SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Town of Windham
Minor Site Plan Review

For

CRR Landscaping Material
8 Self Storage Drive
Windham, Maine 04062

Prepared for

C & E Enterprises, LLC
(dba Costal Road Repair, LLC)
77 Blackstrap Road
Cumberland, ME 04021

Prepared by

Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

November 2018

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November 5, 2016
05103

Ms. Amanda Lessard, Town Planner
Town of Windham
8 School Road
Windham, ME 04063

CRR Landscaping Material, Site Plan Application
8 Self Storage Drive/ aka 56 Roosevelt Trail, Windham, Maine

Dear Ms. Lessard:

On behalf of C& E Enterprises LLC, dba Coastal Road Repair LLC, we are pleased to submit 15 copies of the attached Site Plan and associated application for the proposed CRR Landscaping Materials Development at 8 Self Storage Drive aka, 56 Roosevelt Trail (Route 302) in Windham. We are requesting that the project be scheduled for Site Plan Review by the Planning Board at their next available scheduled meeting on Monday, November 26, 2018.

The proposed development will consist of an approximate 34,000 square feet of landscaping and equipment storage yard/ facilities with access for various landscaping materials such as aggregates, loam, bark mulch, and associated equipment to sell and load such products. The project site is located at 8 Self Storage Lane, or previously known as 56 Roosevelt Trail (Route 302) opposite the existing Haven Road. The site is identified as Lots 9A-3A1 and 9A-3B2 on the Town of Windham Tax Map 25.

Access to the site is proposed through an existing access easement crossing the northerly abutting lot identified as Lot 9A-3C3 on the Town of Windham Tax Map 25. Current, there is a curb cut for the Coastal Road Repair main office building, which could also house the office for the landscaping materials facilities. We anticipate that the primary road frontage lot will be gated and the site constructed with a perimeter fencing. The site also has access from Route 302 from the southerly end. The applicant wished to maintain that access with a gate and will only use that for deliverables and emergency access

The existing access to the site is attained through a 50-foot ingress/egress easement. The easement was established by the Amended Subdivision Plan entitled Division Lot 3, 56 Roosevelt Trail approved in 2011, and recorded in the Cumberland County Registry of Deeds, October 13, 1981, Plan Book 211, Page 112. This Subdivision Plan amend the access easement and combine Lots 3.1 and 3.2., which the applicant owns along with lot 3.3 and proposes to develop the landscaping materials on Lots 3.1 and 3.2. The development will include the construction of a paved access driveway from the gate areas to the connecting access to the existing development on Lot 3.3. The same is true for paving from Route 302 the access gate. The internal portion of the site will be either compacted gravel surface or reclaimed pavement for the landscape materials operational area.

The will not be served by any septic design as restrooms will be associated with the current CRR business on the adjoining lot as will be any need for public water. There will be underground electrical service

provided from the existing poles located along Roosevelt Trail for potential lighting of the lot and entrance areas.

The proposed parking includes space for up to 20 spaces along with various equipment pieces for employee and customers. We anticipate that traffic will not be substantial given the limited use and that a self-storage use will not fall within typical peak commuter trip periods.

Stormwater runoff from the site will be treated in the stormwater management infrastructure proposed within the proposed property and under the working area with subsurface chambers and a subsurface sand filter system for stormwater quality. The attached Site Plan indicates that the development, as currently proposed, will create approximately 0.78 acres of impervious area on the site. The areas now built with various gravel impervious areas will be vegetated with grass, or planted with a conservation mix.

The site is currently undeveloped and drains in a south/southeasterly direction to an existing wetland area located along the western property boundary. The site runoff is eventually discharged into the Colley Wright Brook which is a tributary of the Presumpscot River. Colley Wright Brook is not defined as a river, stream or brook "most at risk" from new development or a sensitive or threatened region or watershed as defined by the Maine Department of Environmental Protection (MDEP).

In addition, the site will also require an updated Wetland Fill/Alteration Permit for the areas previously filled by the applicant if it differs than what was originally approved by the previous owner. That total was estimated to be up to approximately 11,000 square feet as taken from the previous permit development, which incidentally had its approval for the site plan lapse. The Wetland Fill Application has been concurrently re-submitted as an after the fact review; therefore, we are hopeful the Planning Board will condition approval upon approval by the Maine Department of Environmental Protection on the wetland fill amendments.

We look forward to meeting with the Planning Board to discuss the project in greater detail. We request that the project be placed on the Board's next available agenda for Site Plan Review, assumed to be November 26, 2018.

In the interim, please give me a call if you have any questions or if you need any additional information.

Sincerely,

SEBAGO TECHNICS, INC.

James R. Seymour, P.E.
Senior Project Manager

JRS:llg
Enc.

cc: Eric Dechambault-CRR

Project Name: CRR Landscaping Material

Tax Map: 25 **Lot:** 9/A03/B02

Estimated square footage of building(s): 64 s.f. attendant building

If no buildings proposed, estimated square footage of total development: 42,689 sf disturbed
35,719 sf impervious

Is the total disturbance proposed > 1 acre? □ **Yes** X **No**

Contact Information

1. Applicant

Name: C & E Enterprises, LLC (dba Costal Road Repair, LLC)

Mailing Address: 77 Blackstrap Road, Cumberland, ME 04021

Telephone: _____ Fax: _____ Email: _____

2. Record owner of property

X (Check here if same as applicant)

Name: _____

Mailing Address: _____

Telephone: _____ Fax: _____ E-mail: _____

3. Contact Person/Agent (if completed and signed by applicant's agent, provide written documentation of authority to act on behalf of applicant)

Name: James Seymour P.E.

Company Name: Sebago Technics, Inc.

Mailing Address: 75 John Roberts Road, Suite 4a South Portland ME

Telephone: 200-2083 Fax: _____ E-mail: jseymour@sebagotechnics.com

I certify all the information in this application form and accompanying materials is true and accurate to the best of my knowledge.

Signature _____ Date 11/5/18

Final Plan – Minor Site Plan: Submission Requirements	Applicant	Staff

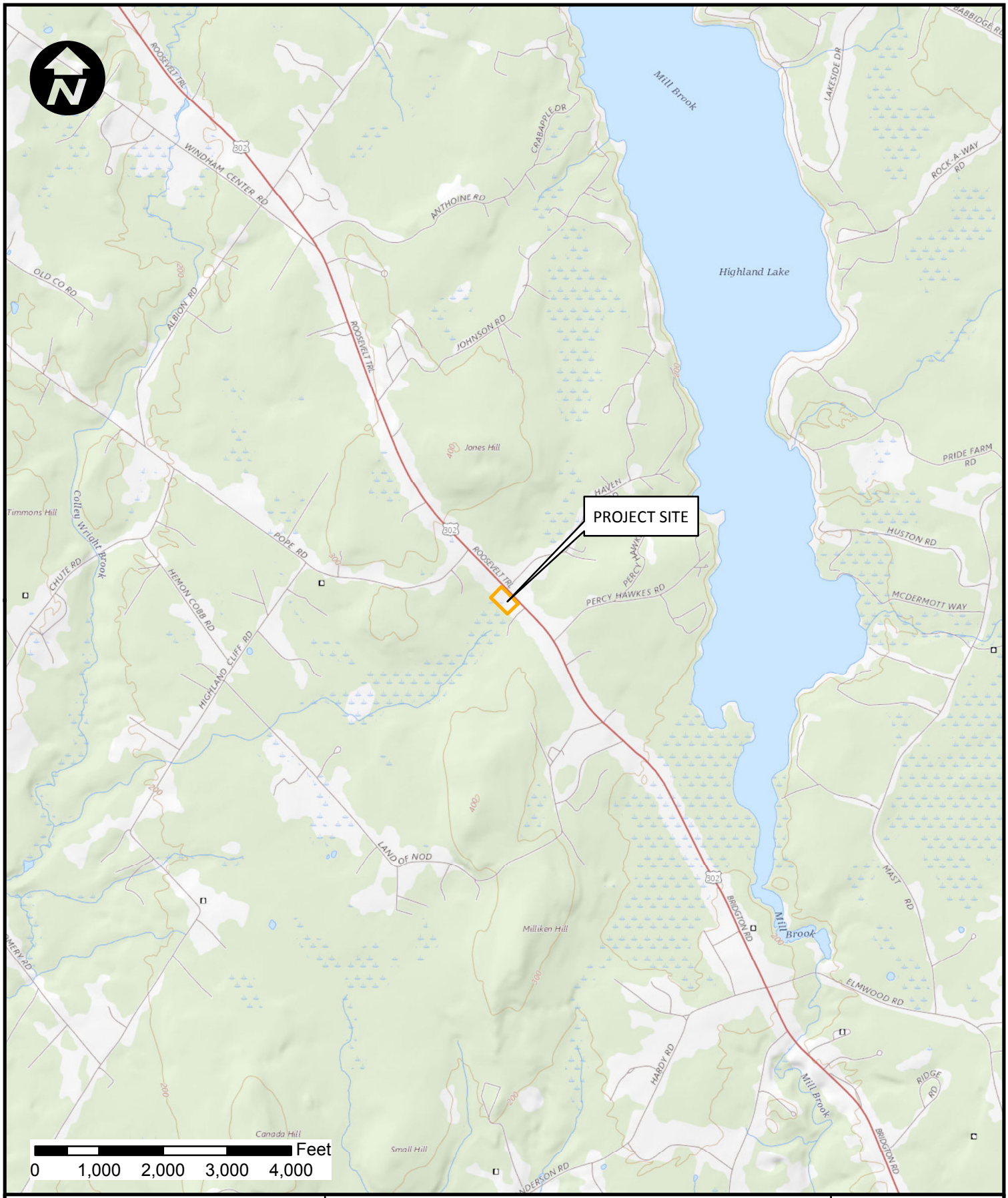
a.	Complete Sketch Plan Application form	x	
b.	Evidence of payment of application and escrow fees	x	
c.	Written information - submitted in bound report		
1	A narrative describing the proposed use or activity	x	
2	Name, address, & phone number of record owner, and applicant if different	x	
3	Names and addresses of all abutting property owners	x	
4	Documentation demonstrating right, title, or interest in property	x	
5	Copies of existing proposed covenants or deed restrictions	n/a	
6	Copies of existing or proposed easements on the property	n/a	
7	Name, registration number, and seal of the licensed professional who prepared the plan, if applicable	x	
8	Evidence of applicant's technical capability to carry out the project	x	
9	Assessment of the adequacy of any existing sewer and water mains, culverts and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property	n/a	
10	Estimated demand for water supply and sewage disposal	n/a	
11	Provisions for handling all solid wastes, including hazardous and special wastes	n/a	
12	Detail sheets of proposed light fixtures	n/a	
13	Listing of proposed trees or shrubs to be used for landscaping	x	
14	Estimate weekday AM and PM and Saturday peak hour and daily traffic to be generated by the project	n/a	
15	Description of important or unique natural areas and site features, including floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archeological resources	n/a	
16	If the project requires a stormwater permit from MaineDEP or if the Staff Review Committee determines that such information is required, submit the following:	x	
	stormwater calculations	x	
	erosion and sedimentation control measures	x	
	water quality and/or phosphorous export management provisions	n/a	
17	If public water or sewerage will be utilized, provide statement from utility district regarding the adequacy of water supply in terms of quantity and pressure for both domestic and fire flows, and the capacity of the sewer system to accommodate additional wastewater.	n/a	
18	Financial Capacity	*separate cover	
	i. Estimated costs of development and itemize estimated major expenses		
	ii. Financing (submit one of the following)		
	a. Letter of commitment to fund		
	b. Self-financing		
	1. Annual corporate report		

	2. Bank Statement		
	c. Other		
	1. Cash equity commitment of 20% of total cost of development		
	2. Financial plan for remaining financing		
	3. Letter from institution indicating intent to finance		
	iii. If a registered corporation a Certificate of Good Standing from:		
	Secretary of State, or		
	statement signed by corporate officer		
19	Technical Capacity (address both)	X	
	i. Prior experience	X	
	ii. Personnel	X	
d.	**Plan Requirements - Existing Conditions**		
i.	Location Map adequate to locate project within the municipality	X	
ii.	Vicinity Plan. Drawn to scale of not over 400 feet to the inch, and showing area within 250 feet of the property line, and shall show the following:	X	
	a. Approximate location of all property lines and acreage of parcels	X	
	b. Locations, widths and names of existing, filed or proposed streets, easements or building footprints	X	
	c. Location and designations of any public spaces	n/a	
	d. Outline of proposed subdivision, together with its street system and an indication of the future probable street system of the remaining portion of the tract	n/a	
iii.	North Arrow identifying Grid North; Magnetic North with the declination between Grid and Magnetic; and whether Magnetic or Grid bearings were used	X	
iv.	Location of all required building setbacks, yards, and buffers	X	
v.	Boundaries of all contiguous property under the total or partial control of the owner or applicant	X	
vi.	Tax map and lot number of the parcel or parcels on which the project is located	X	
vii.	Zoning classification(s), including overlay and/or subdistricts, of the property and the location of zoning district boundaries if the property is located in 2 or more districts or abuts a different district.	X	
viii.	Bearings and lengths of all property lines of the property to be developed, and the stamp of the surveyor that performed the survey.	X	
ix.	Existing topography of the site at 2-foot contour intervals	X	
x.	Location and size of any existing sewer and water mains, culvers and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property and on abutting streets or land that may serve the development.	X	
xi.	Location, names, and present widths of existing public and/or private streets and rights-of way within or adjacent to the proposed development	X	
xii.	Location, dimensions, and ground floor elevation of all existing buildings	X	
xiii.	Location and dimensions of existing driveways, parking and loading areas, walkways, and sidewalks on or adjacent to the site.	X	
xiv.	Location of intersecting roads or driveways within 200 feet of the site.	X	

xv.	Location of the following:	x	
	a. Open drainage courses	x	
	b. Wetlands	x	
	c. Stone walls	n/a	
	d. Graveyards	n/a	
	e. Fences	x	
	f. Stands of trees or treeline, and	x	
	g. Other important or unique natural areas and site features, including but not limited to, floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources	n/a	
xvi.	Direction of existing surface water drainage across the site	x	
xvii.	Location, front view, dimensions, and lighting of existing signs	n/a	
xviii.	Location & dimensions of existing easements that encumber or benefit the site	x	
xix.	Location of the nearest fire hydrant, dry hydrant, or other water supply	x	
	Plan Requirements - Proposed Development Activity		
i.	Location and dimensions of all provisions for water supply and wastewater disposal, and evidence of their adequacy for the proposed use, including soils test pit data if on-site sewage disposal is proposed	n/a	
ii.	Grading plan showing the proposed topography of the site at 2-foot contour intervals	x	
iii.	Direction of proposed surface water drainage across the site and from the site, with an assessment of impacts on downstream properties.	x	
iv.	Location and proposed screening of any on-site collection or storage facilities	n/a	
v.	Location, dimensions, and materials to be used in the construction of proposed driveways, parking and loading areas, and walkways, and any changes in traffic flow onto or off-site	x	
vi.	Proposed landscaping and buffering	x	
vii.	Location, dimensions, and ground floor elevation of all buildings or expansions	x	
viii.	Location, front view, materials and dimensions of proposed signs together with method for securing sign	n/a	
ix.	Location and type of exterior lighting. Photometric plan to demonstrate coverage area of all lighting may be required by Staff Review Committee.	n/a	
x.	Location of all utilities, including fire protection systems	n/a	
xi.	Approval block: Provide space on the plan drawing for the following words, "Approved: Town of Windham Staff Review Committee." along with space for signatures and date	x	
Electronic Submission			

Exhibit 1

Vicinity Maps



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

TITLE FOR:	SITE LOCATION MAP CRR LANDSCAPING MATERIAL	SCALE:	1 " = 2,000 '
		DATE:	11/02/2018
LOCATION:	56 Roosevelt Trail Windham, ME 04062	INFORMATION:	USGS Quadrangles: Cumberland Center/ North Windham/Portland West/Gorham

05103_LocationMap.mxd

PROJECT NUMBER: 05103

THESE MAPS ARE FOR ASSESSMENT PURPOSES ONLY AND ARE NOT FOR CONVEYANCE.

These Tax Maps are based on original maps compiled by James W. Sewall Co.

TOWN OF WINDHAM
CUMBERLAND COUNTY, MAINE
2017 PROPERTY MAPS

SOURCES:
Windham Tax Assessor's Office
Completion Date: April 1, 2017
UTM NAD83 Z19N
Prepared by: Gregory Hanscom
Windham GIS Dept.
Scale is based on printing at 24" x 36".

