

Aug.Wood Construction

SRG ENGINEERING, INC.
PO BOX 925
GRAY, ME 04039

Page 1 of 1

Page Edge

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures NO Fabricator Exempt		Inspect shop fabrication and quality control procedures for wood truss plan?.
2. Material Grading	SRG ENG.	
3. Connections	SRG. ENG.	
4. Framing and Details	SRG ENG.	
5. Diaphragms and Shearwalls	NA	Inspect size, configuration, blocking and fastening of shearwalls and diaphragms. Verify panel grade and thickness.
6. Prefabricated Wood Trusses	NA	Inspect the fabrication of wood trusses.
7. Permanent Truss Bracing	NA	
8. Other:	NA	

8. A ten-inch water line is located under Presumpscot Street. A two-inch and a six-inch water line connection are proposed from Presumpscot Street to the proposed building.
9. Access for fire department connections is located on the easterly side of the building adjacent to Presumpscot Street.
10. Access to the structure is on two sides with the option of a third side from Presumpscot Street.
11. The building will be constructed in conformance with NFPA 1 and all City of Portland Fire Department technical standards.

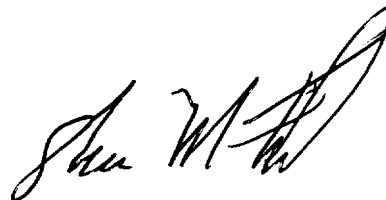
We are hopeful that we have provided the pertinent information for your approval of this project. If you should have any questions or comments while reviewing this project, please call. Thank you for your consideration.

Sincerely,

SEBAGO TECHNICS, INC.



Adam S Bliss
Design Engineer



Shawn M. Frank, P.E.
Project Manager

ASB/SMF:asb/df

Enclosures.

cc: Patco Construction, Inc.
J & H Properties, L.L.C.

JOB NO

(207) 324-5574

TO PORTLAND FIRE Dept.

ATTENTION

RE: _____

 Job for:
PACK EDGE

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop drawings 3 Prints Plans Samples 7 Specifications
 Copy of letter 7 Change order _____

COPIES	DATE	NO.	DESCRIPTION
2			
2		LSI	LIFESAFETY PLAN

THESE ARE TRANSMITTED as checked below:

- For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS

Capt. Cass,

Attached please find 2 copies of
 Lifesafety plan and response letter from
 Dennis Waters.

Please feel free to contact myself, Dennis Waters
 or Ron Mancion (field Supervisor) regarding this.
 Thank You.

COPY TO _____

SIGNED: Bill Roman



PATCO
CONSTRUCTION, INC.

Capt. Greg Cass
Fire Prevention Officer
Portland Fire Department
Portland, Maine 04101

June 30,2006

Re: 352 Presumpscot Street

Dear Capt. Cass:

In response to your “building permit checklist” for plan review of the above mentioned project we submit the following response:

1. Applicant: Dennis Waters
Patco Construction, Inc.
1293 Main Street
Sanford, Maine 04073
(207) 324-5574
2. Architect: John Einsiedler, R.A.
148 Sea Road
Kennebunk, Maine 04043
(207) 985-9760
3. Use: IBC – Business Group B/Factory Industrial F-2 Low Hazard
NFPA – Business/Industrial
4. Square Footage: One story, 15,390 square feet
5. & 6. Fire Protection/Detection: A complete automatic fire suppression system will be installed for the entire structure. Engineered design drawings will be submitted to the City of Portland for approval prior to any installation. A supervisory detection/alarm system shall be installed. Design drawings will be submitted to the City of Portland for permit.

7. Life Safety Plan: Attached find "Life Safety Plan" (Original Floor Plan drawing A-1 with life **safety** items marked up and highlighted.)

If **you** have additional questions, give us a call.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis M. Waters". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Dennis M. Waters
Vice President
Patco Construction, Inc.

Enclosure



May 24, 2006
02237

Margaret Schmuckal, Zoning Administrator
Code Enforcement Department
City of Portland
389 Congress Street, 3rd Floor
Portland, ME 04101

Proposed Office/Warehouse Building – Tax Map 422, Block B, Lot 8
Minor Site Plan Application – 352 Presumpscot Street, Patco Construction, Inc.

Dear Marge:

On behalf of Patco Construction, Inc. and Pack Edge, Inc. we are pleased to submit (nine) 9 copies of the enclosed plans and associated information for a minor site plan application of a proposed office/warehouse building at 352 Presumpscot Street. The existing parcel is 1.61 acres in size and is located in the I-L Zoning District. On June 6, 2003, the Portland Planning Authority granted approval for a similar 14,000s.f. building. That project was never developed and Pack Edge, Inc. has since acquired the parcel. It is the intent of Patco Construction to construct the proposed building for Pack Edge, Inc.

The development proposal consists of constructing a new 15,379 s.f. building containing approximately 1,300 s.f. of office space and approximately 14,079 s.f. of warehouse space. Five loading docks are proposed along the rear of the building with one drive-in access door along the side. Improvements to the site include new parking areas, vehicular circulation areas, landscaping, an upgrade of the existing private pump station that currently services the abutting Collins Insect Control building. Site lighting is proposed that conforms to the site lighting standards set forth in the city ordinance. No on-site detention is proposed due to the large box culvert crossing Presumpscot Street and the proximity of this site to the tidal waters. Less than ten cubic yards of solid waste is expected per week and is handled and stored internally.

A thirty foot access and utility easement currently encumbers the property to access the abutting Collins Insect Control building located at 336 Presumpscot Street. A twenty foot utility easement also encumbers the property to allow for water service to the Collins building, and use of the private pump station that provides sanitary sewer service to the two properties.

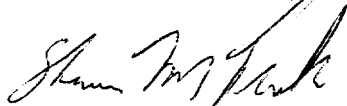
Lighting is conducted using low-level wall-paks over entrances and loading dock areas for safety and security. Cut-sheets of the proposed light are included within the site plan application. Landscaping incorporates street trees along Presumpscot Street and foundation plantings along the front of the building and abutting parking area. A sign is proposed to be installed at the project entrance as shown on the plan.

Water service will connect to the existing main within Presumpscot Street. Two connections are proposed to provide domestic and sprinkler service. A pump station currently exists on-site to collect sanitary sewage from the Collins Insect Control building and pump it into the municipal system in Presumpscot Street to the south via a 2 inch force main. This station will be upgraded as required to service both buildings. The Collins building is currently serviced by overhead electric lines. These lines will be relocated on new utility poles as shown on the plans. The proposed building will be serviced via underground lines from the first new utility poles. Access to the site will be obtained via the existing curb cut which will be upgraded to accommodate both businesses. Curbing and sidewalk are proposed along the Presumpscot Street frontage in accordance with ordinance requirements.

We are hopeful that we have provided the required information to allow this project to proceed through the permitting process. Upon your review of the enclosed material, however, please call with any questions or if you require additional information. Thank you for your consideration.

Sincerely,

SEBAGO TECHNICS, INC.



Shawn M. Frank, P.E.
Project Manager

SMF:dlf

cc: Jeff Freeman
Dennis Waters



Letter of Certification

Date: 5/17/2006
Time: 3:27:03 PM
Page: 1 of 2

Letter of Certification

Contact: Jason Gardner or Bill Rud
Name: Patco Construction
Address: 1293 a Street

Project: Pack Ed
Builder PO # 2705
Jobsite 352 Presumpscott St

State: Sanford, ME 04073
Country: United States

City, State Portland, Maine 04104
County, Country Cumberland, United States

This is to certify that the above referenced VP BUILDINGS project has been designed for the applicable portions of the following Building Code and in accordance with the order documents which have stipulated the following applied environmental loads and conditions

Overall Building Description

Table with 11 columns: Shape, Overall Width, Overall Length, Floor Area (sq. ft.), Wall Area (sq. A.), Roof Area (sq. ft.), Max Eave Height, Min Eave Height 2, Max Roof Pitch, Min Roof Pitch, Peak Height. Row 1: main, 135/0/0, 128/0/0, 15390, 11403, 15403, 22/0/0, 22/0/0, 0.500:12, 0.500:12, 24/9/12

Loads and Codes - Shape: main

City: Portland
County: Cumberland
Building Code: 2003 International Building Code
Building Use: Standard Occupancy Structure

State: Maine
Built Up: 89AISC
Cold Form: 01AISI

Country: United States
Rainfall: 4.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 3.00 psf
Collateral Uplift: 0.00 psf

Roof Covering + Second Dead Load Varies
Frame Weight (assumed for seismic) 2.50 psf

Live Load

Live Load 20.00 psf Not Reducible

Wind Load

Wind Speed 100.00 mph
Wind Exposure (Factor) B (0.701)
Parts Wind Exposure Factor 0.701

Wind Enclosure Enclosed
Wind Importance Factor 1.000
Topographic Factor 1.0000
Hurricane Prone Region
NOT Windborne Debris Region
Base Elevation 0/0/0
Primary Zone Strip Width 17/7/3
Parts / Portions Zone Strip Width 8/9/10
Basic Wind Pressure 15.24 psf

Snow Load

Ground Snow Load: 60.00 psf
Design Snow (Sloped): 42.00 psf
Snow Exposure Category (Factor): 2 Partially Exposed (1.00)
Snow Importance: 1.000
Thermal Category (Factor): Heated (1.00)
Ground / Roof Conversion: 0.70
% Snow Used in Seismic: 20.00
Seismic Snow Load: 8.40 psf
Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 37.36 %g
Mapped Spectral Response - S1: 9.98 %g
Seismic Hazard / Use Group: Group 1
Seismic Importance: 1.000
Seismic Performance / Design Category: C
System NOT detailed for Seismic
Framing Seismic Period: 0.3320
Bracing Seismic Period: 0.2032
Framing R-Factor: 3.0000
Bracing R-Factor: 3.0000
Soil Profile Type: Stiff soil (D, 4)
Frame Redundancy Factor: 1.0000
Brace Redundancy Factor: 1.0000
Frame Seismic Factor (Cs): 0.1246
Brace Seismic Factor (Cs): 0.1246

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

The steel design is in accordance with VP BUILDINGS standard design practices, which have been established based upon pertinent procedures and recommendations of the following organizations :

- American Institute of Steel Construction (AISC)
American Iron and Steel Institute (AISI)
American Welding Society (AWS)
American Society for Testing and Materials (ASTM)
Canadian Standards Association
CSA W59-Welded Steel Construction
Limit State Design of Steel Structures
Metal Building Manufacturers Association (MBMA)
VP Buildings is certified by:
- AISC-MB Certified (Design and Manufacturing)
- CSA A660 Certified (Design and Manufacturing)
- IAS Approved Fabricator
- Canadian Welding Bureau Div. 1 Certified

VP Buildings has designed the structural steel components of this building in accordance with the Building Code, Steel Specifications, and Standards indicated above. Steel components are designed utilizing the following steel grades unless noted otherwise:

- 3 Plate members fabricated from plate, bar, strip steel or sheets
ASTM A529, A572, A1011 - All Grade 50 ksi
Hot Rolled Shapes (W, S, C, Angles, etc)

FROM DESIGNER: JOHN W. EINSIEDLER, P.A.
 DATE: JUNE 5, 2006
 Job Name: PACK EDGE
 Address of Construction: 352 PRESUMPSCOTT ST.

