65-H-1

2001-0264

932 Congress St.

Parking Lot Improvement

Maine Med. Ctr.

on Spreadsheet

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

2001-0264
Application I. D. Number

9/20/01
Application Date

993 Congress St. Parking Lot Improve
Project Name/Description

Maine Medical Center
Applicant

22 Bramhall St, Portland, ME 04102
Applicant's Mailing Address

Conway, Will
Consultant/Agent

Agent Ph: (207)856-0277 **Agent Fax: (207) 856-2206**
Applicant or Agent Daytime Telephone, Fax

932 - 932 Congress St, Portland, Maine
Address of Proposed Site

065 H001001
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) **Parking Lot Improvement**

Proposed Building square Feet or # of Units _____ Acreage of Site _____ Zoning _____

Check Review Required:

☑ Site Plan (major/minor)
☐ Subdivision # of lots _____
☐ PAD Review
☐ 14-403 Streets Review
☐ Flood Hazard
☐ Shoreland
☐ HistoricPreservation
☐ DEP Local Certification
☐ Zoning Conditional Use (ZBA/PB)
☐ Zoning Variance
☐ Other _____

Fees Paid: Site Plan **$400.00** Subdivision _____ Engineer Review _____ Date **9/20/01**

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

☐ Performance Guarantee Accepted _____ date _____ amount _____ expiration date

☐ Inspection Fee Paid _____ date _____ amount

☐ Building Permit Issue _____ date

☐ Performance Guarantee Reduced _____ date _____ remaining balance _____ signature

☐ Temporary Certificate of Occupancy _____ date ☐ Conditions (See Attached) _____ expiration date

☐ Final Inspection _____ date _____ signature

☐ Certificate Of Occupancy _____ date

☐ Performance Guarantee Released _____ date _____ signature

☐ Defect Guarantee Submitted _____ submitted date _____ amount _____ expiration date

☐ Defect Guarantee Released _____ date _____ signature

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM
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Application I. D. Number

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Parking Lot Improvement
Project Name/Description

Maine Medical Center
Applicant

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Applicant's Mailing Address

Conway, Will
Consultant/Agent

Agent Ph: (207)856-0277 **Agent Fax: (207) 856-2206**
Applicant or Agent Daytime Telephone, Fax

995 - 995 Congress St, Portland, Maine
Address of Proposed Site

065 A022001
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) **Parking Lot Improvement**

Proposed Building square Feet or # of Units | Acreage of Site | Zoning

Check Review Required:

☑ Site Plan (major/minor) ☐ Subdivision # of lots ☐ PAD Review ☐ 14-403 Streets Review

☐ Flood Hazard ☐ Shoreland ☐ HistoricPreservation ☐ DEP Local Certification

☐ Zoning Conditional Use (ZBA/PB) ☐ Zoning Variance ☐ Other

Fees Paid: Site Plan **$400.00** Subdivision Engineer Review **$4,180.00** Date **02/15/2002**

DRC Approval Status:

Reviewer **Chris Earle/Steve Bushey**

☑ **Approved** ☐ **Approved w/Conditions** See Attached ☐ **Denied**

Approval Date **10/31/2001** Approval Expiration **10/31/2002** Extension to ☐ Additional Sheets Attached

☑ Condition Compliance **Kandi Talbot** (signature) **02/21/2002** (date)

Performance Guarantee ☑ **Required*** ☐ **Not Required**

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

☑ Performance Guarantee Accepted	**01/14/2002** (date)	**$209,000.00** (amount)	**10/15/2002** (expiration date)
☐ Inspection Fee Paid	(date)	(amount)	
☐ Building Permit Issue	(date)		
☐ Performance Guarantee Reduced	(date)	(remaining balance)	(signature)
☐ Temporary Certificate of Occupancy	(date)	☐ Conditions (See Attached)	(expiration date)
☐ Final Inspection	(date)	(signature)	
☐ Certificate Of Occupancy	(date)		
☐ Performance Guarantee Released	(date)	(signature)	
☐ Defect Guarantee Submitted	(submitted date)	(amount)	(expiration date)
☐ Defect Guarantee Released	(date)	(signature)	

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

2001-0264
Application I. D. Number

09/20/2001
Application Date

Parking Lot Improvement
Project Name/Description

Maine Medical Center
Applicant

22 Bramhall St, Portland, ME 04102
Applicant's Mailing Address

Conway, Will
Consultant/Agent

Agent Ph: (207)856-0277 **Agent Fax: (207) 856-2206**
Applicant or Agent Daytime Telephone, Fax

995 - 995 Congress St, Portland, Maine
Address of Proposed Site

065 A022001
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) **Parking Lot Improvement**

Proposed Building square Feet or # of Units | Acreage of Site | Zoning

Check Review Required:

☑ Site Plan (major/minor) ☐ Subdivision # of lots ☐ PAD Review ☐ 14-403 Streets Review

☐ Flood Hazard ☐ Shoreland ☐ HistoricPreservation ☐ DEP Local Certification

☐ Zoning Conditional Use (ZBA/PB) ☐ Zoning Variance ☐ Other

Fees Paid: Site Plan **$400.00** Subdivision Engineer Review **$4,180.00** Date **02/15/2002**

Planning Approval Status:

Reviewer **Kandi Talbot**

☑ **Approved** ☐ **Approved w/Conditions** See Attached ☐ **Denied**

Approval Date **10/31/2001** Approval Expiration **10/31/2002** Extension to ☐ Additional Sheets Attached

☑ OK to Issue Building Permit **Kandi Talbot** (signature) **02/21/2002** (date)

Performance Guarantee ☑ **Required*** ☐ **Not Required**

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

☑ Performance Guarantee Accepted	**01/14/2002** (date)	**$209,000.00** (amount)	**10/15/2002** (expiration date)
☐ Inspection Fee Paid	(date)	(amount)	
☐ Building Permit Issue	(date)		
☐ Performance Guarantee Reduced	(date)	(remaining balance)	(signature)
☐ Temporary Certificate of Occupancy	(date)	☐ Conditions (See Attached)	(expiration date)
☐ Final Inspection	(date)	(signature)	
☐ Certificate Of Occupancy	(date)		
☐ Performance Guarantee Released	(date)	(signature)	
☐ Defect Guarantee Submitted	(submitted date)	(amount)	(expiration date)
☐ Defect Guarantee Released	(date)	(signature)	

SebagoTechnics
Engineering & Planning for the Future

October 23, 2001
01306

Kandice Talbot, Planner
Planning & Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Kandi:

On behalf of Maine Medical Center, we are pleased to submit additional information pertinent to your review of this project. In response to your letter to me dated October 4, 2001, our responses are as follows:

1. A stamped standard boundary survey is being finalized and will be submitted in one or two business days.

2. Plans have been revised to meet all requests made by the City Arborist.

3. Enclosed is a site lighting photometric plan. Spill over onto the properties is unnoticeable (0.0 to 0.2 foot-candles) due to maximum shielding of the fixtures, and will be eliminated by the Arborvitae hedge proposed in this area.

4. Maine Medical Center will purchase the property from George Hutchins.

5. A letter of financial capability will be provided under separate cover.

We have also addressed traffic issues raised by Larry Ash; see enclosed letter/report prepared by Tom Gorrill. We have incorporated Larry and Tom's suggestions into the plan set.

In response to the email you forwarded from Steve Bushey, our responses are as follows:

1. Complete stormwater calculations have been performed and enclosed for your review (see enclosure). A stormwater management narrative has also been established to summarize the results and the procedures for handling the additional runoff.

One Chabot Street P.O. Box 1339 Westbrook, Maine 04098-1339 207-856-0277 Fax 207-856-2206

Treatment will be accomplished by utilizing the existing wooded buffer along the northerly property lines. Additionally, a Vortechnics unit is proposed for the southerly half of the site that will be draining into the existing municipal system.

2. A shelter is not needed as users will wait in their cars until the shuttle arrives.

3. The driveway entrance has been widened as suggested.

4. See letter/report from Tom Gorrill.

5. The grading within the parking area has been revised to provide at least a 1% slope as requested.

6. A snow storage plan is articulated in Note #24 on the Site Plan, Sheet 2 of 5.

7. All of Mr. Tarling's requirements have been addressed.

8. Additional information regarding the drainage throughout the site can be seen in the Stormwater Narrative enclosed within this submittal.

9. The White Ash is changed to a 2"-2½" caliper size.

10. See previous response re: site lighting. The site lights will be turned off between midnight and 6:00 AM. Regarding security, the shuttle will not depart the lot until all shuttle users have entered their cars and the lot will be patrolled by Maine Medical security staff on an hourly basis.

Maine Medical Center wishes to proceed with the proposed improvements, including bituminous paving work before the asphalt plants shut down. Accordingly, any assistance you can provide in completing the review process is greatly appreciated.

Sincerely,

SEBAGO TECHNICS, INC.

William T. Conway

William T. Conway, R.L.A.
Vice President, Landscape Architecture

WTC:jc
Enc.

cc: Robert Cloutier, Maine Medical Center
Steve Bushey

Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
26 Main St.
Gray, ME 04039

207-657-6910
FAX: 207-657-6912
E-Mail:gpcel@maine.rr.com

October 22, 2001

Mr. Will Conway
Sebago Technics
One Chabot Street
Westbrook, ME 04098-1339

RE: Parking Area at 993 Congress Street
for Maine Medical Center, Portland, Maine

Dear Will:

Per your request, Gorrill-Palmer Consulting Engineers, Inc. has reviewed the access associated with the site plan of the proposed Maine Medical Center parking area at 993 Congress Street dated 09-20-01 prepared by your office. The site is adjacent to Classic Eyewear and will accommodate 100 spaces. It is currently utilized for parking during Seadogs games and other special events. Access to the lot is planned from an existing curb cut located nearly opposite County Way, the access to the Cumberland County Jail. Congress Street fronting the site is one way inbound (east bound) toward St. John Street and has three travel lanes with a posted speed limit of 30 MPH. A grass esplanade and a seven-foot brick sidewalk is located between Congress Street and the property line for the site. The existing twenty-foot access serving the site is located approximately 35 feet west from an active railroad crossing of Congress Street. The crossing has both flashing warning lights and a gate both for vehicles and pedestrians. Traffic queues regularly over and beyond the tracks today on Congress Street.

Gorrill-Palmer Consulting Engineers, Inc. review was confined to the issue of access to the site and potential impact on Congress Street. Following is a summary of our findings and recommendations based upon our review:

1. The sight lines to the right exiting the site are approximately 250 feet. The MDOT current standards are 300 feet for a posted speed of 30 MPH. However, they are in the final stages of adopting a new policy, which would require 250 feet, which would be met by the existing driveway. The stopping sight distance for 30 MPH is approximately 200 feet. It is Gorrill-Palmer Consulting Engineers, Inc. opinion that the sight lines exiting the driveway are adequate.

2. The existing driveway opening is twenty feet in width, which will not allow vehicles to exit and enter simultaneously. Gorrill-Palmer Consulting Engineers, Inc. recommends that the driveway opening be widened sufficiently to allow a passenger car to exit while another is entering.

3. A left turn only sign should be installed to be visible for traffic exiting the sight.

4. Based on prior counts of other parking lots utilized by Maine Medical Center, we forecast the lot will generate 69 trip ends during a peak hour.

Should you have any questions regarding these findings, please contact me.

Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.

Thomas L. Gorrill, P.E., P.T.O.E.
President

TLG/rmg/JN445/Conway10-22-01

STORMWATER MANAGEMENT PLAN

Maine Medical Center
993 Congress Street
Portland, Maine

General

This Stormwater Management Plan has been prepared to evaluate the pre and post-developed conditions associated with the proposed parking lot upgrade/expansion for Maine Medical Center off Congress Street in Portland, Maine.

The total development proposal consists of constructing a parking area that will have a total of approximately 39,500 square feet of pavement with associated landscape areas, sidewalks, and stormwater management facilities. The stormwater from the impervious areas will generally sheet flow to proposed catch basins and be transported to the Vortechnics unit where treatment will occur prior to entering the municipal system along Congress Street. The runoff from the rear of the site will sheet flow onto abutting properties in accordance with existing conditions.

Site Characteristics

The project site currently consists of an existing paved parking area and areas of hard packed gravel. The terrain consists of generally flat slopes from the building to the outer edges of the site towards the railroad and the abutting hotel's property. The proposed grading of the impervious areas will allow for sheet flow towards the catch basin so that most runoff from these areas will be intercepted and transported into the municipal system. A portion of the parking lot will continue to sheet flow toward the hotel property.

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 soil as Deerfield, which has a hydrologic soil group of "B".

Methodology

The pre and post-developed watershed analyses were conducted using the "HydroCAD" computer-modeling program, which incorporates the TR-55 and TR-20 methodologies as provided by the Soil Conservation Service of the U.S. Department of Agriculture.

Existing Watersheds

The existing site consists of two distinct watersheds with a total of approximately 2.69 acres. Watershed 1 (WS-1) consists of the developed area of the site and drains toward the existing catch basin within Congress Street. Watershed 2 (WS-2) consists of the northerly side of the site which is all exposed packed gravel and drains to an existing wooded buffer along the property line.

Proposed Watersheds

The total post-developed contributing areas contain approximately 2.69 acres of land. The impervious and developed areas of the site were divided into five watersheds (WS 1-5). Watersheds 1 will remain the same as it was in the pre-developed condition. The only change will be in the newly developed area. This area will be broken into four separate watersheds that will each flow to their respective catch basins. These catch basins will intercept the runoff from the impervious areas and then the runoff will be transported via subsurface storm drains to the Vortechnics unit to be treated prior to outletting to the municipal system along Congress Street.

Stormwater Management

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

Stormwater Runoff Summary Table													
Study Point	Total Watershed Area		Average Weighted Curve No. (cn)		Peak Rates of Runoff (cfs)								
					2-Year			10-Year			25-Year		
						Post			Post			Post	
	Pre	Post	Pre	Post	Pre	wo/d	w/d	Pre	wo/d	w/d	Pre	wo/d	w/d
1	1.35	1.57	86	86	2.78	2.98	---	5.26	5.76	---	6.44	7.03	---
2	1.34	1.12	80	78	2.05	1.56	---	4.38	3.49	---	5.53	4.46	---

Summary

The proposed development of the parking area for Maine Medical Center will include the regrading and paving of a gravel parking area as well as the resurfacing of an existing paved parking area. The runoff from the majority of the new impervious parking area will be intercepted by catch basins and be transported to the municipal system via subsurface storm drains. Remaining areas will sheet flow to abutting properties in accordance with existing drainage patterns. A slight increase in peak flows will occur in the municipal system due to the proposed construction. Accordingly, a decrease in runoff to the abutting properties will also occur. These changes in peak flows can be seen in the above table.

Other drainage provisions will include a specific grading plan and erosion and sedimentation control plan to be implemented throughout the construction cycle. The incorporation of these measures and the drainage provisions is expected to adequately address stormwater runoff from the developed site such that the municipal storm drain system and no downstream property will be adversely impacted.

Prepared by,

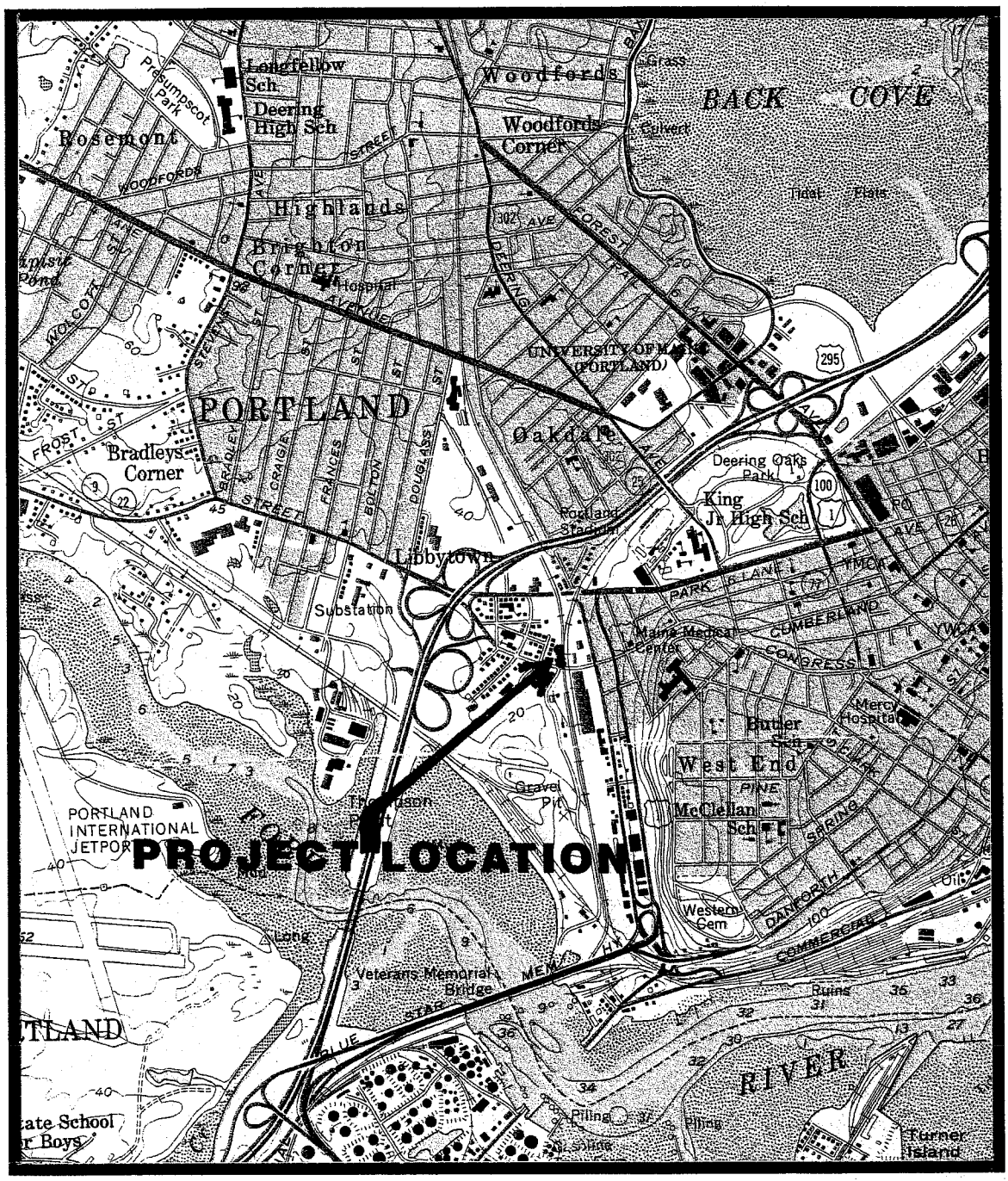
SEBAGO TECHNICS, INC.

Gregory J. Boulette
Project Engineer

Shawn M. Frank, PE.
Project Manager

GJB/SMF:gjb/jc
October 22, 2001

FIGURE 1



SITE LOCATION MAP

USGS TOPOGRAPHIC

7.5 MIN. QUADRANGLE

PORTLAND WEST

SCALE: 1"=2,000'

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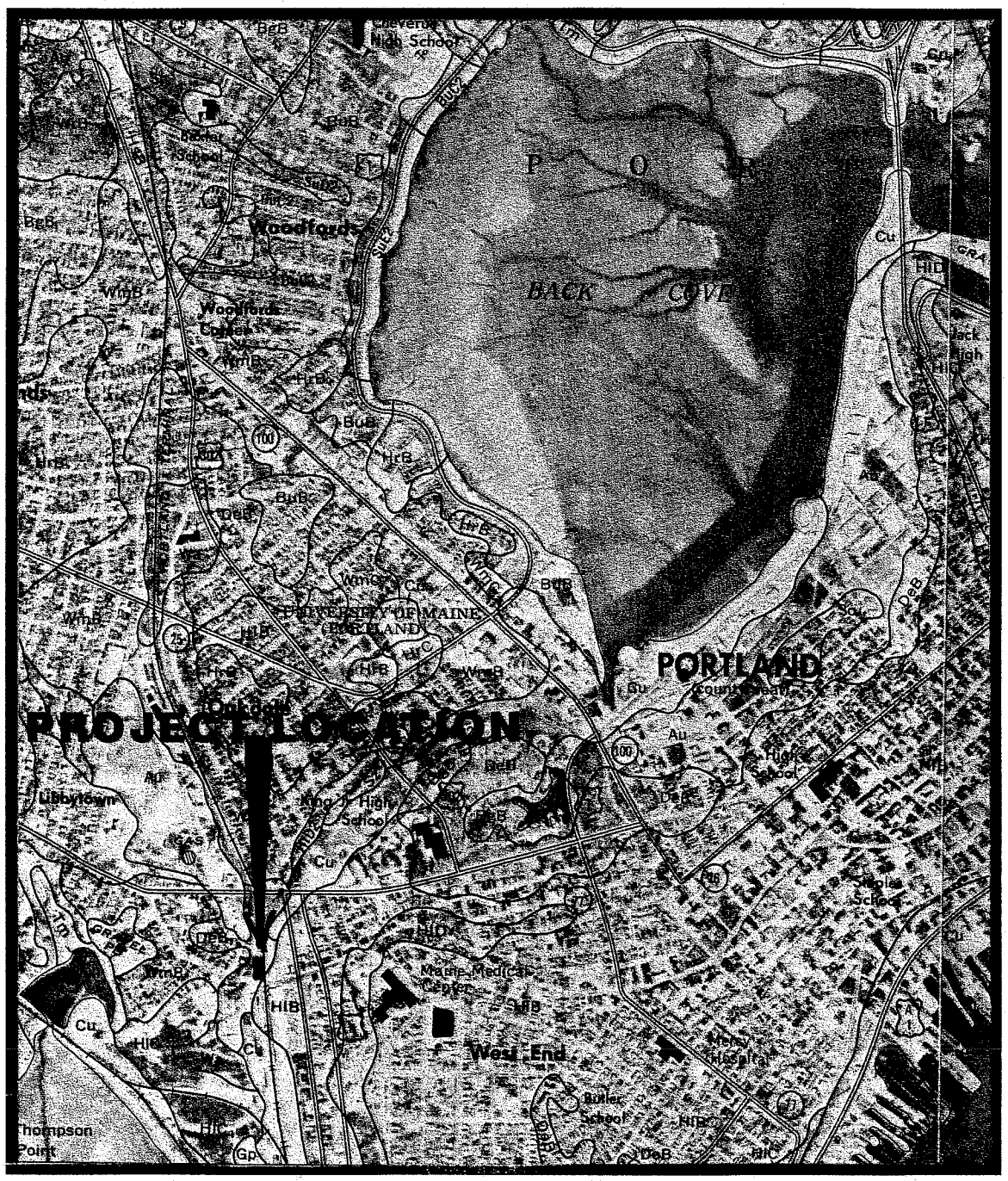
Engineering & Planning for the Future

01306

FIGURE 2



MEDIUM INTENSITY SOIL SURVEY

CUMBERLAND COUNTY

SHEET 82

SCALE 1:20,000

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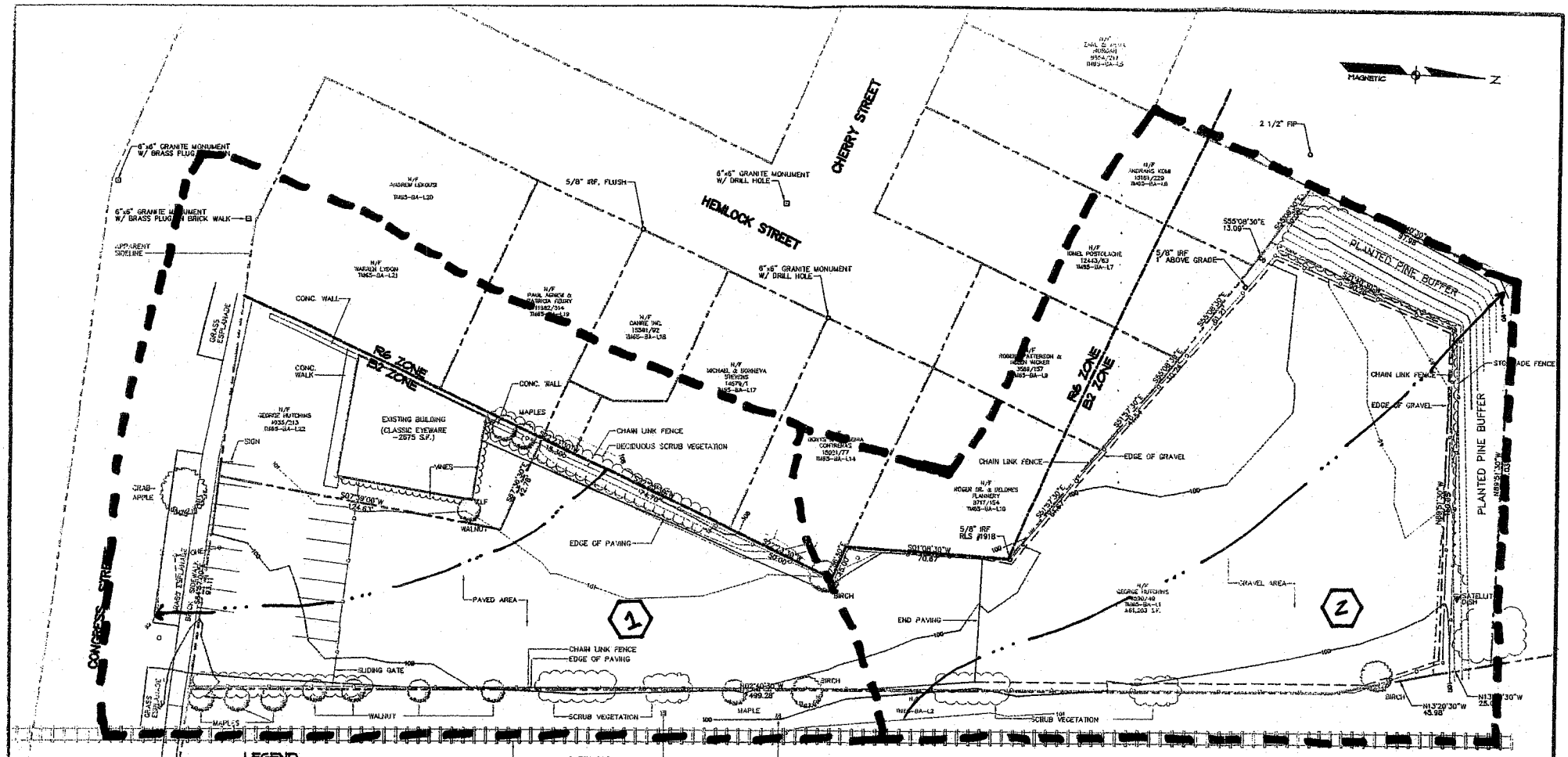


LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	EASEMENT	
	CENTERLINE	
	MONUMENT	
	IRON PIPE/ROD	
C1/L1	CURVE/LINE NO.	
	BUILDING	
	SIGN	
	EDGE PAVEMENT	
	GRAVEL ROAD	
	TREELINE	
124	CONTOURS	
8"S	SEWER	
12"SD	STORM DRAIN	
OHE	OVERHEAD ELEC. & TEL.	
	UTILITY POLE	
	HYDRANT	
	CATCH BASIN	
	MANHOLE	
	CULVERT	
	CHAIN LINK FENCE	
	BARB WIRE FENCE	
	STOCKADE FENCE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	GUARDRAIL	
	RAILROAD	

GENERAL NOTES:

1. APPLICANT: MAINE MEDICAL CENTER
2. RECORD OWNER: GEORGE M. HUTCHINS
   DEED REFERENCE: CUMBERLAND COUNTY DEED BOOK 4939, PAGE 213 AND BOOK 4898, PAGE 49.
3. TAX ASSESSORS REFERENCE: THE PROPERTY IS LOCATED ON THE CITY OF PORTLAND TAX ASSESSORS MAP # 69, BLOCK A, LOT 1 & MAP # 69, BLOCK A, LOT 22.
4. PLAN REFERENCES:
   A. "RECORDING PLAT FOR CUMBERLAND COUNTY COMMISSIONERS" BY SMRT SURVEY DIVISION PROJECT NAME "CUMBERLAND COUNTY JAIL" RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 181 PAGE 200, DECEMBER 1989
   B. "MAINE STATE HIGHWAY RIGHT OF WAY MAP" FEDERAL AID PROJECT NO. I-295-3 SHEETS 46, 47 AND 48 OF 79 (MHC FILE NO. 3-1991).
   C. PORTLAND TERMINAL COMPANY VALUATION SHEET 1 A
5. BEARINGS ARE BASED ON GRID NORTH.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REV:	BY:	DATE:	STATUS:

EXISTING CONDITIONS PLAN

OF:

PARKING AREA

993 CONGRESS ST.
PORTLAND, MAINE

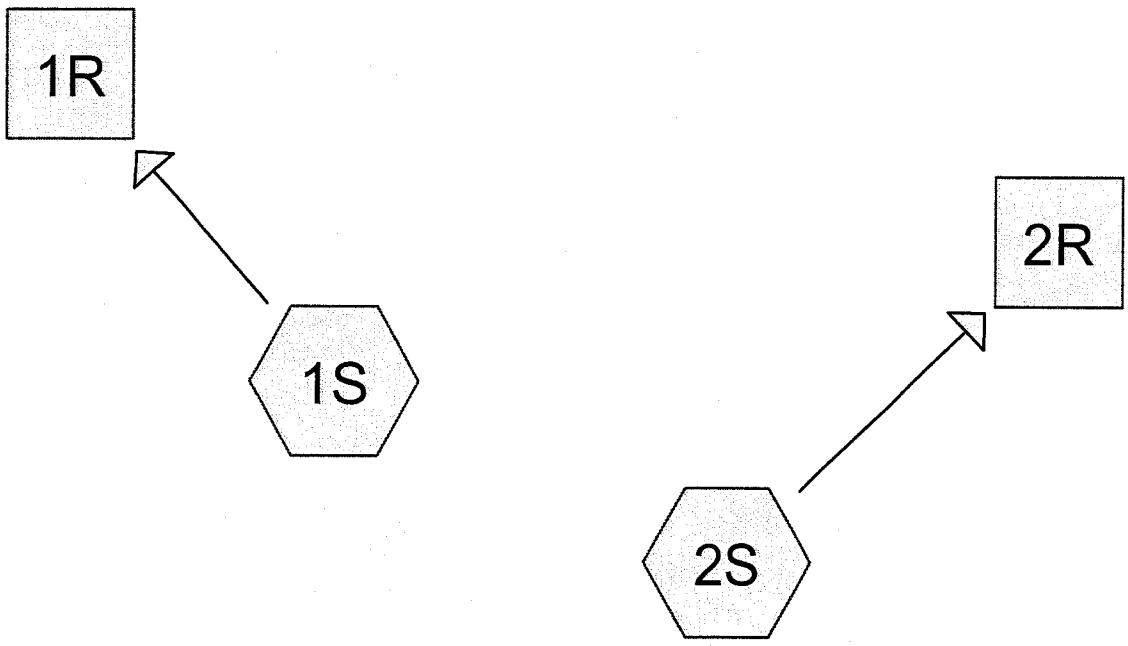
FOR:

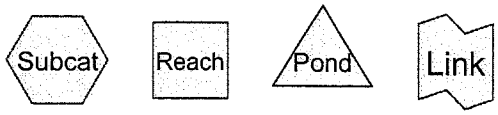
MAINE MEDICAL CENTER

22 BRAMHALL STREET
PORTLAND, MAINE 04102

Sebago Technics
Engineering & Planning for the Future
One Chabot Street
Westbrook, Me 04092-1339
Tel. (207) 856-0277

DESIGN BY:	WTC
DRAWN BY:	MWE/ASB
CHECKED BY:	WTC
DATE:	9/14/01
SCALE:	1" = 20'
FIELD BK:	737
PROJ. NO:	01308
DRAWING:	01308EC
SHEET 1 OF 5	





Drainage Diagram for 01306 MAINE MEDICAL (PRE)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM

Runoff = 2.78 cfs @ 12.06 hrs, Volume= 0.175 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
0.810	98	IMPERVIOUS
0.310	75	1/4 ACRE LOTS
0.230	61	DENSE GRASS
1.350	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	15	0.2000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
2.1	135	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	70	0.0214	2.4		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.9	220	Total			

Subcatchment 2S: AREA DRAINING TO NORTH

Runoff = 2.05 cfs @ 12.06 hrs, Volume= 0.129 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
0.840	85	GRAVEL
0.280	75	1/4 ACRE LOTS
0.070	98	IMPERVIOUS
0.150	55	WOODS
1.340	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	160	0.0156	2.0		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	340	Total			

Reach 1R: (new node)

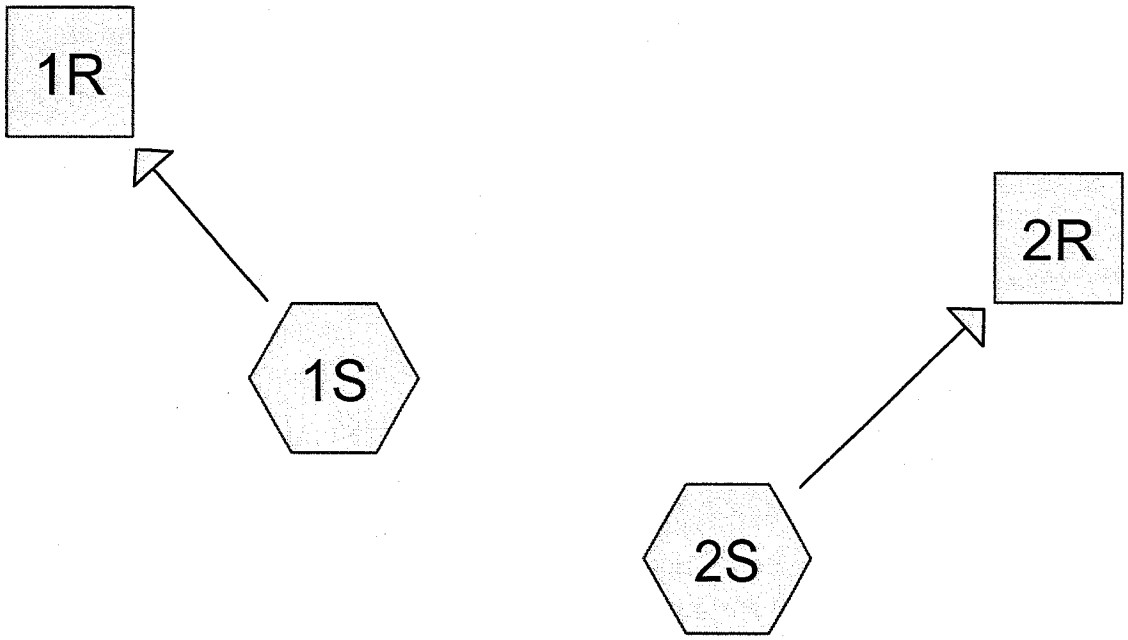
Inflow	=	2.78 cfs @	12.06 hrs,	Volume=	0.175 af
Outflow	=	2.78 cfs @	12.06 hrs,	Volume=	0.175 af, Atten= 0%, Lag= 0.0 min

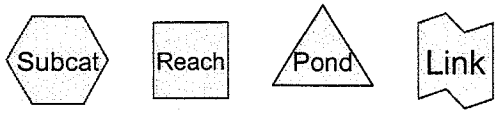
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 2R: (new node)

Inflow	=	2.05 cfs @	12.06 hrs,	Volume=	0.129 af
Outflow	=	2.05 cfs @	12.06 hrs,	Volume=	0.129 af, Atten= 0%, Lag= 0.0 min

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





Drainage Diagram for 01306 MAINE MEDICAL (PRE)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM

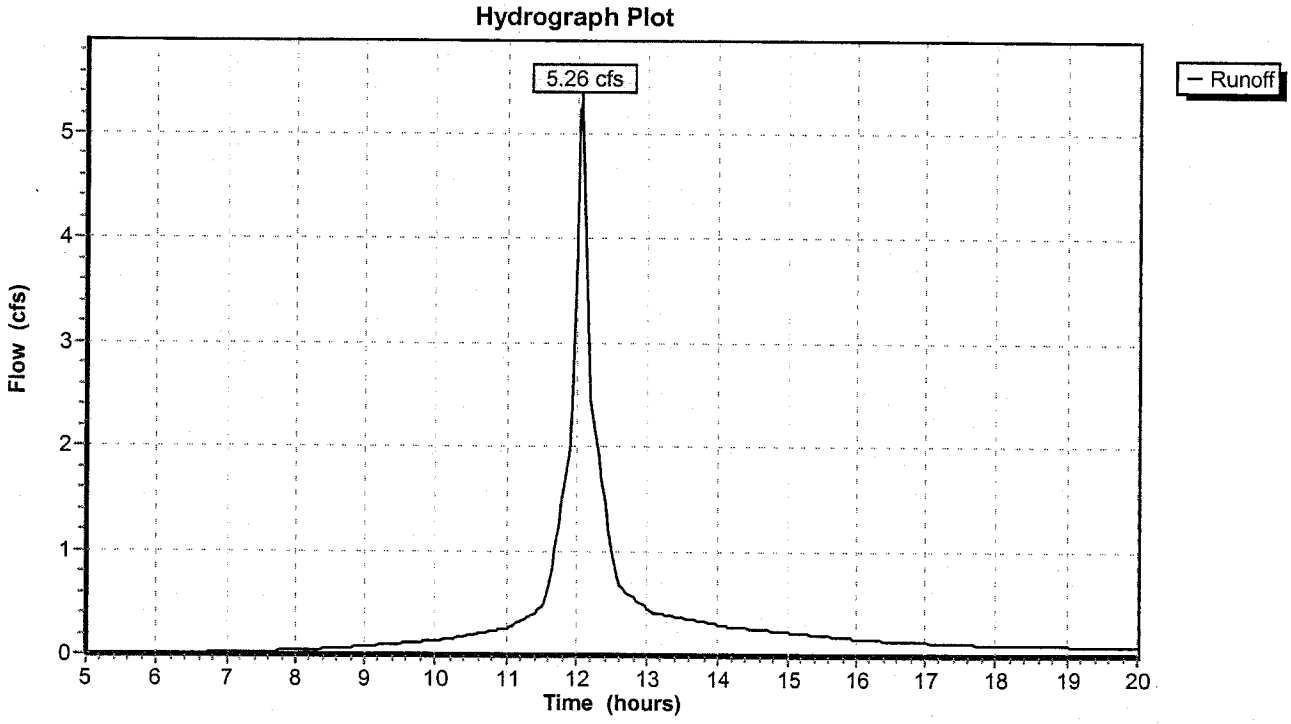
Runoff = 5.26 cfs @ 12.06 hrs, Volume= 0.337 af

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
0.810	98	IMPERVIOUS
0.310	75	1/4 ACRE LOTS
0.230	61	DENSE GRASS
1.350	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	15	0.2000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
2.1	135	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	70	0.0214	2.4		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.9	220	Total			

Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM



Subcatchment 2S: AREA DRAINING TO NORTH

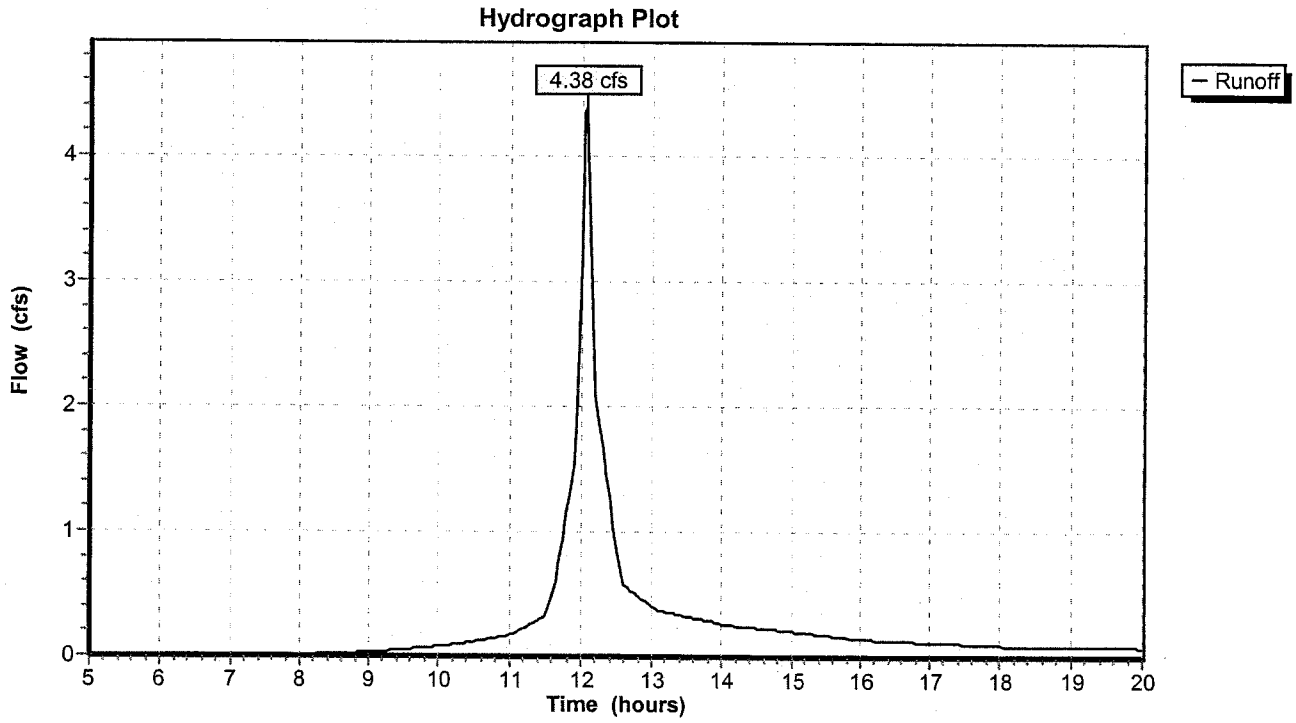
Runoff = 4.38 cfs @ 12.06 hrs, Volume= 0.274 af

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
0.840	85	GRAVEL
0.280	75	1/4 ACRE LOTS
0.070	98	IMPERVIOUS
0.150	55	WOODS
1.340	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	160	0.0156	2.0		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	340	Total			