Legend
- Abutting Town Parcel
- Building Footprint
- Cemetery
- Condominium
- Vacated Subdivision
- Farmstead
- Hook
- Old Property Lines
- ROW Easement
- PWD ROW Easement
- Streams
- Subdivision Number
- Tie Line
- Utility
- Subject Area

Map 25

1 Inch = 100 feet

0 125 250 500 Feet

LOWELL ROAD (DISCONTINUED)

PERCY HAWKES RD

QUAIL DR

DEVON ROSE DR

DISCOVERY WY

HAVEN RD

ROOSEVELT TR

WANDERERS WY

POPE RD

LOWELL ROAD (DISCONTINUED)

Exhibit 2

Abutting Property Owners

05103

ABUTTER'S LIST

Map	Lot	Name & Address
7	60-K	Phyllis Wolstenhulme 51 Roosevelt Trail Windham, ME 04062
7	61	Julie A. Enman 11 Carignan Drive Windham, ME 04062
25	3	Steven M. & Betsey L. Roman P.O. Box 245 Gray, ME 04039
25	4	Stephen M. & Donna D. Rogers 55 Roosevelt Trail Windham, ME 04062
25	5	Town of Windham 8 School Road Windham, ME 04062
25	9A-1	Brandon Lewis 50 Roosevelt Trail Windham, ME 04062
25	9A-3C3	C & E Properties, LLC 77 Blackstrap Road Cumberland, ME 04021
25	9A-3D4	Cumberland County 4-H Leaders Association P.O. Box 9300 Portland, ME 04104
25	10B	Lori J. Crowley 5 Devon Rose Drive Windham, ME 04062
25	10D	Matthew & Erica Hamby 8 Wanderers Way Windham, ME 04062
25	10E	Bryan Maynard 9 Wanderers Way Windham, ME 04062

Exhibit 3

Right, Title Interest

Exhibit 3 – Right, Title, Interest

The subject site is owned by the applicant. Please see Exhibit 5 for a copy of the deed.

8 SELF STORAGE DR

Location 8 SELF STORAGE DR
Mblu 25/ 9/ A03/ B02/
Acct# 025009A03B02
Owner C & E PROPERTIES LLC
Assessment $87,500
PID 3339
Building Count 1

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$0	$87,500	$87,500

Owner of Record

Owner C & E PROPERTIES LLC
Co-Owner
Address 56 ROOSEVELT TR
WINDHAM, ME 04062

Sale Price $95,000
Certificate
Book & Page 32149/ 165
Sale Date 03/19/2015
Instrument WD

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
C & E PROPERTIES LLC	$95,000		32149/ 165	WD	03/19/2015
CHASE JOHN F	$50,000		22446/ 197		03/22/2005
BUSQUE PETER J	$0	1	11542/ 43		07/19/1994
BUSQUE PETER J	$7,200		11542/ 41	02	07/19/1994

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	

Building Photo

Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	

(http://images.vgsi.com/photos/WindhamMEPhotos//default.jpg)

Building Layout

(http://images.vgsi.com/photos/WindhamMEPhotos//Sketches/33

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	3900
Description	UNDEV LOT
Zone	C-3
Neighborhood	09
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.72
Frontage	
Depth	
Assessed Value	$87,500

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$0	$84,100	$84,100
2016	$0	$65,500	$65,500
2015	$0	$65,500	$65,500

Exhibit 4

A. Existing or Proposed Covenants or Deed Restrictions

B. Existing or Proposed Easements

Exhibit 4 – Covenants & Deed Restrictions

There are no covenants or deed restrictions associated with this project.

Exhibit 5

Existing Deeds

Doc#: 11907 Bk:32149 Pg: 162

After recording return to:
Bergen & Parkinson, LLC-EK
62 Portland Road, Suite 25
Kennebunk, ME 04043

Space Above This Line For Recording Data

WARRANTY DEED

MAINE REAL ESTATE TAX PAID

KNOW ALL PERSONS BY THESE PRESENTS, that **CHASE CUSTOM HOMES & FINANCE, INC.**, a Maine corporation having a mailing address of 290 Bridgton Rd., Westbrook ME, FOR CONSIDERATION PAID, hereby grants to **C & E PROPERTIES, LLC**, a Maine limited liability company having a mailing address of 13 Knight St., Unit 2, Portland, ME 04103, with Warranty Covenants, a certain lot or parcel of land, together with any improvements thereon and all rights appurtenant thereto, commonly know and designated as 8 Self Storage Drive, Lot 3.1, Windham, Maine; being more particularly described as follows:

SEE EXHIBIT A ATTACHED HERETO AND
INCORPORATED HEREIN BY REFERENCE

IN WITNESS WHEREOF, Chase Custom Homes & Finance, Inc. has caused this instrument to be executed by John F. Chase, its Chief Executive Officer, thereunto duly authorized as of this 19th day of March, 2015.

CHASE CUSTOM HOMES & FINANCE, INC.

WITNESS

By: John F. Chase

John F. Chase, its C.E.O., thereunto duly authorized

STATE OF MAINE
York County, ss. March 19, 2015

Personally appeared the above-named John F. Chase and acknowledged the foregoing instrument to be his free act and deed duly authorized in said capacity.

Before me,

Attorney at Law/Notary Public

Erin K. Kalakowsky
ATTORNEY AT LAW

FC

EXHIBIT A

A certain lot or parcel of land, with any improvements thereon, located on the southwesterly side of U.S. Route 302, also known as Roosevelt Trail, in the Town of Windham, County of Cumberland and State of Maine, being Lot No. 3.1 as depicted on plan entitled "Division, Lot 3, 56 Roosevelt Trail made for F.S. Plummer Co., Inc." made by James C. Lauzier, dated April 15, 1987, revised through March 22, 1988 and recorded in the Cumberland County Registry of Deeds in Plan Book 170, Page31.

This conveyance is made subject to and together with an easement for ingress and egress as shown on said plan.

This conveyance is made subject to any and all easements and appurtenances of record, insofar as the same may affect the subject premises.

This conveyance is made subject to unpaid real estate taxes for the current tax year, if any, which the Grantee herein, by acceptance of this deed, assumes and agrees to pay.

For title, see deed of Peter J. Busque to Chase Custom Homes & Finance, Inc. dated March 22, 2005 and recorded with the Cumberland County Registry of Deeds in Book 22446, Page 214.

Received
Recorded Register of Deeds
Mar 23,2015 10:39:52A
Cumberland County
Nancy A. Lane

Doc#: 11908 Bk:32149 Pg: 165

After recording return to:
Bergen & Parkinson, LLC
62 Portland Road, Suite 25
Kennebunk, ME 04043

Space Above This Line For Recording Data

WARRANTY DEED

MAINE REAL ESTATE TAX PAID

KNOW ALL PERSONS BY THESE PRESENTS, that **JOHN F. CHASE** of 1 Big Bear Point, Naples, Maine, FOR CONSIDERATION PAID, hereby grants to **C&E PROPERTIES, LLC**, a Maine Limited Liability Company, having a business address of 13 Knights St., Unit 2, Portland, ME 04103, with Warranty Covenants, a certain lot or parcel of land, together with any improvements thereon and all rights appurtenant thereto, commonly know and designated as 8 Self Storage Drive, Lot 3.2, Windham, Maine; being more particularly described as follows:

SEE EXHIBIT A ATTACHED HERETO AND
INCORPORATED HEREIN BY REFERENCE

IN WITNESS WHEREOF, John F. Chase has hereunder set his hand and seal as of this 19th day of March, 2015.

WITNESS

John F. Chase

STATE OF MAINE
Cumberland, March 19, 2015

Personally appeared the above named John F. Chase and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Attorney at Law/Notary Public

Erin K. Kalakowsky
ATTORNEY AT LAW

EXHIBIT A

A certain lot or parcel of land, with any improvements thereon, located on the southwesterly side of U.S. Route 302, also known as Roosevelt Trail, in the Town of Windham, County of Cumberland and State of Maine, being Lot No. 3.2 as depicted on plan entitled "Division, Lot 3, 56 Roosevelt Trail made for F.S. Plummer Co., Inc" made by James C. Lauzier, dated April 15, 1987, revised through March 22, 1988 and recorded in the Cumberland County Registry of Deeds in Plan Book 170, Page 31.

This conveyance is made subject to and together with an easement for ingress and egress as shown on said plan.

This conveyance is made subject to any and all easements and appurtenances of record, insofar as the same may affect the subject premises.

This conveyance is made subject to unpaid real estate taxes for the current tax year, if any, which the Grantee herein, by acceptance of this deed, assumes and agrees to pay.

For title, see deed of Peter J. Busque to John F. Chase dated March 22, 2005 and recorded with the Cumberland Registry of Deeds in Book 22446, Page 197.

Received
Recorded Register of Deeds
Mar 23,2015 10:41:18A
Cumberland County
Nancy A. Lane

Doc#: 11909 Bk:32149 Ps: 167

After recording return to:
BPP Bergen & Parkinson, LLC-EK
62 Portland Road, Suite 25
Kennebunk, ME 04043

Space Above This Line For Recording Data

WARRANTY DEED

MAINE REAL ESTATE TAX PAID

KNOW ALL PERSONS BY THESE PRESENTS, that **CHASE CUSTOM HOMES & FINANCE, INC.**, ALSO KNOWN AS CHASE CUSTOM HOMES & FINANCE), a Maine corporation having a mailing address of 290 Bridgton Rd., Westbrook ME, FOR CONSIDERATION PAID, hereby grants to C & E PROPERTIES, **LLC**, a Maine limited liability company having a mailing address of 13 Knight St., Unit 2, Portland, ME 04103, with Warranty Covenants, a certain lot or parcel of land, together with any improvements thereon and all rights appurtenant thereto, commonly know and designated as 2 Self Storage Drive, Lot 3.3, Windham, Maine; being more particularly described as follows:

SEE EXHIBIT A ATTACHED HERETO AND
INCORPORATED HEREIN BY REFERENCE

IN WITNESS WHEREOF, Chase Custom Homes & Finance, Inc. has caused this instrument to be executed by John F. Chase, its Chief Executive Officer, thereunto duly authorized as of this 19th day of March, 2015.

CHASE CUSTOM HOMES & FINANCE, INC.

WITNESS

By: _____
John F. Chase, its C.E.O., thereunto duly authorized

STATE OF MAINE
York County, ss. March 19, 2015

Personally appeared the above-named John F. Chase and acknowledged the foregoing instrument to be his free act and deed duly authorized in said capacity.

Before me,

Attorney at Law/Notary Public

Erin K. Kalakowsky
ATTORNEY AT LAW

EXHIBIT A

A certain lot or parcel of land with the buildings and improvements thereon, situated on the southwesterly side of U. S. Route 302, also known as Roosevelt Trail, in the Town of Windham, County of Cumberland and State of Maine, described as Lot 3.3 as depicted on plan entitled "Division, Lot 3, 56 Roosevelt Trail, made for F. S. Plummer Co., Inc. made by James C. Lauzier, dated April 15, 1987, revised through March 22, 1988 and recorded in Cumberland County Registry of Deeds in Plan Book 170, Page 31.

This conveyance is made with the benefit of the easement for ingress and egress as shown on said Plan.

This conveyance is also made subject to a reservation of Peter J. Busque specifically for the right to install, repair, maintain and improve all utilities for the benefit of the lot conveyed and all lots benefitted of burdened by said easement.

For title, see deed of SCL Real Estate Trust to Chase Custom Home & Finance, dated January 31, 2003 and recorded with the Cumberland County Registry of Deeds in Book 18799, Page 108.

Received
Recorded Register of Deeds
Mar 23,2015 10:42:55A
Cumberland County
Nancy A. Lane

Exhibit 6

Technical Capacity

Exhibit 6 - Technical Capacity

The applicant has retained Sebago Technics, Inc to assist them with this project.

Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, ME 04106
Contact: James Seymour, P.E.
(207) 200-2083
jseymour@sebagotechnics.com

JAMES R. SEYMOUR, PE

Senior Project Manager

Mr. Seymour has been with Sebago Technics, Inc. since 1993. His role encompasses management of projects relating to civil engineering designs for private residential and commercial developments, and providing planning and development review services for municipal clients. His specific engineering design experience includes roadways, sewer/utilities, stormwater management plans and permitting, sediment and erosion control plans, State and Federal wetland/environmental permits for residential and commercial developments.

Mr. Seymour has strong experience in providing municipal planning and permitting review services. He has consulted with planning, code enforcement, and public services departments to assist Planning Boards in various roles.

EXPERIENCE

Municipal Planning/Engineering Review Experience:

1998 - 2004: Consulted with the City of Portland, as Acting Development Review Coordinator providing engineering peer review services and onsite construction observations to assure compliance with approved plans.

1998 - 2008: Provided construction monitoring for the Town of Windham with responsibilities of reviewing bonding, stormwater management review, and provided and onsite construction observations/reports.

2008 - Present: Provided the Town of Casco planning services to assist the Planning Board with processing various site/subdivision applications, and prepared ordinance revisions, to the Shoreland Zoning per State requirements, and assisted in instituting a contract zone for Camp Sunshine.

2012 - Present: Mr. Seymour has been the consulting Planner for the Town of Raymond in charge of directing the Planning Board with processing various site/subdivision applications, coordinating new ordinance revisions, and maintains weekly hours at the Town for general planner assistance.

2011 - Present: Mr. Seymour has been the consulting engineer for the Town of Brunswick assisting the Town with peer reviews of site/subdivision applications, and has drafted new ordinance revisions.

2012 - Present: Mr. Seymour has been providing planning and engineering consultation to the Town of Poland on an as-needed basis to assist the Planning Board with plan reviews and drafting ordinances.

The variety of projects that Mr. Seymour has been involved with provides him with a well-balanced technical knowledge of planning and land use development issues and engineering experience. Additionally, his involvement with a variety of clientele gives him a unique and positive insight to successfully communicate and coordinate projects from design to construction stages.

EDUCATION

University of Maine, Orono, ME
Bachelor of Science, Civil Engineering

REGISTRATIONS

Professional Engineering:
Maine #9984

Certified Training for
Hazardous Waste Operations
40 hr. Training Compliance with OSHA
29CFR 1910.120

Certified Professional in Maintenance and Inspection for Best Management Practices by Maine DEP and Inclusion on the Qualified Third Party Inspector List for the Long Creek Watershed Management District (May 2011)

MEMBERSHIPS

Former Town of Windham Planning Board member

New England Sports Turf Manager's Association (NESTMA)

Scarborough Little League Board of Directors
League - President
2015 to Present

SEBAGO TECHNICS

207.200.2083 JSEYMOUR@SEBAGOTECHNICS.COM

SEBAGO TECHNICS

About Us



What Sets Us Apart?

Approach
Our approach to project delivery provides a single point of contact, responsive scheduling and cost efficiency.

Reputation
Sebago Technics is recognized as a firm that excels in the permitting of projects through experienced knowledge and excellent reputation.

Ownership
100% Employee ownership results in improved responsiveness, commitment and accountability throughout the organization.

Quality
Our designs, graphics and plans are subject to rigorous quality standards and review which results in clear, effective documents.

Innovation
Sebago Technics' design professionals employ the latest engineering and technological methods to develop practical, cost-effective solutions.

Results
Sebago Technics' resources and experience combined with our project team approach provide the capacity to meet client needs and deliver results.

Founded in 1981, Sebago Technics, Inc. is a consulting firm of more than forty design professionals and technical staff providing services throughout New England. From the start, our business plan was simple:"to provide quality, cost-effective civil engineering services that are responsive to a customer's goals, schedule and budget."

Our One Company capabilities and resources provide clients with experience and solutions to respond to their planning, permitting and design needs. Guided by integrity, experience and teamwork we understand that we can only succeed when quality, responsive and cost-effective service is provided to our customers.

General Services

Land Surveying
Site and Civil Engineering
Transportation/Traffic Engineering
Landscape Architecture
Environmental Engineering
Natural Resources and Soils Science
Permitting (Local/State/Federal)
Construction Services

Licensed & Certified Professionals

Professional Engineers
Certified Flood Plain Manager
Certified Wetland Scientist
DOT Project Administrators
LEED Accredited Professionals
Professional Land Surveyors
Registered Landscape Architects
Licensed Soil Scientist
Subsurface Disposal Systems Designers
Erosion Control, Sedimentation & Stormwater Inspectors
Professional Traffic Operations Engineer

Exhibit 7

Financial Capacity

Exhibit 7 – Financial Capacity

Proof of financial capacity will be submitted under separate cover.

Exhibit 8

Adequacy and Availability of Public Utilities

Exhibit 8 – Public Utilities

Not applicable. The proposed project does not require any public utilities.

Exhibit 9

Solid Waste

Exhibit 9 – Solid Waste

Not applicable. The proposed project will not result in the generation of any solid waste.