2003 International Building Code

Construction project was designed according to the building code criteria listed below:

Building Code and Year 2003 IBC Use Group Classification(s) B / F2

Type of Construction VB

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC YES
 Is the Structure mixed use? YES if yes, separated or non separated (see Section 302.3) NON-SEPARATED 302.3.1
 Supervisory alarm system? YES Geotechnical/Soils report required? (See Section 1802.2) BY OTHERS

PER VARIOUS PROVEN / SRG ENGINEERING	STRUCTURAL DESIGN CALCULATIONS		_____	Live load reduction (1603.1.1, 1607.8, 1607.10)
	_____	Submitted for all structural members (106.1, 106.1.1)	_____	Roof live loads (1603.1.2, 1607.11)
	DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1603)		_____	Roof snow loads (7603.7.3, 1606)
	Uniformly distributed floor live loads (7603.11, 1607)		_____	Ground snow load, P_g (1608.2)
	Floor Area Use	loads Shown	_____	If $P_g > 10$ psf, flat-roof snow load, P_f (1608.3)
	_____	_____	_____	If $P_g > 10$ psf, snow exposure factor, C_e (Table 1608.3.1)
	_____	_____	_____	If $P_g > 10$ psf, snow load importance factor, I_s (Table 1604.5)
	_____	_____	_____	Roof thermal factor, C_t (Table 1608.3.2)
	_____	_____	_____	Sloped roof snowload, P_s (1608.4)
	_____	_____	_____	Seismic design category (1616.3)
Wind loads (1603.1.4, 1609)		_____	Basic seismic-force-resisting system (Table 1617.6.2)	
_____	Design option utilized (1609.1.1, 1609.6)	_____	Response modification coefficient, R , and deflection amplification factor, C_d (Table 1617.6.2)	
_____	Basic wind speed (1609.3)	_____	Analysis procedure (1616.8, 1617.5)	
_____	Building category and wind importance factor, I_w (Table 1604.6, 1609.5)	_____	Design base shear (1617.4, 1617.5.1)	
_____	Wind exposure category (1609.4)	_____	Flood loads (1603.1.6, 1612)	
_____	Internal pressure coefficient (ASCE 7)	_____	Flood hazard area (1612.3)	
_____	Component and cladding pressures (1609.1.1, 1609.6.2.2)	_____	Elevation of structure	
_____	Main force wind pressures (7603.1.1, 1609.6.2.1)	_____	Other loads	
Earthquake design data (1603.1.5, 1614-1623)		_____	Concentrated loads (1607.4)	
_____	Design option utilized (1614.1)	_____	Partition loads (1607.5)	
_____	Seismic use group ("Category") (Table 1604.5, 1616.2)	_____	Impact loads (1607.8)	
_____	Spectral response coefficients, S_{DS} & S_{D1} (1615.1)	_____	Misc. loads (Table 1607.8, 1607.8.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404)	
_____	Site class (1615.1.5)	_____		



CITY OF PORTLAND
BUILDING CODE CERTIFICATE
389 Congress St., Room 315
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

Designer: JOHN W. EINSIEDLER, R.A.

Address of Project: 352 PRESUMP SCOTT ST

Nature of Project: PACK EDGE

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act.

Signature: *John W. Einsiedler*

Title: ARCHITECT

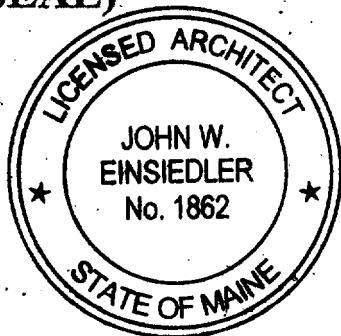
Firm: JOHN W. EINSIEDLER, R.A.

Address: 148 SEA ROAD

KENNEBUNK, ME

Phone: 985-9760

(SEAL)



NOTE: If this project is a new Multi Family Structure of 4 units or more, this project must also be designed in compliance with the Federal Fair Housing Act. On a separate submission, please explain in narrative form the method of compliance.



CITY OF PORTLAND
BUILDING CODE CERTIFICATE
389 Congress St., Room 315
Portland, Maine 04101

TO: Inspector of Buildings City of Portland, Maine
Department of Planning & Urban Development
Division of Housing & Community Service

FROM: JOHN W. EINSIEDLER, R.A.

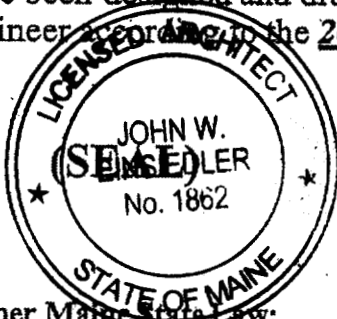
RE: Certificate of Design

DATE: JUNE 5, 2006

These plans and/ or specifications covering construction work on:

PACK EDGE SHEETS A1-A6

Have been designed and drawn up by the undersigned, a Maine registered Architect/
Engineer according to the 2003 International Building Code and local amendments.



As per Maine State Law:

\$50,000.00 or more in new construction, repair
expansion, addition, or modification for
Building or Structures, shall be prepared by a
registered design Professional.

Signature: John W. Einsiedler

Title: ARCHITECT

Firm: JOHN W. EINSIEDLER, R.A.

Address: 148 SEP ROAD
KENNEBUNK, ME 04043

Permit Number

Checked By/Date

Envelope Compliance Certificate 90.1 ('89) Code

COMcheck-EZ Software Version 3.0 Release 1a
Data filename: PackEdge.ock

Section 1: Project Information

Project Name: Pack Edge
Designer/Contractor: John W. Einsiedler, R.A./Patco Construction
Document Author: John W. Einsiedler

Section 2: General Information

Building Location (for weather data): Portland, Maine
Climate Zone: 15
Heating Degree Days (base 65 degrees F): 7378
Cooling Degree Days (base 65 degrees F): 268
Project Type: New Construction
Window / Wall Ratio: 0.01

<u>Activity Type(s)</u>	<u>Floor Area</u>
Office	1800
Industrial Work, >= 20 ft Ceiling Height	13725

Section 3: Requirements Checklist

Bldg.		
Dept.		
Use		
		Air Leakage, Component Certification, and Vapor Retarder Requirements
[]		1. All joints and penetrations are caulked, gasketed, weather-stripped, or otherwise sealed.
[]		2. Windows, doors, and skylights certified as meeting leakage requirements.
[]		3. Component R-values & U-factors labeled as certified.

Climate-Specific Requirements

<u>Component Name/Description</u>	<u>Gross Area</u>	<u>Cavity R-Value</u>	<u>Cont. R-Value</u>	<u>Proposed U-Factor</u>	<u>Budget U-Factor</u>
Roof 1: Metal Roof without Thermal Blocks	16284	19.0	0.0	0.101	0.053
Exterior Wall 1: Metal Wall without Thermal Blocks	10318	14.0	0.0	0.119	0.075
Door 1: Overhead	528	—	—	0.190	0.122
Door 2: Solid	63	—	—	0.019	0.122
Exterior Wall 2: Metal Frame, 16" o.c.	1188	22.0	0.0	0.110	0.075
Window 1: Vinyl Frame: Double Pane with Low-E Clear, SHGC 0.68	128	—	—	0.065	0.526
Door 3: Glass, Clear, SHGC 0.68	42	—	—	0.065	0.526
Floor 1: Slab-On-Grade: Heated	500	—	—	—	—

(a) Budget U-factors are used for software baseline. **ONLY** data code requirements

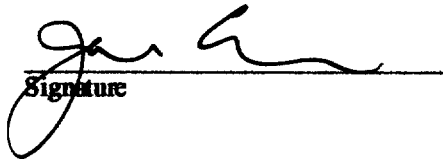
Envelope PASSES: Design 4% better than code

Section 4: Compliance Statement

The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 90.1 ('89) Code requirements in COMcheck-EZ Version 3.0 Release 1a and to comply with the mandatory requirements in the Requirements Checklist.

JOHN W. KINSIEDLER

Principal Envelope Designer-Name


Signature

JUNE 5, 2006

Date



SRG Job#06-062

To: City of Portland Code Enforcement Department
Attn: Mr. Mike Nugent

From: Steven R. Grant, President

Date: June 5, 2006

Subject: Pack Edge Building: Quality Assurance Plan

Project Location: 352 Presumpscot Street, Portland

Seismic resisting lateral support will be provided by Rigid Frames at Grids A, G, 1 and 13.

