1)
5.6. Odors present at the primary viewing location(s).		a. natural odors only b. unnatural odors present at certain times ASSOCIATED - EXHAUST, SEWAGE? c. unnatural, unpleasant odors distinct and fairly continuous	1.0 (0.5) 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 5 = Average of Column D = 2.12/6 = 0.35

Marsh System: _____

Assessment 6
Educational Potential

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
6.1. Opportunity for wildlife observation.		Record the AFI from Assessment 3	0.39
6.2. Presence of visitors center, maintained trails or boardwalks		Record the FI from Question 4.9	0.5
6.3. Diversity of tidal habitats at potential educational site.		Record the FI from Question 3.3	0.1
Questions that may require field observation:			
6.4. Walking time from potential educational site to off-road parking for school buses or other vehicles (carpools, vans, etc.).		a. within 10-minute walk b. within 20-minute walk c. parking not available within 20-minute walk	1.0 0.5 0.1
6.5. Student safety.	SEWAGE OVERFLOW LIMITS "HANDS-ON" LEARNING	a. no known safety hazards b. safety hazards present but easily avoidable c. safety hazards present and not easily avoidable	1.0 0.5 0.1 → 0.3
6.6. Access for disabled persons at potential educational site.		a. specially constructed disabled access b. access via existing roads and trails c. no disabled access	1.0 0.5 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 6 = Average of Column D = 2.79/6 = 0.47

Marsh System: _____ Compiled by: _____

Date: _____

Assessment 7
Noteworthiness

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
7.1. Marsh system is habitat for a state or federally listed threatened or endangered species.		a. marsh system is currently habitat for a threatened or endangered species b. marsh system is not currently habitat for threatened or endangered species	1.0 0.1
7.2. Marsh system has significance because it has biological, geological or other features which are locally rare or unique, or it contains an exemplary community.	CANDIDATE SIGNIFICANT HABITAT FOR COASTAL WADING BIRDS & WATERFOWL	a. marsh system contains feature(s) of significance b. marsh system does not contain feature of significance	1.0 0.1
7.3. Marsh system is known to contain an important historical or archeological site.		a. marsh system is a known site of historical or archaeological significance b. no known historical or archeological significance	1.0 0.1
7.4. ~~Tidal marshes~~ in a developed setting.		a. FI of Question 2.1 = 0.1 b. FI of Question 2.1 = 1.0 or 0.5	1.0 0.1
7.5. Marsh system used as long-term research site.		a. marsh system is a site for long-term research b. marsh system is not a site for long-term research	1.0 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 7 = Average of Column D = 2.3/5 = 0.46

Marsh System: TIDAL FLAT

Compiled by: LL

Date:

MARSH SYSTEM SUMMARY DATA SHEET

This worksheet is designed to help you calculate the final scores of each marsh system using AFIs from all seven assessments and to record features of particular interest.

ASSESSMENT 1 SUMMARY TABLE

	EU 1	EU 2	EU 3	EU 4	EU 5	EU 6	EU 7	EU 8
1. AFI of Evaluation Unit (from Assessment 1 data)								
2. Acres in Evaluation Unit								
3. Total Acreage of Marsh System (Sum of Line 2) : _____								
4. AFI of EU x Acres in EU / Total Acres of Marsh								
5. Marsh System AFI for Assessment 1 = Sum of Line 4 = _____								

MARSH SYSTEM SUMMARY TABLE

Assessment	Average Functional Index (AFI)
1. Ecological Integrity of the Marsh System	0.53 DOES NOT REFLECT SEWAGE
2. Ecological Integrity of the Zone of Influence	0.10
3. Wildlife, Finfish & Shellfish Habitat	0.39 DOES NOT REFLECT SHOREBIRD HABITAT
4. Recreational and Commercial Potential	0.42
5. Aesthetic Quality	0.35
6. Educational Potential	0.47
7. Noteworthiness	0.46

Best education site(s) in marsh system: VICINITY OF PROJECT

Best recreation site(s) in marsh system: "

Public access points in or adjacent to the marsh system: "

Noteworthy feature(s): CANDIDATE SIGNIFICANT HABITAT FOR COASTAL WADING BIRDS & WATERFOWL

APPENDIX II

TIDAL MARSH EVALUATION FORMS

WHERE APPROPRIATE, EVALUATION IS FOCUSED ON DIRECT VICINITY OF BOARDWALK.

Marsh System: BACK COVE HIGH MARSH **Evaluation Unit** BOARDWALK ~~of~~ _____

Assessment 1 *(Page 1 of 3)*
Ecological Integrity of the Marsh System

FIELD VISIT:
Date: 4/25/99 Time: ~3:00 PM
Tide: COMING IN
Weather: SUNNY
Observers: LC

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Note: Results should be based on evaluation units and placed in the summary table on Page D-14.			
Questions that may require field observation:			
1.1. Number of tidal restrictions.		a. no tidal restrictions b. one tidal restriction c. more than one tidal restriction	1.0 0.5 (0.1)
1.2. Type of tidal restriction.		a. headland to headland bridge or no restriction b. free flow over marsh surface obstructed by road but bridge or culverts not restricting flow through tidal creek c. tidal gate, culvert, road or bridge on the marsh surface that significantly restricts tidal flow including through creeks and channels	(1.0) 0.5 0.1 — 0.75
1.3. Fill on marsh surface (spoils, crossroads, etc.).	MARSH IS DEVELOPING ON FILL. (ALSO NOTE PRESENCE OF MUCH TRASH)	a. < 5% of EU filled b. 5% - 15% filled c. > 15% filled	1.0 0.5 (0.1)
1.4. Ditching on surface of the EU.		a. no ditching within EU b. ditches affect ≤20% of EU c. ditches affect > 20% of EU	(1.0) 0.5 0.1
1.5. Alteration of the natural marsh plant community: dominance of invasive species within EU		a. < 5% of EU dominated by invasive species b. 5% - 20% c. > 20%	(1.0) 0.5 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 1 = Average of Column D = 3.35/5 = .59

Marsh System _____ **Evaluation Unit** _____ **of** _____

Assessment 1 *(Page 2 of 3)*

Ecological Integrity of the Marsh System

Narrative Description of Restoration Potential

1. Describe the exact locations and types of restrictions affecting the evaluation unit. Include a description of the extent of the flow that is restricted (e.g., culvert restricting flow at mid-tide).

TUKEY BRIDGE - SOME FILL WAS PLACED IN COVE AT BRIDGE, BUT DOES NOT APPEAR TO INTERFERE WITH COMPLETE TIDAL EXCHANGE.

ALSO RAILROAD CROSSING EAST OF TUKEY BRIDGE

THERE DID NOT APPEAR TO BE A LAG BETWEEN THE TIME OF LOW TIDE FOR CASCO BAY AS INDICATED ON TIDAL CHARTS, AND THE LOW TIDE IN BACK COVE, INDICATING A LACK OF SIGNIFICANT INTERFERENCE OF THE RESTRICTIONS.

2. Describe the area of the evaluation unit that was filled including current uses, approximate acreage, and plant community.

ENTIRE TIDAL MARSH IS DEVELOPING ON FILL. UPSLOPE OF MARSH IS APPROXIMATELY 120' OF LAWN AND A SIDEWALK TO THE BASE OF THE FILL FOR I-295.

DOWNSLOPE OF MARSH IS A STEEP BANK WITH RIP-RAP LEADING DOWN TO TIDAL FLAT.

FILL MAY HAVE BEEN PLACED DURING CONSTRUCTION OF I-295.

Marsh System: _____ **Evaluation Unit** _____ **of** _____

Assessment 1 *(Page 3 of 3)*

Ecological Integrity of the Marsh System

Narrative Description of Restoration Potential *(Continued)*

3. Describe the exact location and arrangement of ditching relative to the tidal flow and apparent impact (area, affect on evaluation unit hydrology). Supplement with sketch map or photos.

N/A

4. Describe the area of the evaluation unit with invasive plant species by estimating the size of the area, listing the species present and the relative proportion of each species.

NONE

Marsh System: _____

Assessment 2
Ecological Integrity of the Zone of Influence

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may require field observation:			
2.1. Dominant land use in the ½ mile Zone of Influence surrounding the marsh system.		a. forests, fields, dune/beach, freshwater wetlands, open water or similar open space b. agricultural or rural residential (ave. lot size > 2 acres) c. commercial, industrial, high density residential or heavily used highways	1.0 0.5 0.1
2.2. Ratio of the number of buildings within the marsh system **and/or** within the 250 foot Shoreland Zone to the total area of marsh system.	HIGHWAY. EQUIVALENT →	a. < 0.1 building/acre b. from 0.1 - 0.5 building/acre c. > 0.5 building/acre	0.1 0.5 0.1
2.3. Percent of the marsh system/upland boundary that has a buffer of woodland or idle land at least 250 feet in width.		a. > 70% b. from 30% - 70% c. < 30%	1.0 0.5 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 2 = Average of Column D = 0.3/3 = 0.1

Marsh System: _____

Assessment 3 *(Page 1 of 2)*
Wildlife, Finfish & Shellfish Habitat

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
3.1. Acreage of the marsh system.	(47 AC)	a. > 100 acres b. from 10 - 100 acres c. < 10 acres	1.0 0.5 (0.1)
3.2. Ecological Integrity of the marsh system.		Record the Marsh System AFI for Assessment 1	0.59
Questions that may require field observation:			
3.3. Diversity of habitat types. See Page 2 of Assessment 3.		a. 8 - 10 types present b. 4 - 7 types present c. < 4 types present	1.0 0.5 (0.1)
3.4. Submerged (aquatic bed) vegetation expressed as percent of submerged habitat.		a. >25% b. from 5% - 25% c. < 5%	1.0 0.5 (0.1)
3.5. Percent of marsh system edge bordered by a buffer of woodland, idle land, or agricultural land at least 250 feet in width.		a. > 70% b. from 30% - 70% c. < 30%	1.0 0.5 (0.1)
3.6. Proximity to perennial stream or freshwater wetlands.		a. marsh system connected to a perennial stream or freshwater wetland b. marsh not connected to a perennial stream but within ¼ mile of freshwater wetland c. marsh not connected to a perennial stream and not within ¼ mile of freshwater wetland	1.0 0.5 (0.1)

AVERAGE FUNCTIONAL INDEX for Assessment 3 = Average of Column D = 1.09/6 = 0.18

Marsh System: _____

Assessment 3 *(Page 2 of 2)*

Wildlife, Finfish & Shellfish Habitat

Diversity of Habitat Types (Check presence or estimate percent)

high marsh	✓	pannes	✓
low marsh	(RIP-RAP)	freshwater source	
open water		tidal creek	
tidal flats	OUTSIDE OF E.U.	natural transition zone	
upland islands		freshwater tidal marsh	

Comments:

THE ELEVATION OF FILL WAS PLACED BETWEEN MEAN HIGH TIDE AND EXTREME TIDES IN THE MARSH AREA. 2 SMALL PANNES. THERE IS A NARROW BAND OF POORLY DRAINED FILL ABOVE THE HIGHEST DRIFT LINE THAT DOES NOT SUPPORT SALT TOLERANT SPECIES. THIS IS MOWED INFREQUENTLY. A "FRESHWATER WETLAND"

Presence of submerged vegetation

Observations and comments:

PANNES NOT OBSERVED IN DETAIL

Wildlife Observations:

NONE OBSERVED. THIS IS PART OF AN AREA THAT IS A CANDIDATE SIGNIFICANT HABITAT FOR COASTAL WADING BIRDS AND WATERFOWL. SEE REPORT.

Marsh System: _____

Assessment 4 *(Page 1 of 2)* *Recreational and Commercial Potential*

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may require field observation:			
4.1. Presence of shellfish beds.		a. shellfish beds present and all are open for harvest	1.0
		b. shellfish beds present but some currently closed to harvest	0.5
		c. no shellfish beds present or all currently closed	(0.1)
4.2. Presence of marine worms.		a. marsh system used by worm diggers	1.0
		b. marsh system not used by worm diggers	(0.1)
4.3. Waterfowl hunting.		a. marsh system accessible and currently used by hunters	1.0
		b. marsh system accessible, but no evidence of use	0.5
		c. marsh system not easily accessible, **or** hunting not permitted	(0.1)
4.4. Opportunities for wildlife observation.		Record the AFI for Assessment 3	0.18
4.5. Canoe, kayak or other non-motorized boat passage in or adjacent to the marsh system.		a. watercourses ~~within~~ adjacent marsh system at least 10 feet wide and 3 feet deep at high tide and free of obstructions, **or** marsh system adjacent to canoeable waterway	(1.0)
		b. watercourses within marsh system contain some exposed obstructions and/or shallow areas, **and** marsh system not adjacent to canoeable waterway	0.5
		c. watercourses too small and shallow or non-existent, has obstructions, **and** marsh system not adjacent to canoeable waterway	0.1

Continued on next page . . .

Marsh System: _____

Assessment 4 *(Page 2 of 2)*
Recreational & Commercial Potential

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
4.6. Canoe and boat access.		a. access point within ½ mile of marsh system by non-motorized boat	1.0
		b. access point between ½ - 1 mile of marsh system by non-motorized boat	0.5
	NONE NOTED	c. no access point or access greater than 1 mile from marsh system by non-motorized boat	(0.1)
4.7. Off-road public parking at or near the potential recreation site.		a. marsh system within 10-minute walk of suitable parking area	(1.0)
		b. suitable parking more than 10-minute walk but less than 20-minute walk away	0.5
		c. parking not available within 20-minute walk of marsh system	0.1
4.8. Access for disabled persons.		a. specially constructed disabled access	1.0
	SIDEWALK 120' FROM MARSH	b. access via existing roads and trails	(0.5)
		c. no disabled access	0.1
4.9. Presence of visitors center, maintained trails, or boardwalks.		a. visitors center and maintained trails, and/or boardwalks present	1.0
		b. maintained trails and/or boardwalks present, but no visitors center	(0.5)
		c. neither a visitors center nor trails or boardwalks present	0.1

AVERAGE FUNCTIONAL INDEX for Assessment 4 = Average of Column D = 3.5/9 0.40

Marsh System: _____

Assessment 5
Aesthetic Quality

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

VIEWING LOCATION(S): _____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
5.1. Ecological Integrity of the marsh system.		Record the AFI for Assessment 1	0.59
5.2. Opportunities for wildlife observation.		Record the AFI for Assessment 3	0.18
Questions that may require field observation:			
5.3. Dominant visible land use <u>surrounding</u> the marsh system from primary viewing location(s).		a. woodland, agricultural land, or similar open space b. rural residential c. commercial, industrial, transportation use, or high density residential use dominates the visible area	1.0 0.5 0.1
5.4. General appearance of <u>the marsh system</u> from primary viewing location(s).	DETRACTORS PRESENT, BUT IN CONTEXT OF URBAN SETTING, QUALITY IS GOOD	a. undisturbed and natural with no visual detractors present b. limited disturbance; minor visual detractors present c. severe detractors present	1.0 0.5 0.1
5.5. Noise level at the primary viewing location(s).		a. low: natural sounds predominate b. moderate: some traffic or other noise audible c. loud: continuous traffic, industrial or other noise	1.0 0.5 0.1
5.6. Odors present at the primary viewing location(s).		a. natural odors only b. unnatural odors present at certain times c. unnatural, unpleasant odors distinct and fairly continuous	1.0 0.5 0.1

ASSUMED - EXHAUST, SEWAGE?

AVERAGE FUNCTIONAL INDEX for Assessment 5 = Average of Column D = 1.97/6 = 0.33

Marsh System: _____

Assessment 6
Educational Potential

FIELD VISIT:
Date:_____ Time:_____
Tide:_____
Weather:_____
Observers:_____

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
6.1. Opportunity for wildlife observation.		Record the AFI from Assessment 3	0.18
6.2. Presence of visitors center, maintained trails or boardwalks		Record the FI from Question 4.9	0.5
6.3. Diversity of tidal habitats at potential educational site.		Record the FI from Question 3.3	0.1
Questions that may require field observation:			
6.4. Walking time from potential educational site to off-road parking for school buses or other vehicles (carpools, vans, etc.).		a. within 10-minute walk b. within 20-minute walk c. parking not available within 20-minute walk	(1.0) 0.5 0.1
6.5. Student safety.	NAILS IN DRIFT WOOD, NEARBY SEWAGE OVERFLOW	a. no known safety hazards b. safety hazards present but easily avoidable c. safety hazards present and not easily avoidable	1.0 (0.5) (0.1) 0.3
6.6. Access for disabled persons at potential educational site.	CAN APPROACH MARSH ON SIDEWALK, BUT IS STILL SOME DISTANCE (120') AWAY. MAY CROSS LAWN WITHOUT MUCH EFFORT(?)	a. specially constructed disabled access b. access via existing roads and trails c. no disabled access	1.0 (0.5) (0.1) 0.3

AVERAGE FUNCTIONAL INDEX for Assessment 6 = Average of Column D = 2.4/6 = 0.40

Marsh System: _____ Compiled by: _____

Date: _____

Assessment 7
Noteworthiness

A Evaluation Questions	B Dates, Calculations, and Notes	C Evaluation Criteria	D Functional Index (FI)
Questions that may not require field observation:			
7.1. Marsh system is habitat for a state or federally listed threatened or endangered species.	NOT KNOWN TO BE - SEE REPORT	a. marsh system is currently habitat for a threatened or endangered species b. marsh system is not currently habitat for threatened or endangered species	1.0 0.1
7.2. Marsh system has significance because it has biological, geological or other features which are locally rare or unique, or it contains an exemplary community.	CANDIDATE SIGNIFICANT HABITAT FOR COASTAL WADING BIRDS & WATERFOWL NO SUEDA CALCEOLIFORMIS NOTED	a. marsh system contains feature(s) of significance b. marsh system does not contain feature of significance	1.0 0.1
7.3. Marsh system is known to contain an important historical or archeological site.		a. marsh system is a known site of historical or archaeological significance b. no known historical or archeological significance	1.0 0.1
7.4. Tidal marshes in a developed setting.		a. FI of Question 2.1 = 0.1 b. FI of Question 2.1 = 1.0 or 0.5	1.0 0.1
7.5. Marsh system used as long-term research site.		a. marsh system is a site for long-term research b. marsh system is not a site for long-term research	1.0 0.1

AVERAGE FUNCTIONAL INDEX for Assessment 7 = Average of Column D = 2.3/5 = 0.46

Marsh System: TIDAL MARSH

Compiled by: _____

Date: _____

MARSH SYSTEM SUMMARY DATA SHEET

This worksheet is designed to help you calculate the final scores of each marsh system using AFIs from all seven assessments and to record features of particular interest.

ASSESSMENT 1 SUMMARY TABLE

	EU 1	EU 2	EU 3	EU 4	EU 5	EU 6	EU 7	EU 8
1. AFI of Evaluation Unit (from Assessment 1 data)								
2. Acres in Evaluation Unit								
3. Total Acreage of Marsh System (Sum of Line 2) : _____								
4. AFI of EU x Acres in EU / Total Acres of Marsh								
5. Marsh System AFI for Assessment 1 = Sum of Line 4 = _____								

MARSH SYSTEM SUMMARY TABLE

Assessment	Average Functional Index (AFI)
1. Ecological Integrity of the Marsh System	0.59
2. Ecological Integrity of the Zone of Influence	0.10
3. Wildlife, Finfish & Shellfish Habitat	0.18 (DOES NOT REFLECT 3RD HABITAT)
4. Recreational and Commercial Potential	0.40
5. Aesthetic Quality	0.33
6. Educational Potential	0.40
7. Noteworthiness	0.46

Best education site(s) in marsh system: VICINITY OF PROJECT

Best recreation site(s) in marsh system: VICINITY OF PROJECT (WILDLIFE VIEWING)

Public access points in or adjacent to the marsh system: EASILY ACCESSIBLE FROM SIDEWALK & LAWN

Noteworthy feature(s): CANDIDATE SIGNIFICANT HABITAT FOR COASTAL WADING BIRDS &

APPENDIX III

RESOURCE AGENCY LETTERS

IFW

IFW 358 Shaker Rd. Gray

Phone: 657-2345
FAX: 657-2980
email:

April 23, 1999

Leonard A. Lord
538 Central Avenue, Suite B
Dover, NH 03820

Re: Proposed Project, Back Cove, Portland

Dear Mr. Lord:

Enclosed please find a habitat map and supplemental data for the Back Cove area. It is a Candidate Significant Habitat under NRPA. As you can see, it is used by a variety of waterfowl, shorebirds and other birds throughout the year. While I haven't seen the plans for this project, there is a good possibility that a boardwalk extending into tidal areas could have a negative impact on bird use of the intertidal areas.

