

354-A-3

2004-0040

1 Rice Street

Capricorn Products

Alpine Realty Corp.

on spreadsheet

**CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
DRC Copy**

2004-0040  
Application I. D. Number  
  
3/9/2004  
Application Date  
  
Capricorn Products  
Project Name/Description

Alpine Realty Corp  
Applicant  
120 Exchange St , Portland , ME 04101  
Applicant's Mailing Address

1 - 1 Rice St, Portland, Maine  
Address of Proposed Site  
354 A003001  
Assessor's Reference: Chart-Block-Lot

Consultant/Agent  
Applicant Ph: (207) 775-3499 Agent Fax:  
Applicant or Agent Daytime Telephone, Fax

Proposed Development (check all that apply):  New Building  Building Addition  Change Of Use  Residential  Office  Retail  
 Manufacturing  Warehouse/Distribution  Parking Lot  Other (specify) \_\_\_\_\_

9,010 sq. ft. IM  
Proposed Building square Feet or # of Units Acreage of Site Zoning

**Check Review Required:**

- |  |   |  |  |
|--|---|--|--|
| <input checked="" type="checkbox"/> Site Plan<br>(major/minor) | <input type="checkbox"/> Subdivision<br># of lots _____ | <input type="checkbox"/> PAD Review            | <input type="checkbox"/> 14-403 Streets Review   |
| <input type="checkbox"/> Flood Hazard                          | <input type="checkbox"/> Shoreland                      | <input type="checkbox"/> Historic Preservation | <input type="checkbox"/> DEP Local Certification |
| <input type="checkbox"/> Zoning Conditional<br>Use (ZBA/PB)    | <input type="checkbox"/> Zoning Variance                |  | <input type="checkbox"/> Other _____             |

Fees Paid: Site Pla \$400.00 Subdivision \_\_\_\_\_ Engineer Review \_\_\_\_\_ Date 3/9/2004

**DRC Approval Status:**

Reviewer \_\_\_\_\_

- Approved  Approved w/Conditions  
See Attached  Denied

Approval Date \_\_\_\_\_ Approval Expiration \_\_\_\_\_ Extension to \_\_\_\_\_  Additional Sheets  
Attached

Condition Compliance \_\_\_\_\_  
signature date

**Performance Guarantee**  Required\*  Not Required

\* No building permit may be issued until a performance guarantee has been submitted as indicated below

- |   |                |  |                 |
|---|----------------|--|-----------------|
| <input type="checkbox"/> Performance Guarantee Accepted     | _____          | _____  | _____           |
|   | date           | amount   | expiration date |
| <input type="checkbox"/> Inspection Fee Paid                | _____          | _____  |                 |
|   | date           | amount   |                 |
| <input type="checkbox"/> Building Permit Issue              | _____          |  |                 |
|   | date           |  |                 |
| <input type="checkbox"/> Performance Guarantee Reduced      | _____          | _____  | _____           |
|   | date           | remaining balance                                  | signature       |
| <input type="checkbox"/> Temporary Certificate of Occupancy | _____          | <input type="checkbox"/> Conditions (See Attached) | _____           |
|   | date           |  | expiration date |
| <input type="checkbox"/> Final Inspection                   | _____          | _____  |                 |
|   | date           | signature  |                 |
| <input type="checkbox"/> Certificate Of Occupancy           | _____          |  |                 |
|   | date           |  |                 |
| <input type="checkbox"/> Performance Guarantee Released     | _____          | _____  |                 |
|   | date           | signature  |                 |
| <input type="checkbox"/> Defect Guarantee Submitted         | _____          | _____  | _____           |
|   | submitted date | amount   | expiration date |
| <input type="checkbox"/> Defect Guarantee Released          | _____          | _____  |                 |
|   | date           | signature  |                 |

**From:** Marge Schmuckai  
**To:** Kandi Talbot  
**Date:** Tue, Mar 16, 2004 10:28 AM  
**Subject:** Re: Application #2004-0040

Kandi,

I guess that I am not following your logic. I am assuming this is a change of use from warehouse/industrial use to general/business offices. And that is why there is a requirement of site plan review. All the uses in the building (including the past approved industrial warehouse use) must be included for purposes of parking. The uses would breakdown as such:

offices: 9,010 divided by 400 = 22.525 or 23 spaces required  
industrial: 46,294 " by 1000 = 46.3 or 46 spaces required

a total of 69 parking spaces are required. I have only counted 27 spaces on the submitted site plan. I have no narrative of uses attached to my site plan application. Was there something else submitted other than a site plan from David Lloyd?

Results: They are short on parking.

Marge

>>> Kandi Talbot 03/11 11:57 AM >>>

Marge,

I have talked to John Shields. He has said that this industrial building at Rice Street is currently vacant. Capricorn Products is going to use 9,010 sq. ft. for their business. There are approximately 28 parking spaces. Even if you calculate the use as office, it appears they meet their parking. The rest of the building is vacant, so that is not included in the parking calculation, right? Just want to make sure the parking is okay with this application. Thanks.

Kandi

**CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
Planning Copy**

2004-0040  
Application I. D. Number  
  
3/9/2004  
Application Date

Alpine Realty Corp  
Applicant  
120 Exchange St, Portland, ME 04101  
Applicant's Mailing Address

Capricorn Products  
Project Name/Description

Consultant/Agent  
Applicant Ph: (207) 775-3499 Agent Fax:  
Applicant or Agent Daytime Telephone, Fax

1 - 1 Rice St, Portland, Maine  
Address of Proposed Site  
354 A003001  
Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply):  New Building  Building Addition  Change Of Use  Residential  Office  Retail  
 Manufacturing  Warehouse/Distribution  Parking Lot  Other (specify) \_\_\_\_\_

9,010 sq. ft. IM  
Proposed Building square Feet or # of Units Acreage of Site Zoning

**Check Review Required:**

- |   |  |  |  |
|---|--|--|--|
| <input checked="" type="checkbox"/> Site Plan (major/minor) | <input type="checkbox"/> Subdivision # of lots _____ | <input type="checkbox"/> PAD Review            | <input type="checkbox"/> 14-403 Streets Review   |
| <input type="checkbox"/> Flood Hazard                       | <input type="checkbox"/> Shoreland                   | <input type="checkbox"/> Historic Preservation | <input type="checkbox"/> DEP Local Certification |
| <input type="checkbox"/> Zoning Conditional Use (ZBA/PB)    | <input type="checkbox"/> Zoning Variance             |  | <input type="checkbox"/> Other _____             |

Fees Paid: Site Pla \$400.00 Subdivision Engineer Review Date 3/9/2004

**Planning Approval Status:**

Reviewer \_\_\_\_\_

- Approved  Approved w/Conditions See Attached  Denied

Approval Date \_\_\_\_\_ Approval Expiration \_\_\_\_\_ Extension to \_\_\_\_\_  Additional Sheets Attached

OK to Issue Building Permit  
signature \_\_\_\_\_ date \_\_\_\_\_

Performance Guarantee  Required\*  Not Required

\* No building permit may be issued until a performance guarantee has been submitted as indicated below

<input type="checkbox"/> Performance Guarantee Accepted	_____	_____	_____
	date	amount	expiration date
<input type="checkbox"/> Inspection Fee Paid	_____	_____	
	date	amount	
<input type="checkbox"/> Building Permit Issue	_____		
	date		
<input type="checkbox"/> Performance Guarantee Reduced	_____	_____	_____
	date	remaining balance	signature
<input type="checkbox"/> Temporary Certificate of Occupancy	_____	<input type="checkbox"/> Conditions (See Attached)	_____
	date		expiration date
<input type="checkbox"/> Final Inspection	_____	_____	
	date	signature	
<input type="checkbox"/> Certificate Of Occupancy	_____		
	date		
<input type="checkbox"/> Performance Guarantee Released	_____	_____	
	date	signature	
<input type="checkbox"/> Defect Guarantee Submitted	_____	_____	_____
	submitted date	amount	expiration date
<input type="checkbox"/> Defect Guarantee Released	_____	_____	
	date	signature	



## City of Portland Site Plan Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Address of Proposed Development: 1 Rice Street		Zone: IM
Total Square Footage of Proposed Structure: 9010 sq. ft.		Square Footage of Lot: 4 A
Tax Assessor's Chart, Block & Lot:  Chart# 354    Block# A    Lot# 3	Property owner's mailing address: Alpine Realty 120 Exchange Street Portland, ME	Telephone #:  (207) 775-3499
Consultant/Agent, mailing address, phone # & contact person:  John Shields Archetype, P.A. 48 Union Wharf Portland, ME 04101 (207) 772-6022	Applicant's name, mailing address, telephone #/Fax#/Pager#:  John Wise Alpine Realty 120 Exchange Street Portland, ME 04101 (207) 775-3499	Project name:  Capricorn Products Interior Fit-up
<p><b>Proposed Development (check all that apply)</b></p> <p> <input type="checkbox"/> New Building    <input type="checkbox"/> Building Addition    <input checked="" type="checkbox"/> Change of Use    <input type="checkbox"/> Residential    <input checked="" type="checkbox"/> Office    <input type="checkbox"/> Retail    <input type="checkbox"/> Manufacturing  <input type="checkbox"/> Warehouse/Distribution    <input type="checkbox"/> Parking lot  <input type="checkbox"/> Subdivision (\$500.00) + amount of lots _____ (\$25.00 per lot) \$ _____  <input type="checkbox"/> Site Location of Development (\$3,000.00)              (except for residential projects which shall be \$200.00 per lot _____ )  <input type="checkbox"/> Traffic Movement (\$1,000.00)    <input type="checkbox"/> Stormwater Quality (\$250.00)  <input type="checkbox"/> Section 14-403 Review (\$400.00 + \$25.00 per lot)  <input type="checkbox"/> Other _____         </p> <p><b>Major Development (more than 10,000 sq. ft.)</b></p> <p> <input type="checkbox"/> Under 50,000 sq. ft. (\$500.00)  <input type="checkbox"/> 50,000 - 100,000 sq. ft. (\$1,000.00)  <input type="checkbox"/> Parking Lots over 100 spaces (\$1,000.00)  <input type="checkbox"/> 100,000 - 200,000 sq. ft. (\$2,000.00)  <input type="checkbox"/> 200,000 - 300,000 sq. ft. (\$3,000.00)  <input type="checkbox"/> Over 300,000 sq. ft. (\$5,000.00)  <input type="checkbox"/> After-the-fact Review (\$1,000.00 + applicable application fee)         </p> <p><b>Minor Site Plan Review</b></p> <p> <input checked="" type="checkbox"/> Less than 10,000 sq. ft. (\$400.00)  <input type="checkbox"/> After-the-fact Review (\$1,000.00 + applicable application fee)         </p> <p><b>Plan Amendments</b></p> <p> <input type="checkbox"/> Planning Staff Review (\$250.00)  <input type="checkbox"/> Planning Board Review (\$500.00)         </p>		



- Please see next page -

Who billing will be sent to: (Company, Contact Person, Address, Phone #)	John Wise Alpine Realty 120 Exchange Street Portland, ME 04101	(207) 775-3499
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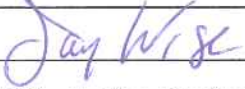
Submittals shall include (9) separate folded packets of the following:

- a. copy of application
- b. cover letter stating the nature of the project
- c. site plan containing the information found in the attached sample plans check list

**Amendment to Plans:** Amendment applications should include 6 separate packets of the above (a, b, & c)  
**ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM**

Section 14-522 of the Zoning Ordinance outlines the process; copies are available at the counter at .50 per page (8.5 x11) you may also visit the web site: [ci.portland.me.us](http://ci.portland.me.us) chapter 14

*I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.*

Signature of applicant: 	Date: 3/9/04
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This application is for site review ONLY, a building Permit application and associated fees will be required prior to construction.

## Development in Portland

The City of Portland has instituted the following fees to recover the costs of reviewing development proposals under the Site Plan and Subdivision ordinances: application fee; engineering fee; and inspection fee. Performance and defect guarantees are also required by ordinance to cover all site work proposed.

The **Application Fee** covers general planning and administrative processing costs, and is paid at the time of application.

The Planning Division is required to send notices to neighbors upon receipt of an application and prior to public meetings. The applicant will be billed for mailing and advertisement costs. Applicants for development will be charged an **Engineering Review Fee**. This fee is charged by the Planning Division for review of on-site improvements of a civil engineering nature, such as storm water management as well as the engineering analysis of related improvements within the public right-of-way, such as public streets and utility connections, as assessed by the Department of Public Works. The Engineering Review fee must be paid before a building permit can be issued. Monthly invoices are sent out by the Planning Division on a monthly basis to cover engineering costs.

A **Performance Guarantee** will be required following approval of development plans. This guarantee covers all required improvements within the public right-of-way, plus certain site improvements such as landscaping, paving, and drainage improvements. The Planning Division will provide a cost estimate form for figuring the amount of the performance guarantee, as well as sample form letters to be filled out by a financial institution.

An **Inspection Fee** must also be submitted to cover inspections to ensure that sites are developed in accordance with the approved plan. The inspection fee is 2.0% of the performance guarantee amount, or as assessed by the planning or public works engineer. The minimum inspection fee is \$300 for development, unless no site improvements are proposed. Public Works inspects work within the City right-of-way and Planning inspects work within the site including pipe-laying and connections. (The contractor must work with inspectors to coordinate timely inspections, and should provide adequate notice before inspections, especially in the case of final inspection.)

Upon completion of a development project, the performance guarantee is released, and a **Defect Guarantee** in the amount of 10% of the performance guarantee must be provided. The Defect Guarantee will be released after a year.

Other reimbursements to the City include actual or apportioned costs for advertising and mailed notices. All fees shall be paid prior to the issuance of any building permit.

For more information on the fees or review process, please call the Planning Division at 874-8719 or 874-8721.



# City Of Portland Site Plan Checklist

Project Name, Address of Project	Application Number	
Submitted ( ) & Date	Item	Required Information <span style="float: right;">Section 14-525 (b,c)</span>
_____	(1)	Standard boundary survey (stamped by a registered surveyor, at a scale of not less than 1 inch to 100 feet and including: <span style="float: right;">l</span>
_____	(2)	Name and address of applicant and name of proposed development <span style="float: right;">a</span>
_____	(3)	Scale and north points <span style="float: right;">b</span>
_____	(4)	Boundaries of the site <span style="float: right;">c</span>
_____	(5)	Total land area of site <span style="float: right;">d</span>
_____	(6)	Topography - existing and proposed (2 feet intervals or less) <span style="float: right;">e</span>
_____	(7)	Plans based on the boundary survey including: <span style="float: right;">2</span>
_____	(8)	Existing soil conditions <span style="float: right;">a</span>
_____	(9)	Location of water courses, marshes, rock outcroppings and wooded areas <span style="float: right;">b</span>
_____	(10)	Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used <span style="float: right;">c</span>
_____	(11)	Approx location of buildings or other structures on parcels abutting the site <span style="float: right;">d</span>
_____	(12)	Location of on-site waste receptacles <span style="float: right;">e</span>
_____	(13)	Public utilities <span style="float: right;">e</span>
_____	(14)	Water and sewer mains <span style="float: right;">e</span>
_____	(15)	Culverts, drains, existing and proposed, showing size and directions of flows <span style="float: right;">e</span>
_____	(16)	Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed <span style="float: right;">f</span>
_____	(17)	Location and dimensions of on-site pedestrian and vehicular access ways <span style="float: right;">f</span>
_____	(18)	Parking areas <span style="float: right;">g</span>
_____	(19)	Loading facilities <span style="float: right;">g</span>
_____	(20)	Design of ingress and egress of vehicles to and from the site onto public streets <span style="float: right;">g</span>
_____	(21)	Curb and sidewalks <span style="float: right;">g</span>
_____	(22)	Landscape plan showing: <span style="float: right;">b</span>
_____	(23)	Location of existing proposed vegetation <span style="float: right;">h</span>
_____	(24)	Type of vegetation <span style="float: right;">h</span>
_____	(25)	Quantity of plantings <span style="float: right;">h</span>
_____	(26)	Size of proposed landscaping <span style="float: right;">h</span>
_____	(27)	Existing areas to be preserved <span style="float: right;">h</span>
_____	(28)	Preservation measures to be employed <span style="float: right;">h</span>
_____	(29)	Details of planting and preservation specifications <span style="float: right;">h</span>
_____	(30)	Location and dimensions of all fencing and screening <span style="float: right;">i</span>
_____	(31)	Location and intensity of outdoor lighting system <span style="float: right;">j</span>
_____	(32)	Location of fire hydrants, existing and proposed <span style="float: right;">k</span>
_____	(33)	Written statement <span style="float: right;">c</span>
_____	(34)	Description of proposed uses to be located on site <span style="float: right;">l</span>
_____	(35)	Quantity and type of residential, if any <span style="float: right;">l</span>
_____	(36)	Total land area of the site <span style="float: right;">b2</span>
_____	(37)	Total floor area and ground coverage of each proposed building and structure <span style="float: right;">b2</span>
_____	(38)	General summary of existing and proposed easements or other burdens <span style="float: right;">c3</span>
_____	(39)	Method of handling solid waste disposal <span style="float: right;">4</span>
_____	(40)	Applicant's evaluation of availability of off-site public facilities, including sewer, water and streets <span style="float: right;">5</span>
_____	(41)	Description of any problems of drainage or topography, or a representation that there are none <span style="float: right;">6</span>
_____	(42)	An estimate of the time period required for completion of the development <span style="float: right;">6</span>

_____	(43)	A list of all state and federal regulatory approvals to which the development may be subject to	8
_____	(44)	The status of any pending applications	8
_____	(45)	Anticipated timeframe for obtaining such permits	h8
_____	(46)	A letter of non jurisdiction	h8
_____	(47)	Evidence of financial and technical capability to undertake and complete the development including a letter from a responsible financial institution stating that it has reviewed the planned development and would seriously consider financing it when approved.	

Note: Depending on the size and scope of the proposed development, the Planning Board or Planning Authority may request additional information, including (but not limited to):

- drainage patterns and facilities;
- erosion and sedimentation controls to be used during construction;
- a parking and/or traffic study; and
- a noise study;
- an environmental impact study;
- a sun shadow study;
- a study of particulates and any other noxious emissions;
- a wind impact analysis.

Other comments:

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## Neighborhood Meetings

In May of 2001, the Planning Board's review procedures were revised to improve neighborhood notification and encourage communication between applicants for development and neighborhood residents.

Neighborhood meetings, organized and hosted by the applicant, are now required for zone change proposals, subdivisions of 5 or more units/lots, and for any major site plan proposals only. Notification of the neighborhood meeting must be mailed to property owners within 500 ft. of the development parcel.

### **Scheduling of Neighborhood Meeting:**

The neighborhood meeting must be held after the first Planning Board workshop but not less than seven (7) days prior to the Planning Board public hearing.

The meeting should be held in the evening, during the week, at a location in the neighborhood.

Upon request, the Planning Division will provide to the applicant mailing labels for the neighborhood meeting invitation. We require 48 hours notice to generate the mailing labels. A charge of \$1.00 per sheet of labels will be payable upon receipt of the labels.

### **Notice:**

The applicant shall send notices to property owners within 500 ft. of the development site at least 7 days prior to the neighborhood meeting. Notice shall contain a brief description of the project, date, time and location of the neighborhood meeting.

### **Sign-up Sheets and Meeting Minutes:**

At the meeting, the applicant shall circulate a sign-up sheet for those in attendance. The applicant shall also keep minutes of the meeting.

After holding the neighborhood meeting, the applicant shall submit the sign-up sheet and meeting minutes to the Planning Division. The meeting minutes and sign-up sheet will be attached to the Planning Board report. A public hearing will not be scheduled until the meeting minutes and sign-up sheet are submitted to the Planning Authority.

Please call the Planning Office (874-8719) if you have any questions.

Department of Planning & Development  
Lee D. Urban, Director



**CITY OF PORTLAND**

Division Directors  
Mark B. Adelson  
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP  
Planning

John N. Lufkin  
Economic Development

March 17, 2004

Mr. John Shields  
Archetype  
48 Union Street  
Portland, Maine 04104

RE: Change of Use, 1 Rice Street  
ID #2004-0040, CBL #354-A-003

Dear Mr. Shields:

After review of the change of use application for the building located at 1 Rice Street, submitted on March 9, 2004, it has been determined that the proposal does not meet the parking requirements of the City of Portland's Land Use Code.

The parking requirement is based on all of the uses in the building, including the past approved industrial warehouse use. Therefore, there are 23 spaces required for the proposed office use, and 46 spaces required for the existing industrial use for a total of 69 parking spaces. The submitted site plan only shows 27 parking spaces, which does not meet the parking requirement.

If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

Kandice Talbot  
Planner

CC: Sarah Hopkins, Development Review Services Manager  
Marge Schmuckal, Zoning Administrator

**DeLuca-Hoffman Associates, Inc.**

Consulting Engineers  
778 Main Street, Suite 8  
South Portland, Maine 04106

**(207) 775-1121**  
**Fax (207) 879-0896**

**TO: Portland Planning Authority**  
**City of Portland, City Hall**  
**389 Congress Street**  
**Portland, Maine 04101**

**LETTER OF TRANSMITTAL**

DATE September 9, 2004	JOB NO. 2360
ATTENTION Ms. Kandi Talbot, Planner	
RE: Via Currier	
Warehouse/Office Park	
1039 Riverside Street	
Portland Maine	

We are sending you  **Attached**  Under separate cover via \_\_\_\_\_ the following items:

- Shop Drawings     Prints     **Plans**     Samples     Specifications  
 Change Order

COPIES	DATE	NO.	DESCRIPTION
3			Site Plans

THESE ARE TRANSMITTED as checked below:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> For Approval        | <input type="checkbox"/> Approved as Submitted            | <input type="checkbox"/> Resubmit _____ Copies for Approval   |
| <input type="checkbox"/> <b>For Your Use</b> | <input type="checkbox"/> Approved as noted                | <input type="checkbox"/> Submit _____ copies for distribution |
| <input type="checkbox"/> As requested        | <input type="checkbox"/> Returned for corrections         | <input type="checkbox"/> Return _____ corrected prints        |
| For review and comment                       | <input type="checkbox"/> _____                            |   |
| <input type="checkbox"/> FOR BIDS DUE _____  | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US |   |

REMARKS:

Please call this office with any questions or if additional information is required.