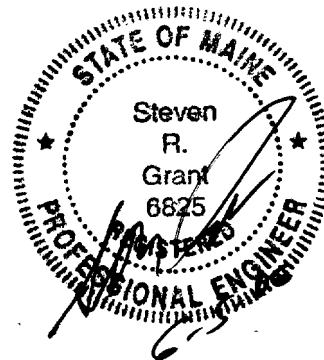
SRG Engineering has subcontracted with S.W. Cole Engineering (contact Craig Turcotte at 657-2866) to provide metal roof deck and structural steel connection review that include any diaphragm bracing at roof and walls, frame bolts, and anchor bolts. Bolts at moment connections will be checked for proper tension/torque and shear connections will be checked for all plies to be in firm contact per AISC. In addition, S.W. Cole Engineering is to provide field review of foundation reinforcing (footings/walls/piers) and anchor bolt placement. Site visits by S.W. Cole and SRG Engineering are planned to be on a limited basis throughout the construction of the foundation and building structure. In addition, SRG Engineering budgeted for a maximum of four (4) site visits to observe construction for conformance with contract documents as well.

We have asked that PATCO Construction notify SRG Engineering and S.W. Cole Engineering a minimum of 48 hours prior to all required site visits. SRG Engineering has also provided a copy of the attached check list to PATCO for their use/reference.

Please call should you have questions.

Steven R. Grant, P.E.
President

SRG:srg





Structural Tests and “Special Inspection” Requirements For a Typical Pre-Engineered Metal Building Structure

(Per Chapter 17 of the 2003 International Building Code)

Site and Fill Materials:

- Field observe sub-grade conditions prior to placement of any fill or concrete for foundations and slab
- Field sample and perform laboratory test(s) on each soil fill material to be used
- Observe placement and perform compaction tests on foundation and sub-slab fill materials
- Review compliance to soils report material
- Review lift thickness of foundation and sub-slab backfill

Reinforcing:

- G.C. to submit reinforcing shop drawings for review prior to placement
- G.C. to submit reinforcing and anchor bolt material certification sheet(s) for review
- Field observe reinforcing at foundation walls for compliance with size, grade, spacing, location, and embedment.
- Field observe reinforcing and/or WWF at structural slabs and slabs-on-grade for compliance with size, grade, spacing, location, and embedment.

Formwork:

- Review formwork
- Review form removal and re-shoring

Concrete:

- G.C. to submit all mix designs to engineer for review a minimum of 10 business days before placement
- G.C. to submit all admixtures to engineer for review a minimum of 10 business days before placement
- G.C. to submit material certification of all slab dowels to engineer for review a minimum of 10 business days before placement
- Review and observe field placement of all concrete: footings, walls, slabs, etc...
- Review and observe curing techniques for footings, walls, and slabs
- Field test concrete for slump, air, and temperature
- Field cast four (4) cylinders for each placement to be tested for strength
- Field observe dowel size and spacing for control and construction joints at walls and slab(s)

Steel Fabrication: (Only for structural steel not fabricated by metal building manufacturer)

- Review and observe steel fabrication shop procedures

Steel Construction:

- G.C. to provide material certificates for bolts, nuts, washers, and weld filler (if field welding is to be performed) material
- Review field connections

Steel Erection:

- G.C. to provide welders certificate for each person performing any field welding
- Review primary steel connections
- Verify pre-tensioning of slip-critical bolts (hanger and moment connections) by certified testing laboratory for proper bolt tension/torque.
- Review moment connections
- Review shear connections
- Review bracing connections
- Review wall girt connections
- Review roof purlin connections
- Review steel roof deck installation
- Review wall siding installation

C.C. NOTE: YOU MUST NOTIFY THE MATERIALS TESTING FIRM AND THE PROJECT SPECIAL INSPECTOR A MINIMUM OF 48 BUSINESS HOURS PRIOR TO SERVICE BEING PERFORMED TO ALLOW FOR PROPER SCHEDULING OF PERSONNEL

Statement of Special inspections

Project: PACK EDGE

Location: 352 PRESUMPSCOTT ST., PORTLAND, ME

Owner: JIM FREEMAN

Design Professional in Responsible Charge: SRG ENGINEERING INC / STEVEN R GRANT, P.E.

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

Structural Mechanical/Electrical/Plumbing
 Architectural Other: _____

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency:

or per attached schedule.

Prepared by:

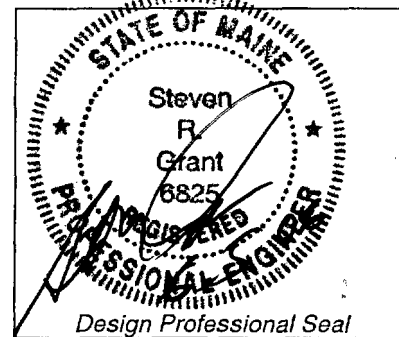
STEVEN R. GRANT

(type or print name)


Signature

6-5-06

Date



Owner's Authorization:

Building Official's Acceptance:

Signature

Date

Signature

Date

Schedule of Inspection and Testing Agencies

This Statement of Special Inspections/ Quality Assurance Plan includes the following building systems:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Soils and Foundations | <input type="checkbox"/> Spray Fire Resistant Material |
| <input checked="" type="checkbox"/> Cast-in-Place Concrete | <input type="checkbox"/> Wood Construction |
| <input type="checkbox"/> Precast Concrete | <input type="checkbox"/> Exterior Insulation and Finish System |
| <input type="checkbox"/> Masonry | <input type="checkbox"/> Mechanical & Electrical Systems |
| <input checked="" type="checkbox"/> Structural Steel | <input type="checkbox"/> Architectural Systems |
| <input type="checkbox"/> Cold-Formed Steel Framing | <input type="checkbox"/> Special Cases |

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. Special Inspection Coordinator <i>STEVEN A. GRANT</i>	SRG ENGINEERING, INC. PO BOX 925 GRAY, ME 04039	207-657-7323 <i>srge@srge.com</i>
2. Inspector	SRG ENGINEERING, INC PO BOX 925 GRAY, ME 04039	<i>SAME AS ABOVE</i>
3. Inspector		
4. Testing Agency <i>ROGER DOMINGO</i>	<i>S.W. COLE ENG. P.C.</i>	<i>286 PORTLAND RD GRAY, ME 04039 657-2866 rdomingo@swcoleng.com</i>
5. Testing Agency		
6. Other		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

R.D.P is BEING RETAINED BY PARO CONSTRUCTION.

Quality Assurance Plan

Quality Assurance for Seismic Resistance (PER VARCO-PRUDEN CALCULATIONS)

Seismic Design Category **C**

Quality Assurance Plan Required (Y/N) **Y**

Description of seismic force resisting system and designated seismic systems:

Rigid Frames at Lines A, G, I, 13.

Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust) **100 mph**

Wind Exposure Category **B**

Quality Assurance Plan Required (Y/N) **N**

Description of wind force resisting system and designated wind resisting components:

Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

VARCO-PRUDEN MUST SUBMIT THIS, SEE PART 20 CONST.

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician -- Level II or III.
------	--

International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector
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Other

Item	Agency# (Qualif.)	Scope
1. Shallow Foundations	PE/GE (4)	<p><i>Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.</i></p> <p><i>Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i></p>
2. Controlled Structural Fill		<p><i>Perform sieve tests (ASTM 422 & D1140) and modified Proctor tests (ASTM 1557) of each source offill material.</i></p> <p><i>Inspect placement, lift thickness and compaction of controlled fill.</i></p> <p><i>Test density of each lift of fill by nuclear methods (ASTM 02922)</i></p> <p><i>Verify extent and slope offill placement.</i></p>
3. Deep Foundations	PWGE	<p><i>Inspect and log pile driving operations. Record pile driving resistance and verify compliance with driving criteria.</i></p> <p><i>Inspect piles for damage from driving and plumbness.</i></p> <p><i>Verify pile size, length and accessories.</i></p> <p><i>Inspect installation of drilled pier foundations. Verify pier diameter, bell diameter, lengths, embedment into bedrock and suitability of end bearing strata.</i></p>
4. Load Testing		
4. Other:		

N.A.

N.A.

Item	Agency # (Qualif.)	Scope
1. Mix Design	② ④ ACI-CCI ICC-RCSI	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.
2. Material Certification		
3. Reinforcement Installation	④ ACI-CCI ICC-RCSI	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters.
4. Post-Tensioning Operations	NA ICC-PCSI	Inspect placement, stressing, grouting and protection of post-tensioning tendons. Verify that tendons are correctly positioned, supported, tied and wrapped. Record tendon elongations.
5. Welding of Reinforcing	NA AWS-CWI	Visually inspect all reinforcing steel welds. Verify weldability of reinforcing steel. Inspect preheating of steel when required.
6. Anchor Rods	④	Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.
7. Concrete Placement	④ ACI-CCI ICC-RCSI	Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
8. Sampling and Testing of Concrete	④ ACI-CFTT ACI-STT	Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).
9. Curing and Protection	④ ACI-CCI ICC-RCSI	Inspect curing, cold weather protection and hot weather protection procedures.
10. Other:		

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures X Fabricator Exempt (VARCO - PRUDEN)	AWS/AISC- SSI ICC-SWSI	Review shop fabrication and quality control procedures. NA
2. Material Certification	②④ AWS/AISC- SSI ICC-SWSI	Review certified mill test reports and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes
3. Open Web Steel Joists NA		Inspect installation, field welding and bridging of joists.
4. Bolting	④ AWS/AISC- SSI ICC-SWSI	Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections.
5. Welding NA	AWS-CWI ASNT	Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds. Ultrasonic testing of all full-penetration welds.
6. Shear Connectors NA	AWS/AISC- SSI ICC-SWSI	Inspect size, number, positioning and welding of shear connectors. Inspect studs for full 360 degree flash. Ring test all shear connectors with a 3 lb hammer. Bend test all questionable studs to 15 degrees.
7. Structural Details	②④ PE/SE	Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.
8. Metal Deck ROOF	④ AWS-CWI	Inspect welding and side-lap fastening of metal roof and floor deck.
9. Other:		

Jim Freeman - Pack Edge

Applicant: J & N Properties

Date: 6/27/06

Address: 352 Presumpscot St

C-B-L: 422-B-8

CHECK-LIST AGAINST ZONING ORDINANCE

06-0846

Date - New lot from 340 Presumpscot

Zone Location - IL

Interior or corner lot - 100' x 137.87' x 128' x 135' (NOT A RECTANGLE Bldg
New bldg
Accessory office
total 15,390 sq ft