Subcatchment 2S: AREA DRAINING TO NORTH

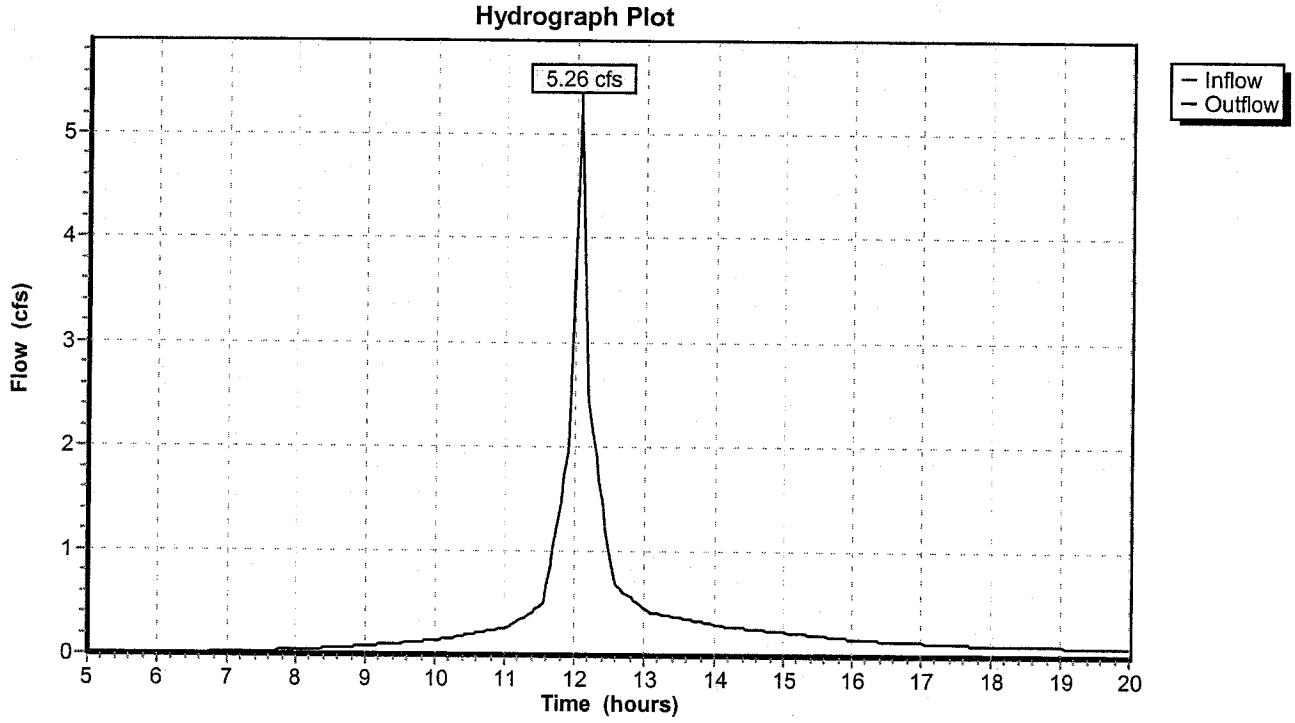


Reach 1R: (new node)

Inflow	=	5.26 cfs @	12.06 hrs,	Volume=	0.337 af
Outflow	=	5.26 cfs @	12.06 hrs,	Volume=	0.337 af, Atten= 0%, Lag= 0.0 min

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

Reach 1R: (new node)

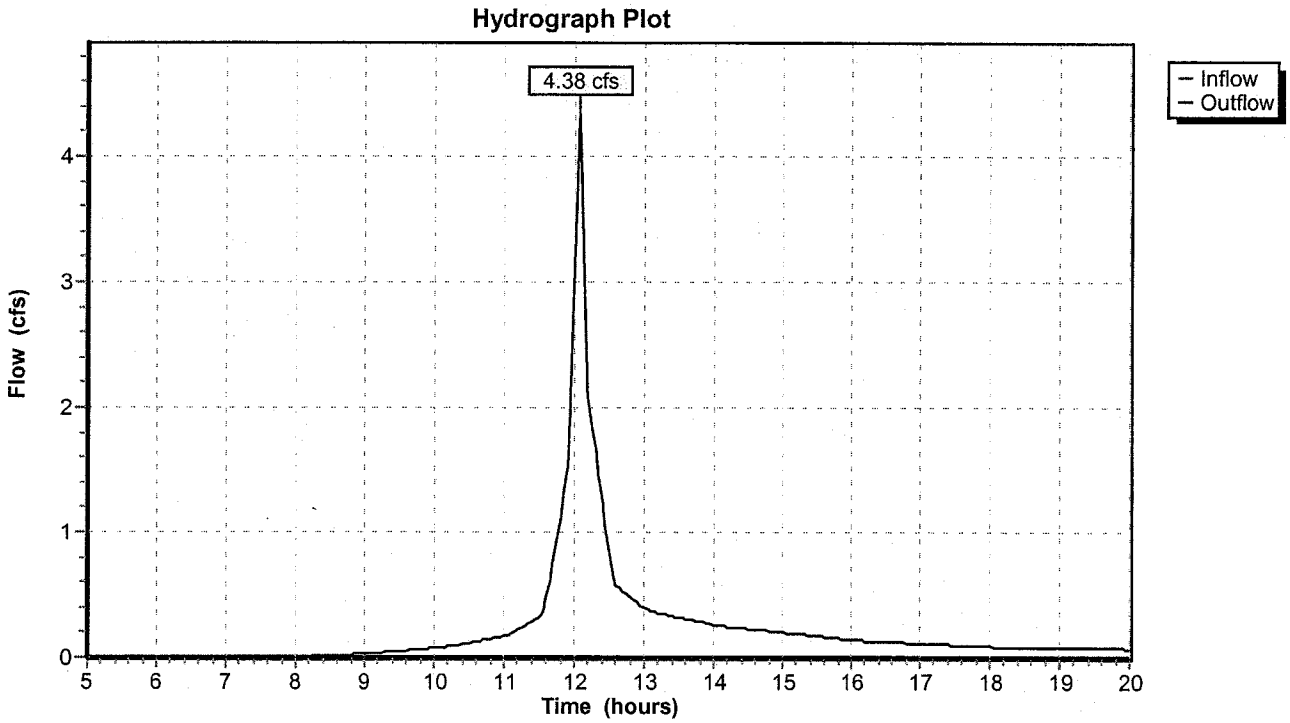


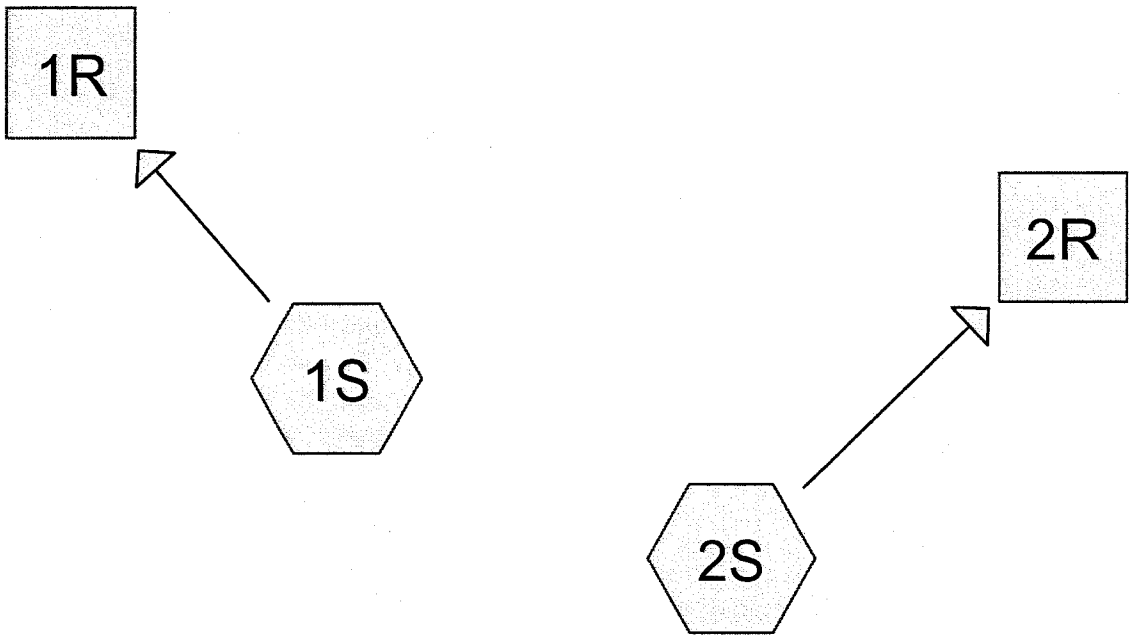
Reach 2R: (new node)

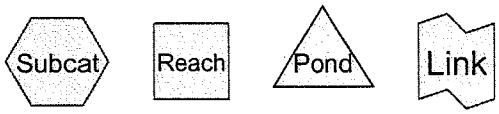
Inflow	=	4.38 cfs @	12.06 hrs,	Volume=	0.274 af
Outflow	=	4.38 cfs @	12.06 hrs,	Volume=	0.274 af, Atten= 0%, Lag= 0.0 min

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

Reach 2R: (new node)







Drainage Diagram for 01306 MAINE MEDICAL (PRE)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM

Runoff = 6.44 cfs @ 12.06 hrs, Volume= 0.418 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
0.810	98	IMPERVIOUS
0.310	75	1/4 ACRE LOTS
0.230	61	DENSE GRASS
1.350	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	15	0.2000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
2.1	135	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	70	0.0214	2.4		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.9	220	Total			

Subcatchment 2S: AREA DRAINING TO NORTH

Runoff = 5.53 cfs @ 12.06 hrs, Volume= 0.349 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
0.840	85	GRAVEL
0.280	75	1/4 ACRE LOTS
0.070	98	IMPERVIOUS
0.150	55	WOODS
1.340	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	160	0.0156	2.0		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	340	Total			

Reach 1R: (new node)

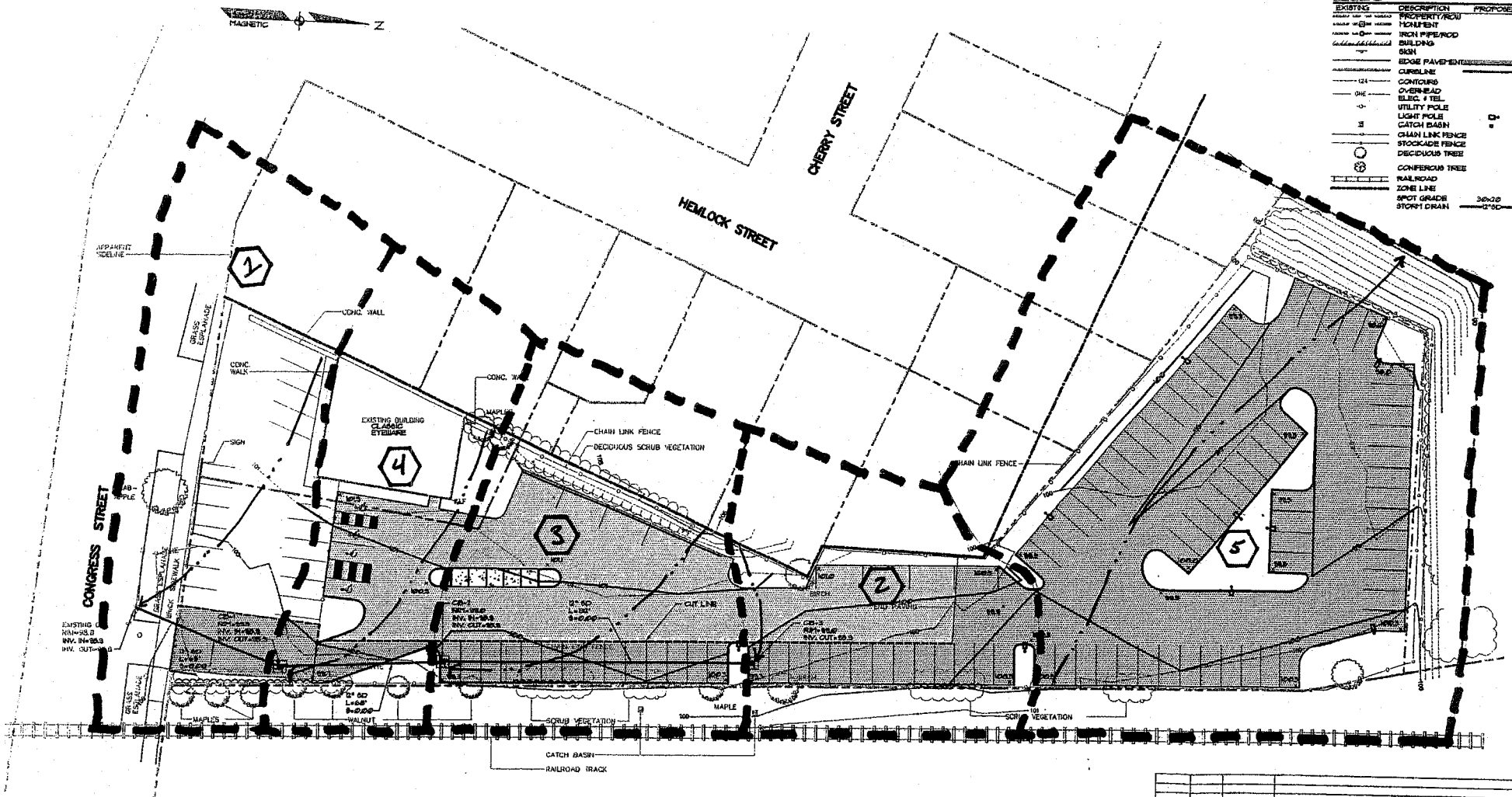
Inflow	=	6.44 cfs @	12.06 hrs,	Volume=	0.418 af
Outflow	=	6.44 cfs @	12.06 hrs,	Volume=	0.418 af, Atten= 0%, Lag= 0.0 min

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

Reach 2R: (new node)

Inflow	=	5.53 cfs @	12.06 hrs,	Volume=	0.349 af
Outflow	=	5.53 cfs @	12.06 hrs,	Volume=	0.349 af, Atten= 0%, Lag= 0.0 min

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



LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	MONUMENT	
	IRON PIPE/ROD	
	BUILDING	
	SIGN	
	EDGE PAVEMENT	
	CURBLINE	
124	CONTOURS	
OHE	OVERHEAD ELEC. & TEL.	
	UTILITY POLE	
	LIGHT POLE	
	CATCH BASIN	
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	RAILROAD	
	ZONE LINE	
	SPOT GRADE	36x28
	STORM DRAIN	12"SD

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

REV:	BY:	DATE:	STATUS:

GRADING & UTILITY PLAN

OF:

PARKING AREA

993 CONGRESS ST.
PORTLAND, MAINE

FOR:

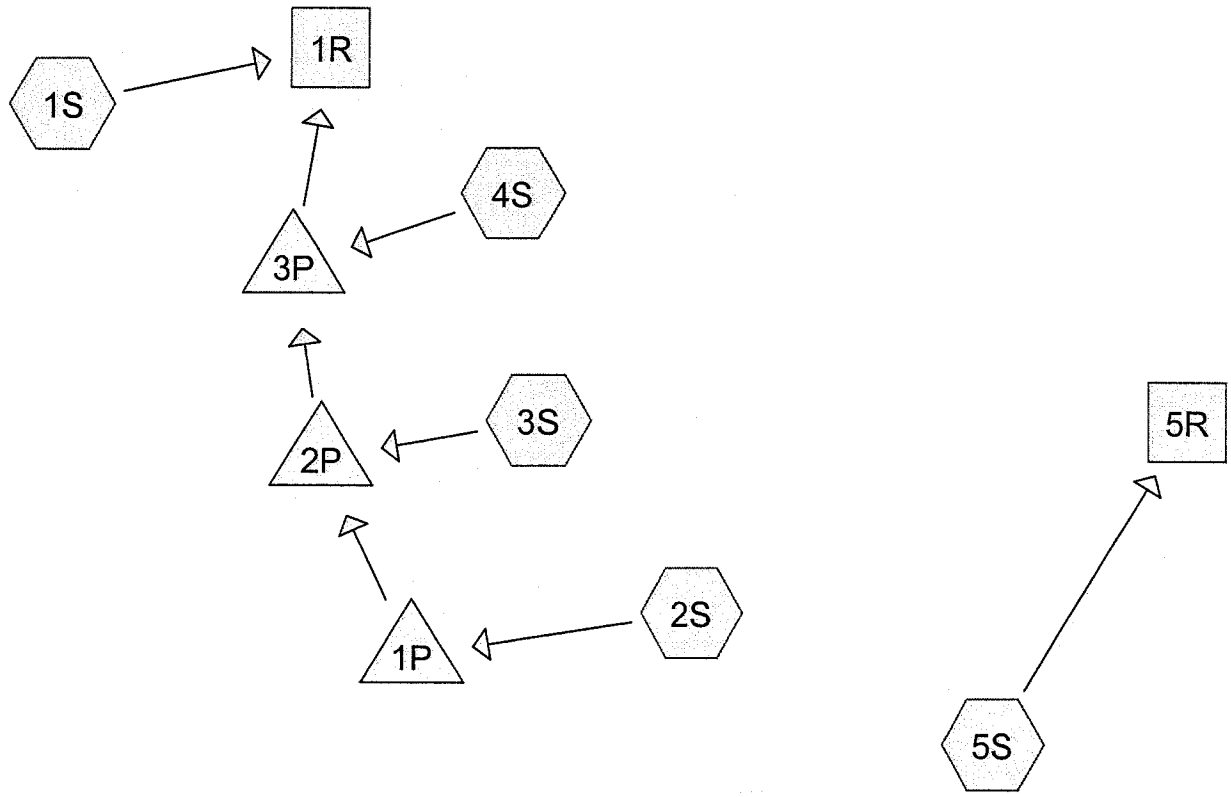
MAINE MEDICAL CENTER

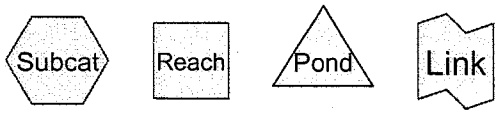
22 BRAMHALL STREET
PORTLAND, MAINE 04102

Sebago Technics
Engineering & Planning for the Future
One Chabot Street
Westbrook, Me 04092-1338
Tel (207) 856-0277

DESIGN BY:	WTC
DRAWN BY:	PLS
CHECKED BY:	WTC
DATE:	3/20/01
SCALE:	1" = 20'
FIELD BK:	737
PROJ. NO:	01306
DRAWING:	01306GU

SHEET 3 OF 5





Drainage Diagram for 01306 MAINE MEDICAL (POST)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM

Runoff = 1.15 cfs @ 12.03 hrs, Volume= 0.072 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
0.330	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.060	61	DENSE GRASS
0.460	90	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0267	1.6		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2S: AREA DRAINING TO CB-3

Runoff = 0.55 cfs @ 12.04 hrs, Volume= 0.033 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
0.150	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.090	61	DENSE GRASS
0.310	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	20	0.1500	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
0.4	35	0.0428	1.5		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	55	Total			

Subcatchment 3S: AREA DRAINIG TO CB-2

Runoff = 0.83 cfs @ 12.04 hrs, Volume= 0.050 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
0.220	98	IMPERVIOUS
0.140	75	1/4 ACRE LOTS
0.110	61	DENSE GRASS
0.470	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	10	0.3000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.4	120	0.0208	1.4		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	130	Total			

Subcatchment 4S: AREA DRAINING TO CB-1

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.037 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
0.170	98	IMPERVIOUS
0.080	75	1/4 ACRE LOTS
0.080	61	DENSE GRASS
0.330	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	40	0.0750	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.3	100	0.0200	1.3		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.5	140	Total			

Subcatchment 5S: AREA DRAINING TO NORTH

Runoff = 1.56 cfs @ 12.06 hrs, Volume= 0.097 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
0.460	98	IMPERVIOUS
0.230	75	1/4 ACRE LOTS
0.280	61	DENSE GRASS
0.150	55	WOODS
1.120	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	85	0.0100	2.0		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	265	Total			

Reach 1R: (new node)

Inflow = 2.98 cfs @ 12.05 hrs, Volume= 0.191 af
Outflow = 2.98 cfs @ 12.05 hrs, Volume= 0.191 af, Atten= 0%, Lag= 0.0 min

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

Reach 5R: (new node)

Inflow = 1.56 cfs @ 12.06 hrs, Volume= 0.097 af
Outflow = 1.56 cfs @ 12.06 hrs, Volume= 0.097 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 node)

Inflow = 0.55 cfs @ 12.04 hrs, Volume= 0.033 af
Outflow = 0.55 cfs @ 12.05 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.3 min
Primary = 0.55 cfs @ 12.05 hrs, Volume= 0.033 af

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

Peak Elev= 96.56' Storage= 20 cf
Plug-Flow detention time= 2.3 min calculated for 0.033 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 132.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 2P: (new node)

Inflow	=	1.38 cfs @	12.05 hrs,	Volume=	0.083 af
Outflow	=	1.38 cfs @	12.05 hrs,	Volume=	0.083 af, Atten= 0%, Lag= 0.2 min
Primary	=	1.38 cfs @	12.05 hrs,	Volume=	0.083 af

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

Peak Elev= 96.87' Storage= 29 cf
Plug-Flow detention time= 1.2 min calculated for 0.083 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 68.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 3P: (new node)

Inflow	=	1.89 cfs @	12.06 hrs,	Volume=	0.120 af
Outflow	=	1.88 cfs @	12.06 hrs,	Volume=	0.120 af, Atten= 1%, Lag= 0.3 min
Primary	=	1.88 cfs @	12.06 hrs,	Volume=	0.120 af

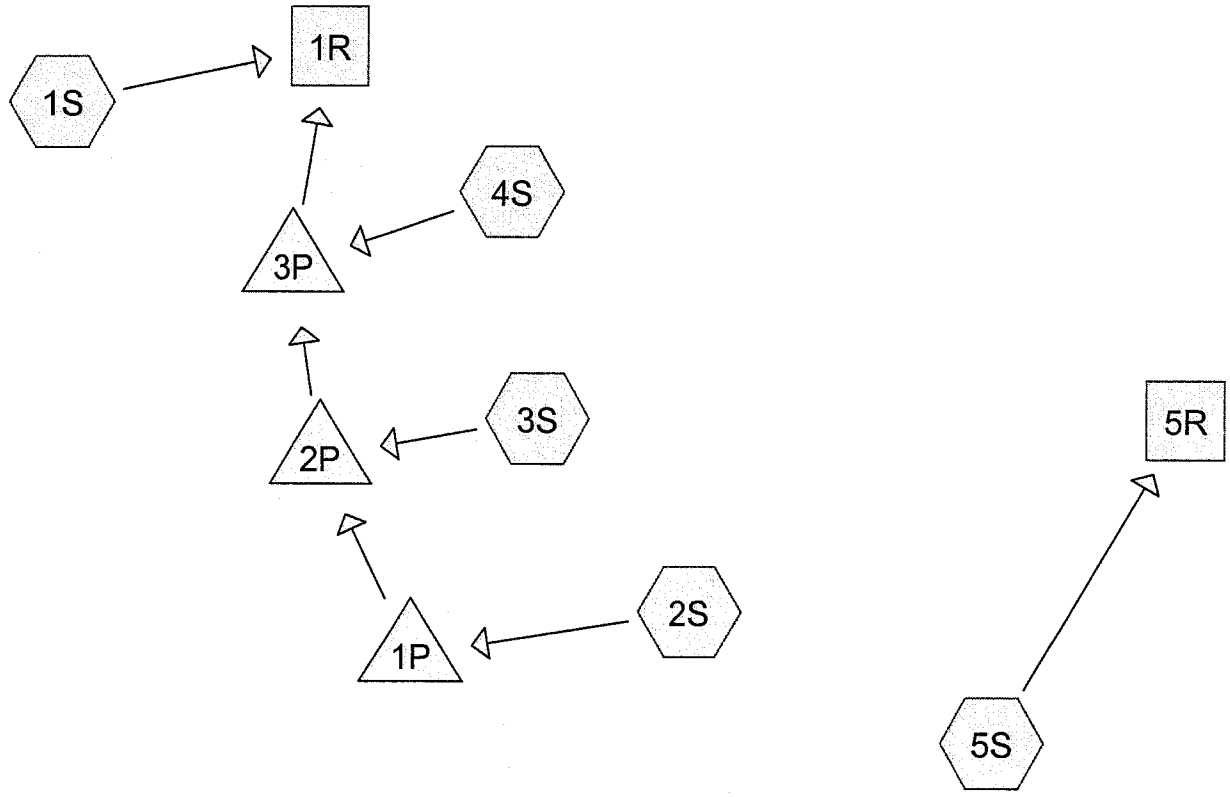
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

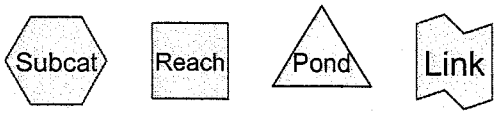
Peak Elev= 97.09' Storage= 36 cf
Plug-Flow detention time= 1.0 min calculated for 0.120 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 65.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900





Drainage Diagram for 01306 MAINE MEDICAL (POST)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM

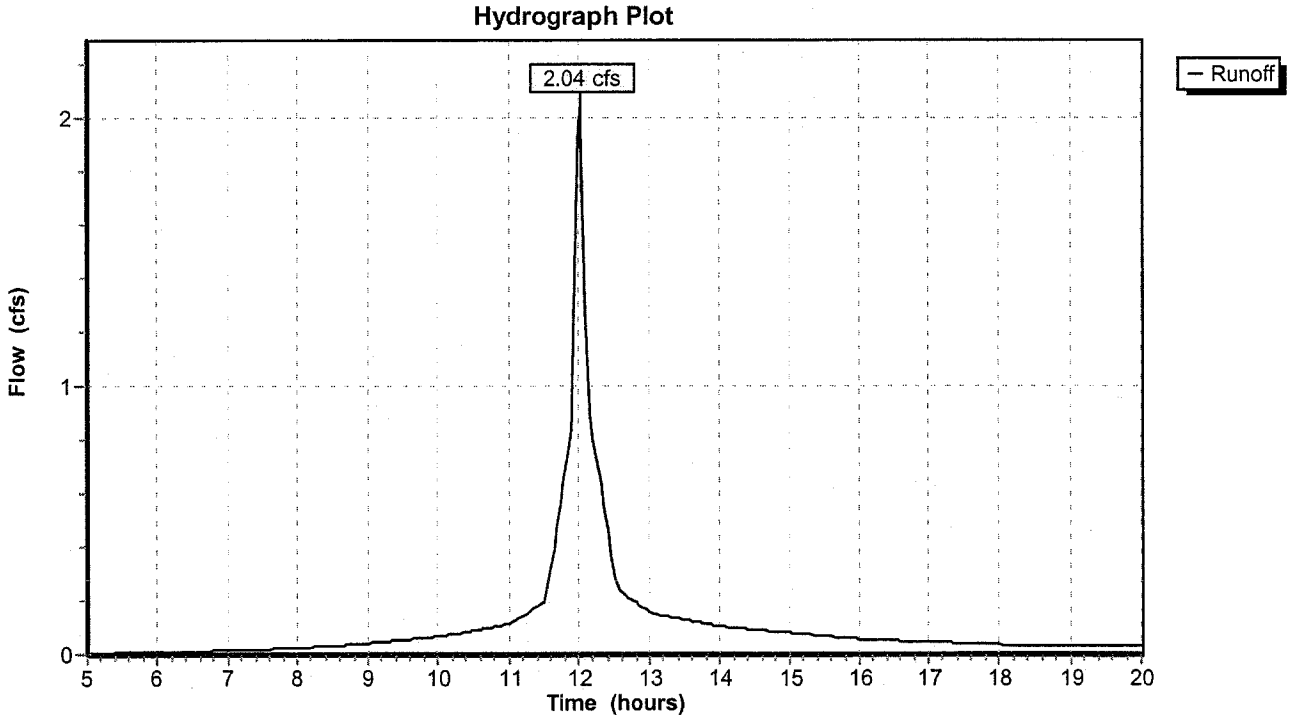
Runoff = 2.04 cfs @ 12.02 hrs, Volume= 0.130 af

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
0.330	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.060	61	DENSE GRASS
0.460	90	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0267	1.6		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM



Subcatchment 2S: AREA DRAINING TO CB-3

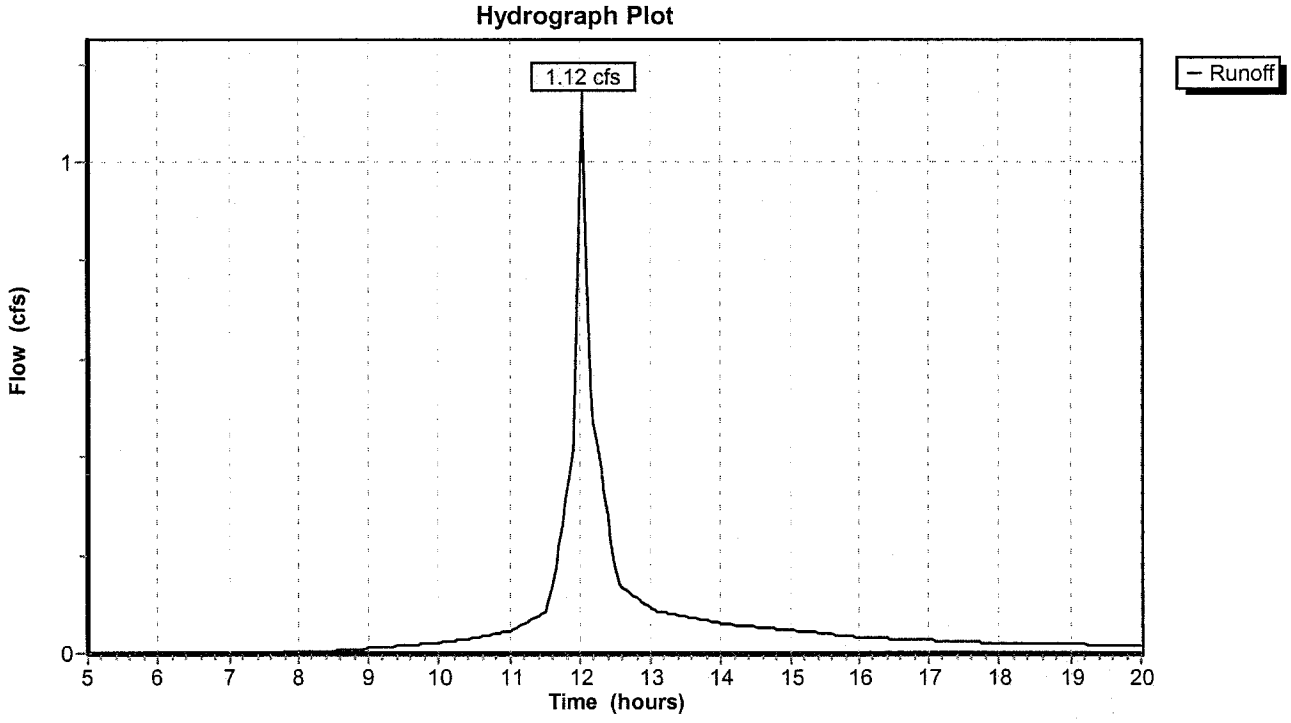
Runoff = 1.12 cfs @ 12.04 hrs, Volume= 0.068 af

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
0.150	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.090	61	DENSE GRASS
0.310	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	20	0.1500	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
0.4	35	0.0428	1.5		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	55	Total			

Subcatchment 2S: AREA DRAINING TO CB-3



Subcatchment 3S: AREA DRAINIG TO CB-2

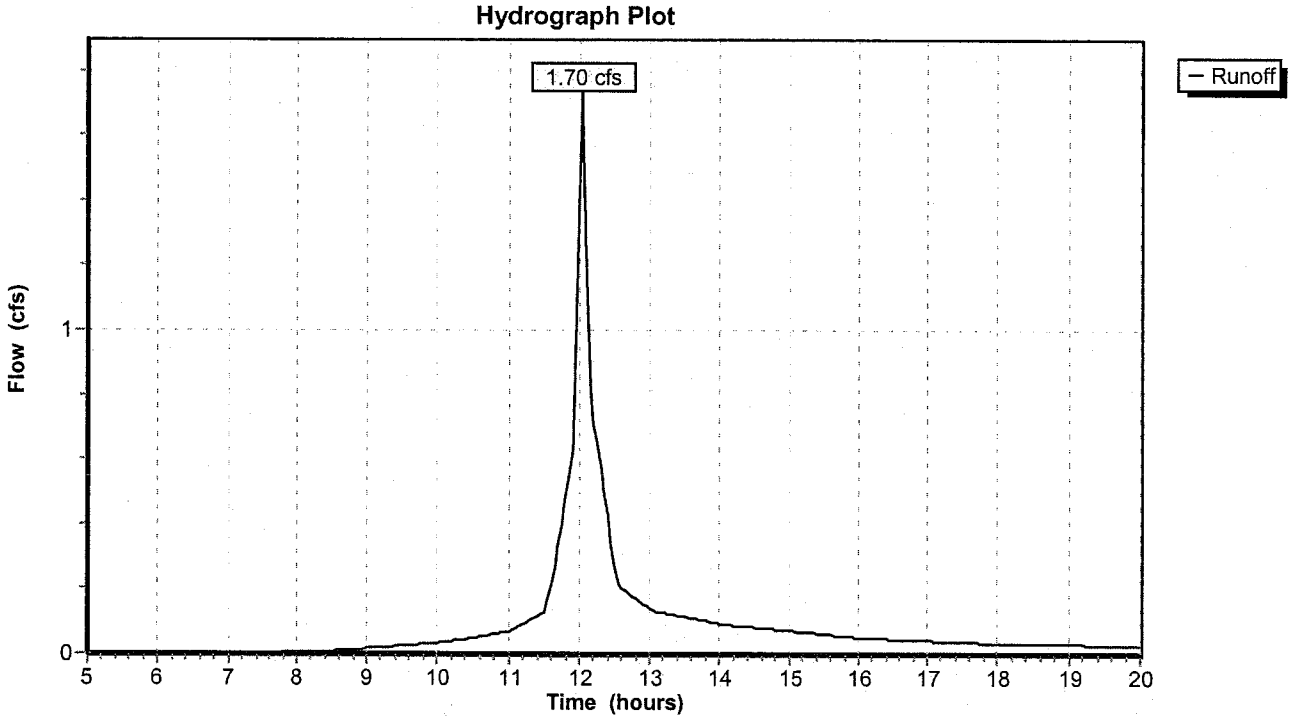
Runoff = 1.70 cfs @ 12.04 hrs, Volume= 0.103 af

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
0.220	98	IMPERVIOUS
0.140	75	1/4 ACRE LOTS
0.110	61	DENSE GRASS
0.470	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	10	0.3000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.4	120	0.0208	1.4		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	130	Total			

Subcatchment 3S: AREA DRAINIG TO CB-2



Subcatchment 4S: AREA DRAINING TO CB-1

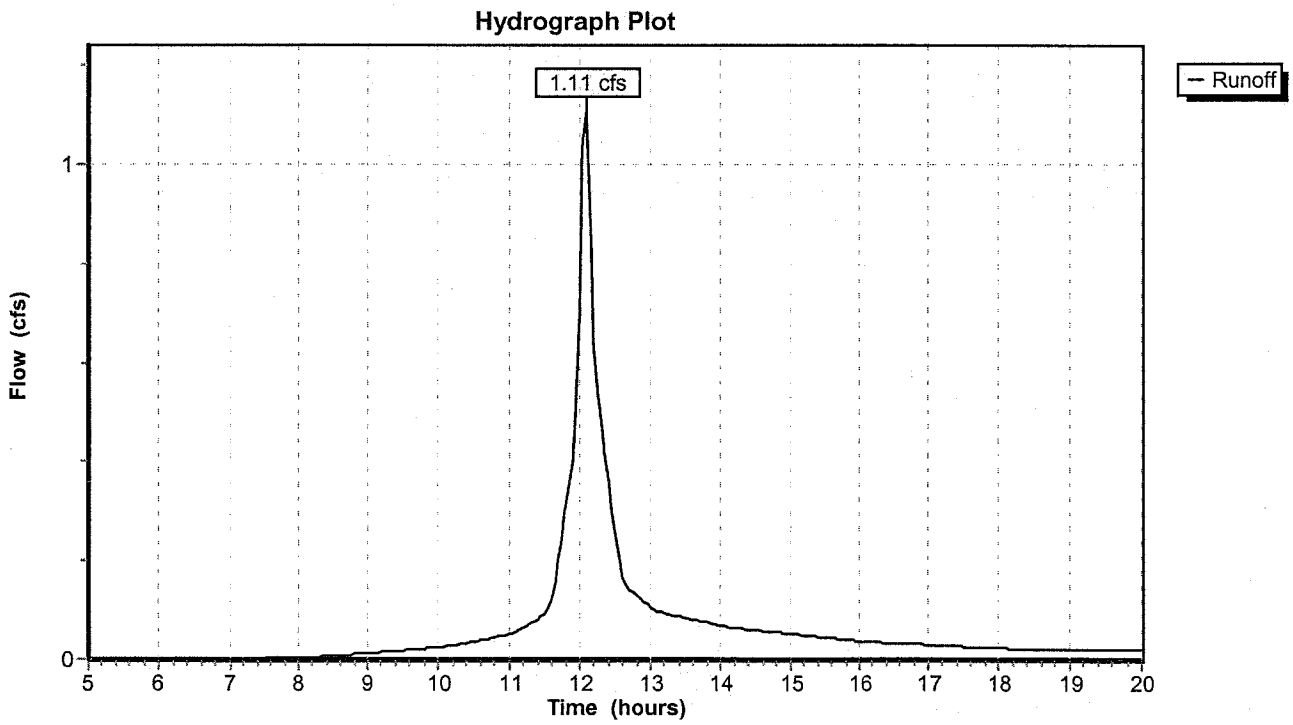
Runoff = 1.11 cfs @ 12.08 hrs, Volume= 0.075 af

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
0.170	98	IMPERVIOUS
0.080	75	1/4 ACRE LOTS
0.080	61	DENSE GRASS
0.330	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	40	0.0750	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.3	100	0.0200	1.3		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.5	140	Total			

Subcatchment 4S: AREA DRAINING TO CB-1



Subcatchment 5S: AREA DRAINING TO NORTH

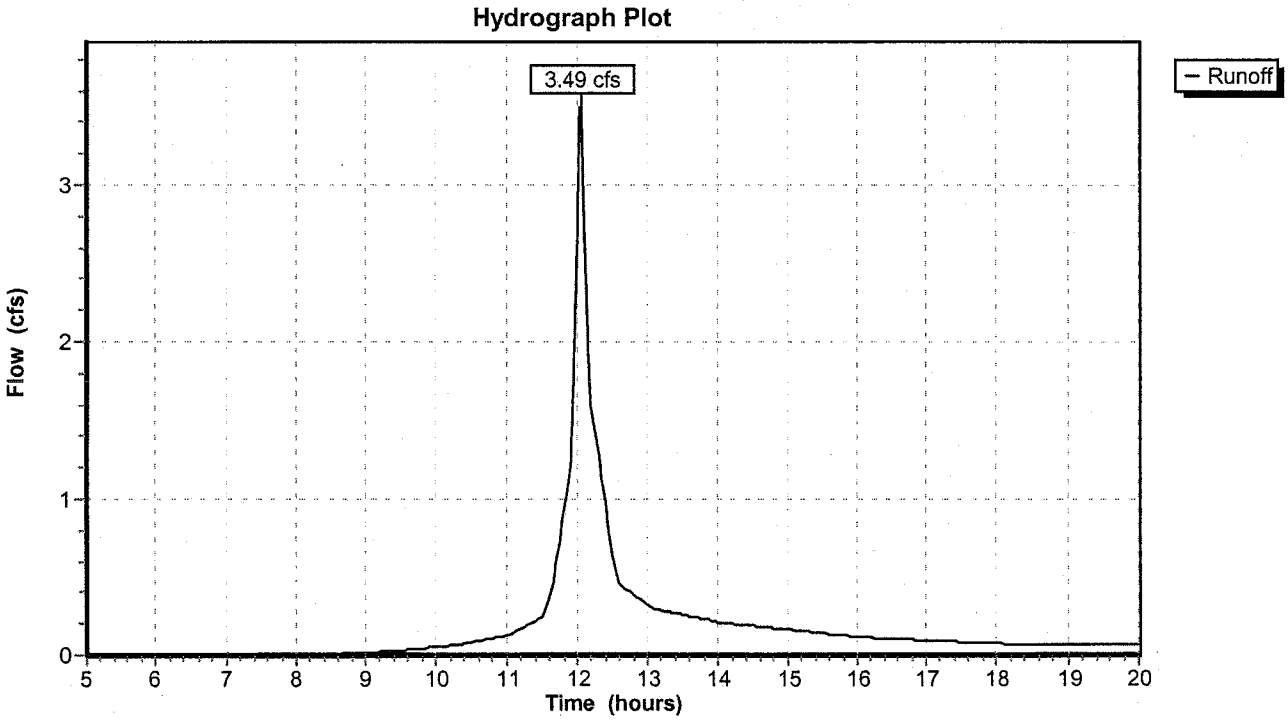
Runoff = 3.49 cfs @ 12.05 hrs, Volume= 0.214 af

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
0.460	98	IMPERVIOUS
0.230	75	1/4 ACRE LOTS
0.280	61	DENSE GRASS
0.150	55	WOODS
1.120	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	85	0.0100	2.0		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	265	Total			