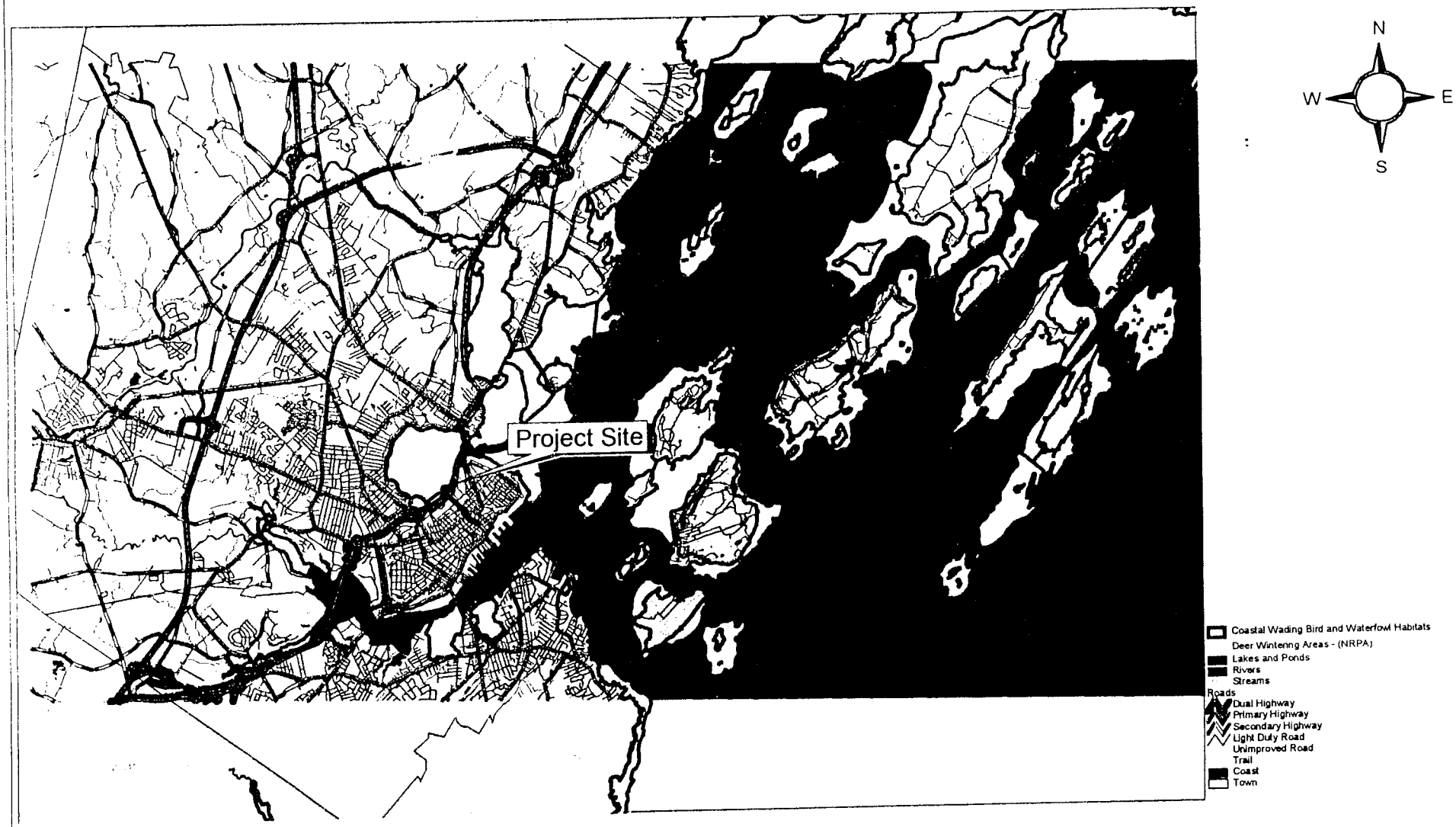
Sincerely

Warren Eldridge
Asst Regional Wildlife Biologist

IF&W Report - Back Cove - Boardwalk

Request for Information - Leonard A. Lord

04/23/1999



Department of Inland Fisheries and Wildlife

(207) 287-5252

1 0 1 2 Miles

Biologist Notes

See Map and Key

Report15

Habitats that Intersect with IF&W Consultation Area:

Shorebird Roosting Area, site number:
BACK COVE, 69

Supplemental Information:
Roosting Site: 69 BACK COVE

Is an area of Shorebird Management Concern (MDIFW)

July-October (1993-1994,1997-1998) - Species List:	mean
Black-bellied Plover:	20.3
Least Sandpiper:	0.6
Lesser Golden-plover:	0.1
Semipalmated Plover:	2.0
Semipalmated Sandpiper:	6.8
Unidentified & Peeps:	3.8
Yellowlegs Species:	1.7

Shorebird Feeding Area, site number:
BACK COVE, 69

Supplemental Information:
Feeding Site: 69 BACK COVE

Is an area of Shorebird Management Concern (MDIFW)

July-October (1993-1994,1997-1998) - Species List:	mean
Black-bellied Plover:	15.4
Dowitcher Species:	22.6
Dunlin:	0.1
Hudsonian Godwit:	0.1
Semipalmated Plover:	13.1
Semipalmated Sandpiper:	147.5
Unidentified & Peeps:	89.9
Whimbrel:	0.1
Yellowlegs Species:	17.6

Coastal Wading Bird and Waterfowl Habitat ID number:
C011

Supplemental Information:
CWCA: C011
Area (hectares): 201.50
Intertidal (hectares): 156.07 (77.45%)

Candidate Significant Habitat under the NRPA

Winter (12/1-2/15) Species List (mean,max)
American Black Duck: 50.0, 250
Oldsquaw: 9.0, 25
Goldeneye/Bufflehead: 37.0, 135
Herring Gull: 10.0, 30

Spring (2/16-4/30) Species List (mean,max)
American Black Duck: 113.0, 155
Scaup: .7, 2
Goldeneye/Bufflehead: 68.0, 96
Merganser: 4.0, 12
Unidentified Gull: 41.7, 125
Herring Gull: 80.0, 185
Black-backed Gull: 2.0, 6
Unidentified Shorebird: .3, 1

Nesting (5/1-6/30) Species List (mean,max)

Post-Nesting (7/1-8/31) Species List (mean,max)
Double-crested Cormorant: 10.5, 30
American Black Duck: 7.5, 12
Unidentified Gull: 50.0, 100
Herring Gull: 18.8, 75
Unidentified Tern: 1.0, 2
Great Blue Heron: .3, 1
Unidentified Shorebird: 29.3, 114

Fall (9/1-11/30) Species List (mean,max)
Double-crested Cormorant: 1.3, 5
American Black Duck: 64.0, 165
Oldsquaw: 7.5, 30
Unidentified Gull: 48.8, 100
Herring Gull: 10.0, 40
Unidentified Shorebird: 12.5, 50

STATE OF MAINE
DEPARTMENT OF CONSERVATION
159 HOSPITAL STREET
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0093

ANGUS S. KING, JR.
GOVERNOR

RONALD B. LOVAGLIO
COMMISSIONER

April 21, 1999

Leonard Lord
Carex Ecosystem Sciences
538 Central Ave., Suite B
Dover, NH 03820

Re: Rare and exemplary botanical features, Back Cove Boardwalk, Portland

Dear Mr. Lord:

I have searched the Natural Areas Division's Biological and Conservation Data System files in response to your request of April 13, 1999 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in the town of Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur within a four mile radius of the project site. The list may include information on

NATURAL RESOURCES INFORMATION AND MAPPING CENTER
ROBERT G. MARVINNEY, DIRECTOR AND STATE GEOLOGIST

PHONE: (207) 287-8044
FAX: (207) 287-8040
TTY: (207) 287-2213

features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Division cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Division is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Division welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Division are to be published in any form, the Division should be informed at the outset and credited as the source.

The Natural Areas Division has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $75.00 for our services.

Thank you for using the Natural Areas Division in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Division or about rare or unique botanical features on this site.

Sincerely,

Emily M. Chase

Emily m. Chase
Information Specialist

Enclosures

Rare or Exemplary Botanical Features in the Project Vicinity

Documented within a four mile radius of the proposed Back Cove boardwalk, Portland.

Scientific Name Common Name	Last Seen	State Rarity	Global Rarity	State Legal Status	Federal Legal Status	Habitat Description
ADLUMIA FUNGOSA ALLEGHENY VINE	1860	S1	G4	E		Wet or recently burned woods, rocky wooded slopes.
ALLIUM CANADENSE WILD GARLIC	1918	S2	G5			Alluvial woods, thickets, and meadows.
ALLIUM TRICOCCUM WILD LEEK	1978	S2	G5			Rich hardwood forests, usually alluvial.
CAREX POLYMORPHA VARIABLE SEDGE	1911	S1	G3	T		In Maine, habitat is between downslope seeps (with horsetails and wetland sedges) and upslope mixed oak/huckleberry forest. Preferred soil type is Deerfield Loamy Sand. All Maine occurrences are from coastal towns where climate is moderated by the ocean.
ELYMUS HYSTRIX BOTTLEBRUSH GRASS	1905	S2	G5			Rich, rocky, or alluvial deciduous forests.
LONICERA DIOICA MOUNTAIN HONEYSUCKLE	1981	S1	G5	E		Rocky banks, dry woods and thickets.
PLATANTHERA FLAVA PALE GREEN ORCHIS	1907	S2	G4T4Q			Swampy woods, bottomlands, swales, and wet shores.
POTAMOGETON VASEYI VASEY'S PONDWEED	1901	S1	G4	E		Quiet muddy or calcareous waters.
SUAEDA CALCEOLIFORMIS AMERICAN SEA-BLITE	1932	S1	G5			Rocky or gravelly saltmarshes and sea-strands.

Rare or Exemplary Botanical Features in the Project Vicinity

Documented within a four mile radius of the proposed Back Cove boardwalk, Portland.

Scientific Name Common Name	Last Seen	State Rarity	Global Rarity	State Legal Status	Federal Legal Status	Habitat Description
VIOLA PALMATA PALMATE-LEAVED VIOLET	1908	SH	G5			Rich deciduous woods, shaded calcareous ledges, etc.
WOLFFIA COLUMBIANA COLUMBIA WATER-MEAL	1979	S2	G5	T		Ponds, and still waters.

Exhibit 14 Plan of Proposed Compensation

Although there is no plan for direct compensation of the coastal wetland area impacted by the proposed Pedestrian Overlook Pier and Marshland Boardwalk, this application does demonstrate extensive efforts to minimize the impact by placement of structures on pile and stub wall foundations.

Underdrains to the soccer field have been connected to the existing Outfall structure to limit the short-term and log-term impacts that would occur with the placement of an additional Outfall. The parking area will be curbed and runoff will be directed through a storm drain system that culminates in a *Vortech Stormwater Treatment Tank* that separates impurities prior to discharge into Back Cove.

Enhancements to the coastal wetland environment will be realized through a partnership with the Friends of Casco Bay to establish vegetative buffers along the Cove's edge. With the help of grant funding they have secured, a native plant buffer between the soccer field/parking lot area and the Back Cove will be undertaken. The Parks and Recreation Department will provide educational signage specific to the benefits of vegetative buffers to Back Cove and all our natural resources. The result will be an increased awareness and stewardship of the resource that will benefit coastal wetlands beyond park boundaries.

LANDSCAPE IMPROVEMENTS

BACK COVE PARK

PORTLAND, MAINE

PROJECT DIRECTORY

OWNER:

CITY OF PORTLAND
CITY HALL
PORTLAND, MAINE 01010

DANA SOUZA, DIRECTOR OF PARKS AND RECREATION 207-756-8383

LANDSCAPE ARCHITECT:

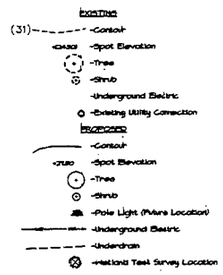
RICHARDSON & ASSOCIATES
P.O. BOX 426
SACO, MAINE 04072

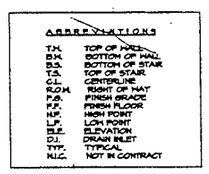
TODD RICHARDSON, PRINCIPAL 207-286-9291

GENERAL NOTES

1. Point of Beginning (POB) for all construction layout is CP of Plaza, as found along a line established through the center of the Shop n' Save entrance driveway median that accesses Preble Street Extension.
2. All topographic and existing base information provided by the City of Portland.
3. Bench mark for elevation is stone bound at ****.
4. All spot grades to preside over contours.
5. Limit of work shall be at property lines unless otherwise noted.
6. All written dimensions shall prevail; do not scale from drawings.
7. Distances shown on site plans are horizontal distances.
8. Layout staking to be approved by landscape architect.
9. Contractor shall verify all dimensions and grades on the ground and field verify location of existing plants and utilities as necessary. Any discrepancies shall be reported immediately to the landscape architect.
10. See construction details for dimensions of site elements.
11. All dimensions 90° unless otherwise noted.
12. All disturbed areas not covered by pavement or structures shall receive a minimum of 6" of loam and seeded as specified.
13. All areas not requiring grading shall be left undisturbed and existing plantings shall be preserved.
14. Utility information shown is approximate only. Prior to excavation, appropriate utility companies shall be contacted and Dig-Safe Center shall be called at 1-800-225-4977, at least 72 hours (3 working days) in advance.

LEGEND





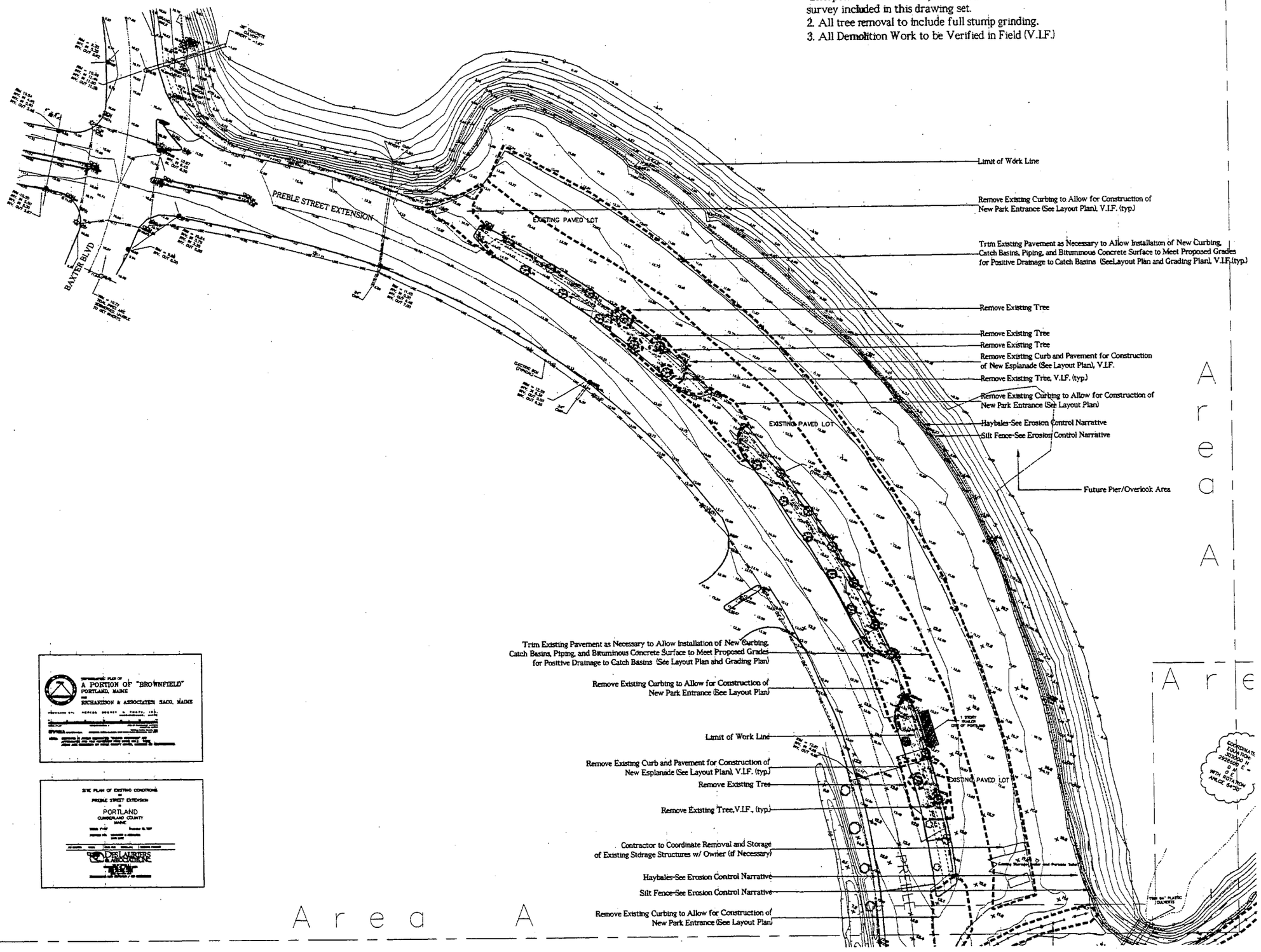
DATE / REVISIONS

12/15/98	WORK BEGINS
2/2/99	INTERIM DRAFT SET
2/9/99	65% ISSUE FOR PLANNING BOARD REVIEW
3/11/99	INTERIM ISSUE (75%)
3/22/99	INTERIM ISSUE (90%)
4/26/99	ISSUE FOR PLANNING BOARD REVIEW

SCHEDULE OF DRAWINGS

DRAWING NUMBER	DRAWING TITLE
	TITLE SHEET
L-001	EXISTING CONDITIONS/DEMO/EROSION CONTROL PLAN: AREA A
L-002	EXISTING CONDITIONS/DEMO/EROSION CONTROL PLAN: AREA B
L-003	EXISTING CONDITIONS/DEMO/EROSION CONTROL PLAN: AREA C
L-101	SITE / MASTER PLAN
L-200-A	LOCATION PLAN-PARKING LOT AREA
L-200-B	LOCATION PLAN-FIELDS AREA
L-201	LAYOUT / LIGHTING / PLANTING PLAN: QUADRANT 1
L-202	LAYOUT / LIGHTING / PLANTING PLAN: QUADRANT 2
L-203	LAYOUT / LIGHTING / PLANTING PLAN: QUADRANT 3
L-204	LAYOUT / LIGHTING / PLANTING PLAN: QUADRANT 4
L-205	LAYOUT / LIGHTING / PLANTING PLAN: QUADRANT 5
L-300-A	GRADING CONCEPT PLAN-PARKING LOT AREA
L-300-B	GRADING CONCEPT PLAN-MLT-PURPOSE/SOCCER FIELD AREA
L-301	GRADING / DRAINAGE PLAN: QUADRANT 1
L-302	GRADING / DRAINAGE PLAN: QUADRANT 2
L-303	GRADING / DRAINAGE PLAN: QUADRANT 3
L-304	GRADING / DRAINAGE PLAN: QUADRANT 4
L-305	GRADING / DRAINAGE PLAN: QUADRANT 5
L-401	PLAN DETAILS
L-402	PLAN DETAILS
L-501	SITE DETAILS
L-502	SITE DETAILS
L-503	SITE DETAILS

Notes:
1. All existing conditions information obtained from surveys performed by Aerial Survey Inc. (11/17/96) and Des Lauriers & Associates (12/12/97). Contours 1 through 5, inclusive, have been interpolated in the vicinity of the Baxter Boulevard/Preble Street Extension intersection. See survey included in this drawing set.
2. All tree removal to include full stump grinding.
3. All Demolition Work to be Verified in Field (V.I.F.)