Proposed Use/Work - Warehouse for boxes/package

Sevage Disposal - City

Lot Street Frontage - 60' min - ~261' shown

Front Yard - 25' min - 26' shown

Rear Yard - 25' min - 130' shown
does not abut A res zone

Side Yard - 25' min 26' & 288' shown
does not abut A res zone

Projections -

Width of Lot - N/A

Height - 45' max - 29' to ridge

Lot Area - No min req. 70,030 sq ft given

Lot Coverage / Impervious Surface - 65% max or 45,519.5 sq ft max - 64% shown

Area per Family -

Off-street Parking - 1800 = 1 per 400 = 5
warehouse 13,590 = 1 per 1,000 = 14 min
19 min req - 19 shown

Loading Bays - 5 Bays shown
& 1 Drive thru to bldg

Site Plan - #2006-0104

Shoreland Zoning/Stream Protection - N/A

Flood Plains - panel 7 - Zone X

Pavement setbacks from lot boundary lines 15' min - 15' min shown to rear

July 11, 2006
02237

Sarah Hopkins, Development Review Manager
City of Portland
389 Congress Street, 3rd Floor
Portland, ME 04101

7/19/06

Proposed Office/Warehouse Building
352 Presumpscot Street,
Minor Site Plan Application, Engineering Review Comments

Dear Sarah:

This letter, the enclosed plans, and associated material are in response to the review comments regarding the above referenced project as contained in a memorandum/outline from Woodard & Curran Consultants dated June 22, 2006. The following numbered responses correspond to the numbered comments within that memorandum:

1. Stormwater Management

- A. More than one acre of disturbed area and less than one acre of new impervious area but no more than 5 acres of developed area requires a Permit-By-Rule. The copy of the application form for the Permit By Rule is enclosed.
- B. The revised BMP Maintenance Plan eliminates reference to the detention basin and stormwater treatment unit.
- C. The proposed storm drain pipe sizes have been modified in accordance with stormwater runoff modeling such that SD-3 and SD-4 are designated as 15" diameter.

2. Erosion and Sedimentation Control

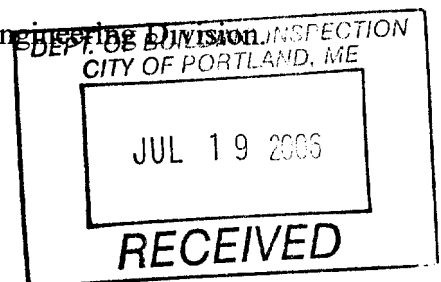
- A. The Erosion and Sedimentation Control plan incorporates revised inspection and maintenance requirements for the project.
- B. Catch basin protection in the form of silt sacks are now specified on the Grading and Utility Plan for protection during construction.

3. Utilities

- A. We are currently coordinating a meeting with Public Works, Engineering Division

4. Site Layout

- A. Parking stalls lengths have been modified to 19 feet.



- B. We believe that the pavement depicted on the plan is required to allow truck maneuverability for a tractor-trailer.
- C. A five-foot landscape row is included along five parking stalls to the rear of the building.

5. General Civil Engineering

- A. The bituminous sidewalk details reflect city standards for MDOT Grading 'C'.
- B. The Paved Parking Lot Section, Bituminous Curb/ Sidewalk Section, and the Pavement Joint Detail agree with respect to pavement thicknesses.
- C. Lighting locations are shown on the Landscape and Lighting Plan in seven (7) locations as 100-Watt cut-off wall pack fixtures.

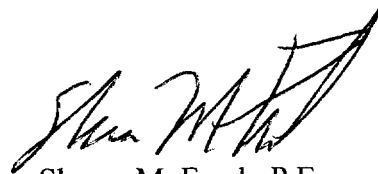
We are hopeful that we have addressed all outstanding issues such that this project may proceed through staff approval. If you should have any questions or comments while reviewing this project, please call. Thank you for your consideration.

Sincerely,

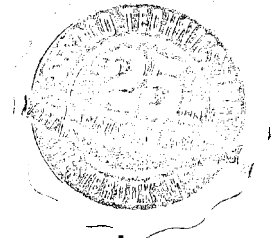
SEBAGO TECHNICS, INC.



Adam S. Bliss
Design Engineer



Shawn M. Frank, P.E.
Project Manager



ASB:SMF/kn
Enclosures

cc: Patco Construction, Inc.
J & H Properties, L.L.C.

July 12,2006
02237

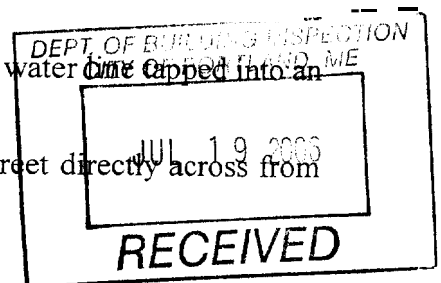
Captain Gregory Cass, Fire Prevention Officer
City of Portland Fire Department
380 Congress Street
Portland, Maine 04101

Proposed Office/Warehouse Building
352 Presumpscot Street,
Minor Site Plan Application ,Fire Department Site Review

Dear Captain Cass:

This letter and the enclosed plans are provided in accordance with the Portland Fire Department Site Review Checklist regarding the proposed office and warehouse building at 352 Presumpscot Street. The parcel is shown as lot 8 on the City of Portland Tax Map 422, Block B and is located in the IL zone. The following numbered responses corresponds to the fire department site review checklist.

- 1 The record owner of the parcel is J&H Properties, L.L.C. in accordance with a deed dated April 1,2002 and recorded at the Cumberland County Registry of Deeds in Book 22323, Pages 132-137. The applicant for the project is Patco Construction, Inc. of 1293 Main Street, Sanford, Maine 04073 at Telephone Number (207) 324-5574, attention Dennis Waters.
2. The Project Engineer is Shawn Frank, P.E., c/o of Sebago Technics, Inc., P.O. Box 1339, Westbrook, Maine 04098-1339 at Telephone Number (207) 856-0277.
3. The proposed use of the building is an office and warehouse facility with NFPA classification as Business/ Industrial and IBC classification as Business Group B/Factory Industrial F-2, Low Hazard.
4. The proposed building is 15,390 s.f. covering one floor
5. The proposed finish floor elevation is 39.2 ft. Elevation drawings are also enclosed of the proposed structure.
6. The proposed fire protection sprinkler system is serviced by a 6" water line capped into an existing 10" water main located within Presumpscot Street.
7. A fire hydrant is located on the easterly side of Presumpscot Street directly across from the proposed building.

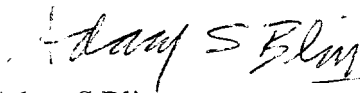


8. A ten-inch water line is located under Presumpscot Street. A two-inch and a six-inch water line connection are proposed from Presumpscot Street to the proposed building.
9. Access for fire department connections is located on the easterly side of the building adjacent to Presumpscot Street.
10. Access to the structure is on two sides with the option of a third side from Presumpscot Street.
11. The building will be constructed in conformance with NFPA 1 and all City of Portland Fire Department technical standards.

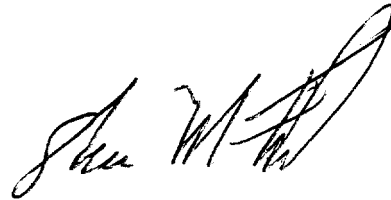
We are hopeful that we have provided the pertinent information for your approval of this project. If you should have any questions or comments while reviewing this project, please call. Thank you for your consideration.

Sincerely,

SEBAGO TECHNICS, INC.



Adam S Bliss
Design Engineer



Shawn M. Frank, P.E.
Project Manager

ASB/SMF:asb/df

Enclosures.

cc: Patco Construction, Inc.
J & H Properties, L.L.C.

STORMWATER PBR APPLICATION FORM
PLEASE TYPE OR PRINT IN INK ONLY

1. Name of Applicant:	J&H Properties	5. Name of Agent: (if applicable)	Sebago Technics, Inc.
2. Applicant's Mailing Address:	88 Winding Way Portland, ME 04102	6. Agent's Mailing Address:	P.O. Box 1339 Westbrook, ME 04098
3. Applicant's Daytime Phone #:	207/799-6600	7. Agent's Daytime Phone #:	207/856-0277
4. Applicant's Fax #: (if available)		8. Agent's Fax # and email address:	207/856-2206
9. Location of Project: (Road, Street, Rt.#)	352 Presumpscot St.	10. Town:	Portland
		11. County:	Cumberland

12. Is this PBR for renewal of an individual stormwater permit? If yes, skip to Block 27 and signature page. Yes No

13. Type of Direct Watershed: (Check all that apply)	<input checked="" type="checkbox"/> Lake not most at risk	14. Amount of Developed Area:	<input type="checkbox"/> Total # of 1.61 acres
	<input type="checkbox"/> Lake most at risk		OR
	<input type="checkbox"/> Lake most at risk, severely blooming		<input type="checkbox"/> Total # of _____ square feet
	<input type="checkbox"/> River, stream or brook	15. Amount of Impervious Area:	<input type="checkbox"/> Total # of _____ acres
	<input type="checkbox"/> Urban impaired stream		OR
	<input type="checkbox"/> Freshwater wetland		<input checked="" type="checkbox"/> Total # of 42,000 square feet
	<input type="checkbox"/> Coastal wetland		
	<input type="checkbox"/> Wellhead of public water supply		

16. Creating a common plan of development or sale? Yes No

17. Name of waterbody(ies) to which the project site drains:

18. Brief Project Description: Proposed 15,000 S.F. Office/Warehouse building with associated parking and loading areas.

19. Size of Lot or Parcel:	<input type="checkbox"/> Total of _____square feet OR	20. UTM Locations:(if known)	UTM Northing:
	<input checked="" type="checkbox"/> Total of 1.61 acres		UTM Easting:

21. Deed Reference Numbers: Book#: 22, 323 Page#: 132-137

22. Map and Lot Numbers: Map #: 422B Lot #: 8

23. Project started prior to application? Yes No

If yes, Completed? Yes No

24. Resubmission of Application? Yes No

25. Written Notice of Violation? Yes No

If yes, name of DEP enforcement staff involved:

26. Detailed Directions to the Project Site: (Attach separate sheet if necessary)

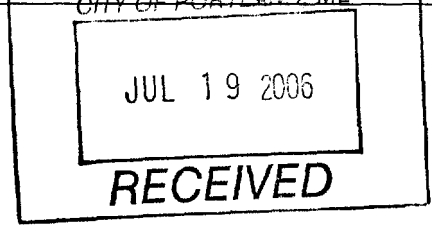
From Interstate 295, take Exit 8, Washington Avenue/ME 26N; travel 0.2 mi. and turn right onto Presumpscot St; proceed 1 mi. to 352 Presumpscot St.