Subcatchment 5S: AREA DRAINING TO NORTH

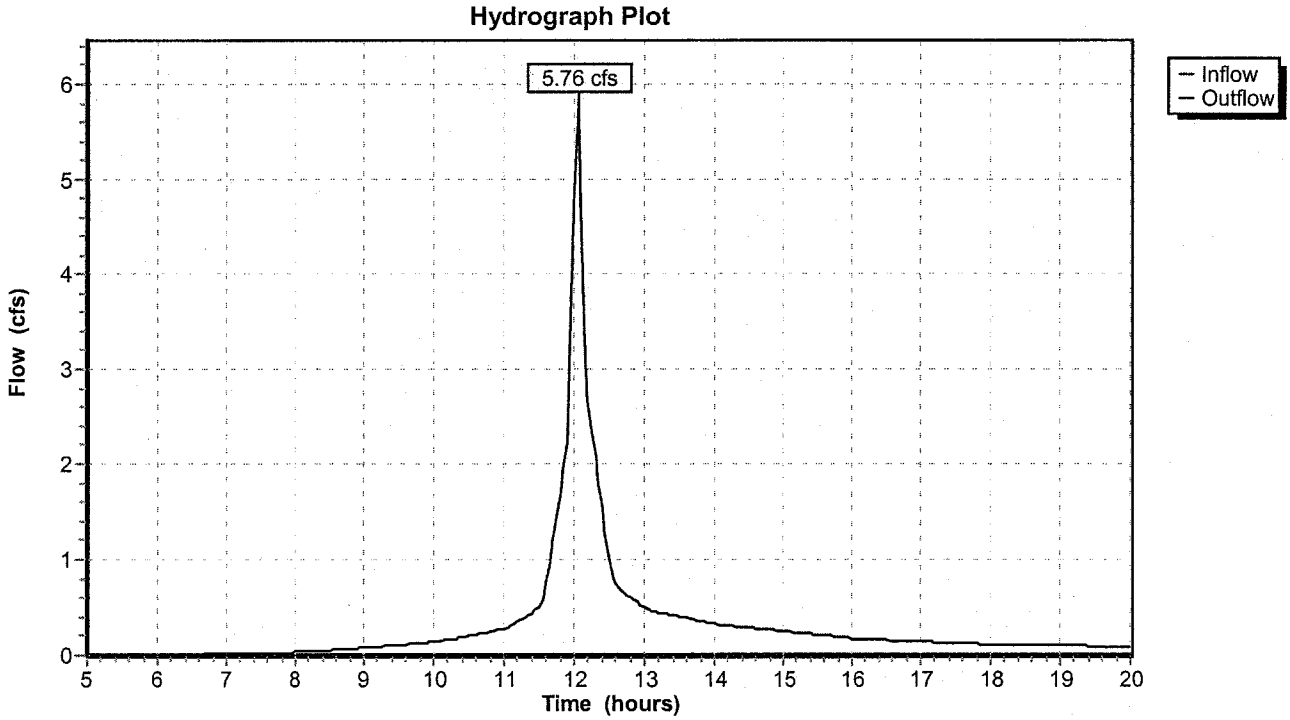


Reach 1R: (new node)

Inflow	=	5.76 cfs @	12.05 hrs,	Volume=	0.376 af
Outflow	=	5.76 cfs @	12.05 hrs,	Volume=	0.376 af, Atten= 0%, Lag= 0.0 min

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

Reach 1R: (new node)

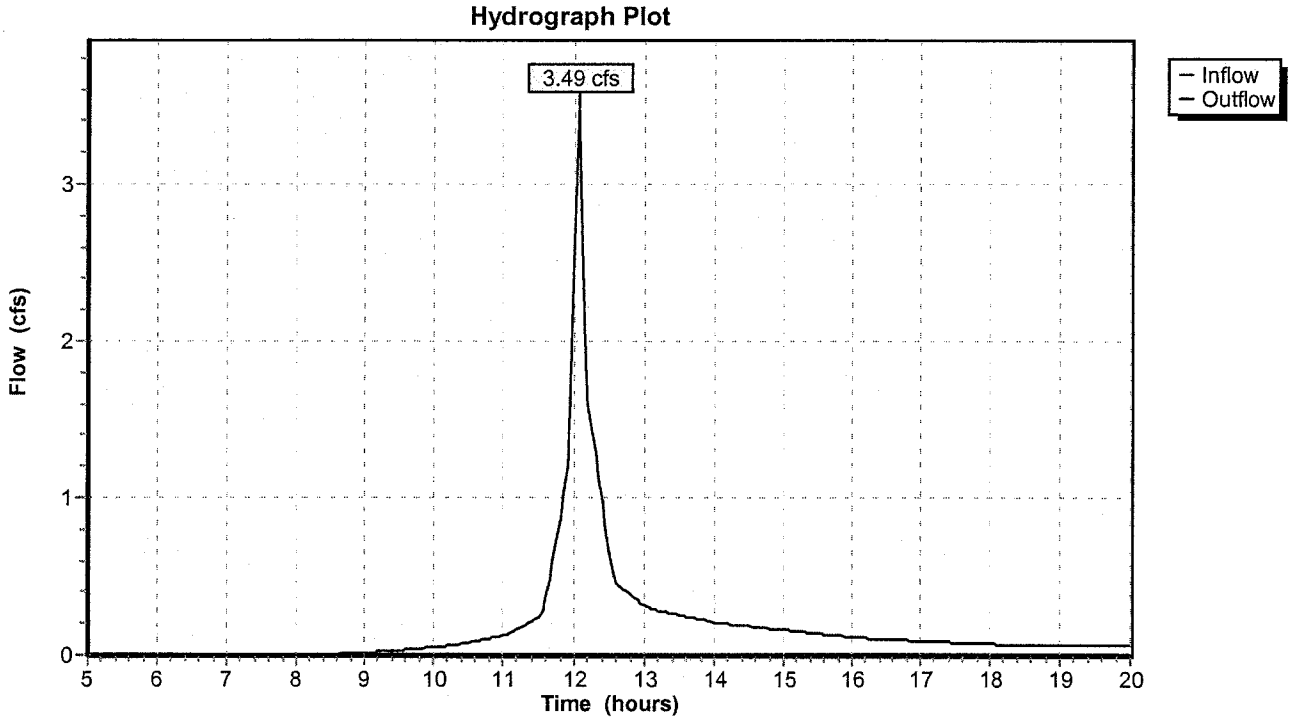


Reach 5R: (new node)

Inflow	=	3.49 cfs @	12.05 hrs,	Volume=	0.214 af
Outflow	=	3.49 cfs @	12.05 hrs,	Volume=	0.214 af, Atten= 0%, Lag= 0.0 min

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

Reach 5R: (new node)



Pond 1P: (new node)

Inflow	=	1.12 cfs @	12.04 hrs,	Volume=	0.068 af
Outflow	=	1.12 cfs @	12.04 hrs,	Volume=	0.068 af, Atten= 0%, Lag= 0.3 min
Primary	=	1.12 cfs @	12.04 hrs,	Volume=	0.068 af

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

Peak Elev= 96.85' Storage= 29 cf
Plug-Flow detention time= 1.6 min calculated for 0.068 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

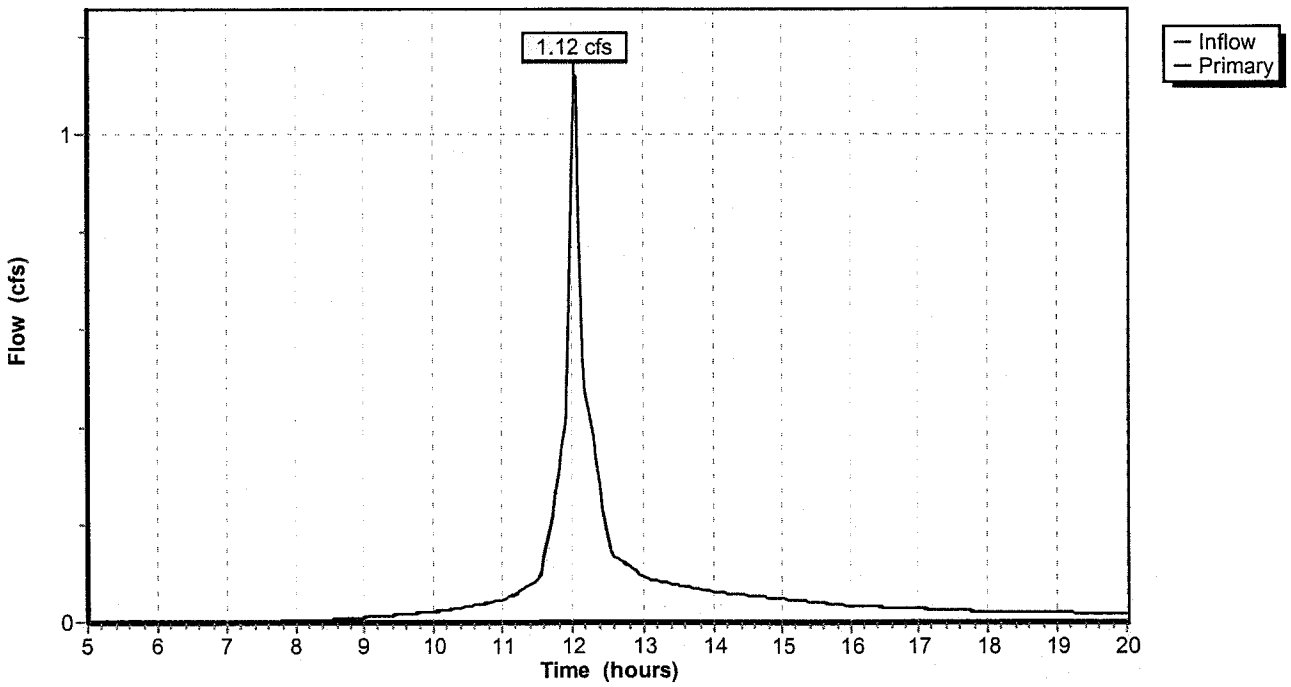
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 132.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 1P: (new node)

Hydrograph Plot



Pond 2P: (new node)

Inflow	=	2.82 cfs @	12.04 hrs,	Volume=	0.171 af
Outflow	=	2.84 cfs @	12.05 hrs,	Volume=	0.171 af, Atten= 0%, Lag= 0.3 min
Primary	=	2.84 cfs @	12.05 hrs,	Volume=	0.171 af

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

Peak Elev= 97.59' Storage= 51 cf
Plug-Flow detention time= 0.9 min calculated for 0.170 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

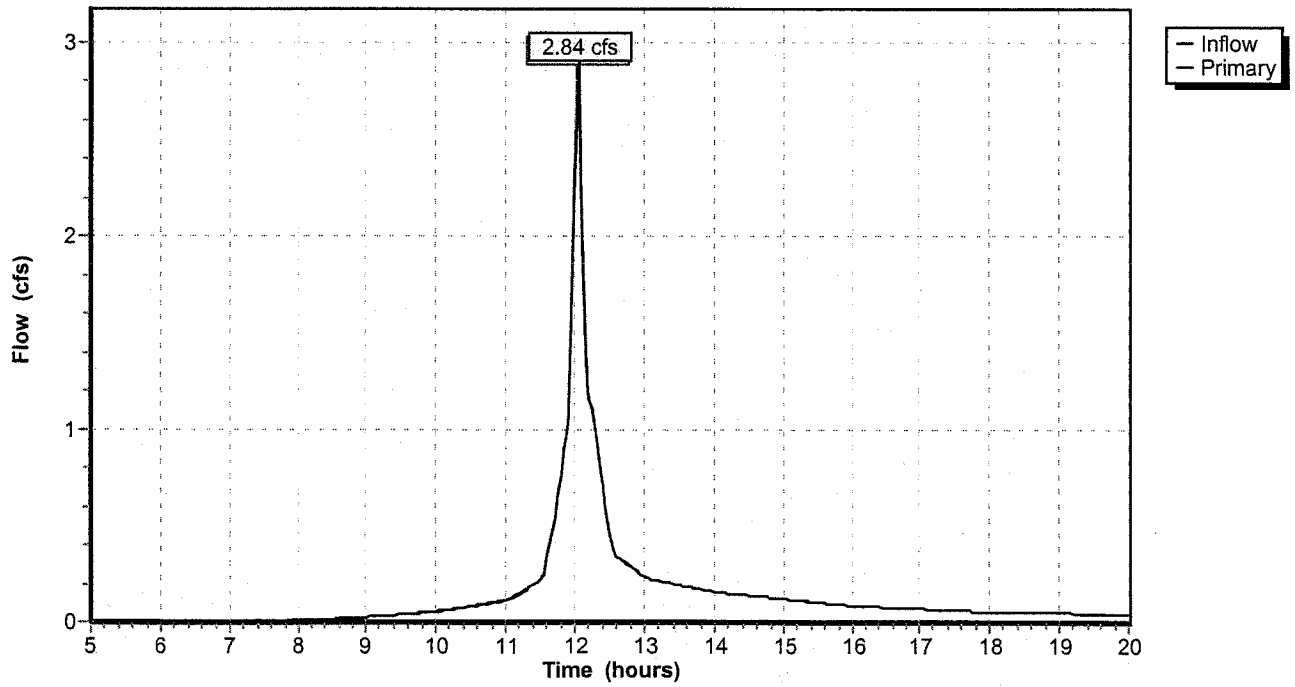
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 68.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 2P: (new node)

Hydrograph Plot



Pond 3P: (new node)

Inflow	=	3.87 cfs @	12.05 hrs,	Volume=	0.246 af
Outflow	=	3.84 cfs @	12.06 hrs,	Volume=	0.246 af, Atten= 1%, Lag= 0.3 min
Primary	=	3.84 cfs @	12.06 hrs,	Volume=	0.246 af

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

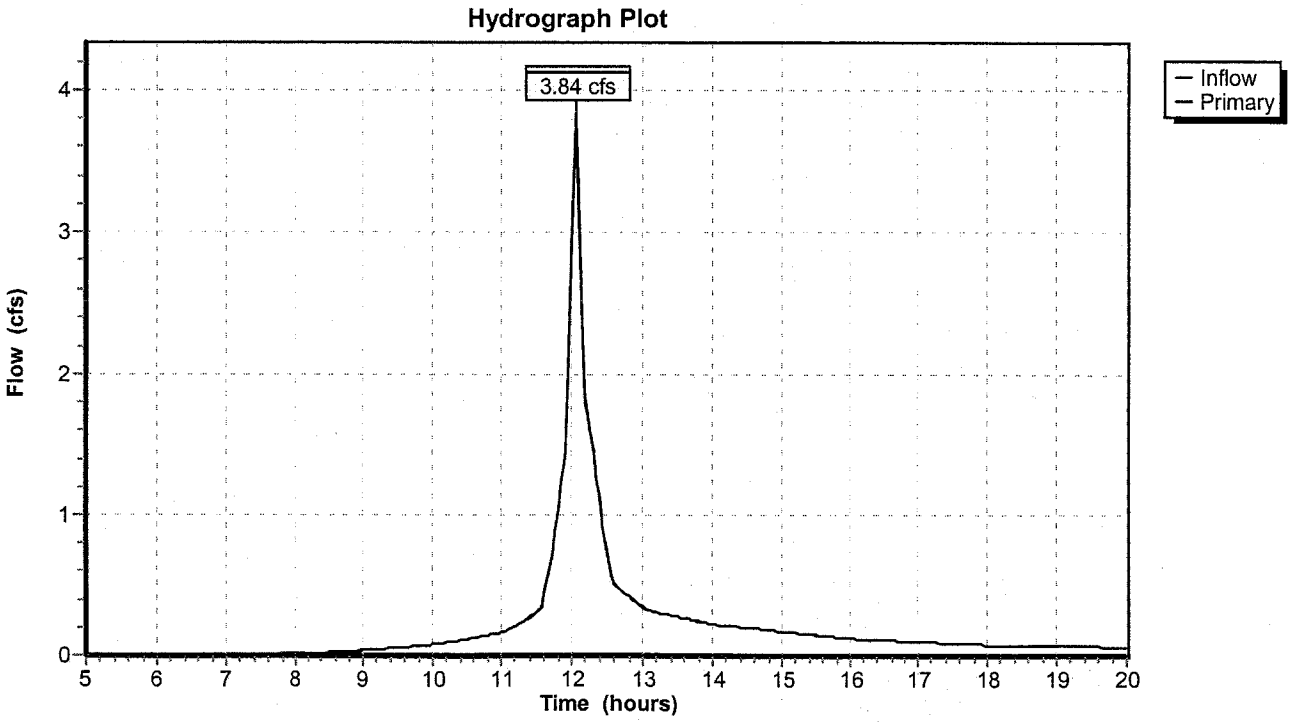
Peak Elev= 98.13' Storage= 67 cf
Plug-Flow detention time= 0.7 min calculated for 0.245 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

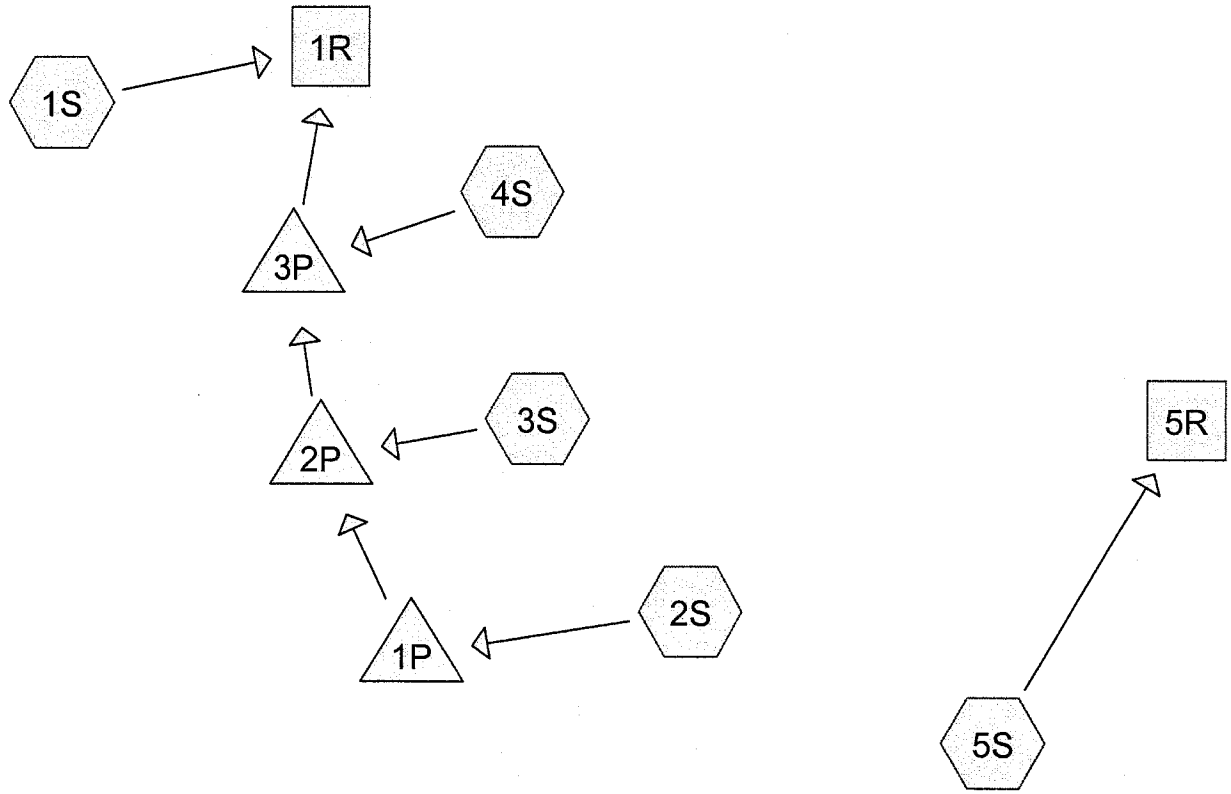
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

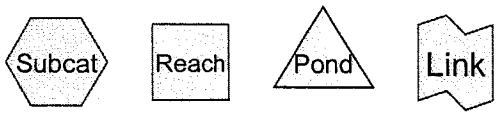
Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 65.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 3P: (new node)







Drainage Diagram for 01306 MAINE MEDICAL (POST)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM

Runoff = 2.46 cfs @ 12.02 hrs, Volume= 0.158 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
0.330	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.060	61	DENSE GRASS
0.460	90	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0267	1.6		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2S: AREA DRAINING TO CB-3

Runoff = 1.40 cfs @ 12.04 hrs, Volume= 0.086 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
0.150	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.090	61	DENSE GRASS
0.310	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	20	0.1500	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
0.4	35	0.0428	1.5		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	55	Total			

Subcatchment 3S: AREA DRAINIG TO CB-2

Runoff = 2.12 cfs @ 12.04 hrs, Volume= 0.130 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
0.220	98	IMPERVIOUS
0.140	75	1/4 ACRE LOTS
0.110	61	DENSE GRASS
0.470	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	10	0.3000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.4	120	0.0208	1.4		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	130	Total			

Subcatchment 4S: AREA DRAINING TO CB-1

Runoff = 1.38 cfs @ 12.08 hrs, Volume= 0.094 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
0.170	98	IMPERVIOUS
0.080	75	1/4 ACRE LOTS
0.080	61	DENSE GRASS
0.330	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	40	0.0750	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.3	100	0.0200	1.3		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.5	140	Total			

Subcatchment 5S: AREA DRAINING TO NORTH

Runoff = 4.46 cfs @ 12.05 hrs, Volume= 0.274 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
0.460	98	IMPERVIOUS
0.230	75	1/4 ACRE LOTS
0.280	61	DENSE GRASS
0.150	55	WOODS
1.120	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	85	0.0100	2.0		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	265	Total			

Reach 1R: (new node)

Inflow = 7.03 cfs @ 12.05 hrs, Volume= 0.467 af
Outflow = 7.03 cfs @ 12.05 hrs, Volume= 0.467 af, Atten= 0%, Lag= 0.0 min

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

Reach 5R: (new node)

Inflow = 4.46 cfs @ 12.05 hrs, Volume= 0.274 af
Outflow = 4.46 cfs @ 12.05 hrs, Volume= 0.274 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 node)

Inflow = 1.40 cfs @ 12.04 hrs, Volume= 0.086 af
Outflow = 1.40 cfs @ 12.04 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.3 min
Primary = 1.40 cfs @ 12.04 hrs, Volume= 0.086 af

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

Peak Elev= 97.00' Storage= 33 cf
Plug-Flow detention time= 1.4 min calculated for 0.085 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 132.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 2P: (new node)

Inflow	=	3.51 cfs @	12.04 hrs,	Volume=	0.215 af
Outflow	=	3.51 cfs @	12.05 hrs,	Volume=	0.215 af, Atten= 0%, Lag= 0.3 min
Primary	=	3.51 cfs @	12.05 hrs,	Volume=	0.215 af

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

Peak Elev= 97.96' Storage= 62 cf
Plug-Flow detention time= 0.8 min calculated for 0.215 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 68.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 3P: (new node)

Inflow	=	4.80 cfs @	12.05 hrs,	Volume=	0.309 af
Outflow	=	4.72 cfs @	12.06 hrs,	Volume=	0.309 af, Atten= 2%, Lag= 0.4 min
Primary	=	4.72 cfs @	12.06 hrs,	Volume=	0.309 af

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

Peak Elev= 98.77' Storage= 86 cf
Plug-Flow detention time= 0.7 min calculated for 0.309 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 65.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Sebago Technics
Engineering & Planning for the Future

September 20, 2001
01306

Richard Knowland, Senior Planner
Planning & Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Site Plan Application, Maine Medical Center, 22 Bramhall Street

Dear Richard:

On behalf of Maine Medical Center, we are pleased to submit ten (10) copies of the enclosed plans and associated information for a Site Plan Application for a parking lot upgrade at 993 Congress Street. The 1.4+- acre site (Map 65, Block A, Lot 1) is located in the B2 (Community Business) Zone and currently consists of paved areas as well as hard packed gravel areas. The development proposal consists of improving the existing paving area for a total of 100 paved parking spaces. Included within these 100 spaces are 4 handicapped spaces. The site plans depict the Classic Eyewear building (Map 65, Block A, Lot 22), however, no improvements are proposed on this lot.

The proposed parking area will be used as overflow parking for Maine Medical Center and they will provide a shuttle bus for users of this parking area. Maine Medical estimates the use of the parking area to be 5 days a week from 7 A.M. to 7 P.M. with shuttle buses running every half hour at peak hours and on call the remaining hours of the day. We estimate the traffic due to this development will reduce the impact on the area streets due to the use of the shuttle bus service provided by Maine Medical. The use of the shuttle bus will decrease the number of individual trips to the Bramhall and Brighton campuses. Due to the proximity of this parking area to residential areas, buffers are proposed around the perimeter of the lot as well as a stockade fence. The lighting is proposed in such a manner that will not adversely affect the surrounding residential areas.

Stormwater from the majority of the site will be intercepted by catch basins and transported via subsurface storm drains to the municipal system within Congress Street. A portion of the site will continue to sheet flow onto abutting property of the Fairfield Inn. We have discussed this proposal with Tony Lombardo and he has agreed with the concept of the stormwater

One Chabot Street P.O. Box 1339 Westbrook, Maine 04098-1339 207-856-0277 Fax 207-856-2206

management. Please see Stormwater Management Plan enclosed within this application package.

We are hopeful that we have provided the required information such that the project can receive approval. Upon your review of the enclosed plans and application materials, however, please call with any questions or if you require additional information. Thank you for your consideration.

Sincerely,

SEBAGO TECHNICS, INC.

William T. Conway

William T. Conway, R.L.A
Vice President, Landscape Architecture

Enc.

cc: Robert Cloutier, Maine Medical

Site Review Pre-Application
Multi-Family/Attached Single Family Dwellings/Two-Family Dwelling or Commercial Structures and Additions Thereto

In the interest of processing your application in the quickest possible manner, please complete the Information below for Site Plan Review

NOTEIf 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.**

Applicant: Maine Medical Center

Application Date: 9/20/01

Applicant's Mailing Address: 22 Bramhall Street

Project Name/Description: Parking Lot Improvement

Consultant/Agent: Will Conway c/o Sebago Technics, Inc.

Address Of Proposed Site: 993 Congress Street

Applicant/Agent Daytime telephone and FAX: 207-856-0277 207-856-2206 fax

Assessor's Reference, Chart#, Block. Lot#: TM65 BA-L 1

Proposed Development (Check all that apply) ____ New Building ____ Building Addition ____ Change of Use ____ Residential ____ Office ____ Retail ____ Manufacturing ____ Warehouse/Distribution X Other(Specify) Parking Lot Improvement

Proposed Building Square Footage and /or # of Units: _____

Acreage of Site: 1.4+

Zoning: B2 (Community Business)

You must Include the following with you application:

1) A Copy of Your Deed or Purchase and Sale Agreement Deed

2) 7 sets of Site Plan packages containing the information found in the attached sample plans and checklist.

(Section 14-522 of the Zoning Ordinance outlines the process, copies are available for review at the counter, photocopies are $ 0.25 per page)

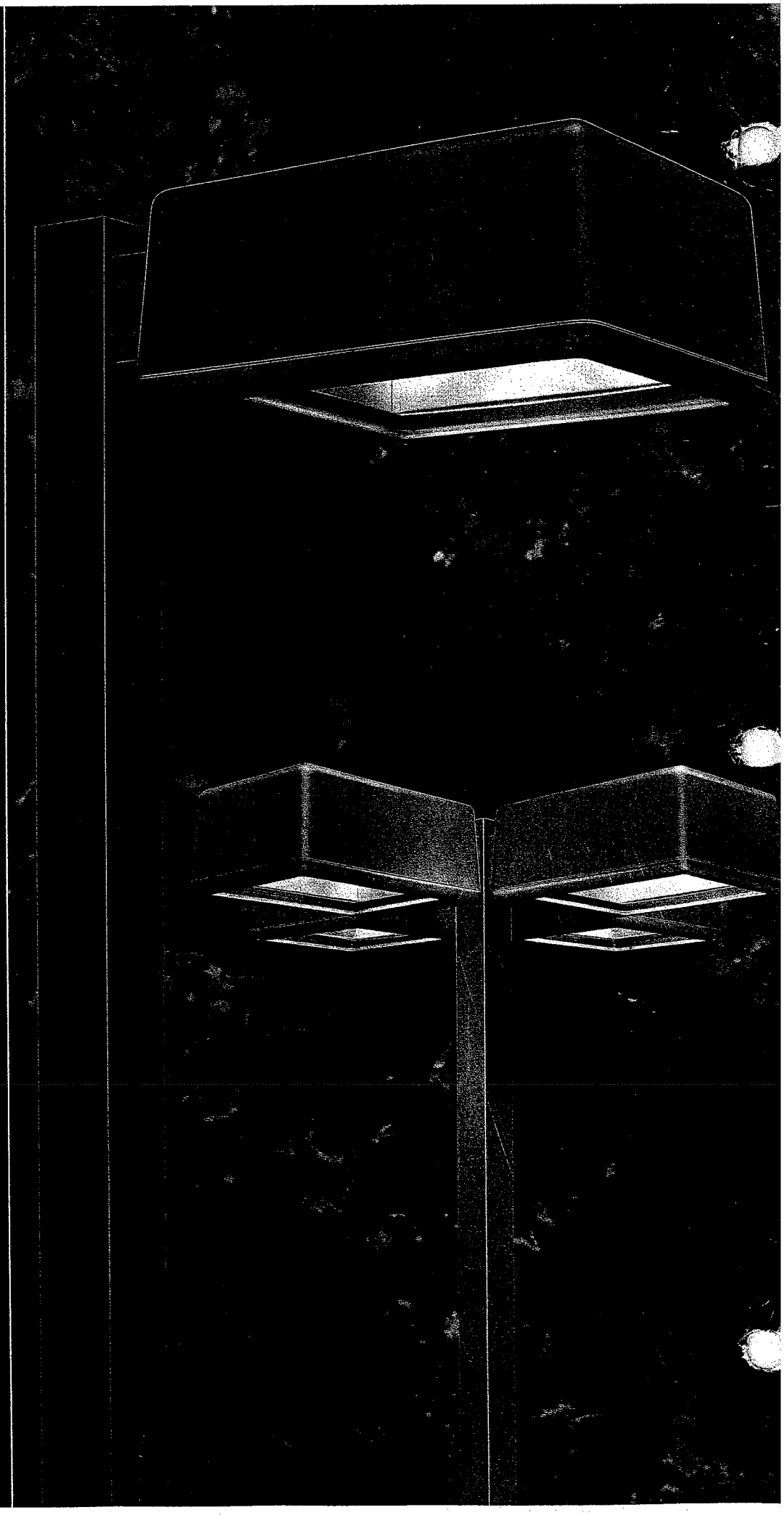
I hereby certify that I am the Owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if an approval for the proposed project or use 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 approval at any reasonable hour to enforce the provisions of the codes applicable to this approval.

Signature of applicant: William J. Conway / Agent	Date: 9/20/01

Site Review Fee: Major $500.00 Minor 400.00

This application is for site review ONLY, a Building Permit application and associated fees will be required prior to construction.

CAMBRIDGE



SPAULDING
LIGHTING, INC.
1736 Dreman Avenue
Cincinnati, OH 45223
(513) 541-3486
Fax: (513) 541-1454

LUMINAIRE ORDERING GUIDE

UL & CSA Listed.

Model

CEI - small size

CEII - large size

Mounting Mode

PM

Pole Mount

WB

Wall Bracket

Lamp Type/ Watts

small size
S100 S150 S250 S400 M175 M250 M400

large size
S400 S1000 M400 M1000

Reflector

I-asymmetric **III**-asymmetric **IV**-forward throw **VS**-symmetric square

Voltage

120 208 240 277 347 480 MT-multi-tap

Options

PC - photoelectric cell 120-277v, up to 400w.
PR - photo receptacle (less cell)
VG - polycarbonate vandal guard
SF - single fuse
DF - double fuse
CS - house side cutoff shield

Colors for Luminaire and Pole

DBZ	SSB	RRN	SGB	WHT	FGP	TBP	RBP	CMB	SOS
dark bronze	beige	rocket red	black	white	forest green	teal blue	royal blue	burgundy	silver

Luminaire Ordering Example:

MODEL		MOUNTING MODE		LAMP TYPE WATTS		REFLECTOR		VOLTAGE		OPTIONS		COLOR
CEII	–	PM	–	S400	–	IV	–	MT	–	PC	–	SOS

CEI
CEII

PM; pole mount:
std-6" arm for CEI
std-10" arm for CEII
WB; wall bracket

small: S100, S150, S250, S400, M175, M250, M400
large: S400, S1000, M400, M1000

I; symmetric
III; asymmetric
IV; forward throw
VS; V-square

120
208
240
277
347
480
MT; multi-tap

PC; photoelectric cell 120-277v, up to 400w
PR; photo receptacle (less cell)
SF; single fuse
DF; double fuse
VG; polycarbonate vandal guard
CS; house side cutoff shield

DBZ; dark bronze
SSB; beige
RNN; rocket red
SGB; black
WHT; white
FGP; forest green
TBP; teal blue
RBP; royal blue
CMB; burgundy
SOS; silver

POLE ORDERING

Refer to Poles/Brackets Section for ordering information.

SPAULDING LIGHTING, INC.

Know all Men by these Presents,

That VSH REALTY, INC., A Rhode Island Corporation, having a place of business in Canton, Massachusetts

in consideration of One Dollar($1.00) and other good and valuable considerations

paid by George M. Hutchins

and whose mailing address is P.O. Box 8353
1000 Congress Street
Portland, Maine 04104

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said George M. Hutchins his heirs and assigns forever,

A certain lot or parcel of land with the buildings thereon, situated on Congress Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the northerly side of Congress Street at a point One Hundred (100) feet easterly from Hemlock Street, which point is marked by an iron pipe set in the ground; thence by said northerly side of Congress Street easterly Twenty-eight and five tenths (28.5) feet, more or less, to the center of a cement walk between the building on the lot hereby conveyed and the building on the lot easterly thereof; thence at approximately a right angle with Congress Street by the center of said cement walk, Ninety-five (95) feet, more or less, to the easterly line of land conveyed by Lucy E. Thomes to Arthur E. Marks, et al, by deed dated March 29, 1898, and recorded in Cumberland County Registry of Deeds, in Book 660, Page 332; thence southerly by said Marks land Ninety-five (95) feet, more or less, to Congress Street and the point of beginning. Being the premises numbered 999-1001 Congress Street.

Also a certain lot or parcel of land, with the buildings thereon, situated on the northerly side of Congress Street in the said City of Portland, bounded and described as follows:

Beginning on the northerly side line of Congress Street at the southeasterly corner of land conveyed by John W. Deering to Glenn H. Reed by deed dated July 30, 1953, and recorded in said Registry of Deeds in Book 2143, Page 53; thence easterly by the northerly side line of Congress Street Forty-nine and five tenths (49.5) feet, more or less, to the southwesterly corner of land conveyed by Augustus W. Berry to Horatio N. Jose by deed dated November 14, 1885, and recorded in said Registry of Deeds, in Book 522, Page 206; thence northerly by said Jose land and by land conveyed by John W. Deering to Horatio N. Jose by deed dated April 11, 1889, recorded in said Registry of Deeds in Book 556, Page 239 One Hundred Thirty-seven and five tenths (137.5) feet, more or less, to the southerly side line of land formerly of A.T. Jones, et al; thence westerly by said Jones land Forty-two and seventy-six hundredths (42.76) feet, more or less, to the easterly corner of land formerly of Alvin Deering; thence

4935/213

Forty-three (143) feet, more or less, to the point of beginning. Being the premises numbered 995-997 Congress Street.

Being the same premises conveyed to the Grantor herein by deed of Joseph J. Bruni et al dated March 5, 1970 and recorded in said Registry in Book 3119, Page 379.

with all the privileges and appurtenances thereof to the said George M. Hutchins

his heirs and assigns, to him and their use and behoof forever.

And it does COVENANT with the said Grantee, his heirs and assigns, that it is lawfully seized in fee of the premises that they are free of all encumbrances: except as aforesaid

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors shall and will WARRANT and DEFEND the same to the said Grantee, his heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, it, the said V.S.H. Realty Inc. has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Francis N. Alger, its Exec. vice president, thereunto duly authorized, this twenty-third day of March in the year of our Lord one thousand nine hundred and eighty-two

Signed, Sealed and Delivered
in presence of
Margaret A. McFadden

V.S.H. Realty Inc.
By Francis N. Alger
Francis N. Alger
Exec. vice president

State of Massachusetts
Norfolk

March 23, 1982.

Personally appeared the above named Francis N. Alger in his capacity as Exec. vice pres. of the said V.S.H. Realty Inc. as aforesaid and acknowledged the above instrument to be his free act and deed, and the free act and deed of said corporation.

Before me,

Notary Public.

MAR 25 1982
REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 4 H 27 M PM, and recorded in
Book 4935 PAGE 213 Edward L. Bernstein Register

[illegible]

COPY

That CITY OF PORTLAND, a body politic and corporate

a Corporation organized and existing under the laws of the State

of Maine and located at Portland

in the County of Cumberland and State of Maine

in consideration of Ninety-one Thousand ($91,000) Dollars

paid by GEORGE M. HUTCHINS, of Portland, Maine

and whose mailing address is 113 Vannah Avenue, Portland, Maine

the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said

GEORGE M. HUTCHINS, his

heirs and assigns forever,

PARCEL 1

~~a certain~~ lot or parcel of land with the buildings thereon, situated in the City of Portland, County of Cumberland and State of Maine, and located on the easterly side of Marston Street, being bounded and described as follows:

Beginning at a point marked by an iron pin on the easterly side of Marston Street at the Northwesterly corner of land now or formerly of Earl B. Sanborn, Jr. et al, which point is Seventy (70) feet Northeasterly from an iron at the corner of Marston and Cherry Streets; thence N21°-40'30"E along the easterly side of Marston Street Sixty-six and Twenty-four hundredths (66.24) feet to an iron; thence N2°-48'W fifty and thirteen hundredths (50.13) feet along Marston Street to an iron; thence Northerly along Marston Street One Hundred (100) feet, more or less, to land formerly of the Portland Terminal Co.; thence Southeasterly along said Terminal Co. land One Hundred Fifty (150) feet, more or less, to a point at the Northeasterly corner of the land herein conveyed; thence Southwesterly along other land formerly of said Terminal Co. Fifty (50) feet, more or less, to a point; thence again Southwesterly along said Terminal Co. land One Hundred Sixteen (116) feet, more or less, to a point at the Northwesterly corner of land now or formerly of John C. Pellerin et al; thence S21°-40'30"W along said Pellerin land Seventy-seven (77) feet to an iron and land now or formerly of Udell Bramson; thence N68°-19'30"W along said Bramson land Fifty (50) feet to an iron at the Northwesterly corner of the Bramson land; thence Southwesterly along said Bramson land Twenty-one (21) feet to an iron at the Northeasterly corner of the said Sanborn land; thence N68°-19'-30"W along the said Sanborn land Fifty (50) feet to the iron pin at the point of beginning, which parcel contains about 28,092 square feet (0.64 acres) of land.

Said premises are hereby conveyed subject to such access rights to the above-described property which were taken by the Maine Department of Transportation, Bureau of Highways, relative to the construction of Route I-295 as set forth in a "Notice of Layout and Taking", dated January 21, 1973, as recorded in the Cumberland County Registry of Deeds in Book 3360, Page 232, to which reference is hereby made.

The above premises being all and the same premises as conveyed to the Cities of Portland and South Portland and the Towns of Cape Elizabeth and Scarborough by deed of Santino J. Viola dated December 4, 1974, and recorded in said Registry of Deeds in Book 3628, Page 92.

4590/49

Also another certain lot or parcel of land which adjoins the above-described premises and is situated on the Northerly side of Congress Street and the Southerly side of Park Avenue in the "Union Station" area of the City of Portland, County of Cumberland, State of Maine, and further bounded and described as follows:

Beginning at an iron on the Northerly side of Congress Street at the Southeasterly corner of land of V.S.H. Realty, Inc., said iron being 110.53 feet Easterly from the first angle point in the Northerly sideline of Congress Street Easterly of Hemlock Street; thence from said point of beginning and by said Congress Street S84°-57'E 93.11 feet to an iron at a line being created through land of the Portland Terminal Company, said iron being 20 feet, more or less, Westerly from the centerline of the westbound mainline track of the P. T. Co. as it now exists; thence through said land of the Portland Terminal Company by a line which is Westerly 4.00 feet, more or less, from the Westerly face of a row of concrete utility poles N2°-40'-30"W 499.28 feet to an iron, said iron being 20 feet, more or less, Westerly from the centerline of the westbound mainline track of the P.T. Co. as it now exists; then continuing by a line Westerly 4.00 feet, more or less, from the face of said utility poles N13°-20'-30"W 325.96 feet to an iron at Park Avenue, said iron being 20 feet, more or less, Westerly from the centerline of the westbound mainline track of the P. T. Co. as it now exists; then by said Park Avenue N89°-51'-30"W 249.79 feet to an iron at the corner formed by the intersection of the Southerly side of Park Avenue with the Easterly side of Marston Street; thence by said Marston Street S0°-08'-30"W 181 feet, more or less, to land now or formerly of Santino J. Viola, et al; thence by said Viola land on the following courses and distances: Southeasterly 150 feet, more or less, to a point; thence Southwesterly 50 feet, more or less, to a point; thence Southwesterly 116 feet, more or less, to an iron at land of John C. Pellerin, et al; thence by said Pellerin land and by land of Earl Brand S55°-08'-30"E 104.54 feet to an iron; thence by land of Robert C. Patterson, et al, and land of Sharon E. Beard, et al, S51°-57'-30"E 103.21 feet to an iron; thence continuing by said Beard land S1°-08'-30"W 70.67 feet to an iron at the land of Mary C. McCullum; thence by said McCullum land S67°-36'-30"E 15.00 feet to an iron; thence continuing by said McCullum land and land of Francis E. Egan, et al S22°-23'30"W 140.00 feet to land of said V.S.H. Realty, Inc.; thence by said V.S.H. Realty, Inc. on the following described courses and distances: S67°-36'-30"E 42.76 feet to an iron; thence S7°-39'W 124.63 feet to the iron at the point of beginning. These described courses are based on true meridian as taken from plans of the Portland Terminal Company.

Said second lot or parcel is hereby conveyed subject to and excepting all rights of access to or egress from Marston Street as condemned by the State of Maine against Portland Terminal Company as shown on a Department of Transportation Right-of-Way Map State Highway "295", Portland, Cumberland County, Federal Aid Project No. I-295-3 (25) dated May 1967 on file in the office of the Department of Transportation, Bureau of Highways (S.H.C. File No. 3-185).

The said second lot or parcel being all and the same premises as conveyed to the Cities of Portland and South Portland and the Towns of Cape Elizabeth and Scarborough by Portland Terminal Company by deed dated December 23, 1974, and recorded in said Registry of Deeds in Book 3636, Page 144.