Exhibit 10

Lighting Information

Exhibit 11 – Traffic

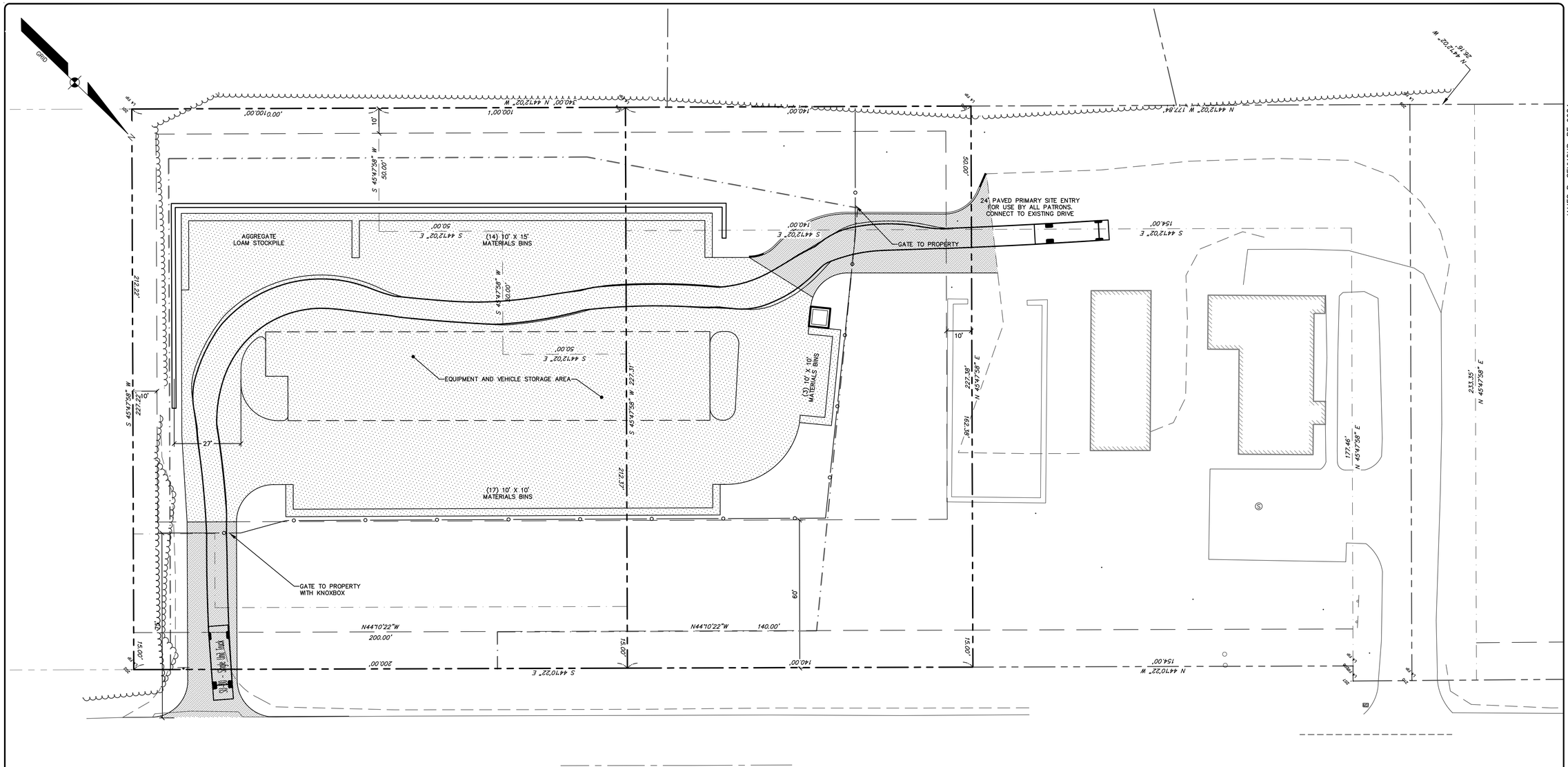
Please see this Exhibit for a turning radius figure which illustrates that there is adequate emergency access to the site.

Exhibit 11

Traffic

Exhibit 10 – Lighting

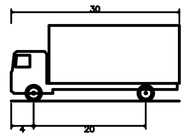
Please see the plan set for any lighting information.



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 INCH = 20 FT.



SU-30 – Single Unit Truck	
Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°

VEHICLE PROFILE

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	EASEMENT	
⊙	IRON PIPE/ROD	●
BENCHMARK DESCRIPTION WITH ELEVATION	BENCHMARK	
	BUILDING	
	EDGE PAVEMENT	
	EDGE GRAVEL	
	DECIDUOUS TREE	(X)
	CONIFEROUS TREE	(X)
W	WATER	W
	WATER SHUT OFF	
OHU	OVERHEAD UTILITY	OHU
	UTILITY POLE	

NOT FOR CONSTRUCTION

11/05/18

JAMES R. SEYMOUR, PE 9984

DESIGNED	CHECKED
ARF	JRS

REV:	BY:	DATE:	STATUS:

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

TURNING EXHIBIT
OF:
CRR LANDSCAPING MATERIALS
56 ROOSEVELT TRAIL
WINDHAM, MAINE
FOR:
C&E PROPERTIES, LLC.
77 BLACKSTRAP RD.
CUMBERLAND, MAINE

PROJECT NO.	SCALE
05103	1" = 20'

SHEET OF

05103JR.TR.dwg, TAB: SITE PLAN

Exhibit 12

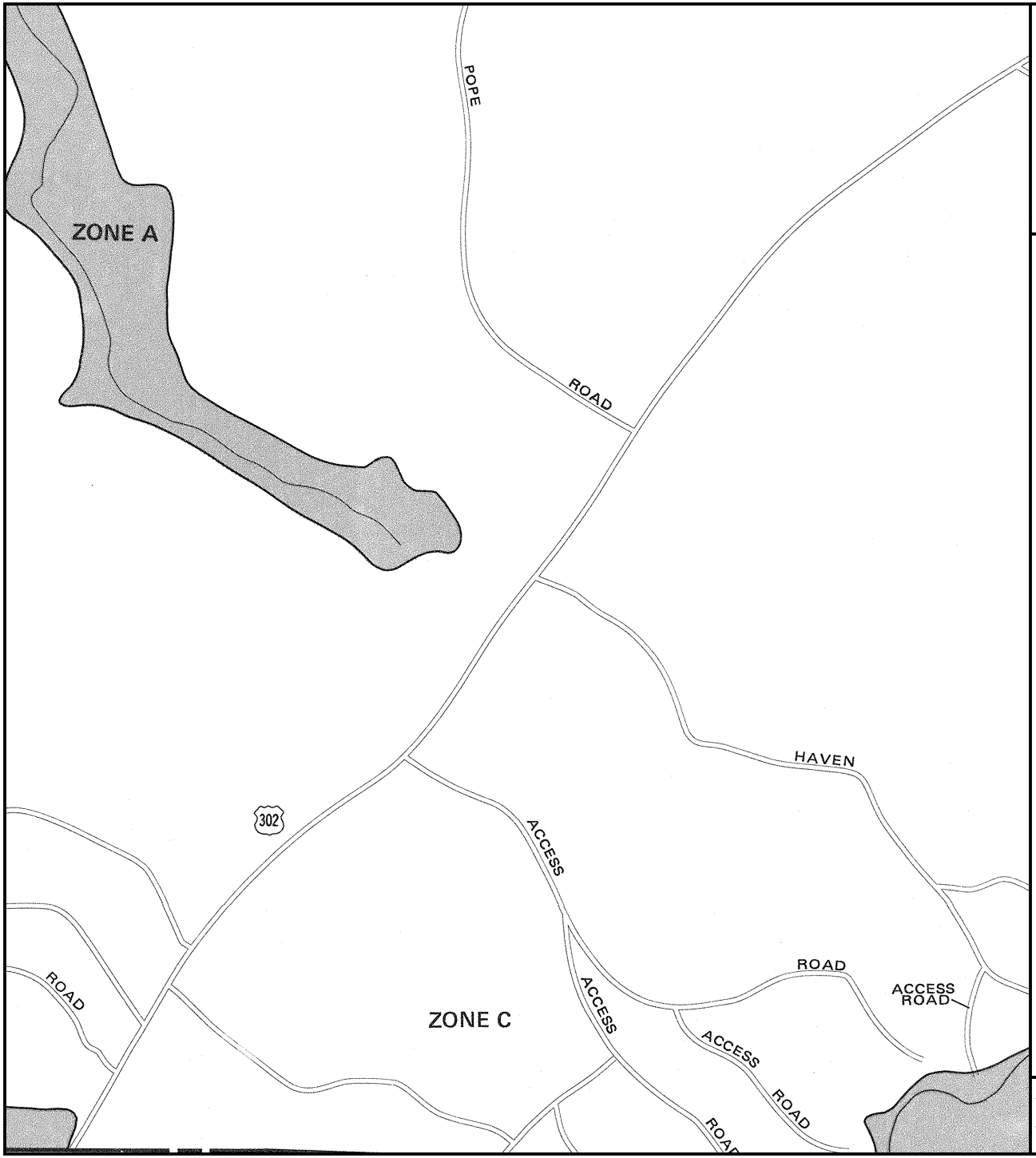
Unique Natural Areas

Sand & Gravel Aquifer Map

FEMA FIRM Map

Exhibit 12 – Unique Natural Areas

The proposed project will not impact any unique natural areas. Please see the plan set.



APPROXIMATE SCALE

800 0 800 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

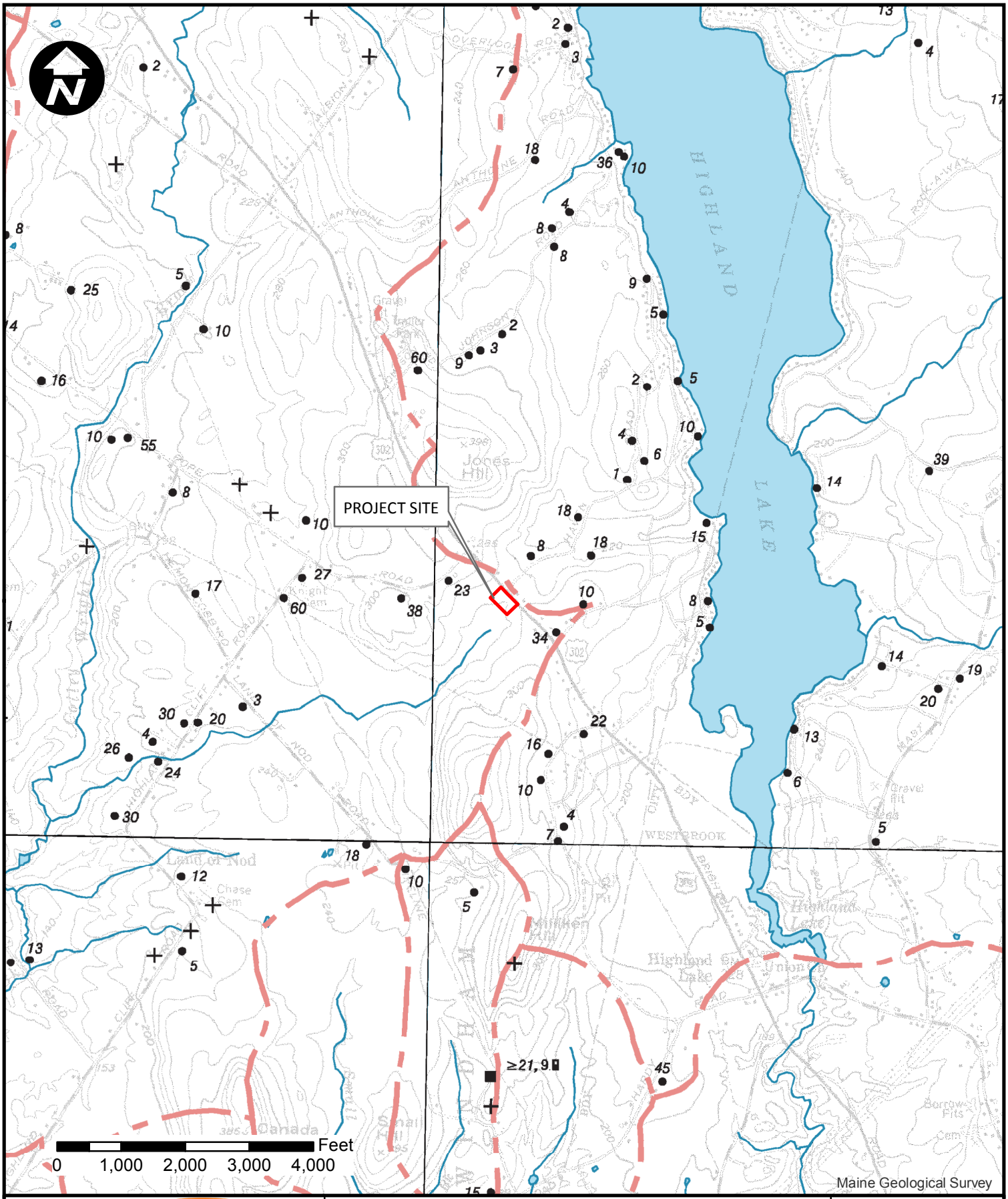
TOWN OF
WINDHAM, MAINE
CUMBERLAND COUNTY

PANEL 30 OF 35
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230189 0030 B

EFFECTIVE DATE:
SEPTEMBER 2, 1981

federal emergency management agency
federal insurance administration



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

TITLE FOR:	AQUIFERS MAP CRR LANDSCAPING MATERIAL	SCALE:	1 " = 2,000 '
		DATE:	11/05/2018
LOCATION:	56 Roosevelt Trail Windham, ME 04062	INFORMATION:	Maine Geological Survey: Aquifer Maps_24K USGS Quadrangle: Cumberland Center/ North Windham/Portland West/Gorham

05103_Aquifers Map.mxd

PROJECT NUMBER: 05103

Exhibit 13

Stormwater Narrative

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

Stormwater Management Report

To:

Town of Windham

CRR Landscaping Materials

56 Roosevelt Drive

Windham, Maine

Prepared for:

C & E Enterprises LLC

Dba Coastal Road Repair LLC

56 Roosevelt Drive

Windham, Maine 04062

Prepared by:

Sebago Technics, Inc.

75 John Roberts Road, Suite 4A

South Portland, Maine 04106

November 2018

Table of Contents

Attachments

Stormwater Management Narrative
CRR Landscaping Materials
Windham, ME

A. Introduction

This Stormwater Management Plan has been prepared to address the potential impacts associated with the proposed development at CRR Landscaping Materials in Windham. The stormwater management controls that are outlined in this plan have been designed to best suit the proposed development and to comply with applicable regulatory requirements to evaluate the pre- and post-development conditions.

Scope

This project includes the construction of landscape material storage and sales business. Proposed improvements include the extension of two driveways, customer parking area, landscape material storage and attendant building and associated stormwater conveyance and treatment. The total anticipated developed area is 0.98 acres.

Tributary Watershed

This site drains to the Colley Wright Brook which is not listed by Maine Department of Environment Protection (MDEP) as an Urban Impaired Stream within Chapter 502.

Regulatory Requirements

Regulatory requirements by MDEP and the Town of Windham are described below for this project.

Basic Standard - Chapter 500, Section 4(B)

Since the project will not disturb more than one (1) acre of land area, MDEP Basic Standards do not apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. We have avoided adverse impacts by providing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Attachment E) to be implemented during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

Since the project will not create more than one (1) acre of impervious surface, MDEP General Standards do not apply, which require a project's stormwater management system to include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The General Standards require treatment of no less than 95% of the site's created impervious area and no less than 80% of the site's created developed area (landscaped area and impervious area combined). To mitigate the changes in hydrologic patterns due to the development of this project, a subsurface sand filter system has been implemented into the stormwater management infrastructure. Filtration BMPs are very effective at removing a wide range of pollutants through the use of organic soil filter media.

Flooding Standard - Chapter 500, Section 4(F)

Since the planned project will not create more than three (3) acres of impervious surface, MDEP Flooding Standards are not required to be met. The Flooding Standard requires a project's stormwater management system to detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

Municipal Requirements

The Town of Windham Land Use Ordinance Section 812E requires that "minor or major site plans shall detain, retain, or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project". A detailed stormwater runoff model was created to meet this standard.

B. Existing Conditions

Soils

Soil information for the site was obtained via the USDA United States Department of Agriculture and Natural Resources Conservation Service's Web Soil Survey. The Hydrologic Soil Group (HSG) of the site soils are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Type	Symbol	HSG	Drainage Class
Hinckley Gravelly Sandy Loam	HlB	A	Very Well Drained
Hollis Fine Sandy Loam	HrB	C/D	Poorly Drained
Paxton Fine Sandy Loam	PbB/PbC	C	Poorly Drained
Paxton Very Stony Fine Sandy Loam	PfC	C	Poorly Drained
Ridgebury Fine Sandy Loam	RbA	C	Poorly Drained
Ridgebury Very Stony Fine Sandy Loam	RgA	C	Poorly Drained

Existing Drainage Patterns

The site abuts Route 302 to the east, a residential property to the south, undeveloped land to the west and a commercial property to the north. Access to the site is provided from Route 302. The site is comprised of meadow, brush but mostly structural fill and construction debris.