27. SUBMISSIONS ▼

<input type="checkbox"/> This form (signed and dated)	<input type="checkbox"/> Dept. of Inland Fishenes and Wildlife Approval (if in Essential Habitat)	<input type="checkbox"/> Photos of Area	For Renewal of an individual Stormwater permit only:
<input type="checkbox"/> Fee		<input type="checkbox"/> ESC Plan	
		<input type="checkbox"/> Location Map	
		<input type="checkbox"/> Site Plan	<input type="checkbox"/> This form (signed and dated)
			<input type="checkbox"/> Copy of original stormwater permit
			<input type="checkbox"/> Fee

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

OFFICE USE ONLY	Ck. #	Date	Staff	Staff
PBR #	FP		Acc Date	DEPT. OF BULWING CITY OF PORTLAND



EROSION AND SEDIMENT CONTROL PLAN

Proposed Warehouse! Office Building 352 Presumpscot Street Portland, Maine

A. Pre-Construction Phase

Prior to the beginning of any construction, filter fabric fencing will be staked across the slope(s), on the contour at or just below the limits of clearing or grubbing, and/or just above any adjacent property line or watercourse to protect against construction related erosion. The placement of silt fences shall be completed in accordance with guidelines established in Best Management Practices and in accordance with the erosion control plan and details in the plan set. This network is to be maintained by the contractor until all exposed slopes have at least 85%-90% vigorous perennial vegetative cover to prevent erosion.

A construction entrance shall be installed at the intersection of the access driveway and Presumpscot to avoid tracking of mud, dust and debris from the site.

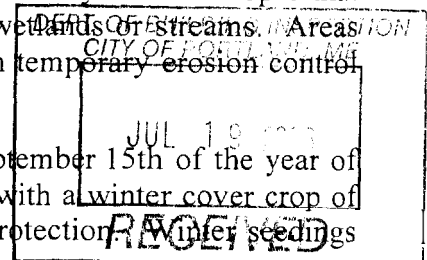
Prior to construction, the contractor shall prepare a detailed schedule and marked up plan indicating areas and components of the work and key dates showing date of disturbance and completion of the work. The contractor shall schedule a pre-construction meeting with the municipal staff. Three copies of the schedule and marked up plan shall be provided to the municipality three days prior to the scheduled pre-construction meeting. Special attention shall be given to the 14-day limit of disturbance in the schedule addressing temporary and permanent vegetation measures.

The following erosion control measures shall be followed by the contractor throughout construction of this project.

B. Construction and Post-Construction Phase

1a. Areas undergoing actual construction shall only expose that amount of mineral soil necessary for progressive and efficient construction and shall not exceed 14-days. Areas that will not be completed (covered and/or finish graded) within fourteen (14) days of disturbance shall be anchored with temporary erosion control blanket or mulch as directed by the inspecting engineer and as shown on the design plans. If mulch is used, hay or straw mulch shall be applied such that the areas shall be sufficiently covered with mulch to avoid any visible soil exposure. Mulch shall be kept moist to avoid loss due to wind. Erosion control blanket shall be applied in the base of all grassed waterways and in slopes that exceed 15% and any disturbed areas within 100' of wetlands or streams. Areas located within 100' of streams shall be anchored with temporary erosion control within seven (7) days.

1b. If disturbed areas do not receive final seeding by September 15th of the year of construction, then all disturbed areas shall be seeded with a winter cover crop of rye at the rate of 3 lbs/1,000 S.F. to provide winter protection.



shall be covered with mulch such that no soil is visible. Erosion control blankets shall be used in the base of all grassed waterways, on slopes equal to or greater than 15%, and any disturbed areas within 100' of wetlands or streams. Erosion control blankets shall also be applied for additional winter protection along side slopes of grassed waterways and in all areas equal to or greater than 8% slope.

- 1c. See winter erosion control measures, Section F.
2. All topsoil shall be collected, stockpiled, seeded with rye at 3 lbs./1,000 S.F. and mulched, and re-used as required. Siltation fencing shall be placed down gradient from stockpiled loam. Loam shall be stockpiled at locations designated by the owner and inspecting engineer.
3. All silt fences shall be installed according to this plan. This shall be maintained during development to remove sediment from runoff water. All the silt fences shall be inspected before and after any rainfall or runoff event, maintained and cleaned until all areas have at least 85%-90% vigorous perennial vegetative cover of grasses.
4. A construction entrance shall be built at the intersection of the existing road and the access drive. Roadway areas shall be periodically swept or washed to avoid tracking of mud, dust or debris from the construction area. Dust control during construction shall be achieved by the use of a watering truck to periodically sprinkle the exposed roadway areas as necessary to reduce dust during the dry months.
5. Stone check dams may be removed only after the roadways are paved and the vegetated swales are established with at least 85%-90% of vigorous perennial growth.
6. All areas shall be seeded and stabilized in accordance with the following vegetation plan.

C. Vegetation Plan

Revegetation measures shall commence immediately upon completion of construction of the roadway improvements. Disturbed areas shall also be mulched and anchored prior to any storm event. See mulching requirements in Section B (1A) above. If final seeding cannot be accomplished by September 15th, then all disturbed areas shall be seeded with a winter cover crop at the rate of 3 lbs./1,000 S.F. to provide winter protection. Seeded areas shall be covered with erosion control mesh. See winter protection requirements in Section B (1B) above. Revegetation measures shall consist of the following:

Four inches of loam will be spread over disturbed areas and smoothed to a uniform surface. Loam shall be free of subsoil, clay lumps, stones and other objects over 1" in diameter, and without weeds, roots or other objectionable material.

Soils tests shall be taken at the time of soil stripping to determine fertilization requirements. Soils test shall be taken promptly as to not interfere with the 14-day limit on soil exposure. Based upon test results, soil amendments shall be incorporated into the

soil prior to final seeding. In lieu of soil tests, soil amendments may be applied as follows:

ITEM	APPLICATION RATE
10-20-20 Fertilizer (N-P205-K20 or equal)	18.4 lbs./1,000 S.F.
Ground Limestone (50% Calcium & magnesium oxide)	138 lbs./1,000 S.F.

Following seed bed preparation, swale areas, fill areas and back slopes shall be seeded at a rate of 3 lbs./1,000 S.F. with a mixture of 35% Creeping Red Fescue, 6% Red Top, 24% Kentucky Bluegrass, 10% Perennial Ryegrass, 20% Annual Ryegrass and 5% White Dutch Clover.

Erosion control mesh shall be applied in accordance with the plans over all finish-seeded areas as specified on the design plans.

All hay bale and/or filter fabric barriers will remain in place until seedings have become 85%-90% established and then removed within 10-days.

The inspecting engineer at his/her discretion may require additional erosion control measures and/or supplemental vegetative provisions to maintain stability of earthworks and finish-graded areas. The contractor shall be responsible for providing and installing any supplemental measures as directed by the inspecting engineer. Failure to comply with the engineer's directions will result in discontinuation of construction activities.

D. Construction Schedule

Site improvements will most likely begin in Summer of 2006 depending upon final project approval. The following schedule is anticipated for the construction of the roadway improvements.

SCHEDULE

- | | |
|--|---------------------------------|
| 1. Estimated Construction Time. | 6 months |
| 2. Erosion Control Measures Placed | Week 1 - Week 2 |
| 3. Site clearing and grubbing | Week 2 – Week 5 |
| 4. Construction of driveway subbase for access | Week 5 – Week 7 |
| 5. Construct Stormwater Management Areas | Week 7 – Week 9 |
| 6. Utility improvements and parking construction | Week 7 – Week 24 |
| 7. Mulch Spread for Winter Erosion Control | October 15 of Construction Year |
| 8. Start final seedings on prepared areas
(during growing season) | Week 8 |
| 9. Biweekly monitoring of vegetative growth | Week 10 |
| 10. Re-seeding of areas, if needed (**) | Week 10 |

11. Removal of erosion control devices (**)

Upon final project completion

** Dates are subject to change at the discretion of the engineer, depending on construction progress.

E. Inspections/Monitoring

Maintenance measures shall be applied as needed during the entire construction cycle. After each rainfall, the contractor shall perform a visual inspection of all installed erosion control measures. The contractor shall perform repairs as needed to allow continued proper functioning of the erosion control measure. The contractor shall provide the municipality with written documentation describing dates of inspections and necessary follow-up work to maintain erosion control measures meeting the requirements of this plan.

Following the temporary and/or final seedings: the contractor shall inspect the work area semimonthly until the seedings have been established. Established means a minimum of 85%-90% of areas vegetated with vigorous growth. Reseeding shall be carried out by the contractor with follow-up inspections in the event of any failures until vegetation is adequately established.

F. Winter Erosion Control Measures

The winter construction period is from November 1 through April 15. If the construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15 then the site needs to be protected with over-winter stabilization. An area considered open is any area not stabilized with pavement; vegetation, mulching, erosion control mats, riprap or gravel base on a road. Winter excavation and earthwork shall be completed such that no more than 1 acre of the site is without stabilization at any one time. Limit the exposed area to those areas in which work is expected to be under taken during the proceeding 15 days and that can be mulched in one day prior to any snow event. All area shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150-lbs./1,000 s.f. (3 tons/acre) and shall be properly anchored. The contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions. Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized, in order to minimize areas without erosion control protection.

1. Soil Stockpiles: Stockpiles of soil or subsoil will be mulched for over winter protection with hay or straw at twice the normal rate or at 150-lbs/1,000 s.f. (3 tons per acre) or with a four-inch layer of woodwaste erosion control mix. This will be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpile will not be placed (even covered with hay or straw) within 100 feet from any natural resources.