COPY TO:

*BY CHAIR*

SIGNED: Tim Michaud, Project Engineer

*If enclosures are not as noted, kindly notify us at once.*



DeLUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

778 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX 207 879 0896

- SITE PLANNING AND DESIGN
- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- PERMITTING
- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION
- TRAFFIC STUDIES AND MANAGEMENT

August 20, 2004

Ms. Sarah Hopkins  
Planning Department  
City of Portland  
389 Congress Street  
Portland, Maine 04101

**Subject: Site Plan Amendment Application  
Capricorn Products - 1 Rice Street**

Dear Sarah:

Attached please find seven (7) copies of a Site Plan Amendment Application for the subject project, and a check in the amount of \$250.00 for the Capricorn Products site work improvements as shown on the attached drawings. The site work includes extension of a 24-foot wide pavement apron on the northerly side of the building 88 feet long to provide delivery access. Additional, larger-scale improvements are anticipated at this end of the site, which will be incorporated into a subsequent submission to the City.

Please contact our office with any questions regarding this matter.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Dwight D. Anderson, P.E.  
Senior Engineer

DDA/sq/JN2472.01/Hopkins-8-19-04

Enclosures: 7 copies – Site Plan Amendment Application  
7 copies – Drawing Sheet C-2  
7 copies – Drawing Sheet C-3  
Check in the amount of \$250.00

C: John Wise, Alpine Realty, with enclosures  
John Shields, Archetype, P.A., with enclosures



# City of Portland Site Plan Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Address of Proposed Development: 1 Rice Street		Zone: IM
Total Square Footage of Proposed Structure: N/A		Square Footage of Lot: 4 A
Tax Assessor's Chart, Block & Lot:  Chart# 354    Block# A    Lot# 3	Property owner's mailing address: Alpine Realty 120 Exchange Street Portland, ME	Telephone #: (207) 775-3499
Consultant/Agent, mailing address, phone # & contact person:  Dwight D. Anderson, P.E. DeLuca-Hoffman Associates, Inc. 778 Main Street, Suite 8 South Portland, ME 04106 (207) 775-1121	Applicant's name, mailing address, telephone #/Fax#/Pager#:  John Wise Alpine Realty 120 Exchange Street Portland, ME 04101 (207) 775-3499	Project name:  Capricorn Products (Site Work)
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Who billing will be sent to: (Company, Contact Person, Address, Phone #)	John Wise Alpine Realty 120 Exchange Street Portland, ME 04101 (207) 775-3499
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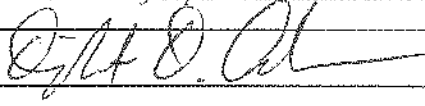
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_____	(2)	Name and address of applicant and name of proposed development	a
_____	(3)	Scale and north points	b
_____	(4)	Boundaries of the site	c
_____	(5)	Total land area of site	d
_____	(6)	Topography - existing and proposed (2 feet intervals or less)	e
_____	(7)	Plans based on the boundary survey including:	2
_____	(8)	Existing soil conditions	a
_____	(9)	Location of water courses, marshes, rock outcroppings and wooded areas	b
_____	(10)	Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used	c
_____	(11)	Approx location of buildings or other structures on parcels abutting the site	d
_____	(12)	Location of on-site waste receptacles	e
_____	(13)	Public utilities	e
_____	(14)	Water and sewer mains	e
_____	(15)	Culverts, drains, existing and proposed, showing size and directions of flows	e
_____	(16)	Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed	f
_____	(17)	Location and dimensions of on-site pedestrian and vehicular access ways	
_____	(18)	Parking areas	g
_____	(19)	Loading facilities	g
_____	(20)	Design of ingress and egress of vehicles to and from the site onto public streets	g
_____	(21)	Curb and sidewalks	g
_____	(22)	Landscape plan showing:	h
_____	(23)	Location of existing proposed vegetation	h
_____	(24)	Type of vegetation	h
_____	(25)	Quantity of plantings	h
_____	(26)	Size of proposed landscaping	h
_____	(27)	Existing areas to be preserved	h
_____	(28)	Preservation measures to be employed	h
_____	(29)	Details of planting and preservation specifications	h
_____	(30)	Location and dimensions of all fencing and screening	i
_____	(31)	Location and intensity of outdoor lighting system	j
_____	(32)	Location of fire hydrants, existing and proposed	k
_____	(33)	Written statement	c
_____	(34)	Description of proposed uses to be located on site	l
_____	(35)	Quantity and type of residential, if any	l
_____	(36)	Total land area of the site	b2
_____	(37)	Total floor area and ground coverage of each proposed building and structure	b2
_____	(38)	General summary of existing and proposed easements or other burdens	c3
_____	(39)	Method of handling solid waste disposal	4
_____	(40)	Applicant's evaluation of availability of off-site public facilities, including sewer, water and streets	5
_____	(41)	Description of any problems of drainage or topography, or a representation that there are none	6
_____	(42)	An estimate of the time period required for completion of the development	







# City of Portland Site Plan Application

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Total Square Footage of Proposed Structure: N/A		Square Footage of Lot: 4 A
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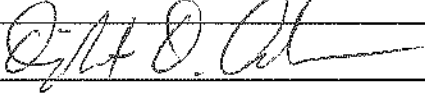
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_____	(5) Total land area of site		d
_____	(6) Topography - existing and proposed (2 feet intervals or less)		e
_____	(7) Plans based on the boundary survey including:		2
_____	(8) Existing soil conditions		a
_____	(9) Location of water courses, marshes, rock outcroppings and wooded areas		b
_____	(10) Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used		c
_____	(11) Approx location of buildings or other structures on parcels abutting the site		d
_____	(12) Location of on-site waste receptacles		e
_____	(13) Public utilities		e
_____	(14) Water and sewer mains		c
_____	(15) Culverts, drains, existing and proposed, showing size and directions of flows		e
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_____	(19) Loading facilities		g
_____	(20) Design of ingress and egress of vehicles to and from the site onto public streets		g
_____	(21) Curb and sidewalks		g
_____	(22) Landscape plan showing:		h
_____	(23) Location of existing proposed vegetation		h
_____	(24) Type of vegetation		h
_____	(25) Quantity of plantings		h
_____	(26) Size of proposed landscaping		h
_____	(27) Existing areas to be preserved		h
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_____	(41) Description of any problems of drainage or topography, or a representation that there are none		6
_____	(42) An estimate of the time period required for completion of the development		

_____	(43)	A list of all state and federal regulatory approvals to which the development may be subject to	8
_____	(44)	The status of any pending applications	8
_____	(45)	Anticipated timeframe for obtaining such permits	h8
_____	(46)	A letter of non jurisdiction	h8
_____	(47)	Evidence of financial and technical capability to undertake and complete the development including a letter from a responsible financial institution stating that it has reviewed the planned development and would seriously consider financing it when approved.	

Note: Depending on the size and scope of the proposed development, the Planning Board or Planning Authority may request additional information, including (but not limited to):

- drainage patterns and facilities;
- erosion and sedimentation controls to be used during construction;
- a parking and/or traffic study;
- and
- a noise study;
- an environmental impact study;
- a sun shadow study;
- a study of particulates and any other noxious emissions;
- a wind impact analysis.

Other comments:

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# City of Portland Site Plan Application

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Address of Proposed Development: 1 Rice Street		Zone: IM
Total Square Footage of Proposed Structure: N/A		Square Footage of Lot: 4 A
Tax Assessor's Chart, Block & Lot: Chart# 354    Block# A    Lot# 3	Property owner's mailing address: Alpine Realty 120 Exchange Street Portland, ME	Telephone #: (207) 775-3499
Consultant/Agent, mailing address, phone # & contact person: Dwight D. Anderson, P.E. DeLuca-Hoffman Associates, Inc. 778 Main Street, Suite 8 South Portland, ME 04106 (207) 775-1121	Applicant's name, mailing address, telephone #/Fax#/Pager#: John Wise Alpine Realty 120 Exchange Street Portland, ME 04101 (207) 775-3499	Project name: Capricorn Products (Site Work)
<b>Proposed Development (check all that apply)</b> <input type="checkbox"/> New Building <input type="checkbox"/> Building Addition <input type="checkbox"/> Change of Use <input type="checkbox"/> Residential <input type="checkbox"/> Office <input type="checkbox"/> Retail <input type="checkbox"/> Manufacturing <input type="checkbox"/> Warehouse/Distribution <input type="checkbox"/> Parking lot <input type="checkbox"/> Subdivision (\$500.00) + amount of lots _____ (\$25.00 per lot) \$ _____ <input type="checkbox"/> Site Location of Development (\$3,000.00) (except for residential projects which shall be \$200.00 per lot _____ ) <input type="checkbox"/> Traffic Movement (\$1,000.00) <input type="checkbox"/> Stormwater Quality (\$250.00) <input type="checkbox"/> Section 14-403 Review (\$400.00 + \$25.00 per lot) <input type="checkbox"/> Other _____		
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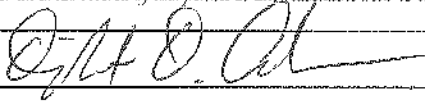
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_____ (4)	Boundaries of the site		c
_____ (5)	Total land area of site		d
_____ (6)	Topography - existing and proposed (2 feet intervals or less)		e
_____ (7)	Plans based on the boundary survey including:		2
_____ (8)	Existing soil conditions		a
_____ (9)	Location of water courses, marshes, rock outcroppings and wooded areas		b
_____ (10)	Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used		c
_____ (11)	Approx location of buildings or other structures on parcels abutting the site		d
_____ (12)	Location of on-site waste receptacles		e
_____ (13)	Public utilities		e
_____ (14)	Water and sewer mains		e
_____ (15)	Culverts, drains, existing and proposed, showing size and directions of flows		e
_____ (16)	Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed		f
_____ (17)	Location and dimensions of on-site pedestrian and vehicular access ways		
_____ (18)	Parking areas		g
_____ (19)	Loading facilities		g
_____ (20)	Design of ingress and egress of vehicles to and from the site onto public streets		g
_____ (21)	Curb and sidewalks		g
_____ (22)	Landscape plan showing:		h
_____ (23)	Location of existing proposed vegetation		h
_____ (24)	Type of vegetation		h
_____ (25)	Quantity of plantings		h
_____ (26)	Size of proposed landscaping		h
_____ (27)	Existing areas to be preserved		h
_____ (28)	Preservation measures to be employed		h
_____ (29)	Details of planting and preservation specifications		h
_____ (30)	Location and dimensions of all fencing and screening		i
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_____ (34)	Description of proposed uses to be located on site		l
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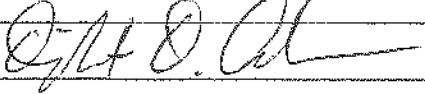
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_____	(43)	A list of all state and federal regulatory approvals to which the development may be subject to	8
_____	(44)	The status of any pending applications	8
_____	(45)	Anticipated timeframe for obtaining such permits	h8
_____	(46)	A letter of non jurisdiction	h8
_____	(47)	Evidence of financial and technical capability to undertake and complete the development including a letter from a responsible financial institution stating that it has reviewed the planned development and would seriously consider financing it when approved.	

Note: Depending on the size and scope of the proposed development, the Planning Board or Planning Authority may request additional information, including (but not limited to):

- drainage patterns and facilities;
- erosion and sedimentation controls to be used during construction;
- a parking and/or traffic study;
- and
- a noise study;
- an environmental impact study;
- a sun shadow study;
- a study of particulates and any other noxious emissions;
- a wind impact analysis.

Other comments:

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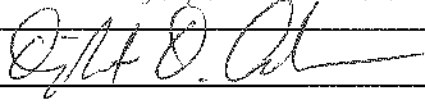
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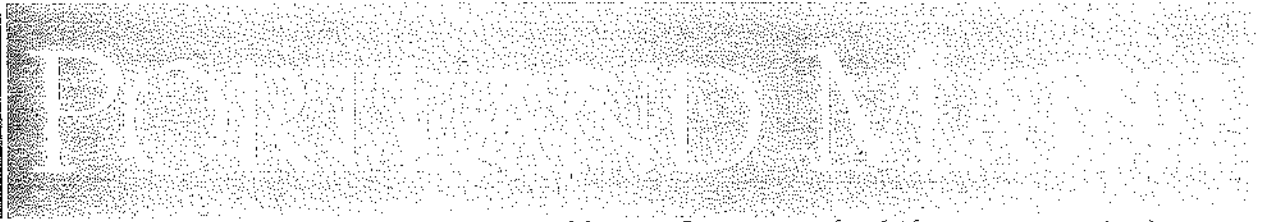
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_____	(14) Water and sewer mains		c
_____	(15) Culverts, drains, existing and proposed, showing size and directions of flows		e
_____	(16) Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed		f
_____	(17) Location and dimensions of on-site pedestrian and vehicular access ways		
_____	(18) Parking areas		g
_____	(19) Loading facilities		g
_____	(20) Design of ingress and egress of vehicles to and from the site onto public streets		g
_____	(21) Curb and sidewalks		g
_____	(22) Landscape plan showing:		h
_____	(23) Location of existing proposed vegetation		h
_____	(24) Type of vegetation		h
_____	(25) Quantity of plantings		h
_____	(26) Size of proposed landscaping		h
_____	(27) Existing areas to be preserved		h
_____	(28) Preservation measures to be employed		h
_____	(29) Details of planting and preservation specifications		h
_____	(30) Location and dimensions of all fencing and screening		i
_____	(31) Location and intensity of outdoor lighting system		j
_____	(32) Location of fire hydrants, existing and proposed		k
_____	(33) Written statement		c
_____	(34) Description of proposed uses to be located on site		l
_____	(35) Quantity and type of residential, if any		l
_____	(36) Total land area of the site		b2
_____	(37) Total floor area and ground coverage of each proposed building and structure		b2
_____	(38) General summary of existing and proposed easements or other burdens		c3
_____	(39) Method of handling solid waste disposal		4
_____	(40) Applicant's evaluation of availability of off-site public facilities, including sewer, water and streets		5
_____	(41) Description of any problems of drainage or topography, or a representation that there are none		6
_____	(42) An estimate of the time period required for completion of the development		





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**Planning & Development Department**  
Lee D. Urban, Director

**Planning Division**  
Alexander Jaegerman, Director

October 14, 2004

Mr. John Wise  
Alpine Realty Corp.  
120 Exchange Street  
Portland, ME 04101

RE: Capricorn Products Change of Use, 1 Rice Street  
ID #2004-0040, CBL #354-A-003

Dear Mr. Wise:

After a recent site visit, it has come to our attention that the development of the site is not in compliance with the approved site plan.

As part of the site plan approval, you were required to provide 63 parking spaces on site. The approved site plan showed 15 existing parking spaces and an additional 50 parking spaces were to be constructed, for a total of 65 parking spaces. However, the 15 parking spaces shown as existing, are not striped and are being used for outdoor storage and only 42 additional parking spaces were constructed.

To bring your development into compliance, you must stripe the 15 parking spaces on the westerly edge of the pavement near the loading docks and you must construct an additional 6 parking spaces to meet the 63 parking spaces required by zoning.

If you have any questions, please do not hesitate to contact Kandice Talbot at 874-8901.

Sincerely,

Alexander Jaegerman  
Planning Division Director

CC: Lee Urban, Planning and Development Director  
Sarah Hopkins, Development Review Program Manager  
Kandice Talbot, Planner  
Jay Reynolds, Development Review Coordinator  
Marge Schmuckal, Zoning Administrator



DeLUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

778 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX 207 879 0896

- SITE PLANNING AND DESIGN
- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- PERMITTING
- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION
- TRAFFIC STUDIES AND MANAGEMENT

May 14, 2004

Ms. Kandi Talbot  
Planning Department  
City of Portland  
389 Congress Street  
Portland, ME 04101-3503

**Subject: Capricorn Products – 1 Rice Street, Portland  
Site Plan Review Comments of James Seymour**

Dear Kandi:

Our office has reviewed the comments prepared by James Seymour and have the following responses.

**Stormwater Management**

**Comment A:**

*The inclusion of the street paving areas should be included with Tc timing and watershed analysis to accurately determine the peak runoff. We would suggest using a reach instead of channel flow for the modeling of the roadside ditches.*

**Response:**

With the street paving area included and a reach used to model the ditch Table 12-8 of the stormwater report changes as shown below:

<b>(ORIGINAL) TABLE 12-8</b>			
<b>Flow Rates at Points of Interests</b>			
<b>Peak Flow Rate in cfs (With Pond)</b>			
<b>POI #</b>	<b>Storm Event</b>	<b>Predevelopment</b>	<b>Postdevelopment</b>
1	2 year	7.80	7.79
	10 year	13.45	13.26
	25 year	16.12	16.08

<b>(REVISED) TABLE 12-8</b>			
<b>Flow Rates at Points of Interests</b>			
<b>Peak Flow Rate in cfs (With Pond)</b>			
<b>POI #</b>	<b>Storm Event</b>	<b>Predevelopment</b>	<b>Postdevelopment</b>
1	2 year	7.77	7.82
	10 year	13.45	13.34
	25 year	16.13	16.19

Ms. Kandi Talbot  
May 14, 2004  
Page 2

It is DeLuca-Hoffman Associates, Inc.'s opinion that these minimal increases are insignificant and do not warrant change to the design. Revised stormwater modeling calculations are attached.

Comment B:

*The outlet elevation of the pond should not be in the City ROW and is the elevations below existing ditch elevations?*

Response:

The bottom of the ditch is at elevation 74.73, approximately 9 inches below the pond outlet. The outlet pipe will not be installed extending into the City ROW. The pipe outlet is currently shown at the ROW line with only riprap stabilization installed in the City ROW.

Comment C:

*What is the pipe size on the downstream end of the Point of Interest #1? Can it handle the volume anticipated?*

Response:

The pipe size at the end of the ditch below the pond is 15 inches and at POI #1 is 18 inches, which both have capacity to carry respective flows of 4.02 and 16.19 cfs.

Comment D:

*We see the configuration of the 2" orifice as potentially having a clogging problem. The orifice should be re-arranged or redesigned to mitigate blockage from sediment and debris.*

Response:

To better protect the orifice a screen on the inlet pipe with crushed stone has been added. Figure SK-2 shows this provision.

Comment E:

*Pond cross-section details are needed along with stage storage levels.*

Response:

A cross section of the detention pond has been prepared and is included as Figure SK-1.

Comment G:

*Pavement details, curbing details, and pavement blending details are needed.*

Response:

A typical section for the curb, pavement and pavement blending have been provided as Figures SK-3, 4, and 5.

Ms. Kandi Talbot  
May 14, 2004  
Page 3

Comment H:

*Overall, the stormwater modeling generally adheres to acceptable standards; however, some additional information is necessary to make a final approval. We don't think that this information will restrict the proposed development but we need to have the assurance that the City's infrastructure will be able to handle the runoff without negative impacts on the immediate properties of downstream receiving areas.*

Response:

We trust the information provided in response to the comments cited above address these comments.

Road/Circulation

Comment A:

*The access lane needs to be delineated from the parking stalls in the existing lot to the entrance of the new lot. We suggest that islands be used but are open to other methods to assure that adequate turning maneuverability is maintained in a permanent manner.*

Response:

The configuration of the entrance to the new parking has been edited to address these comments as shown on Figure SK-6 attached. Pavement markings are proposed.

Comment B:

*The applicant may be forced to request a waiver for granite curb and sidewalk along the road frontage portion of the site. Please contact the planner and Public Works, regarding this issue.*

Response:

John Shields at Archetype reports that you thought this requirement might have been waived when the original Industrial Park was constructed. If a waiver is required, please contact John Shields concerning the final process for this request.

Lighting

Comment A:

*Are lights being proposed with the new parking lot? None are shown; will the lot be acceptably lit?*

Response:

The applicant is not preparing new lighting.



Ms. Kandi Talbot  
May 14, 2004  
Page 4

**Grading and Erosion Controls**

Comment A:

*Grading and erosion controls appear acceptable with the design.*

Response:

It is our understanding no formal response is required.

**Landscaping**

Comment A:

*Will there be any proposed landscaping or vegetative buffers between Riverside Street and the proposed lot?*

Response:

The applicant is not preparing additional landscaping.

If any of these responses do not address the comments raised, please contact our office.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.