Together the above-described parcelsof property contain 148,617 sq. ft. (3.41 acres) of land as shown on a "Plan of Property in Portland, Maine, made for Greater Portland Council of Governments" by Edward C. Jordan, Inc., dated July 9, 1974, Plan File No. 233.

Said premises were both conveyed to City of Portland by deed of City of South Portland, Town of Cape Elizabeth and Town of Scarborough dated November 17, 1976, a copy of which deed is recorded in said Registry in Book 3945, Page 341.

Or some part in fee the same, together with all the privileges and appurtenances thereunto belonging, to the said

GEORGE M. HUTCHINS, his

Heirs and Assigns forever.

And the said Grantor Corporation does covenant with the said

GEORGE M. HUTCHINS, his

Heirs and Assigns, that it will Warrant and Forever Defend the premises to him the said Grantee, his Heirs and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND

has caused this instrument to be sealed with its corporate seal and signed in its corporate name by John G. DePalma, its Director of Finance thereunto duly authorized, this 8th day of April in the year one thousand nine hundred and eighty.

Signed, Sealed and Delivered in presence of

CITY OF PORTLAND
(Corporate Name)

By John G. DePalma
Its Director of Finance

(Corporate Seal)

April 8, 1980.

State of Maine, County of Cumberland } ss.

Personally appeared the above named John G. DePalma, Director of Finance of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me

~~Justice of the Peace.~~
~~Notary Public.~~
Attorney at Law.

APR 15 1980
REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 4 H 08 M P.M. and recorded in
BOOK 4590 PAGE 49 Edward J. Gerstein Register

STORMWATER MANAGEMENT PLAN

Maine Medical Center
993 Congress Street
Portland, Maine

General

This Stormwater Management Plan has been prepared to evaluate the pre and post-developed conditions associated with the proposed parking lot upgrade/expansion for Maine Medical Center off Congress Street in Portland, Maine.

The total development proposal consists of constructing a parking area that will have a total of approximately 39,500 square feet of pavement with associated landscape areas, sidewalks, and stormwater management facilities. The stormwater from the impervious areas will generally sheet flow to proposed catch basins where the runoff will enter the municipal system along Congress Street or sheet flow onto abutting properties in accordance with existing conditions.

Site Characteristics

The project site currently consists of an existing paved parking area and areas of hard packed gravel. The terrain consists of generally flat slopes from the building to the outer edges of the site towards the railroad and the abutting hotels property. The proposed grading of the impervious areas will allow for sheet flow towards the catch basin so that most runoff from these areas will be intercepted and transported into the municipal system. A portion of the parking lot will continue to sheet flow toward the hotel property.

Stormwater Management

Due to the previous development of the site, the paving of existing impervious areas does not warrant stormwater runoff. Instead, the priority of the proposed stormwater system is to effectively convey runoff from the majority of the developed site into the existing municipal system within Congress Street, while limiting the existing drainage patterns onto the abutting properties to the extent practicable. To this end, a series of catch basins are proposed for the site that will be connected via subsurface storm drains to the existing municipal stormwater system within Congress Street.

Summary

The proposed development of the parking area for Maine Medical Center will include the regrading and paving of a gravel parking area as well as the resurfacing of an existing paved parking area. The runoff from the majority of the new impervious parking area will be intercepted by catch basins and be transported to the municipal system via subsurface storm drains. Remaining areas will sheet flow to abutting properties in accordance with existing drainage patterns.

Other drainage provisions will include a specific grading plan and erosion and sedimentation control plan to be implemented throughout the construction cycle. The incorporation of these measures and the drainage provisions is expected to adequately address stormwater runoff from the developed site such that the municipal storm drain system and no downstream property will be adversely impacted.

Prepared by,

SEBAGO TECHNICS, INC.

Gregory J. Boulette
Project Engineer

Shawn M. Frank, PE.
Project Manager

GJB/SMF:gjb/jc
September 21, 2001

From: Anthony Lombardo
To: Kandi Talbot
Date: Fri, Oct 12, 2001 8:50 AM
Subject: Re: 993 Congress Street - Maine Medical Center

No issues.

>>> Kandi Talbot 10/11 3:08 PM >>>
Have you had a chance to review this? If you don't have any issues, please let me know. Thanks.

Kandi

Planning & Urban Development

CITY OF PORTLAND

October 4, 2001

Mr. Will Conway
Sebago Technics
One Chabot Street
P.O. Box 1339
Westbrook, ME 04098-1339

Kandi?!

RE: 993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Mr. Conway:

After review of the plans submitted on November 28, 2000, regarding the proposed Northgate Farms PRUD located at 484-518 Allen Avenue, the following information is requested for review.

1. A standard boundary survey, stamped by a registered surveyor, must be submitted.

2. The City Arborist has reviewed the plan and is recommending the following:

   a. That the applicant substitute the 'Bradford' tree with the 'Cleveland' variety.

   b. In the furthest island to the north of the site, install an Austrian Pine, 6 – 8 ft. in height, in addition to vegetation proposed.

   c. On the westerly edge of the property, abutting the Flannery property, it is recommended that 3 – 5 Arborvitae be installed.

add to plant schedule

3. We have received the catalogue cuts of the lights, which are satisfactory. However, we need further information on the height of the light poles and the wattage of the lights. Staff will also need a lighting photometric plan to ensure that the lighting will not spillover onto abutting property and that the lighting does not exceed the maximum light levels.

4. Will Maine Medical Center be leasing the property from George Hutchins?

5. A letter of financial capability must be submitted to staff.

The Development Review Engineer, Public Works Engineer and Traffic Engineer are currently reviewing the submittal. Any further comments will be forwarded to you as soon as I receive it. If you have any questions, please do not hesitate to contact me at 874-8901.

389 Congress Street • Portland, Maine 04101 • (207) 874-8721 • FAX 756-8258 • TTY 874-8936

From: "Steve Bushey" <SBushey@DelucaHoffman.com>
To: "Kandi Talbot (E-mail)" <KCOTE@ci.portland.me.us>
Date: Fri, Oct 12, 2001 3:14 PM
Subject: Maine Medical Center Parking Lot- 932 congress St. 2001-0264

Kandi,

I have reviewed the site plan application dated 9/20/01 prepared by Sebago Technics on behalf of Maine Medical Center. I offer the following comments for your consideration.

1. The application includes only a brief summary of runoff conditions for the project. I recommend that complete drainage computations be submitted outlining the anticipated runoff conditions to the new system that will connect to the street as well as the runoff amounts to adjacent properties. The engineer should provide data regarding the capacity of the street system and determine if the street system is part of a combined sewer or not. Finally, this project will have more than 25 parking spaces, therefore the applicant should provide evidence that adequate water quality treatment will be provided to the paved area runoff. Given the size of the parking lot I suggest at least a 50% TSS removal efficiency for any BMP measures installed for the project. The MEDEP sliding scale graph suggests greater than 65% removal.

2. Is the applicant providing any type of shelter at the shuttle stop since they have stated that the buses will run every half hour? Granted, users may stay in their car and wait for the bus therefore this may not be necessary. Or they can walk to the hospital since it is only 15 min. or less up the hill.

3. The Public works dept. should comment on the need to reconstruct the driveway entrance onto Congress St. since the parking lot traffic will be substantially increased. It is rather narrow currently.

4. Given the increase of traffic in and out of the site, is a traffic study warrented? Larry Ash should review for sight lines, accessiblity, signage etc. I recommend signage be placed on the site to clarify that left turns out only are allowed since Congress St. is one way.

5. The engineer should review the grading within the parking lot and try to increase the slopes to at least 1%. Several areas are less than 1%.

6. A snow storage plan should be provided.

7. Staff and Jeff Tarling should review the adequacy of the Arborvitae buffer along the southwest property line. 6' tall arborvitae are generally thin and in my opinion will not sufficiently buffer the neighboring houses from the increased activity that will occur in the lot.

8. Additional information should be provided regarding the drainage conditions on the properties on the northwest and north sides of the site.

9. Is it intended that the White ash be only 24" high?

10. A photometrics plan and should be provided. Will the lights be on all night? What, if any, security provisions are being proposed.

If you have any questions please call.

Steve Bushey
Technical Reviewer

CITY OF PORTLAND, MAINE
SITE PLAN CHECKLIST

Project Name, Address of Project _____ I.d. 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)	Approximate location of buildings or other structures on parcels abutting the site		d
N/A	(12)	Location of on-site waste receptacles	e	
	(13)	Public utilities	e	
N/A	(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 accessways	g	
✓	(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	
left wants	(22)	Landscape plan showing:	h	
more trees	(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 summery 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	6	

		are none	
_____	(42)	An estimate of the time period required for completion of the development	7
_____	(43)	A list of all state and federal regulatory approvals to which the development may be subject	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;
- a noise study;
- an environmental impact study;
- a sun shadow study;
- a study of particulates and any other noxious emissions;
- a wind impact analysis.

and

Other comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Sincerely,

Kandice Talbot

Kandice Talbot
Planner

CC: Sarah Hopkins, Development Review Services Manager

From: "Steve Bushey" <SBushey@DelucaHoffman.com>
To: "Kandi Talbot (E-mail)" <KCOTE@ci.portland.me.us>
Date: Tue, Oct 30, 2001 11:09 AM
Subject: Maine Medical Center Parking Lot

Kandi,

I have reviewed the latest submission materials dated 10/23/01 for the Maine Medical Center Parking lot off Congress Street. The materials appear to address my earlier comments. The proposal now includes the installation of a Vortechnics water quality treatment devise. Given the tight site conditions this appears to be the most reasonable means of providing water quality treatment, although, only half of the site runoff will be treated. The applicant's computations show that the runoff leaving the site to the northwest will be slightly decreased in the proposed condition. This finding appears reasonable. The applicant did not ever present data regarding the offsite conditions in this area, although I believe that they are acceptable and that offsite impacts have been minimized. The applicant's plans include provisions for adequate erosion control during construction. I trust that the DRC will be monitoring this project while it is under construction. Based on the materials submitted to date I recommend the project be considered for Final Approval by the Planning Authority, pending no other comments from staff or the Public Works Department.

If you have any questions please call.

Steve Bushey

Technical Reviewer

October 26, 2001

Kandice Talbot Planner
City of Portland – Planning Department
389 Congress Street
Portland, Maine 04101

756 8258

Dear Kandice Talbot:

I am writing concerning Fleet Bank's relationship with Maine Medical Center. Maine Medical is a highly valued customer of our Corporate Banking Group. The Bank has extended an 8 figure line of credit to Maine Medical Center which is currently unused. Maine Medical Center presently maintains significant checking and investment account balances with our Bank and its affiliates. If you have any further questions, please feel free to give me a call at 874 - 5142.

Sincerely,

Stephen deCastro
Assistant Vice President, Corporate Banking

h:\cre\hc&f\cor\letters\042000.doc

Sincerely,

Kandice Talbot

Kandice Talbot
Planner

CC: Sarah Hopkins, Development Review Services Manager

COPY

SONIA
671-5376

CCIM Individual Member

SIOR Individual Membership Specialist Industrial and Office Real Estate

CONTRACT FOR THE SALE OF REAL ESTATE

CB Richard Ellis
The Boulos Company

One Canal Plaza, Portland, ME 04101
(207) 772-1333

Date: 4/18/01

RECEIVED OF: **Maine Medical Center and/or Assigns** whose mailing address is **22 Bramhall Street, Portland, ME**, hereinafter called the Purchaser(s), the sum of **Twenty Five Thousand dollars** Dollars ($25,000.) as earnest money deposit and in part payment of the purchase price of the following described real estate, situated in the municipality of **Portland**, County of **Cumberland**, State of Maine and located at **993 & 995 congress Street, Portland Maine** being **all** the property owned by the Seller(s) at the above address, and described at said County's Registry of Deeds Book --------, Page ------ and further described as: **Two Parcels: (1) An approximate 7686+/- sf site improved with a 2670+/- sf single story retail/office building currently occupied by Classic Eyewear,. Being the same property in the name of George M. Hutchins and referenced by the City of Portland Assessors office as Map 65 Block A Lot 22. (2) An approximate 62,144 +/ sf vacant land parcel also in the name of George M. Hutchins and referenced as Map 65 Block A Lot 1. Parcels 1 & 2 are adjacent.** upon the terms and conditions indicated below:

1. PERSONAL PROPERTY: The following items of personal property are [redacted] (if applicable): N/A
2. PURCHASE PRICE: The TOTAL purchase price being **Three Hundred [redacted] Thousand Dollars** Dollars [redacted]) to be paid as follows: **Twenty five thousand dollars as earnest money deposit with this offer and the balance [redacted] in cash or certified funds at transfer of title.**
3. EARNEST MONEY/ACCEPTANCE: **CB Richard Ellis/The Boulos Company** shall hold said earnest money in a [redacted] interest bearing account and act as Escrow Agent until closing; this offer shall be valid until [redacted] Tues. 5/01/01 at 5 PM; and, in the event of the Seller's non-acceptance, this earnest money shall be returned promptly to the Purchaser(s).
4. TITLE: That a deed, conveying good and merchantable title in accordance with standards adopted by the Maine Bar Association shall be delivered to the Purchaser(s) and this transaction shall be closed and the Purchaser(s) shall pay the balance due and execute all necessary papers on or before **See Addendum**, _____. If Seller(s) is unable to convey in accordance with the provisions of this paragraph, then the Seller(s) shall have a reasonable time period, not to exceed thirty (30) days from the time the Seller(s) receives written notice of the defect, unless otherwise agreed to by both parties, to remedy the title, after which time, if such defect is not corrected so that there is merchantable title, the Purchaser(s) may, within fifteen (15) days thereafter, at Purchaser's option, withdraw said earnest money and neither party shall have any further obligation hereunder. If the Purchaser(s) does not withdraw the earnest money and declare the contract void within the period set forth above, the Purchaser(s) shall have waived the right to object to title. The Seller(s) hereby agrees to make a good-faith effort to cure any title defect during such period
5. DEED: That the property shall be conveyed by a **Warranty Deed**, and shall be free and clear of all encumbrances except building and zoning restrictions of record, restrictive covenants and conditions of record and usual public utilities servicing the property and shall be subject to applicable land use and building laws and regulations.
6. POSSESSION /OCCUPANCY: Possession/occupancy of premises shall be given to Purchaser(s) immediately at closing, subject to any leases, unless otherwise agreed by both parties in writing.
7. LEASES/TENANT SECURITY DEPOSITS: Seller(s) agrees to transfer at closing to Purchaser(s) all Seller(s)' rights under the current leases to the property and all security deposits held by Seller(s) pursuant to said leases.
8. RISK OF LOSS: Until the transfer of title, the risk of loss or damage to said premises by fire or otherwise, is assumed by the Seller(s) unless otherwise agreed in writing. Said premises shall then be in substantially the same condition as at present, excepting reasonable use and wear.
9. PRORATIONS: The following items shall be prorated as of the date of closing:
   a. Real Estate Taxes based on the municipality's tax year. Seller is responsible for any unpaid taxes for prior years.
   b. Fuel
   c. **n/a**
   d. Rents
   e. Metered utilities, such as water and sewer, shall be paid by Seller(s) through the date of closing.
   f. Purchaser(s) and Seller(s) shall each pay its transfer tax as required by the State of Maine.
10. INSPECTIONS: The Purchaser(s) is encouraged to seek information from professionals regarding any specific issue of concern. Purchaser(s) acknowledges receipt of disclosure form attached hereto. The Agent makes no warranties regarding the condition, permitted use or value of the Seller's real or personal property. This Contract is subject to the following inspections, with the results being satisfactory to the Purchaser(s):

Seen and agreed to: _____ Seller(s) _____ Purchaser(s)

TYPE OF INSPECTION	YES	NO	RESULTS REPORTED	TYPE OF INSPECTION	YES	NO	RESULTS REPORTED
a. General Building	☐	☒	Within ____ days	g. Lead Paint	☐	☒	Within ____ days
b. Sewage Disposal	☐	☒	Within ____ days	h. Pests	☐	☒	Within ____ days
c. Water Quality	☐	☐	Within ____ days	i. ADA	☐	☒	Within ____ days
d. Radon Air Quality	☐	☒	Within ____ days	j. Wetlands	☐	☒	Within ____ days
e. Radon Water Quality	☐	☒	Within ____ days	k. Environmental Scan	☐	☐	Within 45 days
f. Asbestos Air Quality	☐	☒	Within ____ days	l. Other: See Addendum	☐	☐	Within ____ days

The use of days is intended to mean from the effective date of this Contract. All inspections will be done by inspectors chosen and paid for by the Purchaser(s). If the result of any inspection or other condition specified herein is unsatisfactory to the Purchaser(s), Purchaser(s) may declare the Contract null and void by notifying Seller(s) in writing within the specified number of days, and any earnest money shall be returned to the Purchaser(s). If the Purchaser(s) does not notify the Seller(s) that an inspection is unsatisfactory within the time period set forth above, this contingency is waived by the Purchaser(s). In the absence of inspection(s) mentioned above, the Purchaser(s) is relying completely upon Purchaser's own opinion as to the condition of the property.

intentionally deleted

[redacted]

12. AGENCY DISCLOSURE: The Purchaser(s) and Seller(s) acknowledge that they have been informed that the Selling Licensee is acting as a **Seller's** agent in this transaction and is representing **the Seller(s)** and that the Listing Licensee is acting as a **Seller's** agent in this transaction and is representing **the Seller(s)**.

13. DEFAULT: If the Purchaser(s) fails to consummate this transaction, Seller(s) shall [redacted] retain [redacted] the earnest money as full and complete liquidated damages [redacted] Should Seller(s) [redacted] retain the earnest money, this Contract shall terminate and neither party shall be under any further obligation hereunder. In the event of default by either party, the Escrow Agent will not return the earnest money to Purchaser(s) or turn over the deposit to the Seller(s) without written releases from both parties. Buyer shall have right of Specific Performance in the event of Seller default.

intentionally deleted

14. [redacted] Any dispute or claim arising out of or relating to this Contract or the premises [redacted] shall be submitted to mediation in accordance [redacted] Mediation Rules of the American Arbitration Association. [redacted] shall survive the closing of this transaction.

15. PRIOR STATEMENTS: Any verbal presentations, statements and agreements are not valid unless contained herein. This Contract completely expresses the obligations of the parties. This is a Maine contract and shall be construed according to the laws of Maine.

16. HEIRS/ASSIGNS: This Contract is assignable ☒ Yes ☐ No. This Contract shall extend to and be obligatory upon heirs, personal representatives, successors, and assigns (if assignment is allowed by the terms of this Contract), of the respective parties.

17. COUNTERPARTS: This Contract may be signed on any number of identical counterparts, including telefacsimilie copies, with the same binding effect as if the signatures were on one instrument. Original or telefacsimilied signatures are binding.

18. BINDING CONTRACT: This Contract is a binding contract when signed by both Seller(s) and Purchaser(s) and when that fact has been communicated to all parties or to their agents. The Effective Date of the Contract is noted below. Time is of the essence of this Contract.

19. REVIEW OF LEASES AND INCOME AND EXPENSE INFORMATION: The Seller(s) shall provide the Purchaser(s) with copies of all leases and income & expense information regarding the subject property within **fourteen** (14) days of the effective date of this Contract. Purchaser(s) shall have **fourteen** (14)days from such delivery to review leases and income & expense information regarding the property. If the result of the review is unsatisfactory to the Purchaser(s), Purchaser(s) may declare the Contract null and void by notifying the Seller(s) in writing within the specified number of days set forth above, and any earnest money shall be returned to the Purchaser(s). If the Purchaser(s) does not notify the Seller(s) that the review is unsatisfactory within the time period set forth above, this contingency is waived by the Purchaser(s).

20. Seller(s) and Purchaser(s) acknowledge receipt of the Maine Real Estate Commission Disclosure of Agency Relationship Form (Form #2), *if the property is, or has a component of, one to four residential dwelling units.*

21. ADDENDA: This Contract has addenda containing additional terms and conditions: YES ☒ NO ☐

Seen and agreed to: _____ Seller(s) _____ Purchaser(s)

A COPY OF THIS CONTRACT IS TO BE RECEIVED BY ALL PARTIES AND, BY SIGNATURE, RECEIPT OF A COPY IS HEREBY ACKNOWLEDGED. IF NOT FULLY UNDERSTOOD CONSULT AN ATTORNEY.

Seller(s) acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2 1/2% of the consideration unless the Seller(s) furnishes to the Buyer(s) a certificate by the Seller(s) stating, under penalty of perjury, that Seller(s) is/are a resident of Maine or the transfer is otherwise exempt from withholding.

Purchaser	*Date* 4/17/01
Maine Medical Center and/or assigns	010239552
Name/Title John E. Hoye, Treasurer	*Soc. Sec. # or Tax I.D. #*
Purchaser	*Date*
Name/Title	*Soc. Sec. # or Tax I.D. #*

The Seller(s) accepts the offer and agrees to deliver the above-mentioned property at the price and upon the terms and conditions set forth above and agrees to pay the Broker the commission for services herein according to the Listing Agreement or if there is no Listing Agreement the sum of: **per agreement**. The obligation to pay said commission or sum shall survive the closing of this transaction. Seller agrees that Broker may apply any deposit(s) received in connection with the sale of the Property toward commissions due and payable under this Agreement. If the earnest money is forfeited by Purchaser(s), it shall be evenly distributed between the Broker and the Seller(s), provided, however, that Broker's portion shall not exceed the full amount of the commission specified. In the event the Seller(s) defaults on its obligations hereunder, CB Richard Ellis/The Boulos Company shall be entitled to costs of collection, including reasonable attorneys' fees.

Signed this 1ST day of MAY, 2001. Effective date of Contract: _____, _____.

The Listing Licensee is **Debra R. Napolitano** of **The Boulos Company** (Company).
The Selling Licensee is **Debra R. Napolitano** of **The Boulos Company** (Company).

Seller George M. Hutchins	*Date* 5/01/01
George M. Hutchins	
Name/Title Owner	*Soc. Sec. #* 007-22-6034
Seller	*Date*
Name/Title	*Soc. Sec. # or Tax I.D. #*

Offer reviewed and refused on _____, _____. _____, Seller

Addendum to Contract For Sale of Real Estate
Between George M. Hutchins, Seller
and Maine Medical Center and/or Assigns, Buyer
for Real Estate Located at
993 and 995 Congress Street, Portland, ME
Originally Dated April 12, 2001

Once executed by all Parties below, the above referenced Contract shall be amended to include the following additional Terms and Conditions:

1. The Closing shall occur within twenty-one (21) days of Buyer's receipt of all necessary Permits and Approvals under applicable Local, State and Federal Laws, Ordinances and Regulations for Buyer's intended use of Lot 1 as an improved, paved parking lot for use by Maine Medical Center. Buyer shall be provided an initial time frame of sixty (60) days to obtain said Permits and Approvals. Buyer shall also be provided an extension period of ninety (90) days, in thirty (30) day increments, if requested by Buyer in writing and provided Buyer is making all reasonable "good faith" efforts to obtain such Permits and Approvals. All costs and expenses including, but not limited to legal fees, and expenses incurred by Buyer in seeking such Permits and Approvals, shall be the sole responsibility of the Buyer. However, Seller agrees to join with Buyer as petitioners or applicants as necessary, and otherwise to reasonably cooperate with Buyer to obtain such Permits and Approvals. In the event that such Permits and Approvals are denied, then this Contract shall be null and void and Seller shall return the full Earnest Money Deposit, with all interest accrued thereon, to Buyer.

2. Should Buyer not Close as anticipated in this Agreement, copies of all Surveys, Environmental Reports, Appraisal Reports, Wetland Delineation Reports, Site Plans, Concept Plans, Engineering Plans, etc. which have been completed for and paid for by Buyer shall be provided to Seller at no additional cost to Seller.

3. This Contract is contingent upon review and acceptance by Maine Medical Center's Board of Directors within ninety (90) days of the effective Contract date.

4. Purchaser agrees to provide three (3) year lease to Classic Eyewear at monthly rental of $1,600 NNN.

SEEN AND AGREED TO

MAINE MEDICAL CENTER and/or Assigns, Buyer

By: John E. Fore
Its: Treasurer

4/25/01
Date

GEORGE M. HUTCHINS, Seller

George M. Hutchins

5/01/01
Date

1306

ESTIMATE OF PROBABLE CONSTRUCTION COST

PROJECT NAME: Maine Medical Center / Congress Street, Portland
PROJECT NUMBER: 01306
DATE: 8/10/2001

ITEM DESCRIPTION	QTY.	UNIT	UNIT COST $	TOTAL COST $
EARTHWORK				
COMMON EXCAVATION	3000	C.Y.	$10.00	30000
AGGREGATE SUBBASE	2000	C.Y.	$18.00	36000
AGGREGATE BASE	400	C.Y.	$20.00	8000
REMOVALS	1	EA.	$5,000.00	5000
			SUBTOTAL	79000

EROSION/SEDIMENT CONTROL				
EROSION/SEDIMENT CONTROL PLAN	1	EA.	$2,500.00	2500
			SUBTOTAL	2500

BITUMINOUS CONCRETE PAVING AND STRIPING				
BITUMINOUS PAVING	615	TON	$55.00	33825
PAVEMENT STRIPING	1	EA.	$1,500.00	1500
			SUBTOTAL	35325

CURBING				
VERTICAL GRANITE CURB	300	L.F.	$30.00	9000
CAPE COD CURBING	1500	L.F.	$5.00	7500
			SUBTOTAL	16500

SEWERS, DRAINS, SITE PIPING				
12" STORM DRAIN	257	L.F.	$35.00	8995
VORTECHNICS UNIT	1	EA.	$20,000	20000
CATCH BASINS	3	EA.	$2,000.00	6000
			SUBTOTAL	34995

ITEM DESCRIPTION	QTY.	UNIT	UNIT COST $	TOTAL COST $
CONCRETE SIDEWALKS				
CONCRETE SIDEWALKS	315	S.F.	$5.50	1732.5
			SUBTOTAL	1732.5

SITE IMPROVEMENTS				
PARKING LOT LIGHTS	11	EA.	$2,000.00	22000
			SUBTOTAL	22000

LANDSCAPE WORK				
TREES (EVERGREENS)	24	EA.	$362.00	8688
TREES (SHADING)	7	EA.	$450.00	3150
LOAM & SEED	1	EA.	$5,000.00	5000
			SUBTOTAL	16838
		GRAND SUBTOTAL		208890.5

Planning & Urban Development

CITY OF PORTLAND

October 25, 2001

Mr. Will Conway
Sebago Technics
One Chabot Street
P.O. Box 1339
Westbrook, ME 04098-1339

RE: 993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Mr. Conway:

After review of the plans submitted on October 23, 2001, regarding the proposed Maine Medical Parking lot located at 993 Congress Street, the following information is requested for review.

1. The Plant Schedule on the Landscaping Plan should be revised to reflect the following:

   a. That the 'Bradford' tree be substituted with the 'Cleveland' variety.

   b. Species PN is not listed in the plant schedule. PN shall be an Austrian Pine, 6 – 8 ft. in height.

2. The light levels along the westerly edge of the property, which abuts several residential buildings, are still too high. Light levels shall be no more than 0.1 foot candles at the property line.

3. A purchase and sales agreement between Maine Medical Center and George Hutchins much be submitted to verify that Maine Medical Center has right, title and interest to go forward with the project.

4. A letter of financial capability must be submitted to staff.

The Development Review Engineer is currently reviewing the most recent submittal and as soon as comments are available, I will forward them to you. If you have any questions, please do not hesitate to contact me at 874-8901.

389 Congress Street • Portland, Maine 04101 • (207) 874-8721 • FAX 756-8258 • TTY 874-8936

SebagoTechnics
Engineering & Planning for the Future

October 23, 2001
01306

Kandice Talbot, Planner
Planning & Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Kandi:

On behalf of Maine Medical Center, we are pleased to submit additional information pertinent to your review of this project. In response to your letter to me dated October 4, 2001, our responses are as follows:

1. A stamped standard boundary survey is being finalized and will be submitted in one or two business days.

2. Plans have been revised to meet all requests made by the City Arborist.

3. Enclosed is a site lighting photometric plan. Spill over onto the properties is unnoticeable (0.0 to 0.2 foot-candles) due to maximum shielding of the fixtures, and will be eliminated by the Arborvitae hedge proposed in this area.

4. Maine Medical Center will purchase the property from George Hutchins.

5. A letter of financial capability will be provided under separate cover.

We have also addressed traffic issues raised by Larry Ash; see enclosed letter/report prepared by Tom Gorrill. We have incorporated Larry and Tom's suggestions into the plan set.

In response to the email you forwarded from Steve Bushey, our responses are as follows:

1. Complete stormwater calculations have been performed and enclosed for your review (see enclosure). A stormwater management narrative has also been established to summarize the results and the procedures for handling the additional runoff.

One Chabot Street P.O. Box 1339 Westbrook, Maine 04098-1339 207-856-0277 Fax 207-856-2206

Treatment will be accomplished by utilizing the existing wooded buffer along the northerly property lines. Additionally, a Vortechnics unit is proposed for the southerly half of the site that will be draining into the existing municipal system.

2. A shelter is not needed as users will wait in their cars until the shuttle arrives.

3. The driveway entrance has been widened as suggested.

4. See letter/report from Tom Gorrill.

5. The grading within the parking area has been revised to provide at least a 1% slope as requested.

6. A snow storage plan is articulated in Note #24 on the Site Plan, Sheet 2 of 5.

7. All of Mr. Tarling's requirements have been addressed.

8. Additional information regarding the drainage throughout the site can be seen in the Stormwater Narrative enclosed within this submittal.

9. The White Ash is changed to a 2"-2½" caliper size.

10. See previous response re: site lighting. The site lights will be turned off between midnight and 6:00 AM. Regarding security, the shuttle will not depart the lot until all shuttle users have entered their cars and the lot will be patrolled by Maine Medical security staff on an hourly basis.

Maine Medical Center wishes to proceed with the proposed improvements, including bituminous paving work before the asphalt plants shut down. Accordingly, any assistance you can provide in completing the review process is greatly appreciated.

Sincerely,

SEBAGO TECHNICS, INC.

William T. Conway

William T. Conway, R.L.A.
Vice President, Landscape Architecture

WTC:jc
Enc.

cc: Robert Cloutier, Maine Medical Center
Steve Bushey

Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
26 Main St.
Gray, ME 04039

207-657-6910
FAX: 207-657-6912
E-Mail:gpce@maine.rr.com

October 22, 2001

Mr. Will Conway
Sebago Technics
One Chabot Street
Westbrook, ME 04098-1339

RE: Parking Area at 993 Congress Street
for Maine Medical Center, Portland, Maine

Dear Will:

Per your request, Gorrill-Palmer Consulting Engineers, Inc. has reviewed the access associated with the site plan of the proposed Maine Medical Center parking area at 993 Congress Street dated 09-20-01 prepared by your office. The site is adjacent to Classic Eyewear and will accommodate 100 spaces. It is currently utilized for parking during Seadogs games and other special events. Access to the lot is planned from an existing curb cut located nearly opposite County Way, the access to the Cumberland County Jail. Congress Street fronting the site is one way inbound (east bound) toward St. John Street and has three travel lanes with a posted speed limit of 30 MPH. A grass esplanade and a seven-foot brick sidewalk is located between Congress Street and the property line for the site. The existing twenty-foot access serving the site is located approximately 35 feet west from an active railroad crossing of Congress Street. The crossing has both flashing warning lights and a gate both for vehicles and pedestrians. Traffic queues regularly over and beyond the tracks today on Congress Street.

Gorrill-Palmer Consulting Engineers, Inc. review was confined to the issue of access to the site and potential impact on Congress Street. Following is a summary of our findings and recommendations based upon our review:

1. The sight lines to the right exiting the site are approximately 250 feet. The MDOT current standards are 300 feet for a posted speed of 30 MPH. However, they are in the final stages of adopting a new policy, which would require 250 feet, which would be met by the existing driveway. The stopping sight distance for 30 MPH is approximately 200 feet. It is Gorrill-Palmer Consulting Engineers, Inc. opinion that the sight lines exiting the driveway are adequate.

2. The existing driveway opening is twenty feet in width, which will not allow vehicles to exit and enter simultaneously. Gorrill-Palmer Consulting Engineers, Inc. recommends that the driveway opening be widened sufficiently to allow a passenger car to exit while another is entering.

3. A left turn only sign should be installed to be visible for traffic exiting the sight.

4. Based on prior counts of other parking lots utilized by Maine Medical Center, we forecast the lot will generate 69 trip ends during a peak hour.

Should you have any questions regarding these findings, please contact me.

Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.

Thomas L. Gorrill, P.E., P.T.O.E.
President

TLG/rmg/7N445/Conway10-22-01

STORMWATER MANAGEMENT PLAN

Maine Medical Center
993 Congress Street
Portland, Maine

General

This Stormwater Management Plan has been prepared to evaluate the pre and post-developed conditions associated with the proposed parking lot upgrade/expansion for Maine Medical Center off Congress Street in Portland, Maine.

The total development proposal consists of constructing a parking area that will have a total of approximately 39,500 square feet of pavement with associated landscape areas, sidewalks, and stormwater management facilities. The stormwater from the impervious areas will generally sheet flow to proposed catch basins and be transported to the Vortechnics unit where treatment will occur prior to entering the municipal system along Congress Street. The runoff from the rear of the site will sheet flow onto abutting properties in accordance with existing conditions.

Site Characteristics

The project site currently consists of an existing paved parking area and areas of hard packed gravel. The terrain consists of generally flat slopes from the building to the outer edges of the site towards the railroad and the abutting hotel's property. The proposed grading of the impervious areas will allow for sheet flow towards the catch basin so that most runoff from these areas will be intercepted and transported into the municipal system. A portion of the parking lot will continue to sheet flow toward the hotel property.

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 soil as Deerfield, which has a hydrologic soil group of "B".

Methodology

The pre and post-developed watershed analyses were conducted using the "HydroCAD" computer-modeling program, which incorporates the TR-55 and TR-20 methodologies as provided by the Soil Conservation Service of the U.S. Department of Agriculture.

Existing Watersheds

The existing site consists of two distinct watersheds with a total of approximately 2.69 acres. Watershed 1 (WS-1) consists of the developed area of the site and drains toward the existing catch basin within Congress Street. Watershed 2 (WS-2) consists of the northerly side of the site which is all exposed packed gravel and drains to an existing wooded buffer along the property line.

Proposed Watersheds

The total post-developed contributing areas contain approximately 2.69 acres of land. The impervious and developed areas of the site were divided into five watersheds (WS 1-5). Watersheds 1 will remain the same as it was in the pre-developed condition. The only change will be in the newly developed area. This area will be broken into four separate watersheds that will each flow to their respective catch basins. These catch basins will intercept the runoff from the impervious areas and then the runoff will be transported via subsurface storm drains to the Vortechnics unit to be treated prior to outletting to the municipal system along Congress Street.

Stormwater Management

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

Stormwater Runoff Summary Table

Study Point	Total Watershed Area		Average Weighted Curve No. (cn)		Peak Rates of Runoff (cfs)								
					2-Year			10-Year			25-Year		
						Post			Post			Post	
	Pre	Post	Pre	Post	Pre	wo/d	w/d	Pre	wo/d	w/d	Pre	wo/d	w/d
1	1.35	1.57	86	86	2.78	2.98	---	5.26	5.76	---	6.44	7.03	---
2	1.34	1.12	80	78	2.05	1.56	---	4.38	3.49	---	5.53	4.46	---

Summary

The proposed development of the parking area for Maine Medical Center will include the regrading and paving of a gravel parking area as well as the resurfacing of an existing paved parking area. The runoff from the majority of the new impervious parking area will be intercepted by catch basins and be transported to the municipal system via subsurface storm drains. Remaining areas will sheet flow to abutting properties in accordance with existing drainage patterns. A slight increase in peak flows will occur in the municipal system due to the proposed construction. Accordingly, a decrease in runoff to the abutting properties will also occur. These changes in peak flows can be seen in the above table.

Other drainage provisions will include a specific grading plan and erosion and sedimentation control plan to be implemented throughout the construction cycle. The incorporation of these measures and the drainage provisions is expected to adequately address stormwater runoff from the developed site such that the municipal storm drain system and no downstream property will be adversely impacted.

Prepared by,

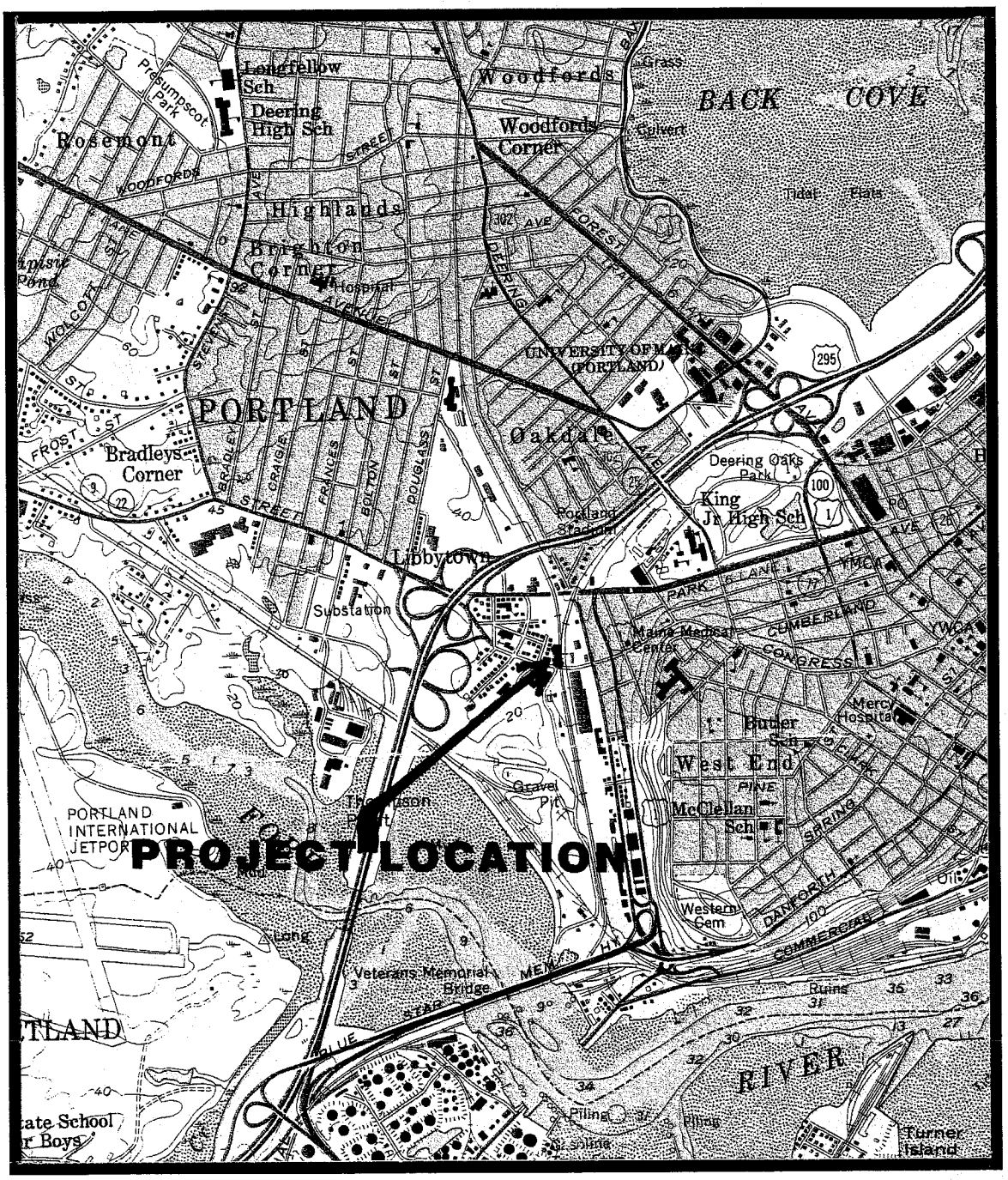
SEBAGO TECHNICS, INC.