Drainage swales convey stormwater runoff from the site and portions of Route 302 to a large wooded wetland to the southwest of the site and eventually to Colley Wright Brook.

Slopes on the site are moderate to steep, with the slopes ranging from 4% to 20% through the majority of the site. Slopes are as steep as 2:1 along Route 302.

The site drains to a large wooded wetland to the southwest of the site and eventually to Colley Wright Brook. Sebago Technics, Inc. has delineated wetland areas on the site. The delineations are shown on the design plans.

Flood Zone

The proposed development area of the site is located in Zone C, areas of minimal flooding, per the FEMA Flood Insurance Rate Map for the Town of Windham, Community Panel 230189 0030 B, effective September 2, 1981.

C. Proposed Conditions

Project Overview

This project includes the construction of landscape material storage and sales business. Proposed improvements include the extension of two driveways, customer parking area, landscape material storage and attendant building and associated stormwater conveyance and treatment. The stormwater management plan was designed so that existing drainage patterns are not significantly altered at the Study Point. The total impervious area is 0.82 acres and the total developed area is 0.98 acres.

BMP summary

The proposed development has been designed with stormwater facilities to provide treatment and detention of stormwater. A subsurface sand filter was selected as the appropriate BMP for this site.

Test Pits

Test pit were not completed. The stormwater BMP will be wrapped in an impermeable membrane to provide separation from groundwater.

D. Methodology

The stormwater runoff analysis was developed using the "HydroCAD" computer modeling software, which incorporates the TR-55 and TR-20 methodologies as provided by the Soil Conservation Service of the U.S. Department of Agriculture.

The peak runoff rates were calculated using a 24-hour duration storm event with a Type III rainfall distribution. The rainfall amounts for southeast Cumberland County for the 2-year, 10-year and 25-year storm events are as follows:

Storm Frequency	24-hr Duration Rainfall (in.)
2-yr	3.10
10-yr	4.60
25-yr	5.80

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The hydrologic model incorporates the following design assumptions:

- The minimum time of concentration (Tc) is six minutes, based upon limitations of the TR-55 model.

E. Pre-Development Watershed Model

The pre-development watershed model consists of five (5) subcatchments and one (1) study point (SP). SP-1 is located on the southwestern corner of the property.

Subcatchments 1S and 4S include the subject parcel and the area to the south. The subcatchments drains to the west to SP-1.

Subcatchments 2S, 3S and 5S include the offsite areas to the north and across Route 302 which drain to the ditch on the subject parcel. The subcatchments drains to the west to SP-1.

F. Post-Development Watershed Model

The post-development watershed model consists of six (6) subcatchments and one (1) study point. Modeling reflects on-site ground cover changes to include proposed landscaping and impervious areas associated with the proposed private road construction.

Subcatchments 10S, 11S, and 40S include the subject parcel and the area to the south. Subcatchment 11S contains the entire developed area which is treated by the subsurface sand filter. The subcatchments drains to the west to SP-1.

Subcatchments 20S, 30S, and 50S include the offsite areas to the north and across Route 302 which drain to the ditch on the subject parcel. The subcatchments drain to the west to SP-1.

G. Stormwater Quality Management

Subsurface Sand Filter System

The subsurface sand filter is designed in general conformance with Section 7.3 of the BMPs Technical Design Manual. The Subsurface Sand Filter will capture runoff from the gravel lot and driveways. An inlet control structure will direct flow from a 1-inch rain storm evenly into isolator rows sized so that the number of chambers exceeds standard sizing. Through the isolator row, flow will disperse equally to exterior chambers so that a consistent water level is maintained throughout the entire system. The number of isolator rows was determined utilizing the 1-inch inflow rate to the chambers. An outlet control structure will be constructed with a weir set at or near the top of chamber so that the volume meets or exceeds the required channel protection volume. Runoff contained in the chambers will first pass through a filter media for treatment before discharging to natural downstream drainageways. An orifice will be installed at the outlet of the underdrain header pipe to control outflow of the treated runoff. This allows the full height of the chambers to be utilized to treatment. Oil booms will be installed in every catch basin upstream of the sand filters for the removal of hydrocarbons.

Through the use of the aforementioned BMP's 100% of new impervious area and 85.67% of new developed area will be receiving treatment. This meets the requirements for the Maine DEP General Standards.

H. Stormwater Quantity Management

The HydroCAD model predicts slight decreases in estimated peak flow rates during the 2-, 10- and 25-year storm events at the study point. The slight decrease is due to the size of the overall drainage area in

relation to the actual developed area. The following table summarizes the results of stormwater calculations for the design storm events for the project area.

STORMWATER PEAK DISCHARGE SUMMARY TABLE						
Study Point	2YR-24HR		10YR-24HR		25YR-24HR	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
SP-1	7.1	6.7	14.5	13.9	20.8	20.5

I. Conclusion

Based on the modeling data, post-development peak flow rates examined at the study point for the whole site decrease from the corresponding pre-development rates during the 2-year, 10-year, and 25-year storm events.

An Erosion and Sedimentation Control Plan has been developed using the Maine Department of Environmental Protection's Erosion and Sediment Control Field Guide for Contractors for the project site placing emphasis on the installation of sedimentation barriers and revegetation to minimize erosion potential from development activities during and after construction. The Erosion Control Plan is incorporated into the design plans and includes the locations of the erosion control provisions (i.e., silt fence, silt sacks, erosion control blanket) along with a narrative and construction details for reference by the contractor during construction. Provisions for periodic inspection and maintenance of erosion control measures are included in the Inspection, Maintenance, and Housekeeping Plan in Attachment E of this application.

Prepared by

SEBAGO TECHNICS, INC.

Amber R. Ferland, P.E.
Project Engineer

James R. Seymour, P.E.
Senior Project Manager

STATE OF MAINE
JAMES R. SEYMOUR
No 9984
LICENSED PROFESSIONAL ENGINEER
11-5-18

JRS/ARF

Attachment A

Water Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 05103

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED* (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10S	102,746	40,496	0	56,150	6,100	6,100	96,646	NO	0	0	0	
11S	36,466	0	35,793	0	673	36,466	0	YES	35,793	673	36,466	SSSF1
20S	199,069	61,855	0	137,214	0	0	199,069	NO	0	0	0	
30S	101,930	39,640	0	62,291	0	0	101,931	NO	0	0	0	
40S	124,582	47,916	0	76,666	0	0	124,582	NO	0	0	0	
50S	117,612	6,534	0	111,078	0	0	117,612	NO	0	0	0	
TOTAL (S.F.)	**682,405**	**196,441**	**35,793**	**443,399**	**6,773**	**42,566**	**639,840**		**35,793**	**673**	**36,466**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**35,793**	**TOTAL DEVELOPED AREA (S.F.)**	**42,566**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**35,793**	**TOTAL DEV. AREA RECEIVING TREATMENT (S.F.)**	**36,466**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**100.00%**	**% OF DEV. AREA RECEIVING TREATMENT**	**85.67%**

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	05103				
SHEET NO.	2	OF	2		
CALCULATED BY	ARF	DATE	10/4/2018		
FILE NAME	05103 WQC.xls	PRINT DATE	10/24/2018		

UNDERDRAINED SUBSURFACE SAND FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References

1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.3.2
   a. "detain runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
   b. "surface area of the sand filter bed and chamber system must be at least equal to 5% of the impervious area draining to it and 2% of the landscaped area."
   c. "treatment flow rate for the Stormtech Isolator Row is the projected one year peak flow rate for the drainage area feeding the Isolator Row"

Flow rates:

SC-310	0.10	cfs/chamber
SC-740	0.20	cfs/chamber
DC-780	0.20	cfs/chamber
MC-3500	0.30	cfs/chamber

Tributary to Subsurface Sand Filter: SSSF1

Landscaped Area	673.00	SF
Impervious Area	35,793.00	SF

Minimum Surface Area for sand filter and chamber system

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	673.00	SF	Area	13.5	SF	
Total Impervious Area	35,793.00	SF	Area	1,789.7	SF	
Required Minimum Surface Area				1,803.1	SF	
Provided Surface Area				5,200.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	673.00	SF	Volume	22.4				
Impervious Area	35,793.00	SF	Volume	2,982.8				
Treatment Volume Required				3,005.2	CF	0.069	AF	
Provided Treatment Volume				6,970.0	CF	AT ELEV.=244.53		

Sediment Pre-Treatment

Per Reference 2.c above

One year flow rate out put from Hydrocad:	2.05	cfs	
ISO Row sizing for:	**SC-310**	**0.1**	cfs
Total number of Isolator Row Chambers required:	21		

CRR LANDSCAPING MATERIALS

ORIFICE SIZING CALCULATION

SUBSURFACE SAND FILTER

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 3,006 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.03 \text{ cfs}$$

surface area of BMP = 5,200 SF

h = 0.58 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.010 sf = 1.37 sq. in.

Diam = 1.32 in

Attachment B

Soil Map & FEMA Map

Map Scale: 1:6,410 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 15, Sep 6, 2018

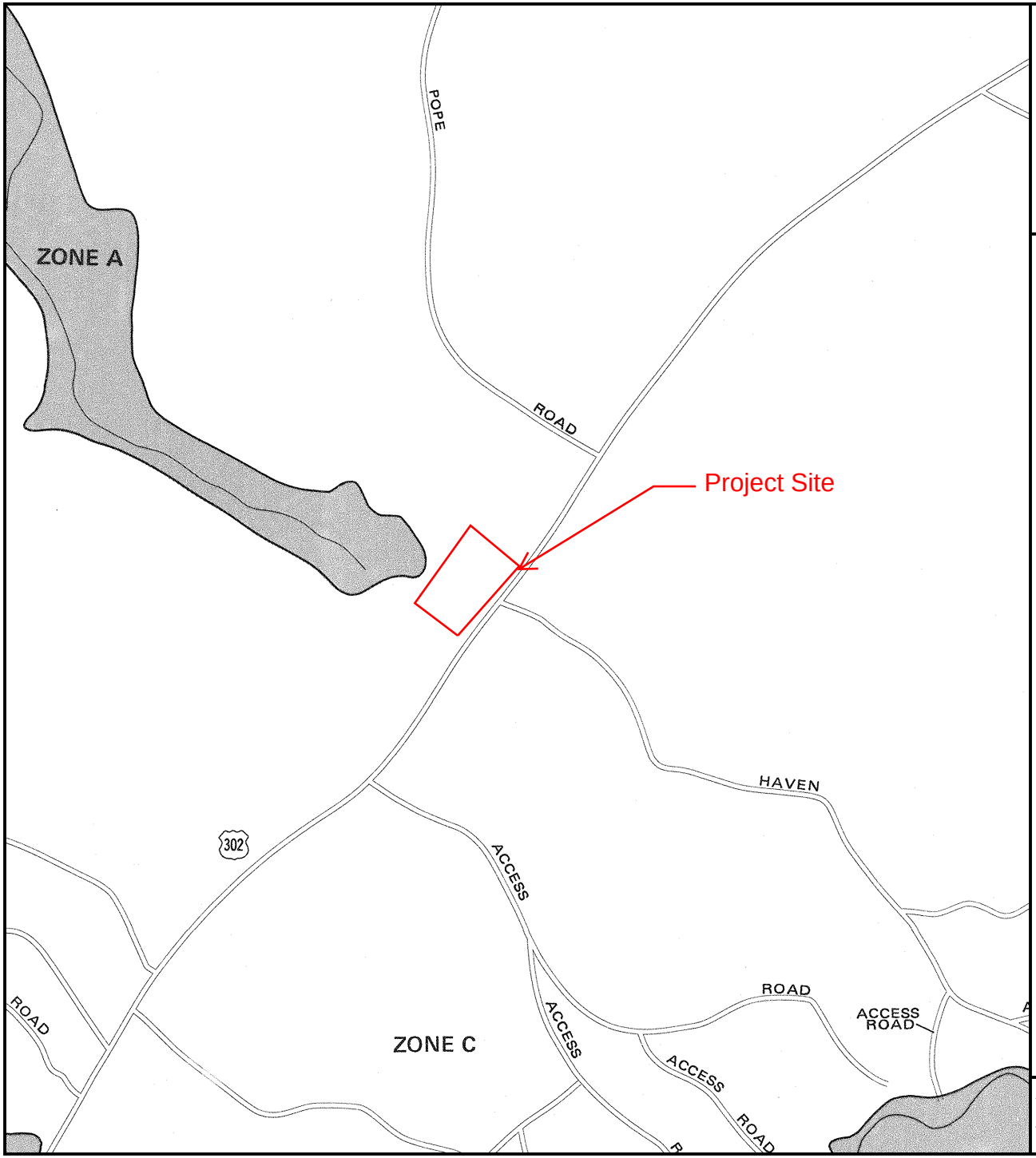
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 29, 2012—Jun 26, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bo	Biddeford mucky peat, 0 to 3 percent slopes	1.9	1.1%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	3.4	1.9%
HhB	Hermon sandy loam, 0 to 8 percent slopes, very stony	0.6	0.4%
HlB	Hinckley loamy sand, 3 to 8 percent slopes	3.4	1.9%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	11.4	6.4%
HsB	Lyman-Abram complex, 0 to 8 percent slopes, very rocky	3.3	1.9%
HsC	Lyman-Abram complex, 8 to 15 percent slopes, very rocky	1.9	1.1%
PbB	Paxton fine sandy loam, 3 to 8 percent slopes	13.1	7.4%
PbC	Paxton fine sandy loam, 8 to 15 percent slopes	4.0	2.2%
PfB	Paxton very stony fine sandy loam, 3 to 8 percent slopes	6.8	3.9%
PfC	Paxton very stony fine sandy loam, 8 to 15 percent slopes	17.8	10.1%
RbA	Ridgebury fine sandy loam, 0 to 3 percent slopes	48.7	27.5%
RgA	Ridgebury very stony fine sandy loam, 0 to 3 percent slopes	24.1	13.6%
Sp	Sebago mucky peat	9.0	5.1%
W	Water	0.4	0.2%
Wa	Walpole fine sandy loam	0.0	0.0%
WrB	Woodbridge fine sandy loam, 0 to 8 percent slopes	11.8	6.7%
WsB	Woodbridge very stony fine sandy loam, 0 to 8 percent slopes	15.7	8.8%
Totals for Area of Interest		**177.4**	**100.0%**



APPROXIMATE SCALE

800 0 800 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
WINDHAM, MAINE
CUMBERLAND COUNTY

PANEL 30 OF 35
(SEE MAP INDEX FOR PANELS NOT PRINTED)