William G. Hoffman, P.E.  
President

WGH/kmb/JN2472/Talbot5-14-04

Enclosures: Stormwater Modeling Calculations  
SK-1: Detention Basin Section/Section A-A  
SK-2: Schematic of Inlet Protection For Orifice  
SK-3: Type 3A Bituminous Curb Detail  
SK-4: Pavement Section Detail  
SK-5: New Pavement Adjacent to Existing Pavement Sawcut Detail  
SK-6: Striping at Entrance Drive

c: James Seymour, Sebago Technics, Inc.  
John Shields, Archetype  
John Wise, (Fax only)

**Subcatchment 1: Site**

Runoff = 1.67 cfs @ 12.41 hrs, Volume= 0.190 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
7,840	98	impervious
27,400	79	Woods, Fair, HSG D
47,155	80	>75% Grass cover, Good, HSG D
82,395	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.1	320	Total			

**Reach 1R: (new Reach)**

Inflow Area = 1.892 ac, Inflow Depth = 1.20"  
Inflow = 1.67 cfs @ 12.41 hrs, Volume= 0.190 af  
Outflow = 1.66 cfs @ 12.47 hrs, Volume= 0.189 af, Atten= 1%, Lag= 3.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.7 fps, Min. Travel Time= 2.2 min  
Avg. Velocity = 1.1 fps, Avg. Travel Time= 5.4 min

Peak Depth= 0.25'  
Capacity at bank full= 5.88 cfs  
2.00' x 0.50' deep channel, n= 0.030 Length= 360.0' Slope= 0.0250 1/  
Side Slope Z-value= 2.0 1'

**Reach POI: (new Reach)**

Inflow Area = 4.555 ac, Inflow Depth = 1.74"  
Inflow = 7.77 cfs @ 12.05 hrs, Volume= 0.661 af  
Outflow = 7.77 cfs @ 12.05 hrs, Volume= 0.661 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Subcatchment 1: Site**

Runoff = 3.51 cfs @ 12.39 hrs, Volume= 0.398 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
7,840	98	impervious
27,400	79	Woods, Fair, HSG D
47,155	80	>75% Grass cover, Good, HSG D
82,395	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.1	320	Total			

**Reach 1R: (new Reach)**

Inflow Area = 1.892 ac, Inflow Depth = 2.52"  
 Inflow = 3.51 cfs @ 12.39 hrs, Volume= 0.398 af  
 Outflow = 3.48 cfs @ 12.44 hrs, Volume= 0.397 af, Atten= 1%, Lag= 3.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 3.4 fps, Min. Travel Time= 1.8 min  
 Avg. Velocity = 1.3 fps, Avg. Travel Time= 4.5 min

Peak Depth= 0.38'  
 Capacity at bank full= 5.88 cfs  
 2.00' x 0.50' deep channel, n= 0.030 Length= 360.0' Slope= 0.0250 1/  
 Side Slope Z-value= 2.0 1'

**Reach POI: (new Reach)**

Inflow Area = 4.555 ac, Inflow Depth = 3.20"  
 Inflow = 13.45 cfs @ 12.05 hrs, Volume= 1.216 af  
 Outflow = 13.45 cfs @ 12.05 hrs, Volume= 1.216 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**rice street - pre2 with reach**

Type III 24-hr Rainfall=5.50"

Prepared by {enter your company name here}

Page 1

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5/14/2004

**Subcatchment 1: Site**

Runoff = 4.42 cfs @ 12.39 hrs, Volume= 0.503 af, Depth= 3.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
7,840	98	impervious
27,400	79	Woods, Fair, HSG D
47,155	80	>75% Grass cover, Good, HSG D
82,395	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
28.1	320	Total			

**Reach 1R: (new Reach)**

Inflow Area = 1.892 ac, Inflow Depth = 3.19"  
Inflow = 4.42 cfs @ 12.39 hrs, Volume= 0.503 af  
Outflow = 4.38 cfs @ 12.44 hrs, Volume= 0.502 af, Atten= 1%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.6 fps, Min. Travel Time= 1.7 min  
Avg. Velocity = 1.4 fps, Avg. Travel Time= 4.2 min

Peak Depth= 0.43'  
Capacity at bank full= 5.88 cfs  
2.00' x 0.50' deep channel, n= 0.030 Length= 360.0' Slope= 0.0250 1/  
Side Slope Z-value= 2.0 1'

**Reach POI: (new Reach)**

Inflow Area = 4.555 ac, Inflow Depth = 3.91"  
Inflow = 16.13 cfs @ 12.05 hrs, Volume= 1.485 af  
Outflow = 16.13 cfs @ 12.05 hrs, Volume= 1.485 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Subcatchment 1: Site**

Runoff = 1.25 cfs @ 12.40 hrs, Volume= 0.141 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
7,840	98	impervious
26,000	79	Woods, Fair, HSG D
24,395	80	>75% Grass cover, Good, HSG D
58,235	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.1	320	Total			

**Reach 1R: (new Reach)**

Inflow Area = 1.337 ac, Inflow Depth = 1.27"  
Inflow = 1.25 cfs @ 12.40 hrs, Volume= 0.141 af  
Outflow = 1.24 cfs @ 12.47 hrs, Volume= 0.140 af, Atten= 1%, Lag= 4.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.4 fps, Min. Travel Time= 2.5 min  
Avg. Velocity = 1.0 fps, Avg. Travel Time= 6.1 min

Peak Depth= 0.21'  
Capacity at bank full= 5.88 cfs  
2.00' x 0.50' deep channel, n= 0.030 Length= 360.0' Slope= 0.0250 '/'  
Side Slope Z-value= 2.0 '/'

**Reach POI: (new Reach)**

Inflow Area = 4.555 ac, Inflow Depth = 1.86"  
Inflow = 7.82 cfs @ 12.05 hrs, Volume= 0.706 af  
Outflow = 7.82 cfs @ 12.05 hrs, Volume= 0.706 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**rice street - post2 with reach**

Type III 24-hr Rainfall=4.70"

Prepared by {enter your company name here}

Page 1

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5/14/2004

**Subcatchment 1: Site**

Runoff = 2.56 cfs @ 12.39 hrs, Volume= 0.291 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
7,840	98	impervious
26,000	79	Woods, Fair, HSG D
24,395	80	>75% Grass cover, Good, HSG D
58,235	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.1	320	Total			

**Reach 1R: (new Reach)**

Inflow Area = 1.337 ac, Inflow Depth = 2.61"  
Inflow = 2.56 cfs @ 12.39 hrs, Volume= 0.291 af  
Outflow = 2.54 cfs @ 12.45 hrs, Volume= 0.290 af, Atten= 1%, Lag= 3.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.1 fps, Min. Travel Time= 2.0 min  
Avg. Velocity = 1.2 fps, Avg. Travel Time= 5.1 min

Peak Depth= 0.32'  
Capacity at bank full= 5.88 cfs  
2.00' x 0.50' deep channel, n= 0.030 Length= 360.0' Slope= 0.0250 '/'  
Side Slope Z-value= 2.0 '/

**Reach POI: (new Reach)**

Inflow Area = 4.555 ac, Inflow Depth = 3.34"  
Inflow = 13.34 cfs @ 12.05 hrs, Volume= 1.269 af  
Outflow = 13.34 cfs @ 12.05 hrs, Volume= 1.269 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**rice street - post2 with reach**

Type III 24-hr Rainfall=5.50"

Prepared by {enter your company name here}

Page 1

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5/14/2004

**Subcatchment 1: Site**

Runoff = 3.21 cfs @ 12.39 hrs, Volume= 0.366 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
7,840	98	impervious
26,000	79	Woods, Fair, HSG D
24,395	80	>75% Grass cover, Good, HSG D
58,235	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.1	320	Total			

**Reach 1R: (new Reach)**

Inflow Area = 1.337 ac, Inflow Depth = 3.29"  
Inflow = 3.21 cfs @ 12.39 hrs, Volume= 0.366 af  
Outflow = 3.18 cfs @ 12.44 hrs, Volume= 0.365 af, Atten= 1%, Lag= 3.3 min

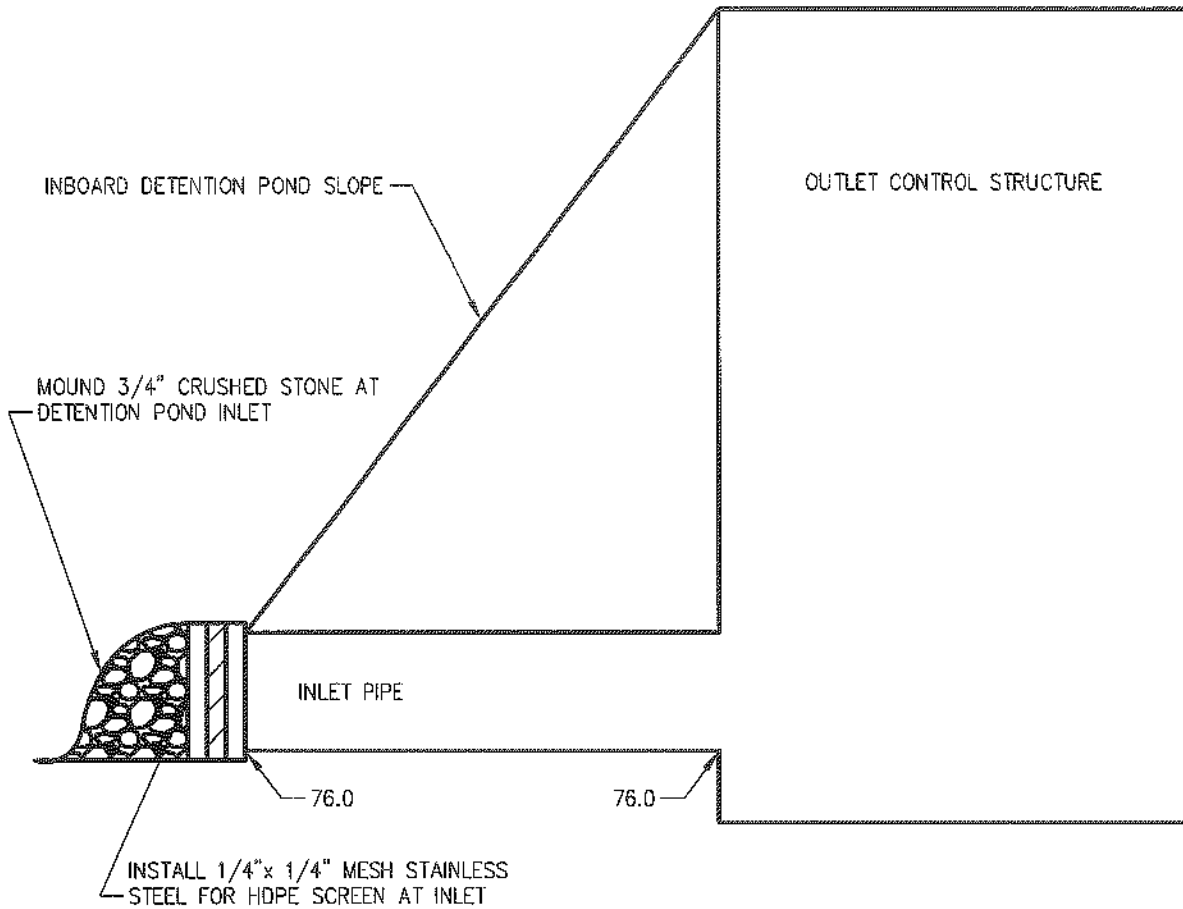
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Max. Velocity= 3.3 fps, Min. Travel Time= 1.8 min  
Avg. Velocity = 1.3 fps, Avg. Travel Time= 4.8 min

Peak Depth= 0.36'  
Capacity at bank full= 5.88 cfs  
2.00' x 0.50' deep channel, n= 0.030 Length= 360.0' Slope= 0.0250 '/'  
Side Slope Z-value= 2.0 '/'

**Reach POI: (new Reach)**

Inflow Area = 4.555 ac, Inflow Depth = 4.06"  
Inflow = 16.19 cfs @ 12.05 hrs, Volume= 1.539 af  
Outflow = 16.19 cfs @ 12.05 hrs, Volume= 1.539 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**CAPRICORN PRODUCTS**  
**PORTLAND, MAINE**

**SCHEMATIC OF INLET  
 PROTECTION FOR ORIFICE**

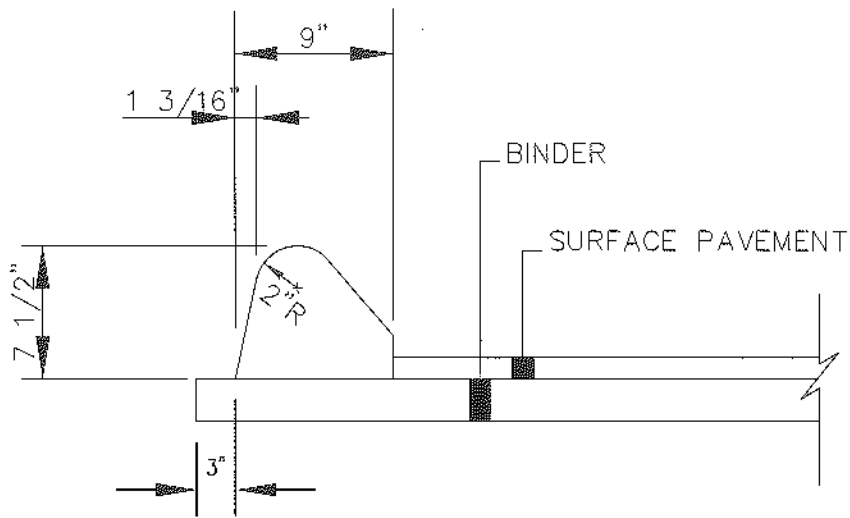


**DeLuca-Hoffman Associates, Inc.**  
 778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 207.775.1121  
 WWW.DELUCAHOFFMAN.COM

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DESIGNED:	WGH	SCALE:	N.T.S.
CHECKED:	WGH	JOB NO.	2472
FILE NAME:	2472-SK-2		

FIGURE  
**SK-2**





CAPRICORN PRODUCTS  
PORTLAND, MAINE

TYPE 3A BITUMINOUS CURB  
DETAIL



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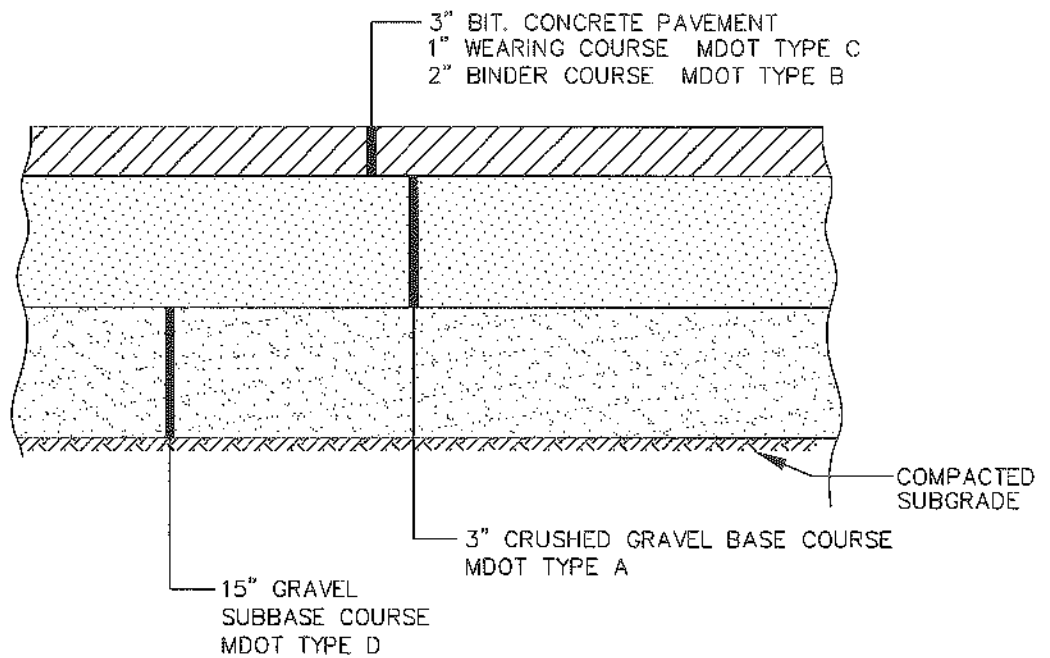
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DESIGNED:	WGH	SCALE:	N.T.S.
CHECKED:	WGH	JOB NO.	2472
FILE NAME:	2472-SK-3		

FIGURE

SK-3

NOTE:

1. MDOT TYPE D AGGREGATE GRADATION SHALL BE MODIFIED FOR A MAXIMUM 4" STONE SIZE AND LIMIT #200 SIEVE TO 5% PASSING.



CAPRICORN PRODUCTS  
PORTLAND, MAINE

PAVEMENT SECTION DETAIL

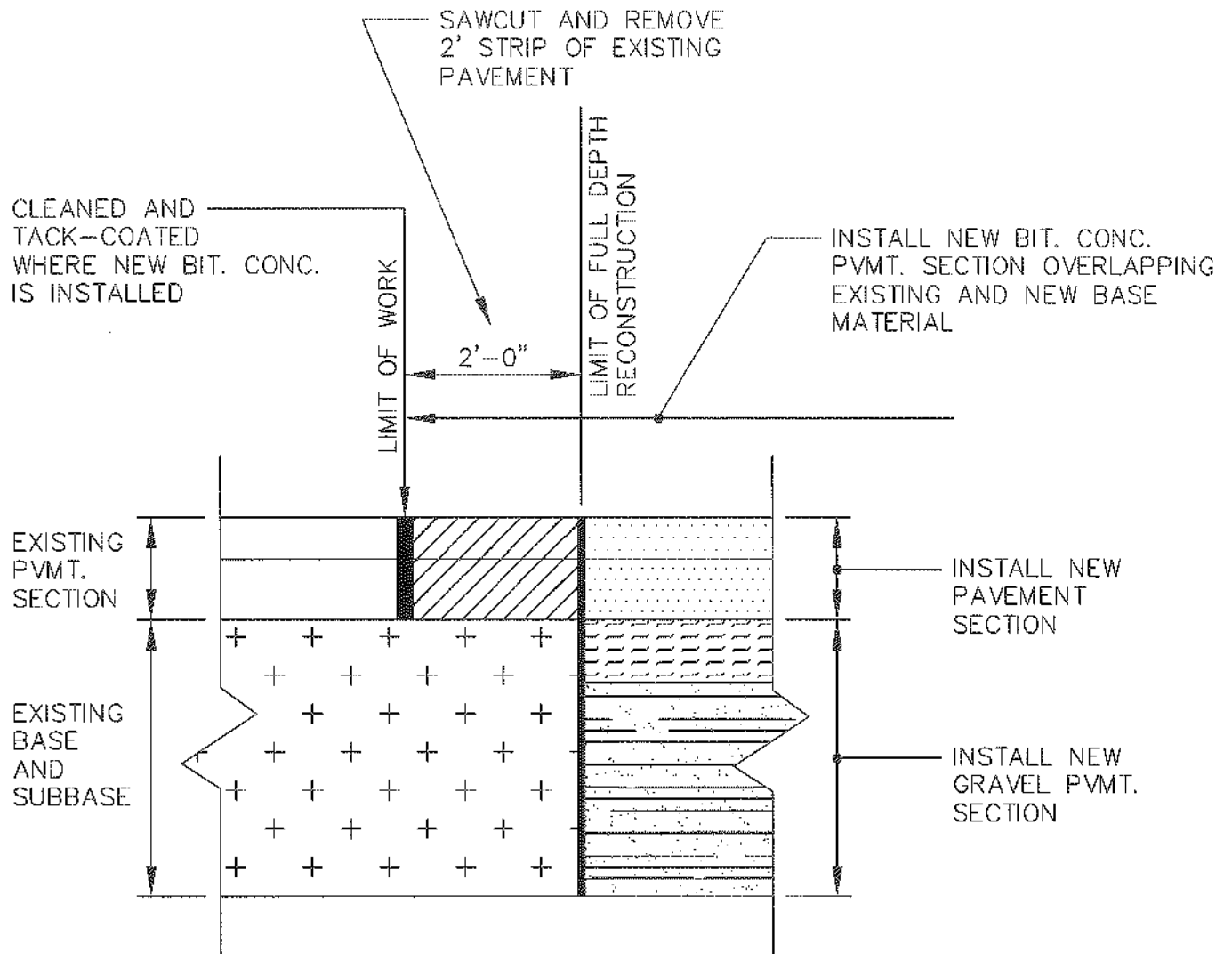


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DESIGNED:	WGH	SCALE:	N.T.S.
CHECKED:	WGH	JOB NO.	2472
FILE NAME:	2472-SK-4		

FIGURE

SK-4



CAPRICORN PRODUCTS  
PORTLAND, MAINE

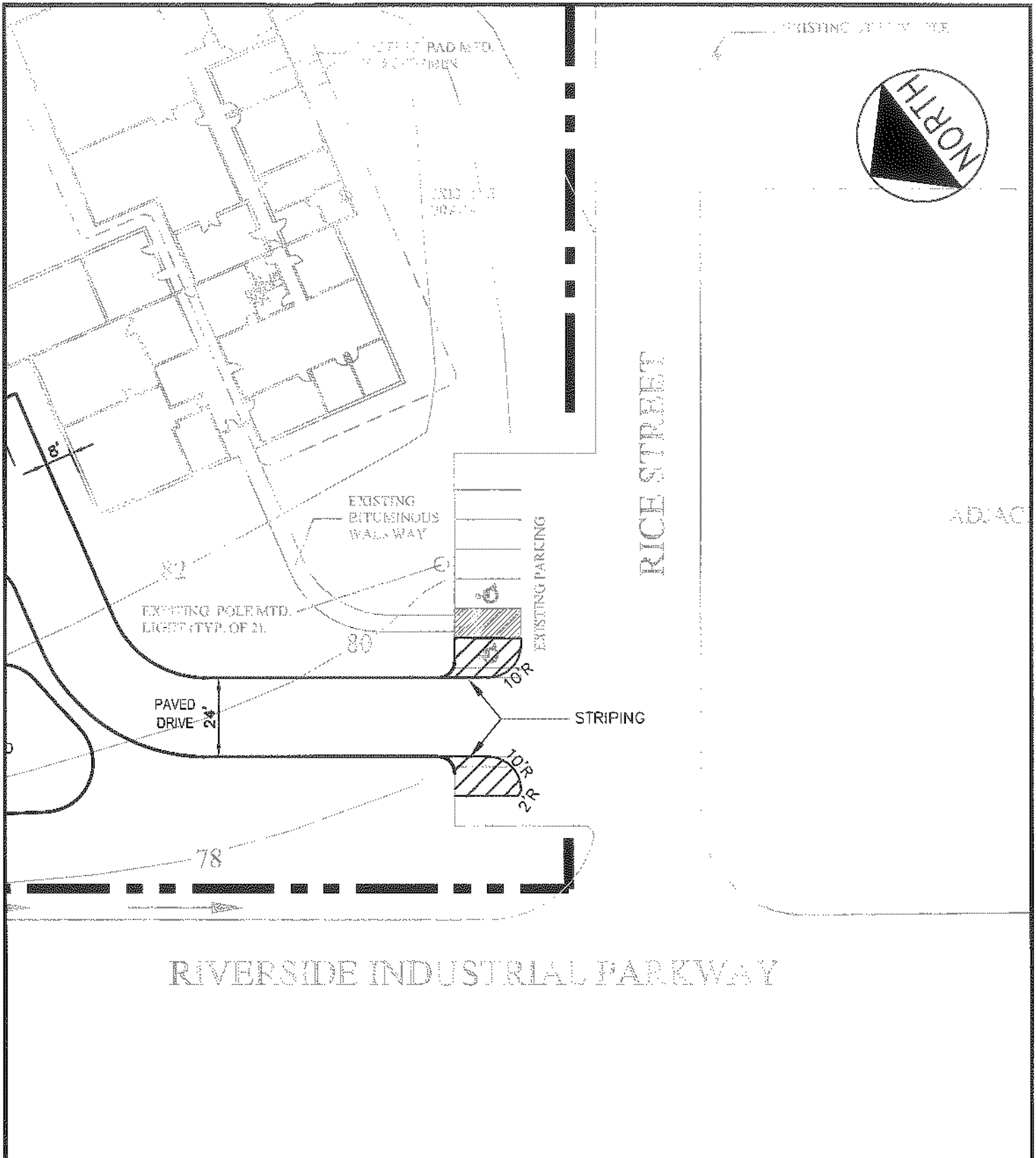
NEW PAVEMENT ADJACENT TO  
EXISTING PAVEMENT SAWCUT DETAIL



DeLuca-Hoffman Associates, Inc.  
778 MAIN STREET, SUITE 8  
SOUTH PORTLAND, ME 04106  
207.775.1121  
WWW.DELUCAHOFFMAN.COM