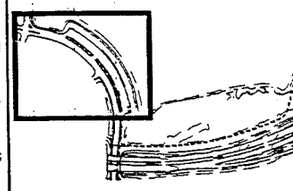
TOPOGRAPHIC PLAN OF
A PORTION OF "BROWNFIELD"
PORTLAND, MAINE
FOR
RICHARDSON & ASSOCIATES SACO, MAINE

SITE PLAN OF EXISTING CONDITIONS
FOR
PREBLE STREET EXTENSION
IN
PORTLAND
CUMBERLAND COUNTY
MAINE

DesLAURIERS & ASSOCIATES

LEGEND

KEY PLAN



No.	ISSUE	DA
	Issue for Planning Board Review	4/
	Interim Issue (90%)	3/
	Interim Issue (75%)	3/
	55% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	1/

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL. (207) 236-9291 FAX (207) 286-9650

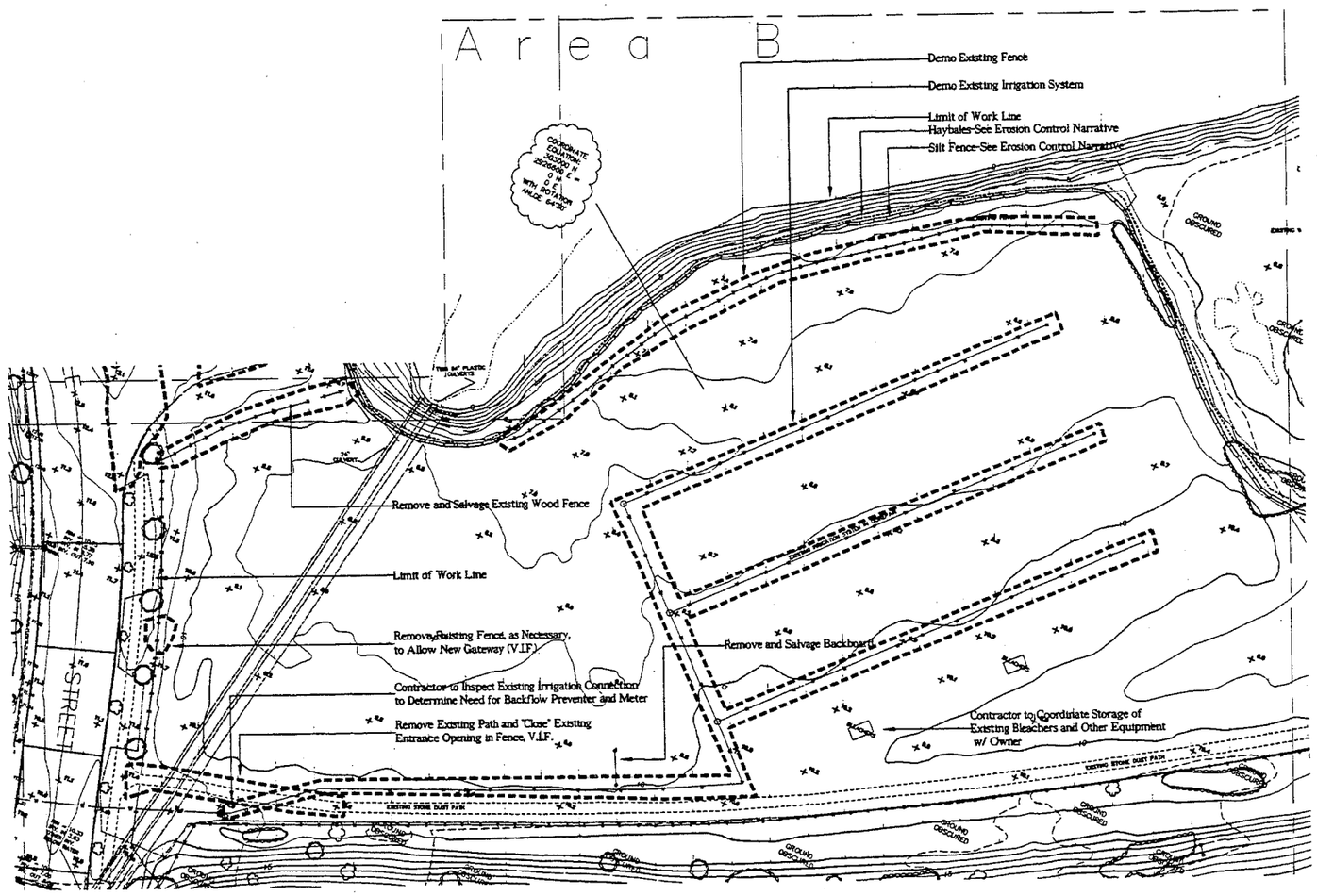
0' 20' 40' 80'

EXSTNG COND/DEMO/EROS CONTROL PLAN – AREA

Project No. 72-45	Date 12.15.9
CAD File No. xcond.dwg	Scale 1"=40'
Drawing No.	

L-001

Notes:
1. All existing conditions information obtained from surveys performed by Aerial Survey Inc. (11/17/96) and Des Lauriers & Associates (12/12/97). Contours 1 through 5, inclusive, have been interpolated in the vicinity of the Baxter Boulevard/Preble Street Extension intersection. See survey included in this drawing set.
2. All tree removal to include full stump grinding.
3. All demolition work to be Verified in Field (V.I.F.)



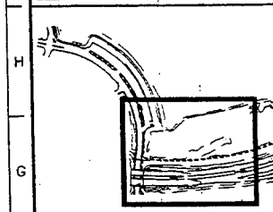
TOPOGRAPHIC PLAN OF
A PORTION OF "BROWNFIELD"
PORTLAND, MAINE
FOR
RICHARDSON & ASSOCIATES, SACO, MAINE

SITE PLAN OF EXISTING CONDITIONS
for
PREBLE STREET EXTENSION
in
PORTLAND
CUMBERLAND COUNTY
MAINE

DES LAURIERS & ASSOCIATES, INC.

LEGEND

KEY PLAN



No.	ISSUE	DATE
	Issue for Planning Board Review	4/2
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	85% Issue for Planning Board Review	2/5
	Interim Draft Set	2/1
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATES
LANDSCAPE ARCHITECTS
P.O. BOX 428, SACO, MAINE 04072
TEL (207) 286-9291 FAX (207) 286-9650

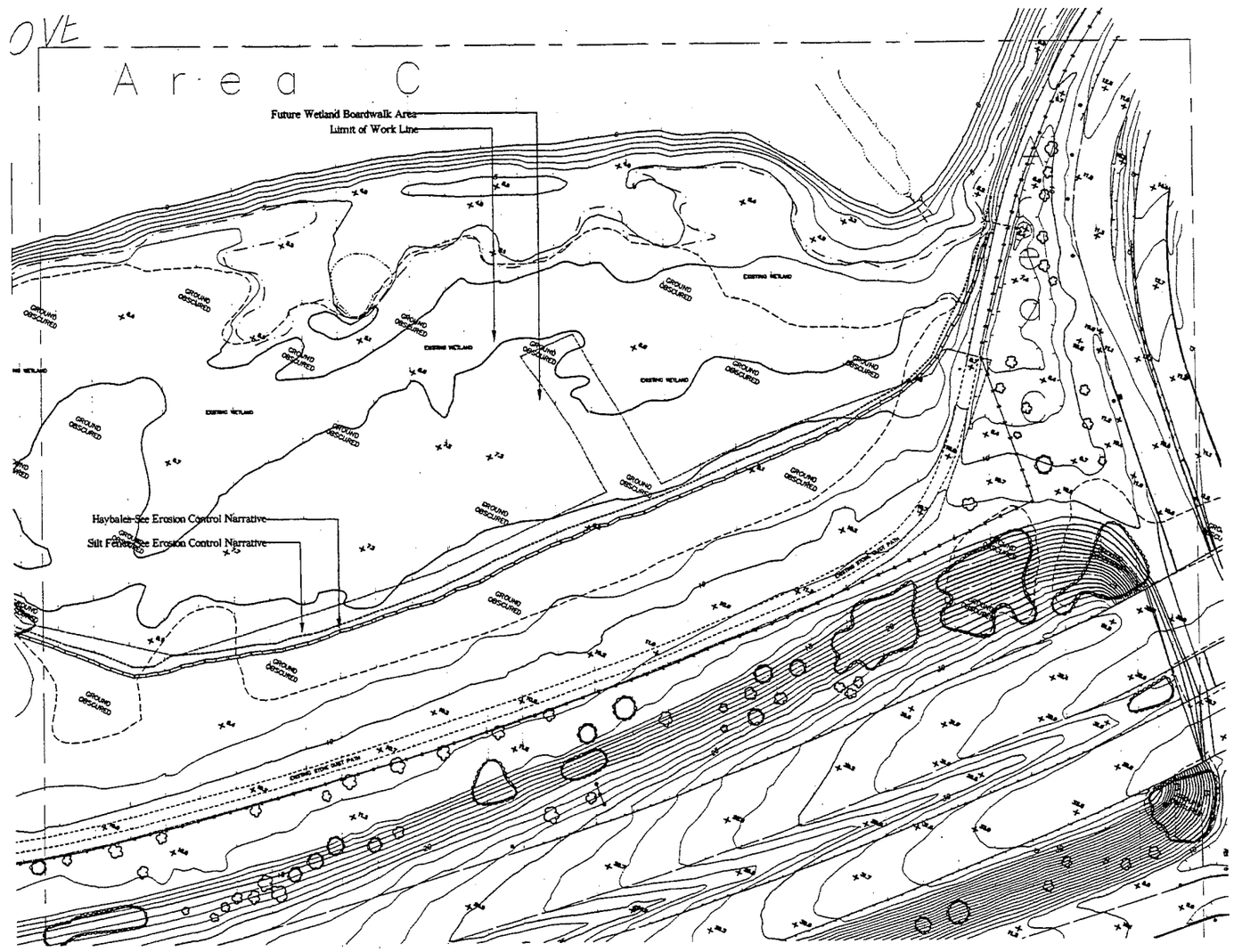
0' 20' 40' 80'

EXSTNG COND/DEMO/EROSION CONTROL PLAN - AREA B

Project No.	Date
12-45	12/15/98
CAD File No.	Scale
xcond.dwg	1"=40'-
Drawing No.	

L-002

Notes:
1. All existing conditions information obtained from surveys performed by Aerial Survey Inc. (11/17/96) and Des Lauriers & Associates (12/12/97). Contours 1 through 5, inclusive, have been interpolated in the vicinity of the Baxter Boulevard/Preble Street Extension intersection. See survey included in this drawing set.
2. All tree removal to include full stump grinding.
3. All demolition work to be Verified in Field (V.I.F.)



REFERENCE PLAN OF
A PORTION OF "BROWNFIELD"
PORTLAND, MAINE
for
RICHARDSON & ASSOCIATES SACO, MAINE

SITE PLAN OF EXISTING CONDITIONS
for
PREBLE STREET EXTENSION
in
PORTLAND
CUMBERLAND COUNTY
MAINE

DES LAURIERS & ASSOCIATES

LEGEND

KEY PLAN

No.	ISSUE	DATE
	Issue for Planning Board Review	4/
	Interim Issue (90%)	3/
	Interim Issue (75%)	3/
	65% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	1/

BACK COVE PARK
PORTLAND, MAINE

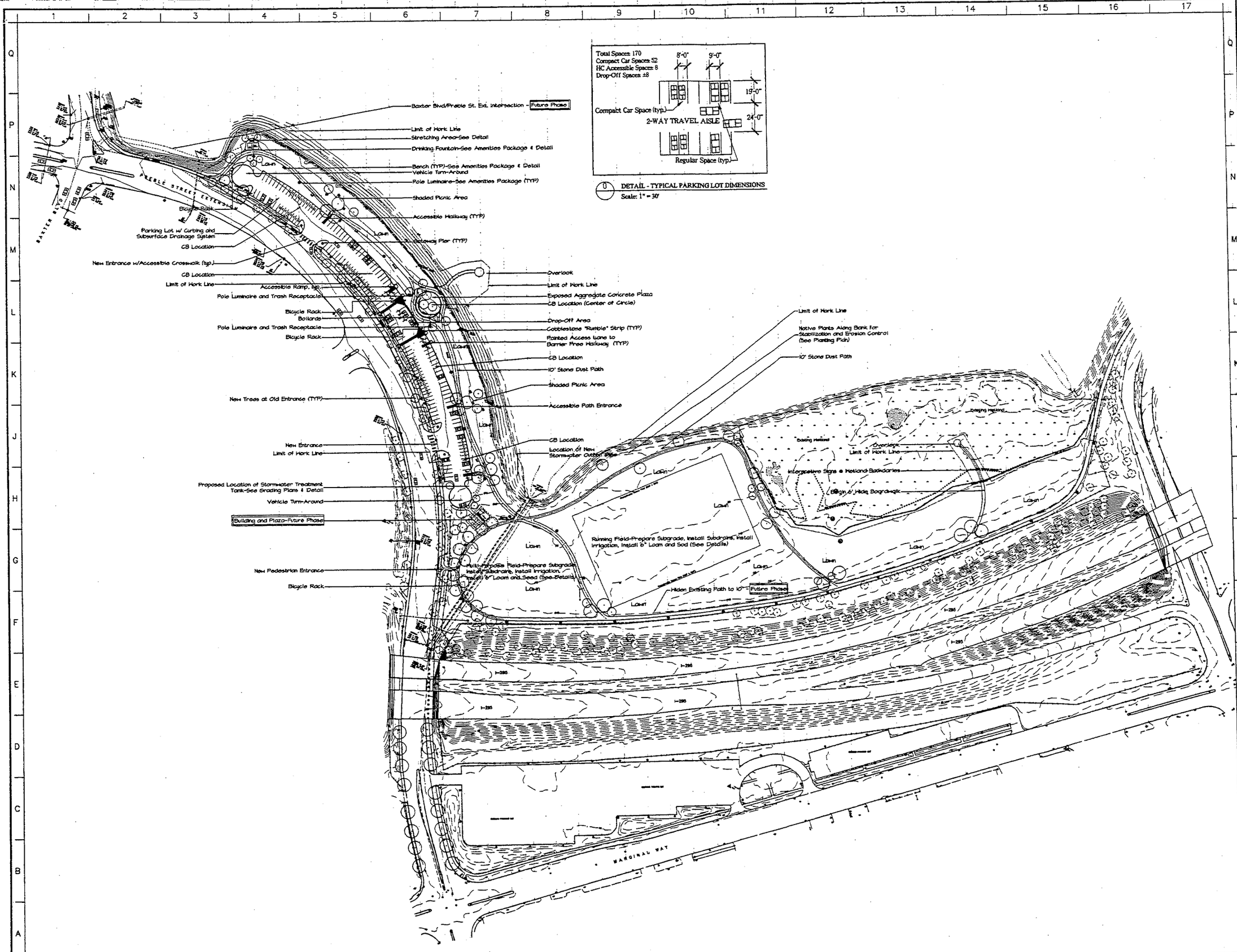
RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL (207) 286-9201 FAX (207) 286-9660

0' 20' 40' 80'

EXSTNG COND/DEMO/EROS
CONTROL PLAN – AREA

Project No.	Date
72-45	12.15.9
CAD File No.	Scale
xcond.dwg	1"=40
Drawing No.	

L-00



Total Spaces: 170
Compact Car Spaces: 52
HC Accessible Spaces: 8
Drop-Off Spaces: ±8

0 DETAIL - TYPICAL PARKING LOT DIMENSIONS
Scale: 1" = 30'

LEGEND

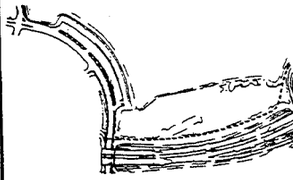
EXISTING
- (31) -Contour
- +34.56 -Spot Elevation
- -Tree
- -Shrub
- -Underground Electric
- -Existing Utility Connection

PROPOSED
- -Contour
- +27.30 -Spot Elevation
- -Tree
- -Shrub
- -Pole Light (Fixture Location)
- -Wetland Survey Test Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/9
	Interim Draft Set	2/7
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

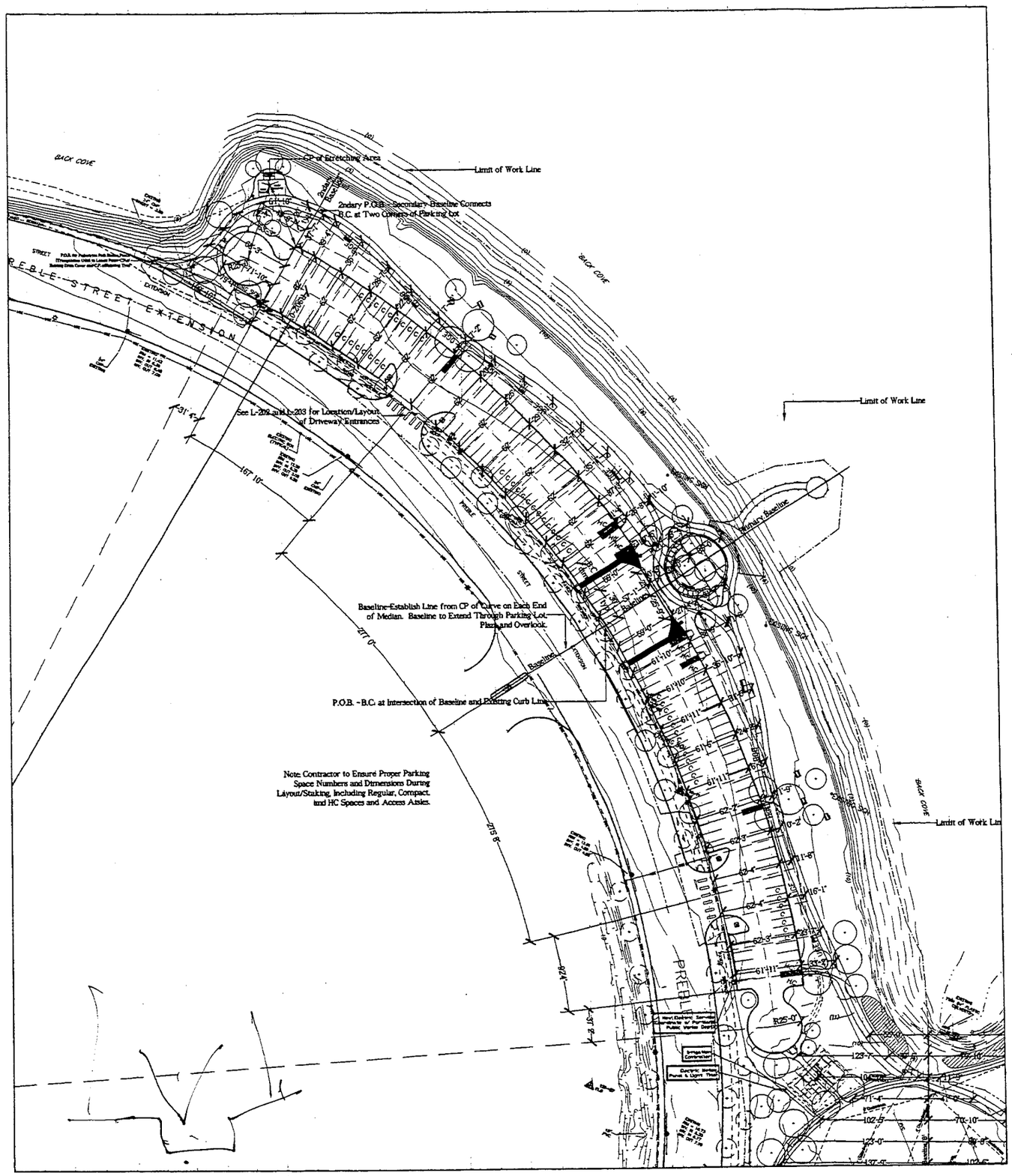
RICHARDSON & ASSOCIATI
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL (207) 286-9391 FAX (207) 286-9650

0' 40' 80' 160'

MASTER PLAN

Project No. 72-45	Date 12.15.95
CAD File No. L-site.dwg	Scale 1"=80'-
Drawing No.	

L-101



PARKING LOT AREA - LOCATION OF MAJOR ELEMENTS
Scale: 1" = 40' - 0"

LAYOUT/STAKING NOTES

1. Point of Beginning (POB) for all construction layout is C.P. of Plaza, as found along a line established through the center of the Shop n' Save driveway median that accesses Preble Street Extension. (See Layout Plans)
2. All topographic and existing base information provided by the City of Portland.
3. Bench mark for elevation is stone bound at *****.
4. All spot grades to preside over contours.
5. Limit of work shall be at property lines unless otherwise noted.
6. All written dimensions shall prevail; do not scale from drawings.
7. Distances shown on site plans are horizontal distances.
8. Layout staking to be approved by landscape architect.
9. Contractor shall verify all dimensions and grades on the ground and field verify location of existing plants and utilities as necessary. Any discrepancies shall be reported immediately to the landscape architect.
10. See construction details for dimensions of site elements.
11. All dimensions 90° unless otherwise noted.