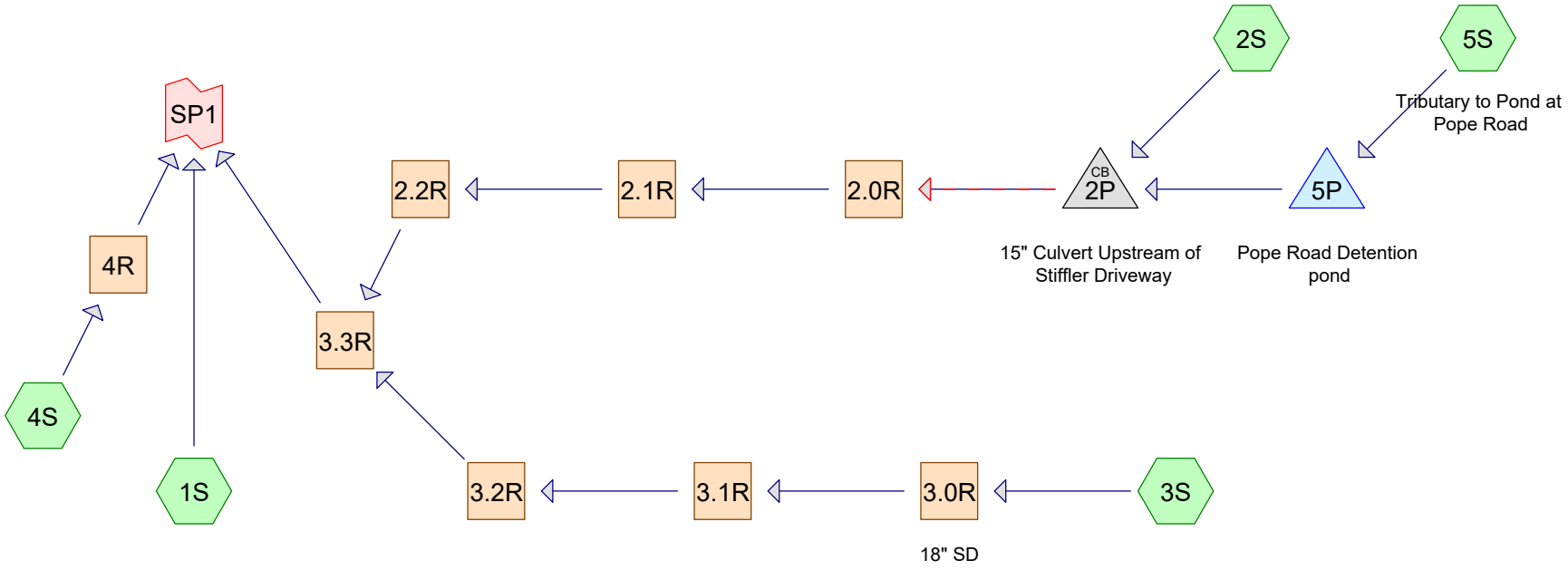
COMMUNITY-PANEL NUMBER
230189 0030 B

EFFECTIVE DATE:
SEPTEMBER 2, 1981

federal emergency management agency
federal insurance administration

Attachment C

Pre-Development Stormwater Modeling



Subcat Reach Pond Link

Routing Diagram for 05103 PRE

Prepared by Sebago Technics, Inc., Printed 10/24/2018

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.710	39	>75% Grass cover, Good, HSG A (2S, 3S)
2.290	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 4S, 5S)
0.460	73	Brush, Good, HSG D (1S)
0.530	89	Gravel roads, HSG C (1S, 3S)
0.030	71	Meadow, non-grazed, HSG C (4S)
1.530	79	Pasture/grassland/range, Fair, HSG C (1S)
3.990	98	Paved parking & roofs (1S, 2S, 3S, 4S, 5S)
0.480	98	Water Surface (5S)
0.310	30	Woods, Good, HSG A (2S, 3S)
5.340	70	Woods, Good, HSG C (1S, 2S, 3S, 4S, 5S)
15.670	**78**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Runoff Area=139,394 sf 16.56% Impervious Runoff Depth=1.46"
Flow Length=260' Tc=18.8 min CN=82 Runoff=3.76 cfs 0.389 af

Subcatchment2S: Runoff Area=199,069 sf 31.07% Impervious Runoff Depth=0.97"
Flow Length=509' Tc=38.7 min CN=74 Runoff=2.45 cfs 0.370 af

Subcatchment3S: Runoff Area=101,929 sf 33.76% Impervious Runoff Depth=1.14"
Flow Length=646' Tc=86.7 min CN=77 Runoff=0.94 cfs 0.222 af

Subcatchment4S: Runoff Area=124,582 sf 38.46% Impervious Runoff Depth=1.46"
Flow Length=860' Tc=44.4 min CN=82 Runoff=2.26 cfs 0.348 af

Subcatchment5S: Tributary to Pond at Runoff Area=117,612 sf 23.33% Impervious Runoff Depth=1.14"
Flow Length=330' Tc=56.0 min CN=77 Runoff=1.42 cfs 0.257 af

Reach 2.0R: Avg. Flow Depth=0.34' Max Vel=1.93 fps Inflow=2.45 cfs 0.370 af
n=0.050 L=215.0' S=0.0231 '/' Capacity=169.99 cfs Outflow=2.44 cfs 0.370 af

Reach 2.1R: Avg. Flow Depth=0.33' Max Vel=1.91 fps Inflow=2.44 cfs 0.370 af
n=0.040 L=65.0' S=0.0154 '/' Capacity=288.89 cfs Outflow=2.44 cfs 0.370 af

Reach 2.2R: Avg. Flow Depth=0.13' Max Vel=3.92 fps Inflow=2.44 cfs 0.370 af
n=0.040 L=55.0' S=0.1818 '/' Capacity=314.90 cfs Outflow=2.44 cfs 0.370 af

Reach 3.0R: 18" SD Avg. Flow Depth=0.29' Max Vel=3.97 fps Inflow=0.94 cfs 0.222 af
18.0" Round Pipe n=0.012 L=68.0' S=0.0106 '/' Capacity=11.71 cfs Outflow=0.94 cfs 0.222 af

Reach 3.1R: Avg. Flow Depth=0.20' Max Vel=1.50 fps Inflow=0.94 cfs 0.222 af
n=0.040 L=94.0' S=0.0184 '/' Capacity=50.79 cfs Outflow=0.94 cfs 0.222 af

Reach 3.2R: Avg. Flow Depth=0.12' Max Vel=1.90 fps Inflow=0.94 cfs 0.222 af
n=0.040 L=115.0' S=0.0522 '/' Capacity=2,384.92 cfs Outflow=0.94 cfs 0.222 af

Reach 3.3R: Avg. Flow Depth=0.25' Max Vel=2.17 fps Inflow=2.91 cfs 0.593 af
n=0.040 L=155.0' S=0.0258 '/' Capacity=143.45 cfs Outflow=2.91 cfs 0.593 af

Reach 4R: Avg. Flow Depth=0.28' Max Vel=1.94 fps Inflow=2.26 cfs 0.348 af
n=0.050 L=124.0' S=0.0323 '/' Capacity=331.64 cfs Outflow=2.26 cfs 0.348 af

Pond 2P: 15" Culvert Upstream of Stiffler Driveway Peak Elev=259.14' Inflow=2.45 cfs 0.370 af
Primary=2.45 cfs 0.370 af Secondary=0.00 cfs 0.000 af Outflow=2.45 cfs 0.370 af

Pond 5P: Pope Road Detention pond Peak Elev=286.51' Storage=11,182 cf Inflow=1.42 cfs 0.257 af
Outflow=0.00 cfs 0.000 af

Link SP1: Inflow=7.13 cfs 1.329 af
Primary=7.13 cfs 1.329 af

Total Runoff Area = 15.670 ac Runoff Volume = 1.586 af Average Runoff Depth = 1.21"
71.47% Pervious = 11.200 ac 28.53% Impervious = 4.470 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Runoff Area=139,394 sf 16.56% Impervious Runoff Depth=2.72"
Flow Length=260' Tc=18.8 min CN=82 Runoff=7.08 cfs 0.726 af

Subcatchment2S: Runoff Area=199,069 sf 31.07% Impervious Runoff Depth=2.05"
Flow Length=509' Tc=38.7 min CN=74 Runoff=5.43 cfs 0.781 af

Subcatchment3S: Runoff Area=101,929 sf 33.76% Impervious Runoff Depth=2.29"
Flow Length=646' Tc=86.7 min CN=77 Runoff=1.96 cfs 0.447 af

Subcatchment4S: Runoff Area=124,582 sf 38.46% Impervious Runoff Depth=2.72"
Flow Length=860' Tc=44.4 min CN=82 Runoff=4.26 cfs 0.649 af

Subcatchment5S: Tributary to Pond at Runoff Area=117,612 sf 23.33% Impervious Runoff Depth=2.29"
Flow Length=330' Tc=56.0 min CN=77 Runoff=2.97 cfs 0.516 af

Reach 2.0R: Avg. Flow Depth=0.54' Max Vel=2.48 fps Inflow=5.43 cfs 0.781 af
n=0.050 L=215.0' S=0.0231 '/' Capacity=169.99 cfs Outflow=5.42 cfs 0.781 af

Reach 2.1R: Avg. Flow Depth=0.52' Max Vel=2.44 fps Inflow=5.42 cfs 0.781 af
n=0.040 L=65.0' S=0.0154 '/' Capacity=288.89 cfs Outflow=5.42 cfs 0.781 af

Reach 2.2R: Avg. Flow Depth=0.21' Max Vel=5.24 fps Inflow=5.42 cfs 0.781 af
n=0.040 L=55.0' S=0.1818 '/' Capacity=314.90 cfs Outflow=5.42 cfs 0.781 af

Reach 3.0R: 18" SD Avg. Flow Depth=0.41' Max Vel=4.92 fps Inflow=1.96 cfs 0.447 af
18.0" Round Pipe n=0.012 L=68.0' S=0.0106 '/' Capacity=11.71 cfs Outflow=1.96 cfs 0.447 af

Reach 3.1R: Avg. Flow Depth=0.30' Max Vel=1.88 fps Inflow=1.96 cfs 0.447 af
n=0.040 L=94.0' S=0.0184 '/' Capacity=50.79 cfs Outflow=1.95 cfs 0.447 af

Reach 3.2R: Avg. Flow Depth=0.18' Max Vel=2.40 fps Inflow=1.95 cfs 0.447 af
n=0.040 L=115.0' S=0.0522 '/' Capacity=2,384.92 cfs Outflow=1.95 cfs 0.447 af

Reach 3.3R: Avg. Flow Depth=0.40' Max Vel=2.82 fps Inflow=6.44 cfs 1.227 af
n=0.040 L=155.0' S=0.0258 '/' Capacity=143.45 cfs Outflow=6.44 cfs 1.227 af

Reach 4R: Avg. Flow Depth=0.40' Max Vel=2.34 fps Inflow=4.26 cfs 0.649 af
n=0.050 L=124.0' S=0.0323 '/' Capacity=331.64 cfs Outflow=4.26 cfs 0.649 af

Pond 2P: 15" Culvert Upstream of Stiffler Driveway Peak Elev=260.21' Inflow=5.43 cfs 0.781 af
Primary=5.43 cfs 0.781 af Secondary=0.00 cfs 0.000 af Outflow=5.43 cfs 0.781 af

Pond 5P: Pope Road Detention pond Peak Elev=286.98' Storage=22,465 cf Inflow=2.97 cfs 0.516 af
Outflow=0.00 cfs 0.000 af

Link SP1: Inflow=14.49 cfs 2.603 af
Primary=14.49 cfs 2.603 af

Total Runoff Area = 15.670 ac Runoff Volume = 3.119 af Average Runoff Depth = 2.39"
71.47% Pervious = 11.200 ac 28.53% Impervious = 4.470 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Runoff Area=139,394 sf 16.56% Impervious Runoff Depth=3.80"
Flow Length=260' Tc=18.8 min CN=82 Runoff=9.84 cfs 1.014 af

Subcatchment2S: Runoff Area=199,069 sf 31.07% Impervious Runoff Depth=3.02"
Flow Length=509' Tc=38.7 min CN=74 Runoff=8.07 cfs 1.149 af

Subcatchment3S: Runoff Area=101,929 sf 33.76% Impervious Runoff Depth=3.31"
Flow Length=646' Tc=86.7 min CN=77 Runoff=2.84 cfs 0.644 af

Subcatchment4S: Runoff Area=124,582 sf 38.46% Impervious Runoff Depth=3.80"
Flow Length=860' Tc=44.4 min CN=82 Runoff=5.93 cfs 0.907 af

Subcatchment5S: Tributary to Pond at Runoff Area=117,612 sf 23.33% Impervious Runoff Depth=3.31"
Flow Length=330' Tc=56.0 min CN=77 Runoff=4.30 cfs 0.744 af

Reach 2.0R: Avg. Flow Depth=0.67' Max Vel=2.79 fps Inflow=8.07 cfs 1.149 af
n=0.050 L=215.0' S=0.0231 '/' Capacity=169.99 cfs Outflow=8.07 cfs 1.149 af

Reach 2.1R: Avg. Flow Depth=0.64' Max Vel=2.74 fps Inflow=8.07 cfs 1.149 af
n=0.040 L=65.0' S=0.0154 '/' Capacity=288.89 cfs Outflow=8.07 cfs 1.149 af

Reach 2.2R: Avg. Flow Depth=0.27' Max Vel=6.03 fps Inflow=8.07 cfs 1.149 af
n=0.040 L=55.0' S=0.1818 '/' Capacity=314.90 cfs Outflow=8.07 cfs 1.149 af

Reach 3.0R: 18" SD Avg. Flow Depth=0.50' Max Vel=5.46 fps Inflow=2.84 cfs 0.644 af
18.0" Round Pipe n=0.012 L=68.0' S=0.0106 '/' Capacity=11.71 cfs Outflow=2.84 cfs 0.644 af

Reach 3.1R: Avg. Flow Depth=0.37' Max Vel=2.11 fps Inflow=2.84 cfs 0.644 af
n=0.040 L=94.0' S=0.0184 '/' Capacity=50.79 cfs Outflow=2.84 cfs 0.644 af

Reach 3.2R: Avg. Flow Depth=0.22' Max Vel=2.70 fps Inflow=2.84 cfs 0.644 af
n=0.040 L=115.0' S=0.0522 '/' Capacity=2,384.92 cfs Outflow=2.83 cfs 0.644 af

Reach 3.3R: Avg. Flow Depth=0.50' Max Vel=3.19 fps Inflow=9.58 cfs 1.794 af
n=0.040 L=155.0' S=0.0258 '/' Capacity=143.45 cfs Outflow=9.58 cfs 1.794 af

Reach 4R: Avg. Flow Depth=0.47' Max Vel=2.57 fps Inflow=5.93 cfs 0.907 af
n=0.050 L=124.0' S=0.0323 '/' Capacity=331.64 cfs Outflow=5.93 cfs 0.907 af

Pond 2P: 15" Culvert Upstream of Stiffler Driveway Peak Elev=260.37' Inflow=8.07 cfs 1.149 af
Primary=5.74 cfs 1.080 af Secondary=2.34 cfs 0.069 af Outflow=8.07 cfs 1.149 af

Pond 5P: Pope Road Detention pond Peak Elev=287.36' Storage=32,393 cf Inflow=4.30 cfs 0.744 af
Outflow=0.00 cfs 0.000 af

Link SP1: Inflow=20.82 cfs 3.714 af
Primary=20.82 cfs 3.714 af

Total Runoff Area = 15.670 ac Runoff Volume = 4.458 af Average Runoff Depth = 3.41"
71.47% Pervious = 11.200 ac 28.53% Impervious = 4.470 ac

Summary for Subcatchment 1S:

Runoff = 9.84 cfs @ 12.26 hrs, Volume= 1.014 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	23,087	98	Paved parking & roofs
	17,860	89	Gravel roads, HSG C
	9,148	74	>75% Grass cover, Good, HSG C
	20,038	73	Brush, Good, HSG D
	66,647	79	Pasture/grassland/range, Fair, HSG C
	2,614	70	Woods, Good, HSG C
	139,394	82	Weighted Average
	116,307		83.44% Pervious Area
	23,087		16.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	150	0.0260	0.14		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.10"
0.4	50	0.0800	1.98		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.3	60	0.0330	3.71	10.21	**Trap/Vee/Rect Channel Flow, C to D** Bot.W=4.50' D=0.50' Z= 2.0 '/' Top.W=6.50' n= 0.040
18.8	260	Total			

Summary for Subcatchment 2S:

Runoff = 8.07 cfs @ 12.52 hrs, Volume= 1.149 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	61,855	98	Paved parking & roofs
	41,818	74	>75% Grass cover, Good, HSG C
	62,291	70	Woods, Good, HSG C
	23,522	39	>75% Grass cover, Good, HSG A
	9,583	30	Woods, Good, HSG A
	199,069	74	Weighted Average
	137,214		68.93% Pervious Area
	61,855		31.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.4	150	0.0500	0.07		**Sheet Flow, A to B** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.0	50	0.0300	0.87		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.0	42	0.0340	14.38	45.19	**Pipe Channel, C to D** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.3	267	0.0150	3.39	20.35	**Trap/Vee/Rect Channel Flow, D to E** Bot.W=3.00' D=1.00' Z= 3.0 '/' Top.W=9.00' n= 0.040
38.7	509	Total			

Summary for Subcatchment 3S:

Runoff = 2.84 cfs @ 13.19 hrs, Volume= 0.644 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	34,412	98	Paved parking & roofs
	4,356	74	>75% Grass cover, Good, HSG C
	5,227	89	Gravel roads, HSG C
	46,609	70	Woods, Good, HSG C
	3,920	30	Woods, Good, HSG A
	7,405	39	>75% Grass cover, Good, HSG A
	101,929	77	Weighted Average
	67,517		66.24% Pervious Area
	34,412		33.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.0	150	0.0070	0.03		**Sheet Flow, A to B** Woods: Dense underbrush n= 0.800 P2= 3.10"
6.0	150	0.0070	0.42		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.0	41	0.1000	18.03	22.13	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.7	305	0.0170	7.44	9.12	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
86.7	646	Total			

Summary for Subcatchment 4S:

Runoff = 5.93 cfs @ 12.58 hrs, Volume= 0.907 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	47,916	98	Paved parking & roofs
	26,136	74	>75% Grass cover, Good, HSG C
	49,223	70	Woods, Good, HSG C
	1,307	71	Meadow, non-grazed, HSG C
	124,582	82	Weighted Average
	76,666		61.54% Pervious Area
	47,916		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	150	0.0200	0.08		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
2.4	210	0.0860	1.47		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
44.4	860	Total			