DRAWN:	CMW	DATE:	5.14.04
DESIGNED:	WGH	SCALE:	N.T.S.
CHECKED:	WGH	JOB NO.	2472
FILE NAME:	2472-SK-5		

FIGURE  
**SK-5**



**CAPRICORN PRODUCTS**  
**PORTLAND, MAINE**

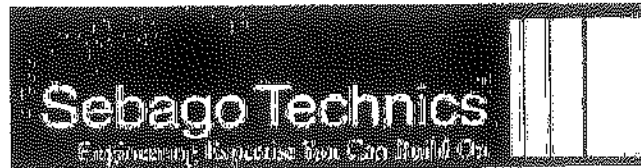
**STRIPING AT ENTRANCE DRIVE**



**DeLuca-Hoffman Associates, Inc.**  
 778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 207.775.1121  
 WWW.DELUCAHOFFMAN.COM

DRAWN:	CMW	DATE:	5.14.04
DESIGNED:	DDA	SCALE:	1"=40'
CHECKED:	DDA	JOB NO.	2472
FILE NAME:	2472-BASE		

FIGURE  
**SK-6**



04P040

TO: Kandi Talbot – Planner  
FROM: Jim Seymour – Development Review Coordinator, Sebago Technics, Inc.  
RE: Minor Site Plan Review: Capricorn Products – 1 Rice Street, Portland  
DATE: May 5, 2004

---

Sebago Technics has reviewed the Minor Site Plan application and supporting documentation for the proposed parking lot expansion to be located at 1 Rice Street in the City of Portland. We respectfully offer the following in short comments in outline format:

I. Stormwater Management

- A. The inclusion of the street paving areas should be included with Tc timing and watershed analysis to accurately determine the peak runoff. We would suggest using a reach instead of channel flow for the modeling of the roadside ditches.
- B. The outlet elevation of the pond should not be in the City ROW and is the elevations below existing ditch elevations?
- C. ~~What is the pipe size on the downstream end of the Point of Interest #1? Can it handle the volume anticipated?~~
- D. We see the configuration of the 2" orifice as potentially having a clogging problem. The orifice should be re-arranged or redesigned to mitigate blockage from sediment and debris.
- E. Pond cross-section details are needed along with stage storage levels.
- G. Pavement details, curbing details, and pavement blending details are needed.
- H. Overall, the stormwater modeling generally adheres to acceptable standards, however some additional information is necessary to make a final approval. We don't think that this information will restrict the proposed development but we need to have the assurance that the City's infrastructure will be able to handle the

Kandi Talbot

-2-

May 5, 2004

runoff with out negative impacts on the immediate properties of downstream receiving areas.

2. Road Access/Circulation

- A. The access lane needs to be delineated from the parking stalls in the existing lot to the entrance of the new lot. We suggest that islands be used but are open to other methods to assure that adequate turning maneuverability is maintained in a permanent manner.
- B. The applicant may be forced to request a waiver for granite curb and sidewalk along the road frontage portion of the site. Please contact the planner and Public Works, regarding this issue.

3. Utilities

- A. Are lights being proposed with the new parking lot. None are shown; will the lot be acceptably lit?

4. Grading & Erosion Controls

- A. Grading and Erosion controls appear acceptable with the design.

5. Landscaping

- A. Will there be any proposed landscaping or vegetative buffers between Riverside Street and the proposed lot.

Overall, the development appears to be near an approvable stage, assuming that the design is revised in accordance with the comments noted above. Please contact our office if you have any questions. I will leave the judgment for a conditional approval with staff.

JRS/jrs:

**From:** Marge Schmuckal  
**To:** Kandi Talbot  
**Date:** Tue, May 4, 2004 3:33 PM  
**Subject:** 19 Rice Street - I-M zone

I have reviewed the latest submittal for the new parking at 19 Rice Street. Their submittal changes some of the sizes of areas. The new uses breakdown is now:

Offices: 5,150 divided by 400 = 12.875 or 13 parking spaces  
Labs: 6,303 " " 1000 = 6.303 or 6 " "  
(used # 14-332(l) for the lab parking requirements)  
warehouse 44,035 divided by 1000 = 44.035 or 44 " "

A total of 63 spaces are required - I have counted 71 spaces as being provided at this time. So they are in compliance.

The I-M zone requires no more than 75% impervious surface. My figures show that they are under the 75% requirements.

The I-M zone also requires a 10 foot setback for pavement from property lines. 20 foot and over is shown. The plan is meeting this requirement.

The submitted plans comply with the I-M zone requirements.

Marge Schmuckal

Department of Planning & Development  
Lee D. Urban, Director



**CITY OF PORTLAND**

Division Directors  
Mark B. Adelson  
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP  
Planning

John N. Lufkin  
Economic Development

August 25, 2004

Mr. John Wise  
Alpine Realty  
120 Exchange Street  
Portland, ME 04101

RE: Revision to Site Plan, 1 Rice Street  
ID #2004-0175, CBL #354-A-003

Dear Mr. Wise:

This letter is to confirm the revision to the approved site plan of the project located at 1 Rice Street. The approved revision is an extension of a 24-foot wide pavement apron on the northerly side of the building 88 feet long to provide delivery access. The revised plan has been reviewed and approved by the project review staff including representatives of the Planning, Public Works, Building Inspections, Fire and Parks Departments, with the following conditions.

If you have any questions regarding the revision please contact Kandice Talbot at 874-8901.

Sincerely,

  
Alexander Jaegerman  
Planning Division Director

cc: Lee D. Urban, Planning and Development Department Director  
Sarah Hopkins, Development Review Services Manager  
— Kandice Talbot, Planner  
Jay Reynolds, Development Review Coordinator  
Marge Schmuckal, Zoning Administrator  
Inspections Division  
Michael Bobinsky, Public Works Director  
Traffic Division  
Eric Labelle, City Engineer  
Jeff Tarling, City Arborist  
Penny Littell, Associate Corporation Counsel  
Lt. Gaylen McDougall, Fire Prevention  
Assessor's Office  
Approval Letter File

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Department of Planning & Development  
Lee D. Urban, Director



**CITY OF PORTLAND**

Division Directors  
Mark B. Adelson  
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP  
Planning

John N. Lufkin  
Economic Development

February 6, 2004

Mr. John Wise  
Alpine Realty Corp.  
120 Exchange Street  
Portland, ME 04101

RE: Capricorn Products Change of Use, 1 Rice Street  
ID #2004-0040, CBL #354-A-003

Dear Mr. Wise:

On May 5, 2004, the Portland Planning Authority approved the Capricorn Products Change of Use with associated parking and site work to be located at 1 Rice Street, with the following conditions:

1. That the applicant address the Development Review Coordinator's comments in the memo dated May 5, 2004 regarding stormwater management.
2. Landscaping shall be provided between the proposed parking lot and Riverside Industrial Parkway. The landscaping shall include street trees to be reviewed and approved by the City Arborist.
3. No lighting is proposed for the parking area. If the applicant intends to install lighting, the lighting must meet the City's technical standards and must be reviewed and approved by Planning staff.

The approval is based on the submitted site plan and the findings related to site plan review standards.

Please note the following provisions and requirements for all site plan approvals:

1. Where submission drawings are available in electronic form, the applicant shall submit any available electronic CADD.DXF files with seven (7) sets of the final plans.

2. A performance guarantee covering the site improvements as well as an inspection fee payment of 2.0% of the guarantee amount and 7 final sets of plans must be submitted to and approved by the Planning Division and Public Works prior to the release of the building permit. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.
3. The site plan approval will be deemed to have expired unless work in the development has commenced within one (1) year of the approval or within a time period agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the expiration date.
4. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
5. Prior to construction, a preconstruction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the preconstruction meeting.
6. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)
7. The Development Review Coordinator must be notified five (5) working days prior to date required for final site inspection. The Development Review Coordinator can be reached at the Planning Department at 874-8632. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Kandice Talbot at 874-8901.

Sincerely,



Alexander Jaegerman  
Planning Division Director

cc: Lee D. Urban, Planning and Development Department Director  
Sarah Hopkins, Development Review Services Manager  
Kandice Talbot, Planner  
Jay Reynolds, Development Review Coordinator  
Marge Schmuckal, Zoning Administrator  
Karen Dunfey, Inspections  
Michael Bobinsky, Public Works Director  
Traffic Division  
Tony Lombardo, Project Engineer  
Eric Labelle, City Engineer  
Jeff Tarling, City Arborist  
Penny Littell, Associate Corporation Counsel  
Lt. Gaylen McDougall, Fire Prevention  
Don Hall, Appraiser, Assessor's Office  
Approval Letter File



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SITE PLAN/SUBDIVISION  
DEFECT GUARANTEE  
LETTER OF CREDIT  
#003-021D

May 26, 2004

Lee D. Urban  
Planning and Development Department Director  
Planning Division  
City of Portland, 4<sup>th</sup> Floor  
389 Congress Street  
Portland, Maine 04101

Re: Application of Thirsty-Turf Irrigation, Inc. and J.D. Building, LLC  
at 19 Rice Street, Portland, Maine

Norway Savings Bank hereby issues its Irrevocable Letter of Credit for the account of Thirsty-Turf Irrigation, Inc. and J.D. Building, LLC., as developer, (hereinafter referred to as "Developer"), in the name of the City of Portland, in the aggregate amount of \$10,900.00. These funds represent 10% of the estimated cost of installing site improvement at 19 Rice Street, Portland, ME as depicted on the subdivision/site plan, approved on February 13, 2003 and as required under Portland Code of Ordinances Chapter 14 §§499, 499.5, 525 and Chapter 25 §§46 through 65.

This Irrevocable Letter of Credit is intended to satisfy the Developer's obligation, under Portland Code of Ordinances Chapter 14 §§501, 502 and 525, to post a defect guarantee for the above referenced development.

The City, through its Director of Planning and Development and in his sole discretion, may draw on this Letter of Credit by presentation of a sight draft and the original Letter of Credit and all amendments thereto, at Norway Savings Bank offices located at 1200 Congress Street, Portland, Maine stating that:

1. the Developer has failed to correct any defects in workmanship and the durability of all materials used in the construction and installation site improvements for the facility at 19 Rice Street, Portland, ME on or before May 26, 2005 or the Developer has failed to complete any unfinished improvements. Said draft will be accompanied by a written statement that the Developer has failed to correct such defect(s).

It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for period(s) of one year each from the current expiration date hereof, or any future expiration date, unless within sixty (60) days prior to any expiration, the Norway Savings Bank notifies the Director of Planning and Development by registered mail at the above listed address that the Norway Savings Bank elects not to consider this Letter of Credit renewed for any such additional period.

The Director of Planning and Development may call on the guarantee thirty days prior to the expiration date contained herein, or any automatically extended date.

NORWAY SAVINGS BANK

Date: 05/26/04

By: Tad S. Atwell  
Tad S. Atwell  
Its Vice President

Seen and Agreed to:

THIRSTY-TURE IRRIGATION, INC.

By: [Signature]  
Joshua G. Doucette  
Its: President

J.D. BUILDING, LLC

By: [Signature]  
Joshua G. Doucette  
Its: Member

APPROVED AS TO FORM:  
[Signature] 6/1/04  
CORPORATION COUNSEL'S OFFICE

[Signature] JRC 6-2-04

April 8, 2004

Kandi Talbot  
City of Portland  
Planning Department  
City Hall  
Portland, Maine 04101

**Re: 1 Rice Street – Capricorn Products Interior Fit-up**

Dear Kandi,

Enclosed is a revised minor site plan prepared by DeLuca – Hoffman Associates for your review.

The project involves an existing, single story 55,488 square foot building at 1 Rice Street in the IM zone. Presently the building includes 50,338 square feet of storage space and 5,150 square feet of office space.

The project consists of the interior fit-up of 9,010 square feet of business occupancy. This includes 2,610 square foot of office fit-up in the existing office area, and 6,400 square feet of laboratory fit-up in the existing storage area.

Capricorn Products is a business that processes pharmaceuticals for veterinary and medical uses. Per 1999 BOCA Section 304.0. Table 304.2 “Laboratories; testing and research” are in the Business Use Group. Per your Ordinance Section 14-247, (a) pharmaceuticals are a permitted use in the IM zone.

Based on your letter of March 17, 2004 we have redesigned the site plan to include the required 69 parking spaces.

Please call if you have any questions.

Sincerely,



John Shields  
Architect

Attachments



DeLUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

778 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX 207 879 0866

- SITE PLANNING AND DESIGN
- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- PERMITTING
- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION
- TRAFFIC STUDIES AND MANAGEMENT

April 7, 2004

Mr. John Shields  
Archetype  
48 Union Wharf  
Portland, ME 04101

**Subject: Capricorn Products Interior Renovations  
Riverside Industrial Parkway and Rice Street  
Stormwater and Erosion Control Analysis**

Dear John:

Enclosed are the plans with Stormwater and Erosion Control details, the Stormwater Report, and the Erosion Control Report to support the new parking lot at the subject site. This should be relatively straightforward but if you have questions, please contact our office.

We are enclosing three sets of this information for your convenience.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'Bill Hoffman', with a long, sweeping underline.

William G. Hoffman, P.E.  
President

WGH/kmb/JN2472/Shields 04-07-04

Enclosure

SECTION 12

STORMWATER MANAGEMENT REPORT

CAPRICORN PRODUCTS INTERIOR RENOVATIONS  
WITH LIMITED SITE WORK TO EXPAND THE PARKING AREA  
RIVERSIDE INDUSTRIAL PARKWAY AND RICE STREET  
PORTLAND, MAINE

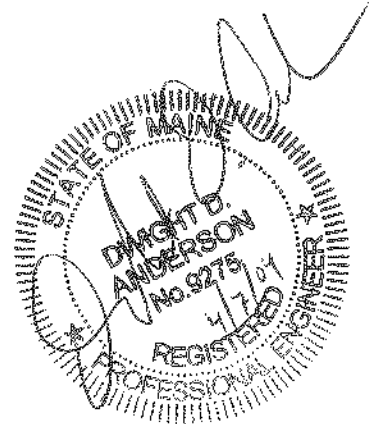
Prepared for:

Archetype  
48 Union Wharf  
Portland, ME 04101

Prepared by:

DeLuca-Hoffman Associates, Inc.  
778 Main Street, Suite 8  
South Portland, Maine 04106  
(207) 775-1121

April 2004





# STORMWATER MANAGEMENT REPORT

## Table of Contents

<u>Section</u>	<u>Description</u>	<u>Page</u>
12.0	Introduction .....	1
12.1	Existing Site Conditions and Drainage Systems .....	1
12.2	Proposed Drainage Features.....	1
12.3	References .....	2
12.4	Overview of Stormwater Runoff Modeling.....	2
12.5	Methods of Analysis – Stormwater Quantity .....	3
12.6	Description of Site Watershed Model .....	4
12.7	Predevelopment Watersheds .....	4
12.8	Postdevelopment Conditions: .....	5
12.9	Requirement for Stormwater Management:.....	6
12.10	Culvert and Storm Drainage Requirements .....	7
12.11	Ditch Sizing and Scour Protection .....	7
12.12	Water Quality Provisions: .....	7
12.13	Maintenance of Facilities .....	7
12.14	Conclusions.....	8

## Attachments

- A Predevelopment Runoff Calculations
- B Postdevelopment Runoff Calculations
- C Water Quality Calculations
- D Ditch Scour/Rip Rap Sizing Calculations
- E Pre and Postdevelopment Watershed Figures

## Cross References

Section 14 – Erosion and Sediment Control

## Plan References

- Sheet C-1 Existing Conditions Plan
- Sheet C-2 Site Layout/Grading, Drainage and Erosion Control Plans Views
- Sheet C-3 Erosion Control Details
- Sheet C-4 Stormwater System Details

## SECTION 12

### STORMWATER MANAGEMENT REPORT

#### **12.0 Introduction**

DeLuca-Hoffman Associates, Inc. has been retained as a consultant to Archetype to prepare a stormwater management plan for expanded parking at a building at the northeast corner of Rice Street and Riverside Industrial Parkway. The existing building use will be changed resulting in the need for an additional 46 parking spaces on the site. The addition of this parking will result in an increase in the impervious coverage and a need for stormwater management. The proposed parking lot is to be located in front of the building as shown on the accompanying site plan

This narrative contains the stormwater management systems designed and required for this project.

The project is not in a lake watershed or a watershed most at risk from development.

#### **12.1 Existing Site Conditions and Drainage Systems**

The existing site is currently divided with the northerly portion being wooded or lawn and the southerly portion containing the existing building with a footprint of approximately 55,000 square feet and a paved service and parking area of about 26,900 square feet. The total lot size is approximately 190,575 square feet. The existing site conditions are depicted on the plans which accompany this report.

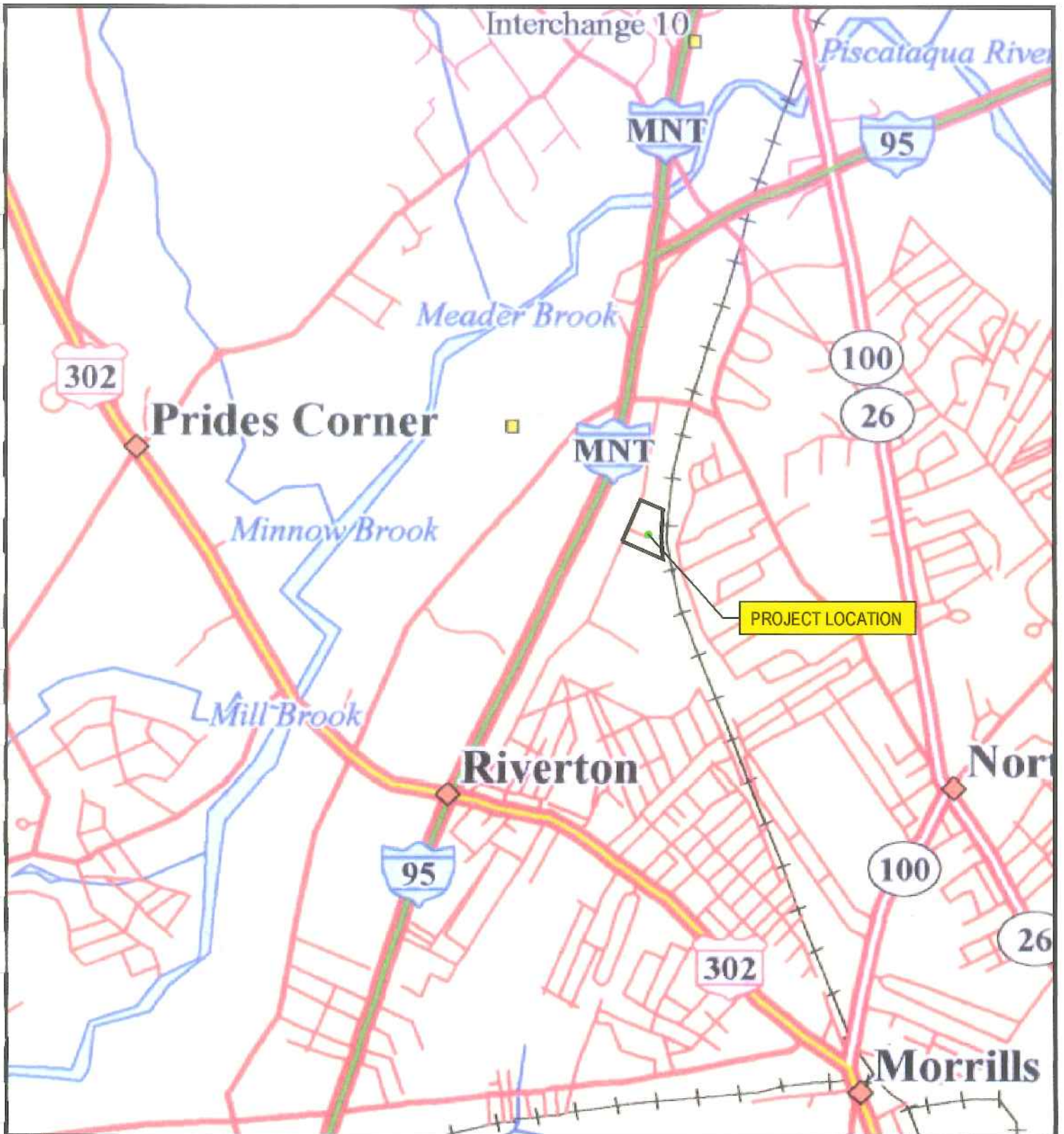
The site has very mild and featureless topography and generally drains in a westerly direction toward Riverside Industrial Parkway. A drainage ditch separates the lot from the Riverside Industrial Parkway. Elevations range from 84 to about 76 feet based upon information obtained from the original site plan. Drainage from the roof and parking area are intercepted by a storm drain that cuts across the site and enters a storm drain in the Riverside Industrial Parkway. Other drainage is intercepted by the ditch and then enters the formal drainage system

The site is mapped on the medium intensity soils map as being Scantic which has a hydrologic group D rating. Figures 1, 2, and 3 provide a location, USGS, and USDA soils map for the site.