2. Natural Resources Protection: Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats. During winter construction, a double line of sediment barriers (i.e. silt fence backed with hay bales or erosion control mix) will be placed between any natural resource and the disturbed area. Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.
3. Sediment Barriers: During frozen conditions, sediment barriers shall consist of woodwaste filter berms as frozen soil prevents the proper installation of hay bales and sediment silt fences.
4. Mulching: All area shall be considered to be denuded until areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Mulch shall not be spread on top of snow. The snow will be removed down to a one-inch depth or less prior to application. After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either peg line, mulch netting, asphalt emulsion chemical, track or wood cellulose fiber. When ground surface is not visible through the mulch then cover is sufficient. After November 1st, mulch and anchoring of all bare soil shall occur at the end of each final grading workday.
5. Mulching on Slopes and Ditches: Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with peg and netting or with erosion control blankets. Mulching shall be applied at a rate of 230-lbs/1,000 sf on all slopes greater than 8%. Mulch netting shall be used to anchor mulch in all drainage ways with a slope greater than 3% for slopes exposed to direct winds and for all other slopes greater than 8%. Erosion control blankets shall be used in lieu of mulch in all drainage ways with slopes 8%. Erosion control mix can be used to substitute erosion control blankets on all slopes except ditches.
6. Seeding: Between the dates of October 15 and April 1st, loam or seed will not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until such time as the final treatment can be applied. If the date is after November 1st and if the exposed area has been loamed, final graded with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched. Dormant seeding may be

selected to be placed prior to the placement of mulch and fabric netting anchored with staples. If dormant seeding is used for the site, all disturbed areas shall receive 4' of loam and seed at an application rate of 5 lbs/1,000 s.f. All areas seeded during the winter will be inspected in the spring for adequate catch. All areas sufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

7. Trench Dewatering and Temporary Stream Diversion: Water from construction trench dewatering or temporary stream diversion will pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing, and sediment discharges to a protected resource. In no case shall the filter bag or containment structure be located within 100 feet of a protected natural resource.
8. Inspection and Monitoring: Maintenance measures shall be applied as needed during the entire construction season. After each rainfall, snow storm or period of thawing and runoff, the site contractor shall perform a visual inspection of all installed erosion control measures and perform repairs as needed to insure their continuous function. Following the temporary and or final seeding and mulching, the contractor shall in the spring inspect and repair any damages and/or unestablished spots. Established vegetative cover means a minimum of 85 to 90 % of areas vegetated with vigorous growth.

Standards for Timely Stabilization of Construction Sites During Winter

1. Standard for the timely stabilization of ditches and channels -- The applicant will construct and stabilize all stone-lined ditches and channels on the site by November 15. The applicant will construct and stabilize all grass-lined ditches and channels on the site by September 15. If the applicant fails to stabilize a ditch or channel to be grass-lined by September 15, then the applicant will take one of the following actions to stabilize the ditch for late fall and winter.

Install a sod lining in the ditch -- The applicant will line the ditch with properly installed sod by October 1. Proper installation includes the applicant pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, watering the sod to promote root growth into the disturbed soil, and anchoring the sod with jute or plastic mesh to prevent the sod strips from sloughing during flow conditions.

Install a stone lining in the ditch --The applicant will line the ditch with stone riprap by November 15. The applicant will hire a registered professional engineer to determine the stone size and lining thickness needed to withstand the anticipated flow velocities and flow depths within the ditch. If necessary, the

applicant will regrade the ditch prior to placing the stone lining so to prevent the stone lining from reducing the ditch's cross-sectional area.

2. Standard for the timely stabilization of disturbed slopes -- The applicant will construct and stabilize stone-covered slopes by November 15. The applicant will seed and mulch all slopes to be vegetated by September 15. The department will consider any area having a grade greater than 15% (1OH:1V) to be a slope. If the applicant fails to stabilize any slope to be vegetated by September 15, then the applicant will take one of the following actions to stabilize the slope for late fall and winter.

Stabilize the soil with temporary vegetation and erosion control mats -- By October 1 the applicant will seed the disturbed slope with winter rye at a seeding rate of 3 pounds per 1,000 square feet and apply erosion control mats over the mulched slope. The applicant will monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or cover at least 75% of the disturbed slope by November 1, then the applicant will cover the slope with a layer of woodwaste compost as described in item iii of this condition or with stone riprap as described in item iv of this condition.

Stabilize the slope with sod -- The applicant will stabilize the disturbed slope with properly installed sod by October 1. Proper installation includes the applicant pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The applicant will not use late-season sod installation to stabilize slopes having a grade greater than 33% (3H:1V).

Stabilize the slope with woodwaste compost -- The applicant will place a six-inch layer of woodwaste compost on the slope by November 15. Prior to placing the woodwaste compost, the applicant will remove any snow accumulation on the disturbed slope. The applicant will not use woodwaste compost to stabilize slopes having grades greater than 50% (2H:1V) or having groundwater seeps on the slope face.

Stabilize the slope with stone riprap -- The applicant will place a layer of stone riprap on the slope by November 15. The applicant will hire a registered professional engineer to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

3. Standard for the timely stabilization of disturbed soils -- By September 15 the applicant will seed and mulch all disturbed soils on areas having a slope less than 15%. If the applicant fails to stabilize these soils by this date, then the applicant will take one of the following actions to stabilize the soil for late fall and winter.

Stabilize the soil with temporary vegetation -- By October 1 the applicant will seed the disturbed soil with winter rye at a seeding rate of 3 pounds per 1,000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per

1,000 square feet, and anchor the mulch with plastic netting. The applicant will monitor growth of the rye over the next 30 days. If the rye fails grow at least three inches or cover at least 75% of the disturbed soil before November 15, then the applicant will mulch the area for over-winter protection as described in item iii of this standard.

Stabilize the soil with sod -- The applicant will stabilize the disturbed soil with properly installed sod by October 1. Proper installation includes the applicant pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

Stabilize the soil with mulch -- By November 15 the applicant will mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1,000 square feet on the area so that no soil is visible through the mulch. Prior to applying the mulch, the applicant will remove any snow accumulation on the disturbed area. Immediately after applying the mulch, the applicant will anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

Prepared by,

SEBAGO TECHNICS, INC.

A handwritten signature in black ink, appearing to read "Adam S. Bliss". The signature is stylized and includes a small mark resembling "FR" at the bottom right.

Adam S. Bliss
Design Engineer

ASB
July 12, 2006

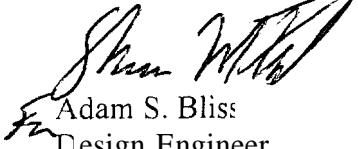
BMP MAINTENANCE PLAN OF STORMWATER MANAGEMENT FACILITIES

The facility manager for the Proposed Warehouse Building located at 352 Presumpscot Street is Jeff Freeman. The facility manager will be responsible for the maintenance of all stormwater management structures, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book. Records of all inspections and maintenance work accomplished must be kept on file and retained for a minimum 5-year time span. At a minimum, the appropriate and relevant activities for each of the stormwater management systems will be performed on the prescribed schedule.

1. Open swales and ditches need to be inspected on a monthly basis or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Debris needs to be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper functioning. Swales that show newly formed channels or gullies will be immediately repaired by reseeding/sodding of bare spots; removal of trash, leaves and/or accumulated sediments; and the control of woody or other undesirable vegetation.
2. Vegetated ditches should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.
3. Riprap ditches, where stone is displaced, should be replaced and chinked to assure stability. With time, riprap may need to be added. Vegetation growing through riprap should be removed on a yearly schedule.
4. If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing or any mechanical means. All pipes should be inspected on an annual basis.
5. Paved surfaces shall be swept or vacuumed at least annually in the spring to remove all winter sand and periodically during the year on as-needed basis to minimize the transportation of sediment during rainfall events.
6. **All** catch basin sumps and drainage manhole structures shall be cleaned of debris and sediment at least annually to minimize clogging and transportation of sediment during rainfall events.

Prepared by,

SEBAGO TECHNICS, INC.



Adam S. Bliss
Design Engineer

ASB:asb
July 12,2006

STORMWATER RUNOFF EVALUATION

**J & H Properties, L.L.C.
352 Presumpscot Street
Portland, Maine 04103**

General

This stormwater runoff evaluation has been prepared by Sebago Technics, Inc. (STI) on behalf of J & H Properties, L.L.C. and Patco Construction, Inc. to evaluate the effects of site improvements on stormwater runoff, as proposed and evaluated herein.

The subject site is located at 352 Presumpscot Street in the City of Portland. Proposed site improvements consist of constructing a 15,390 square-foot warehouse building and associated parking areas. The development will be serviced by public utilities to include underground cable, electric, and telephone; and subsurface drainage infrastructure. The proposed development consists of approximately **41,967** square feet of new impervious surface area.

Site Characteristics

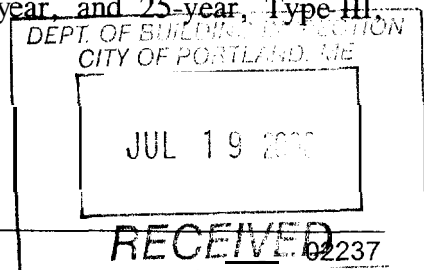
The subject site exists today as a commercial/industrial parcel, of approximately 1.61 acres. The existing ground cover consists primarily of woods and herbaceous growth. The topography throughout the site consists of moderate slopes draining toward a ravine along the southerly property line. Stormwater runoff for the entire site drains in a southeasterly direction to a localized low point in the site where it drains beneath Presumpscot Street via a 3' x 4' concrete culvert.

Soils

Soils information used for the stormwater evaluation was obtained from the Cumberland County Medium Intensity Soil Survey. A copy of the soils and project location maps are enclosed. The soil survey maps the predominant site soils as Hollis, which has a hydrologic soil group of "C".

Methodology

The stormwater runoff analysis was developed in accordance with methodology outlined in the "HydroCAD" stormwater modeling system. The 2-year, 10-year, and 25-year, Type III, 24-hour storm events were used for analysis.