LEGEND

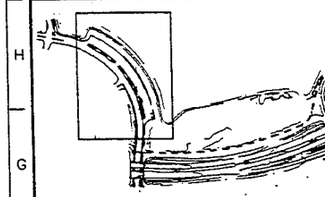
EXISTING
- (31) Contour
- 31.50 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- 31.50 Spot Elevation
- Tree
- Shrub
- Pole Light (Future Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELE.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Work Begins	12/
	Interim Draft Set	2/
	65% Issue for Planning Board Review	2/
	Interim Issue (75%)	3/
	Interim Issue	3/
	Issue for Planning Board Review	4/

BACK COVE PARK
PORTLAND, MAINE

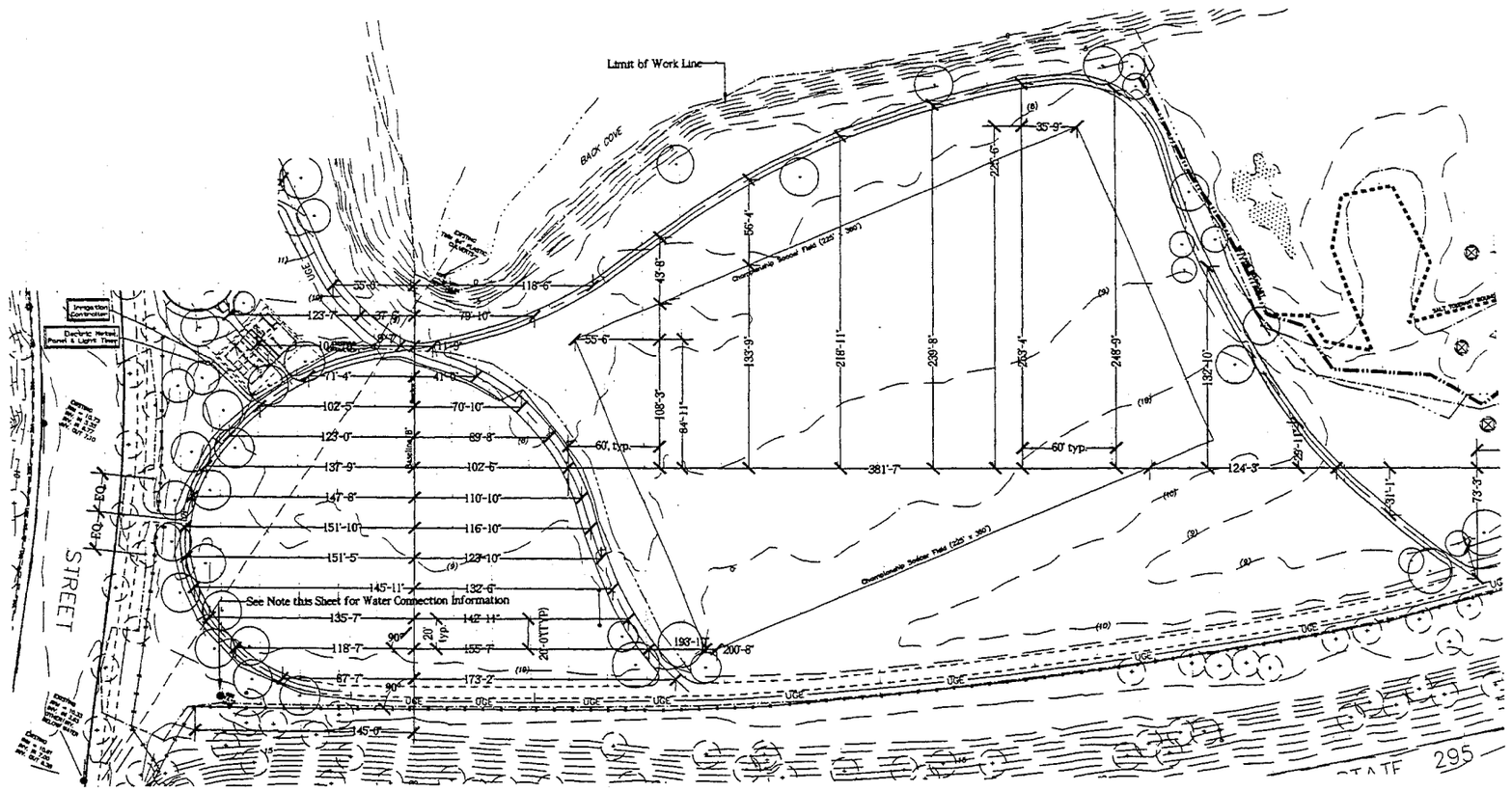
RICHARDSON & ASSOCIATI
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL. (207) 286-2391 FAX (207) 286-9650

0' 20' 40' 80'

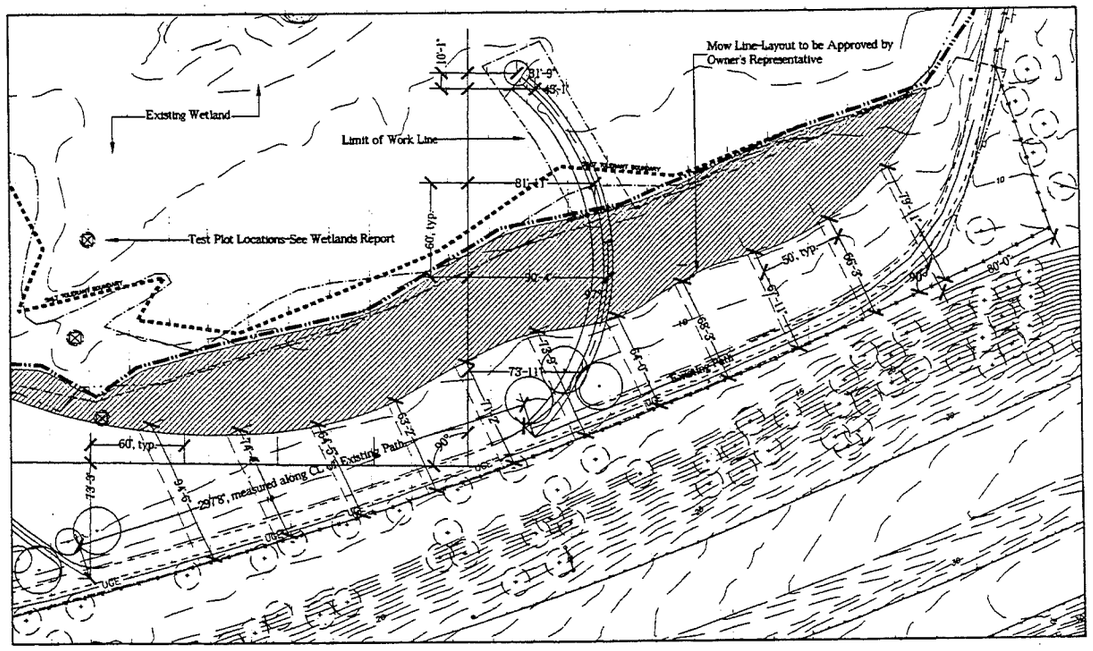
LOCATION PLAN
PARKING LOT AREA

Project No. 72-48	Date 12.15.98
CAD File No. layout-qpad1.dwg	Scale 1"=40'
Drawing No.	

L-200-



MULTI-PURPOSE & SOCCER FIELD AREA - LOCATION OF MAJOR ELEMENTS
Scale: 1" = 40' - 0"



WETLAND BOARDWALK AREA - LOCATION OF MAJOR ELEMENTS
Scale: 1" = 40' - 0"

Note: Make water connection at Existing Supply Location.
Contractor to Supply all Components for Connection,
Including (but not limited to) Fittings and Housings.
Contractor is Responsible for Inspecting Existing Connection and Installing New Backflow Preventer and Meter if Existing Components are Insufficient or in Disrepair. Contractor shall Obtain Approval from Portland Water Department prior to Installation.

LAYOUT/STAKING NOTES

1. Point of Beginning (POB) for all construction layout is C.P. of Plaza, as found along a line established through the center of the Shop n' Save driveway median that accesses Preble Street Extension. (See Layout Plans)
2. All topographic and existing base information provided by the City of Portland.
3. Bench mark for elevation is stone bound at "".
4. All spot grades to preside over contours.
5. Limit of work shall be at property lines unless otherwise noted.
6. All written dimensions shall prevail; do not scale from drawings.
7. Distances shown on site plans are horizontal distances.
8. Layout staking to be approved by landscape architect.
9. Contractor shall verify all dimensions and grades on the ground and field verify location of existing plants and utilities as necessary. Any discrepancies shall be reported immediately to the landscape architect.
10. See construction details for dimensions of site elements.
11. All dimensions 90° unless otherwise noted.

LEGEND

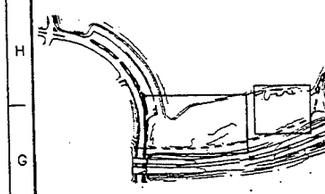
EXISTING
- (31) Contour
- 31.00 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- 31.00 Spot Elevation
- Tree
- Shrub
- Pole Light (Where Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

TW.	TOP OF WALL
BW.	BOTTOM OF WALL
BS.	BOTTOM OF STAIR
TS.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELE.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DA
	Issue for Planning Board Review	4/
	Interim Issue (90%)	3/
	Interim Issue (75%)	3/
	65% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	12

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 428, SACO, MAINE 04072
TEL. (207) 286-9291 FAX (207) 286-9850

0' 20' 40' 80'

LOCATION PLAN FIELD AREAS

Project No. 72-95	Date 12.15.9
CAD File No. layout-quad.dwg	Scale 1"=40'
Drawing No.	

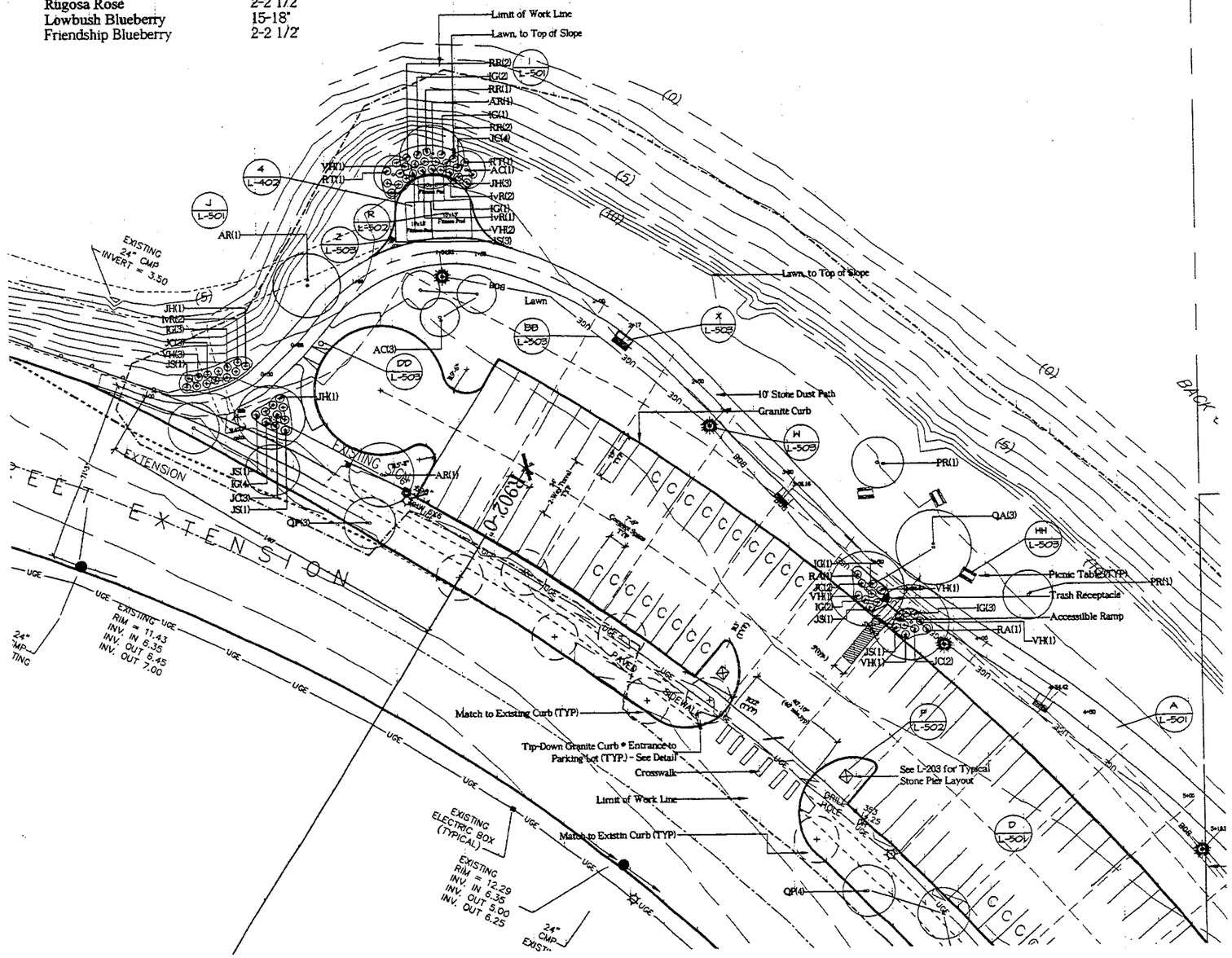
L-200-

MASTER PLANT LIST

Sym.	No.	Botanical Name	Common Name	Size
		TREES		
AR	25	Acer rubrum	Red Maple	2-2 1/2" cal.
AC	10	Amelanchier canadensis	Shadblow	10' (clump)
GT	11	Gleditsia triacanthos 'inermis'	Thornless Honey Locust	2-2 1/2" cal.
PR	13	Pinus rigida	Pitch Pine	2-2 1/2" cal.
QA	8	Quercus alba	White Oak	2-2 1/2" cal.
QP	11	Quercus palustris	Pin Oak	2-2 1/2" cal.
		SHRUBS		
IG	85	Ilex glabra 'Compacta'	Compact Inkberry	2-2 1/2'
IvR	35	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	2-2 1/2'
JC	91	Juniperus chinensis 'Sea Green'	Sea Green Juniper	2 1/2-3'
JH	32	Juniperus horizontalis 'Andorra Compacta'	Andorra Juniper	15-18"
JS	49	Juniperus sabina 'Skandia'	Skandia Juniper	15-18"
MP	18	Myrica pennsylvannica	Northern Bayberry	2-2 1/2'
PM	3	Prunus maritima	Beach Plum	3-4'
RA	6	Rhus aromatica 'Gro-Low'	Fragrant Sumac	15-18"
RT	5	Rhus typhina 'Laciniata'	Cutleaf Staghorn Sumac	3-4'
RR	44	Rosa rugosa	Rhgosa Rose	2-2 1/2'
VA	173	Vaccinium angustifolium	Lowbush Blueberry	15-18"
VH	69	Vaccinium hybrid 'Friendship'	Friendship Blueberry	2-2 1/2'

LAYOUT/STAKING NOTES

1. Point of Beginning (POB) for all construction layout is C.P. of Plaza, as found along a line established through the center of the Shop n' Save driveway median that accesses Preble Street Extension. (See Layout Plans)
2. All topographic and existing base information provided by the City of Portland.
3. Bench mark for elevation is stone bound at [illegible].
4. All spot grades to preside over contours.
5. Limit of work shall be at property lines unless otherwise noted.
6. All written dimensions shall prevail; do not scale from drawings.
7. Distances shown on site plans are horizontal distances.
8. Layout staking to be approved by landscape architect.
9. Contractor shall verify all dimensions and grades on the ground and field verify location of existing plants and utilities as necessary. Any discrepancies shall be reported immediately to the landscape architect.
10. See construction details for dimensions of site elements.
11. All dimensions 90° unless otherwise noted.



LEGEND

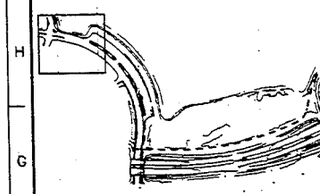
EXISTING
- (31) -Contour
- -Spot Elevation
- -Tree
- -Shrub
- -Underground Electric
- -Existing Utility Connection

PROPOSED
- -Contour
- 41.50 -Spot Elevation
- -Tree
- -Shrub
- -Pole Light (Fixture Location)
- -Underground Electric
- -Underdrain
- -Irrigation Line
- -Irrigation Head
- -Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELEV.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DAT
	Issue for Planning Board Review	4/2
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/1
	Interim Draft Set	2/1
	Work Begins	12,

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATI
LANDSCAPE ARCHITECTS
P.O. BOX 425, SACO, MAINE 04072
TEL (207) 286-9261 FAX (207) 286-9660

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILI
PLANTING PLAN - QUADRA

Project No.	Date
T2-98	12.15.98
CAD File No.	Scale
layout-quad1.dwg	1"=20'-
Drawing No.	

L-201

LAYOUT/STAKING NOTES

1. Point of Beginning (POB) for all construction layout is C.P. of Plaza, as found along a line established through the center of the Shop n' Save driveway median that accesses Preble Street Extension. (See Layout Plans)
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10. See construction details for dimensions of site elements.
11. All dimensions 90° unless otherwise noted.

LEGEND

EXISTING
- (31) Contour
- Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- Spot Elevation
- Tree
- Shrub
- Pole Light (Fixture Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE	DA
	Issue for Planning Board Review	4/
	Interim Issue (90%)	3/
	Interim Issue (75%)	3/
	65% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	12

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL. (207) 286-9201 FAX (207) 286-9650

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILI
PLANTING PLAN – QUADRA

Project No.	Date
12-45	12.15.0
CAD File No.	Scale
layout-quad1.dwg	1"=20'
Drawing No.	

L-202

MASTER PLANT LIST

Sym.	No.	Botanical Name	Common Name	Size
		TREES		
AR	25	Acer rubrum	Red Maple	2-2 1/2" cal.
AC	10	Amelanchier canadensis	Shadblow	10' (clump)
GT	11	Gleditsia triacanthos 'inermis'	Thornless Honey Locust	2-2 1/2" cal.
PR	13	Pinus rigida	Pitch Pine	2-2 1/2' cal.
QA	8	Quercus alba	White Oak	2-2 1/2" cal.
QP	11	Quercus palustris	Pin Oak	2-2 1/2' cal.
		SHRUBS		
IG	85	Ilex glabra 'Compacta'	Compact Inkberry	2-2 1/2'
IvR	35	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	2-2 1/2'
JC	91	Juniperus chinensis 'Sea Green'	Sea Green Juniper	2 1/2-3'
JH	32	Juniperus horizontalis 'Andorra Compacta'	Andorra Juniper	15-18"
JS	49	Juniperus sabina 'Skandia'	Skandia Juniper	15-18"
MP	18	Myrica pennsylvannica	Northern Bayberry	2-2 1/2'
PM	3	Prunus maritima	Beach Plum	3-4'
RA	6	Rhus aromatica 'Gro-Low'	Fragrant Sumac	15-18"
RT	5	Rhus typhina 'Laciniata'	Cutleaf Staghorn Sumac	3-4'
RR	44	Rosa rugosa	Rugosa Rose	2-2 1/2'
VA	173	Vaccinium angustifolium	Lowbush Blueberry	15-18"
VH	69	Vaccinium hybrid 'Friendship'	Friendship Blueberry	2-2 1/2'

LAYOUT/STAKING NOTES

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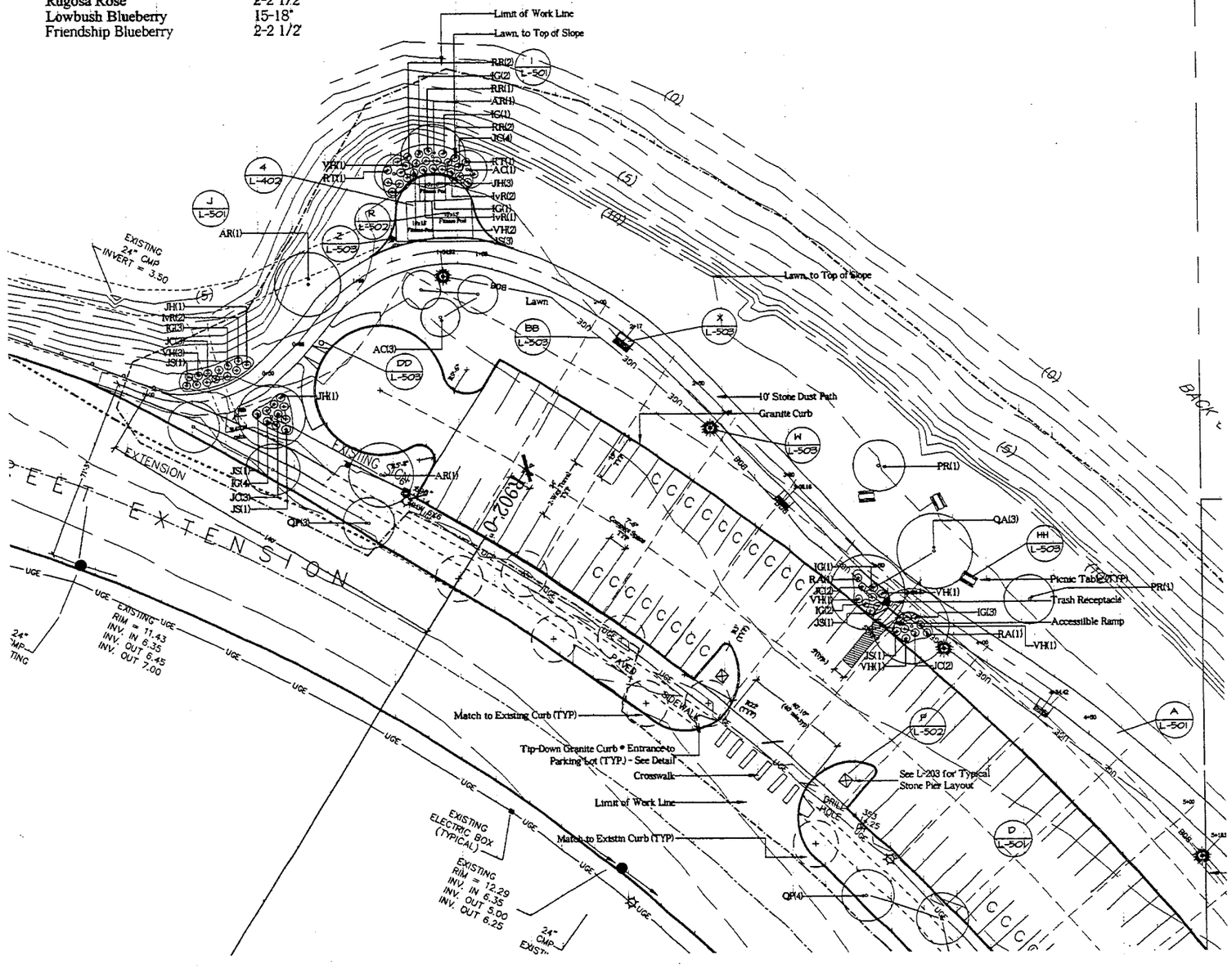