DeLuca-Hoffman Associates, Inc. is not aware of any areas of existing erosion on the site or blockage which restricts existing drainage from entering the site from natural upstream areas.

#### **12.2 Proposed Drainage Features**

The proposed parking lot will be intercepted by a catch basin and directed to the proposed stormwater management system. The existing drainage systems described above will not be changed. A small water quality unit and detention pond are proposed to enhance water quality by removing sediment and to restrict the rate of peak flow discharge from the site.



FIGURES.dwg, D

**DeLORME LOCATION MAP**  
**CAPRICORN PRODUCTS - PORTLAND, MAINE**

SOURCE: DeLORME MAPEXPERT; DATED: 1993



**DeLuca-Hoffman Associates, Inc.**

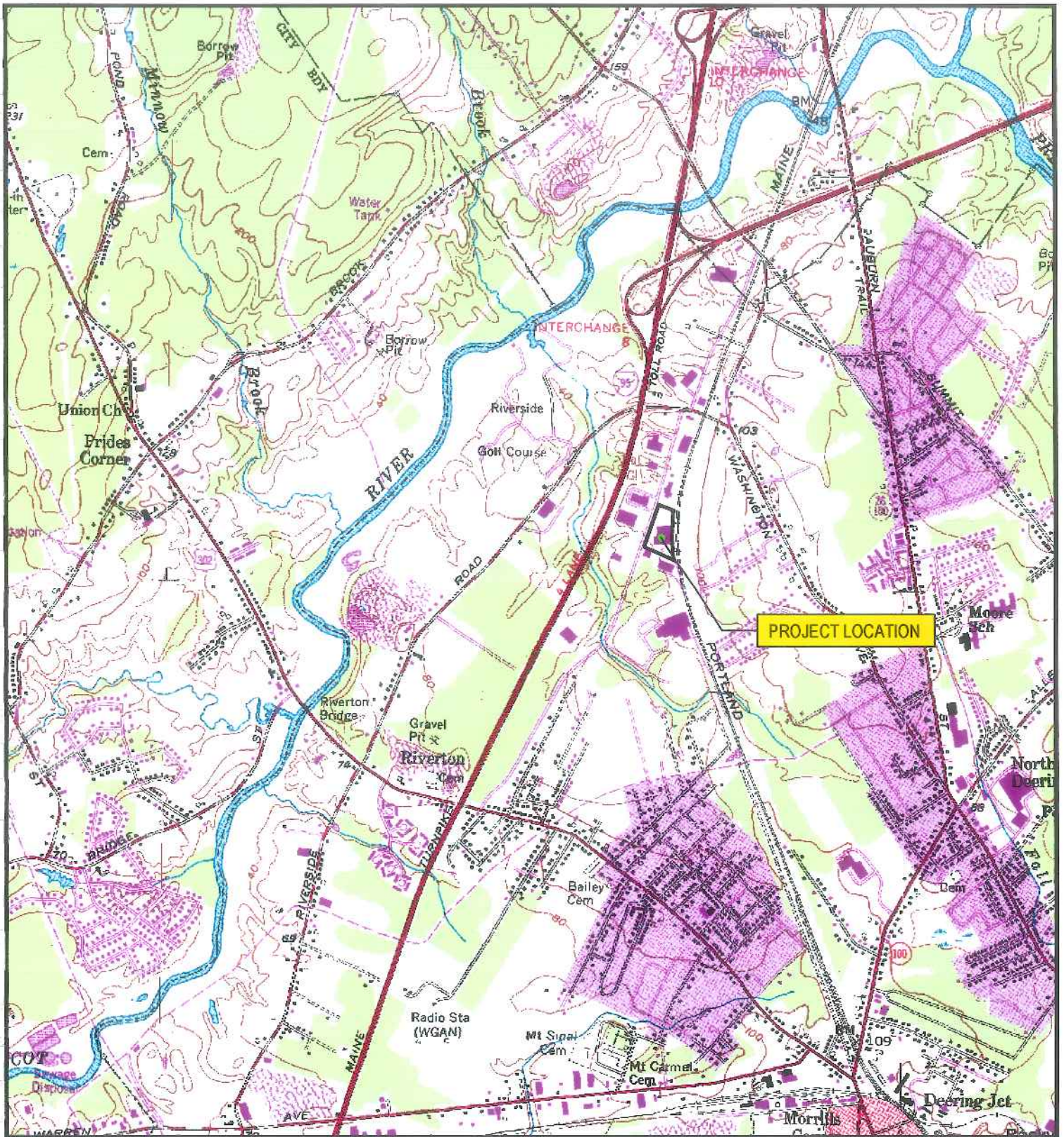
778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 207.775.1121  
 WWW.DELUCAHOFFMAN.COM

DRAWN:	CMW	DATE:	APRIL 2004
DESIGNED:	DDA	SCALE:	1"=2000'
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FILE NAME:	2472 FIGURES		

FIGURE

1





PROJECT LOCATION

USGS TOPOGRAPHIC MAP  
CAPRICORN PRODUCTS - PORTLAND, MAINE

SOURCE: USGS PORTLAND WEST (TOPOGRAPHIC)



FIGURES.dwg, G

DH

**DeLuca-Hoffman Associates, Inc.**

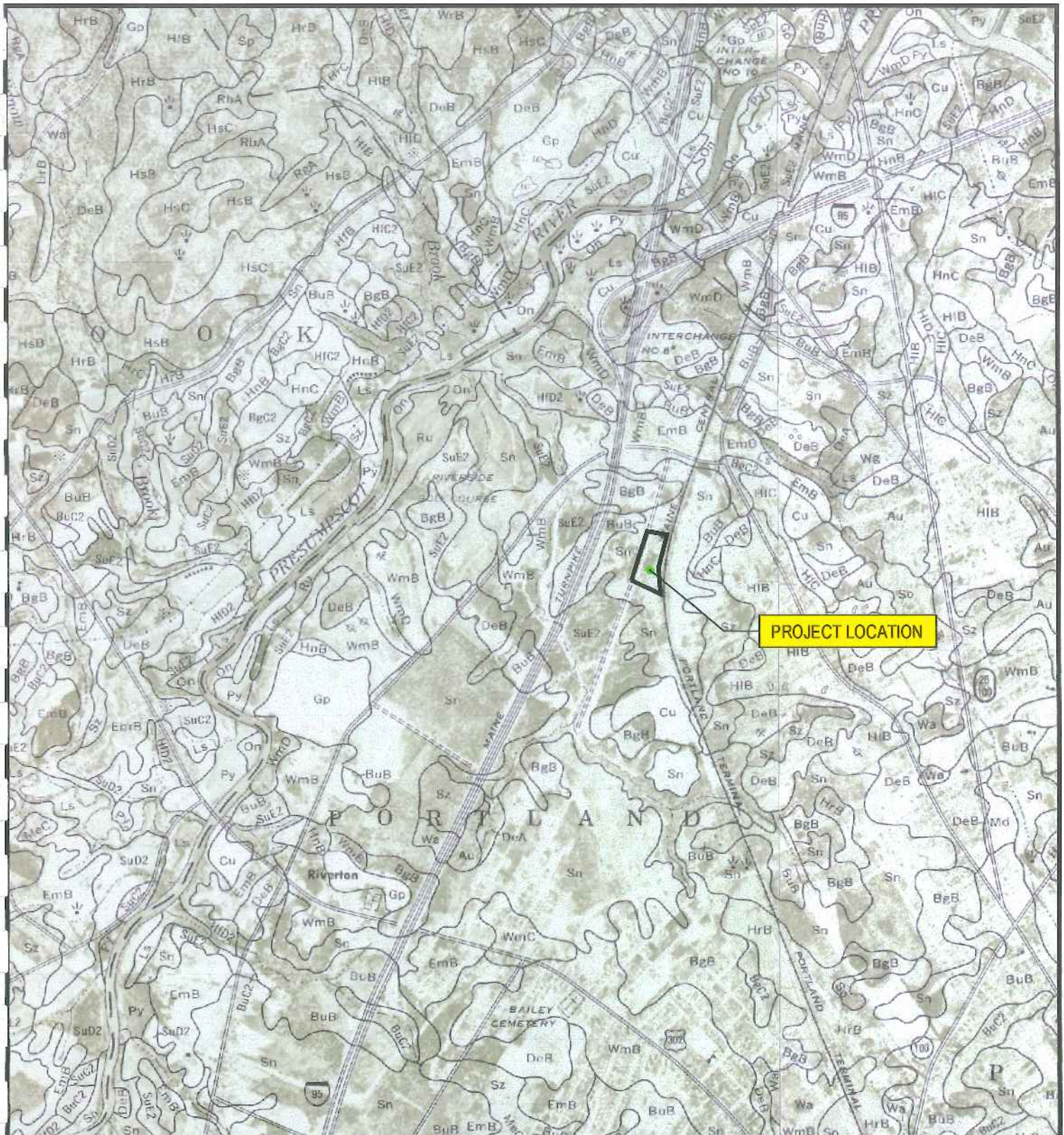
778 MAIN STREET, SUITE 8  
SOUTH PORTLAND, ME 04106  
207.775.1121  
WWW.DELUCAHOFFMAN.COM

DRAWN:	CMW	DATE:	APRIL 2004
DESIGNED:	DDA	SCALE:	1"=2000'
CHECKED:	DDA	JOB NO.	2472
FILE NAME:	2472 FIGURES		

FIGURE

2





**PROJECT LOCATION**

**SOILS LEGEND**

FIGURES 1-5  
n-Scantic

**USDA SCS SOILS MAP**  
**CAPRICORN PRODUCTS - PORTLAND, MAINE**

SOURCE: SOIL SURVEY OF CUMBERLAND COUNTY, MAINE



**DeLuca-Hoffman Associates, Inc.**  
778 MAIN STREET, SUITE 8  
SOUTH PORTLAND, ME 04106  
207.775.1121  
WWW.DELUCAHOFFMAN.COM

DRAWN:	CMW	DATE:	APRIL 2004
DESIGNED:	DDA	SCALE:	1"=2000'
CHECKED:	DDA	JOB NO.:	2472
FILE NAME:	2472 FIGURES		

FIGURE  
**3**



### 12.3 References

The following reference sources were reviewed during preparation of the stormwater analysis:

1. Technical Release Number 20 – Computer Program for Project Formulation – Hydrology, USDA Soil Conservation Service, May 1983
2. HydroCAD Technical Reference Manual, Applied Micro-Computer System, 2001
3. Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices, MeDEP, March 1991
4. Stormwater Management, Best Management Practices, MeDEP, 1996

The following sources were used for preparation of the stormwater quality analysis:

1. Stormwater Management, Best Management Practices, MeDEP, 1996.
2. MeDEP Chapter 500, Stormwater Management Rules.

Computer programs used to assist in the various components of this analysis include:

1. HydroCAD Stormwater Modeling System, version 6.0, Applied Microcomputer Systems – used for modeling watersheds for pre and postdevelopment conditions;
2. FlowMaster 1, version 2.06, Haested Methods, Inc., 1990 – used to determine flow depths in open channel; and
3. Microsoft Excel, version 7.0, 1997, Microsoft Corporation – used for spreadsheet computations.

Data resources used to obtain the hydrologic input data for the stormwater model are identified later in this report.

### 12.4 Overview of Stormwater Runoff Modeling

The stormwater analysis evaluates seven elements of the project as follows:

1. Analysis of predevelopment and postdevelopment stormwater runoff rates including an assessment of the flows entering the site.
2. Review of the potential impacts of the proposed parking lot and subsequent modification to site discharge rates and locations.
3. Evaluation of the requirements for stormwater management.
4. Evaluation of storm drainage requirements for the parking areas,
5. Water quality measures requirements.
6. Ditch design and lining determinations; and
7. Inlet capacity of various catch basins and inlets.

## 12.5 Methods of Analysis – Stormwater Quantity

The hydrologic analyses for predevelopment and postdevelopment conditions have been conducted based upon the methodology contained in the USDA Soil Conservation Service's Technical Releases No. 20 and 55 (SCS TR-20 and TR-55) as modified for special site conditions. For Cumberland County, Maine, a 24-hour SCS Type III storm distribution was used for the analysis using the following storm frequencies and rainfall amounts:

Storm Event	24-Hour Rainfall
2-Year Storm	3.0
10-Year Storm	4.7
25-Year Storm	5.5

The HydroCAD computer program was used in the analysis. This program determines the critical points of the project watershed and uses SCS TR-20 methodology for evaluation of the anticipated conditions at these points. Drainage areas are defined with runoff curve numbers, times of concentration, and travel time data based on methods outlined in the USDA TR-55 manual. To assess storage and kinematic effects of runoff, the model uses reservoirs and pipes to imitate actual conditions. Specific hydrologic characteristics including travel times, storage capacity, and the effects of hydraulic head are considered for analysis with this program.

To model any watershed, the drainage system is represented by a system network consisting of four basic components:

- **Subcatchment:** A relative homogenous area of land that drains into a single reach or pond. Each subcatchment generates a runoff hydrograph.
- **Reach:** A uniform stream, channel, or pipe which conveys water from one point to another reach or pond. The outflow of each reach is determined by a hydrograph routing calculation.
- **Pond:** A pond, swamp, dam, or other impoundment which fills with water from one or more sources and empties in a manner determined by a weir, culvert or other device (s) at its outlet. A pond may empty into a reach or into another pond. The outflow of each pond is also determined by a hydrograph routing calculation.
- **Link:** A multi-purpose mechanism for introducing a hydrograph from outside the diagram, either by manual entry, file import, or linkage to another diagram. A link also allows the diversion and/or scaling of hydrographs.

After identifying each of the components, the system may be represented by a routing diagram such as shown in the schematics and computations contained in Attachment A.

The proposed storm drain system was designed to convey runoff from a 25-year storm event using Manning's Equation to compute full flow capacity of pipes. Flow values were checked using peak rates developed using the rational method.

Ditch scour protection was based upon methods outlined in the Maine Erosion Control BMP Handbook. A nomograph was used which provides a d50 stone size for a given ditch flow and velocity.

Land use, cover, delineation of watershed subcatchments, hydraulic flow paths and hydrologic soil types were obtained using the following data:

1. Portland West, Maine USGS 7.5 minute Quadrangles Maps.
2. Cumberland County, USDA Medium Intensity Soils Survey.
3. Onsite Topographic Survey with 2' contour intervals shown on the original project drawings titled Warehouse for C.M. Rice Paper Company and dated 1966.
4. Field Reconnaissance by DeLuca-Hoffman Associates, Inc.

## 12.6 Description of Site Watershed Model

The watershed model was developed to predict peak discharge rates emanating from various points of the property as well as adjacent locations for the current and future conditions. The model allows the following analyses:

- Comparison of current storm water discharge rates with proposed conditions including the attenuation effect of detention facilities;
- Determination of flows within the pipe or channels allowing sizing, hydraulic grade lines, and velocities to be computed;
- Evaluation of the effect of hydrologic lag (the time difference between peak flows) in various portions of the drainage system.

## 12.7 Predevelopment Watersheds

The current cover for the predevelopment watersheds reflect a distinctive difference in runoff patterns between developed areas and forest or lawn. The current conditions were broken into two watersheds. The northerly area (watershed 1) is principally the forest and lawn with a relatively long hydrologic time of concentration. The southerly area (watershed 2) is principally the roof and hard surface area of the site. These two watersheds are identified on the drainage plan. The distribution of land cover, areas, and hydrologic flow path are shown on the plan with the numeric values provided in the attached computations. The combined flow of the two watersheds is the project point of interest. The combined flow at this point is the basis of comparison with Postdevelopment conditions

A summary of the two predevelopment watersheds by hydrologic parameters is provided in the table as follows.

Watershed #	Area (ac)	RCN	Hydrologic Time of Concentration (Min.)
1	1.71	80	29.6
2	2.66	93	3.2

The peak flows computed for the current conditions are summarized in the following table. Computations are appended to this study.



Watershed #	Runoff (inches)			Peak Discharge (cfs)		
	2 yr.	10 yr.	25 yr.	2 yr.	10 yr.	25 yr.
1	1.14	2.44	3.10	1.40	3.00	3.80
2	2.13	3.69	4.43	7.38	12.40	14.73

The flows are hydrologically combined at the point of interest as follows:

POI #	Runoff (inches)			Peak Discharge		
	2 yr.	10 yr.	25 yr.	2 yr.	10 yr.	25 yr.
1	1.74	3.20	3.91	7.80	13.45	16.12

#### 12.8 Postdevelopment Conditions:

The post development conditions evaluate the effect of adding the proposed 46-space parking lot. A small subcatchment is added to isolate the parking lot area resulting in three subcatchments in the Postdevelopment condition. The hydrologic parameters for these three subareas is summarized in the table below:

Watershed #	Area (ac)	RCN	Hydrologic Time Of Concentration (Min.)
1	1.16	79	29.6
2	2.66	93	3.2
Parking	0.55	92	2.0

The postdevelopment flows were computed as follows:

Watershed #	Runoff (inches)			Peak Discharge (cfs)		
	2 yr.	10 yr.	25 yr.	2 yr.	10 yr.	25 yr.
1	1.08	2.35	3.00	0.89	1.96	2.50
2	2.13	3.69	4.43	7.38	12.40	14.73
Parking	2.04	3.59	4.33	1.50	2.56	3.05

The computed flows at POI #1 are shown below:

TABLE 12-5 Postdevelopment Flows at Points of Interest (No Detention)			
Point of Interest	Peak Discharge Rate		
	2 yr.	10 yr.	25 yr.
1	9.12	15.60	18.65

**12.9 Requirement for Stormwater Management:**

Stormwater management is intended to provide either:

- Control of Peak Discharge Rates; or
- Measures to address Non-Point Runoff and Stormwater Quality

The need for Stormwater management can be determined by comparing the predevelopment or current flows with postdevelopment Flows. In the case of this the comparison of the points of interest where the watersheds combine without construction of detention ponds are shown in the following table:

TABLE 12-6 Flow Rates at Points of Interests Peak Flow Rate in cfs (Without Pond)				
POI #	Storm Event	Predevelopment	Postdevelopment	Percent Change
1	2 year	7.80	9.12	17%
	10 year	13.45	15.60	16%
	25 year	16.12	18.65	16%

Stormwater management for control of peak discharge rates is required.

This Stormwater management will be achieved by construction of a dry detention pond to serve the new parking lot. The performance of the pond has been modeled as follows:

TABLE 12-7				
Storm Event	Peak Inflow (cfs)	Peak Discharge (cfs)	Max Stage (ft)	Max Storage (ft <sup>3</sup> )
2 year	1.50	0.17	78.70	1,725
10 year	2.56	0.65	79.45	2,809
25 year	3.05	0.86	79.71	3,248

The effect of detention on postdevelopment flows compared to predevelopment flows are as follows:

<b>TABLE 12-8</b>			
<b>Flow Rates at Points of Interests</b>			
<b>Peak Flow Rate in cfs</b>			
<b>(With Pond)</b>			
<b>POI #</b>	<b>Storm Event</b>	<b>Predevelopment</b>	<b>Postdevelopment</b>
1	2 year	7.80	7.79
	10 year	13.45	13.26
	25 year	16.12	16.08

As demonstrated above, the proposed Stormwater provisions for control of peak discharges so as not to exceed the predevelopment flows of the point of interest for the 2, 10, and 25 year events.

**12.10 Culvert and Storm Drainage Requirements**

The onsite storm drain system will serve the following purposes:

1. To collect surface runoff collected from the access drives, parking and services areas rooftops and immediate yard areas at catch basins or field inlets.
2. To collect surface runoff collected from low yard areas between the building and sidewalks with catch basins.
3. To convey surface runoff collected from lot development areas to the water quality measures.
4. To convey surface runoff to suitable discharge points.

The formal storm drain system was analyzed using the HydroCAD data for the 25-year storm. Individual pipe runs were modeled as reaches with preliminary sizing set to avoid surcharging of storm drain lines. These flows were compared to peak flow rates predicted using the Rational Equation.

**12.11 Ditch Sizing and Scour Protection**

Computations for the capacity of the channel velocities, scour protection in the ditches and for the rip rap outlet aprons are provided in Appendix D.

**12.12 Water Quality Provisions:**

The proposed work will include a proprietary water quality unit designed to remove suspended solids from the runoff of the new parking lot.

The estimated TSS removal is 60% as supported by the appended computations.

**12.13 Maintenance of Facilities**

The water quality facilities will be maintained by the Applicant or their assigns after construction is completed. The general contractor will be responsible for maintenance during construction. The contract documents should require the contractor designate a person for maintenance of the facilities during construction.