Gregory J. Boulette
Project Engineer

Shawn M. Frank, PE.
Project Manager

GJB/SMF:gjb/jc
October 22, 2001

FIGURE 1



SITE LOCATION MAP

USGS TOPOGRAPHIC

7.5 MIN. QUADRANGLE

PORTLAND WEST

SCALE: 1"=2,000'

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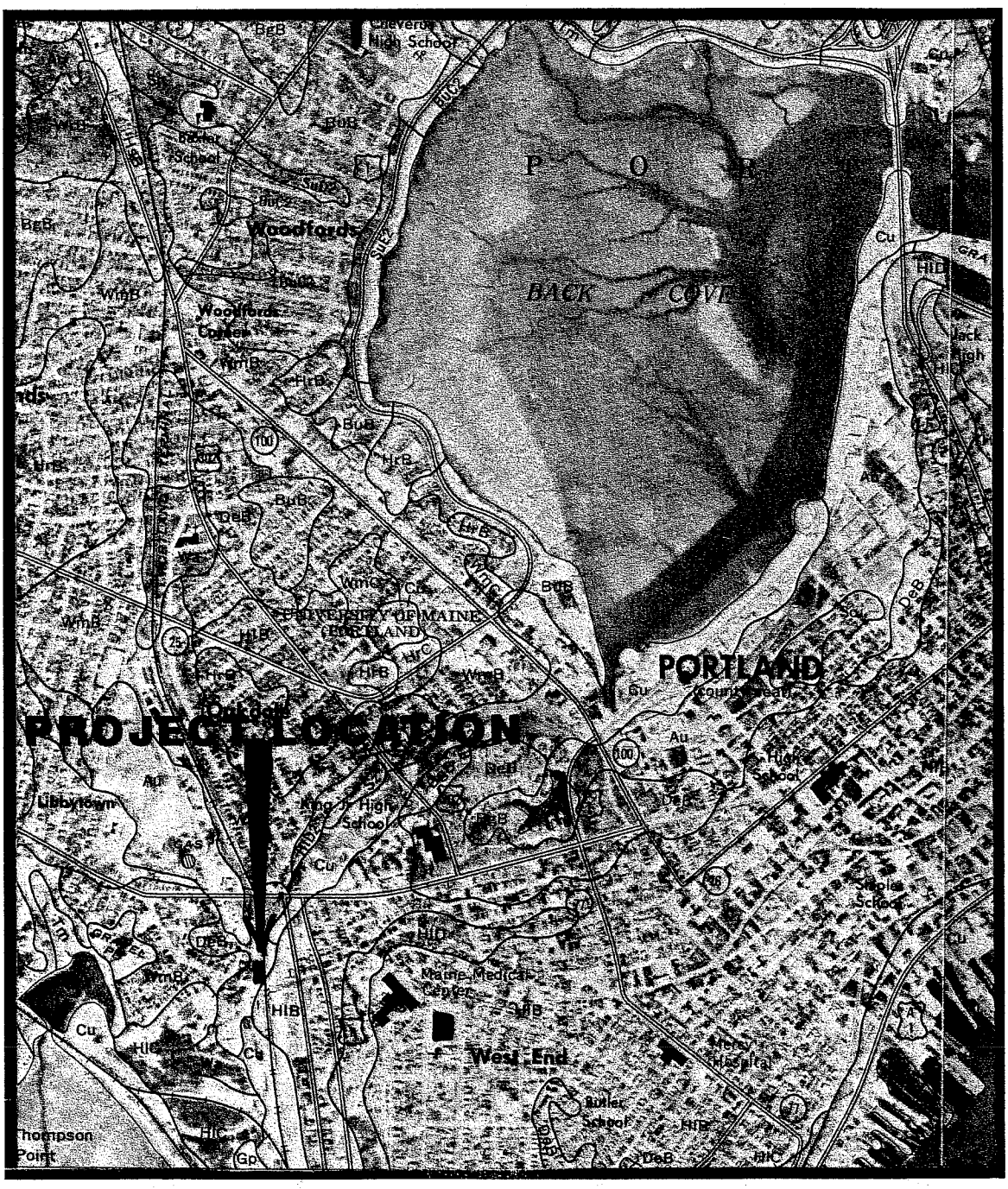
FIGURE 2



MEDIUM INTENSITY SOIL SURVEY

CUMBERLAND COUNTY

SHEET 82

SCALE 1:20,000

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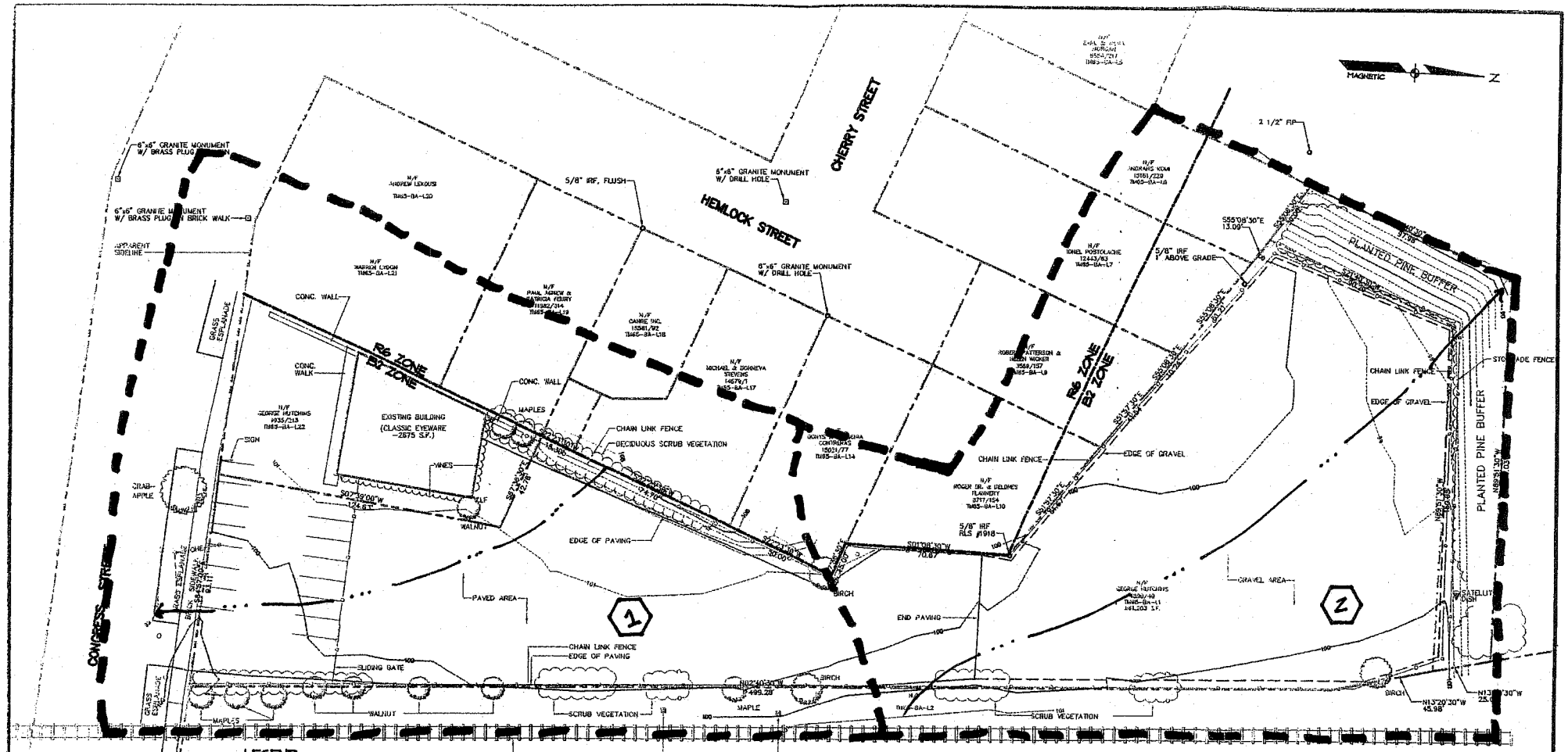


LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	EASEMENT	
	CENTERLINE	
	MONUMENT	
	IRON PIPE/ROD	
CI/L1	CURVE/LINE NO.	
	BUILDING	
	SIGN	
	EDGE PAVEMENT	
	GRAVEL ROAD	
	TREELINE	
121	CONTOURS	
9"S	SEWER	
12"SD	STORM DRAIN	
OHE	OVERHEAD ELEC. & TEL.	
	UTILITY POLE	
	HYDRANT	
	CATCH BASIN	
	MANHOLE	
	CULVERT	
	CHAIN LINK FENCE	
	BARB WIRE FENCE	
	STOCKADE FENCE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	GUARDRAIL	
	RAILROAD	

GENERAL NOTES:

1. APPLICANT: MAINE MEDICAL CENTER
2. RECORD OWNER: GEORGE M. HUTCHINS
   DEED REFERENCE: CUMBERLAND COUNTY DEED BOOK 4939, PAGE 213 AND BOOK 4898, PAGE 48.
3. TAX ASSESSORS REFERENCE: THE PROPERTY IS LOCATED ON THE CITY OF PORTLAND TAX ASSESSORS MAP # 65, BLOCK A, LOT 1 & MAP # 65, BLOCK A, LOT 22.
4. PLAN REFERENCES
   A. "RECORDING PLAT FOR CUMBERLAND COUNTY COMMISSIONERS" BY SMRT SURVEY DIVISION PROJECT NAME "CUMBERLAND COUNTY JAIL" RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 151 PAGE 200, DECEMBER 1993
   B. "MAINE STATE HIGHWAY RIGHT OF WAY MAP" FEDERAL AID PROJECT NO. I-295-3 SHEETS 46, 47 AND 48 OF 73 (S.H.C. FILE NO. 3-1651.
   C. PORTLAND TERMINAL COMPANY VALUATION SHEET 1 A
5. BEARINGS ARE BASED ON GRID NORTH.

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

REV:	BY:	DATE:	STATUS:

EXISTING CONDITIONS PLAN

OF:

PARKING AREA

993 CONGRESS ST.
PORTLAND, MAINE

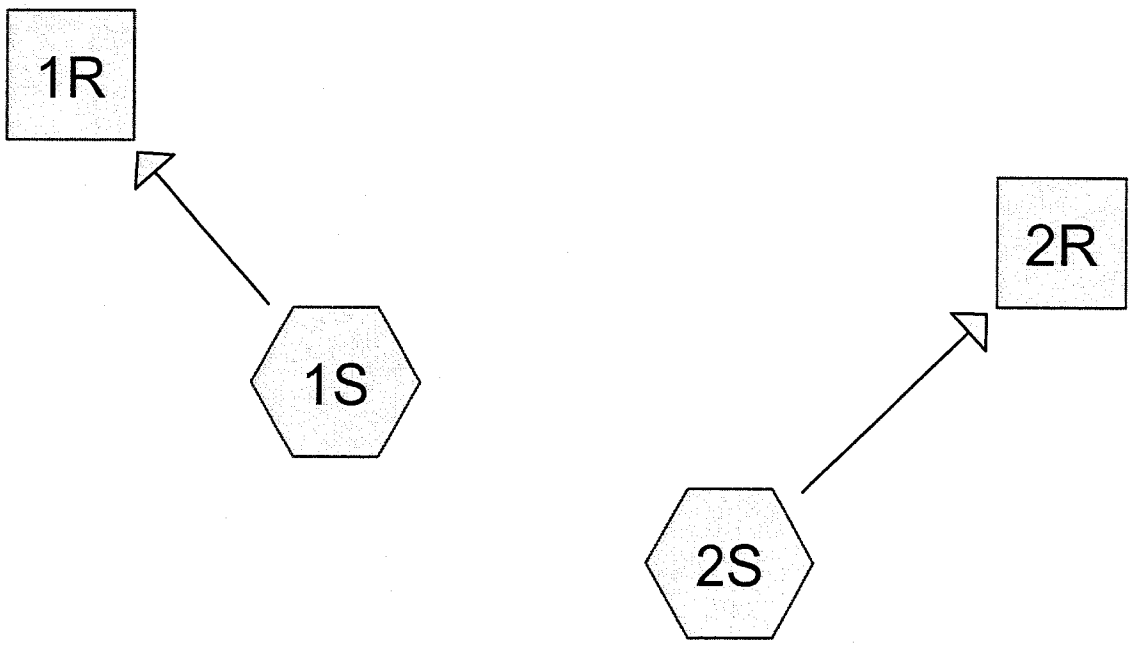
FOR:

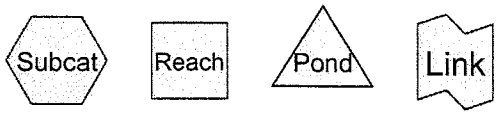
MAINE MEDICAL CENTER

22 BRAMHALL STREET
PORTLAND, MAINE 04102

Sebago Technics
Engineering & Planning for the Future
One Chabot Street
Westbrook, Me 04092-1330
Tel (207) 856-0277

DESIGN BY:	WTC
DRAWN BY:	MWE/ASB
CHECKED BY:	WTC
DATE:	9/14/01
SCALE:	1" = 20'
FIELD BK:	797
PROJ. NO:	01308
DRAWING:	01308EC
SHEET 1 OF 5	





Drainage Diagram for 01306 MAINE MEDICAL (PRE)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM

Runoff = 2.78 cfs @ 12.06 hrs, Volume= 0.175 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
0.810	98	IMPERVIOUS
0.310	75	1/4 ACRE LOTS
0.230	61	DENSE GRASS
1.350	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	15	0.2000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
2.1	135	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	70	0.0214	2.4		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.9	220	Total			

Subcatchment 2S: AREA DRAINING TO NORTH

Runoff = 2.05 cfs @ 12.06 hrs, Volume= 0.129 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
0.840	85	GRAVEL
0.280	75	1/4 ACRE LOTS
0.070	98	IMPERVIOUS
0.150	55	WOODS
1.340	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	160	0.0156	2.0		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	340	Total			

Reach 1R: (new node)

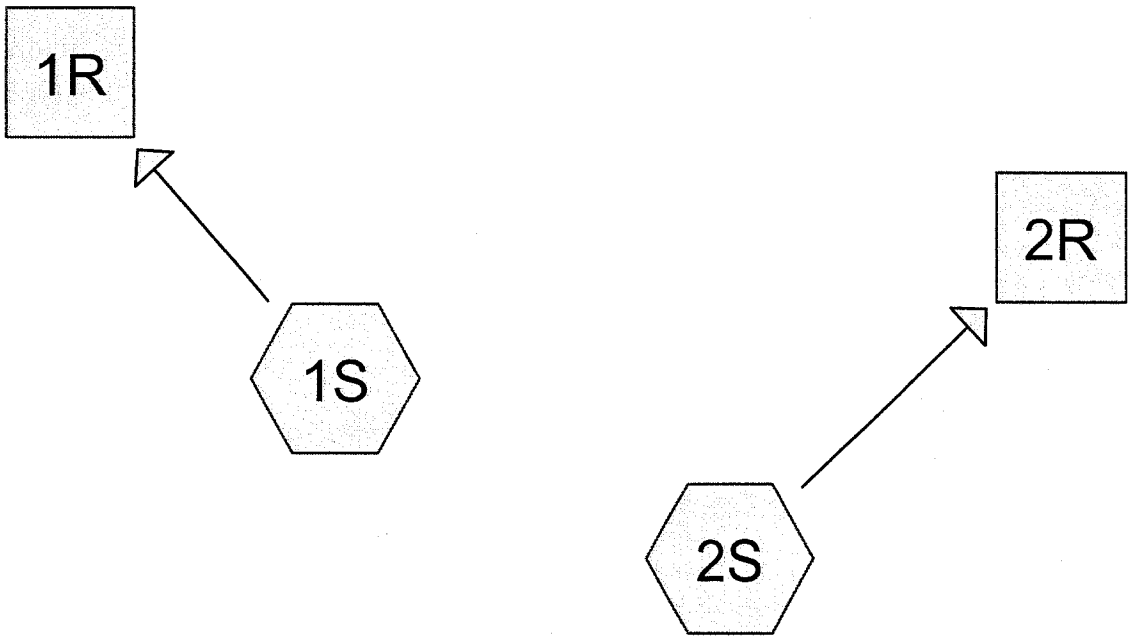
Inflow	=	2.78 cfs @	12.06 hrs,	Volume=	0.175 af
Outflow	=	2.78 cfs @	12.06 hrs,	Volume=	0.175 af, Atten= 0%, Lag= 0.0 min

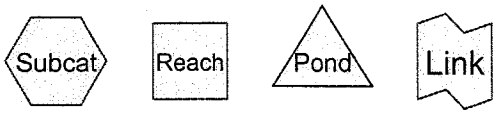
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 2R: (new node)

Inflow	=	2.05 cfs @	12.06 hrs,	Volume=	0.129 af
Outflow	=	2.05 cfs @	12.06 hrs,	Volume=	0.129 af, Atten= 0%, Lag= 0.0 min

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





Drainage Diagram for 01306 MAINE MEDICAL (PRE)
Prepared by SEBAGO TECHNICS INC 10/22/01
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Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM

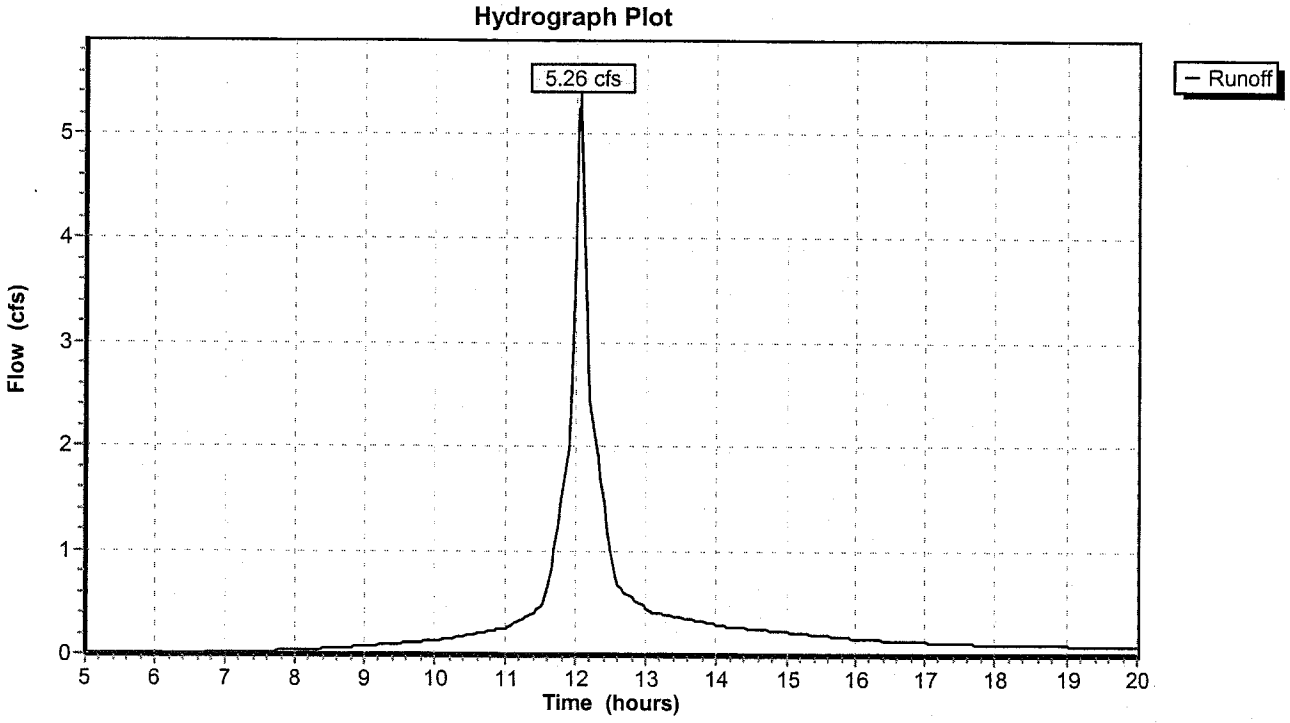
Runoff = 5.26 cfs @ 12.06 hrs, Volume= 0.337 af

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
0.810	98	IMPERVIOUS
0.310	75	1/4 ACRE LOTS
0.230	61	DENSE GRASS
1.350	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	15	0.2000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
2.1	135	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	70	0.0214	2.4		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.9	220	Total			

Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM



Subcatchment 2S: AREA DRAINING TO NORTH

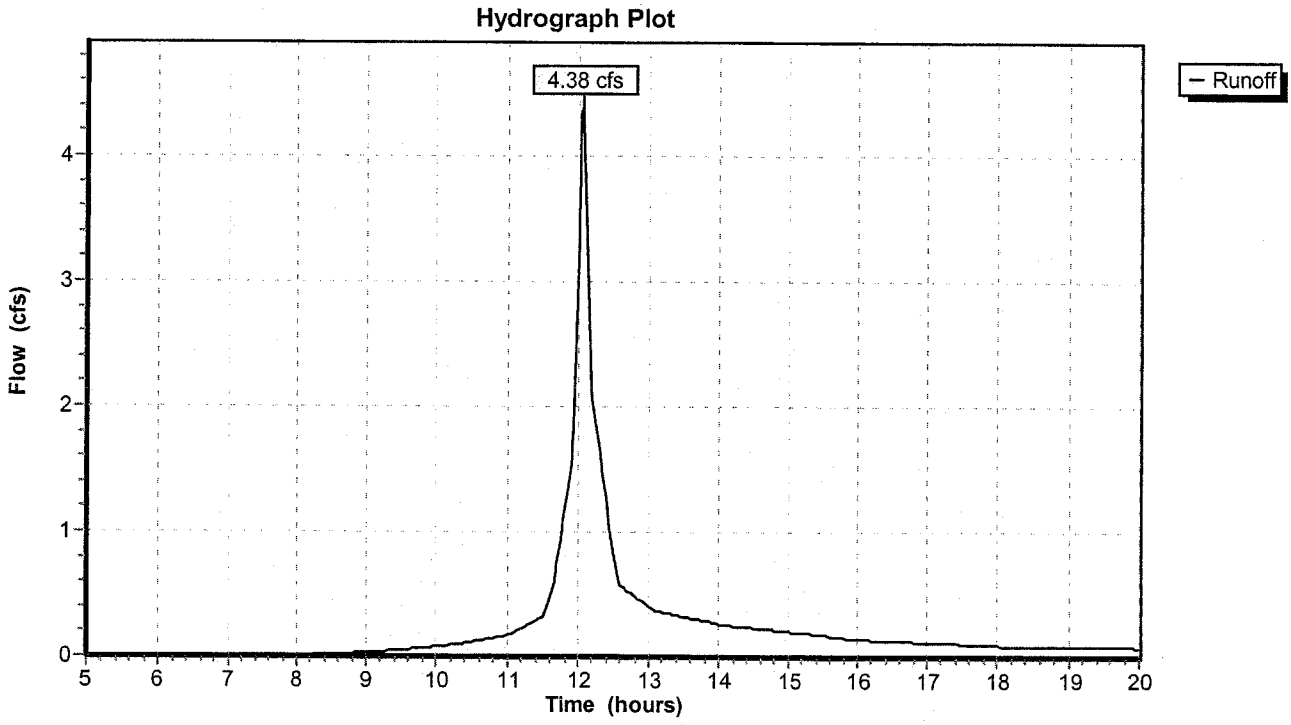
Runoff = 4.38 cfs @ 12.06 hrs, Volume= 0.274 af

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
0.840	85	GRAVEL
0.280	75	1/4 ACRE LOTS
0.070	98	IMPERVIOUS
0.150	55	WOODS
1.340	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	160	0.0156	2.0		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	340	Total			

Subcatchment 2S: AREA DRAINING TO NORTH

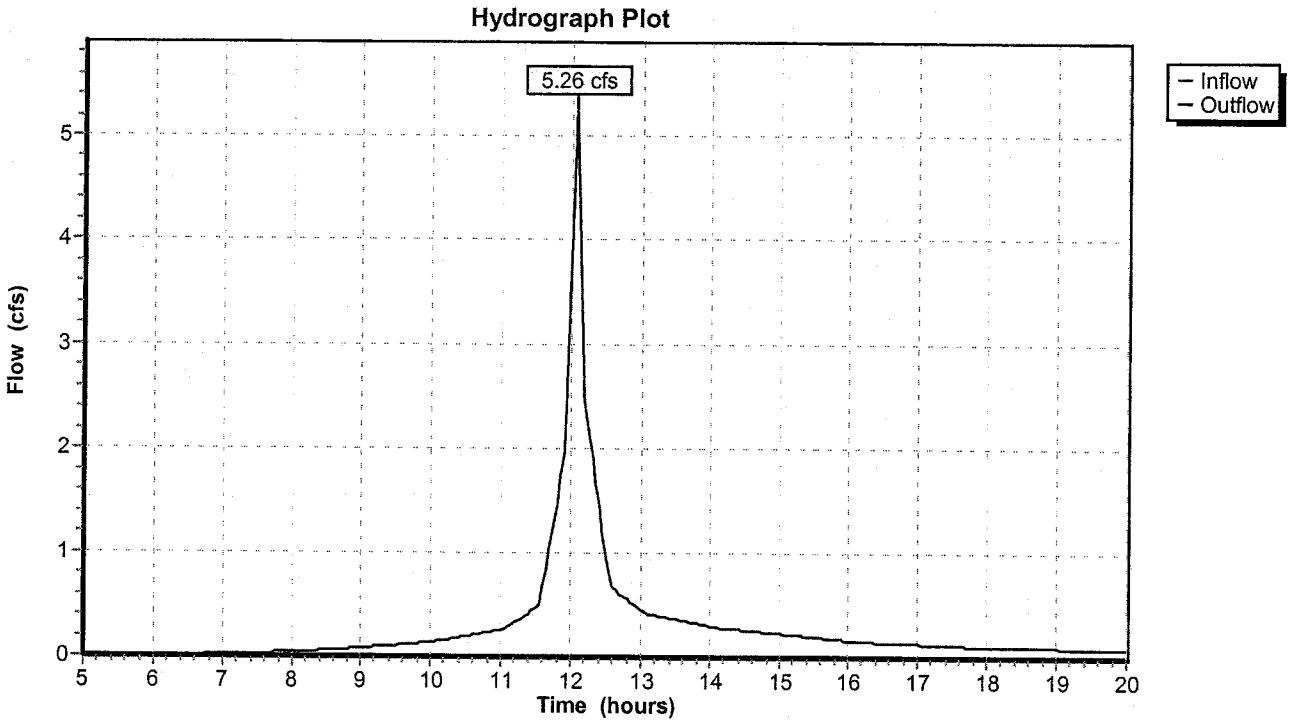


Reach 1R: (new node)

Inflow	=	5.26 cfs @	12.06 hrs,	Volume=	0.337 af
Outflow	=	5.26 cfs @	12.06 hrs,	Volume=	0.337 af, Atten= 0%, Lag= 0.0 min

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

Reach 1R: (new node)

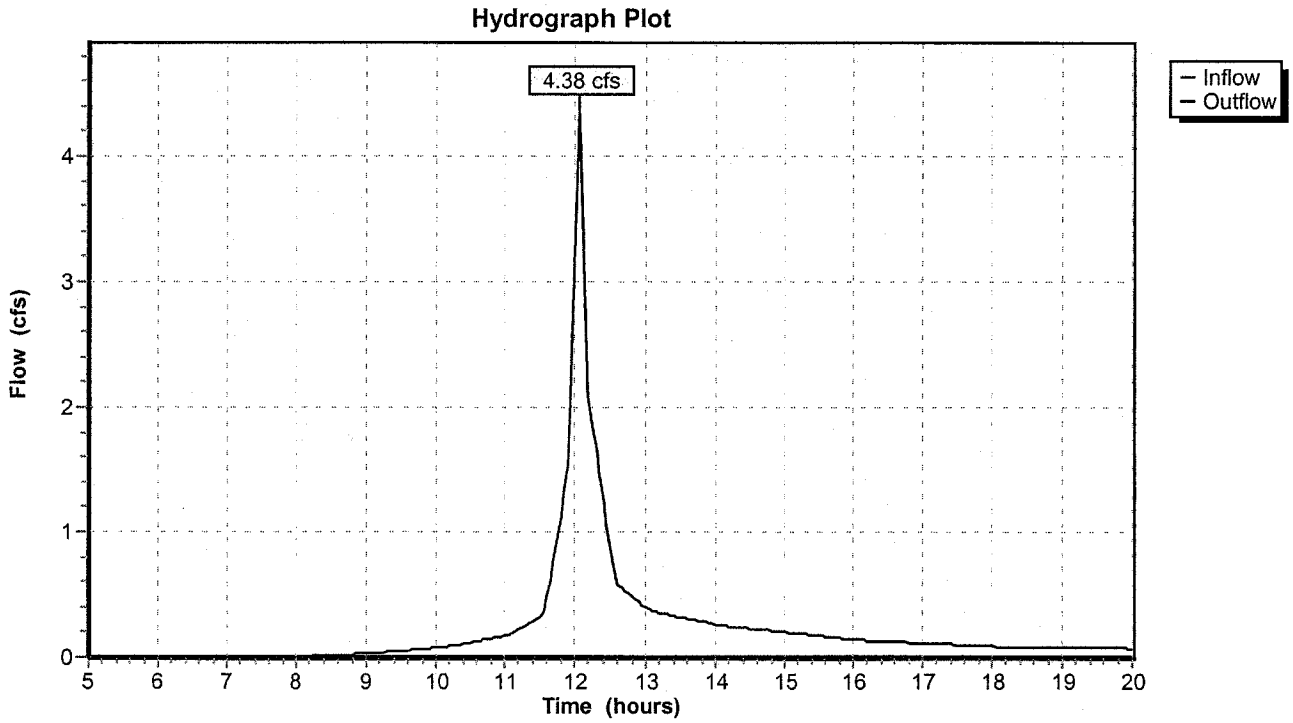


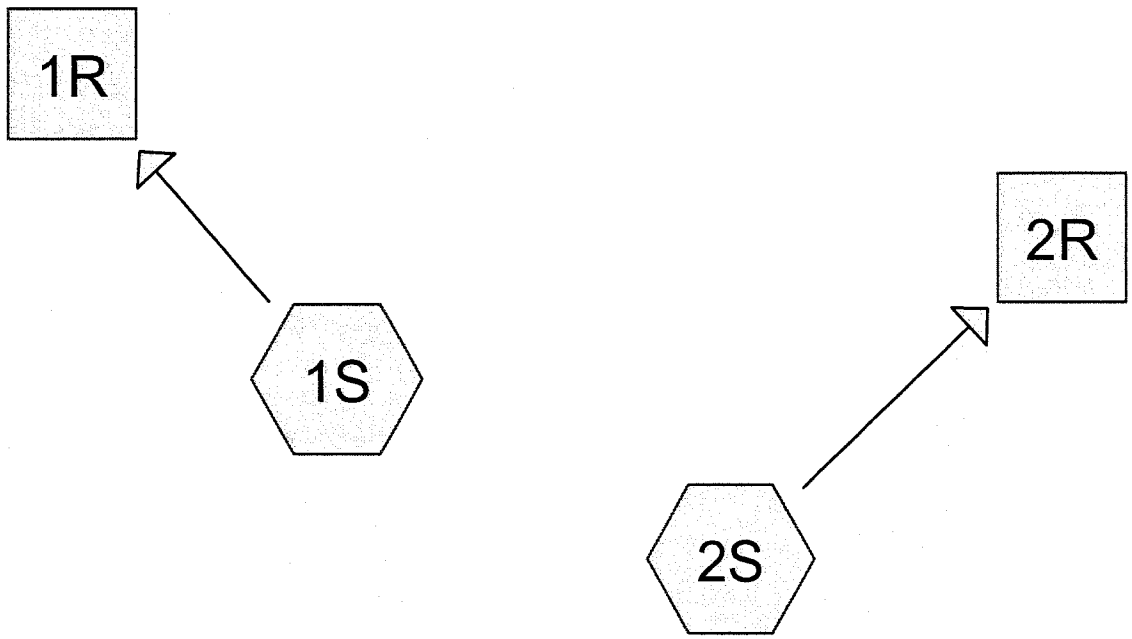
Reach 2R: (new node)

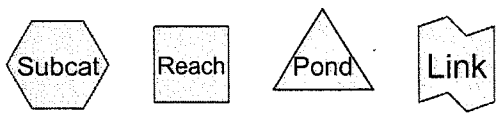
Inflow	=	4.38 cfs @	12.06 hrs,	Volume=	0.274 af
Outflow	=	4.38 cfs @	12.06 hrs,	Volume=	0.274 af, Atten= 0%, Lag= 0.0 min

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

Reach 2R: (new node)







Drainage Diagram for 01306 MAINE MEDICAL (PRE)
Prepared by SEBAGO TECHNICS INC 10/22/01
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Subcatchment 1S: AREA DRAINING TO MUNICIPAL SYSTEM

Runoff = 6.44 cfs @ 12.06 hrs, Volume= 0.418 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
0.810	98	IMPERVIOUS
0.310	75	1/4 ACRE LOTS
0.230	61	DENSE GRASS
1.350	86	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	15	0.2000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
2.1	135	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	70	0.0214	2.4		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.9	220	Total			

Subcatchment 2S: AREA DRAINING TO NORTH

Runoff = 5.53 cfs @ 12.06 hrs, Volume= 0.349 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
0.840	85	GRAVEL
0.280	75	1/4 ACRE LOTS
0.070	98	IMPERVIOUS
0.150	55	WOODS
1.340	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	160	0.0156	2.0		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	340	Total			

Reach 1R: (new node)

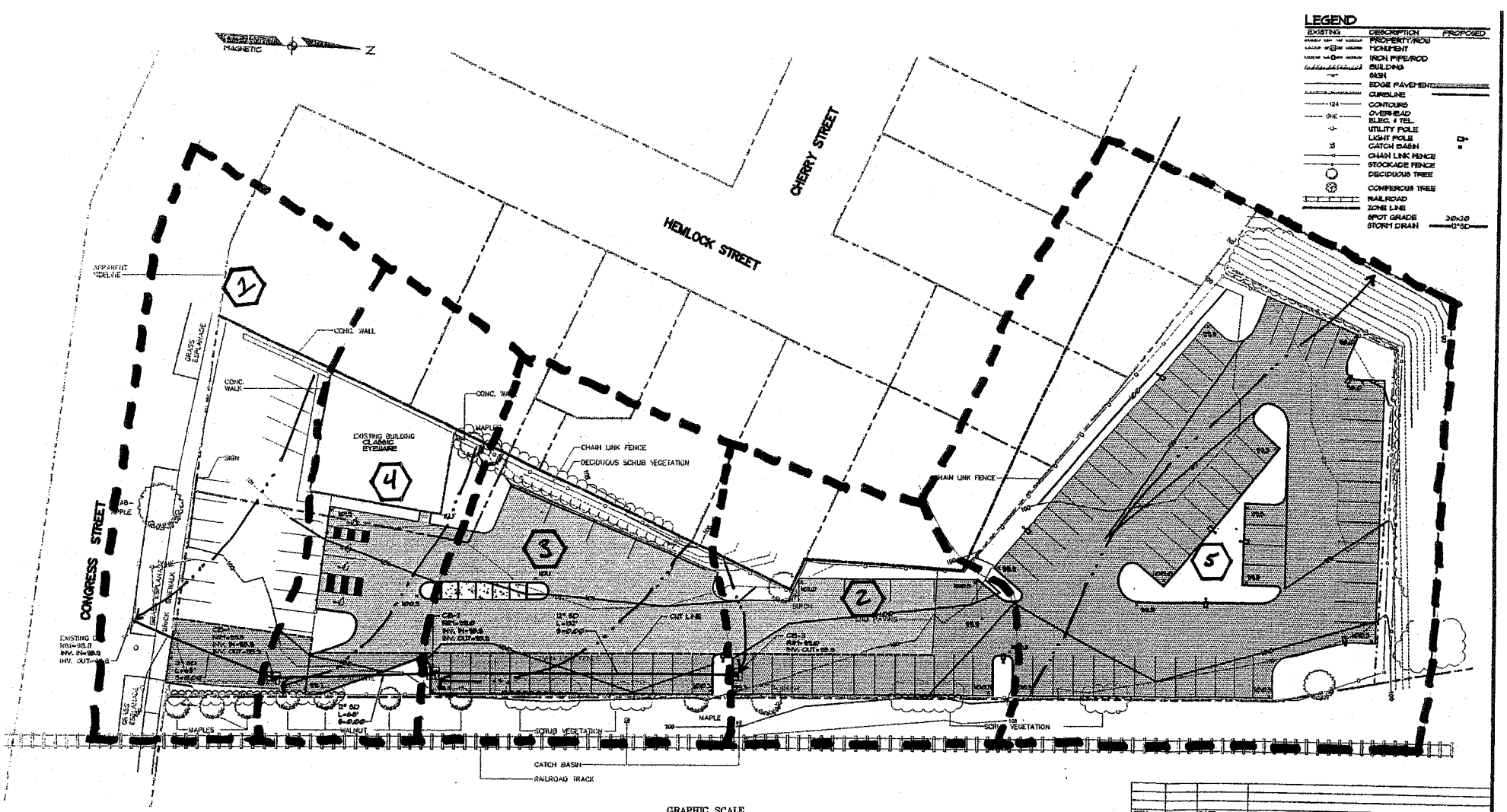
Inflow	=	6.44 cfs @	12.06 hrs,	Volume=	0.418 af
Outflow	=	6.44 cfs @	12.06 hrs,	Volume=	0.418 af, Atten= 0%, Lag= 0.0 min

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

Reach 2R: (new node)

Inflow	=	5.53 cfs @	12.06 hrs,	Volume=	0.349 af
Outflow	=	5.53 cfs @	12.06 hrs,	Volume=	0.349 af, Atten= 0%, Lag= 0.0 min

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



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY/ROW	
	MONUMENT	
	IRON PIPE/ROD	
	BUILDING	
	BASIN	
	EDGE PAVEMENT	
	CURBLINE	
124	CONTOURS	
OHE	OVERHEAD ELEC. & TEL.	
	UTILITY POLE	
	LIGHT POLE	
S	CATCH BASIN	
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	RAILROAD	
	ZONE LINE	
50x20	SPOT GRADE	50x20
12"SD	STORM DRAIN	12"SD

REV:	BY:	DATE:	STATUS:

GRADING & UTILITY PLAN

OF:

PARKING AREA

993 CONGRESS ST.
PORTLAND, MAINE

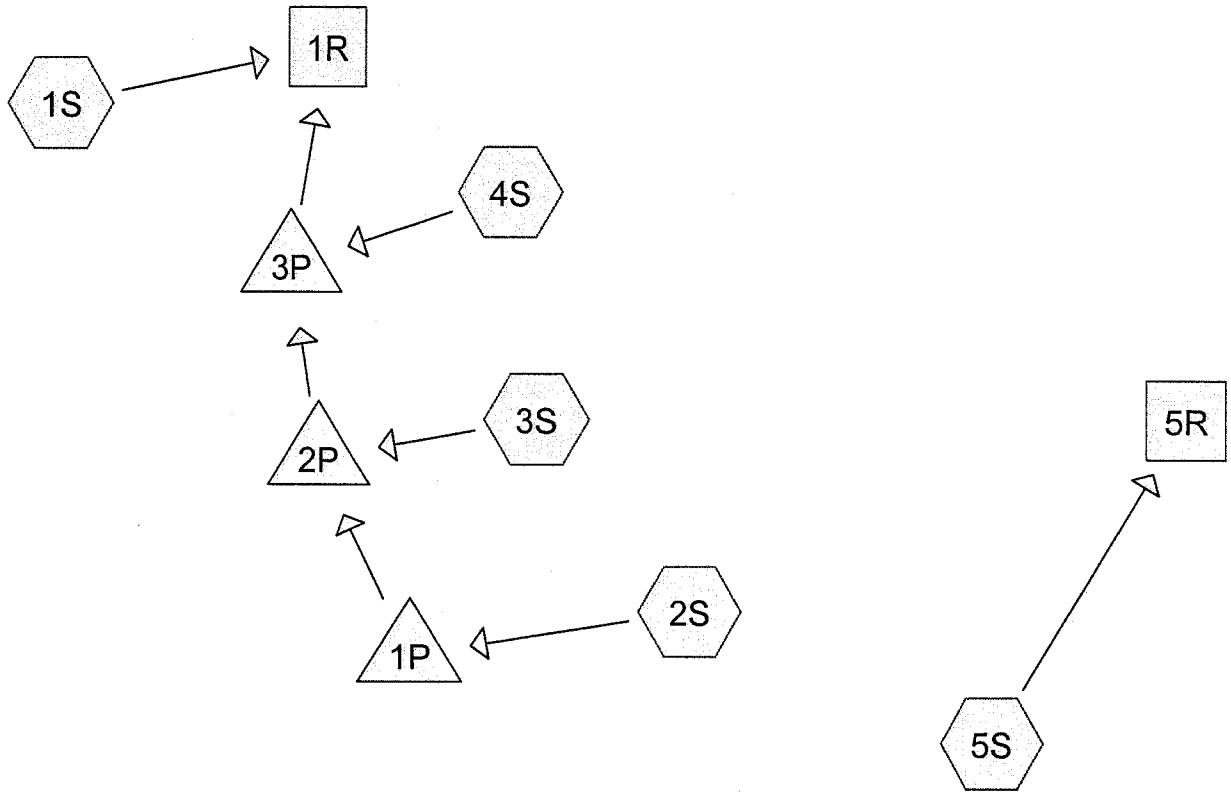
FOR:

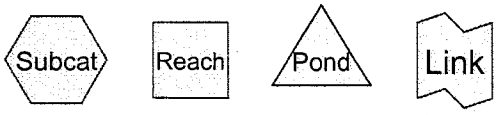
MAINE MEDICAL CENTER

22 BRAMHALL STREET
PORTLAND, MAINE 04102

Sebago Technics
Engineering & Planning for the Future
One Chabot Street
Westbrook, Me 04092-1339
Tel (207) 856-0277

DESIGN BY:	WTC
DRAWN BY:	PLS
CHECKED BY:	WTC
DATE:	9/20/01
SCALE:	1" = 20'
FIELD BK:	737
PROJ. NO:	01306
DRAWING:	01306GU
SHEET 3 OF 5	





Drainage Diagram for 01306 MAINE MEDICAL (POST)
Prepared by SEBAGO TECHNICS INC 10/22/01
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Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM

Runoff = 1.15 cfs @ 12.03 hrs, Volume= 0.072 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
0.330	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.060	61	DENSE GRASS
0.460	90	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0267	1.6		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2S: AREA DRAINING TO CB-3

Runoff = 0.55 cfs @ 12.04 hrs, Volume= 0.033 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
0.150	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.090	61	DENSE GRASS
0.310	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	20	0.1500	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
0.4	35	0.0428	1.5		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	55	Total			

Subcatchment 3S: AREA DRAINIG TO CB-2

Runoff = 0.83 cfs @ 12.04 hrs, Volume= 0.050 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
0.220	98	IMPERVIOUS
0.140	75	1/4 ACRE LOTS
0.110	61	DENSE GRASS
0.470	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	10	0.3000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.4	120	0.0208	1.4		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	130	Total			

Subcatchment 4S: AREA DRAINING TO CB-1

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.037 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
0.170	98	IMPERVIOUS
0.080	75	1/4 ACRE LOTS
0.080	61	DENSE GRASS
0.330	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	40	0.0750	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.3	100	0.0200	1.3		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.5	140	Total			

Subcatchment 5S: AREA DRAINING TO NORTH

Runoff = 1.56 cfs @ 12.06 hrs, Volume= 0.097 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
0.460	98	IMPERVIOUS
0.230	75	1/4 ACRE LOTS
0.280	61	DENSE GRASS
0.150	55	WOODS
1.120	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	85	0.0100	2.0		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	265	Total			

Reach 1R: (new node)

Inflow = 2.98 cfs @ 12.05 hrs, Volume= 0.191 af
Outflow = 2.98 cfs @ 12.05 hrs, Volume= 0.191 af, Atten= 0%, Lag= 0.0 min

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

Reach 5R: (new node)

Inflow = 1.56 cfs @ 12.06 hrs, Volume= 0.097 af
Outflow = 1.56 cfs @ 12.06 hrs, Volume= 0.097 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 node)

Inflow = 0.55 cfs @ 12.04 hrs, Volume= 0.033 af
Outflow = 0.55 cfs @ 12.05 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.3 min
Primary = 0.55 cfs @ 12.05 hrs, Volume= 0.033 af

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

Peak Elev= 96.56' Storage= 20 cf
Plug-Flow detention time= 2.3 min calculated for 0.033 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 132.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 2P: (new node)