LEGEND

EXISTING
- (31) ——— -Contour
- +34.50 -Spot Elevation
- -Tree
- -Shrub
- -Underground Electric
- -Existing Utility Connection

PROPOSED
- ——— -Contour
- +34.50 -Spot Elevation
- -Tree
- -Shrub
- -Pole Light (Fixture Location)
- -Underground Electric
- -Underdrain
- -Irrigation Line
- -Irrigation Head
- -Wetland Test Survey Location

ABBREVIATIONS

T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELEV.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE	DATE
	Issue for Planning Board Review	4/2
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/9
	Interim Draft Set	2/2
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

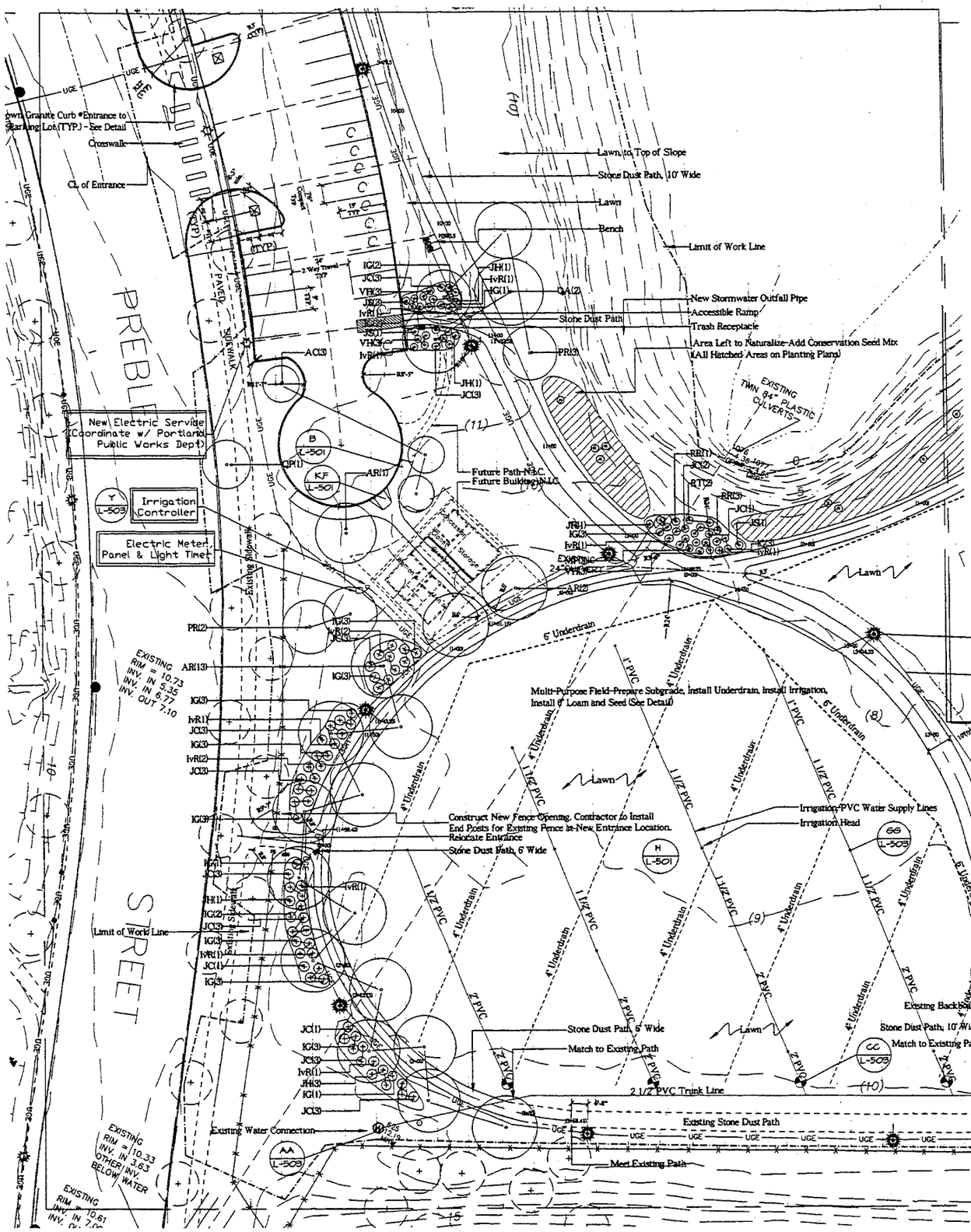
RICHARDSON & ASSOCIATE
LANDSCAPE ARCHITECTS
P.O. BOX 428, SACO, MAINE 04072
TEL (207) 286-9261 FAX (207) 286-9650

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILIT
PLANTING PLAN – QUADRAN

Project No. 12-45	Date 12.15.98
CAD File No. layout-quadlt.dwg	Scale 1"=20'-0
Drawing No.	

L-201



LAYOUT/STAKING NOTES

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11. All dimensions 90° unless otherwise noted.

LEGEND

Existing
- Contour
- Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

Proposed
- Contour
- Spot Elevation
- Tree
- Shrub
- Pole Light (Please Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELE.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE	DATE
	Issue for Planning Board Review	4/2
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/1
	Interim Droft Set	2/2
	Work Begins	12,

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATE
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL. (207) 286-9391 FAX (207) 286-9650

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILIT
PLANTING PLAN – QUADRAN

Project No.	Date
12-95	12.15.96
CAD File No.	Scale
layout-qaddl.dwg	1"=20'-0
Drawing No.	

L-203

LAYOUT/STAKING NOTES

1. Point of Beginning (POB) for all construction layout is C.P. of Plaza, as found along a line established through the center of the Shop n' Save driveway median that accesses Preble Street Extension. (See Layout Plans)
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11. All dimensions 90° unless otherwise noted.

VH(28) - Naturalized Area 'Spotted' with Hybrid Blueberry

Area Left to Naturalize-Add Conservation Seed Mix (All Hatched Areas on Planting Plans)

BACK COVE

EXISTING WETLAND

WETLAND BOUNDARY

SALT TOLERANT BOUNDARY

Stone Dust Path, 6' Wide

Area Left to Naturalize-Add Conservation Seed Mix (All Hatched Areas on Planting Plans)

Championship Soccer Field (225' x 360')

Irrigation-PVC Water Supply Lines Pipe Size Noted on Drawing

Irrigation Sprinkler Head

Running Field-Prepare Subgrade, Install Underdrain, Install Irrigation, Install 6" Loam and Sod (See Detail)

Catch Basin

6' Stone Dust Path

Lawn

Meet Existing Path

Existing Stone Dust Path

2 1/2" PVC Trunk Line

Pop-Up Sprinkler Head-Hunter Model I-25 or Approved Equal, Installed as per Manufacturer's Guidelines (TYP).

Manual Control Valve-Weathermatic Model 12014E-10 or Approved Equal, Installed as per Manufacturer's Guidelines (TYP).

Remote Control Valve-Weathermatic Model 12024EF-10 or Approved Equal, Installed as per Manufacturer's Guidelines (TYP).

120' Light Spacing (TYP.)

Limit of Work

UGE

LEGEND

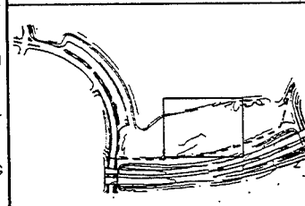
Existing
- (31) Contour
- 4430 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- 4730 Spot Elevation
- Tree
- Shrub
- Pole Light (Future Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Issue for Planning Board Review	4/26
	Interim Issue (90%)	3/22
	Interim Issue (75%)	3/11
	65% Issue for Planning Board Review	2/9/
	Interim Draft Set	2/2/
	Work Begins	12/1

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATES
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TEL (207) 286-9291 FAX (207) 286-9650

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILITY PLANTING PLAN - QUADRANT

Project No. 72-45	Date 12.15.45
CAD File No. layout-quad1.dwg	Scale 1"=20'-0"
Drawing No.	L-204

LAYOUT/STAKING NOTES

1. Point of Beginning (POB) for all construction layout is C.P. of Plaza, as found along a line established through the center of the Shop n' Save driveway median that accesses Preble Street Extension. (See Layout Plans)
2. All topographic and existing base information provided by the City of Portland.
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VH(28) - Naturalized Area 'Spotted' with Hybrid Blueberry

Area Left to Naturalize-Add Conservation Seed Mix (All Hatched Areas on Planting Plans)

BACK COVE

EXISTING WETLAND

Championship Soccer Field (225' x 360')

Stone Dust Path, 6' Wide

Area Left to Naturalize-Add Conservation Seed Mix (All Hatched Areas on Planting Plans)

Catch Basin

4" Underdrain

1" PVC

1 1/2" PVC

2" PVC

2 1/2" PVC Trunk Line

Irrigation-PVC Water Supply Lines: Pipe Size Noted on Drawing

Irrigation Sprinkler Head

Running Field-Prepare Subgrade, Install Underdrain, Install Irrigation, Install 6" Loam and Sod (See Detail)

Pop-Up Sprinkler Head-Hunter Model I-25 or Approved Equal, Installed as per Manufacturer's Guidelines (TYP).

Manual Control Valve-Weathermatic Model 12014E-10 or Approved Equal, Installed as per Manufacturer's Guidelines (TYP).

Remote Control Valve-Weathermatic Model 12024EF-10 or Approved Equal, Installed as per Manufacturer's Guidelines (TYP).

120' Radius Spacing (TYP.)

Lawn

Limit of Work

Existing Stone Dust Path

Meet Existing Path

6' Stone Dust Path

Lawn

SALT TOLERANT BOUNDARY

LAND BOUNDARY

UGE

LEGEND

EXISTING
- (31) Contour
- 43.50 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- 43.20 Spot Elevation
- Tree
- Shrub
- Pole Light (Future Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- National Test Survey Location

ABBREVIATIONS

T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
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L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE	DATE
	Issue for Planning Board Review	4/26
	Interim Issue (90%)	3/22
	Interim Issue (75%)	3/11
	65% Issue for Planning Board Review	2/9/
	Interim Draft Set	2/2/
	Work Begins	12/1

BACK COVE PARK
PORTLAND, MAINE

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TEL (207) 286-9291 FAX (207) 286-9650

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILITY PLANTING PLAN - QUADRANT

Project No. T2-45	Date 12.15.98
CAD File No. layout-quad1.dwg	Scale 1"=20'-0"
Drawing No.	L-204

LAYOUT/STAKING NOTES

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EXISTING WETLAND
Wetland Overlook
3 L-402
OB L-502
Limit of Work Line
SALT TOLERANT BOUNDARY
WETLAND BOUNDARY
Boardwalk - 6' Wide
Begin Boardwalk
Stone Dust Path - 6' Wide
See L-202-B for Path Layout
Lawn
Limit of Work Line
Existing Stone Dust Path
79'-11"
90°
80'-0"
IvR(1)
JC(1)
IG(2)
IvR(1)
JC(3)
IG(5)
JC(2)
AR(3)
1 L-501
IvR(2)
1 L-501
Lawn
Limit of Work Line
Test Pit Location (See Report from Wetlands Scientist)
Area Left to Naturalize
Mow Line - Layout to be Approved by Landscape Architect
W L-503
BB L-503
Existing Stone Dust Path
UGE
100' Light Spacing (TYP.)

LEGEND

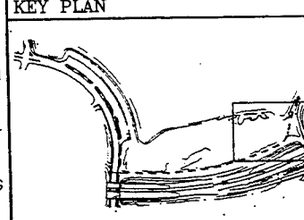
EXISTING
- (31) Contour
- 4180 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- 4180 Spot Elevation
- Tree
- Shrub
- Pole Light (Future Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Work Begins	12/
	Interim Draft Set	2/2
	65% Issue for Planning Board Review	2/9
	Interim Issue (75%)	3/1
	Interim Issue (90%)	3/2
	Issue for Planning Board Review	4/2

BACK COVE PARK
PORTLAND, MAINE

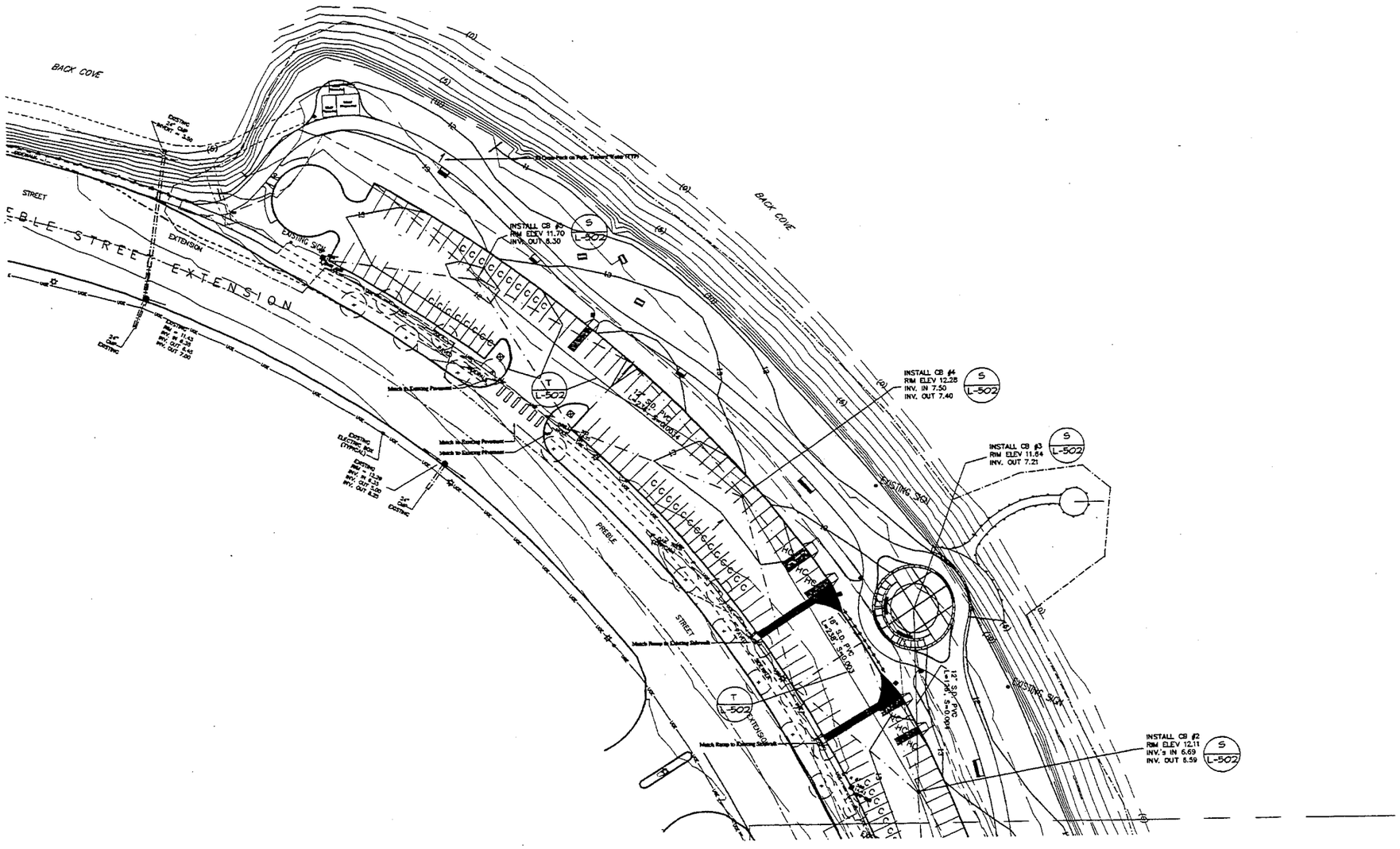
RICHARDSON & ASSOCIATE
LANDSCAPE ARCHITECTS
P.O. BOX 428, SACO, MAINE 04072
TEL (207) 286-9201 FAX (207) 286-9850

0' 10' 20' 40'

LAYOUT/LIGHTING & UTILIT
PLANTING PLAN – QUADRAN

Project No. 72-45	Date 12.15.95
CAD File No. layout-quad.dwg	Scale 1"=20'
Drawing No.	

L-205



LEGEND

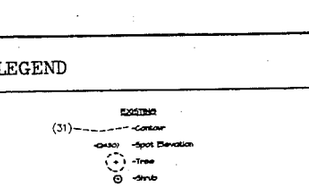
EXISTING
- (31) Contour
- (34.50) Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- +71.50 Spot Elevation
- Tree
- Shrub
- Pole Light (Prairie Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Issue for Planning Board Review	4/28/
	Interim Issue (90%)	3/22/
	Grading Plan Revisions	3/15/
	Interim Issue (75%)	3/11/
	65% Issue for Planning Board Review	2/9/1
	Interim Draft Set	2/2/1
	Work Begins	12/15

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATES
LANDSCAPE ARCHITECTS
P.O. BOX 428, SACO, MAINE 04072
TEL (207) 286-9991 FAX (207) 286-9650

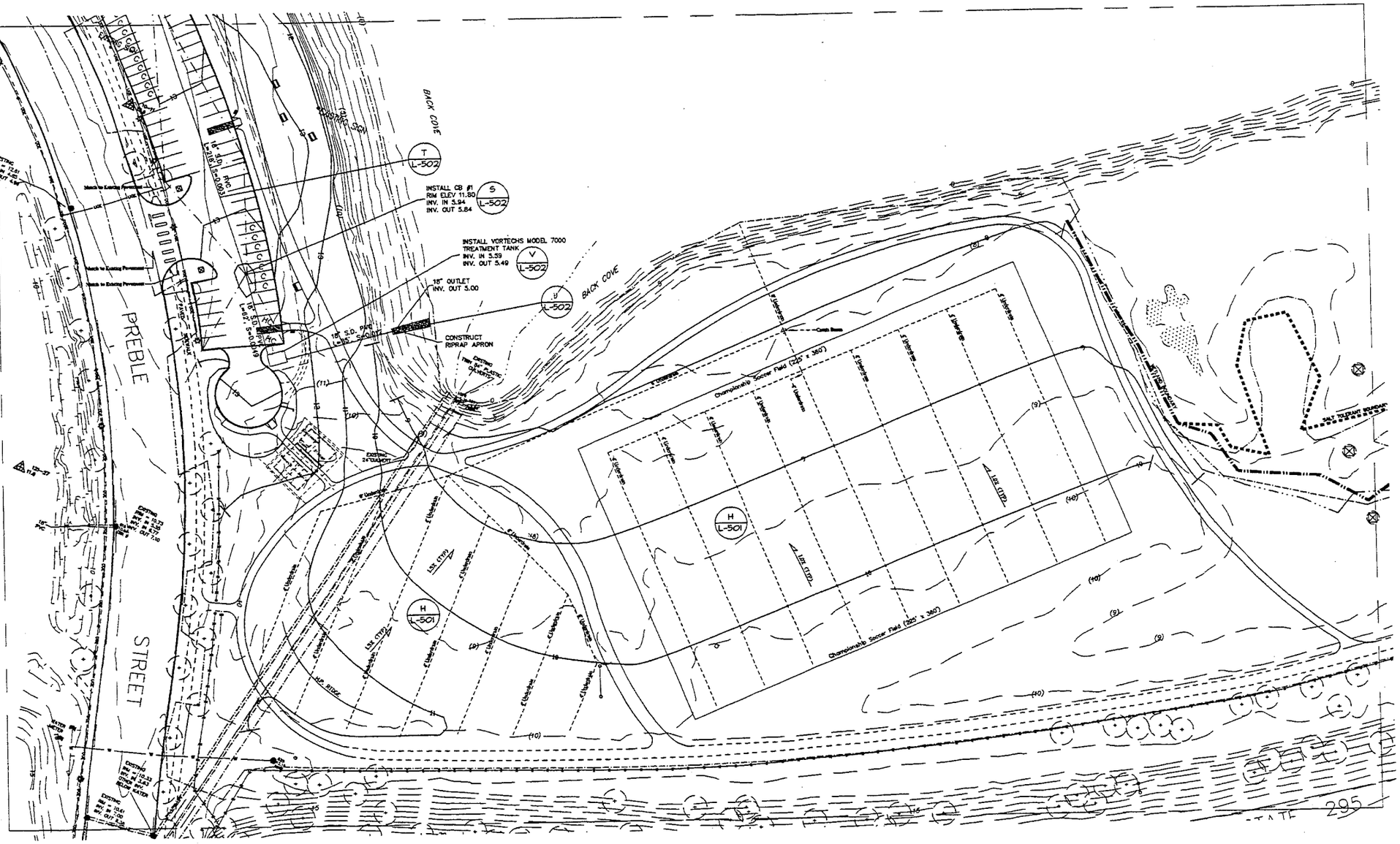
0' 20' 40' 80'

Squaw Bay Corp
P.O. Box 66A
Cumberland Center, ME
(207) 829-6994

GRADING CONCEPT/DRAINAG
PARKING LOT AREA

Project No. 72-45	Date 12.15.95
CAD File No. grading-quad1.dwg	Scale 1"=40'-0"
Drawing No.	