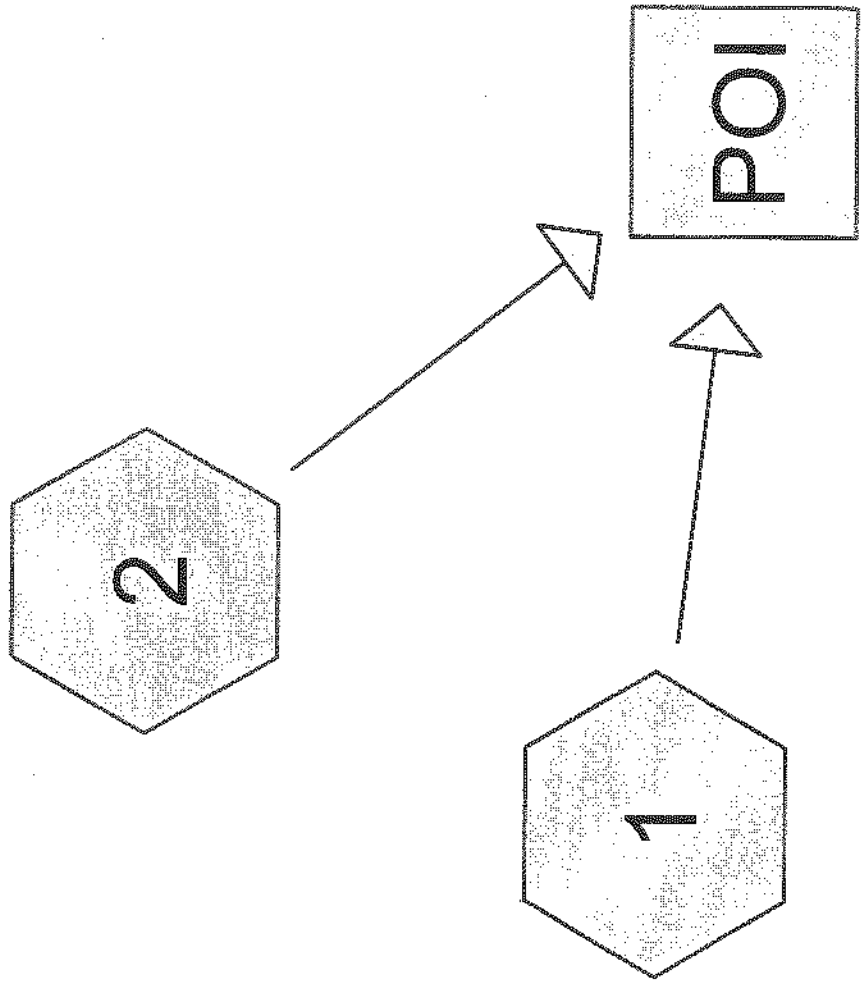
#### 12.14 Conclusions

The Stormwater Management Plan for this project is anticipated to mitigate any impacts of development on stormwater runoff rates and to provide treatment of non-point pollutants for the runoff of the new parking lot. Based on this study's findings, it is anticipated that runoff from the proposed improvements can be discharged with no adverse impact to the overall peak release rates from the overall watershed.

Water quality provisions have been provided for the site pursuant to the City of Portland's standards.

**ATTACHMENT A**

**Predevelopment Runoff Calculations**



Legend for diagram symbols:

- Subcat (Hexagon)
- Reach (Rectangle)
- Pond (Triangle)
- Link (Arrow)

Drainage Diagram for rice street - pre2  
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rice street - pre2

Type III 24-hr Rainfall=3.00"

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Page 1

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Site**

Runoff Area=74,555 sf Runoff Depth=1.14"  
Length=680' Tc=29.6 min CN=80 Runoff= 1.40 cfs 0.163 af

**Subcatchment 2: (new Subcat)**

Runoff Area=116,020 sf Runoff Depth=2.13"  
Length=760' Tc=3.2 min CN=93 Runoff= 7.38 cfs 0.473 af

**Reach POI: (new Reach)**

Inflow= 7.80 cfs 0.635 af  
Outflow= 7.80 cfs 0.635 af

**Total Runoff Area = 4.375 ac Runoff Volume = 0.635 af Average Runoff Depth = 1.74"**

**Subcatchment 1: Site**

Runoff = 1.40 cfs @ 12.43 hrs, Volume= 0.163 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
0	98	impervious
27,400	79	Woods, Fair, HSG D
47,155	80	>75% Grass cover, Good, HSG D
74,555	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	360	0.0250	4.0	9.00	Trap/Vee/Rect Channel Flow, Riverside Ditch Bot.W=3.00' D=0.50' Z= 3.0 ' n= 0.030
29.6	680	Total			

**Subcatchment 2: (new Subcat)**

Runoff = 7.38 cfs @ 12.05 hrs, Volume= 0.473 af, Depth= 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
81,900	98	imp
12,600	79	Woods, Fair, HSG D
21,520	80	>75% Grass cover, Good, HSG D
116,020	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.9		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	220	0.0100	4.5	3.56	Circular Channel (pipe), Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.3	480	0.0100	5.9	10.50	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
3.2	760	Total			



**Reach POI: (new Reach)**

Inflow Area = 4.375 ac, Inflow Depth = 1.74"  
Inflow = 7.80 cfs @ 12.05 hrs, Volume= 0.635 af  
Outflow = 7.80 cfs @ 12.05 hrs, Volume= 0.635 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

rice street - pre2

Type III 24-hr Rainfall=4.70"

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Page 1

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Site**

Runoff Area=74,555 sf Runoff Depth=2.44"

Length=680' Tc=29.6 min CN=80 Runoff= 3.00 cfs 0.348 af

**Subcatchment 2: (new Subcat)**

Runoff Area=116,020 sf Runoff Depth=3.69"

Length=760' Tc=3.2 min CN=93 Runoff= 12.40 cfs 0.819 af

**Reach POI: (new Reach)**

Inflow= 13.45 cfs 1.167 af

Outflow= 13.45 cfs 1.167 af

**Total Runoff Area = 4.375 ac Runoff Volume = 1.167 af Average Runoff Depth = 3.20"**

**Subcatchment 1: Site**

Runoff = 3.00 cfs @ 12.41 hrs, Volume= 0.348 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
0	98	impervious
27,400	79	Woods, Fair, HSG D
47,155	80	>75% Grass cover, Good, HSG D
74,555	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	360	0.0250	4.0	9.00	Trap/Vee/Rect Channel Flow, Riverside Ditch Bot.W=3.00' D=0.50' Z= 3.0 ' n= 0.030
29.6	680	Total			

**Subcatchment 2: (new Subcat)**

Runoff = 12.40 cfs @ 12.05 hrs, Volume= 0.819 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
81,900	98	imp
12,600	79	Woods, Fair, HSG D
21,520	80	>75% Grass cover, Good, HSG D
116,020	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.9		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	220	0.0100	4.5	3.56	Circular Channel (pipe), Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.3	480	0.0100	5.9	10.50	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
3.2	760	Total			

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Type III 24-hr Rainfall=4.70"

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**Reach POI: (new Reach)**

Inflow Area = 4.375 ac, Inflow Depth = 3.20"

Inflow = 13.45 cfs @ 12.05 hrs, Volume= 1.167 af

Outflow = 13.45 cfs @ 12.05 hrs, Volume= 1.167 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Site**

Runoff Area=74,555 sf Runoff Depth=3.10"  
Length=680' Tc=29.6 min CN=80 Runoff= 3.80 cfs 0.442 af

**Subcatchment 2: (new Subcat)**

Runoff Area=116,020 sf Runoff Depth=4.43"  
Length=760' Tc=3.2 min CN=93 Runoff= 14.73 cfs 0.983 af

**Reach POI: (new Reach)**

Inflow= 16.12 cfs 1.424 af  
Outflow= 16.12 cfs 1.424 af

**Total Runoff Area = 4.375 ac Runoff Volume = 1.424 af Average Runoff Depth = 3.91"**

**Subcatchment 1: Site**

Runoff = 3.80 cfs @ 12.41 hrs, Volume= 0.442 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
0	98	impervious
27,400	79	Woods, Fair, HSG D
47,155	80	>75% Grass cover, Good, HSG D
74,555	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	360	0.0250	4.0	9.00	Trap/Vee/Rect Channel Flow, Riverside Ditch Bot.W=3.00' D=0.50' Z= 3.0 ' n= 0.030
29.6	680	Total			

**Subcatchment 2: (new Subcat)**

Runoff = 14.73 cfs @ 12.05 hrs, Volume= 0.983 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
81,900	98	imp
12,600	79	Woods, Fair, HSG D
21,520	80	>75% Grass cover, Good, HSG D
116,020	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.9		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	220	0.0100	4.5	3.56	Circular Channel (pipe), Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.3	480	0.0100	5.9	10.50	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
3.2	760	Total			

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Type III 24-hr Rainfall=5.50"

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**Reach POI: (new Reach)**

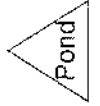
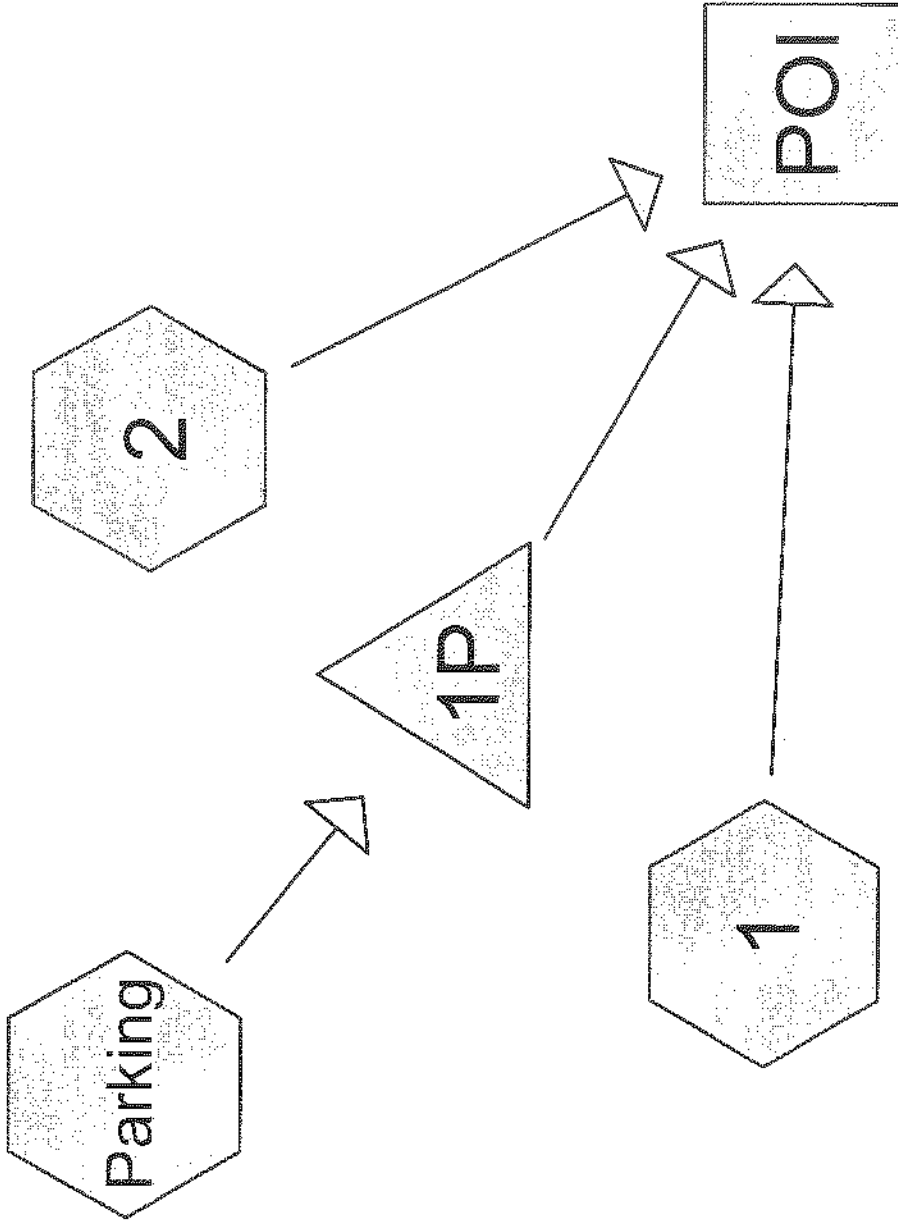
Inflow Area = 4.375 ac, Inflow Depth = 3.91"  
Inflow = 16.12 cfs @ 12.05 hrs, Volume= 1.424 af  
Outflow = 16.12 cfs @ 12.05 hrs, Volume= 1.424 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**ATTACHMENT B**

**Postdevelopment Runoff Calculations**





Drainage Diagram for rice street - post2

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Site**

Runoff Area=50,395 sf Runoff Depth=1.08"  
Length=680' Tc=29.6 min CN=79 Runoff= 0.89 cfs 0.104 af

**Subcatchment 2: (new Subcat)**

Runoff Area=116,020 sf Runoff Depth=2.13"  
Length=760' Tc=3.2 min CN=93 Runoff= 7.38 cfs 0.473 af

**Subcatchment Parking: (new Subcat)**

Runoff Area=24,160 sf Runoff Depth=2.04"  
Length=140' Tc=2.0 min CN=92 Runoff= 1.50 cfs 0.094 af

**Reach POI: (new Reach)**

Inflow= 7.79 cfs 0.670 af  
Outflow= 7.79 cfs 0.670 af

**Pond 1P: (new Pond)**

Peak Storage= 1,725 cf @ 78.70' Inflow= 1.50 cfs 0.094 af  
Primary= 0.17 cfs 0.093 af Outflow= 0.17 cfs 0.093 af

**Total Runoff Area = 4.375 ac Runoff Volume = 0.671 af Average Runoff Depth = 1.84"**

**rice street - post2**

Type III 24-hr Rainfall=3.00"

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Page 2

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**Subcatchment 1: Site**

Runoff = 0.89 cfs @ 12.43 hrs, Volume= 0.104 af, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
0	98	impervious
26,000	79	Woods, Fair, HSG D
24,395	80	>75% Grass cover, Good, HSG D
50,395	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	360	0.0250	4.0	9.00	Trap/Vee/Rect Channel Flow, Riverside Ditch Bot.W=3.00' D=0.50' Z= 3.0'/' n= 0.030
29.6	680	Total			

**Subcatchment 2: (new Subcat)**

Runoff = 7.38 cfs @ 12.05 hrs, Volume= 0.473 af, Depth= 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
84,420	98	imp
12,600	79	Woods, Fair, HSG D
19,000	80	>75% Grass cover, Good, HSG D
116,020	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.9		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	220	0.0100	4.5	3.56	Circular Channel (pipe), Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.3	480	0.0100	5.9	10.50	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
3.2	760	Total			

**Subcatchment Parking: (new Subcat)**

Runoff = 1.50 cfs @ 12.04 hrs, Volume= 0.094 af, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
15,840	98	Paved parking & roofs
8,320	80	>75% Grass cover, Good, HSG D
24,160	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.0		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.0100	2.0		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	140	Total			

**Reach POI: (new Reach)**

Inflow Area = 4.375 ac, Inflow Depth = 1.84"  
Inflow = 7.79 cfs @ 12.05 hrs, Volume= 0.670 af  
Outflow = 7.79 cfs @ 12.05 hrs, Volume= 0.670 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Pond 1P: (new Pond)**

Inflow Area = 0.555 ac, Inflow Depth = 2.04"  
Inflow = 1.50 cfs @ 12.04 hrs, Volume= 0.094 af  
Outflow = 0.17 cfs @ 12.61 hrs, Volume= 0.093 af, Atten= 89%, Lag= 34.6 min  
Primary = 0.17 cfs @ 12.61 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 78.70' Surf.Area= 1,209 sf Storage= 1,725 cf  
Plug-Flow detention time= 102.1 min calculated for 0.093 af (99% of inflow)  
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
76.00	160	0	0
77.00	416	288	288
78.00	896	656	944
79.00	1,344	1,120	2,064
80.00	1,984	1,664	3,728
81.00	2,595	2,290	6,018

rice street - post2

Type III 24-hr Rainfall=3.00"

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Primary OutFlow Max=0.17 cfs @ 12.61 hrs HW=78.70' (Free Discharge)

└1=Orifice/Grate (Controls 0.17 cfs)

└2=Orifice/Grate (Controls 0.00 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	76.00'	2.0" Vert. Orifice/Grate C= 0.600
2	Primary	78.97'	6.0" Vert. Orifice/Grate C= 0.600

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Site**

Runoff Area=50,395 sf Runoff Depth=2.35"  
Length=680' Tc=29.6 min CN=79 Runoff= 1.96 cfs 0.227 af

**Subcatchment 2: (new Subcat)**

Runoff Area=116,020 sf Runoff Depth=3.69"  
Length=760' Tc=3.2 min CN=93 Runoff= 12.40 cfs 0.819 af

**Subcatchment Parking: (new Subcat)**

Runoff Area=24,160 sf Runoff Depth=3.59"  
Length=140' Tc=2.0 min CN=92 Runoff= 2.56 cfs 0.166 af

**Reach POI: (new Reach)**

Inflow= 13.26 cfs 1.206 af  
Outflow= 13.26 cfs 1.206 af

**Pond 1P: (new Pond)**

Peak Storage= 2,809 cf @ 79.45' Inflow= 2.56 cfs 0.166 af  
Primary= 0.65 cfs 0.160 af Outflow= 0.65 cfs 0.160 af

**Total Runoff Area = 4.375 ac Runoff Volume = 1.212 af Average Runoff Depth = 3.32"**

**Subcatchment 1: Site**

Runoff = 1.96 cfs @ 12.42 hrs, Volume= 0.227 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
0	98	impervious
26,000	79	Woods, Fair, HSG D
24,395	80	>75% Grass cover, Good, HSG D
50,395	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	360	0.0250	4.0	9.00	Trap/Vee/Rect Channel Flow, Riverside Ditch Bot.W=3.00' D=0.50' Z= 3.0 ' n= 0.030
29.6	680	Total			

**Subcatchment 2: (new Subcat)**

Runoff = 12.40 cfs @ 12.05 hrs, Volume= 0.819 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
84,420	98	imp
12,600	79	Woods, Fair, HSG D
19,000	80	>75% Grass cover, Good, HSG D
116,020	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.9		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	220	0.0100	4.5	3.56	Circular Channel (pipe), Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.3	480	0.0100	5.9	10.50	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
3.2	760	Total			

**Subcatchment Parking: (new Subcat)**

Runoff = 2.56 cfs @ 12.03 hrs, Volume= 0.166 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
15,840	98	Paved parking & roofs
8,320	80	>75% Grass cover, Good, HSG D
24,160	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.0		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.0100	2.0		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	140	Total			

**Reach POI: (new Reach)**

Inflow Area = 4.375 ac, Inflow Depth = 3.31"  
Inflow = 13.26 cfs @ 12.05 hrs, Volume= 1.206 af  
Outflow = 13.26 cfs @ 12.05 hrs, Volume= 1.206 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Pond 1P: (new Pond)**

Inflow Area = 0.555 ac, Inflow Depth = 3.59"  
Inflow = 2.56 cfs @ 12.03 hrs, Volume= 0.166 af  
Outflow = 0.65 cfs @ 12.37 hrs, Volume= 0.160 af, Atten= 75%, Lag= 20.3 min  
Primary = 0.65 cfs @ 12.37 hrs, Volume= 0.160 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 79.45' Surf.Area= 1,631 sf Storage= 2,809 cf  
Plug-Flow detention time= 109.0 min calculated for 0.160 af (96% of inflow)  
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
76.00	160	0	0
77.00	416	288	288
78.00	896	656	944
79.00	1,344	1,120	2,064
80.00	1,984	1,664	3,728
81.00	2,595	2,290	6,018



rice street - post2

Type III 24-hr Rainfall=4.70"

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Page 4

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Primary OutFlow Max=0.65 cfs @ 12.37 hrs HW=79.45' (Free Discharge)

└─1=Orifice/Grate (Controls 0.19 cfs)

└─2=Orifice/Grate (Controls 0.45 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	76.00'	2.0" Vert. Orifice/Grate C= 0.600
2	Primary	78.97'	6.0" Vert. Orifice/Grate C= 0.600

**rice street - post2**

Type III 24-hr Rainfall=5.50"

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Page 1

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Site**

Runoff Area=50,395 sf Runoff Depth=3.00"  
Length=680' Tc=29.6 min CN=79 Runoff= 2.50 cfs 0.289 af

**Subcatchment 2: (new Subcat)**

Runoff Area=116,020 sf Runoff Depth=4.43"  
Length=760' Tc=3.2 min CN=93 Runoff= 14.73 cfs 0.983 af

**Subcatchment Parking: (new Subcat)**

Runoff Area=24,160 sf Runoff Depth=4.33"  
Length=140' Tc=2.0 min CN=92 Runoff= 3.05 cfs 0.200 af

**Reach POI: (new Reach)**

Inflow= 16.08 cfs 1.463 af  
Outflow= 16.08 cfs 1.463 af

**Pond 1P: (new Pond)**

Peak Storage= 3,248 cf @ 79.71' Inflow= 3.05 cfs 0.200 af  
Primary= 0.86 cfs 0.191 af Outflow= 0.86 cfs 0.191 af

**Total Runoff Area = 4.375 ac Runoff Volume = 1.472 af Average Runoff Depth = 4.04"**

**Subcatchment 1: Site**

Runoff = 2.50 cfs @ 12.41 hrs, Volume= 0.289 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
0	98	impervious
26,000	79	Woods, Fair, HSG D
24,395	80	>75% Grass cover, Good, HSG D
50,395	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	60	0.0100	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
8.7	260	0.0100	0.5		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	360	0.0250	4.0	9.00	Trap/Vee/Rect Channel Flow, Riverside Ditch Bot.W=3.00' D=0.50' Z= 3.0 ' n= 0.030
29.6	680	Total			

**Subcatchment 2: (new Subcat)**

Runoff = 14.73 cfs @ 12.05 hrs, Volume= 0.983 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
84,420	98	imp
12,600	79	Woods, Fair, HSG D
19,000	80	>75% Grass cover, Good, HSG D
116,020	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.9		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	220	0.0100	4.5	3.56	Circular Channel (pipe), Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.3	480	0.0100	5.9	10.50	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
3.2	760	Total			

**Subcatchment Parking: (new Subcat)**

Runoff = 3.05 cfs @ 12.03 hrs, Volume= 0.200 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
15,840	98	Paved parking & roofs
8,320	80	>75% Grass cover, Good, HSG D
24,160	92	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.0		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.0100	2.0		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	140	Total			

**Reach PO1: (new Reach)**

Inflow Area = 4.375 ac, Inflow Depth = 4.01"  
Inflow = 16.08 cfs @ 12.05 hrs, Volume= 1.463 af  
Outflow = 16.08 cfs @ 12.05 hrs, Volume= 1.463 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Pond 1P: (new Pond)**

Inflow Area = 0.555 ac, Inflow Depth = 4.33"  
Inflow = 3.05 cfs @ 12.03 hrs, Volume= 0.200 af  
Outflow = 0.86 cfs @ 12.33 hrs, Volume= 0.191 af, Atten= 72%, Lag= 18.1 min  
Primary = 0.86 cfs @ 12.33 hrs, Volume= 0.191 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 79.71' Surf.Area= 1,799 sf Storage= 3,248 cf  
Plug-Flow detention time= 101.9 min calculated for 0.191 af (96% of inflow)  
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
76.00	160	0	0
77.00	416	288	288
78.00	896	656	944
79.00	1,344	1,120	2,064
80.00	1,984	1,664	3,728
81.00	2,595	2,290	6,018

Primary OutFlow Max=0.86 cfs @ 12.33 hrs HW=79.71' (Free Discharge)

└─1=Orifice/Grate (Controls 0.20 cfs)

└─2=Orifice/Grate (Controls 0.66 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	76.00'	2.0" Vert. Orifice/Grate C= 0.600
2	Primary	78.97'	6.0" Vert. Orifice/Grate C= 0.600

**ATTACHMENT C**

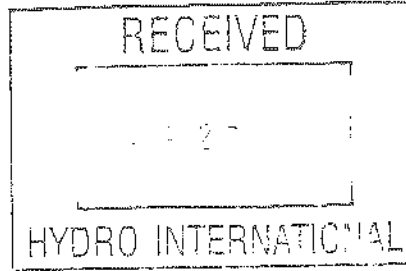
**Water Quality Calculations**



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.  
GOVERNOR  
August 5, 2002

MARTHA KIRKPATRICK  
COMMISSIONER



Pam Deahl  
Hydro International  
94 Hutchins Drive  
Portland, ME 04102

Dear Ms. Deahl,

The purpose of this letter is to inform you that, in accordance with the Laboratory Testing Protocol for Manufactured Treatment Systems and based on the results of the confirmation test for removal of OK-110 grade silica sand performed on July 12, 2002 and described in the attached report, the Downstream Defender stormwater treatment device with an aspect ratio of 0.5 is approved for a total suspended solids (TSS) removal rating of 60%, provided that the device is sized such that the projected one year peak flow from the device's drainage area does not exceed the flow indicated by the following formula:

$$Q_{1\text{ypf}} = 583 (D/4)^{2.5}$$

Where:

- $Q_{1\text{ypf}}$  = the projected one year peak flow from the device's drainage area and
- D = the diameter in feet of the device's treatment chamber

This scaling factor is based on Froude's Law and on the fact that a 4 ft diameter Downstream Defender has been shown to provide at least 80 % removal of OK-110 grade silica sand at a flow of 583 gpm (see attached report). Solutions of this formula for a variety of Downstream Defender diameters are given in the following table.