Inflow	=	1.38 cfs @	12.05 hrs,	Volume=	0.083 af
Outflow	=	1.38 cfs @	12.05 hrs,	Volume=	0.083 af, Atten= 0%, Lag= 0.2 min
Primary	=	1.38 cfs @	12.05 hrs,	Volume=	0.083 af

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

Peak Elev= 96.87' Storage= 29 cf
Plug-Flow detention time= 1.2 min calculated for 0.083 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 68.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 3P: (new node)

Inflow	=	1.89 cfs @	12.06 hrs,	Volume=	0.120 af
Outflow	=	1.88 cfs @	12.06 hrs,	Volume=	0.120 af, Atten= 1%, Lag= 0.3 min
Primary	=	1.88 cfs @	12.06 hrs,	Volume=	0.120 af

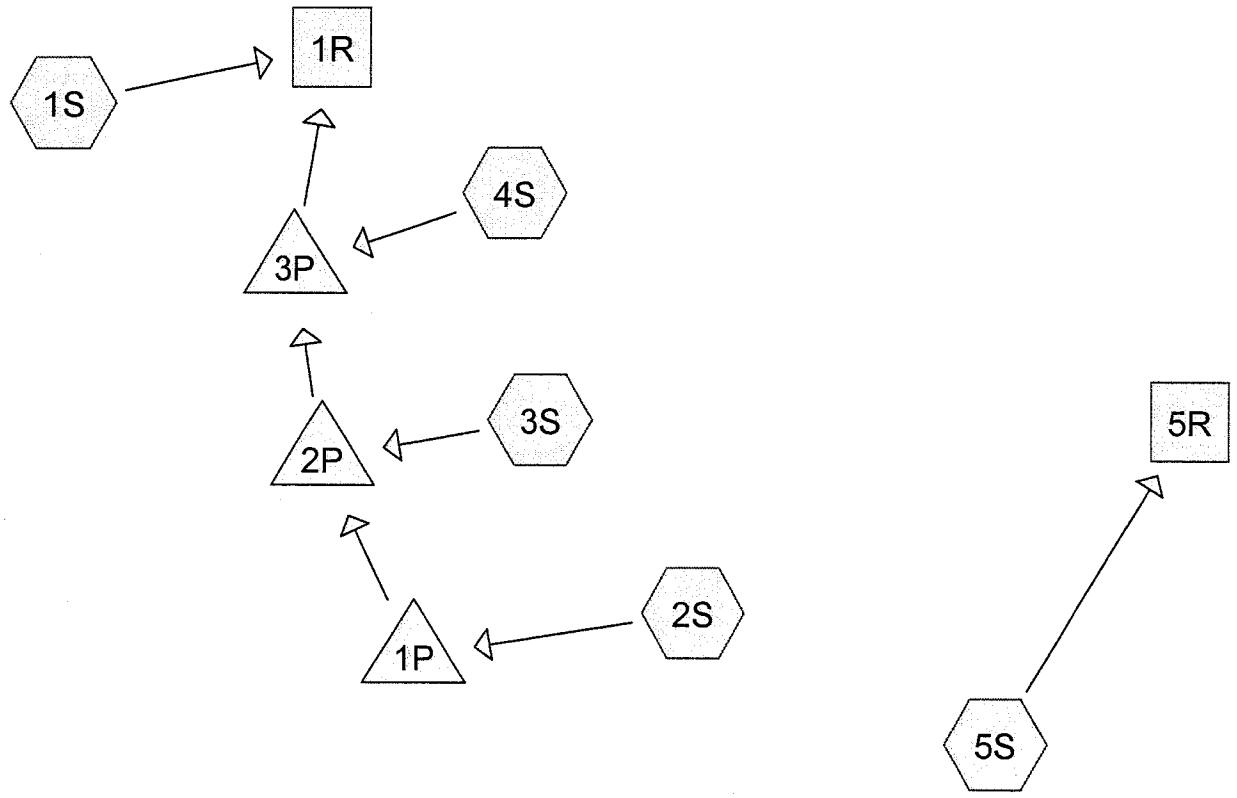
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

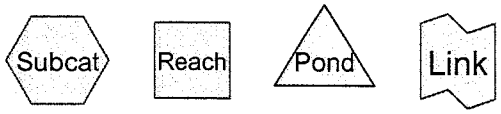
Peak Elev= 97.09' Storage= 36 cf
Plug-Flow detention time= 1.0 min calculated for 0.120 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 65.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900





Drainage Diagram for 01306 MAINE MEDICAL (POST)
Prepared by SEBAGO TECHNICS INC 10/22/01
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Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM

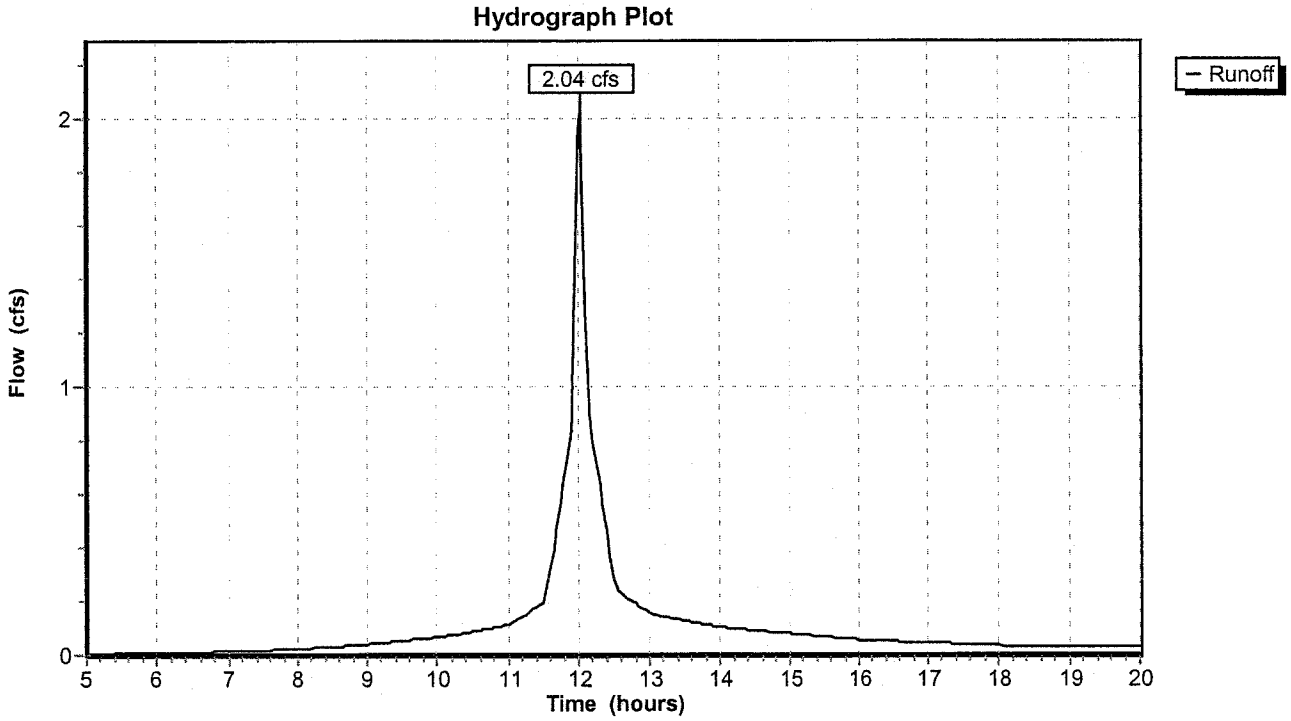
Runoff = 2.04 cfs @ 12.02 hrs, Volume= 0.130 af

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
0.330	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.060	61	DENSE GRASS
0.460	90	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0267	1.6		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM



Subcatchment 2S: AREA DRAINING TO CB-3

Runoff = 1.12 cfs @ 12.04 hrs, Volume= 0.068 af

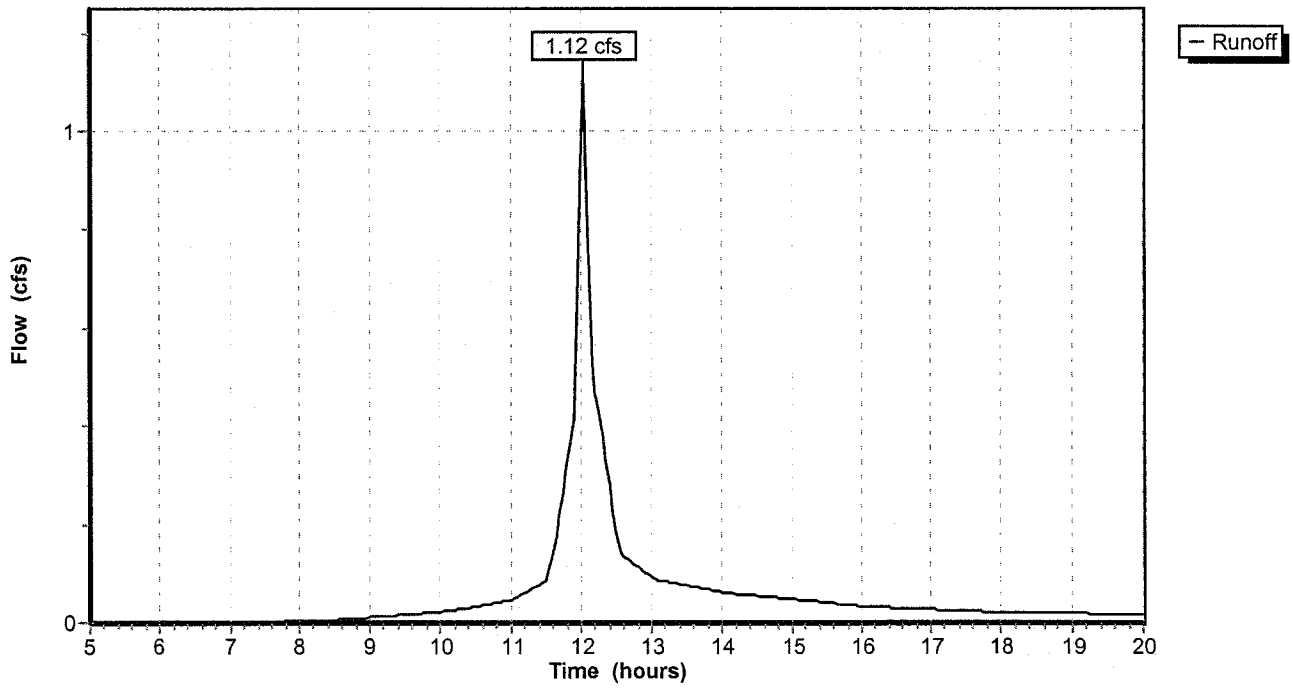
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
0.150	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.090	61	DENSE GRASS
0.310	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	20	0.1500	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
0.4	35	0.0428	1.5		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	55	Total			

Subcatchment 2S: AREA DRAINING TO CB-3

Hydrograph Plot



Subcatchment 3S: AREA DRAINIG TO CB-2

Runoff = 1.70 cfs @ 12.04 hrs, Volume= 0.103 af

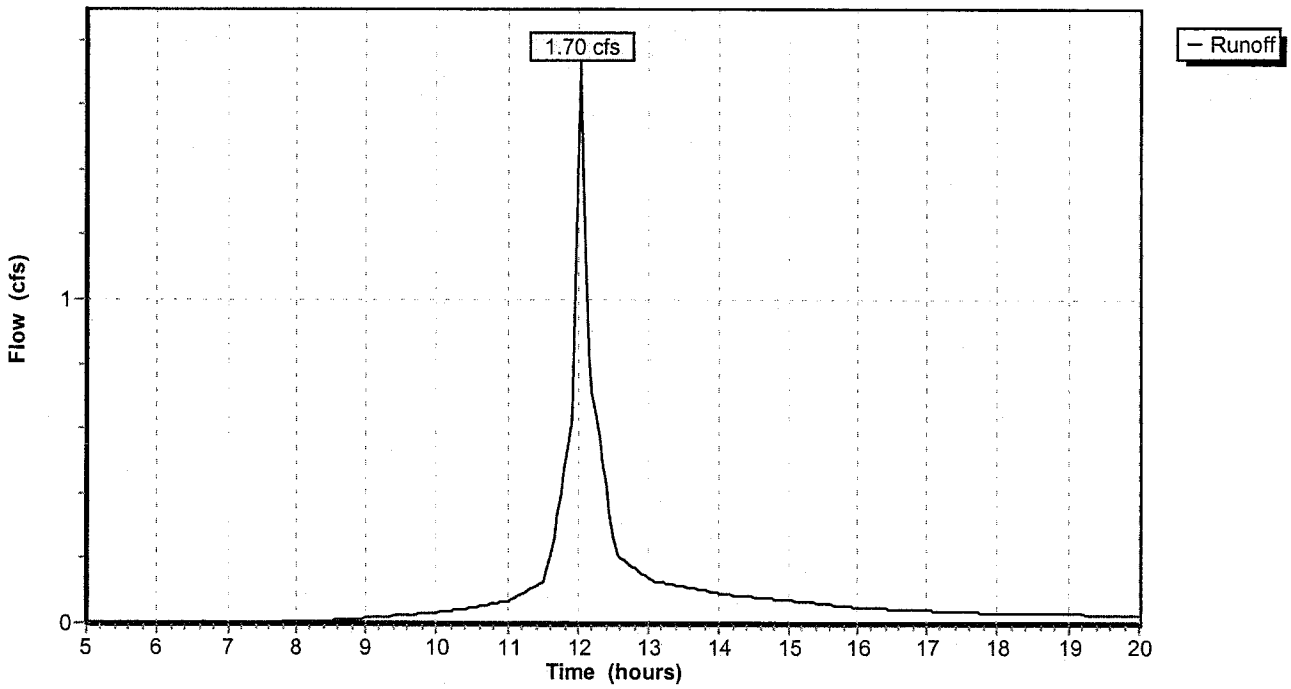
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
0.220	98	IMPERVIOUS
0.140	75	1/4 ACRE LOTS
0.110	61	DENSE GRASS
0.470	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	10	0.3000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.4	120	0.0208	1.4		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	130	Total			

Subcatchment 3S: AREA DRAINIG TO CB-2

Hydrograph Plot



Subcatchment 4S: AREA DRAINING TO CB-1

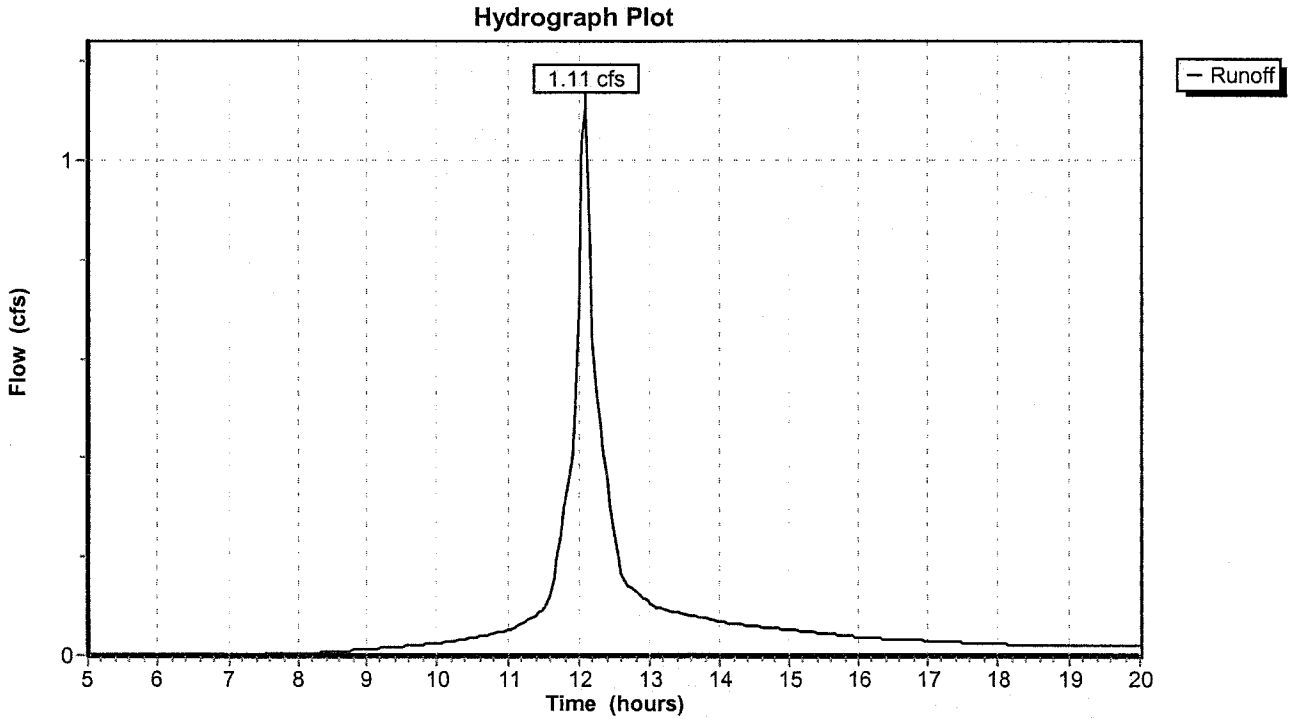
Runoff = 1.11 cfs @ 12.08 hrs, Volume= 0.075 af

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
0.170	98	IMPERVIOUS
0.080	75	1/4 ACRE LOTS
0.080	61	DENSE GRASS
0.330	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	40	0.0750	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.3	100	0.0200	1.3		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.5	140	Total			

Subcatchment 4S: AREA DRAINING TO CB-1



Subcatchment 5S: AREA DRAINING TO NORTH

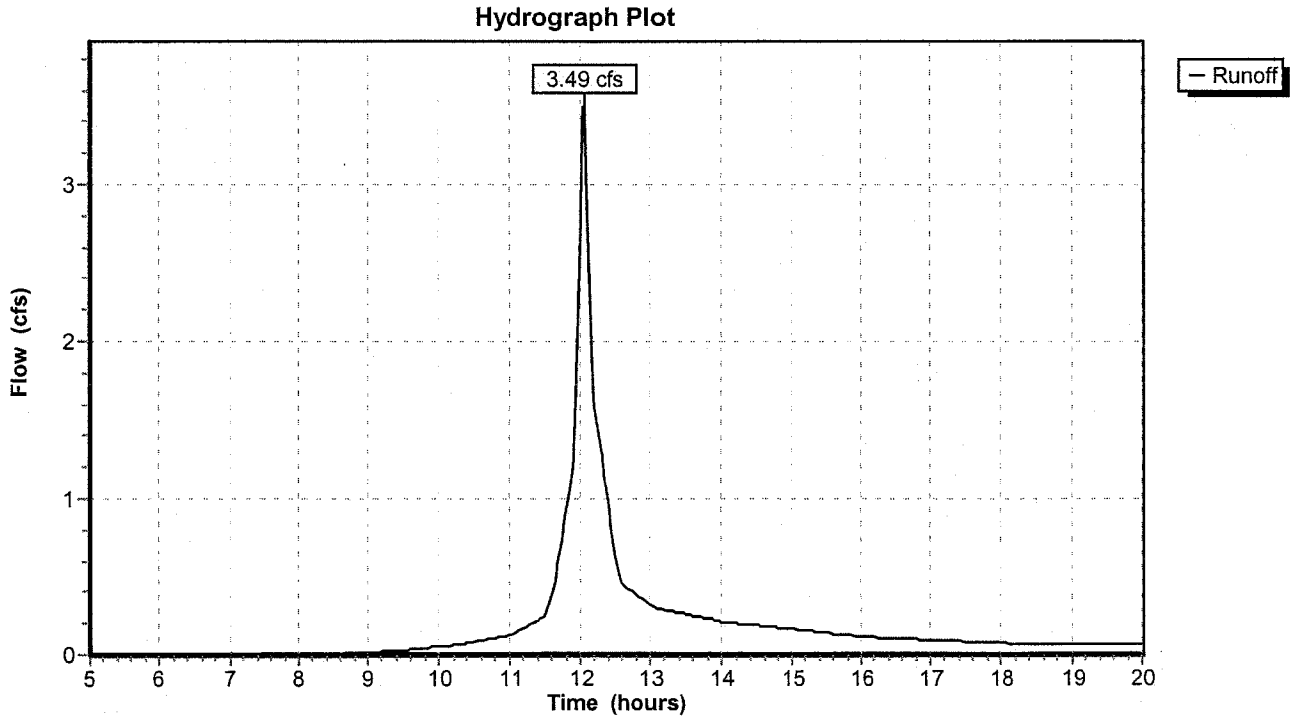
Runoff = 3.49 cfs @ 12.05 hrs, Volume= 0.214 af

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
0.460	98	IMPERVIOUS
0.230	75	1/4 ACRE LOTS
0.280	61	DENSE GRASS
0.150	55	WOODS
1.120	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	85	0.0100	2.0		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	265	Total			

Subcatchment 5S: AREA DRAINING TO NORTH

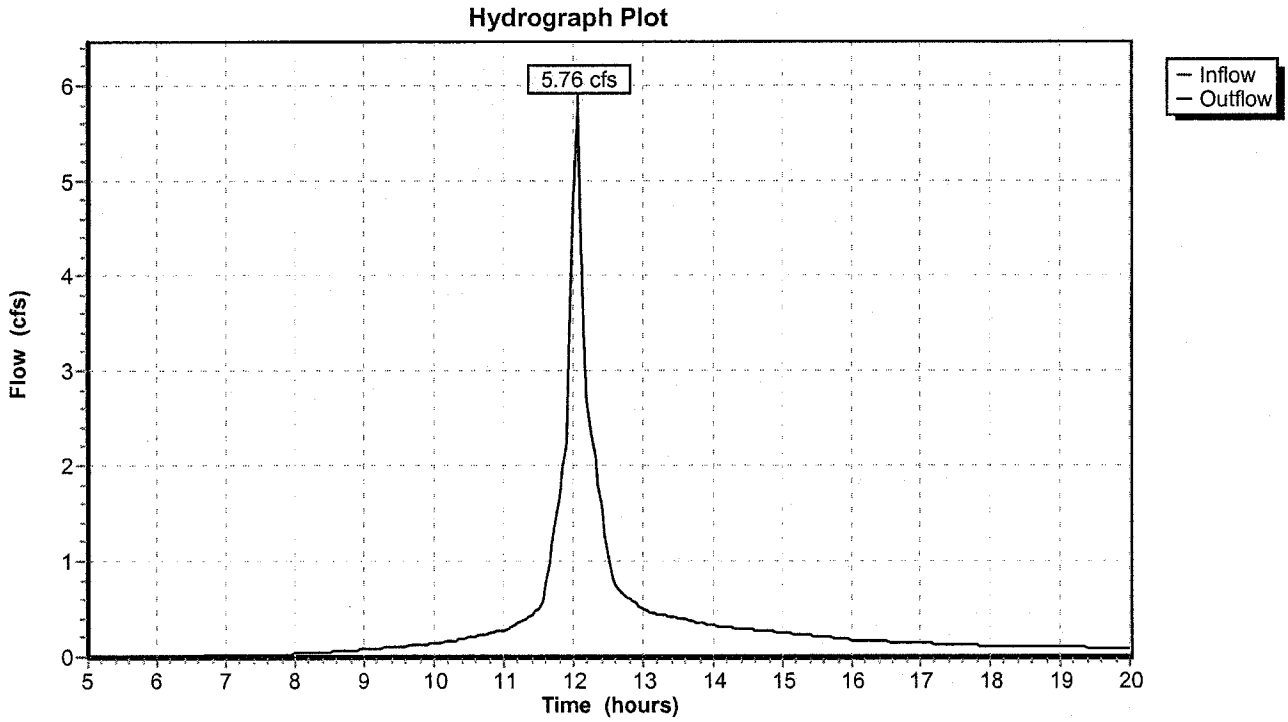


Reach 1R: (new node)

Inflow	=	5.76 cfs @	12.05 hrs,	Volume=	0.376 af
Outflow	=	5.76 cfs @	12.05 hrs,	Volume=	0.376 af, Atten= 0%, Lag= 0.0 min

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

Reach 1R: (new node)

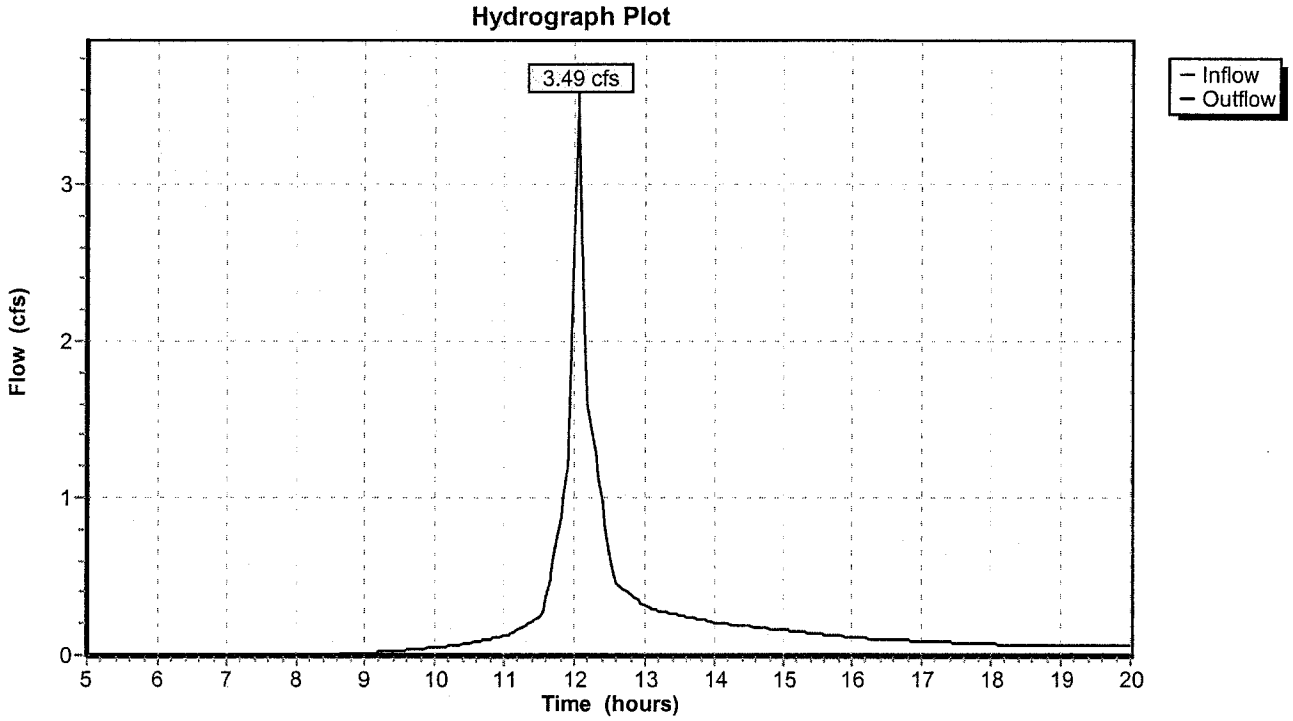


Reach 5R: (new node)

Inflow	=	3.49 cfs @	12.05 hrs,	Volume=	0.214 af
Outflow	=	3.49 cfs @	12.05 hrs,	Volume=	0.214 af, Atten= 0%, Lag= 0.0 min

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

Reach 5R: (new node)



Pond 1P: (new node)

Inflow	=	1.12 cfs @	12.04 hrs,	Volume=	0.068 af
Outflow	=	1.12 cfs @	12.04 hrs,	Volume=	0.068 af, Atten= 0%, Lag= 0.3 min
Primary	=	1.12 cfs @	12.04 hrs,	Volume=	0.068 af

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

Peak Elev= 96.85' Storage= 29 cf
Plug-Flow detention time= 1.6 min calculated for 0.068 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

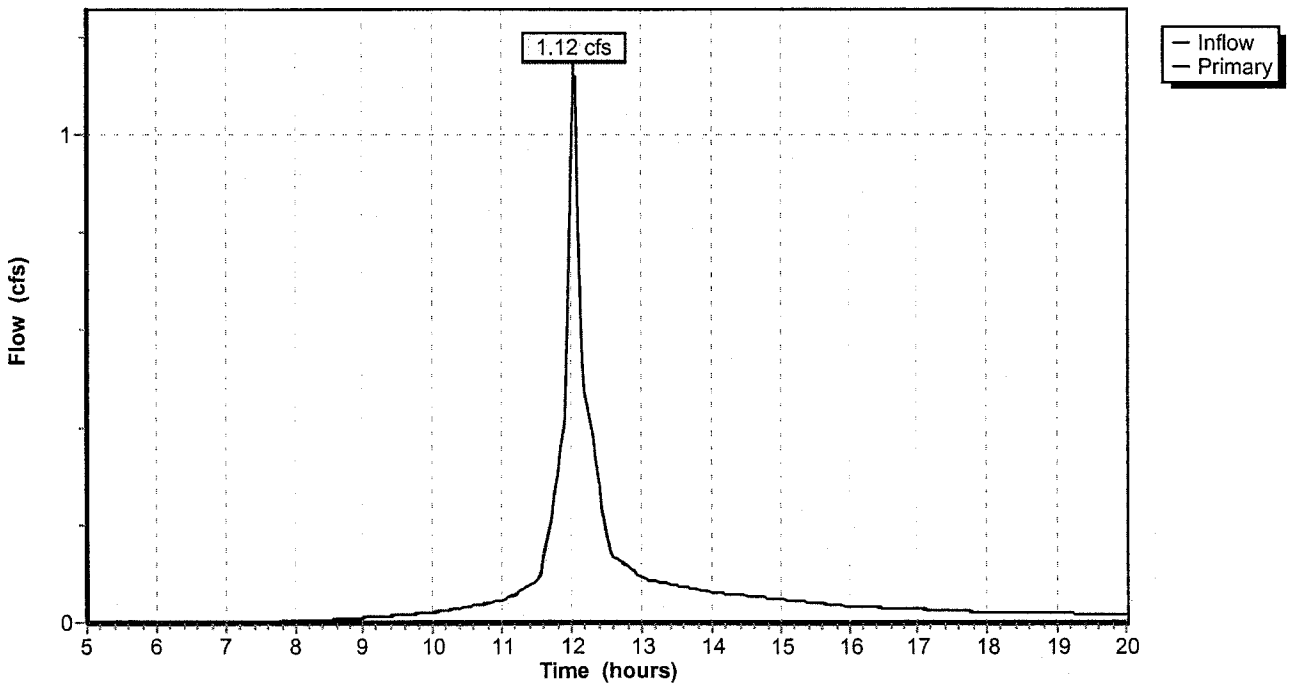
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 132.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 1P: (new node)

Hydrograph Plot



Pond 2P: (new node)

Inflow	=	2.82 cfs @	12.04 hrs,	Volume=	0.171 af
Outflow	=	2.84 cfs @	12.05 hrs,	Volume=	0.171 af, Atten= 0%, Lag= 0.3 min
Primary	=	2.84 cfs @	12.05 hrs,	Volume=	0.171 af

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

Peak Elev= 97.59' Storage= 51 cf
Plug-Flow detention time= 0.9 min calculated for 0.170 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

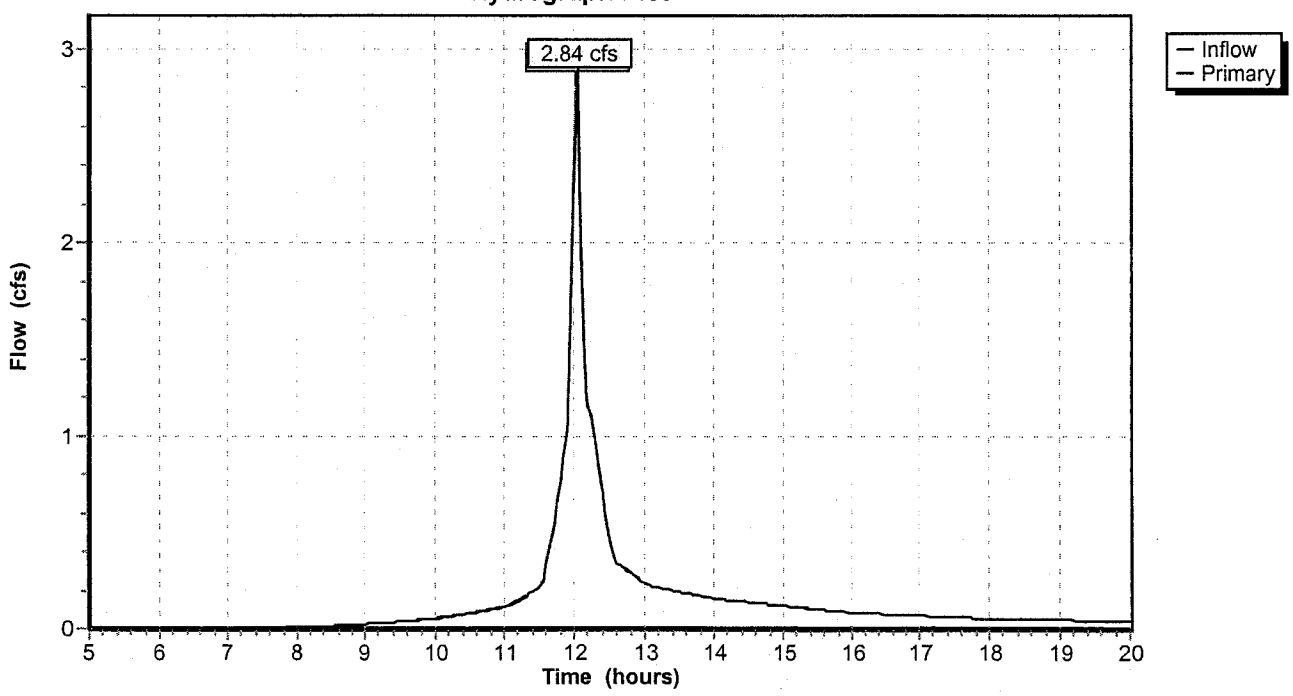
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 68.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 2P: (new node)

Hydrograph Plot



Pond 3P: (new node)

Inflow	=	3.87 cfs @	12.05 hrs,	Volume=	0.246 af
Outflow	=	3.84 cfs @	12.06 hrs,	Volume=	0.246 af, Atten= 1%, Lag= 0.3 min
Primary	=	3.84 cfs @	12.06 hrs,	Volume=	0.246 af

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

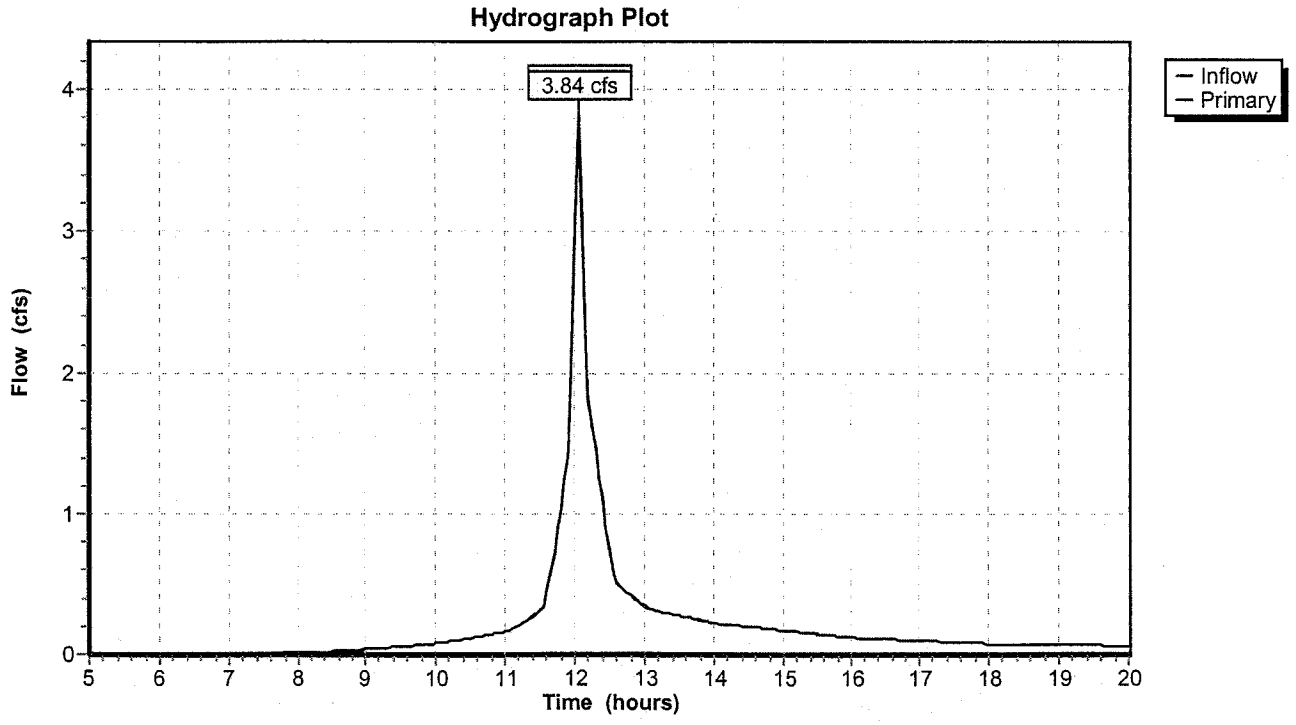
Peak Elev= 98.13' Storage= 67 cf
Plug-Flow detention time= 0.7 min calculated for 0.245 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

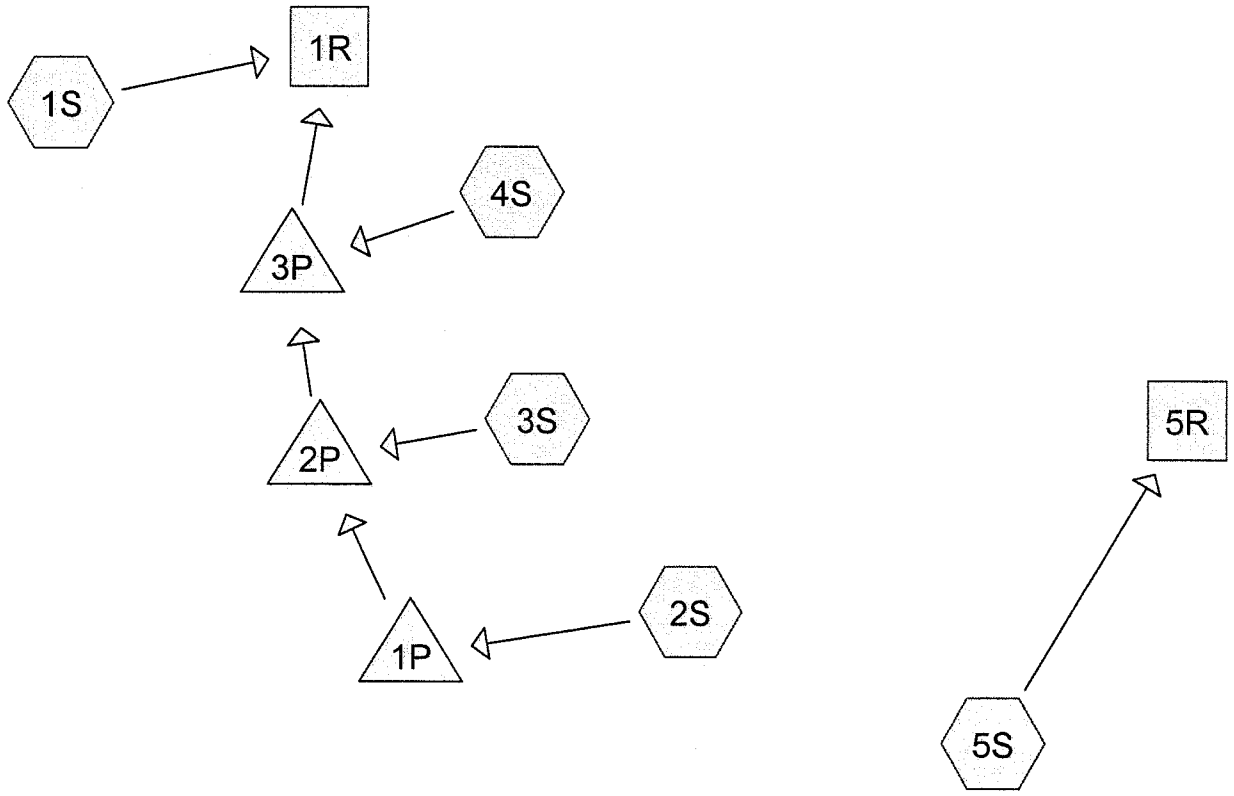
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

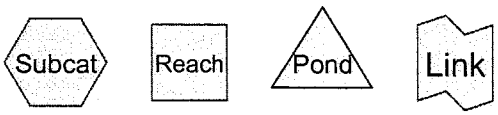
Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 65.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 3P: (new node)







Drainage Diagram for 01306 MAINE MEDICAL (POST)
Prepared by SEBAGO TECHNICS INC 10/22/01
HydroCAD® 6.00 s/n 000643 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1S: AREA DRAINING DIRECTLY TO MUNICIPAL SYSTEM

Runoff = 2.46 cfs @ 12.02 hrs, Volume= 0.158 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
0.330	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.060	61	DENSE GRASS
0.460	90	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0267	1.6		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2S: AREA DRAINING TO CB-3

Runoff = 1.40 cfs @ 12.04 hrs, Volume= 0.086 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
0.150	98	IMPERVIOUS
0.070	75	1/4 ACRE LOTS
0.090	61	DENSE GRASS
0.310	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	20	0.1500	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
0.4	35	0.0428	1.5		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	55	Total			

Subcatchment 3S: AREA DRAINIG TO CB-2

Runoff = 2.12 cfs @ 12.04 hrs, Volume= 0.130 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
0.220	98	IMPERVIOUS
0.140	75	1/4 ACRE LOTS
0.110	61	DENSE GRASS
0.470	82	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	10	0.3000	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.4	120	0.0208	1.4		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	130	Total			

Subcatchment 4S: AREA DRAINING TO CB-1

Runoff = 1.38 cfs @ 12.08 hrs, Volume= 0.094 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
0.170	98	IMPERVIOUS
0.080	75	1/4 ACRE LOTS
0.080	61	DENSE GRASS
0.330	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	40	0.0750	0.2		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.3	100	0.0200	1.3		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.5	140	Total			

Subcatchment 5S: AREA DRAINING TO NORTH

Runoff = 4.46 cfs @ 12.05 hrs, Volume= 0.274 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
0.460	98	IMPERVIOUS
0.230	75	1/4 ACRE LOTS
0.280	61	DENSE GRASS
0.150	55	WOODS
1.120	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	150	0.0100	1.1		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	85	0.0100	2.0		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	30	0.2000	2.2		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	265	Total			

Reach 1R: (new node)

Inflow = 7.03 cfs @ 12.05 hrs, Volume= 0.467 af
Outflow = 7.03 cfs @ 12.05 hrs, Volume= 0.467 af, Atten= 0%, Lag= 0.0 min

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

Reach 5R: (new node)

Inflow = 4.46 cfs @ 12.05 hrs, Volume= 0.274 af
Outflow = 4.46 cfs @ 12.05 hrs, Volume= 0.274 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 node)

Inflow = 1.40 cfs @ 12.04 hrs, Volume= 0.086 af
Outflow = 1.40 cfs @ 12.04 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.3 min
Primary = 1.40 cfs @ 12.04 hrs, Volume= 0.086 af

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

Peak Elev= 97.00' Storage= 33 cf
Plug-Flow detention time= 1.4 min calculated for 0.085 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 132.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 2P: (new node)

Inflow	=	3.51 cfs @	12.04 hrs,	Volume=	0.215 af
Outflow	=	3.51 cfs @	12.05 hrs,	Volume=	0.215 af, Atten= 0%, Lag= 0.3 min
Primary	=	3.51 cfs @	12.05 hrs,	Volume=	0.215 af

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

Peak Elev= 97.96' Storage= 62 cf
Plug-Flow detention time= 0.8 min calculated for 0.215 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 68.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Pond 3P: (new node)

Inflow	=	4.80 cfs @	12.05 hrs,	Volume=	0.309 af
Outflow	=	4.72 cfs @	12.06 hrs,	Volume=	0.309 af, Atten= 2%, Lag= 0.4 min
Primary	=	4.72 cfs @	12.06 hrs,	Volume=	0.309 af

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

Peak Elev= 98.77' Storage= 86 cf
Plug-Flow detention time= 0.7 min calculated for 0.309 af (100% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.90	30	0	0
96.00	30	3	3
97.00	30	30	33
98.00	30	30	63
99.00	30	30	93

Primary OutFlow (Free Discharge)
└─1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	95.90'	**12.0" x 65.0' long Culvert** Ke= 0.600 Outlet Invert= 95.90' S= 0.0000 '/' n= 0.012 Cc= 0.900

Planning & Urban Development

CITY OF PORTLAND

October 31, 2001

Mr. Will Conway
Sebago Technics
One Chabot Street
P.O. Box 1339
Westbrook, ME 04098-1339

RE: 993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Mr. Conway:

On October 31, 2001, the Portland Planning Authority granted minor site plan approval for a parking lot located at 993 Congress Street.