Summary for Subcatchment 5S: Tributary to Pond at Pope Road

Runoff = 4.30 cfs @ 12.76 hrs, Volume= 0.744 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	6,534	98	Paved parking & roofs
	18,295	74	>75% Grass cover, Good, HSG C
	71,874	70	Woods, Good, HSG C
*	20,909	98	Water Surface
	117,612	77	Weighted Average
	90,169		76.67% Pervious Area
	27,443		23.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.5	150	0.0200	0.05		**Sheet Flow, A to B** Woods: Dense underbrush n= 0.800 P2= 3.10"
3.5	180	0.0300	0.87		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
56.0	330	Total			

Summary for Reach 2.0R:

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.07 cfs @ 12.52 hrs, Volume= 1.149 af
Outflow = 8.07 cfs @ 12.56 hrs, Volume= 1.149 af, Atten= 0%, Lag= 2.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.79 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 1.06 fps, Avg. Travel Time= 3.4 min

Peak Storage= 623 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.67'
Bank-Full Depth= 3.00' Flow Area= 27.0 sf, Capacity= 169.99 cfs

3.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 15.00'
Length= 215.0' Slope= 0.0231 '/'
Inlet Invert= 256.97', Outlet Invert= 252.00'

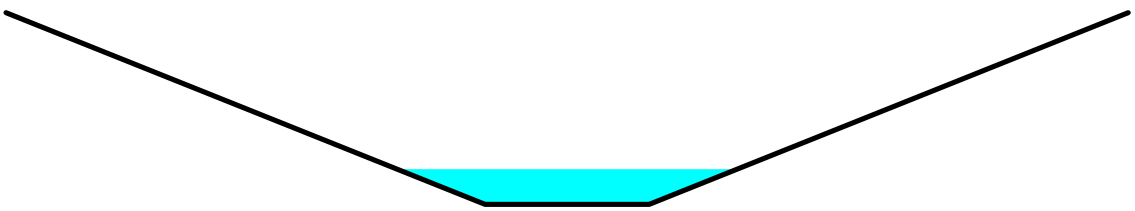
Summary for Reach 2.1R:

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.07 cfs @ 12.56 hrs, Volume= 1.149 af
Outflow = 8.07 cfs @ 12.56 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.74 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 1.0 min

Peak Storage= 192 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.64'
Bank-Full Depth= 3.50' Flow Area= 41.1 sf, Capacity= 288.89 cfs

3.00' x 3.50' deep channel, n= 0.040
Side Slope Z-value= 2.5 '/' Top Width= 20.50'
Length= 65.0' Slope= 0.0154 '/'
Inlet Invert= 252.00', Outlet Invert= 251.00'



Summary for Reach 2.2R:

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.07 cfs @ 12.56 hrs, Volume= 1.149 af
Outflow = 8.07 cfs @ 12.56 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.03 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.14 fps, Avg. Travel Time= 0.4 min

Peak Storage= 74 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 2.00' Flow Area= 17.0 sf, Capacity= 314.90 cfs

4.50' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 2.0 '/' Top Width= 12.50'
Length= 55.0' Slope= 0.1818 '/'
Inlet Invert= 251.00', Outlet Invert= 241.00'

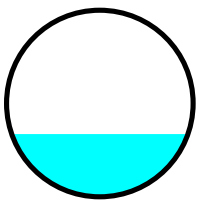
Summary for Reach 3.0R: 18" SD

Inflow Area = 2.340 ac, 33.76% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 2.84 cfs @ 13.19 hrs, Volume= 0.644 af
Outflow = 2.84 cfs @ 13.20 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.46 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.41 fps, Avg. Travel Time= 0.5 min

Peak Storage= 35 cf @ 13.20 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.71 cfs

18.0" Round Pipe
n= 0.012
Length= 68.0' Slope= 0.0106 '/'
Inlet Invert= 249.45', Outlet Invert= 248.73'



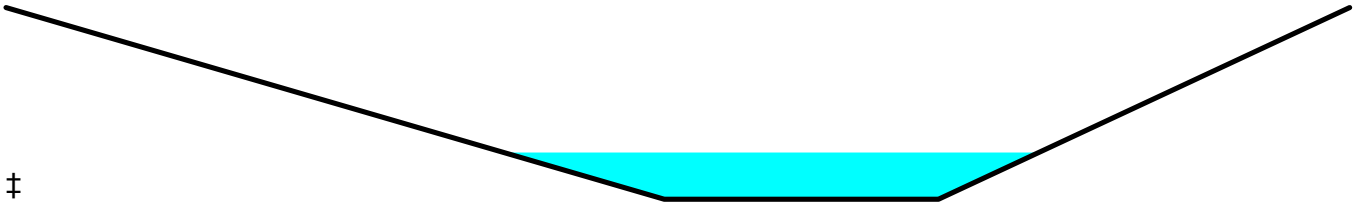
Summary for Reach 3.1R:

Inflow Area = 2.340 ac, 33.76% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 2.84 cfs @ 13.20 hrs, Volume= 0.644 af
Outflow = 2.84 cfs @ 13.20 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.11 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 1.8 min

Peak Storage= 127 cf @ 13.20 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.50' Flow Area= 11.1 sf, Capacity= 50.79 cfs

2.50' x 1.50' deep channel, n= 0.040
Side Slope Z-value= 4.0 2.5 '/' Top Width= 12.25'
Length= 94.0' Slope= 0.0184 '/'
Inlet Invert= 248.73', Outlet Invert= 247.00'



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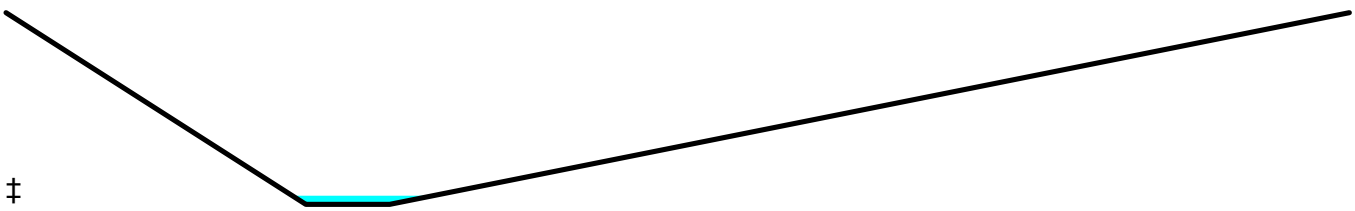
Summary for Reach 3.2R:

Inflow Area = 2.340 ac, 33.76% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 2.84 cfs @ 13.20 hrs, Volume= 0.644 af
Outflow = 2.83 cfs @ 13.21 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.70 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.33 fps, Avg. Travel Time= 1.4 min

Peak Storage= 121 cf @ 13.21 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 5.00' Flow Area= 148.8 sf, Capacity= 2,384.92 cfs

3.50' x 5.00' deep channel, n= 0.040
Side Slope Z-value= 2.5 8.0 '/' Top Width= 56.00'
Length= 115.0' Slope= 0.0522 '/'
Inlet Invert= 247.00', Outlet Invert= 241.00'



‡

Summary for Reach 3.3R:

Inflow Area = 9.610 ac, 29.55% Impervious, Inflow Depth = 2.24" for 25YR event
Inflow = 9.58 cfs @ 12.61 hrs, Volume= 1.794 af
Outflow = 9.58 cfs @ 12.62 hrs, Volume= 1.794 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.19 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 2.2 min

Peak Storage= 465 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 2.00' Flow Area= 21.0 sf, Capacity= 143.45 cfs

4.50' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 3.0 '/' Top Width= 16.50'
Length= 155.0' Slope= 0.0258 '/'
Inlet Invert= 241.00', Outlet Invert= 237.00'

‡

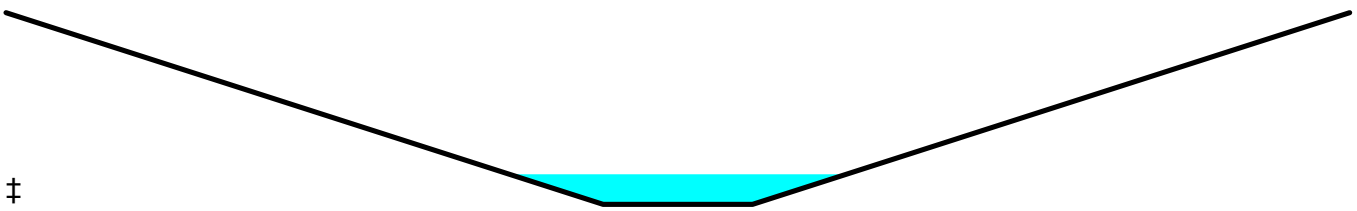
Summary for Reach 4R:

Inflow Area = 2.860 ac, 38.46% Impervious, Inflow Depth = 3.80" for 25YR event
Inflow = 5.93 cfs @ 12.58 hrs, Volume= 0.907 af
Outflow = 5.93 cfs @ 12.60 hrs, Volume= 0.907 af, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.57 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 2.1 min

Peak Storage= 286 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 3.00' Flow Area= 45.0 sf, Capacity= 331.64 cfs

3.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 4.0 '/' Top Width= 27.00'
Length= 124.0' Slope= 0.0323 '/'
Inlet Invert= 240.00', Outlet Invert= 236.00'



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Summary for Pond 2P: 15" Culvert Upstream of Stiffler Driveway

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.07 cfs @ 12.52 hrs, Volume= 1.149 af
Outflow = 8.07 cfs @ 12.52 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.0 min
Primary = 5.74 cfs @ 12.52 hrs, Volume= 1.080 af
Secondary = 2.34 cfs @ 12.52 hrs, Volume= 0.069 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 260.37' @ 12.52 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.23'	**15.0" Round Culvert** L= 51.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.23' / 256.97' S= 0.0247 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	260.30'	**50.0' long x 22.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.74 cfs @ 12.52 hrs HW=260.37' TW=257.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.74 cfs @ 4.67 fps)

Secondary OutFlow Max=2.34 cfs @ 12.52 hrs HW=260.37' TW=257.64' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.34 cfs @ 0.69 fps)

Summary for Pond 5P: Pope Road Detention pond

Inflow Area = 2.700 ac, 23.33% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 4.30 cfs @ 12.76 hrs, Volume= 0.744 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 287.36' @ 27.14 hrs Surf.Area= 26,813 sf Storage= 32,393 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	286.00'	50,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
286.00	21,000	0	0
287.00	25,000	23,000	23,000
288.00	30,000	27,500	50,500

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**50.0' long x 25.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=286.00' TW=258.23' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

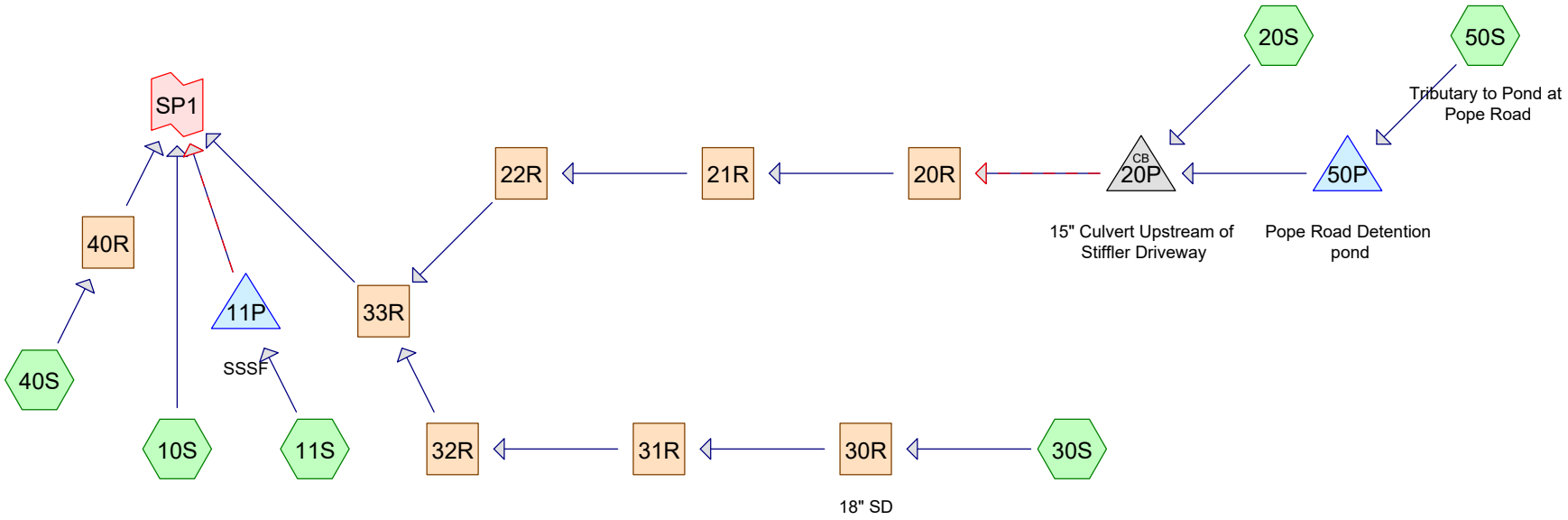
Summary for Link SP1:

Inflow Area = 15.670 ac, 28.53% Impervious, Inflow Depth = 2.84" for 25YR event
Inflow = 20.82 cfs @ 12.49 hrs, Volume= 3.714 af
Primary = 20.82 cfs @ 12.49 hrs, Volume= 3.714 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Attachment D

Post-Development Stormwater Modeling



Subcat Reach Pond Link

Routing Diagram for 05103 POST

Prepared by Sebago Technics, Inc., Printed 10/24/2018

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.710	39	>75% Grass cover, Good, HSG A (20S, 30S)
2.290	74	>75% Grass cover, Good, HSG C (10S, 20S, 30S, 40S, 50S)
0.015	80	>75% Grass cover, Good, HSG D (11S)
0.460	73	Brush, Good, HSG D (10S)
0.530	89	Gravel roads, HSG C (10S, 30S)
0.030	71	Meadow, non-grazed, HSG C (40S)
0.689	79	Pasture/grassland/range, Fair, HSG C (10S)
3.990	98	Paved parking & roofs (10S, 20S, 30S, 40S, 50S)
0.822	98	Paved parking, HSG D (11S)
0.480	98	Water Surface (50S)
0.310	30	Woods, Good, HSG A (20S, 30S)
5.340	70	Woods, Good, HSG C (10S, 20S, 30S, 40S, 50S)
15.666	**79**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=102,746 sf 22.47% Impervious Runoff Depth=1.53"
Flow Length=260' Tc=18.8 min CN=83 Runoff=2.90 cfs 0.300 af

Subcatchment11S: Runoff Area=36,466 sf 98.15% Impervious Runoff Depth=2.87"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=2.46 cfs 0.200 af

Subcatchment20S: Runoff Area=199,069 sf 31.07% Impervious Runoff Depth=0.97"
Flow Length=509' Tc=38.7 min CN=74 Runoff=2.45 cfs 0.370 af

Subcatchment30S: Runoff Area=101,929 sf 33.76% Impervious Runoff Depth=1.14"
Flow Length=646' Tc=86.7 min CN=77 Runoff=0.94 cfs 0.222 af

Subcatchment40S: Runoff Area=124,582 sf 38.46% Impervious Runoff Depth=1.46"
Flow Length=860' Tc=44.4 min CN=82 Runoff=2.26 cfs 0.348 af

Subcatchment50S: Tributary to Pond at Runoff Area=117,612 sf 23.33% Impervious Runoff Depth=1.14"
Flow Length=330' Tc=56.0 min CN=77 Runoff=1.42 cfs 0.257 af

Reach 20R: Avg. Flow Depth=0.34' Max Vel=1.93 fps Inflow=2.45 cfs 0.370 af
n=0.050 L=215.0' S=0.0231 '/' Capacity=169.99 cfs Outflow=2.44 cfs 0.370 af

Reach 21R: Avg. Flow Depth=0.33' Max Vel=1.91 fps Inflow=2.44 cfs 0.370 af
n=0.040 L=65.0' S=0.0154 '/' Capacity=288.89 cfs Outflow=2.44 cfs 0.370 af

Reach 22R: Avg. Flow Depth=0.13' Max Vel=3.92 fps Inflow=2.44 cfs 0.370 af
n=0.040 L=55.0' S=0.1818 '/' Capacity=314.90 cfs Outflow=2.44 cfs 0.370 af

Reach 30R: 18" SD Avg. Flow Depth=0.29' Max Vel=3.97 fps Inflow=0.94 cfs 0.222 af
18.0" Round Pipe n=0.012 L=68.0' S=0.0106 '/' Capacity=11.71 cfs Outflow=0.94 cfs 0.222 af