Diameter of treatment chamber (ft)	Maximum 1 year peak flow (gpm//cfs)
2	103//0.23
4	583//1.30 ← > .93 cfs
6	1607//3.58
8	3297//7.35
10	5761//12.85
12	9088//20.27

If you have any questions regarding this letter or the attached report, please feel free to call Jeff Dennis at 207-287-7847.

Sincerely,

Donald T. Witherill

AUGUSTA Division of Watershed Management  
17 STATE HOUSE STATION BANGOR  
AUGUSTA, MAINE 04333-0017 106 HOGAN ROAD  
(207) 287-7688 BANGOR, MAINE 04401  
RAY BLDG., HOSPITAL ST. (207) 941-4572 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 764-1507

1 year Storm

rice street - post2

Type III 24-hr Rainfall=2.50"

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Subcatchment Area to WQU: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

→ Runoff = 0.93 cfs @ 12.03 hrs, Volume= 0.061 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr Rainfall=2.50"

Area (sf)	CN	Description
14,760	98	Paved parking & roofs
1,600	80	>75% Grass cover, Good, HSG D
16,360	96	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.0		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"



25 year Storm

Type III 24-hr Rainfall=5.50"

rice street - post2

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Subcatchment Area to WQU: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

→ Runoff = 2.16 cfs @ 12.03 hrs, Volume= 0.148 af, Depth= 4.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
14,760	98	Paved parking & roofs
1,600	80	>75% Grass cover, Good, HSG D
16,360	96	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.0		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"



## Downstream Defender<sup>®</sup> Design Chart (Imperial) Maximum Inlet Pipe Diameter for Minimum Headloss

MODEL NUMBER	FREQUENT STORM FLOW <sup>1</sup> (cfs)	PEAK TREATMENT FLOW <sup>2</sup> (cfs)	INLET PIPE DIAMETER (inches)	OUTLET PIPE DIAMETER (inches)	HEADLOSS @ FREQUENT STORM FLOW <sup>2</sup> (inches)	HEADLOSS @ PEAK TREATMENT FLOWRATE (inches)	CONTINUOUS OIL STORAGE CAPACITY (gallons)	SPILL CONTAINMENT CAPACITY (gallons)	SEDIMENT STORAGE CAPACITY (cubic yards)	UNIT DIAMETER (feet)
4-FT	0.75	3.0	12	12	<2	5	70	188	0.70	4
6-FT	3.0	8.0	18	18	<2	8	230	634	2.10	6
8-FT	7.0	15.0	24	24	<2	8	525	1,504	4.65	8
10-FT	13.0	25.0	30	30	3	10	1,050	2,937	8.70	10

**NOTES:**

1. Frequent Storm Flow is based on at least 80% total solids removal of particles with specific gravity of 2.65 and a size distribution similar to typical Department of Transportation road sand.
2. Peak Treatment Flow rate is based on keeping headloss at a minimum and removal efficiencies within a desirable range. Higher flow rates are possible if lower removal efficiencies and higher headlosses are acceptable.
3. Headloss is defined as the difference between the top water level upstream and the top water level downstream of the unit.

- ◆ AutoCAD drawings and Microsoft Word specifications available on disk.
- ◆ For pricing, delivery, and custom design, please call Hydro International's Proposal Engineering Department

Hydro International • 94 Hutchins Drive • Portland, ME 04102  
Tel: (207) 756-6200 • Fax: (207) 756-6212 • E-mail: [hltech@hil-tech.com](mailto:hltech@hil-tech.com)  
[www.hydro-international.biz](http://www.hydro-international.biz)

**ATTACHMENT D**

**Ditch Scour/Rip Rap Sizing Calculations**

DITCH-class

FILE NAME: DITCH-calcs  
 PROJECT: JN-2472  
 LOCATION: Portland, Maine  
 DATE: 4/6/2004

Channel Around Parking Area

CHANNEL CONFIGURATION:

BOTTOM WIDTH 2.00 FT  
 LEFT SIDE SLOPE (HORZ:1 VERT) 3.00  
 RIGHT SIDE SLOPE (HORZ:1 VERT) 3.00  
 DITCH SLOPE 1.00 %  
 MANNING'S N 0.027

DEPTH INCREMENT 0.40 INCH

DEPTH OF FLOW (IN)	1.00	1.40	1.80	2.20	2.60	3.00	3.40	3.80
AREA OF FLOW (SQ. FT.)	0.19	0.27	0.37	0.47	0.57	0.69	0.81	0.93
WETTED PERIMETER (FT)	2.53	2.74	2.95	3.16	3.37	3.58	3.79	4.00
HYDRAULIC RADIUS (FT)	0.07	0.10	0.12	0.15	0.17	0.19	0.21	0.23
FLOW VELOCITY (FPS)	0.97	1.19	1.37	1.54	1.69	1.83	1.96	2.09
CHANNEL CAPACITY (CFS)	0.18	0.33	0.50	0.72	0.97	1.26	1.58	1.95

DEPTH OF FLOW (IN)	4.20	4.60	5.00	5.40	5.80	6.20	6.60	7.00
AREA OF FLOW (SQ. FT.)	1.07	1.21	1.35	1.51	1.67	1.83	2.01	2.19
WETTED PERIMETER (FT)	4.21	4.42	4.64	4.85	5.06	5.27	5.48	5.69
HYDRAULIC RADIUS (FT)	0.25	0.27	0.29	0.31	0.33	0.35	0.37	0.38
FLOW VELOCITY (FPS)	2.20	2.32	2.42	2.53	2.63	2.72	2.82	2.91
CHANNEL CAPACITY (CFS)	2.35	2.80	3.28	3.81	4.38	5.00	5.66	6.37

↑ 3.80 cfs Veg. Swale OK

DEPTH OF FLOW (IN)	7.40	7.80	8.20	8.60	9.00	9.40	9.80	10.20
AREA OF FLOW (SQ. FT.)	2.37	2.57	2.77	2.97	3.19	3.41	3.63	3.87
WETTED PERIMETER (FT)	5.90	6.11	6.32	6.53	6.74	6.95	7.17	7.38
HYDRAULIC RADIUS (FT)	0.40	0.42	0.44	0.46	0.47	0.49	0.51	0.52
FLOW VELOCITY (FPS)	3.00	3.09	3.17	3.26	3.34	3.42	3.50	3.58
CHANNEL CAPACITY (CFS)	7.12	7.93	8.78	9.69	10.65	11.66	12.72	13.84

DITCH-clacs

FILE NAME: DITCH-calcs  
 PROJECT: JN-2472  
 LOCATION: Portland, Maine  
 DATE: 4/6/2004

Channel Into Ditch

CHANNEL CONFIGURATION:

BOTTOM WIDTH 2.00 FT  
 LEFT SIDE SLOPE (HORZ:1 VERT) 3.00  
 RIGHT SIDE SLOPE (HORZ:1 VERT) 3.00  
 DITCH SLOPE 33.00 %  
 MANNING'S N 0.040  
 DEPTH INCREMENT 0.40 INCH

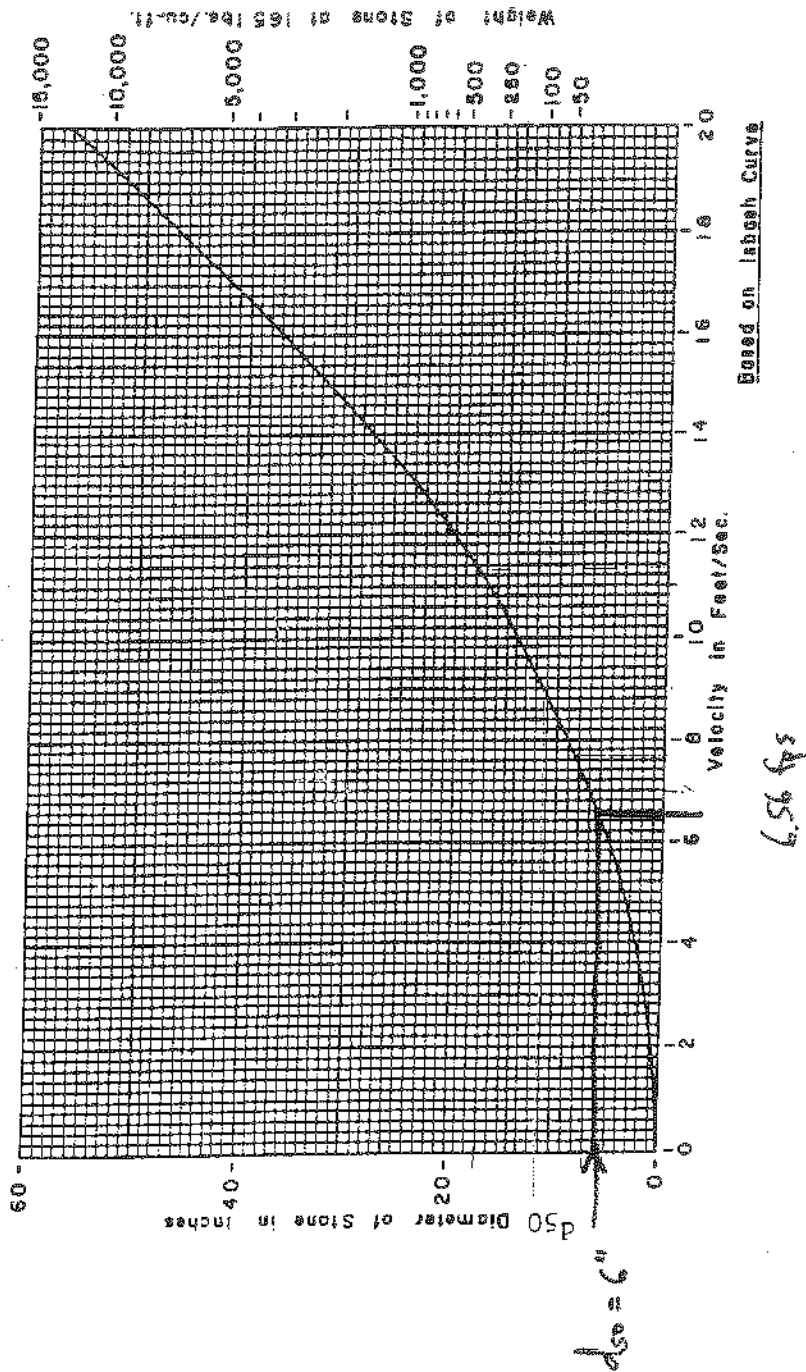
DEPTH OF FLOW (IN)	1.00	1.40	1.80	2.20	2.60	3.00	3.40	3.80
AREA OF FLOW (SQ. FT.)	0.19	0.27	0.37	0.47	0.57	0.69	0.81	0.93
WETTED PERIMETER (FT)	2.53	2.74	2.95	3.16	3.37	3.58	3.79	4.00
HYDRAULIC RADIUS (FT)	0.07	0.10	0.12	0.15	0.17	0.19	0.21	0.23
FLOW VELOCITY (FPS)	3.77	4.60	5.32	5.97	6.56	7.10	7.61	8.09
CHANNEL CAPACITY (CFS)	0.71	1.26	1.96	2.79	3.77	4.88	6.15	7.56

↑ Riprap Required

DEPTH OF FLOW (IN)	4.20	4.60	5.00	5.40	5.80	6.20	6.60	7.00
AREA OF FLOW (SQ. FT.)	1.07	1.21	1.35	1.51	1.67	1.83	2.01	2.19
WETTED PERIMETER (FT)	4.21	4.42	4.64	4.85	5.06	5.27	5.48	5.69
HYDRAULIC RADIUS (FT)	0.25	0.27	0.29	0.31	0.33	0.35	0.37	0.38
FLOW VELOCITY (FPS)	8.54	8.98	9.40	9.80	10.19	10.56	10.93	11.28
CHANNEL CAPACITY (CFS)	9.12	10.84	12.72	14.77	16.99	19.37	21.94	24.68

DEPTH OF FLOW (IN)	7.40	7.80	8.20	8.60	9.00	9.40	9.80	10.20
AREA OF FLOW (SQ. FT.)	2.37	2.57	2.77	2.97	3.19	3.41	3.63	3.87
WETTED PERIMETER (FT)	5.90	6.11	6.32	6.53	6.74	6.95	7.17	7.38
HYDRAULIC RADIUS (FT)	0.40	0.42	0.44	0.46	0.47	0.49	0.51	0.52
FLOW VELOCITY (FPS)	11.63	11.97	12.30	12.63	12.95	13.26	13.57	13.88
CHANNEL CAPACITY (CFS)	27.62	30.74	34.05	37.56	41.28	45.20	49.33	53.67

Figure 70.1 STONE SIZE FOR RIPRAP (USDA Soil Conservation Service)



## ATTACHMENT E

### **Pre and Postdevelopment Watershed Figures**

SECTION 14

EROSION AND SEDIMENTATION CONTROL REPORT

CAPRICORN PRODUCTS INTERIOR RENOVATIONS  
WITH LIMITED SITE WORK TO EXPAND THE PARKING AREA  
RIVERSIDE INDUSTRIAL PARKWAY AND RICE STREET  
PORTLAND, MAINE

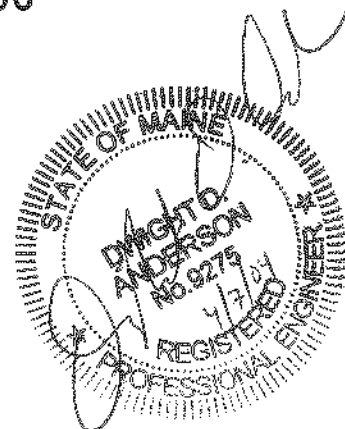
Prepared for:

Archetype  
48 Union Wharf  
Portland, ME 04101

Prepared by:

DeLuca-Hoffman Associates, Inc.  
778 Main Street, Suite 8  
South Portland, Maine 04106

April 2004





## TABLE OF CONTENTS

<u>Section</u>	<u>Description</u>	<u>Page</u>
14.0	Introduction .....	1
14.1	Existing Site Conditions .....	1
14.2	Overview of Soil Erosion and Sedimentation Concerns .....	2
14.3	Description and Location of Limits of All Proposed Earth Movements .....	2
14.4	Existing and Proposed Drainage Features .....	2
14.4A	Critical Areas .....	3
14.5	Erosion/Sedimentation Control Devices.....	3
14.6	Temporary Erosion/Sedimentation Control Measures.....	4
14.6A	Standards for Stabilizing Sites for the Winter.....	5
14.7	Permanent Erosion Control Measures .....	5
14.8	Contracting Procedure.....	7
14.9	Provisions for Maintenance of the Erosion/Sedimentation Control Features .....	7
14.10	Preconstruction Conference .....	7
14.11	Attachments .....	8
14.12	Plan References.....	8

### Attachments

A – Seeding Plan

## SECTION 14

### EROSION AND SEDIMENTATION CONTROL REPORT

#### **14.0 Introduction**

DeLuca-Hoffman Associates, Inc. has been retained as a consultant to Archetype to prepare an Erosion and Sedimentation Control Report for expanded parking at a building at the northeast corner of Rice Street and Riverside Industrial Parkway. The existing building use will be changed resulting in the need for an additional 46 parking spaces on the site. The addition of this parking will result in an increase in the impervious coverage and a need for stormwater management. The proposed parking lot is to be located in front of the building as shown on the accompanying site plan

This narrative contains the Erosion and Sedimentation Control Report for this project.

The project is not in a lake watershed or a watershed most at risk from development.

#### **14.1 Existing Site Conditions**

The existing site is currently divided with the northerly portion being wooded or lawn and the southerly portion containing the existing building with a footprint of approximately 55,000 square feet and a paved service and parking area of about 26,900 square feet. The total lot size is approximately 190,575 square feet. The existing site conditions are depicted on the plans which accompany this report.

The site has very mild and featureless topography and generally drains in a westerly direction toward Riverside Industrial Parkway. A drainage ditch separates the lot from the Riverside Industrial Parkway. Elevations range from 84 to about 76 feet based upon information obtained from the original site plan. Drainage from the roof and parking area are intercepted by a storm drain that cuts across the site and enters a storm drain in the Riverside Industrial Parkway. Other drainage is intercepted by the ditch and then enters the formal drainage system

The site is mapped on the medium intensity soils map as being Scantic which has a hydrologic group D rating. Figures 1, 2, and 3 provide a location, USGS, and USDA soils map for the site.

DeLuca-Hoffman Associates, Inc. is not aware of any areas of existing erosion on the site or blockage which restricts existing drainage from entering the site from natural upstream areas.

#### 14.2 Overview of Soil Erosion and Sedimentation Concerns

The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. The "K" value is frequently used with the universal soil loss equation. The higher values are indicative of the more erodible soils. The project area consists of the following soils based upon the USDA Cumberland County Soils Survey.

Soil Type	Soil Description	K Value
Scantic	Silt Loam	0.49

Based on a review of the K values, the onsite soils in the area where construction is focused are moderately to highly susceptible to erosion after the cover material is stripped.

The primary emphasis of the erosion and sedimentation control plan to be implemented for this project is as follows:

1. Planning the project to provide the ability to capture and eroded materials from the work area on the site;
2. Development of a careful construction sequence.
3. Rapid stabilization of denuded areas to minimize the period of soil exposure.
4. Rapid stabilization of drainage paths to avoid rill and gully erosion.
5. The use of on-site measures to capture initial sediment (hay bales/silt fence, etc.).
7. The provision for the pond to act as a sedimentation sump
8. The implementation of long-term measures for erosion/sediment and pollutant treatment through the construction of permanent water quality measures.

#### 14.3 Description and Location of Limits of All Proposed Earth Movements

The proposed parking lot and small detention pond is a relatively small area of construction. As a result the duration of the work should be limited. The disturbed area is estimated at 0.64 acres and should involve less than 900 cy of excavation

Earthmoving activities will generally be to strip and grub the site, stockpile the loam for subsequent reuse, regrade and contour the land to support the proposed gravels of the parking lot and to shape the subgrade for the pond.

Stormwater will be intercepted in a catch basin and directed to a water quality unit and the pond. The pond will have a 4'0" diameter manhole with an outlet control pipe.

#### 14.4 Existing and Proposed Drainage Features

The proposed drainage will capture runoff from most of the new paved surface and convey it through formal storm drain systems to the proposed dry pond and water quality unit.

The proposed drainage systems are being designed to have peak discharge rates at or below existing levels to avoid causing downstream erosion or flooding problems. The control of the peak runoff rates is discussed in more detail in the Stormwater Management Report provided as part of this application.

#### 14.4A Critical Areas

The critical areas of the site include the ditch along the frontage on Riverside Industrial Parkway.

#### 14.5 Erosion/Sedimentation Control Devices

The Contractor as part of the site development will implement the following erosion and sediment control devices. These devices shall be installed as indicated on the plans or as described within this report. For further reference, see the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices.

1. Siltation fence shall be installed downslope of any disturbed areas to trap runoff borne sediments until the site is revegetated. The silt fence shall be installed per the detail provided in the plan set and inspected immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made immediately by the Contractor if there are any signs of erosion or sedimentation below the fence line. Proper placement of stakes and keying the bottom of the fabric into the ground is critical to the fence's effectiveness. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam.

Silt fence is shown by three types depending upon the timing and intent as follows:

<b>SCHEDULE OF SILT FENCE REQUIREMENTS</b>		
<b>Silt Fence</b>	<b>Type Purpose</b>	<b>Time of Installation</b>
Type 1	To trap sediment along the grading edge where the new contours nearly parallel existing contours.	At initial site preparation, prior to other work.
Type 2	To trap sediment from the work area; install in short sections parallel to existing contour; typically occurs where proposed and existing contours form a "V" shape.	At initial site preparation, prior to other work or as fills are blended to existing grades along the contour.
Type 3	To trap sediment along the base of proposed contours, typically in cut areas.	During construction after new grade is shaped. Time between work in area and shaping new grade to allow silt fence to be installed shall be minimized.