L-300-A



LEGEND

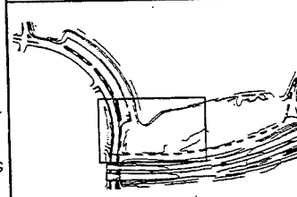
EXISTING
- (31) Contour
- Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- 2130 Spot Elevation
- Tree
- Shrub
- Pole Light (Fixture Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELE.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	
	Interim Issue (90%)	3/
	Grading Plan Revisions	3/
	Interim Issue (75%)	3/
	65% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	12

BACK COVE PARK
PORTLAND, MAINE

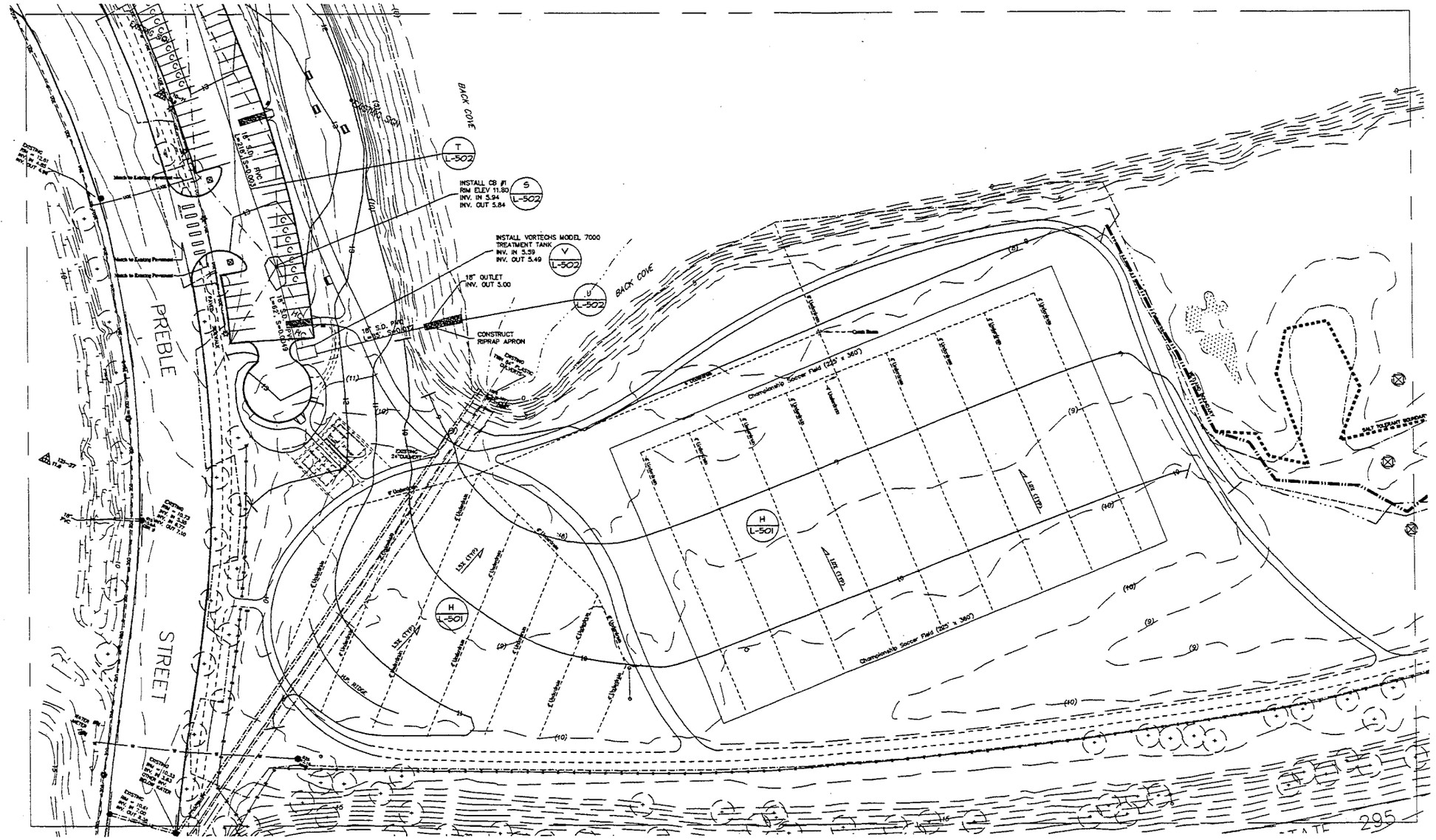
RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL (207) 286-9261 FAX (207) 286-9650

0' 20' 40' 80'

Squaw Bay C
P.O. Box 66A
Cumberland Center, ME
(207) 829-

GRADING CONCEPT/DRAIN
MLT-PRPS/SOCCER FIELD

Project No. 92-49	Date 12.15.9
CAD File No. grading-quad1.dwg	Scale 1"=40
Drawing No.	L-300-



LEGEND

EXISTING
- (31) -Contour
- 31.50 -Spot Elevation
- -Tree
- -Shrub
- -Underground Electric
- -Existing Utility Connection

PROPOSED
- -Contour
- 31.50 -Spot Elevation
- -Tree
- -Shrub
- -Pole Light (Future Location)
- -Underground Electric
- -Underdrain
- -Irrigation Line
- -Irrigation Head
- -Metland Test Survey Location

ABBREVIATIONS

T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE	DATE
	Interim Issue (90%)	3/2
	Grading Plan Revisions	3/1
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/9
	Interim Draft Set	2/2
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

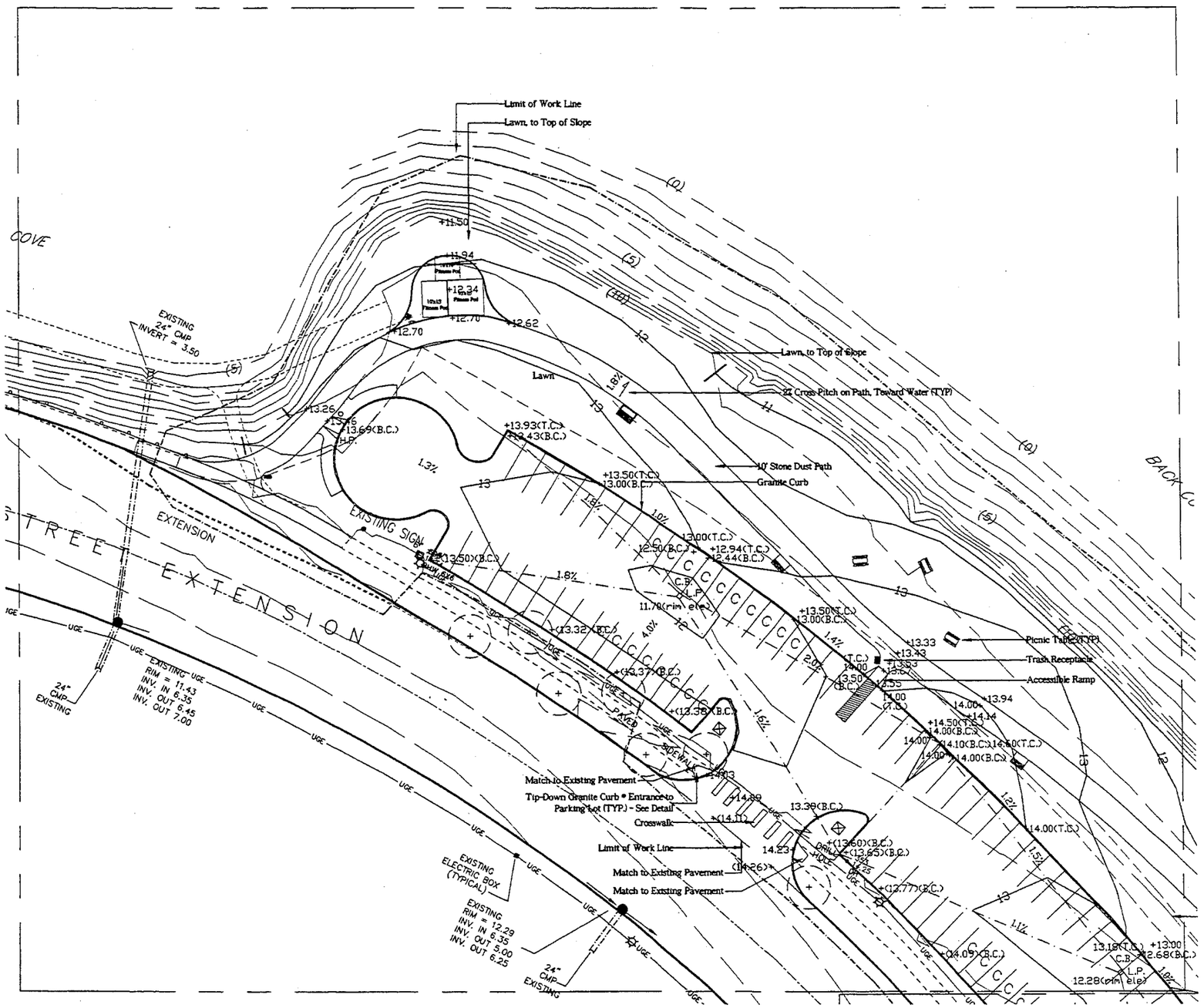
RICHARDSON & ASSOCIATE
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL (207) 286-9201 FAX (207) 286-9650

0' 20' 40' 80'

Squaw Bay Cor
P.O. Box 66A
Cumberland Center, ME
(207) 829-3864

GRADING CONCEPT/DRAINAG
MLT-PRPS/SOCCER FIELD A

Project No. 72-46	Date 12.15.98
CAD File No. grading-quad1.dwg	Scale 1"=40'-0
Drawing No.	L-300-F



LEGEND

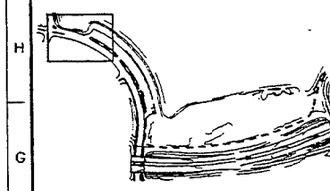
Existing
- (31) Contour
- +24.00 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

Proposed
- Contour
- +23.00 Spot Elevation
- Tree
- Shrub
- Pole Light (Fixture Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
ELE.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Issue for Planning Board Review	4/26
	Interim Issue (90%)	3.22
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/9,
	Interim Draft Set	2/2,
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATES
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL (207) 286-9261 FAX (207) 286-9650

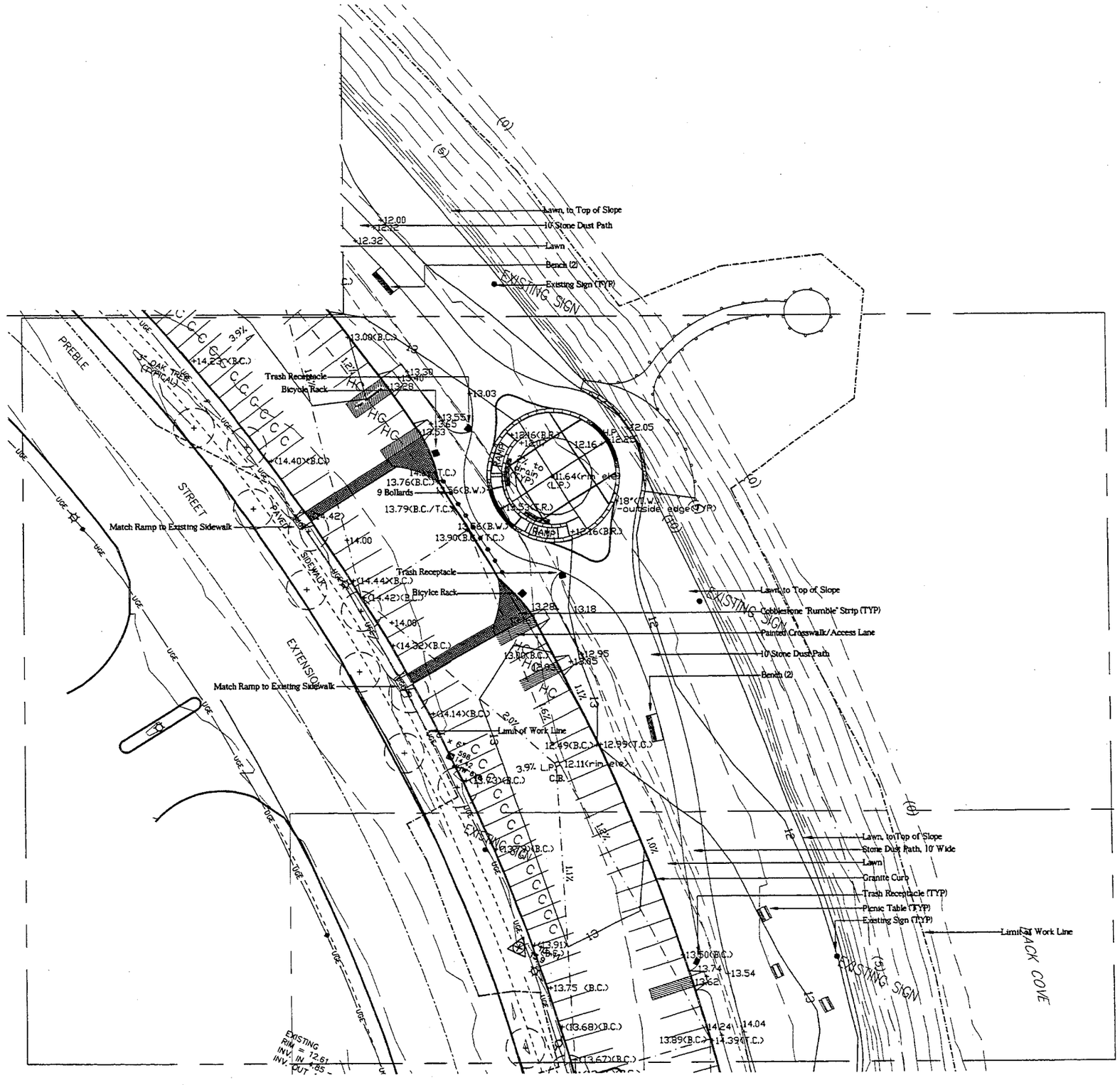
0' 10' 20' 40'

Squaw Bay Corp
P.O. Box 86A
Cumberland Center, ME
(207) 829-6864

GRADING/DRAINAGE PLAN QUADRANT 1

Project No. 12-45	Date 12.15.25
CAD File No. grading-quad1.dwg	Scale 1"=20'-0"
Drawing No.	

L-301



LEGEND

Existing
- Contour
- Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

Proposed
- Contour
- Spot Elevation
- Tree
- Shrub
- Pole Light (Future Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.M.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
E.L.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE
	Issue for Planning Board Review
	Interim Issue (90%)
	Interim Issue (75%)
	65% Issue for Planning Board Review
	Interim Draft Set
	Work Begins

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIA
LANDSCAPE ARCHITECTS
P.O. BOX 425, SACO, MAINE 04072
TEL (207) 286-9291 FAX (207) 286-9650

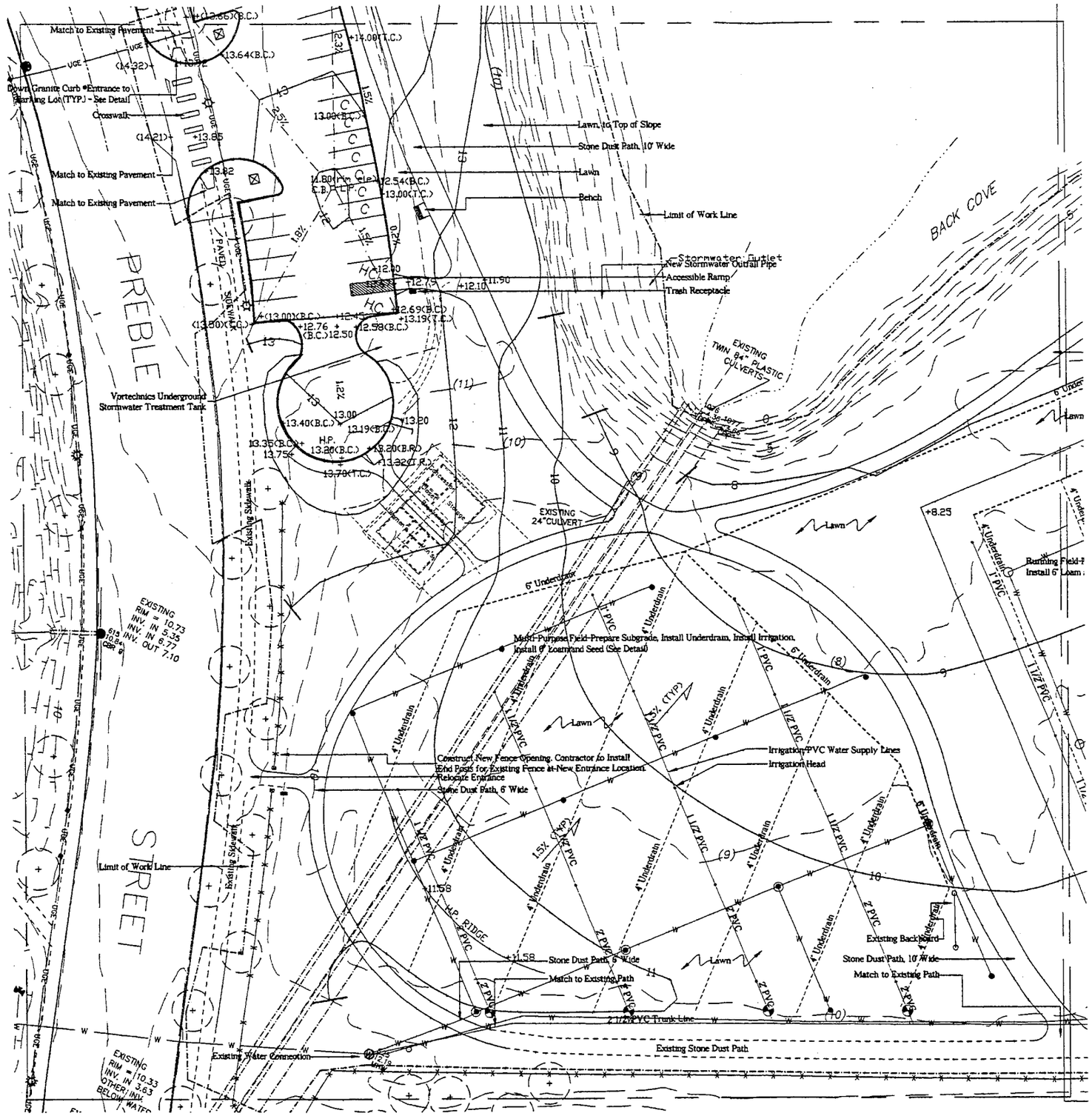
0' 10' 20' 40'

Squaw Bay
P.O. Box 94
Cumberland Center, M
(207) 829-59

GRADING/DRAINAGE PLA
QUADRANT 2

Project No.	Date
12-45	12.15
CAD File No.	Scale
grading-quad1.dwg	1"=20
Drawing No.	