Reach 31R: Avg. Flow Depth=0.20' Max Vel=1.50 fps Inflow=0.94 cfs 0.222 af
n=0.040 L=94.0' S=0.0184 '/' Capacity=50.79 cfs Outflow=0.94 cfs 0.222 af

Reach 32R: Avg. Flow Depth=0.12' Max Vel=1.90 fps Inflow=0.94 cfs 0.222 af
n=0.040 L=115.0' S=0.0522 '/' Capacity=2,384.92 cfs Outflow=0.93 cfs 0.222 af

Reach 33R: Avg. Flow Depth=0.25' Max Vel=2.17 fps Inflow=2.91 cfs 0.593 af
n=0.040 L=155.0' S=0.0258 '/' Capacity=143.45 cfs Outflow=2.90 cfs 0.593 af

Reach 40R: Avg. Flow Depth=0.28' Max Vel=1.94 fps Inflow=2.26 cfs 0.348 af
n=0.050 L=124.0' S=0.0323 '/' Capacity=331.64 cfs Outflow=2.26 cfs 0.348 af

Pond 11P: SSSF Peak Elev=243.99' Storage=0.111 af Inflow=2.46 cfs 0.200 af
Primary=0.09 cfs 0.200 af Secondary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.200 af

Pond 20P: 15" Culvert Upstream of Stiffler Driveway Peak Elev=259.14' Inflow=2.45 cfs 0.370 af
Primary=2.45 cfs 0.370 af Secondary=0.00 cfs 0.000 af Outflow=2.45 cfs 0.370 af

Pond 50P: Pope Road Detention pond Peak Elev=286.51' Storage=11,182 cf Inflow=1.42 cfs 0.257 af
Outflow=0.00 cfs 0.000 af

Link SP1: Inflow=6.68 cfs 1.441 af
Primary=6.68 cfs 1.441 af

Total Runoff Area = 15.666 ac Runoff Volume = 1.697 af Average Runoff Depth = 1.30"
66.22% Pervious = 10.374 ac 33.78% Impervious = 5.292 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=102,746 sf 22.47% Impervious Runoff Depth=2.81"
Flow Length=260' Tc=18.8 min CN=83 Runoff=5.37 cfs 0.553 af

Subcatchment11S: Runoff Area=36,466 sf 98.15% Impervious Runoff Depth=4.36"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=3.67 cfs 0.304 af

Subcatchment20S: Runoff Area=199,069 sf 31.07% Impervious Runoff Depth=2.05"
Flow Length=509' Tc=38.7 min CN=74 Runoff=5.42 cfs 0.781 af

Subcatchment30S: Runoff Area=101,929 sf 33.76% Impervious Runoff Depth=2.29"
Flow Length=646' Tc=86.7 min CN=77 Runoff=1.95 cfs 0.447 af

Subcatchment40S: Runoff Area=124,582 sf 38.46% Impervious Runoff Depth=2.72"
Flow Length=860' Tc=44.4 min CN=82 Runoff=4.26 cfs 0.649 af

Subcatchment50S: Tributary to Pond at Runoff Area=117,612 sf 23.33% Impervious Runoff Depth=2.29"
Flow Length=330' Tc=56.0 min CN=77 Runoff=2.96 cfs 0.516 af

Reach 20R: Avg. Flow Depth=0.54' Max Vel=2.47 fps Inflow=5.42 cfs 0.781 af
n=0.050 L=215.0' S=0.0231 '/' Capacity=169.99 cfs Outflow=5.42 cfs 0.781 af

Reach 21R: Avg. Flow Depth=0.52' Max Vel=2.43 fps Inflow=5.42 cfs 0.781 af
n=0.040 L=65.0' S=0.0154 '/' Capacity=288.89 cfs Outflow=5.42 cfs 0.781 af

Reach 22R: Avg. Flow Depth=0.21' Max Vel=5.24 fps Inflow=5.42 cfs 0.781 af
n=0.040 L=55.0' S=0.1818 '/' Capacity=314.90 cfs Outflow=5.42 cfs 0.781 af

Reach 30R: 18" SD Avg. Flow Depth=0.41' Max Vel=4.91 fps Inflow=1.95 cfs 0.447 af
18.0" Round Pipe n=0.012 L=68.0' S=0.0106 '/' Capacity=11.71 cfs Outflow=1.95 cfs 0.447 af

Reach 31R: Avg. Flow Depth=0.30' Max Vel=1.88 fps Inflow=1.95 cfs 0.447 af
n=0.040 L=94.0' S=0.0184 '/' Capacity=50.79 cfs Outflow=1.95 cfs 0.447 af

Reach 32R: Avg. Flow Depth=0.18' Max Vel=2.40 fps Inflow=1.95 cfs 0.447 af
n=0.040 L=115.0' S=0.0522 '/' Capacity=2,384.92 cfs Outflow=1.95 cfs 0.447 af

Reach 33R: Avg. Flow Depth=0.40' Max Vel=2.82 fps Inflow=6.44 cfs 1.227 af
n=0.040 L=155.0' S=0.0258 '/' Capacity=143.45 cfs Outflow=6.44 cfs 1.227 af

Reach 40R: Avg. Flow Depth=0.40' Max Vel=2.34 fps Inflow=4.26 cfs 0.649 af
n=0.050 L=124.0' S=0.0323 '/' Capacity=331.64 cfs Outflow=4.26 cfs 0.649 af

Pond 11P: SSSF Peak Elev=244.61' Storage=0.155 af Inflow=3.67 cfs 0.304 af
Primary=0.09 cfs 0.265 af Secondary=0.40 cfs 0.039 af Outflow=0.49 cfs 0.304 af

Pond 20P: 15" Culvert Upstream of Stiffler Driveway Peak Elev=260.21' Inflow=5.42 cfs 0.781 af
Primary=5.42 cfs 0.781 af Secondary=0.00 cfs 0.000 af Outflow=5.42 cfs 0.781 af

Pond 50P: Pope Road Detention pond Peak Elev=286.98' Storage=22,465 cf Inflow=2.96 cfs 0.516 af
Outflow=0.00 cfs 0.000 af

Link SP1: Inflow=13.86 cfs 2.734 af
Primary=13.86 cfs 2.734 af

Total Runoff Area = 15.666 ac Runoff Volume = 3.250 af Average Runoff Depth = 2.49"
66.22% Pervious = 10.374 ac 33.78% Impervious = 5.292 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=102,746 sf 22.47% Impervious Runoff Depth=3.91"
Flow Length=260' Tc=18.8 min CN=83 Runoff=7.40 cfs 0.768 af

Subcatchment11S: Runoff Area=36,466 sf 98.15% Impervious Runoff Depth=5.56"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=4.65 cfs 0.388 af

Subcatchment20S: Runoff Area=199,069 sf 31.07% Impervious Runoff Depth=3.02"
Flow Length=509' Tc=38.7 min CN=74 Runoff=8.07 cfs 1.149 af

Subcatchment30S: Runoff Area=101,929 sf 33.76% Impervious Runoff Depth=3.31"
Flow Length=646' Tc=86.7 min CN=77 Runoff=2.83 cfs 0.644 af

Subcatchment40S: Runoff Area=124,582 sf 38.46% Impervious Runoff Depth=3.80"
Flow Length=860' Tc=44.4 min CN=82 Runoff=5.92 cfs 0.907 af

Subcatchment50S: Tributary to Pond at Runoff Area=117,612 sf 23.33% Impervious Runoff Depth=3.31"
Flow Length=330' Tc=56.0 min CN=77 Runoff=4.29 cfs 0.744 af

Reach 20R: Avg. Flow Depth=0.67' Max Vel=2.78 fps Inflow=8.07 cfs 1.149 af
n=0.050 L=215.0' S=0.0231 '/' Capacity=169.99 cfs Outflow=8.06 cfs 1.149 af

Reach 21R: Avg. Flow Depth=0.64' Max Vel=2.73 fps Inflow=8.06 cfs 1.149 af
n=0.040 L=65.0' S=0.0154 '/' Capacity=288.89 cfs Outflow=8.06 cfs 1.149 af

Reach 22R: Avg. Flow Depth=0.27' Max Vel=6.03 fps Inflow=8.06 cfs 1.149 af
n=0.040 L=55.0' S=0.1818 '/' Capacity=314.90 cfs Outflow=8.06 cfs 1.149 af

Reach 30R: 18" SD Avg. Flow Depth=0.50' Max Vel=5.46 fps Inflow=2.83 cfs 0.644 af
18.0" Round Pipe n=0.012 L=68.0' S=0.0106 '/' Capacity=11.71 cfs Outflow=2.83 cfs 0.644 af

Reach 31R: Avg. Flow Depth=0.37' Max Vel=2.10 fps Inflow=2.83 cfs 0.644 af
n=0.040 L=94.0' S=0.0184 '/' Capacity=50.79 cfs Outflow=2.83 cfs 0.644 af

Reach 32R: Avg. Flow Depth=0.22' Max Vel=2.70 fps Inflow=2.83 cfs 0.644 af
n=0.040 L=115.0' S=0.0522 '/' Capacity=2,384.92 cfs Outflow=2.83 cfs 0.644 af

Reach 33R: Avg. Flow Depth=0.50' Max Vel=3.19 fps Inflow=9.57 cfs 1.794 af
n=0.040 L=155.0' S=0.0258 '/' Capacity=143.45 cfs Outflow=9.57 cfs 1.794 af

Reach 40R: Avg. Flow Depth=0.47' Max Vel=2.57 fps Inflow=5.92 cfs 0.907 af
n=0.050 L=124.0' S=0.0323 '/' Capacity=331.64 cfs Outflow=5.92 cfs 0.907 af

Pond 11P: SSSF Peak Elev=244.78' Storage=0.164 af Inflow=4.65 cfs 0.388 af
Primary=0.10 cfs 0.280 af Secondary=2.04 cfs 0.108 af Outflow=2.13 cfs 0.388 af

Pond 20P: 15" Culvert Upstream of Stiffler Driveway Peak Elev=260.37' Inflow=8.07 cfs 1.149 af
Primary=5.74 cfs 1.080 af Secondary=2.33 cfs 0.069 af Outflow=8.07 cfs 1.149 af

Pond 50P: Pope Road Detention pond Peak Elev=287.36' Storage=32,393 cf Inflow=4.29 cfs 0.744 af
Outflow=0.00 cfs 0.000 af

Link SP1: Inflow=20.53 cfs 3.856 af
Primary=20.53 cfs 3.856 af

Total Runoff Area = 15.666 ac Runoff Volume = 4.600 af Average Runoff Depth = 3.52"
66.22% Pervious = 10.374 ac 33.78% Impervious = 5.292 ac

Summary for Subcatchment 10S:

Runoff = 7.40 cfs @ 12.26 hrs, Volume= 0.768 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	23,087	98	Paved parking & roofs
	17,860	89	Gravel roads, HSG C
	9,148	74	>75% Grass cover, Good, HSG C
	20,038	73	Brush, Good, HSG D
	29,999	79	Pasture/grassland/range, Fair, HSG C
	2,614	70	Woods, Good, HSG C
	102,746	83	Weighted Average
	79,659		77.53% Pervious Area
	23,087		22.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	150	0.0260	0.14		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.10"
0.4	50	0.0800	1.98		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.3	60	0.0330	3.71	10.21	**Trap/Vee/Rect Channel Flow, C to D** Bot.W=4.50' D=0.50' Z= 2.0 '/' Top.W=6.50' n= 0.040
18.8	260	Total			

Summary for Subcatchment 11S:

Runoff = 4.65 cfs @ 12.09 hrs, Volume= 0.388 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR Rainfall=5.80"

Area (sf)	CN	Description
35,793	98	Paved parking, HSG D
673	80	>75% Grass cover, Good, HSG D
36,466	98	Weighted Average
673		1.85% Pervious Area
35,793		98.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
4.8					**Direct Entry,**
6.0	100	Total			

Summary for Subcatchment 20S:

Runoff = 8.07 cfs @ 12.54 hrs, Volume= 1.149 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	61,855	98	Paved parking & roofs
	41,818	74	>75% Grass cover, Good, HSG C
	62,291	70	Woods, Good, HSG C
	23,522	39	>75% Grass cover, Good, HSG A
	9,583	30	Woods, Good, HSG A
	199,069	74	Weighted Average
	137,214		68.93% Pervious Area
	61,855		31.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.4	150	0.0500	0.07		**Sheet Flow, A to B** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.0	50	0.0300	0.87		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.0	42	0.0340	14.38	45.19	**Pipe Channel, C to D** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.3	267	0.0150	3.39	20.35	**Trap/Vee/Rect Channel Flow, D to E** Bot.W=3.00' D=1.00' Z= 3.0 '/' Top.W=9.00' n= 0.040
38.7	509	Total			

Summary for Subcatchment 30S:

Runoff = 2.83 cfs @ 13.18 hrs, Volume= 0.644 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	34,412	98	Paved parking & roofs
	4,356	74	>75% Grass cover, Good, HSG C
	5,227	89	Gravel roads, HSG C
	46,609	70	Woods, Good, HSG C
	3,920	30	Woods, Good, HSG A
	7,405	39	>75% Grass cover, Good, HSG A
	101,929	77	Weighted Average
	67,517		66.24% Pervious Area
	34,412		33.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.0	150	0.0070	0.03		**Sheet Flow, A to B** Woods: Dense underbrush n= 0.800 P2= 3.10"
6.0	150	0.0070	0.42		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.0	41	0.1000	18.03	22.13	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.7	305	0.0170	7.44	9.12	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
86.7	646	Total			

Summary for Subcatchment 40S:

Runoff = 5.92 cfs @ 12.60 hrs, Volume= 0.907 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	47,916	98	Paved parking & roofs
	26,136	74	>75% Grass cover, Good, HSG C
	49,223	70	Woods, Good, HSG C
	1,307	71	Meadow, non-grazed, HSG C
	124,582	82	Weighted Average
	76,666		61.54% Pervious Area
	47,916		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	150	0.0200	0.08		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
11.8	500	0.0200	0.71		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
2.4	210	0.0860	1.47		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
44.4	860	Total			

Summary for Subcatchment 50S: Tributary to Pond at Pope Road

Runoff = 4.29 cfs @ 12.76 hrs, Volume= 0.744 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR Rainfall=5.80"

	Area (sf)	CN	Description
*	6,534	98	Paved parking & roofs
	18,295	74	>75% Grass cover, Good, HSG C
	71,874	70	Woods, Good, HSG C
*	20,909	98	Water Surface
	117,612	77	Weighted Average
	90,169		76.67% Pervious Area
	27,443		23.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.5	150	0.0200	0.05		**Sheet Flow, A to B** Woods: Dense underbrush n= 0.800 P2= 3.10"
3.5	180	0.0300	0.87		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
56.0	330	Total			

Summary for Reach 20R:

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.07 cfs @ 12.54 hrs, Volume= 1.149 af
Outflow = 8.06 cfs @ 12.56 hrs, Volume= 1.149 af, Atten= 0%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.78 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 1.06 fps, Avg. Travel Time= 3.4 min

Peak Storage= 622 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.67'
Bank-Full Depth= 3.00' Flow Area= 27.0 sf, Capacity= 169.99 cfs

3.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 15.00'
Length= 215.0' Slope= 0.0231 '/'
Inlet Invert= 256.97', Outlet Invert= 252.00'

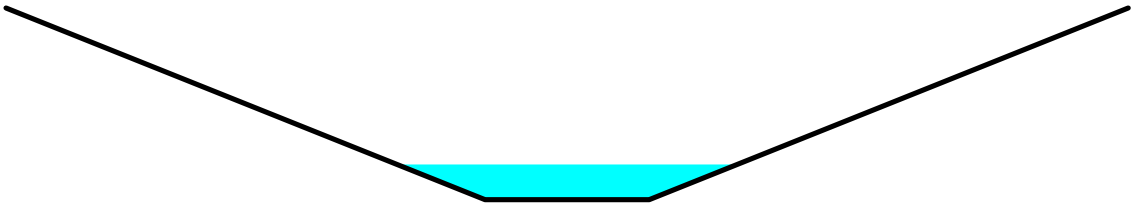
Summary for Reach 21R:

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.06 cfs @ 12.56 hrs, Volume= 1.149 af
Outflow = 8.06 cfs @ 12.56 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.73 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 1.0 min

Peak Storage= 192 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.64'
Bank-Full Depth= 3.50' Flow Area= 41.1 sf, Capacity= 288.89 cfs

3.00' x 3.50' deep channel, n= 0.040
Side Slope Z-value= 2.5 '/' Top Width= 20.50'
Length= 65.0' Slope= 0.0154 '/'
Inlet Invert= 252.00', Outlet Invert= 251.00'