2. Straw or hay mulch including hydroseeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed on slopes of less than 10 percent shall be anchored by applying water; mulch placed on slopes steeper than 10 percent shall be covered with a fabric netting and anchored with staples in accordance with the manufacturer's recommendations. Proposed drainage channels, which are to be revegetated, shall receive curlex blankets by American Excelsior or equal. Mulch application rates are provided in Attachment A of this section. Hay mulch shall be available on site at all times in order to provide immediate temporary stabilization when necessary. Where necessary for

concentrated runoff to be conveyed down a slope, a temporary stone channel or pipe sluice shall be used to convey runoff down the slope.

3. Riprap slopes, ditch linings, stone check dams, hay bale barriers, and culvert outlet aprons are intended to reduce runoff velocities and protect denuded soil surfaces from concentrated flows. Installation details and stone sizes are provided in the construction plan set on the erosion control detail sheets.
4. A construction entrance will be constructed at all access points onto the site to prevent tracking of soil onto adjacent local roads.
5. Stone sediment traps or a premanufactured SiltSack™ will be installed at catch basin inlets to prevent silt from entering the storm drain system. Installation details are provided in the plan set on the erosion control detail sheets.
6. Loam and seed is intended to serve as the primary permanent revegetative measure for all denuded areas not provided with other erosion control measures, such as riprap. Specific areas as shown on the landscape plan will receive sod. Application rates are provided in Attachment A of this section for temporary and permanent seeding in non-wetland areas.
7. Water will be the principal means to control fugitive dust.

#### **14.6 Temporary Erosion/Sedimentation Control Measures**

The following are planned as temporary erosion/sedimentation control measures during construction:

1. A crushed stone-stabilized construction entrance shall be placed at any construction access points from the existing parking lot.
2. Type 1 and 2 siltation fence shall be installed along the downgradient side of the proposed improvement areas prior to work in these areas. Type 2 and 3 siltation fence shall be installed as work progresses. The siltation fence will remain in place and properly maintained until the site is acceptably revegetated.
3. Temporary stockpiles of stumps, grubblings, or common excavation will be protected as follows:
  - a) Temporary stockpiles shall not be located within 100 feet of the wetlands and at least 50 feet upgradient of the perimeter silt fence.
  - b) Inactive stockpiles shall be stabilized within 5 days by either temporarily seeding the stockpile with a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch. If necessary, mesh shall be installed to prevent wind from removing the mulch.
4. All denuded areas, which have been rough graded, shall receive mulch or erosion control mesh fabric within 14 days of initial disturbance of soil.
5. All soils disturbed between November 1 and April 1 will be covered with mulch within 5 days of disturbance, prior to any predicted storm event of the equivalent of ½" of equivalent rainfall in a 24-hour period, or prior to any work shutdown lasting more

than 35 hours (including weekends and holidays). The mulch rate shall be double the normal rate.

6. For work which is conducted between November 1 and April 15 of any calendar year, all denuded areas will be covered with hay mulch, applied at twice the normal application rate and (in areas over 10% grade) anchored with a fabric netting. The time period for applying mulch shall be limited to 5 days for all areas or immediately in advance of a predicted rainfall event.
7. The access drive and Riverside Industrial Parkway shall be swept to control mud and dust as necessary.
8. Silt fencing with a maximum stake spacing of 6 feet should be used, unless the fence is supported by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence should be properly anchored a minimum of 6" per the plan detail and backfilled. Any silt fence identified by the owner or reviewing agencies, as not being properly installed during construction shall be immediately repaired in accordance with the installation details.
9. Storm drain catch basin inlet protection shall be provided through the use of stone sediment barriers or a premanufactured SiltSack™ as distributed by A. H. Harris Company, Portland, Maine. Stone sediment barrier installation details are provided in the plan set. The barriers or SiltSacks™ shall be inspected after each rainfall and repairs made as necessary, including the removal of sediment. Sediment shall be removed and the barrier or SiltSack™ restored to its original dimensions when the sediment has accumulated to ½ the design depth of the barrier. Sediment shall be removed from SiltSacks™ as necessary. Inlet protection shall be removed when the tributary drainage area has been stabilized.
10. All slopes over 4:1 shall receive erosion control mesh.
11. Slopes steeper than 3:1 shall receive reinforced turf unless rip rap or other nonvegetative stabilization measures are required by the contract.
12. Type 2 and 3 silt fence shall be installed as construction progresses.
13. Areas of visible erosion shall be stabilized with crushed stone. The Owner's representative in consultation with the engineer shall determine the size of the stone.
14. Catch basins shall all be installed with an opening 2'-6" below finish grade to receive a 4" underdrain with an end cap. A 3'-0" stub of underdrain surrounded by 6" of ¾" crushed stone and filter fabric shall be installed.

#### **14.6A Standards for Stabilizing Sites for the Winter**

Construction is scheduled to occur during the non-winter months. Therefore, these standards are not required.

#### **14.7 Permanent Erosion Control Measures**

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

1. All storm drain pipes shall have riprap aprons at their outlet to protect the outlet and receiving channel of the culverts from scour and deterioration. Installation details are provided in the plan set. The aprons shall be installed and stabilized prior to directing runoff to the tributary pipe or culvert. It is noted that all inlets and outlets over 18" in diameter are to have a flared concrete inlet and an aluminum bar rack. Pipes less than 18 inches in diameter are to have an HDPE flare. Riprap shall not be extended above the area shown on the plans.
2. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas where the finish grade slope is greater than 10 percent except in the areas with over 3:1 slopes where reinforced turf is required. Native topsoil shall be stockpiled and temporarily stabilized with seed and mulch and reused for final restoration when it is of sufficient quality. Where necessary, compost shall be added and blended to increase the organic content of the soil.
3. Catch basins shall be provided with sediment sumps for all outlet pipes that are 12" in diameter or greater.
4. Permanent water quality measures will be installed using the proprietary water quality unit shown on the drawing

#### Timing and Sequence of Erosion/Sedimentation Control Measures

The following construction sequence shall be required to insure the effectiveness of the erosion and sedimentation control measures are optimized.

Note: For all grading activities, the Contractor shall exercise extreme caution not to overexpose the site by limiting the disturbed area.

1. Install crushed stone-stabilized construction entrance from the parking lot
2. Install Type 1 and appropriate Type 2 siltation fences
3. Clear and grub the work area and stockpile the loam
4. Construct the detention pond and install the water quality unit and inlet pipe and catch basin. Install type 3 silt fence inside the pond
5. Construct the parking lot.
6. Install stone and hay bale check dams at any concentrated flow discharge points.
7. Install pavement as detailed on the site plans.
8. Loam, Lime, fertilize, seed and mulch all remaining disturbed and denuded areas.
9. Remove all accumulated sediment from silt barriers.
10. Review stability of the site. If a 75% catch of grass is achieved, remove all other temporary erosion control devices.

Soil will be considered disturbed if it does not have an established stand of vegetation covering at least 75% of the soil surface or has not been mulched with hay applied at a rate of 230 lb./1000 sq. ft.

#### 14.8 Contracting Procedure

The Owner should provide this erosion control plan to any contractor engaged for the project and provide contract language stipulating the erosion control plan must be implemented during construction.

The Contractor should be required to submit a schedule which should be subject to the approval of the Owner.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site and fugitive dust emissions dependent upon the actual site and weather conditions.

#### 14.9 Provisions for Maintenance of the Erosion/Sedimentation Control Features

The water quality unit should be cleaned twice per year, the catch basin should be cleaned annually. If water is slow to drain from the pond, the control structure should be inspected to insure there is not debris clogging the orifices. During construction of the pond and parking lot of the project the Contractor should be required to perform the following

1. Inspection of this project work site on a weekly basis and after each significant rainfall event (0.5 inches or more within any consecutive 24 hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized. Inspection of the project work site shall include:

- Identification of proper erosion control measure installation in accordance with the erosion control detail sheet or as specified in this section.
- Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
- Identify areas that appear vulnerable to erosion and determine additional erosion control measures that should be used to improve conditions.
- Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 75 percent is required prior to removal of erosion control measures.

Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.

2. If inspection of the site indicates a change should be made to the erosion control plan, either to improve effectiveness or correct a site-specific deficiency, the inspector shall immediately implement the corrective measure and notify the owner of the change.

Once construction has been completed all catch basins, the water quality unit, the pond, and the outlet control structure should be cleaned.

#### 14.10 Preconstruction Conference

Prior to any construction at the site, representatives of the Contractor, the City should meet with the Owner to discuss the scheduling of the site construction. On or before that meeting, the Contractor will prepare a detailed schedule and a marked-up site plan indicating areas and components of the work and key dates showing date of disturbance



and completion of the work. Three copies of the schedule and marked-up site plan shall be provided to the Owner.

**14.11 Attachments**

Attachment A – Seeding Plan

**14.12 Plan References**

Sheets– Erosion/Sediment Control Plans and Details

**ATTACHMENT A**

**SEEDING PLAN**

SEEDING PLAN: LAWN AND OTHER AREAS

Project Capricorn Products Interior Renovations with Limited Site Work to  
Expand the Parking Area

Site Location Riverside Industrial Parkway & Rice Street, Portland, Maine

X Permanent Seeding \_\_\_\_\_ Temporary Seeding

1. Area to be seeded: 1/2± acres, OR \_\_\_\_\_ M Sq. Ft.
2. Instructions on preparation of soil: Prepare a good seed bed for planting method used.
3. Apply lime as follows: \_\_\_\_\_ #/acres, OR 138#/M Sq. Ft.
4. Fertilize with \_\_\_\_\_ pounds of \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ N-P-K/ac. OR  
18.4 pounds of 10 - 20 - 20 N-P-K/M Sq. Ft.
5. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
6. Seed with the following mixture:
  - 45% Kentucky Bluegrass
  - 45% Creeping Red Fescue
  - 10% Perennial Ryegrass

When using small grain as nurse crop seed it at one-half the normal seeding rate.

7. Mulching instructions: Apply at the rate of \_\_\_\_\_ tons per acre. OR  
230 pounds per M. Sq. Ft.

<u>Amount</u>	<u>Unit #</u>	<u>Tons, Etc.</u>
8. TOTAL LIME.....	<u>138</u>	<u>#/1000 sq. ft.</u>
9. TOTAL FERTILIZER.....	<u>13.8</u>	<u>#/1000 sq. ft.</u>
10. TOTAL SEED.....	<u>6 to 8</u>	<u>#/1000 sq. ft.</u>
11. TOTAL MULCH.....	<u>230</u>	<u>#/1000 sq. ft.</u>
12. TOTAL other materials, seeds, etc.....	<u>Compost is likely required</u>	
13. REMARKS:		

- Recommended seeding dates after August 15.
- For areas with slopes >10%, waterways, areas within 100 feet of the stream, and fall and winter erosion control areas, mulch netting shall be used per manufacturer's specifications.
- Fertilizer requirements shall be subject to actual test results of the topsoil used for the project. The Contractor shall be responsible for providing topsoil test results for pH and recommended fertilizer application rates to the owner
- All loam shall have compost or peat admixtures to raise the organic content to 8%.

TEMPORARY SEEDING PLAN

Project Capricorn Products Interior Renovations with Limited Site Work to Expand the Parking Area

Site Location Riverside Industrial Parkway & Rice Street, Portland, Maine

                     Permanent Seeding           X           Temporary Seeding

1. Area to be seeded:           varies           acres, OR                                  M Sq. Ft.
2. Instructions on preparation of soil: Prepare a good seed bed for planting method used.
3. Apply lime as follows:                                  #/acres, OR           138#          /M Sq. Ft.
4. Fertilize with                                  pounds of           -          -           N-P-K/ac. OR 18.4                                 pounds of           10 - 20 - 20           N-P-K/M Sq. Ft.
5. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
6. Seed with the following mixture:
  - 50% Perennial Ryegrass
  - 50% Winter Rye

When using small grain as nurse crop seed it at one-half the normal seeding rate.

7. Mulching instructions: Apply at the rate of                                  tons per acre. OR           180           pounds per M. Sq. Ft.

	<u>Amount</u>	<u>Unit #</u>	<u>Tons, Etc.</u>
8. TOTAL LIME.....		<u>138</u>	<u>#/1000 sq. ft.</u>
9. TOTAL FERTILIZER.....		<u>18.4</u>	<u>#/1000 sq. ft.</u>
10. TOTAL SEED.....		<u>6</u>	<u>#/1000 sq. ft.</u>
11. TOTAL MULCH.....		<u>180</u>	<u>#/1000 sq. ft.</u>
12. TOTAL other materials, seeds, etc.....			

13. REMARKS:
  - The above seed mix is required in all temporarily disturbed wetland areas.
  - Fertilizer requirements shall be subject to actual test results of the topsoil used for the project. The Contractor shall be responsible for providing topsoil test results for pH and recommended fertilizer application rates to the owner.



# City of Portland Site Plan Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Address of Proposed Development: 1 Rice Street		Zone: IM
Total Square Footage of Proposed Structure: N/A	Square Footage of Lot: 4 A	
Tax Assessor's Chart, Block & Lot:  Chart# 354    Block# A    Lot# 3	Property owner's mailing address: Alpine Realty 120 Exchange Street Portland, ME	Telephone #:  (207) 775-3499
Consultant/Agent, mailing address, phone # & contact person:  Dwight D. Anderson, P.E. DeLuca-Hoffman Associates, Inc. 778 Main Street, Suite 8 South Portland, ME 04106 (207) 775-1121	Applicant's name, mailing address, telephone #/Fax#/Pager#:  John Wise Alpine Realty 120 Exchange Street Portland, ME 04101 (207) 775-3499	Project name:  Capricorn Products (Site Work)
<b>Proposed Development (check all that apply)</b> <input type="checkbox"/> New Building <input type="checkbox"/> Building Addition <input type="checkbox"/> Change of Use <input type="checkbox"/> Residential <input type="checkbox"/> Office <input type="checkbox"/> Retail <input type="checkbox"/> Manufacturing <input type="checkbox"/> Warehouse/Distribution <input type="checkbox"/> Parking lot <input type="checkbox"/> Subdivision (\$500.00) + amount of lots _____ (\$25.00 per lot) \$ _____ <input type="checkbox"/> Site Location of Development (\$3,000.00) (except for residential projects which shall be \$200.00 per lot _____ ) <input type="checkbox"/> Traffic Movement (\$1,000.00) <input type="checkbox"/> Stormwater Quality (\$250.00) <input type="checkbox"/> Section 14-403 Review (\$400.00 + \$25.00 per lot) <input type="checkbox"/> Other _____		
<b>Major Development (more than 10,000 sq. ft.)</b> <input type="checkbox"/> Under 50,000 sq. ft. (\$500.00) <input type="checkbox"/> 50,000 - 100,000 sq. ft. (\$1,000.00) <input type="checkbox"/> Parking Lots over 100 spaces (\$1,000.00) <input type="checkbox"/> 100,000 - 200,000 sq. ft. (\$2,000.00) <input type="checkbox"/> 200,000 - 300,000 sq. ft. (\$3,000.00) <input type="checkbox"/> Over 300,000 sq. ft. (\$5,000.00) <input type="checkbox"/> After-the-fact Review (\$1,000.00 + applicable application fee)		
<b>Minor Site Plan Review</b> <input type="checkbox"/> Less than 10,000 sq. ft. (\$400.00) <input type="checkbox"/> After-the-fact Review (\$1,000.00 + applicable application fee)		
<b>Plan Amendments</b> <input checked="" type="checkbox"/> Planning Staff Review (\$250.00) <input type="checkbox"/> Planning Board Review (\$500.00)		
- Please see next page -		

Who billing will be sent to: (Company, Contact Person, Address, Phone #)	John Wise Alpine Realty 120 Exchange Street Portland, ME 04101	(207) 775-3499
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Submittals shall include (9) separate folded packets of the following:


- a. copy of application
- b. cover letter stating the nature of the project
- c. site plan containing the information found in the attached sample plans check list

**Amendment to Plans:** Amendment applications should include 6 separate packets of the above (a, b, & c)

**ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM**

Section 14-522 of the Zoning Ordinance outlines the process; copies are available at the counter at .50 per page (8.5 x11) you may also visit the web site: [ci.portland.me.us](http://ci.portland.me.us) chapter 14

*I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree in conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representatives shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.*

Signature of applicant: 	Date: 8/20/04
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This application is for site review ONLY, a building Permit application and associated fees will be required prior to construction.

## Development in Portland

The City of Portland has instituted the following fees to recover the costs of reviewing development proposals under the Site Plan and Subdivision ordinances: application fee; engineering fee; and inspection fee. Performance and defect guarantees are also required by ordinance to cover all site work proposed.

The **Application Fee** covers general planning and administrative processing costs, and is paid at the time of application.

The Planning Division is required to send notices to neighbors upon receipt of an application and prior to public meetings. The applicant will be billed for mailing and advertisement costs. Applicants for development will be charged an **Engineering Review Fee**. This fee is charged by the Planning Division for review of on-site improvements of a civil engineering nature, such as storm water management as well as the engineering analysis of related improvements within the public right-of-way, such as public streets and utility connections, as assessed by the Department of Public Works. The Engineering Review fee must be paid before a building permit can be issued. Monthly invoices are sent out by the Planning Division on a monthly basis to cover engineering costs.

A **Performance Guarantee** will be required following approval of development plans. This guarantee covers all required improvements within the public right-of-way, plus certain site improvements such as landscaping, paving, and drainage improvements. The Planning Division will provide a cost estimate form for figuring the amount of the performance guarantee, as well as sample form letters to be filled out by a financial institution.

An **Inspection Fee** must also be submitted to cover inspections to ensure that sites are developed in accordance with the approved plan. The inspection fee is 2.0% of the performance guarantee amount, or as assessed by the planning or public works engineer. The minimum inspection fee is \$300 for development, unless no site improvements are proposed. Public Works inspects work within the City right-of-way and Planning inspects work within the site including pipe-laying and connections. (The contractor must work with inspectors to coordinate timely inspections, and should provide adequate notice before inspections, especially in the case of final inspection.)

Upon completion of a development project, the performance guarantee is released, and a **Defect Guarantee** in the amount of 10% of the performance guarantee must be provided. The Defect Guarantee will be released after a year.

Other reimbursements to the City include actual or apportioned costs for advertising and mailed notices. All fees shall be paid prior to the issuance of any building permit.

For more information on the fees or review process, please call the Planning Division at 874-8719 or 874-8721.



# City Of Portland Site Plan Checklist

Project Name, Address of Project	Application Number		
Submitted () & Date Item	Required Information		Section 14-525 (b,c)
_____ (1)	Standard boundary survey (stamped by a registered surveyor, at a scale of not less than 1 inch to 100 feet and including:		1
_____ (2)	Name and address of applicant and name of proposed development		a
_____ (3)	Scale and north points		b
_____ (4)	Boundaries of the site		c
_____ (5)	Total land area of site		d
_____ (6)	Topography - existing and proposed (2 feet intervals or less)		e
_____ (7)	Plans based on the boundary survey including:		2
_____ (8)	Existing soil conditions		a
_____ (9)	Location of water courses, marshes, rock outcroppings and wooded areas		b
_____ (10)	Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used		c
_____ (11)	Approx location of buildings or other structures on parcels abutting the site		d
_____ (12)	Location of on-site waste receptacles		e
_____ (13)	Public utilities		e
_____ (14)	Water and sewer mains		c
_____ (15)	Culverts, drains, existing and proposed, showing size and directions of flows		e
_____ (16)	Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed		f
_____ (17)	Location and dimensions of on-site pedestrian and vehicular access ways		
_____ (18)	Parking areas		g
_____ (19)	Loading facilities		g
_____ (20)	Design of ingress and egress of vehicles to and from the site onto public streets		g
_____ (21)	Curb and sidewalks		g
_____ (22)	Landscape plan showing:		h
_____ (23)	Location of existing proposed vegetation		h
_____ (24)	Type of vegetation		h
_____ (25)	Quantity of plantings		h
_____ (26)	Size of proposed landscaping		h
_____ (27)	Existing areas to be preserved		h
_____ (28)	Preservation measures to be employed		h
_____ (29)	Details of planting and preservation specifications		h
_____ (30)	Location and dimensions of all fencing and screening		i
_____ (31)	Location and intensity of outdoor lighting system		j
_____ (32)	Location of fire hydrants, existing and proposed		k
_____ (33)	Written statement		c
_____ (34)	Description of proposed uses to be located on site		l
_____ (35)	Quantity and type of residential, if any		l
_____ (36)	Total land area of the site		b2
_____ (37)	Total floor area and ground coverage of each proposed building and structure		b2
_____ (38)	General summary of existing and proposed easements or other burdens		c3
_____ (39)	Method of handling solid waste disposal		4
_____ (40)	Applicant's evaluation of availability of off-site public facilities, including sewer, water and streets		5
_____ (41)	Description of any problems of drainage or topography, or a representation that there are none		6
_____ (42)	An estimate of the time period required for completion of the development		

_____	(43)	A list of all state and federal regulatory approvals to which the development may be subject to	8
_____	(44)	The status of any pending applications	8
_____	(45)	Anticipated timeframe for obtaining such permits	h8
_____	(46)	A letter of non jurisdiction	h8
_____	(47)	Evidence of financial and technical capability to undertake and complete the development including a letter from a responsible financial institution stating that is has reviewed the planned development and would seriously consider financing it when approved.	

Note: Depending on the size and scope of the proposed development, the Planning Board or Planning Authority may request additional information, including (but not limited to):

- drainage patterns and facilities;
- erosion and sedimentation controls to be used during construction;
- a parking and/or traffic study;
- and
- a noise study;
- an environmental impact study;
- a sun shadow study;
- a study of particulates and any other noxious emissions;
- a wind impact analysis.

Other comments:

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