L-30



LEGEND

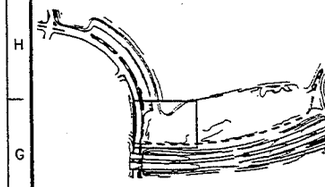
Existing
- (31) Contour
- 94.50 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

Proposed
- Contour
- 97.50 Spot Elevation
- Tree
- Shrub
- Pole Light (Fixture Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Horizontal Test Survey Location

ABBREVIATIONS

T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL. or ELEV.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Issue for Planning Board Review	4/2
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/9
	Interim Draft Set	2/2
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATE
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL (207) 286-9291 FAX (207) 286-9850

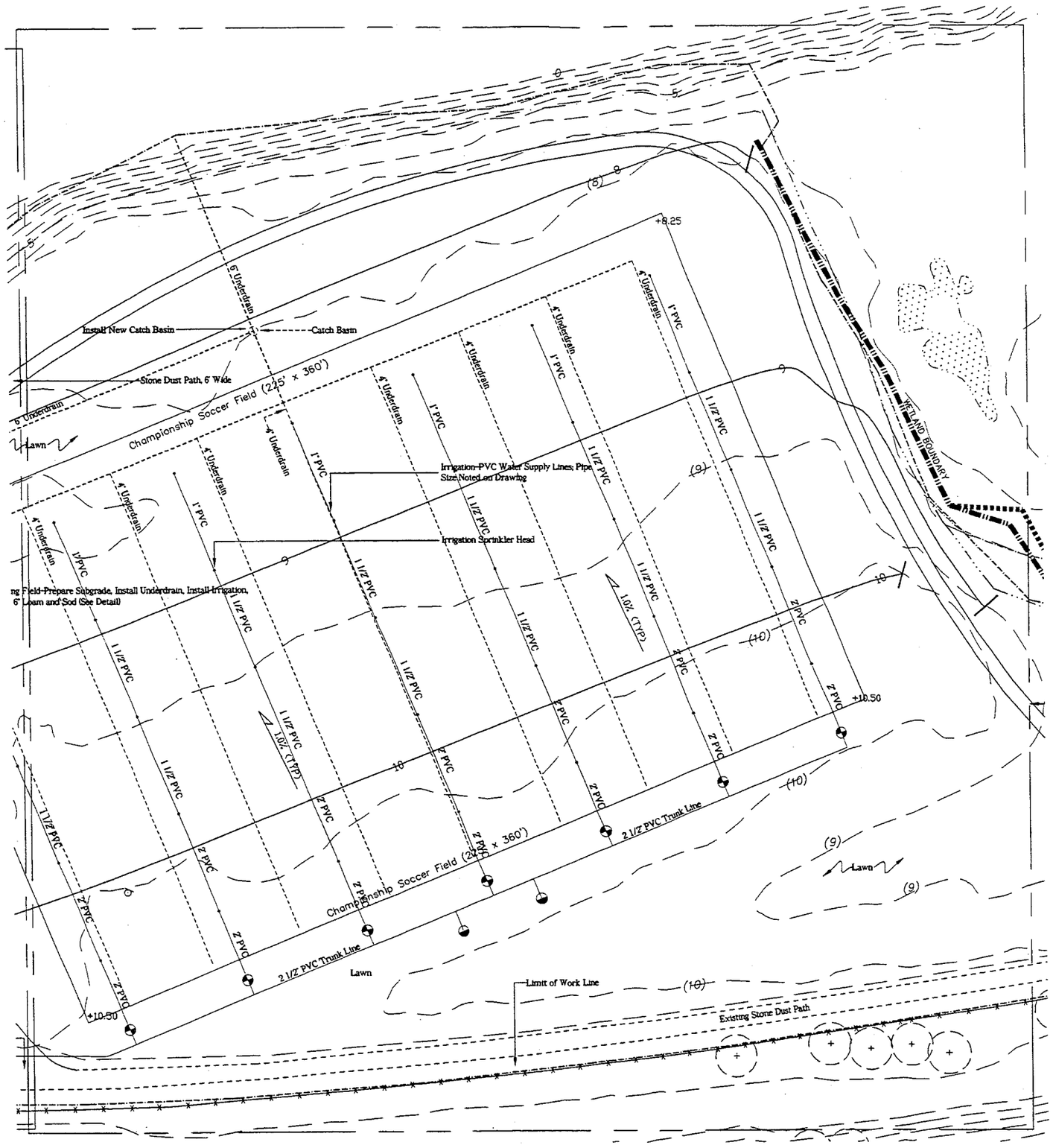
0' 10' 20' 40'

Squaw Bay Cor
P.O. Box 66A
Cumberland Center, ME
(207) 829-6994

GRADING/DRAINAGE PLAN QUADRANT 3

Project No.	Date
12-49	12.15.98
CAD File No.	Scale
grading-quad1.dwg	1"=20'-0
Drawing No.	

L-303



LEGEND

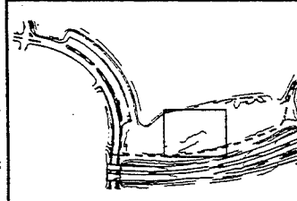
EXISTING
- (31) Contour
- +31.00 Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- +31.00 Spot Elevation
- Tree
- Shrub
- Pole Light (Future Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.W.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN



No.	ISSUE	DATE
	Issue for Planning Board Review	4/2
	Interim Issue (90%)	3/2
	Interim Issue (75%)	3/1
	65% Issue for Planning Board Review	2/9
	Interim Draft Set	2/2
	Work Begins	12/

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATE
LANDSCAPE ARCHITECTS
P.O. BOX 428, SACO, MAINE 04072
TEL (207) 286-9291 FAX (207) 286-9850

0' 10' 20' 40'

Squaw Bay Cor
P.O. Box 66A
Cumberland Center, ME
(207) 829-2884

GRADING/DRAINAGE PLAN QUADRANT 4

Project No. T2-46	Date 12.15.98
CAD File No. grading-quad.dwg	Scale 1"=20'-0"
Drawing No.	L-304

EXISTING WETLAND

Wetland Overlook

EXISTING WETLAND

Limit of Work Line

SALT TOLERANT BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

Boardwalk - 6' Wide

Begin Boardwalk

Stone Dust Path - 6' Wide

SALT TOLERANT BOUNDARY

Lawn

Limit of Work Line

Existing Stone Dust Path

Limit of Work Line

Test PitLocation (See Report from Wetlands Scientist)

Path

Lawn

Existing Stone Dust Path

LEGEND

EXISTING
- (31) Contour
- Spot Elevation
- Tree
- Shrub
- Underground Electric
- Existing Utility Connection

PROPOSED
- Contour
- Spot Elevation
- Tree
- Shrub
- Pole Light (Where Location)
- Underground Electric
- Underdrain
- Irrigation Line
- Irrigation Head
- Wetland Test Survey Location

ABBREVIATIONS

T.H.	TOP OF HALL
B.H.	BOTTOM OF HALL
B.S.	BOTTOM OF STAIR
T.S.	TOP OF STAIR
C.L.	CENTERLINE
R.O.H.	RIGHT OF WAY
F.G.	FINISH GRADE
F.F.	FINISH FLOOR
H.P.	HIGH POINT
L.P.	LOW POINT
EL.	ELEVATION
D.I.	DRAIN INLET
TYP.	TYPICAL

KEY PLAN

No.	ISSUE	DATE
	Issue for Planning Board Review	4/
	Interim Issue (90%)	3/
	Interim Issue (75%)	3/
	65% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	12

BACK COVE PARK
PORTLAND, MAINE

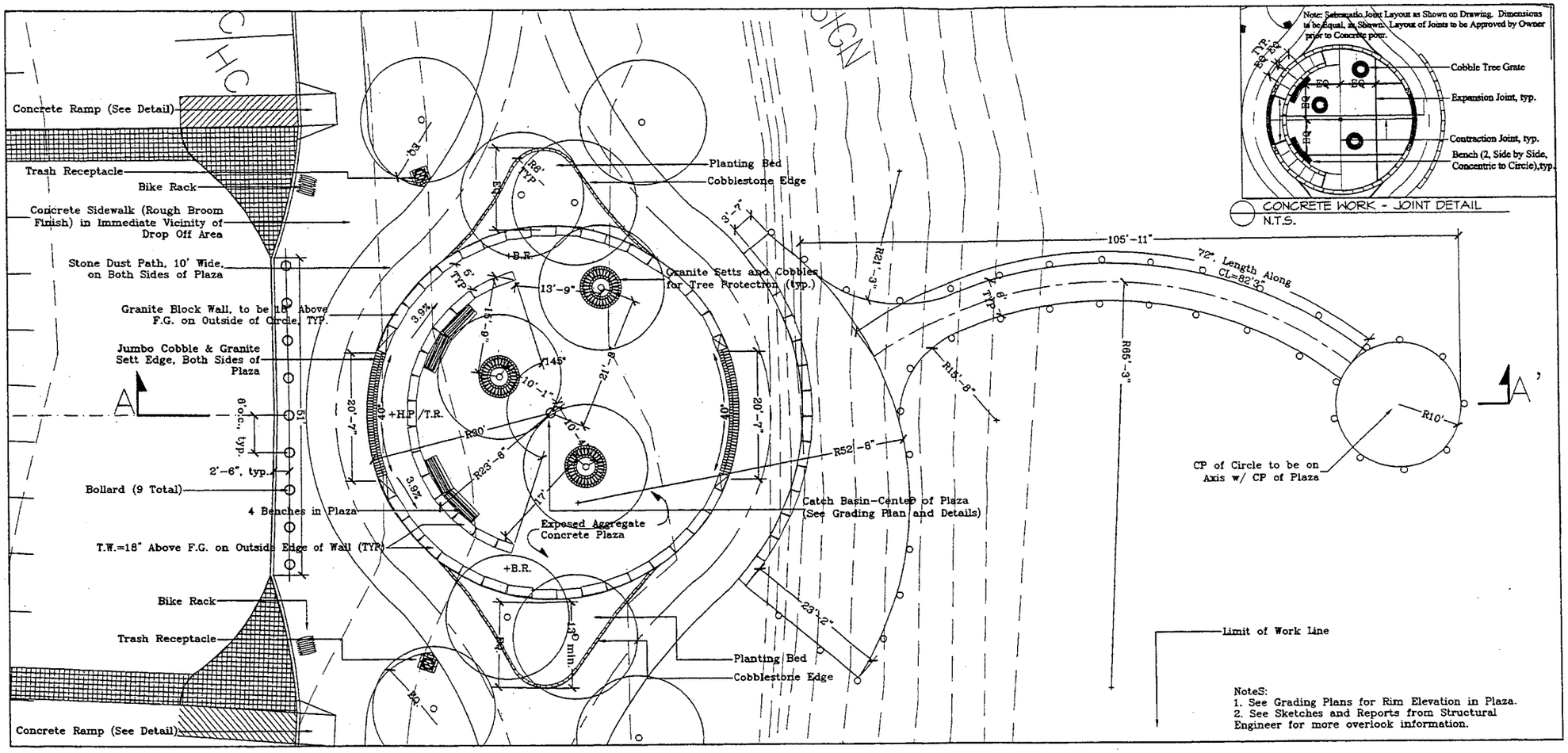
RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL. (207) 286-8561 FAX (207) 286-9650

0' 10' 20' 40'

Squaw Bay Co
P.O. Box 96A
Cumberland Center, ME
(207) 829-6994

GRADING/DRAINAGE PLA
QUADRANT 5

Project No. 92-49	Date 12.15.9
CAD File No. grading-quad5.dwg	Scale 1"=20'
Drawing No.	L-305



5 PLAZA AND OVERLOOK - PLAN DETAIL
SCALE: 1/8" = 1' - 0"

5 SECTION THROUGH PLAZA & OVERLOOK (A-A')
SCALE: 1/8" = 1' - 0"

CONCRETE WORK - JOINT DETAIL
N.T.S.

LEGEND

KEY PLAN

No.	ISSUE	DA
	Issue for Planning Board Review	4/
	Interim Issue (90%)	3/
	Interim Issue (75%)	3/
	65% Issue for Planning Board Review	2/
	Interim Draft Set	2/
	Work Begins	1/

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIAT
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
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P.O. Box 69A
Cumberland Center, ME 04021
(207 829-5884

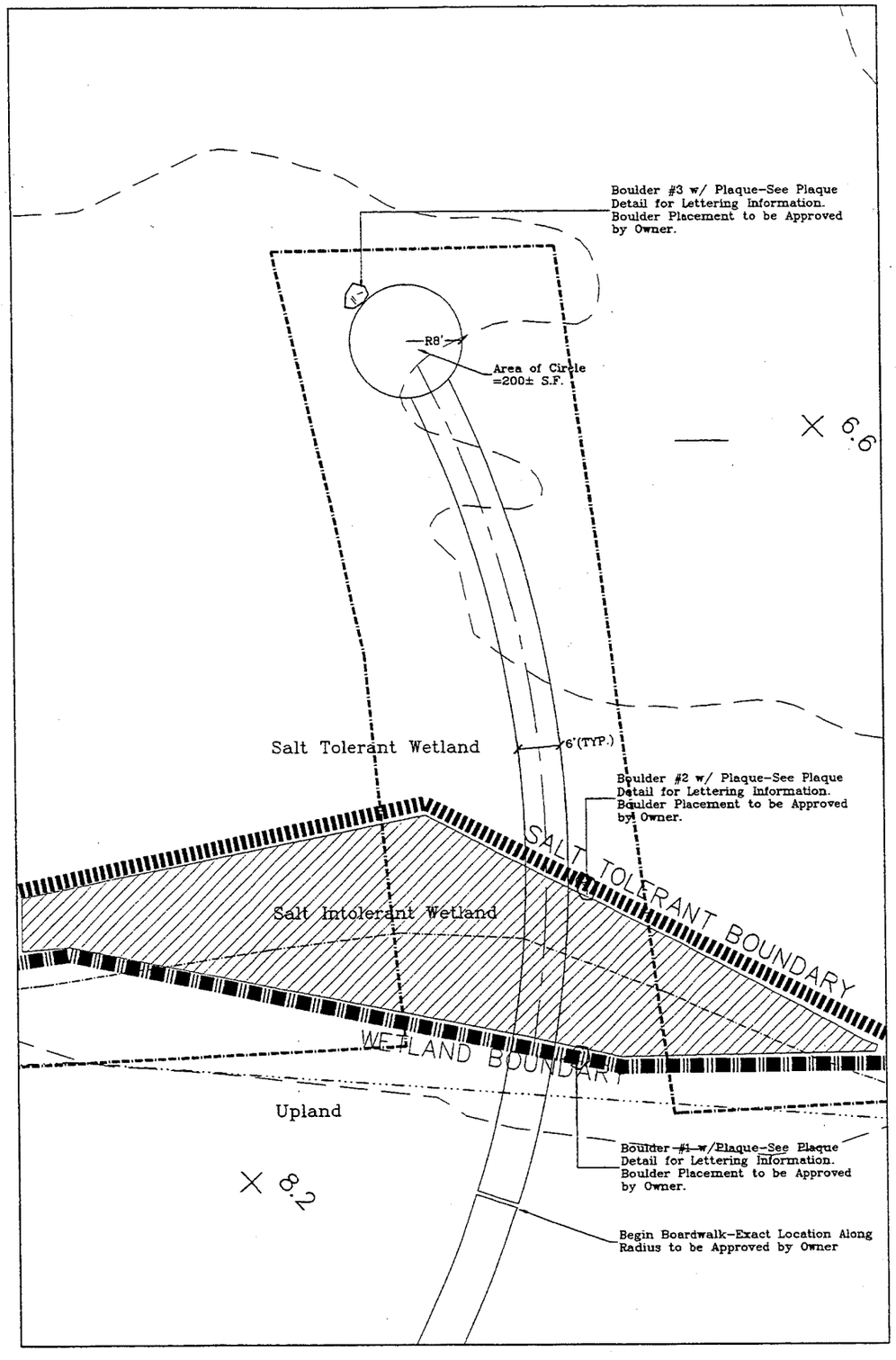
Baker Design Con
11 Sherry Brook La
Yarmouth, ME 04
(207) 846-6724

PLAN DETAILS

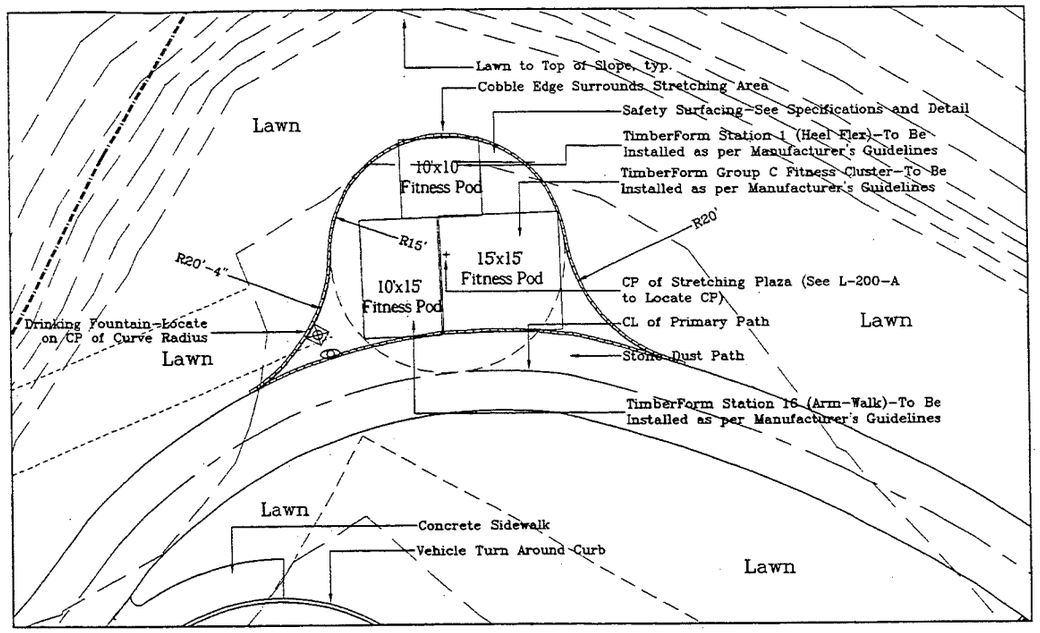
Project No.	Date
92-45	12.15.9
CAD File No.	Scale
plandetails.dwg	As No

Drawing No.

L-401



5 BOARDWALK DETAIL
SCALE: 1/8" = 1'-0"



5 STRETCHING AREA DETAIL
SCALE: 1/8" = 1'-0"

LEGEND

KEY PLAN

No.	ISSUE	DATE
	Issue for Planning Board Review	4/26
	Interim Issue (90%)	3/22
	Interim Issue (75%)	3/11
	65% Issue for Planning Board Review	2/9/
	Interim Draft Set	2/2/
	Work Begins	12/1

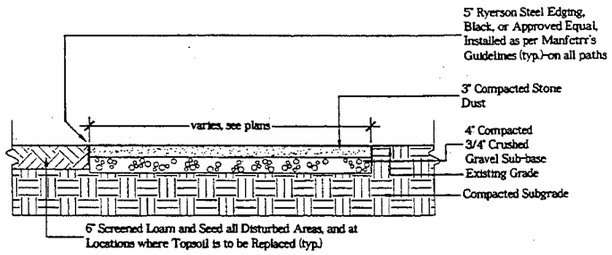
BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATES
LANDSCAPE ARCHITECTS
P.O. BOX 426, SACO, MAINE 04072
TEL. (207) 286-9201 FAX (207) 286-9650

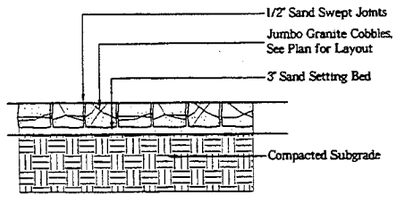
PLAN DETAILS

Project No. 12-46	Date 12.19.96
CAD File No. plandetails.dwg	Scale As Noted
Drawing No.	