Storm Event	Rainfall Depth
2-year	3.0
10-year	4.7
25-year	5.5

Watersheds

Based upon topographical information, adjacent properties and the project site, one watershed was evaluated for the pre-development condition and three watersheds for the post-development condition. The study point analyzed during both pre-and post-development conditions is along the southeasterly property line where the stormwater enters the municipal system. The study point is labeled on the drainage plans.

The pre-developed watershed (WS-1) contains 2.06 acres of land. Topography consists of moderate slopes with woods and grass ground cover. Stormwater runoff drains southeasterly toward a ditchline along Presumpscot street before exiting the southeast corner of the site through 3' x 4' box culvert underneath Presumpscot Street.

The post-developed watersheds (WS-11 through WS-13) contain 2.06 acres of total land. Land cover has changed from woods and grass in the pre-development condition, to revegetated grass and impervious areas in the post developed condition. Stormwater runoff from Watershed 11 sheet flows across a parking area to a catch basin and is then piped to study point 1, located at the 3' x 4' box culvert. Additionally, Watershed 11 conveys runoff via a swale to study point 1. Watershed 12 accepts runoff from the front parking area and an unchanged wooded area where it flows naturally through the existing ravine to study point 1. Watershed 13 sheet flows across a parking area to a catch basin where it is then conveyed via a storm drain to study point 1.

Stormwater Management

The following table summarizes the results of stormwater calculations for the design storm event for the project area. Calculations and computer modeling data sheets are provided with this report.

Stormwater Peak Discharge Summary Table									
Study Point	2-Year Storm			10-Year Storm			25-Year Storm		
	Pre (cfs)	Post (cfs)	Diff. (cfs)	Pre (cfs)	Post (cfs)	Diff. (cfs)	Pre (cfs)	Post (cfs)	Diff. (cfs)
SP-1	0.94	2.65	1.71	2.34	4.91	2.57	3.07	5.98	2.91

Summary

The proposed development of the 15,390 S.F. warehouse facility will include the installation of two cross culverts to which the runoff from the impervious areas will be directed. The culverts will transport the runoff to the localized low spot prior to outletting to the existing municipal system within Presumpscot Street.

Other drainage provisions will include a specific grading plan and erosion and sedimentation control measures which will be implemented throughout the construction cycle. Incorporation of the above mentioned drainage provisions and infrastructure for the proposed development adequately addresses stormwater runoff such that no significant downstream impacts on downstream properties are anticipated.

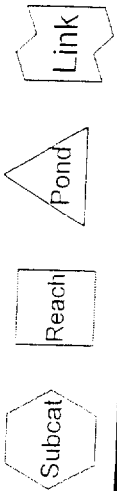
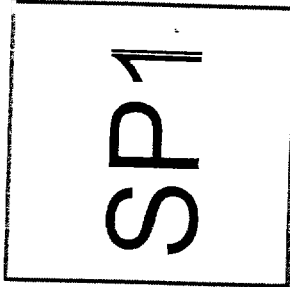
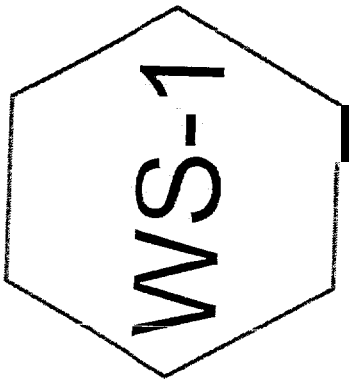
Prepared by

SEBAGO TECHNICS, INC.



ASB
Adam S. Bliss
Design Engineer

ASD:msh
July 12, 2006



Drainage Diagram for 02237_PRE

Prepared by Sebago Technics, Inc. 5/25/2006

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02237_PRE

Type III 24-hr Rainfall=3.00" (Two Year Storm)

Prepared by Sebago Technics, Inc.

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HvdroCAD B 6.00 s/n 001856 © 1986-2001 Applied Microcomputer Systems

5/25/2006

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 WS-1:

Tc=45.3 min CN=74 Area=2.059 ac Runoff= 0.94 cfs 0.139 af

Reach SP1: (new node)

Inflow= 0.94 cfs 0.139 af

Outflow= 0.94 cfs 0.139 af

Runoff Area = 2.059 ac Volume = 0.139 af Average Depth = 0.81"

Subcatchment WS-I :

Runoff = 0.94 cfs @ 12.68 hrs, Volume= 0.139 af

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 (ac)	CN	Description
0.098	89	Gravel roads, HSG C
0.076	98	Paved roads w/curbs & sewers
1.234	74	>75% Grass cover, Good, HSG C
0.651	70	Woods, Good, HSG C
2.059	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.2	150	0.0670	0.1		Sheet Flow, A to B Woods: Dense underbrush n= 0.800 P2= 3.00"
1.7	155	0.0500	1.6		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0100	6.2	7.63	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
10.6	105	0.0650	0.2	0.10	Trap/Vee/Rect Channel Flow, D to E Bot.W=2.00' D=0.25' H= 1.5' n= 0.800
45.3	450	Total			

Reach SP1: (new node)

Inflow = 0.94 cfs @ 12.68 hrs, Volume= 0.139 af
Outflow = 0.94 cfs @ 12.68hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min

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

02237_PRE

Type III 24-hr Rainfall=4.70" (Ten Year Storm)

Prepared by Sebago Technics, Inc.

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5/25/2006

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 WS-1:

Tc=45.3 min CN=74 Area=2.059 ac Runoff= 2.34 cfs 0.332 af

Reach SP1: (new node)

Inflow= 2.34 cfs 0.332 af
Outflow= 2.34 cfs 0.332 af

Runoff Area = 2.059 ac Volume = 0.332 af Average Depth = 1.94"

Subcatchment WS-1:

Runoff = 2.34 cfs @ 12.64 hrs, Volume= 0.332 af

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 (ac)	CN	Description
0.098	89	Gravel roads, HSG C
0.076	98	Paved roads w/curbs & sewers
1.234	74	>75% Grass cover, Good, HSG C
0.651	70	Woods. Good, HSG C
2.059	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.9	150	0.0670	0.1		Sheet Flow, A to B Woods: Dense underbrush n= 0.800 P2= 3.00"
1.7	155	0.0500	1.6		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0100	6.2	7.63	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2sf Perim= 3.9' r= 0.31' n= 0.011
10.6	105	0.0650	0.2	0.10	Trap/Vee/Rect Channel Flow, D to E Bot.W=2.00' D=0.25' H= 1.5' n= 0.800
45.3	450	Total			

Reach SP1: (new node)

inflow = 2.34 cfs @ 22.64 hrs, Volume= 0.332 af
Outflow = 2.34 cfs @ 12.64 hrs, Volume= 0.332 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 WS-1:

Tc=45.3 min CN=74 Area=2.059 ac Runoff= 3.07cfs 0.435 af

Reach SP1: (new node)

Inflow= 3.07cfs 0.435af
Outflow= 3.07 cfs 0.435 af

Runoff Area = 2.059 ac Volume = 0.435af Average Depth = 2.54"

Subcatchment WS-1:

Runoff = 3.07 cfs @ 12.64 hrs, Volume= 0.435 af

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 (ac)	CN	Description
0.098	89	Gravel roads, HSG C
0.076	98	Paved roads w/curbs & sewers
1.234	74	>75% Grass cover, Good, HSG C
0.651	70	Woods, Good, HSG C
2.059	74	Weighted Average

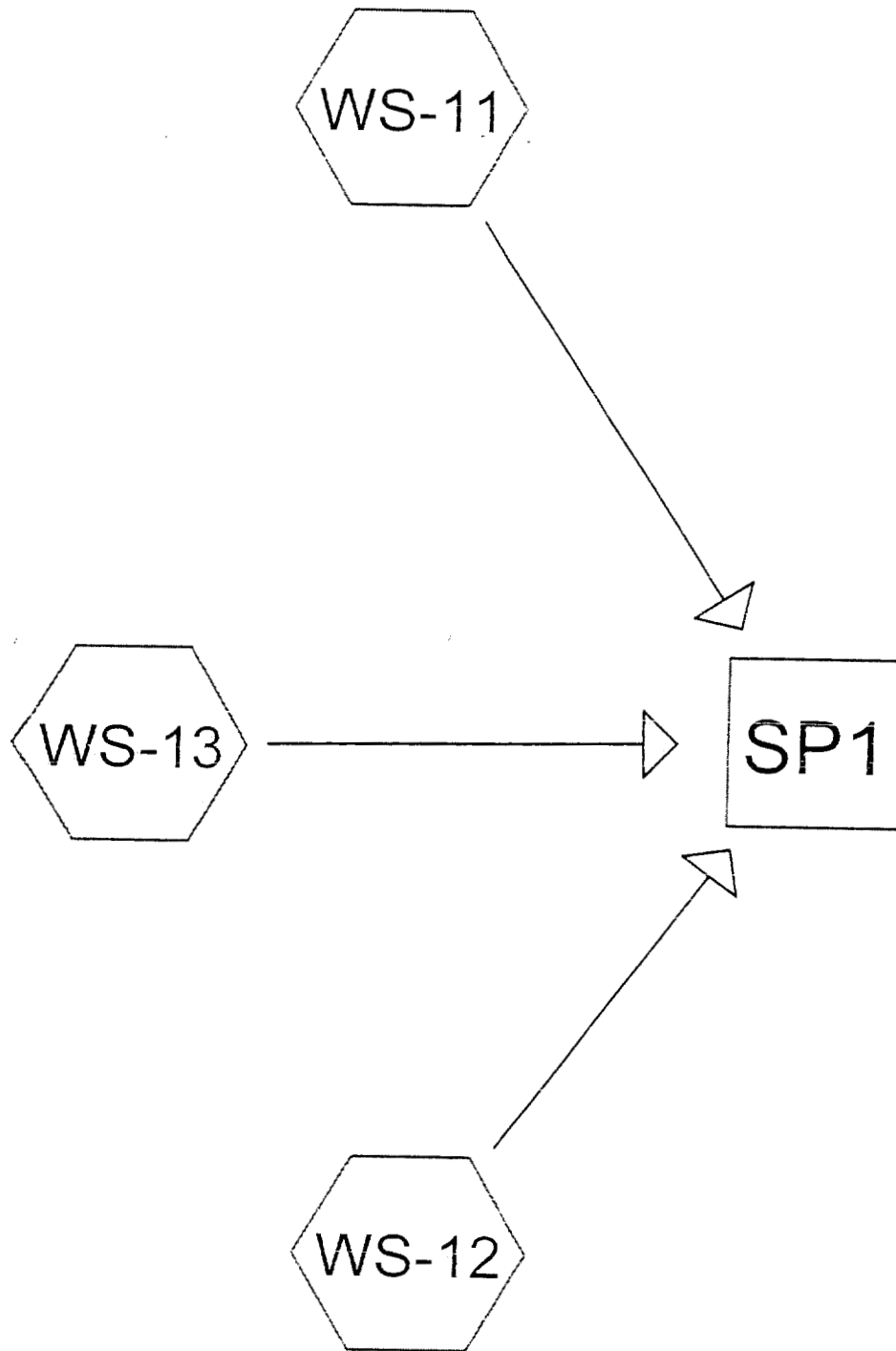
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.9	150	0.0670	0.1		Sheet Flow, A to B Woods: Dense underbrush n= 0.800 P2= 3.00"
1.7	155	0.0500	1.6		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0100	6.2	7.63	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2sf Perim= 3.9' ■ 0.31' n= 0.011
10.6	105	0.0650	0.2	0.10	Trap/Vee/Rect Channel Flow, D to E Bot.W=2.00' D=0.25' ■ 1.5' n= 0.800
45.3	450	Total			