The approval is based on the submitted site plan. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.

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

1. 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. A one year extension may be granted by this department if requested by the applicant in writing prior to the expiration date of the site plan.

2. A performance guarantee in a form acceptable to the City of Portland and an inspection fee equal to 2.0% of the performance guarantee will have to be posted before beginning any site construction or issuance of a building permit.

3. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

389 Congress Street • Portland, Maine 04101 • (207) 874-8721 • FAX 756-8258 • TTY 874-8936

FIGURE V-1
(Page 1 of 2)
STORMWATER DRAINAGE SYSTEM
MAINTENANCE AGREEMENT

IN CONSIDERATION OF _Minor Site Plan _____ approval granted by the Planning Board (or Planning Authority, where applicable) of the City of Portland to a plan entitled _Parking Area-993 Congress Street_____ dated __October 30_____, 2001___, and filed with the City of Portland, Department of Planning and Urban Development, 389 Congress Street, Portland, Maine,* and pursuant to a condition thereof, __Maine Medical Center_____, a _____Corporation_____ with a place of business at __22 Bramhall Street, Portland, ME_____, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the "Owner"), as follows:

That it will, at its own cost and expense and at all time in perpetuity, maintain in good repair and in proper working order the stormwater drainage system, as shown on said plan, including but not limited to the treatment tank(s) and the outlet(s) therefrom. Owner of the subject premises further agrees to periodically clean out said tanks in accordance with the manufacturer's specifications as included on Exhibit A, attached hereto and incorporated herein by reference (Manufacturer's name and address ___Vortechnics Inc. Portland, Maine_____) and to keep a log detailing: 1) the date and nature of the maintenance performed; and 2) who performed said maintenance. Such log shall be made available for inspection by the City of Portland upon reasonable notice and request. Said agreement is for the benefit of the said City of Portland and all persons in lawful possession of said premises and abutters thereto; further, that the said City of

Portland, said persons in lawful possession and said abutters, or any of them, may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice and a reasonable time to perform, the said City of Portland, by its authorized agents or representatives, may, but is not obligated to enter upon said premises to maintain, repair, or replace said stormwater drainage system, including but not limited to, treatment tank(s) and outlet(s) thereon in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon demand.

This Agreement shall not confer upon the City of Portland or any other person the right to utilize said stormwater drainage system for public use or for the development of any other property, and the Owner shall bear no financial responsibility by virtue of this Agreement for enlarging the capacity of said surface water drainage system for any reason whatsoever.

This Agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon its successors and assigns as their interests may from time to time appear.

Dated at Portland, Maine this 2 day of November 2001

By: Robert E Cloutier
Its: Director, Property Management

STATE OF MAINE
CUMBERLAND, ss.
Date: November 2, 2001

Personally appeared the above-named ROBERT E. CLOUTIER, and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of said STORM WATER MANAGEMENT STANDARDS.

Before me,

Melinda T. Storer

Notary Public/Attorney at Law

Print Name: MELINDA F. STORER

Commission expires 3/9/06

O:\WP\PENNY\FORMS\PLANNING\STORMWAT.AGR

STANDBY LETTER OF CREDIT NO. PS1303187
DATE OF ISSUE: DECEMBER 24, 2001

ISSUING BANK:
FLEET BANK OF MAINE
A MEMBER OF FLEET FINANCIAL GROUP
ONE CITY CENTER
PORTLAND ME 04101

APPLICANT:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

BENEFICIARY:
CITY OF PORTLAND
PLANNING DEPARTMENT
389 CONGRESS ST.
PORTLAND, ME 04101

AMOUNT/CURRENCY:
USD 209,000.00
TWO HUNDRED NINE THOUSAND AND 00/100'S US DOLLARS

DATE AND PLACE OF EXPIRY:
AUGUST 31, 2002 AT OUR COUNTERS

FLEET NATIONAL BANK HEREBY ISSUES ITS IRREVOCABLE LETTER OF CREDIT FOR THE ACCOUNT OF MAINE MEDICAL CENTER, AS DEVELOPER, (HEREINAFTER REFERRED TO AS "DEVELOPER"), IN THE NAME OF THE CITY OF PORTLAND, IN THE AGGREGATE AMOUNT OF USD 209,000.00 (TWO HUNDRED NINE THOUSAND AND 00/100 U.S. DOLLARS). THESE FUNDS REPRESENT THE ESTIMATED COST OF INSTALLING SITE IMPROVEMENTS AS DEPICTED ON THE MAINE MEDICAL PARKING LOT-993 CONGRESS STREET (SITE IMPROVEMENTS), APPROVED ON OCTOBER 31, 2001 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 PERFORMANCE GUARANTEE FOR THE ABOVE REFERENCED DEVELOPMENT.

THE CITY, THROUGH ITS DIRECTOR OF PLANNING AND URBAN 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 FLEET NATIONAL BANK'S OFFICE LOCATED AT 1 FLEET WAY, SCRANTON, PA 18507-1999, ATTN: TRADE SERVICES/STANDBY UNIT, STATING THAT:

1. THE DEVELOPER HAS FAILED TO SATISFACTORILY COMPLETE BY (~~DATE: WITHIN TWO YEARS BUT NOT BETWEEN OCTOBER 30 AND APRIL 15~~) October 15, 2002 THE WORK ON THE IMPROVEMENTS CONTAINED WITHIN THE MAINE MEDICAL PARKING LOT-993 CONGRESS STREET (SITE

THIS IS AN INTEGRAL PART OF LETTER OF CREDIT NUMBER: PS1303187

IMPROVEMENT) APPROVAL, DATED OCTOBER 31, 2001. OR

2. THE DEVELOPER HAS FAILED TO DELIVER TO THE CITY A DEED CONTAINING THE METES AND BOUNDS DESCRIPTION OF ANY STREETS, EASEMENTS OR OTHER IMPROVEMENTS REQUIRED TO BE DEEDED TO THE CITY; OR

3. THE DEVELOPER HAS FAILED TO POST THE TEN PERCENT (10%) DEFECT GUARANTEE REQUIRED BY PORTLAND CODE OF ORDINANCES CHAPTER 14 &&501 AND 525; OR

4. THE DEVELOPER HAS FAILED TO NOTIFY THE CITY FOR INSPECTIONS.

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, FLEET NATIONAL BANK NOTIFIES THE CITY BY CERTIFIED MAIL (RESTRICTED DELIVERY TO DUANE KLINE, DIRECTOR OF FINANCE, CITY OF PORTLAND, 389 CONGRESS STREET, PORTLAND, MAINE 04101) THAT FLEET NATIONAL BANK ELECTS NOT TO CONSIDER THIS LETTER OF CREDIT RENEWED FOR ANY SUCH ADDITIONAL PERIOD.

IN THE EVENT OF THE FLEET NATIONAL BANK'S DISHONOR OF THE CITY OF PORTLAND'S SIGHT DRAFT, FLEET NATIONAL BANK SHALL INFORM THE CITY OF PORTLAND IN WRITING OF THE REASON OR REASONS THEREOF WITHIN THREE (3) WORKING DAYS OF THE DISHONOR.

AFTER ALL UNDERGROUND WORK HAS BEEN COMPLETED AND INSPECTED TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AND PLANNING, INCLUDING BUT NOT LIMITED TO SANITARY SEWERS, STORM DRAINS, CATCH BASINS, MANHOLES, ELECTRICAL CONDUITS, AND OTHER REQUIRED IMPROVEMENTS CONSTRUCTED CHIEFLY BELOW GRADE, THE CITY OF PORTLAND DIRECTOR OF PLANNING AND URBAN DEVELOPMENT OR ITS DIRECTOR OF FINANCE AS PROVIDED IN CHAPTER 14 &501 OF THE PORTLAND CODE OF ORDINANCES, MAY AUTHORIZE FLEET NATIONAL BANK, BY WRITTEN CERTIFICATION, TO REDUCE THE AVAILABLE AMOUNT OF THE LETTER OF CREDIT BY A SPECIFIED AMOUNT.

IN THE EVENT OF SUCH NOTICE, THE CITY, IN ITS SOLE DISCRETION, MAY DRAW HEREUNDER BY PRESENTATION OF A SIGHT DRAFT DRAWN ON FLEET NATIONAL BANK, ACCOMPANIED BY THE ORIGINAL LETTER OF CREDIT AND ALL AMENDMENTS THERETO, AND A STATEMENT PURPORTEDLY SIGNED BY THE DIRECTOR OF PLANNING AND URBAN DEVELOPMENT, AT FLEET NATIONAL BANK'S OFFICE LOCATED AT 1 FLEET WAY, SCRANTON, PA 18507-1999, ATTN: TRADE SERVICES/STANDBY UNIT STATING THAT:

1. THIS DRAWING RESULTS FROM NOTIFICATION THAT FLEET NATIONAL BANK HAS ELECTED NOT TO RENEW ITS LETTER OF CREDIT NO. PS1303187; OR

2. THE DEVELOPER HAS FAILED TO SATISFACTORILY COMPLETE BY DATE: ~~WITHIN TWO YEARS~~ October 15, 2002, THE WORK ON THE IMPROVEMENTS CONTAINED WITHIN THE MAINE MEDICAL PARKING LOT-993 CONGRESS STREET (SITE IMPROVEMENTS) APPROVAL, DATED OCTOBER 31, 2001; OR

3. THE DEVELOPER HAS FAILED TO DELIVER TO THE CITY A DEED CONTAINING THE METES AND BOUNDS DESCRIPTION OF ANY STREETS, EASEMENTS OR OTHER IMPROVEMENTS REQUIRED TO BE DEEDED TO THE CITY; OR

4. THE DEVELOPER HAS FAILED TO POST THE TEN PERCENT (10%) DEFECT GUARANTEE REQUIRED BY PORTLAND CODE OF ORDINANCES CHAPTER 14 &&501 AND 525; OR

THIS IS AN INTEGRAL PART OF LETTER OF CREDIT NUMBER: PS1303187

5. THE DEVELOPER HAS FAILED TO NOTIFY THE CITY FOR INSPECTIONS.

THIS LETTER OF CREDIT WILL AUTOMATICALLY EXPIRE UPON THE EARLIER OF:

1. FLEET NATIONAL BANK'S RECEIPT OF WRITTEN NOTIFICATION FROM THE CITY OF PORTLAND THAT SAID WORK CONTAINED WITHIN THE MAINE MEDICAL PARKING LOT-993 CONGRESS STREET (SITE IMPROVEMENTS) APPROVAL AND AS REQUIRED BY PORTLAND CODE OF ORDINANCES CHAPTER 14 &&499, 499.5, 525 AND CHAPTER 25 &46 THROUGH 65 HAS BEEN COMPLETED IN ACCORDANCE WITH THE CITY OF PORTLAND'S SPECIFICATIONS AND FLEET NATIONAL BANK LETTER OF CREDIT NO. PS1303187 MAY BE CANCELLED; OR

2. THE EXPIRATION DATE OF (~~DATE MAY NOT FALL BETWEEN OCTOBER 30 THROUGH APRIL 15)~~ October 15, 2002 ? OR ANY AUTOMATICALLY EXTENDED DATE AS SPECIFIED HEREIN.

~~THIS LETTER OF CREDIT IS SUBJECT TO THE INTERNATIONAL STANDBY PRACTICES (ISP98), THE INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 590.~~

M. Grzyanto
AUTHORIZED SIGNATURE

THIS DOCUMENT CONSISTS OF 3 PAGE(S).

Penny Littell, 1/14/02

1/15/02

DATE OF AMENDMENT: JANUARY 11, 2002

AMENDMENT TO LETTER OF CREDIT NO.: PS1303187
DATE OF ISSUE: DECEMBER 24, 2001

ISSUING BANK:
FLEET BANK OF MAINE
A MEMBER OF FLEET FINANCIAL GROUP
ONE CITY CENTER
PORTLAND ME 04101

APPLICANT:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

BENEFICIARY:
CITY OF PORTLAND
PLANNING DEPARTMENT
389 CONGRESS ST.
PORTLAND, ME 04101

THE FOLLOWING CONDITIONS HAVE BEEN AMENDED:

1. THE DEVELOPER HAS FAILED TO SATISFACTORILY COMPLETE BY OCTOBER 15, 2002 THE WORK ON THE IMPROVEMENTS CONTAINED WITHIN THE MAINE MEDICAL PARKING LOT-993 CONGRESS STREET (SITE IMPROVEMENT) APPROVAL, DATED OCTOBER 31, 2001.

2. THE DEVELOPER HAS FAILED TO SATISFACTORILY COMPLETE BY DATE: OCTOBER 15, 2002 THE WORK ON THE IMPROVEMENTS CONTAINED WITHIN THE MAINE MEDICAL PARKING LOT-993 CONGRESS STREET (SITE IMPROVEMENTS) APPROVAL, DATED OCTOBER 31, 2001

2. THE EXPIRATION DATE OF OCTOBER 15, 2002 OR ANY AUTOMATICALLY EXTENDED DATE AS SPECIFIED HEREIN.

THE FOLLOWING CONDITION HAS BEEN DELETED:

THIS LETTER OF CREDIT IS SUBJECT TO THE INTERNATIONAL STANDBY PRACTICES (ISP98), THE INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 590.

THE FOLLOWING CONDITION HAS BEEN ADDED:

EXCEPT AS OTHERWISE EXPRESSLY STATED HEREIN, THIS CREDIT IS ISSUED SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) , INTERNATIONAL CHAMBER OF COMMERCE PUBLICATION NO. 500.

PL 1/14/02
AQJ 1/15/02

THIS IS AN INTEGRAL PART OF LETTER OF CREDIT / ADVICE NUMBER: PS1303187

THE FOLLOWING PARAGRAPHS ARE HEREBY PUT IN THE FOLLOWING ORDER:

AFTER ALL UNDERGROUND WORK HAS BEEN COMPLETED AND INSPECTED TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AND PLANNING, INCLUDING BUT NOT LIMITED TO SANITARY SEWERS, STORM DRAINS, CATCH BASINS, MANHOLES, ELECTRICAL CONDUITS, AND OTHER REQUIRED IMPROVEMENTS CONSTRUCTED CHIEFLY BELOW GRADE, THE CITY OF PORTLAND DIRECTOR OF PLANNING AND URBAN DEVELOPMENT OR ITS DIRECTOR OF FINANCE AS PROVIDED IN CHAPTER 14 &501 OF THE PORTLAND CODE OF ORDINANCES, MAY AUTHORIZE FLEET NATIONAL BANK, BY WRITTEN CERTIFICATION, TO REDUCE THE AVAILABLE AMOUNT OF THE LETTER OF CREDIT BY A SPECIFIED AMOUNT.

IN THE EVENT OF THE FLEET NATIONAL BANK'S DISHONOR OF THE CITY OF PORTLAND'S SIGHT DRAFT, FLEET NATIONAL BANK SHALL INFORM THE CITY OF PORTLAND IN WRITING OF TO CONSIDER THIS LETTER OF CREDIT RENEWED FOR ANY SUCH ADDITIONAL PERIOD.

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, FLEET NATIONAL BANK NOTIFIES THE CITY BY CERTIFIED MAIL (RESTRICTED DELIVERY TO DUANE KLINE, DIRECTOR OF FINANCE, CITY OF PORTLAND, 389 CONGRESS STREET, PORTLAND, MAINE 04101) THAT FLEET NATIONAL BANK ELECTS NOT TO CONSIDER THIS LETTER OF CREDIT RENEWED FOR ANY SUCH ADDITIONAL PERIOD.

M Gaugante

AUTHORIZED SIGNATURE

pl 1/14/02
A 01. 1/15/02

Planning & Urban Development

Alexander Jaegerman
Planning Director

CITY OF PORTLAND

April 11, 2002

Mr. Gregory Boulette
Sebago Technics
One Chabot Street
P.O. Box 1339
Westbrook, ME 04098-1339

RE: 993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Mr. Conway:

This letter is to confirm the revision to the approved site plan of the Maine Medical parking lot project located at 993 Congress Street. The approved revision includes the substitution of the originally approved Vortechnics stormwater treatment tank with a Downstream Defender. 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.

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

Sincerely,

Alexander Jaegerman
Director of Planning Division

O:\PLAN\DEVREVW\CONG993\REVLTR4-11-02.DOC

1306

ESTIMATE OF PROBABLE CONSTRUCTION COST

PROJECT NAME: Maine Medical Center / Congress Street, Portland
PROJECT NUMBER: 01306
DATE: 8/10/2001

ITEM DESCRIPTION	QTY.	UNIT	UNIT COST $	TOTAL COST $
EARTHWORK				
COMMON EXCAVATION	3000	C.Y.	$10.00	30000
AGGREGATE SUBBASE	2000	C.Y.	$18.00	36000
AGGREGATE BASE	400	C.Y.	$20.00	8000
REMOVALS	1	EA.	$5,000.00	5000
			SUBTOTAL	79000

EROSION/SEDIMENT CONTROL				
EROSION/SEDIMENT CONTROL PLAN	1	EA.	$2,500.00	2500
			SUBTOTAL	2500

BITUMINOUS CONCRETE PAVING AND STRIPING				
BITUMINOUS PAVING	615	TON	$55.00	33825
PAVEMENT STRIPING	1	EA.	$1,500.00	1500
			SUBTOTAL	35325

CURBING				
VERTICAL GRANITE CURB	300	L.F.	$30.00	9000
CAPE COD CURBING	1500	L.F.	$5.00	7500
			SUBTOTAL	16500

SEWERS, DRAINS, SITE PIPING				
12" STORM DRAIN	257	L.F.	$35.00	8995
VORTECHNICS UNIT	1	EA.	$20,000	20000
CATCH BASINS	3	EA.	$2,000.00	6000
			SUBTOTAL	34995

ITEM DESCRIPTION	QTY.	UNIT	UNIT COST $	TOTAL COST $
CONCRETE SIDEWALKS				
CONCRETE SIDEWALKS	315	S.F.	$5.50	1732.5
			SUBTOTAL	1732.5

SITE IMPROVEMENTS				
PARKING LOT LIGHTS	11	EA.	$2,000.00	22000
			SUBTOTAL	22000

LANDSCAPE WORK				
TREES (EVERGREENS)	24	EA.	$362.00	8688
TREES (SHADING)	7	EA.	$450.00	3150
LOAM & SEED	1	EA.	$5,000.00	5000
			SUBTOTAL	16838
		GRAND SUBTOTAL		208890.5

OK 11-6-04
J.R.

Inspection fee = 2% = $4,177.81 J.R.

SebagoTechnics
Engineering Expertise You Can Build On

sebagotechnics.com
One Chabot Street
P.O. Box 1339
Westbrook, Maine
04098-1339
Ph. 207-856-0277
Fax 856-2206

March 20, 2002
01306

Kandice Talbot, Planner
Planning & Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

993 Congress Street, Maine Medical Parking Lot
City of Portland Job # 2001-0264, CBL #65-H-1

Dear Kandi:

We are in receipt of your letter dated March 14, 2002 regarding the above referenced project, and specifically the substitution of the originally approved Vortechnics stormwater treatment tank with the Downstream Defender. The following responses are provided to address the concerns in that letter:

1. The inlet pipe to the Downstream Defender will be submerged. Insulation is proposed to be installed to minimize the threat of freezing. Topographical constraints at the site preclude additional cover. The insulation has been noted on the plan and an appropriate detail has been added.
2. The downstream Defender had originally been proposed with an 18-inch diameter outlet that would connect to the existing City catch basin. As the existing pipes within this catch basin are 12-inch diameter, there was a concern that the additional 6 inches would impact the adjustable brick. The outlet pipe is now proposed as a 12-inch diameter, which matches the existing City pipes, in diameter and invert such that an acceptable connection can be accomplished.

Please be aware that we have been coordinating the substitution of the Vortechnics Tank to the Downstream Defender with the Development review Coordinator for this project and believed that we had received verbal approval. Accordingly, we relayed this approval to the site contractor who subsequently ordered the Downstream Defender.

We believe that this letter and the enclosed plans address the concerns raised in your letter. Please call with any questions or comments. Thank you

Sincerely,

SEBAGO TECHNICS, INC.

Gregory J. Boulette
Project Engineer

GJB:gjb/dlf
Enc.

cc: Robert Cloutier, Maine Medical Center
Jay Reynolds, Development Review Coordinator

City of Portland
Planning Department

389 Congress Street, 4th Floor
Portland, ME 04101
(207)874-8721 or (207)874-8719
Fax: (207)756-8258

FAX TRANSMISSION COVER SHEET

Date: March 19, 2001

To: Will Conway

Company: Sebago Technics

Fax #: 856-2206

From: Kandi Talbot

RE:

YOU SHOULD RECEIVE 2 PAGE(S),
INLUDING THIS COVER SHEET.
IF YOU DO NOT RECEIVE ALL THE PAGES,
PLEASE CALL (207)874-8721 OR (207)874-8719.

Planning & Urban Development

Alexander Jaegerman
Planning Director

CITY OF PORTLAND

March 14, 2002

Mr. Greg Boulot
Sebago Technics
One Chabot Street
P.O. Box 1339
Westbrook, ME 04098-1339

RE: 993 Congress Street, Maine Medical Parking Lot
Job #2001-0264, CBL #65-H-1

Dear Mr. Boulot:

Staff has reviewed your request to revise the approved site plan for the Maine Medical Parking Lot to substitute a Downstream Defender stormwater treatment unit for a Vortechnics stormwater treatment unit.

Greater site detail needs to be provided surrounding the design of the stormwater treatment unit. The inlet on this structure, as designed, will be submerged before runoff can outlet the structure. The engineer should verify that adequate cover is proposed over the inlet pipe to minimize the threat of freezing. Further, the applicant's engineer needs to confirm that entry into the City's existing catch basin in Congress Street will occur at an elevation, such that the pipe invert is made below the flat top of the structure and not into the row of adjustment brick.

Please submit revised plans for staff review. If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

Kandice Talbot

Kandice Talbot
Planner

CC: Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator
Anthony Lombardo, Project Engineer
Steve Bushey, DeLuca-Hoffman

389 Congress Street • Portland, Maine 04101 • (207) 874-8721 • FAX 756-8258 • TTY 874-8936

City of Portland
Planning Department

389 Congress Street, 4th Floor
Portland, ME 04101
(207)874-8721 or (207)874-8719
Fax: (207)756-8258

FAX TRANSMISSION COVER SHEET

Date: March 12, 2002

To: Tony Lombardo

Company:

Fax #: 874-8852

From: Kandi

RE: MMC - please review per Steve Bushey's e-mail

YOU SHOULD RECEIVE 30 PAGE(S),
INLUDING THIS COVER SHEET.
IF YOU DO NOT RECEIVE ALL THE PAGES,
PLEASE CALL (207)874-8721 OR (207)874-8719.

Grondin

R. J. Grondin & Sons
General Contractors
11 Bartlett Rd.
Gorham, ME., 04038
207-854-1147
Fax 854-4315

02/15/02

SUBMITTAL

PROJECT:	MAINE MEDICAL CENTER PARKING LOT 993 CONGRESS ST. PORTLAND, ME.
CONTRACTOR:	R. J. GRONDIN & SONS
SITE ENGINEER:	SEBAGO TECHNICS
RJG SUBMITTAL NO.	001-DOWNSTREAM DEFENDER
SUPPLIER:	HYDRO INTERNATIONAL 94 HUTCHINS DR. PORTLAND, ME.

Reviewed and Approved By
FEB 15 2002
R. J. GRONDIN & SONS

Hydro International

January 18, 2002 H.I.L. Ref. 2001/413

George Conly
R.J. Grondin & Sons
11 Bartlett Rd.
Gorham, ME 04038

RE: Maine Medical Center - Portland, ME - Downstream Defender Submittal (shop drawings)

Dear Mr. Conly:

We have enclosed shop drawings of the 6-ft dia. Downstream Defender proposed as an alternate to the Vortechnics Model 4000 specified for the Maine Medical Center project. The submittal package also includes ancillary documents such as installation instructions and an O&M manual.

Site Information

Please refer to the photocopies of the site plan and the shop drawings.

- Downstream Defenders are designed with a submerged inlet. The Defender overflow pipe stub is typically placed on the hydraulic profile and the invert of the inlet is placed one inlet pipe diameter below the invert of the overflow pipe stub. In addition, the inlet enters the Defender so that the i.d. of the inlet pipe is tangent to the i.d. of the Defender manhole.

- Considering the design criteria mentioned above, **we have recommended lowering the invert into the treatment unit from El. 95.9 to el. 94.9.**

- It appears that the rim elevation of the Defender will fall between El. 99.5 and 100. The top of the Defender manhole will have a minimum elevation of 98.83, providing minimal room for adjustment (approximately 8" if final grade is at El. 99.5). We intend to the supply the shortest available frames and covers that meet HS20 loading to allow the maximum room for adjustment.

H.I.L. Technology, Inc. • 94 Hutchins Drive • Portland, Maine 04102
Tel: (207) 756-6200 • Fax: (207) 756-6212 • E-mail: hiltech@hil-tech.com
H.I.L. Technology, Inc. is a subsidiary of Hydro International plc

Installation

Please refer to the enclosed installation instructions.

There are a few important items that we would like to bring to your attention:

- We estimate that the 6-ft Defender will have a heaviest pick weight of approximately 6-7 tons. **Please call Hydro International to confirm the heaviest pick weight prior to installation.** We recommend that the contractor arrange to have the appropriate gear on hand (spreader bar, ring clutches, crane, chains, etc.) to offload and place the Defender manhole sections.

- The contractor will need to provide a coupling to connect the Defender overflow pipe stub to the storm drain system. The overflow pipe stub has the following dimensions: 6-ft Defender - o.d.=18 11/16", i.d.=18 5/16", length=6".

- **As base thickness and riser heights vary from one precast facility to another, the actual sump depth may vary slightly from the elevation shown on the section view (dwg. GA3). As a consequence, Hydro International recommends that the contractor measure the distance from the sump to the invert of the overflow pipe stub, and use that distance plus room for bedding material, when preparing the Defender manhole excavation.**

- The inlet pipe will need to enter the Defender manhole so that the i.d. of the inlet pipe is tangent to the inside wall of the manhole. In addition, the end of the inlet pipe will need to be cut off at a 30° angle inside the Defender manhole.

- Both the inlet and overflow pipes will need to be grouted in with non-shrink grout to ensure water tight connections.

Sizing an Equivalent Treatment Unit

Removal Efficiency

Hydro International sizes each Downstream Defender to provide treatment that equals or exceeds the solids removal efficiency of competing flow-through treatment devices. To properly compare the performance of different proprietary devices, it is most appropriate to compare test data that has been gathered using similar test methods conducted on similar material. In order to satisfy this need, the Maine Department of Environmental Protection has issued a protocol for laboratory testing to determine the flow rate at which a proprietary device achieves 80% removal efficiency of a specific sediment gradation, namely U.S. Silica F-95 sand. As this testing has been completed by Vortechnics and by Hydro International, data exists to make a direct performance comparison of the two devices. The results of the Maine DEP testing program, summarized in Appendix A, show a design flow of 3.86 cfs for a 6-ft Downstream

Defender compared to a design flow of 2.62 cfs for a Vortechs Model 4000. The results of the confirmation test of each manufacturer's stormwater treatment device are included in Appendix A. A Downstream Defender design chart is included for reference as well.

To conclude, we hope that the shop drawings, our recommendations, and the material we have presented to facilitate a comparison of the treatment units are acceptable. If you have any questions or need further assistance, please do not hesitate to call us. We would be happy to assist you.

To close, we hope that this submittal package is acceptable. If you have any questions please do not hesitate to call us. We would be happy to assist you.

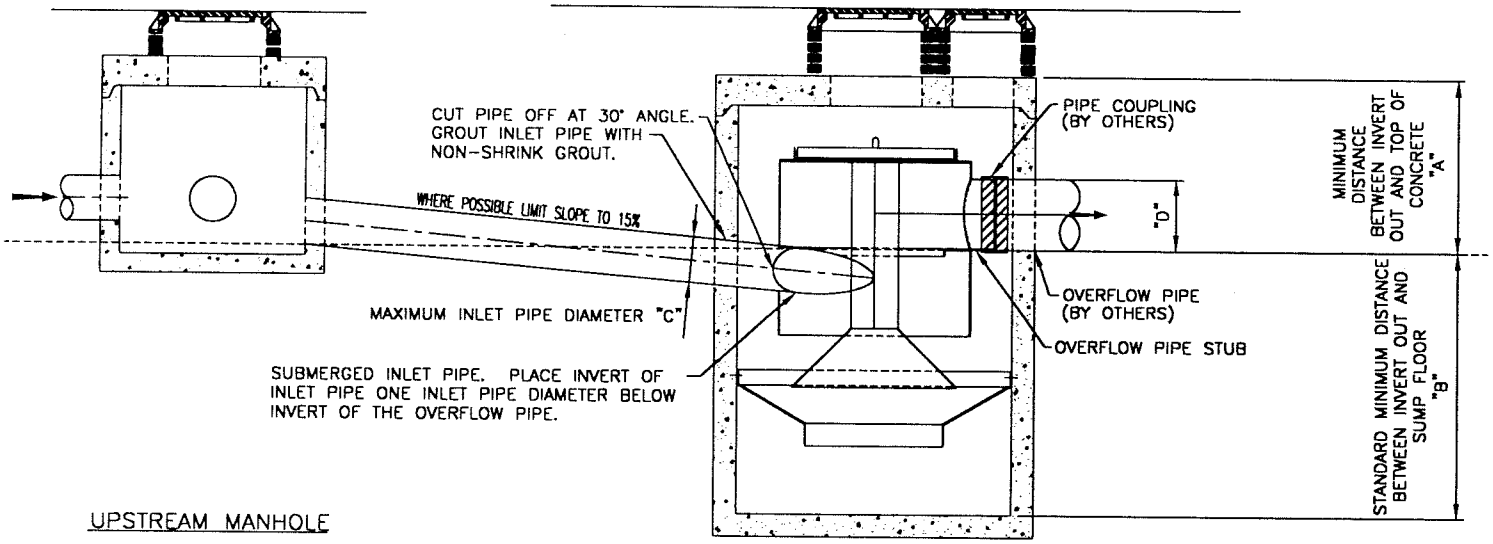
Sincerely,

Mark R Johnston

Mark R. Johnston
Proposal Engineer

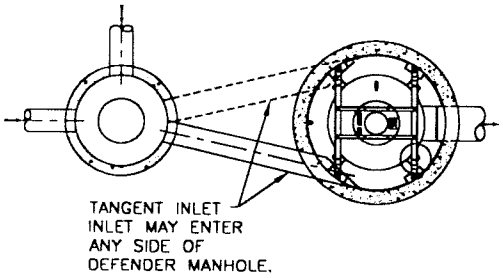
TABLE OF CONTENTS

DOWNSTREAM DEFENDER DIAMETER	MINIMUM DISTANCE BETWEEN INVERT OUT AND TOP OF CONCRETE "A" (FT)	STANDARD MINIMUM DISTANCE BETWEEN INVERT OUT AND SUMP FLOOR "B" (FT)	STANDARD INLET PIPE DIAMETER RANGE "C" (IN)	STANDARD OVERFLOW PIPE DIAMETER "D" (IN)
4-FT	3.07	4.08	8-12	12
6-FT	3.59	5.86	12-18	18
8-FT	4.11	7.67	18-24	24
10-FT	4.96	9.44	24-30	30



UPSTREAM MANHOLE

PLACE THE INVERT OF THE OVERFLOW PIPE ON THE HYDRAULIC PROFILE – WHERE POSSIBLE, THE INVERT OF THE OVERFLOW PIPE SHOULD BE AT THE SAME ELEVATION OR LOWER THAN INVERTS INTO THE UPSTREAM CHAMBER.



PLAN VIEW

DOWNSTREAM DEFENDER

Rev	By	Date	Description
A	DAS	10/15/01	FIRST ISSUE

Date 10/15/01	Scale NTS
Drawn by DAS	Checked Eng.
Checked Prod.	Approved by

Title

DOWNSTREAM DEFENDER

DETAILS FOR PLACING INTO A STORM DRAIN SYSTEM

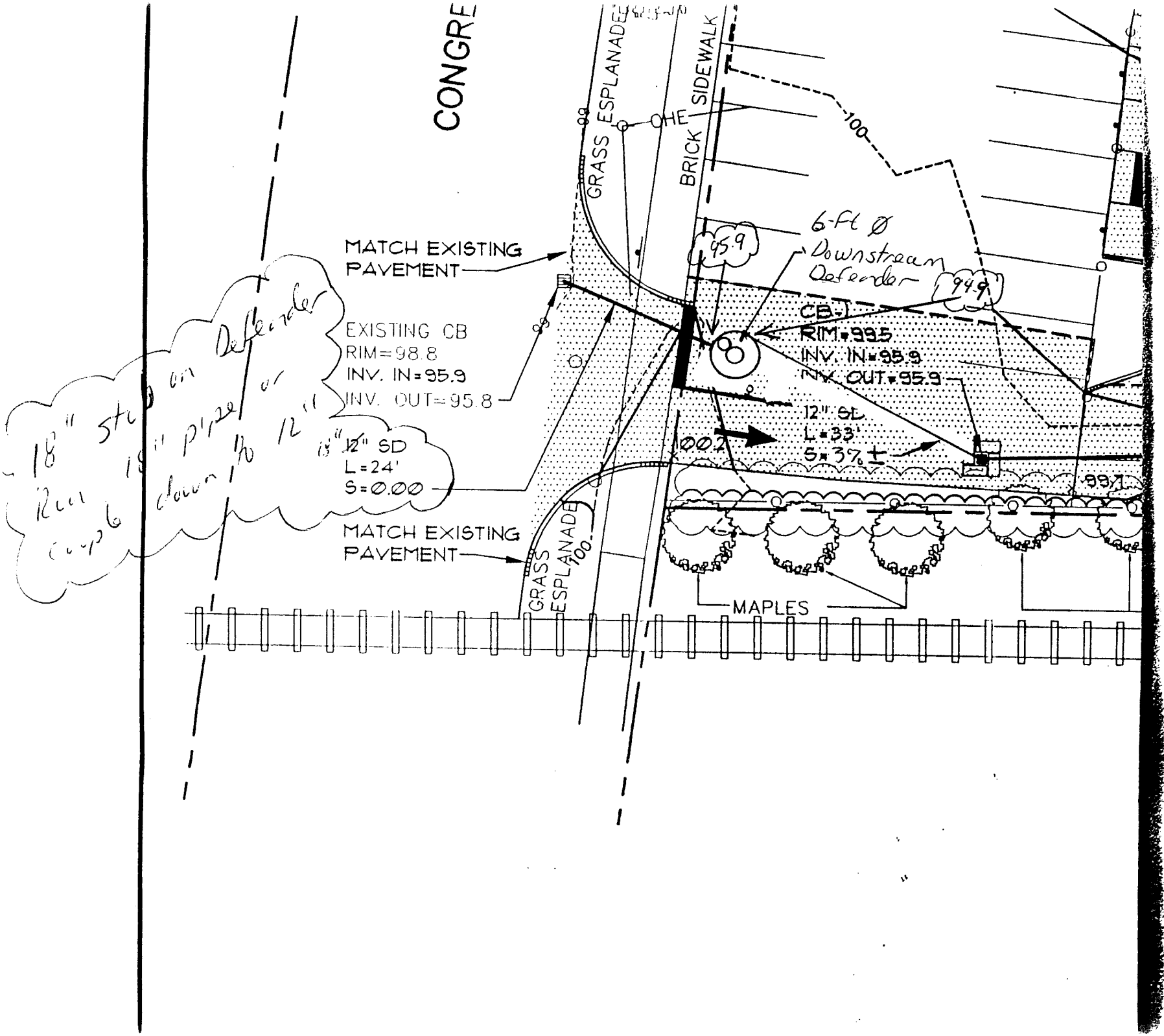
Hydro International

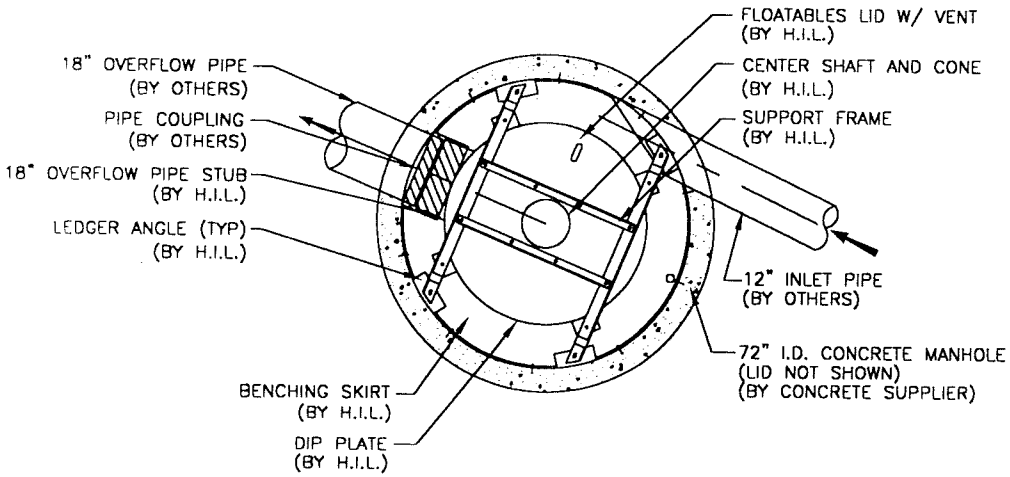
94 Hutchins Drive
Portland, Maine 04102
tel: (207) 756-6200
fax: (207) 756-6212
email: hiltech@hil-tech.com

CAD Ref: sdfit

Project No.

Drawing No. SDFIT Rev. A


CONGRE
GRASS ESPLANADE
OHE
BRICK SIDEWALK
100
MATCH EXISTING PAVEMENT
EXISTING CB
RIM=98.8
INV. IN=95.9
INV. OUT=95.8
~18" stub on Defender
Run 18" pipe or
couple down to 12"
15" 12" SD
L=24'
S=0.00
95.9
6-Ft Ø
Downstream
Defender
94.9
CB-1
RIM=99.5
INV. IN=95.9
INV. OUT=95.9
12" SL
L=33'
S=3%±
100.2
99.1
MATCH EXISTING PAVEMENT
GRASS ESPLANADE
100
MAPLES



PLAN VIEW

COMPONENT MATERIALS LIST

1. CONCRETE–4000 PSI CONCRETE @ 28 DAYS FABRICATED TO WITHSTAND HS–20 LOADING.
2. FRAMES AND COVERS–CAST IRON FABRICATED TO WITHSTAND HS–20 LOADING.
3. INTERNAL COMPONENTS:
DIP PLATE, CENTER SHAFT AND CONE, BENCHING SKIRT–HDPE OR COPOLYMER POLYPROPYLENE.
SUPPORT FRAME, LEDGER ANGLES AND MOUNTING HARDWARE–304 STAINLESS STEEL.