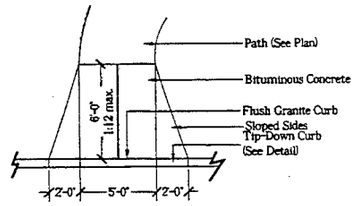
L-402



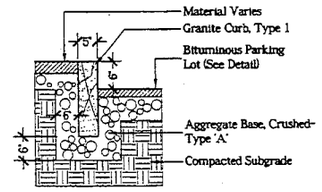
A STONE DUST WALK
SCALE: 3/4" = 1' - 0"



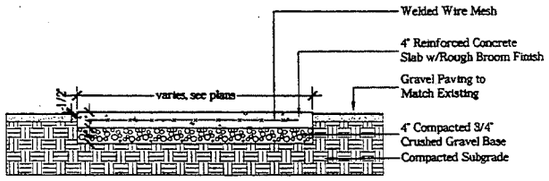
G COBBLE STONE TREE GRATE
SCALE: 1/2" = 1' - 0"



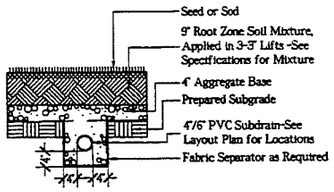
K UNIVERSAL ACCESS RAMP
SCALE: 1/4" = 1' - 0"



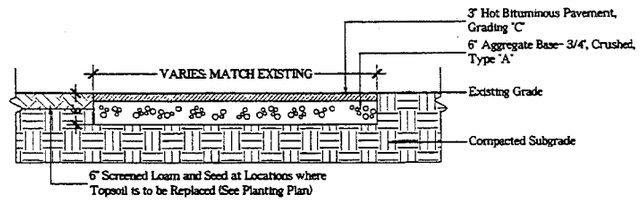
N GRANITE CURB - CROSS SECTION
SCALE: 3/4" = 1' - 0"



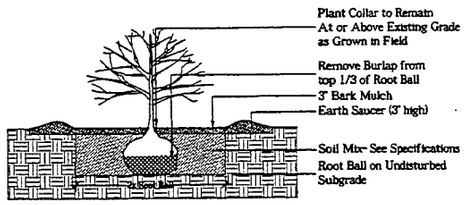
B REINFORCED CONCRETE PAVING
SCALE: 3/4" = 1' - 0"



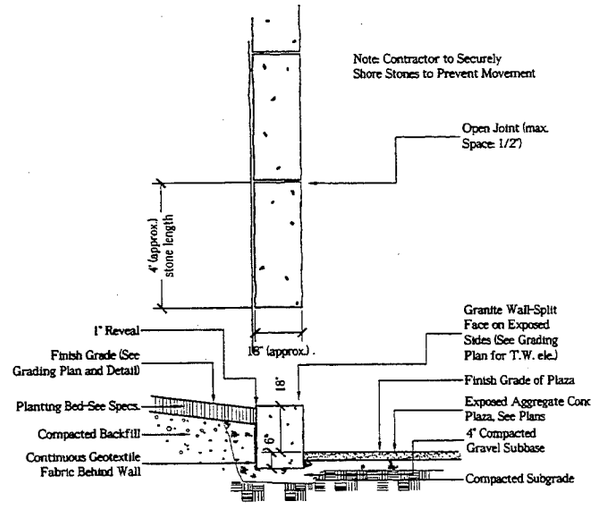
H NAT. TURF ATHLETIC FIELD W/ SUBDRAINS
SCALE: 3/4" = 1' - 0"



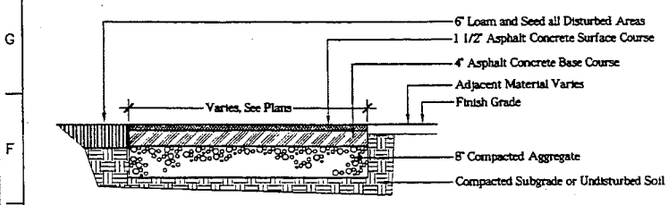
C BITUMINOUS SIDEWALK
SCALE: 3/4" = 1' - 0"



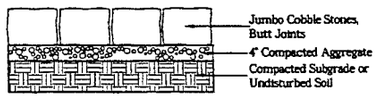
I SHRUB PLANTING
SCALE: 3/4" = 1' - 0"



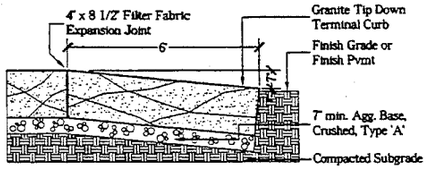
L GRANITE BLOCK WALL
SCALE: 1/2" = 1' - 0"



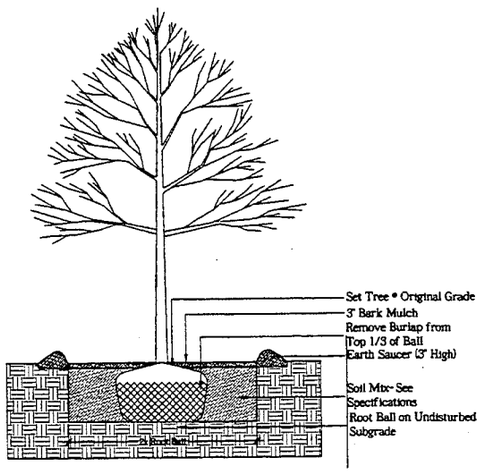
D BITUMINOUS PAVING @ PARKING LOT
SCALE: 3/4" = 1' - 0"



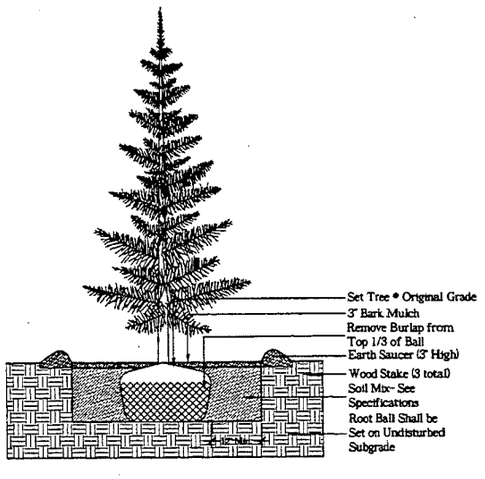
E JUMBO COBBLE STONE CROSSWALK
SCALE: 3/4" = 1' - 0"



F TIPDOWN GRANITE CURB (SECTION)
SCALE: 1/2" = 1' - 0"



J DECIDUOUS TREE PLANTING
SCALE: 3/4" = 1' - 0"



M CONIFEROUS TREE PLANTING
SCALE: 3/4" = 1' - 0"

LEGEND

KEY PLAN

No.	ISSUE	DATE
	Work Begins	12/
	Interim Draft Set	2/
	65% Issue for Planning Board Review	2/
	Interim Issue (75%)	3/1
	Interim Issue (90%)	3/2
	Issue for Planning Board Review	4/2

BACK COVE PARK
PORTLAND, MAINE

RICHARDSON & ASSOCIATE
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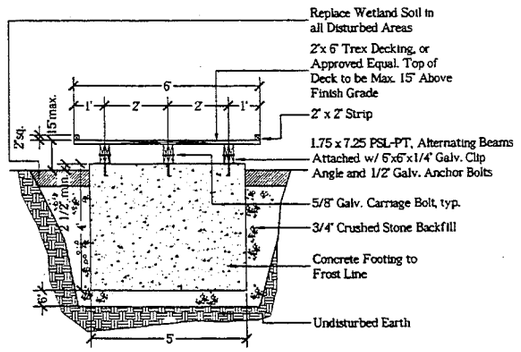
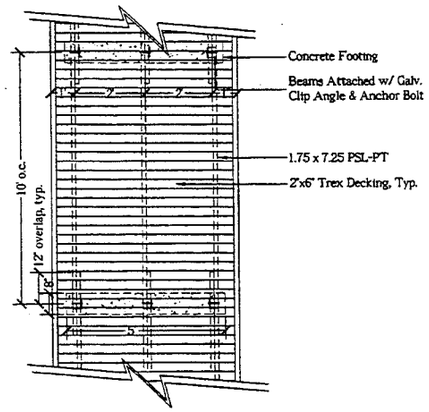
SITE DETAILS

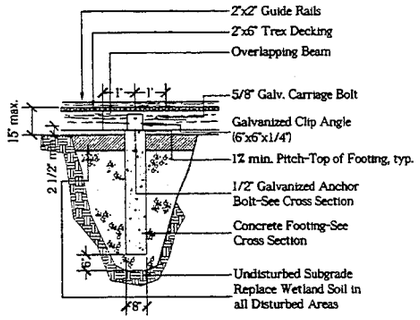
Project No. 72-05	Date 12.15.05
CAD File No. details.dwg	Scale As Noted
Drawing No.	

L-501

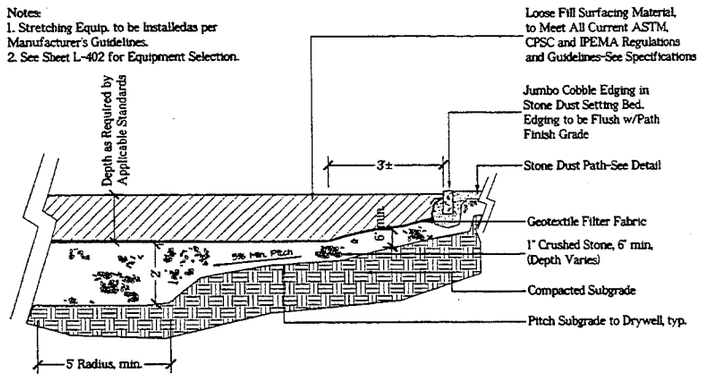




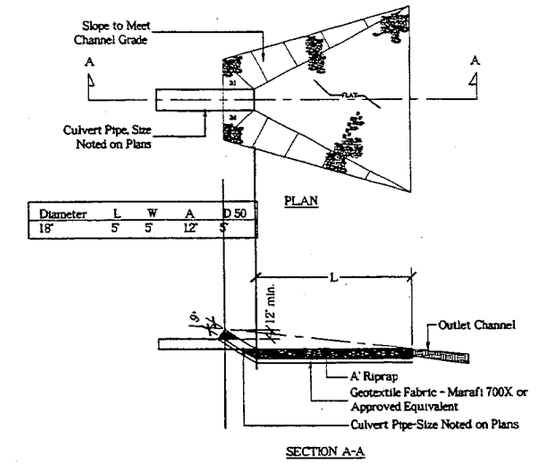
O BOARDWALK (CROSS SECTION and PLAN)
SCALE: 1/2" = 1' - 0"



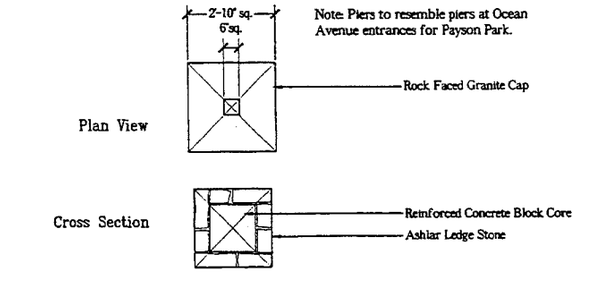
Q BOARDWALK (LONGITUDINAL SECTION)
SCALE: 1/2" = 1' - 0"



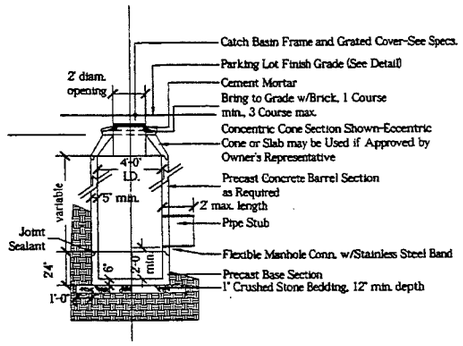
R STRETCHING AREA DETAIL
SCALE: 1/2"=1'-0"



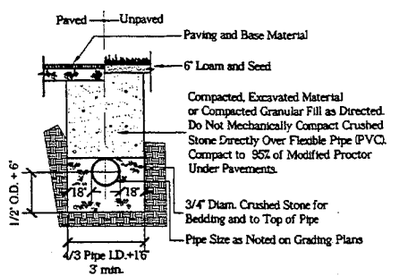
U RIP RAP INLET/OUTLET PROTECTION
N.T.S.



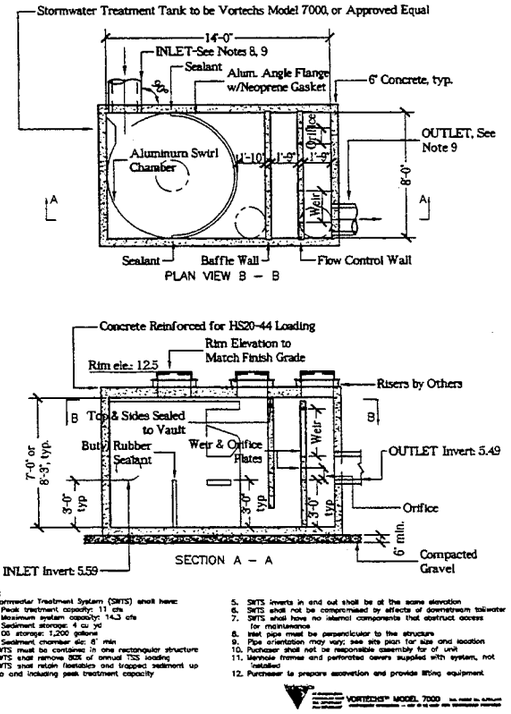
P STONE GATEWAY PIER
SCALE: 1/2" = 1' - 0"



S CATCH BASIN
N.T.S.



T SINGLE PIPE TRENCH
N.T.S.



V TREATMENT TANK - PLAN & SECTION
N.T.S.

LEGEND

KEY PLAN

No.	ISSUE	DA
	Issue for Planning Board Review	4,
	Interim Issue (90%)	3,
	Interim Issue (75%)	3,
	65% Issue for Planning Board Review	2,
	Interim Draft Set	2,
	Work Begins	1:

BACK COVE PARK
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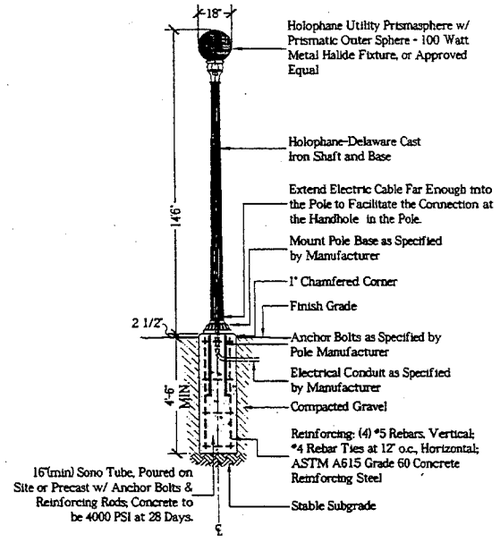
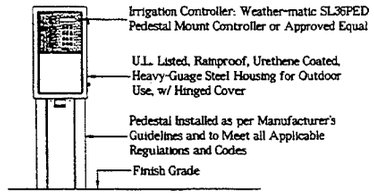
SITE DETAILS

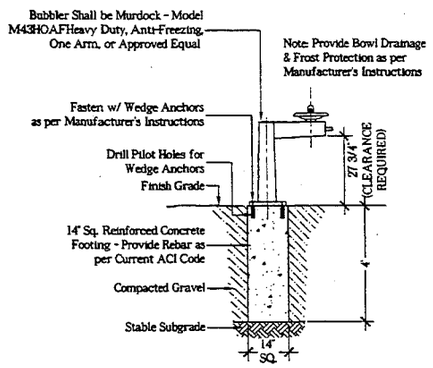
Project No. 12-45	Date 12.15.9
CAD File No. details.dwg	Scale As No
Drawing No.	L-502



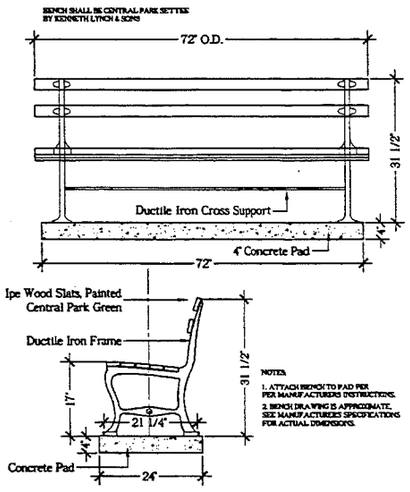
W 100 WATT METAL HALIDE LIGHT POLE
N.T.S.



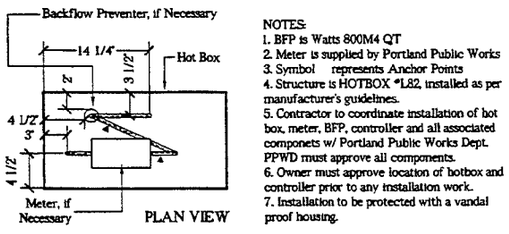
T PEDESTAL MOUNT IRRIGATION CONTROLLER
N.T.S.



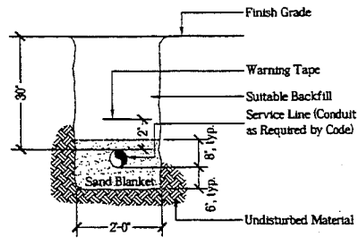
Z DRINKING FOUNTAIN DETAIL
N.T.S.



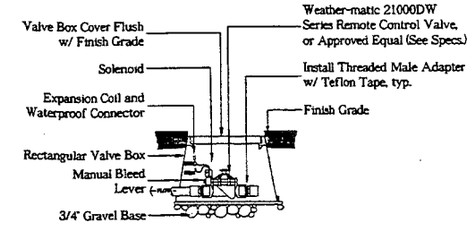
X BENCH DETAIL
N.T.S.



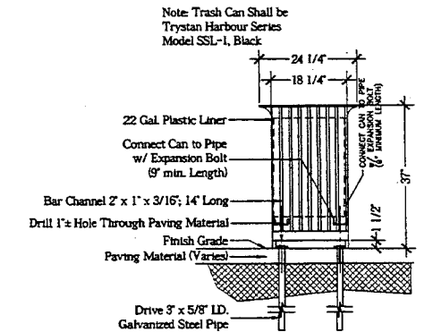
ABOVE GROUND WATER METER & BACKFLOW PREV. INSTALLATION SCHEMATIC (IF NECESSARY)
AA N.T.S.



BB ELECTRIC SERVICE TRENCH
N.T.S.



CC REMOTE CONTROL IRRIGATION VALVE
N.T.S.



DD TRASH RECEPTACLE DETAIL
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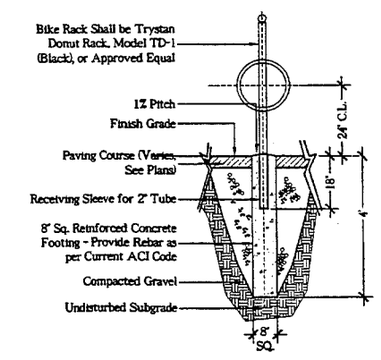
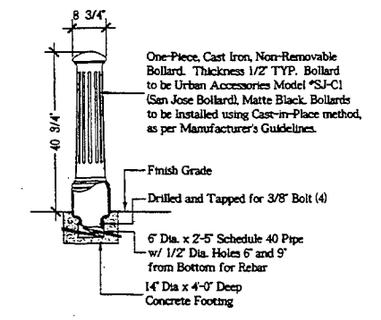
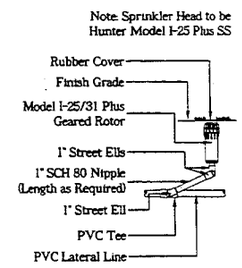


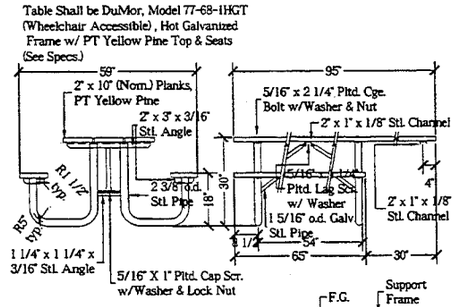
EE BIKE RACK DETAIL
N.T.S.



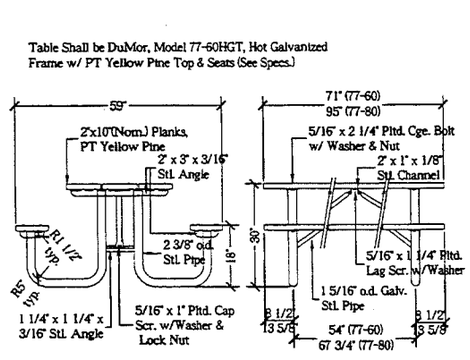
FF BOLLARD DETAIL
N.T.S.



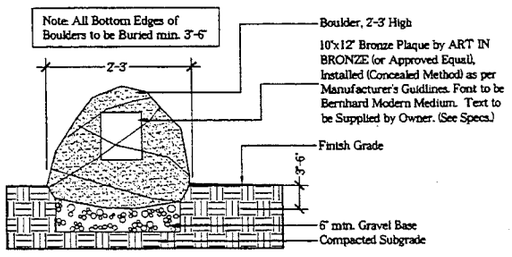
GG POP-UP IRRIGATION SPRINKLER HEAD
N.T.S.



HH WHEELCHAIR ACCESSIBLE PICNIC TABLE
N.T.S.



II 6' PICNIC TABLE
N.T.S.



JJ BOULDER & PLAQUE DETAIL
N.T.S.

LEGEND

KEY PLAN

No.	ISSUE	Date
	Issue for Planning Board Review	
	Interim Issue (90%)	
	Interim Issue (75%)	
	65% Issue for Planning Board Review	
	Interim Draft Set	
	Work Begins	

BACK COVE PARK
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TEL (207) 286-9091 FAX (207) 205-9650

SITE DETAILS

Project No.	Date
72-49	12.15.0
CAD File No.	Scale
details.dwg	As N
Drawing No.	

L-501