Reach SP1: (new node)

inflow = 3.07 cfs @ 12.64 hrs, Volume= 0.435 af

Outflow = 3.07 cfs @ 12.64 hrs, Volume= 0.435 af, Atten= 0%, Lag= 0.0 min

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



Subcat

Reach

Pond

Link

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 WS-11:

Tc=20.7 min CN=86 Area=0.788 ac Runoff= 1.02 cfs 0.101af

Subcatchment WS-12:

Tc=27.6 min CN=86 Area=0.645 ac Runoff= 0.74 cfs 0.083 af

Subcatchment WS-13:

Tc=12.4 min CN=91 Area=0.627 ac Runoff= 1.22cfs 0.102 af

Reach SP1: (new node)

Inflow= 2.65 cfs 0.286 af
Outflow= 2.65 cfs 0.286af

Runoff Area = 2.060 ac Volume = 0.286 af Average Depth = 1.66"

Subcatchment WS-11:

Runoff = 1.02 cfs @ 12.29 hrs, Volume= 0.101 af

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 (ac)	CN	Description
0.405	98	Paved parking & roofs
0.367	74	>75% Grass cover. Good, HSG C
0.016	70	Woods, Good, HSG C
0.788	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	150	0.0250	0.1		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.00"
1.5	83	0.0170	0.9		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
0.1	73	0.0270	10.2	12.54	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.1	20	0.0100	6.2	7.63	Circular Channel (pipe), D to E Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.4	25	0.0350	0.9		Shallow concentrated Flow, D to E Woodland Kv= 5.0 fps
20.7	351	Total			

Subcatchment WS-12:

Runoff = 0.74 cfs @ 12.39 hrs, Volume= 0.083 af

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 (ac)	CN	Description
0.346	98	Paved parking & roofs
0.197	74	>75% Grass cover, Good, HSG C
0.102	70	Woods, Good; HSG C
0.645	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
276	115	0.0610	0.1		Sheet Flow, A to B Woods. Dense underbrush n= 0.800 P2= 3.00"

Subcatchment WS-13:

Runoff = 1.22 cfs @ 12.17 hrs, Volume= 0.102 af

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 (ac)	CN	Description
0.446	98	Paved parking & roofs
0.169	74	>75% Grass cover, Good, HSG C
0.012	70	Woods, Good. HSG C
0.627	91	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	130	0.0690	0.2		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.00"
0.4	105	0.0550	4.8		Shallow Concentrated Flow, B to C Paved Kv= 20.3 fps
0.4	201	0.0200	8.8	10.80	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.1	20	0.0100	6.2	7.63	Circular Channel (pipe), D to E Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.4	25	0.0360	0.9		Shallow Concentrated Flow, E to F Woodland Kv= 5.0 fps
12.4	481	Total			

Reach SP1: (new nodej

Inflow = 2.65cfs @ 12.24 hrs, Volume= 0.286af
 Outflow = 2.65 cfs @ 12.24 hrs, Volume= 0.286 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=4.70"

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

Subcatchment WS-11

Tc=20.7 min CN=86 Area=0.788 ac Runoff= 1.94 cis 0.196 af

Subcatchment WS-12:

Tc=27.6 min CN=86 Area=0.645 ac Runoff= 1.40 cis C.160 af

Subcatchment WS-13:

Tc=12.4 min CN=91 Area=0.627 ac Runoff= 2.12 cfs 0.182 ai

Reach SP1: (new node)

Inflow 4.91 cfs 0.538 af

Outflow= 4.91 cfs 0.538 af

Runoff Area = 2.060 ac Volume = 0.538 af Average Depth = 3.13"

Subcatchment WS-22 :

Runoff = 1.94 cfs @ 12.28 hrs, Volume= 0.196 af

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 (ac)	CN	Description
0.405	98	Paved parking & roofs
0.367	74	>75% Grass cover, Good, HSG C
0.016	70	Woods, Good, HSG C
0.788	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	150	0.0250	0.1		Sheet Flow, A to B Grass: Dense n= 0.240 P2=3.00"
1.5	83	0.0170	0.9		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
0.1	73	0.0270	10.2	12.54	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.1	20	0.0100	6.2	7.63	Circular Channel (pipe), D to E Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.4	25	0.0360	0.9		Shallow Concentrated Flow, D to E Woodland Kv= 5.0 fps
20.7	351	Total			

Subcatchment WS-12:

Runoff = 1.40 cfs @ 12.37 hrs, Volume= 0.160 af

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 (ac)	CN	Description
0.346	98	Paved parking & roofs
0.197	74	>75% Grass cover, Good, HSG C
0.102	70	Woods, Good, HSG C
0.645	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.6	115	0.0610	0.1		Sheet Flow, A to B Woods Dense underbrush n= 0.800 P2= 3.00"

Subcatchment WS-13:

Runoff = 2.12 cfs @ 12.17hrs, Volume= 0.182 af

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 (ac)	CN	Description
0.446	98	Paved parking & roofs
0.169	74	>75% Grass cover, Good, HSG C
0.012	70	Woods. Good, HSG C
0.627	91	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	130	0.0690	0.2		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.00"
0.4	105	0.0550	4.8		Shallow Concentrated Flow, B to C Paved Kv= 20.3 fps
0.4	201	0.0200	8.8	10.80	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.1	20	0.0100	6.2	7.63	Circular Channel (pipe), D to E Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.4	25	0.0360	0.9		Shallow Concentrated Flow, E to F Woodland Kv= 5.0 fps
12.4	481	Total			

Reach SP1: (newnode)

inflow = 4.91 cfs @ 12.24 hrs, Volume= 0.538 af
Outflow = 4.91 cfs @ 12.24 hrs, Volume= 0.538 af, Atten= 0%, Lag= 0.0 min

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

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 WS-11:

Tc=20.7 min CN=86 Area=0.788 ac Runoff= 2.37 cfs 0.243 af

Subcatchment WS-12:

Tc=27.6 min CN=86 Area=0.645 ac Runoff= 1.72 cfs 0.198 af

Subcatchment WS-13:

Tc=12.4 min CN=91 Area=0.627 ac Runoff= 2.54 cfs 0.220 af

Reach SP1; (new node)

Inflow= 5.98 cfs 0.661 af
Outflow= 5.98 cis 0.661af

Runoff Area = 2.060 ac Volume = 0.661 af Average Depth = 3.85"

Subcatchment **WS-11**:

Runoff = 2.37 cfs @ 12.28 hrs, Volume= 0.243 af

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 (ac)	CN	Description
0.405	98	Paved parking & roofs
0.367	74	>75% Grass cover, Good, HSG C
0.016	70	Woods. Good, HSG C
0.788	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	150	0.0250	0.1		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.00"
1.5	83	0.0170	0.5		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
0.1	73	0.0270	10.2	12.54	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.1	20	0.0100	6.2	7.63	Circular Channel (pipe), D to E Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.4	25	0.0360	0.9		Shallow Concentrated Flow. D to E Woodland Kv= 5.0 fps
20.7	351	Total			

Subcatchment **WS-12**:

Runoff = 2.72 cfs @ 12.37 hrs, Volume= 0.198 af

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

Area (ac)	CN	Description
0.346	98	Paved parking & roofs
0.197	74	>75% Grass cover, Good, HSG C
0.102	70	Woods, Good. HSG C
0.645	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.6	115	0.0610	0.1		Sheet Flow, A to B Woods: Dense unadbrushn n= 0.800 P2= 3.00"

Subcatchment WS-13:

Runoff = 2.54 cfs @ 12.17hrs, Volume= 0.220af

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 (ac)	CN	Description
0.446	98	Paved parking 8 roofs
0.169	74	>75% Grass cover, Good, HSG C
0.012	70	Woods, Good, HSG C
0.627	91	Weighted Average

Tc imin	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	130	0.0690	0.2		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.00"
0.4	105	0.0550	4.8		Shallow Concentrated Flow, B to C Paved Kv= 20.3fps
0.4	201	0.0200	6.8	10.80	Circular Channel (pipe), C to D Diam= 15.0" Area= 1.2sf Perim= 3.9' r= 0.31' n= 0.011
0.1	20	0.0100	6.2	7.63	Circular Channel (pipe), D to E Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011
0.4	25	0.0360	0.9		Shallow Concentrated Flow, E to F Woodland Kv= 5.0fps
11.14	481	Total			

Reach SP1: (new nodej)

Inflow = 5.98 cfs @ 12.24 hrs, Volume= 0.661 af
 Outflow = 5.98 cfs @ 12.24hrs, Volume= 0.661af, Atten= 0%. Lag= 0.0min

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