HYDRAULIC PARAMETERS

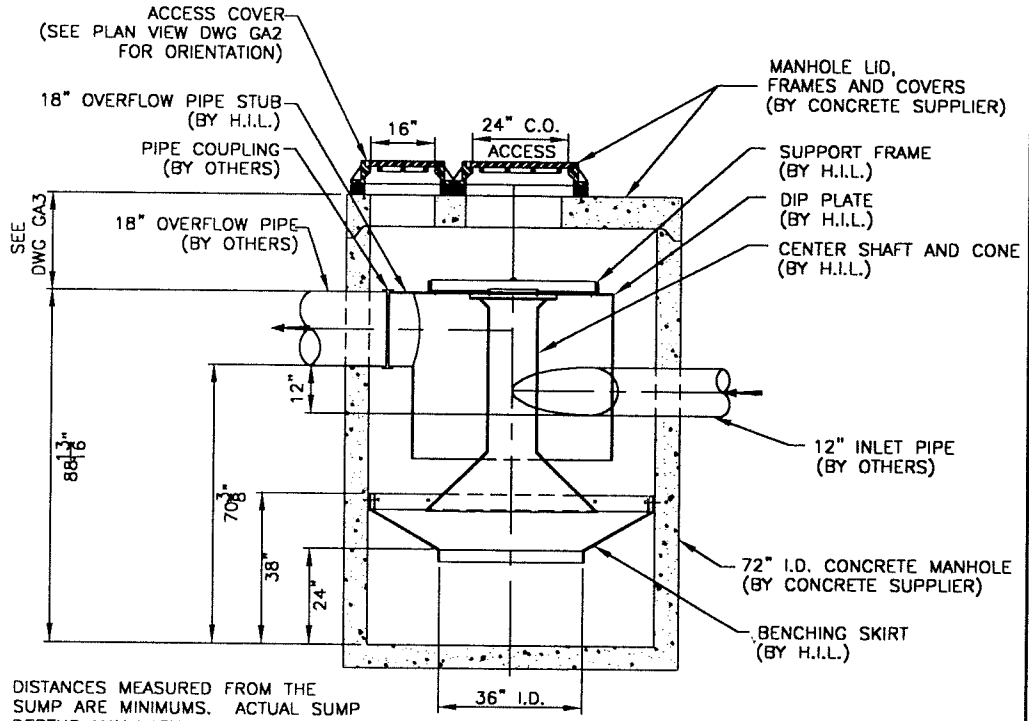
INLET PIPE ø=12"
OVERFLOW PIPE ø=18"
OVERFLOW PIPE SLOPE=0.0%

DEPTH OF FLOW IN OVERFLOW PIPE AT 3.0 cfs	FULL	INCHES
DEPTH OF FLOW IN OVERFLOW PIPE AT 8.0 cfs	FULL	INCHES
ESTIMATED HEADLOSS* AT 3.0 cfs	5	INCHES
ESTIMATED HEADLOSS* AT 8.0 cfs	39	INCHES

DOWNSTREAM DEFENDER WEIGHT

EMPTY WEIGHT	30,000	Lbs.
OPERATIONAL WEIGHT	40,350	Lbs.

*HEADLOSS IS DEFINED AS THE DIFFERENCE BETWEEN STATIC WATER LEVEL AT THE INLET OF THE DOWNSTREAM DEFENDER TO THE FREE WATER SURFACE IN THE OVERFLOW PIPE, ASSUMING FREE DISCHARGE.



DISTANCES MEASURED FROM THE SUMP ARE MINIMUMS. ACTUAL SUMP DEPTHS MAY VARY. CONTACT H.I.L. TECHNOLOGY FOR SUMP DEPTH SPECIFIC TO YOUR INSTALLATION.

GENERAL SECTION VIEW

Rev	By	Date	Description
	MRJ	01/16/02	FIRST ISSUE

Date 01/16/02	Scale 1/4"=1'-0"
Drawn by MRJ	Checked Eng.
Checked Prod.	Approved by

Title
6–FT
DOWNSTREAM DEFENDER

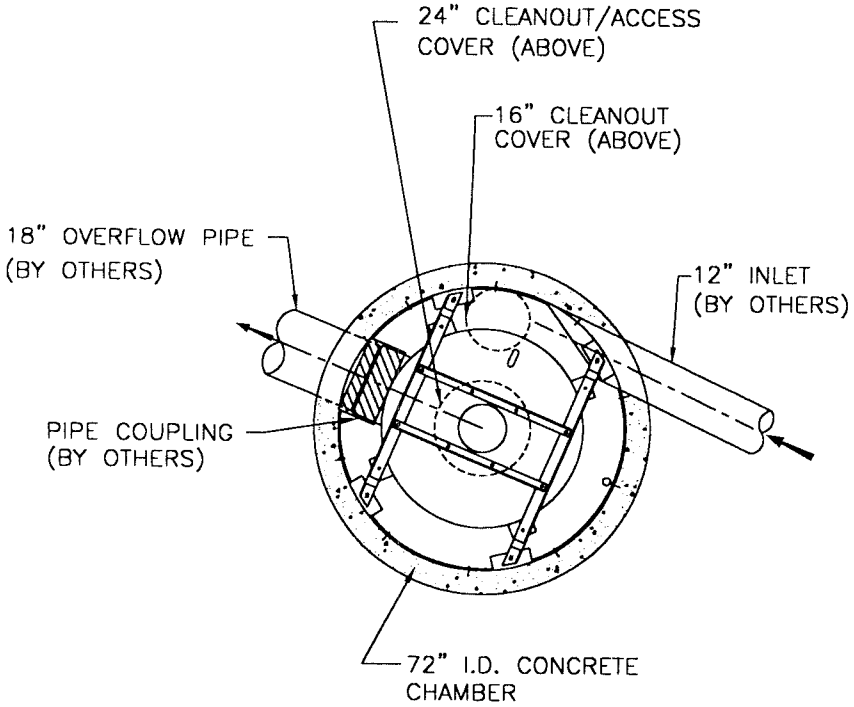
MAINE MEDICAL CENTER
PORTLAND, ME

GENERAL ARRANGEMENT

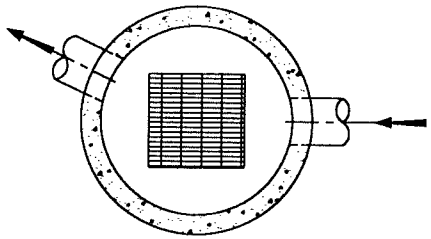
Hydro International

94 Hutchins Drive
Portland, Maine 04102
tel: (207) 756-6200
fax: (207) 756-6212
email: hiltech@hil-tech.com

CAD Ref: GA1
Project No. 2001/413
Drawing No. GA1 Rev.



DOWNSTREAM DEFENDER



CB #1
(BY OTHERS)

Rev	By	Date	Description
	MRJ	1/16/02	FIRST ISSUE

Date 1/16/02	Scale 1/4"=1'-0"
Drawn by MRJ	Checked Eng.
Checked Prod.	Approved by

Title
6-FT
DOWNSTREAM DEFENDER

MAINE MEDICAL CENTER
PORTLAND, ME

PLAN VIEW

Hydro International

94 Hutchins Drive
Portland, Maine 04102
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fax: (207) 756-6212
email: hiltech@hil-tech.com

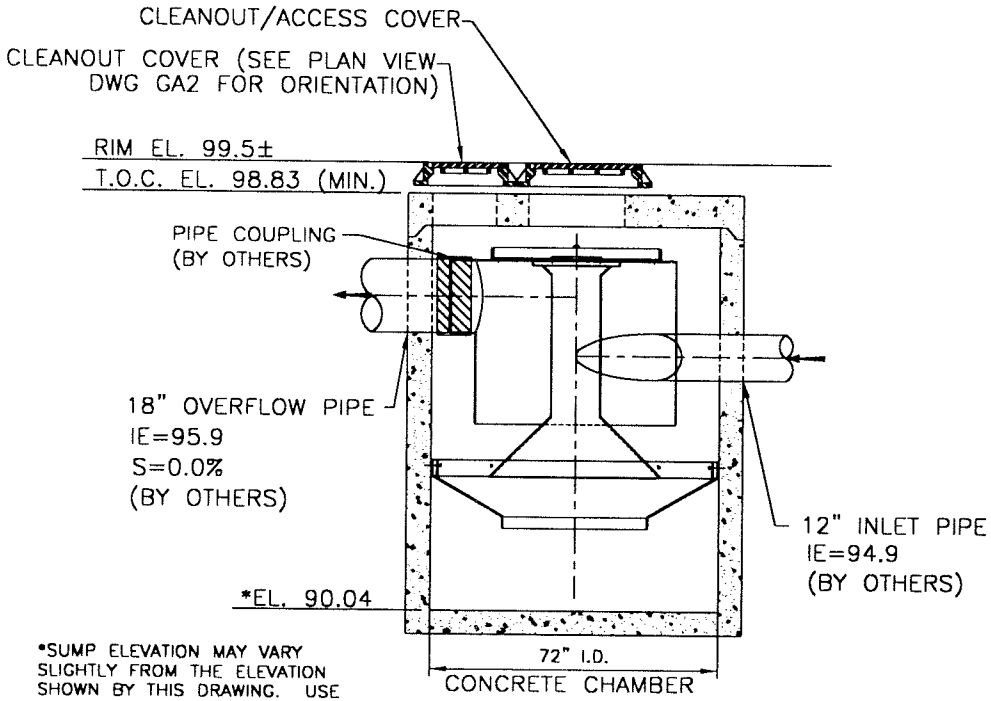
CAD Ref: DDP1
Project No. 2001/413
Drawing No. GA2 Rev.

DEFENDER PIPE CONNECTIONS:

1. RECOMMEND RCP OR PVC OVERFLOW PIPE.
2. LARGE DIAMETER COUPLING REQUIRED TO CONNECT OVERFLOW PIPE TO OVERFLOW PIPE STUB. OVERFLOW PIPE STUB DIMENSIONS: O.D.=18 11/16", I.D.=18 5/16", STUB LENGTH=6"
3. INLET PIPE ENTERS UNIT TANGENT TO INSIDE OF DEFENDER MANHOLE. CUT PIPE OFF AT 30° ANGLE. (SEE INSTALLATION INSTRUCTIONS.)
4. GROUT INLET AND OVERFLOW PIPES WITH NON-SHRINK GROUT TO ENSURE A WATERTIGHT CONNECTION.

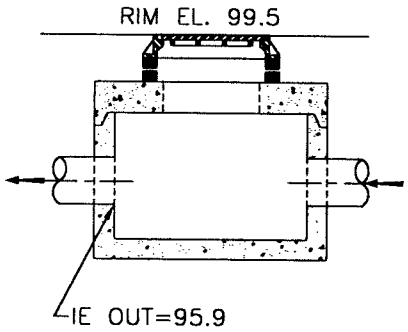
FABRICATION NOTES:

1. SUPPLY SHORT MANHOLE FRAMES AND COVERS.



*SUMP ELEVATION MAY VARY SLIGHTLY FROM THE ELEVATION SHOWN BY THIS DRAWING. USE THE INVERT OF THE OVERFLOW PIPE STUB AS A REFERENCE WHEN SETTING THE DEFENDER MANHOLE.

DOWNSTREAM DEFENDER



CB #1
(BY OTHERS)

Rev	By	Date	Description
	MRJ	01/16/02	FIRST ISSUE

Date 01/16/02	Scale 1/4"=1'-0"
Drawn by MRJ	Checked Eng.
Checked Prod.	Approved by

Title
6-FT
DOWNSTREAM DEFENDER

MAINE MEDICAL CENTER
PORTLAND, ME

SECTION VIEW

Hydro International

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CAD Ref: DDP1S
Project No. 2001/413
Drawing No. GA3 Rev.

APPENDIX A - STORMWATER TREATMENT SYSTEM COMPARISON SUMMARY

Hydro International

Stormwater Treatment System Comparison

In the interest of defining consistent performance standards for manufactured flow-through stormwater treatment systems, the Maine Department of Environmental Protection (DEP) has developed a specific laboratory test protocol that any manufactured system must adhere to in order to be utilized in the State of Maine. This protocol differs from the direct testing method traditionally used by Hydro International for evaluating removal efficiencies for its range of Hydrodynamic Vortex Separators. The final performance test must be witnessed by Maine DEP personnel and results are determined by an independent testing laboratory. The protocol is designed to determine the flow rate at which a device achieves 80% removal efficiency of a specific sediment gradation, namely U.S. Silica grade F-95 sand. Once established, the flow rate determines proper unit size to be used based on site runoff characteristics, and serves to provide a performance comparison between proprietary devices supplied by different manufacturers.

As this testing has been completed by Hydro International on the Downstream Defender and by Vortechnics on the Vortechs system, data exists to make a direct performance comparison of the two devices. Testing of each device was conducted on each company's respective 4-ft diameter model. The enclosed reports contain test results for each unit. The data indicates that a 4-ft dia. Downstream Defender achieved an average removal efficiency of 86% while operating at a flow rate of 628 gpm. Comparatively, a 4-ft Vortechs model achieved an average removal efficiency of 84% while operating at a flow rate of 525 gpm.

To determine the performance of other device sizes, the loading rates associated with the test data must be scaled upward or downward to determine an equivalent performance flow rate.

The internal components of the Downstream Defender incorporate a three-dimensional flow pattern to maximize solids separation. In addition, as Downstream Defender diameters increase to treat higher flows, depths also increase. Therefore, removal efficiencies are based on volumetric loading rates and the scaling factor for solids removal was based on Froude's Law, $Q = 628\ (D/4)^{2.5}$, where:

Q = flow rate at which a different diameter device achieves the same performance
D = the diameter in feet of the device's treatment chamber

Utilizing this scaling factor establishes the flow rate at which various size Downstream Defenders achieve 80% removal of F-95 grade silica sand.

The removal efficiency of Vortechs units is based on surface loading rates. There are no flow-modifying internal components and units do not get deeper as diameters increase. The Vortechs test unit was loaded at a rate of 42 gpm/ft^2. Therefore, this loading rate establishes the flow rate at which a Vortechs unit achieves 80% removal of F-95 grade silica sand.

For comparison purposes, the following chart lists the flow rate for each model that corresponds to the loading rate for 80% removal of F-95 grade silica sand.

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Hydro International

Stormwater Treatment System Comparison

Based on Maine DEP confirmation test for 80% removal of F-95 grade silica sand.

Downstream Defender **Hydro International**			**Vortechs** **Vortechnics, Inc.**			
Model Diameter (ft)	Design Flow		Model #	Chamber Diameter (ft)	Design Flow	
	cfs	gpm			cfs	gpm
4	1.40	628	1000	3	0.66	294
			2000	4	1.22	546
			3000	5	1.87	840
6	3.86	1731	4000	6	2.62	1176
			5000	7	3.56	1596
			7000	8	4.68	2100
8	7.92	3553	9000	9	5.99	2688
			11000	10	7.39	3318
			16000	12	10.57	4746
10	13.84	6206				

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DOWNSTREAM DEFENDER INFORMATION

Hydro International

Downstream Defender® Design Chart (Imperial)

Standard Inlet Pipe Diameters

UNIT DIAMETER (feet)	DESIGN FLOW[1]/ CAPACITY[2] (cfs)	DESIGN FLOW[1]/ CAPACITY[2] (gpm)	INLET PIPE DIAMETER (inches)	OUTLET PIPE DIAMETER (inches)	HEADLOSS[3] @ DESIGN FLOW (inches)	HEADLOSS @ CAPACITY (inches)	WEIGHT FULL (lbs)	WEIGHT EMPTY[4] (lbs)	OIL STORAGE CAPACITY (gallons)	SEDIMENT STORAGE CAPACITY (cubic yards)	UNIT DIAMETER (feet)
4	0.75/3.0	330/1,350	8	12	<2	28	13,200	10,000	70	0.70	4
6	3.00/8.0	1,350/3,590	12	18	5	39	40,350	30,000	230	2.10	6
8	7.00/15.0	3,140/6,730	18	24	6	27	79,100	55,000	525	4.65	8
10	13.0/25.0	5,830/11,220	24	30	6	24	146,300	100,000	1,050	8.70	10

NOTES:

1. Design flow is based on 90% removal of all particles with specific gravity of 2.65 down to 150 microns, 84% overall removal efficiency based on an influent sediment gradation similar to typical Department of Transportation road sand.
2. Capacity flow rate is based on keeping headloss and removal efficiencies within a desirable range with a standard inlet pipe. 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. Headlosses can be minimized by increasing the inlet pipe diameter up to the standard outlet pipe diameter.
4. Weights are calculated with internal components. Support frame, ledger angles, and mounting hardware are 304 stainless steel. Benching skirt, center cone and shaft, and dip plate are available in copolymer polypropylene or HDPE.

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

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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.

MARTHA KIRKPATRICK
COMMISSIONER

November 8, 2001

RECEIVED
NOV 2001
HYDROLOGY, INC.

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 F-95 grade silica sand performed on September 20, 2001 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 50%, 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:

$Q_{1ypf} = 628\ (D/4)^{2.5}$

Where:

Q_{1ypf} = 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 F-95 grade silica sand at a flow of 628 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	306//0.68
4	628//1.40
6	1731//3.86
8	3553//7.92
10	6206//13.84
12	9789//21.83

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
Division of Watershed Management

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17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
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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

web site: www.state.me.us/dep

Hydro International F-95 Sand SSC (TSS) Removal Confirmation Test
September 20, 2001

Reported by Jeff Dennis
Division of Watershed Management, DEP

On September 20, 2001 I witnessed a confirmation test of the ability of a 4 ft diameter Downstream Defender® unit to remove F-95 grade silica sand. The test was performed in the laboratory of the Hydro International office on Hutchins Drive in Portland, Maine. The target flow rate for the test was 630 gpm.

Lab Set-Up

The laboratory set-up for the test consists of a 23,300 gallon clean water storage reservoir from which water is pumped into an 8 in pipe which feeds water to a 4 ft diameter Downstream Defender® unit. The pipe from the storage reservoir is fitted with a valved bypass to divert excess flows back to the storage reservoir, a butterfly valve for flow control, and a flowmeter. F-95 sand is fed into the inflow pipe from an elevated 60 gal sand slurry barrel. The sand is kept in a relatively uniform suspension in the slurry tank using a propeller type mixer. Slurry is pumped through plastic tubing from the slurry tank into the inflow pipe by a peristaltic pump. An automatic sampler is located upstream of the slurry feed to collect background samples. Several feet downstream of the slurry feed in the inflow pipe there is a 6 inch T with a sluice gate for collection of inflow samples.

The outflow pipe from the Downstream Defender® unit has a free-fall discharge back into the storage reservoir. Outflow samples are collected by passing the sample bottle through the free fall discharge into the reservoir.

Test Procedure

The target test flow for the test was 630 gpm. The mean water detention time in the system at this flow rate is 20.9 seconds. Outflow samples lagged inflow samples by this amount. The interval between samples for both the inflow and outflow samples was 60 seconds. Back ground samples were collected at the same time as inflow samples. Flow was observed throughout the test.

The flow rate was stabilized at around 630 gpm and the slurry feed pump started at 10:05. The system was then allowed to reach equilibrium for a period in excess of four detention times. The first inflow sample was taken at 10:08. Outflow sampling commenced about 21 seconds later. Background sampling commenced prior to inflow sampling and continued throughout the test. Six sets of samples were taken.

Inflow, outflow and background samples were taken to the George Mitchell Center Environmental Lab for Suspended Sediment Concentration analysis. The analysis was performed by Mike Hanley.

Results

Results of the test are presented in the attached tables. Inflow concentrations ranged from 190.0 mg/l to 289.3 mg/l. Outflow concentrations ranged from 17.4 mg/l to 42.1 mg/l. Background concentrations ranged between 5.3 and 9.3 mg/l.

The removal efficiencies indicated by inflow/outflow pairs ranged from 82.1% up to 92.7%, with a mean of 86.0%. When adjusted for recycled background concentrations, efficiencies were slightly higher, from 84.6% to 95.8% with a mean of 88.9%.

Flow for the test varied from 611 gpm to 644 gpm with a mean of 628 gpm, virtually at the target flow rate.

Conclusions

All the paired removal efficiencies exceeded 80%, as did their means, so there is no question that at 628 gpm, a 4 ft diameter Downstream Defender® unit can remove at least 80% of F-95 grade silica sand. Variation in paired removal efficiencies was low, and variation in inflow concentration acceptable.

Therefore, the conclusion of this report is that the test performed on May 9, 2001, in substantial accordance with the Lab Testing Protocol, indicates that a 4 ft diameter Downstream Defender® unit operating at an average flow rate of 628 gpm provides at least 80% removal of the specified F-95 grade silica sand.

Signed: _____ Date: 11/16/01

VORTECHNICS INFORMATION

May 24, 2001

Francis Tighe
Vortechnics, Inc.
41 Evergreen Drive
Portland, ME 04103

Dear Mr. Tighe,

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 F-95 grade silica sand performed on May 9, 2001 and described in the attached report, the Vortechs stormwater treatment device is approved for a total suspended solids (TSS) removal rating of 50%, provided that the device is sized such that the projected one year peak flow from the device's drainage area does not exceed a water loading rate to the device of 42 gpm/sf.

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
Division of Watershed Management

Vortechs F-95 Sand SSC (TSS) Removal Confirmation Test
May 9, 2001

Reported by Jeff Dennis
Division of Watershed Management, DEP

On May 9, 2001 I witnessed a confirmation test of the ability of a 4 ft diameter Vortechs unit to remove F-95 grade silica sand. The test was performed in the laboratory of the Vortechnics main office on Evergreen Drive in Portland, Maine. The target flow rate for the test was 1.17 cfs or 42 gpm/sf.

Lab Set-Up

The laboratory set-up for the test consists of an inflow storage tank from which water is fed by gravity into a pipe leading to a tangential inflow into a 4 ft Vortechs unit. An intake for an ISCO sampler to collect samples for background concentration measurements is located at the point at which water leaves the inflow tank. Flow into the Vortechs unit is controlled by a butterfly valve located in the pipe shortly after it leaves the storage tank. Shortly downstream of the butterfly valve a feed enters the pipe from the F-95 sand slurry tank. F-95 sand is kept in a relatively uniform suspension in the slurry tank using a propeller type mixer. Slurry is pumped through plastic tubing from the slurry tank into the inflow pipe by a peristaltic pump. Several feet downstream of the slurry feed in the inflow pipe there is a 6 inch T with a sluice gate for collection of inflow samples. The T is directed downward at roughly a 45 degree angle form vertical.

The outflow pipe from the Vortechs unit has a free-fall discharge into a catch tank that contains two pumps that return water to the inflow storage tank. Outflow samples are collected by passing the sample bottle through the free fall discharge into the catch tank. There is a curtain of filter fabric mounted on a wire mesh frame located in the catch tank between the discharge from the Vortechs unit and the intake to the flow return pumps. The fabric prevents material from being re-circulated through the system during the test.

Test Procedure

The operating rate being tested was 42 gpm/sf, which is equivalent in a 4 ft diameter unit to 1.17 cfs. The mean water detention time in the system at this flow rate is 2 minutes 35 seconds. Outflow samples lagged inflow samples by this amount. The interval between samples for both the inflow and outflow samples was 30 seconds. Back ground samples were taken every minute. Flow was recorded every minute during the test.

The flow rate was stabilized and the slurry feed pump started at 13:32:00. The system was then allowed to reach equilibrium for a period of three detention times, or 7 minutes 45 seconds, before the first inflow sample was taken at 13:39:45. Outflow sampling commenced 2 minutes 35 seconds later, at 13:42:20. Background sampling commenced at 13:37:45, two minutes before the inflow sampling, and continued throughout the test.

During the test the butterfly valve was adjusted regularly as needed to keep the flow near the target rate.

Inflow, outflow and background samples were taken to the George Mitchell Center Environmental Lab for Suspended Sediment Concentration analysis. The analysis was performed by Mike Hanley.

Results

Results of the test are presented in the attached tables. Inflow concentrations ranged from 378.8 mg/l to 453.9 mg/l. Outflow concentrations ranged from 57.4 mg/l to 74 mg/l. Background concentrations were consistently low at 4.1, 6.9 and 5.4 mg/l.

The removal efficiencies indicated by inflow/outflow pairs ranged from 81.3% up to 85.6%, with a mean of 83.9%. When adjusted for recycled background concentrations, efficiencies were slightly higher, from 82.8% to 86.5% with a mean of 85.0%.

Flow for the test varied from 1.14 cfs to 1.21 cfs with a mean of 1.17 cfs, the target flow rate.

Conclusions

All the paired removal efficiencies exceeded 80%, as did their means, so there is no question that at a loading rate of 42 gpm/sf, a 4 ft diameter Vortechs unit can remove at least 80% of F-95 grade silica sand. Variation in paired removal efficiencies was very low, and variation in inflow concentration acceptable.

The only element of the Laboratory Testing Protocol that was not adhered to in this test was that the inflow concentrations all exceeded 300 mg/l, though the protocol states that inflow concentrations should be between 100 mg/l and 300 mg/l. This limitation was included in the protocol because field testing of BMPs suggests that removal efficiencies tend to improve for a given BMP as inflow concentrations increase. The principal reason for this phenomenon is that higher inflow runoff concentrations are almost always associated with higher intensity rainfall and, hence, relatively coarse particle size distributions that are easier to treat than the finer distributions usually associated with lower concentrations and runoff intensities. Based on re-examination of this inflow concentration limitation in light of the fact that we are keeping particle size constant by using F-95 silica sand, I conclude that this requirement is not significant given the relatively small divergence from the prescribed concentrations.

Therefore, the conclusion of this report is that the test performed on May 9, 2001, in substantial accordance with the Lab Testing Protocol, indicates that a 4 ft diameter Vortechs unit operating at an average flow rate of 1.17 cfs (equivalent to a loading rate of 42 gpm/sf) provides at least 80% removal of the specified F-95 grade silica sand.

Signed: _____ Date: _____

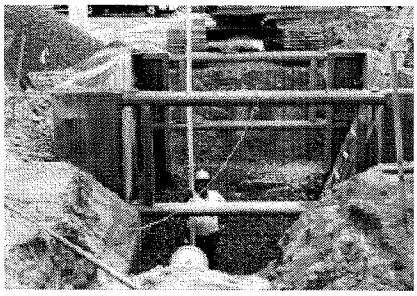
DOWNSTREAM DEFENDER®

HANDLING AND INSTALLATION INSTRUCTIONS

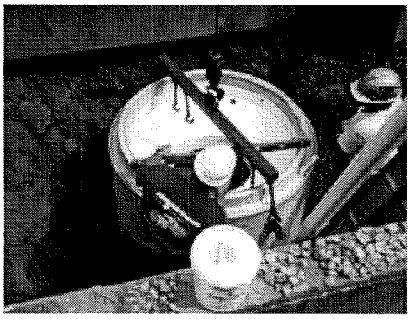
Hydro International's ***DOWNSTREAM DEFENDER®*** internal components are manufactured utilizing highly durable thermoplastics; however, improper handling may result in damage to components and accessories. Failure to comply with handling, and installation instructions voids all warranties.

1. Upon delivery of the ***DOWNSTREAM DEFENDER®*** components, inspect immediately for defects or shipping damage. If any discrepancies are found, notify Hydro International prior to unloading to initiate corrective action. Unloading of a damaged unit without notifying Hydro International voids all warranties and releases liability of costs to repair or replace from Hydro International and places onto the contractor.
2. At all times during unloading and installation, avoid unnecessary and extreme impacts to the internal components. All components shall be handled with firm and complete support. At no time shall anyone step, stand, or otherwise place an unnecessary load, on the components.
3. The ***DOWNSTREAM DEFENDER®*** shall be installed as soon after delivery as practical. Pending installation, all components shall be protected from dirt, ultraviolet light, vandalism, and impact.

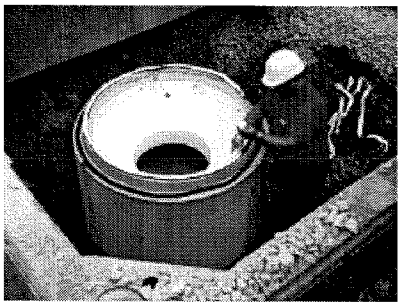
INSTALLATION – reference engineering drawings.



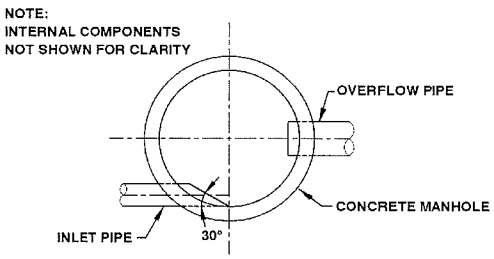
1. Excavation shall be properly prepared in advance and shall meet all applicable specifications for standards of construction. A sufficient sub-base of compacted stone, level and at correct elevation, is required as a minimum.



2. Install the ***DOWNSTREAM DEFENDER®*** pre-cast base containing benching skirt in properly prepared excavation. Base must be level prior to installation of successive risers.



3. Install successive risers, placing supplied joint sealant per specifications. Ensure the riser(s) containing the inlet and overflow pipe holes are orientated correctly as per alignment shown on the engineering drawings. Do not install pre-cast lid. Grout pick holes, if applicable, with watertight non-shrink grout.



PLAN VIEW

4. Cut off the end of the inlet pipe (by others) at a 30° angle and connect so that the inlet pipe i.d. is <u>tangent</u> to the pre-cast i.d. as shown on the engineering drawings. Grout inlet knockout with watertight non-shrink grout (by others). <u>Inlet pipe shall not protrude further into the unit than indicated on the engineering drawings.</u> On the interior, grout must be finished to a uniform, smooth surface flush with the pre-cast

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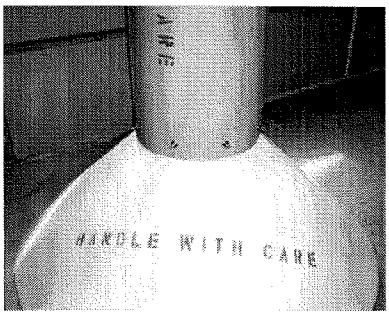
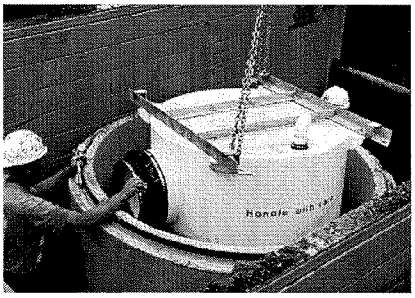
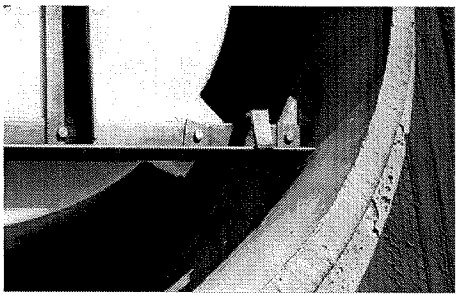
wall. No grout shall spill inside the unit. If required, plug inlet pipe and overflow pipe knockout and test for watertightness. The cause of any leaks must be determined and corrected prior to backfilling. Failure to properly perform and pass test if required, releases Hydro from liability ensuing from such failure.



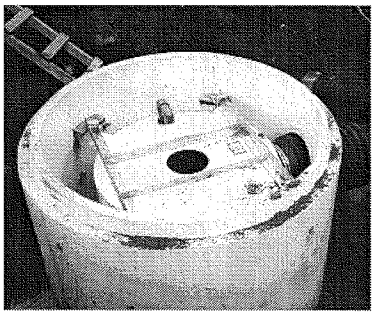
5. Center Shaft & Cone (8' and 10' units): If not attached, attach center cone to center shaft using supplied 304 ss bolts, flat washers, lock washers and nuts. Install hardware so bolt heads are to the interior of the center shaft.



6. Place approved pipe coupling (by others) onto overflow stub. Using the lifting points on the support frame, carefully lower the dip plate assembly onto the stainless steel ledger angles attached to the interior wall of the pre-cast chamber. Orientate assembly so that overflow pipe stub aligns with overflow pipe knockout.

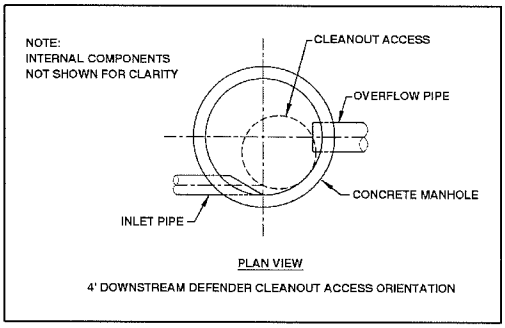


7. Attach the support frame to the ledger angles using required number of 304 ss bolts, flat washers, lock washers and nuts. For 8 foot and 10 foot units, square plate washers (supplied) are to be used in place of flat washers on top of support frame angle.

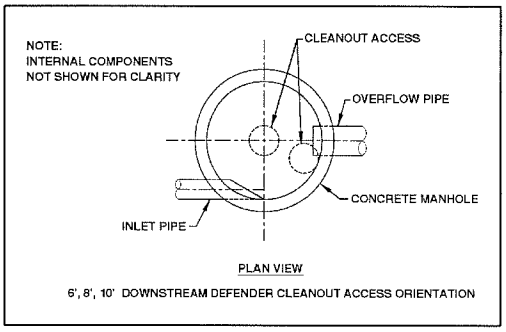


8. Connect the outlet pipe to the overflow stub using the previously installed pipe coupling (by others). Grout manhole outlet knockout with watertight non-shrink grout (by others). On the interior, grout must be finished to a uniform, smooth surface flush with pre-cast wall. No grout shall spill inside the unit.

9. Prepare the upper most riser joint with supplied joint sealant. Install pre-cast lid. Ensure that floatables access is located to the side of the overflow pipe which will be in the direct path of influent flow.



4' DOWNSTREAM DEFENDER CLEANOUT ACCESS ORIENTATION



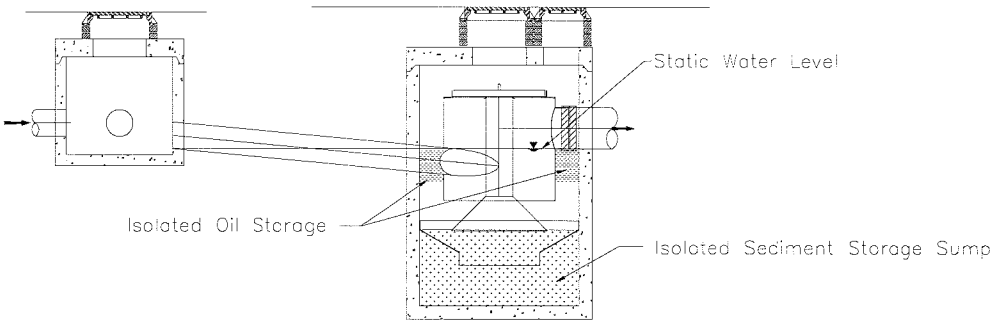
6', 8', 10' DOWNSTREAM DEFENDER CLEANOUT ACCESS ORIENTATION

10. Install cast frame(s) and cover(s) using standard accepted construction methods of adjusting to grade. Carefully backfill around unit.

DOWNSTREAM DEFENDER
OPERATION AND MAINTENANCE

The Downstream Defender operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. Therefore, no procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The Downstream Defender has been designed to allow for easy and safe access for inspection/monitoring and clean-out procedures. Entry into the unit or removal of the internal components is not necessary for maintenance so that safety concerns related to confined-space-entry are avoided.

The internal components of the Downstream Defender have been designed to protect the oil, floatables and sediment storage volumes so that treatment capacities are not reduced as pollutants accumulate between clean-outs. Additionally, the Downstream Defender is designed and installed into the storm drain system so that the vessel remains wet between storm events. Oil and floatables are stored on the water surface in the outer annulus separate from the sediment storage volume in the sump of the unit providing the option for separate oil disposal, such as adsorbant pads. Since the oil and floatables storage volumes are isolated from the sediment storage, only the pollutant volumes need to be removed. The units are typically not completely drained, which minimizes disposal costs.



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Keeping the unit wet also prevents stored sediment from solidifying in the base of the unit. The clean-out procedure becomes much more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. When this occurs, clean-out crews must enter the chamber and manually remove the sediment; a labor intensive operation in a hazardous environment.

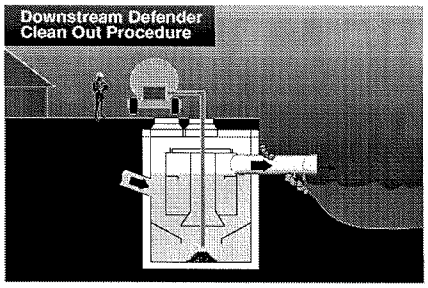
The Downstream Defender has large clear openings and no internal restrictions or weirs, minimizing the risk of blockage and hydraulic losses. Orifices and internal weirs can create two serious hydraulic problems:

1. Increased risk of blockage - Small orifices tend to collect debris and trash such as soda cans, sticks and Styrofoam cups which further reduce opening size and may even block openings completely. This alters the hydraulics in a flow-through treatment device, adversely affecting operation and performance and can eventually lead to system back-ups and maintenance issues. Removing debris from a submerged orifice may require pumping down the chamber.

2. Increased headlosses - Internal restrictions and weirs significantly increase hydraulic losses in a flow-through treatment device. The higher the flow through the system, the higher the headloss. This problem is exacerbated during the more intense storm events, backing up the storm sewer and increasing the risk for upstream flooding.

MAINTENANCE PROCEDURE

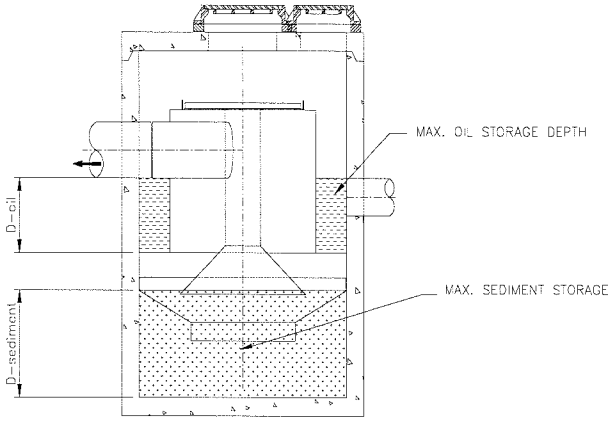
A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. The floatables access port is above the area between the concrete manhole wall and the dip plate. The sediment removal access port is located directly over the hollow center shaft.



The frequency of the sump vac procedure is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe can be used to determine the level of solids in the sediment storage facility. This information can be recorded in the attached maintenance logs to establish a routine maintenance schedule. Maximum pollutant storage capacities are provided in the following chart.

In order to minimize disposal costs, removing oil and floatables prior to removing sediment is recommended. Removing the entire oil, floatables and sediment storage volumes is not required unless the pollutant depths are equal to the maximum storage capacities as indicated in the chart shown below. The vactor procedure for a typical 6-ft diameter Downstream Defender with one foot of sediment depth and two inches of oil and debris takes less than 30 minutes and removes about 150 gallons of water in the process.

DOWNSTREAM DEFENDER
MAXIMUM STORAGE DEPTHS



UNIT DIAMETER	TOTAL OIL STORAGE	OIL CLEAN-OUT DEPTH	TOTAL SEDIMENT STORAGE	SEDIEMNT CLEAN-OUT DEPTH	UNIT DIAMETER
(FEET)	(GAL.)	(INCHES)	(GAL.)	(INCHES)	(FEET)
4	70	<16	141	<18	4
6	230	<23	424	<24	6
8	525	<33	939	<30	8
10	1050	<42	1,757	<36	10

NOTES: 1. OIL ACCUMULATION IS TYPICALLY MUCH LESS THAN SEDIMENT, HOWEVER, REMOVAL OF OIL AND SEDIMENT DURING THE SAME SERVICE IS RECOMMENDED.

2. IT IS NOT NECESSARY TO DRAIN THE UNIT'S ENTIRE VOLUME. REMOVAL OF FLOATABLES FIRST, THEN ONLY THE UNIT'S SEDIMENT STORAGE VOLUME AS INDICATED IN THE ABOVE CHART IS RECOMMENDED.

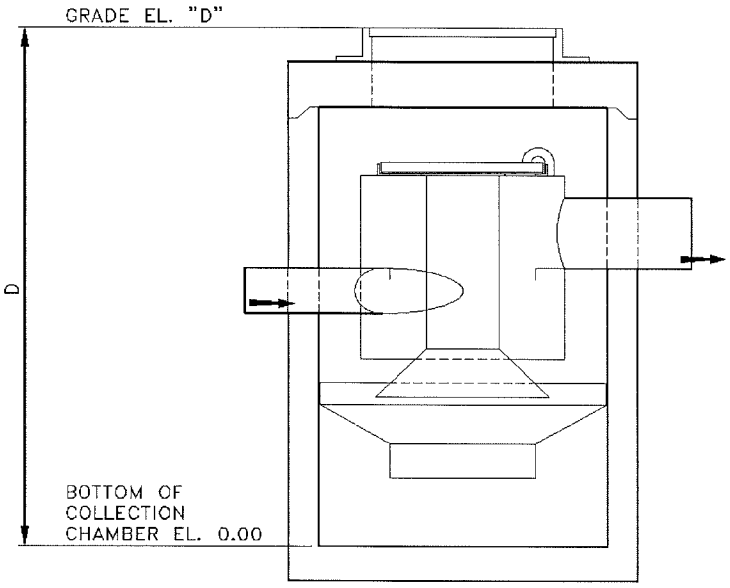
DOWNSTREAM DEFENDER MAINTENANCE LOG

Hydro Ref. No.: Site Name: Site Location:			
Owner:		Contractor:	
Contact Name:		Contact Name:	
Company Name:		Company Name:	
Address:		Address:	
Telephone:		Telephone:	
Fax:		Fax:	

Installation Date:___/___/___

Downstream Defender Diameter:_____

Downstream Defender Depth: ("D"):_____



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DOWNSTREAM DEFENDER MAINTENANCE LOG

Date	Initials	Depth of Floatables and Oils	Sediment Depth ("D" less measurement)	Volume of Sediment Removed	Site Activity/Comments

From: Anthony Lombardo
To: Kandi Talbot
Date: Thu, Mar 14, 2002 1:12 PM
Subject: MMC Parking Lot on Congress St.

I am in agreement with Steve Bushey. I believe the applicant's engineer needs to provide some greater site detail surrounding their design of the stormwater treatment unit. The inlet on this structure, as designed, will be submerged before runoff can outlet the structure. The engineer should verify that adequate cover is proposed over the inlet pipe to minimize the threat of freezing. Further, the applicant's engineer needs to confirm that entry into the City's exising catch basin in Congress St. will occur at an elevation, such that the pipe invert is made below the flat top of the structure and not into the row of adjustment brick.