Summary for Reach 22R:

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.06 cfs @ 12.56 hrs, Volume= 1.149 af
Outflow = 8.06 cfs @ 12.56 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.03 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.14 fps, Avg. Travel Time= 0.4 min

Peak Storage= 73 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 2.00' Flow Area= 17.0 sf, Capacity= 314.90 cfs

4.50' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 2.0 '/' Top Width= 12.50'
Length= 55.0' Slope= 0.1818 '/'
Inlet Invert= 251.00', Outlet Invert= 241.00'

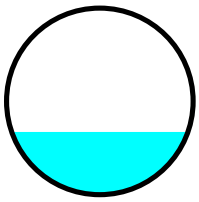
Summary for Reach 30R: 18" SD

Inflow Area = 2.340 ac, 33.76% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 2.83 cfs @ 13.18 hrs, Volume= 0.644 af
Outflow = 2.83 cfs @ 13.18 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.46 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.40 fps, Avg. Travel Time= 0.5 min

Peak Storage= 35 cf @ 13.18 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.71 cfs

18.0" Round Pipe
n= 0.012
Length= 68.0' Slope= 0.0106 '/'
Inlet Invert= 249.45', Outlet Invert= 248.73'



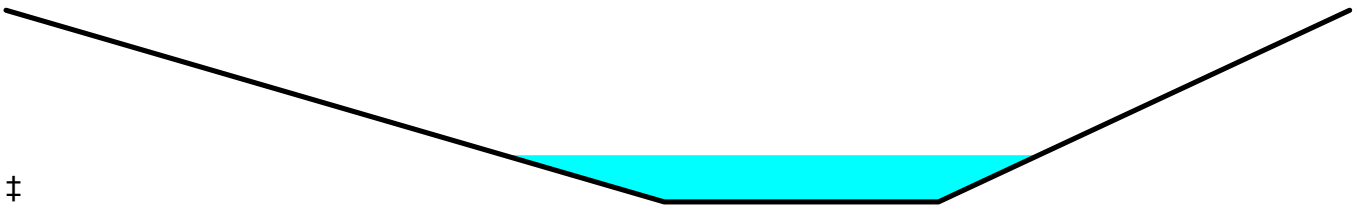
Summary for Reach 31R:

Inflow Area = 2.340 ac, 33.76% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 2.83 cfs @ 13.18 hrs, Volume= 0.644 af
Outflow = 2.83 cfs @ 13.19 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.10 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 1.8 min

Peak Storage= 126 cf @ 13.19 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.50' Flow Area= 11.1 sf, Capacity= 50.79 cfs

2.50' x 1.50' deep channel, n= 0.040
Side Slope Z-value= 4.0 2.5 '/' Top Width= 12.25'
Length= 94.0' Slope= 0.0184 '/'
Inlet Invert= 248.73', Outlet Invert= 247.00'



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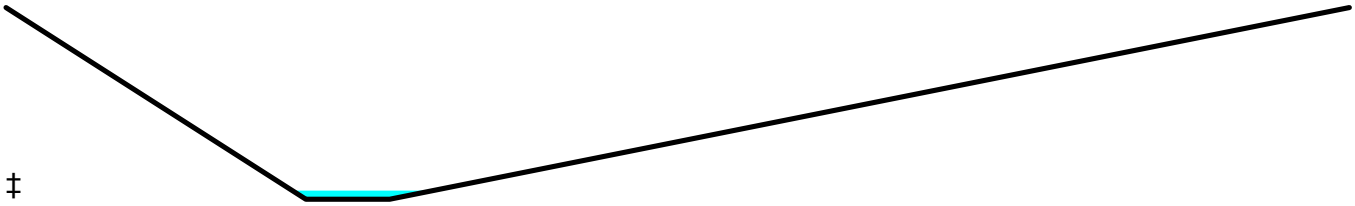
Summary for Reach 32R:

Inflow Area = 2.340 ac, 33.76% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 2.83 cfs @ 13.19 hrs, Volume= 0.644 af
Outflow = 2.83 cfs @ 13.19 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.70 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.33 fps, Avg. Travel Time= 1.4 min

Peak Storage= 121 cf @ 13.19 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 5.00' Flow Area= 148.8 sf, Capacity= 2,384.92 cfs

3.50' x 5.00' deep channel, n= 0.040
Side Slope Z-value= 2.5 8.0 '/' Top Width= 56.00'
Length= 115.0' Slope= 0.0522 '/'
Inlet Invert= 247.00', Outlet Invert= 241.00'



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Summary for Reach 33R:

Inflow Area = 9.610 ac, 29.55% Impervious, Inflow Depth = 2.24" for 25YR event
Inflow = 9.57 cfs @ 12.61 hrs, Volume= 1.794 af
Outflow = 9.57 cfs @ 12.62 hrs, Volume= 1.794 af, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.19 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 2.2 min

Peak Storage= 465 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 2.00' Flow Area= 21.0 sf, Capacity= 143.45 cfs

4.50' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 3.0 '/' Top Width= 16.50'
Length= 155.0' Slope= 0.0258 '/'
Inlet Invert= 241.00', Outlet Invert= 237.00'

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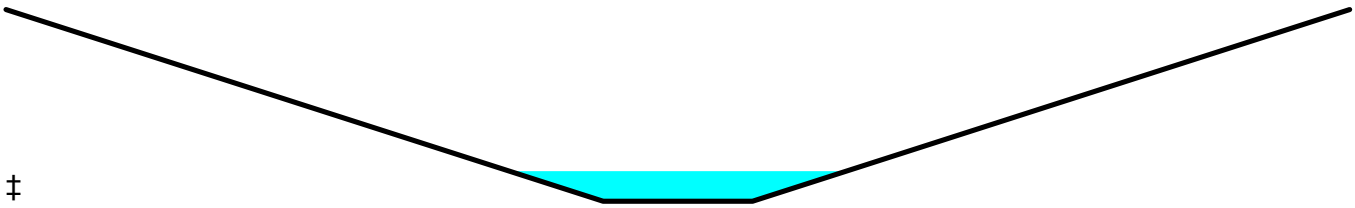
Summary for Reach 40R:

Inflow Area = 2.860 ac, 38.46% Impervious, Inflow Depth = 3.80" for 25YR event
Inflow = 5.92 cfs @ 12.60 hrs, Volume= 0.907 af
Outflow = 5.92 cfs @ 12.61 hrs, Volume= 0.907 af, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.57 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 2.1 min

Peak Storage= 285 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 3.00' Flow Area= 45.0 sf, Capacity= 331.64 cfs

3.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 4.0 '/' Top Width= 27.00'
Length= 124.0' Slope= 0.0323 '/'
Inlet Invert= 240.00', Outlet Invert= 236.00'



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Summary for Pond 11P: SSSF

Inflow Area = 0.837 ac, 98.15% Impervious, Inflow Depth = 5.56" for 25YR event
Inflow = 4.65 cfs @ 12.09 hrs, Volume= 0.388 af
Outflow = 2.13 cfs @ 12.27 hrs, Volume= 0.388 af, Atten= 54%, Lag= 11.1 min
Primary = 0.10 cfs @ 12.27 hrs, Volume= 0.280 af
Secondary = 2.04 cfs @ 12.27 hrs, Volume= 0.108 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 244.78' @ 12.27 hrs Surf.Area= 0.139 ac Storage= 0.164 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 491.6 min (1,237.2 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	242.70'	0.097 af	**41.50'W x 145.60'L x 2.33'H Field A** 0.324 af Overall - 0.081 af Embedded = 0.242 af x 40.0% Voids
#2A	243.20'	0.081 af	**ADS_StormTech SC-310 +Cap** x 240 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 12 Rows of 20 Chambers
		0.178 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	240.00'	**12.0" Round Outlet Pipe** L= 6.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.00' / 239.00' S= 0.1667 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	240.10'	**1.3" Vert. Orifice** C= 0.600
#3	Device 2	240.12'	**6.0" Round Header Pipe** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.12' / 240.00' S= 0.0024 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#4	Device 3	242.70'	**10.000 in/hr Infiltration over Surface area**
#5	Secondary	244.53'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.10 cfs @ 12.27 hrs HW=244.77' TW=0.00' (Dynamic Tailwater)
└**1=Outlet Pipe** (Passes 0.10 cfs of 6.17 cfs potential flow)
└**2=Orifice** (Orifice Controls 0.10 cfs @ 10.35 fps)
└**3=Header Pipe** (Passes 0.10 cfs of 1.42 cfs potential flow)
└**4=Infiltration** (Passes 0.10 cfs of 1.40 cfs potential flow)

Secondary OutFlow Max=1.97 cfs @ 12.27 hrs HW=244.77' TW=0.00' (Dynamic Tailwater)
└**5=Broad-Crested Rectangular Weir** (Weir Controls 1.97 cfs @ 1.36 fps)

Summary for Pond 20P: 15" Culvert Upstream of Stiffler Driveway

Inflow Area = 7.270 ac, 28.20% Impervious, Inflow Depth = 1.90" for 25YR event
Inflow = 8.07 cfs @ 12.54 hrs, Volume= 1.149 af
Outflow = 8.07 cfs @ 12.54 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.0 min
Primary = 5.74 cfs @ 12.54 hrs, Volume= 1.080 af
Secondary = 2.33 cfs @ 12.54 hrs, Volume= 0.069 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 260.37' @ 12.54 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.23'	**15.0" Round Culvert** L= 51.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.23' / 256.97' S= 0.0247 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	260.30'	**50.0' long x 22.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.74 cfs @ 12.54 hrs HW=260.37' TW=257.64' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 5.74 cfs @ 4.67 fps)

Secondary OutFlow Max=2.32 cfs @ 12.54 hrs HW=260.37' TW=257.64' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.32 cfs @ 0.69 fps)

Summary for Pond 50P: Pope Road Detention pond

Inflow Area = 2.700 ac, 23.33% Impervious, Inflow Depth = 3.31" for 25YR event
Inflow = 4.29 cfs @ 12.76 hrs, Volume= 0.744 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 287.36' @ 27.20 hrs Surf.Area= 26,813 sf Storage= 32,393 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	286.00'	50,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
286.00	21,000	0	0
287.00	25,000	23,000	23,000
288.00	30,000	27,500	50,500

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**50.0' long x 25.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=286.00' TW=258.23' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link SP1:

Inflow Area = 15.666 ac, 33.78% Impervious, Inflow Depth = 2.95" for 25YR event
Inflow = 20.53 cfs @ 12.49 hrs, Volume= 3.856 af
Primary = 20.53 cfs @ 12.49 hrs, Volume= 3.856 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Attachment E

Inspection, Maintenance, and Housekeeping Plan

05103

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN
CRR Landscaping Materials
Windham, Maine

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site by the contractor during construction and by the applicant after construction. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section and the erosion and sedimentation control plan for the project. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Correction action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made

accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.

- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation. A Spill, Prevention, Control and Countermeasures Plan is created for the project and is to be kept onsite at all times.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to

stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the applicant or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

   A. Vegetated Areas:
   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Winter Sanding:

   - Clear accumulations of winter sand along access road at least once a year,

preferably in the spring.

- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Subsurface Sand Filter:

- Follow Operation & Maintenance procedures per manufacturer.
- Inspect the site monthly for the first few months after construction. Then inspections can occur on an annual basis, preferably after rain events when clogging will be obvious.
- Make any repairs necessary to ensure the measure is operating properly.
- Regular maintenance is necessary to remove surface sediment, trash, debris, and leaf litter.
- Outlets and chambers need to be cleaned/repaired when drawdown times in the filter exceed 36 hours.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 2 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. Duration of Maintenance: Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Stormwater Inspection and Maintenance Log Form

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

CRR Landscaping Materials
Windham, Maine

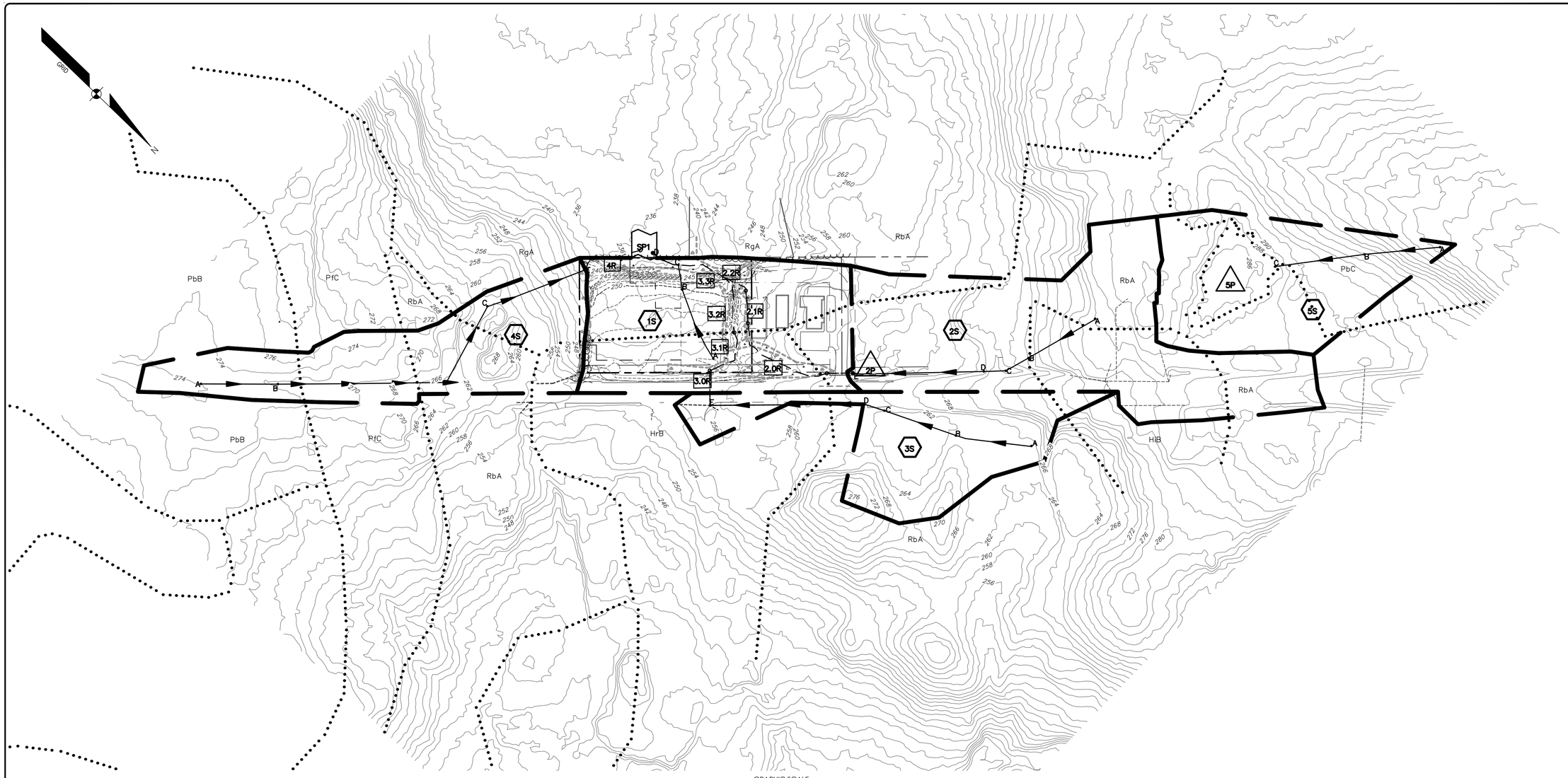
This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the proposed CRR Landscaping Materials in Windham, Maine. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the municipality. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

`	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Catch Basins			
Remove accumulated sediments and debris in the sump and at grate			Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

	Remove trash and other debris			Annually
	Replace mulch layer and tree pruning			Annually
Subsurface Sand Filter				
	Inspection of subsurface structure following major storm events			Semi-Annually (during first year)
	Inspection after major storm to ensure proper function			Bi-Annually
	Remove sediment and debris			Annually
	Clean/repair outlets and chambers			When drawdown times in filter exceed 36 hrs

Attachment F

Pre-Development and Post-Development Stormwater Watershed Plans



SOIL TYPES

SYMBOL	SOIL SERIES	HSG	DRAINAGE CLASS
HlB	HINCKLEY GRAVELLY SANDY LOAM	A	VERY WELL DRAINED
HrB	HOLLIS FINE SANDY LOAM	C/D	POORLY DRAINED
PbB/PbC	PAXTON FINE SANDY LOAM	D	POORLY DRAINED
PfC	PAXTON VERY STONY FINE SANDY LOAM	D	POORLY DRAINED
RbA	RIDGEBURY FINE SANDY LOAM	D	POORLY DRAINED
RgA	RIDGEBURY VERY STONY FINE SANDY LOAM	D	POORLY DRAINED

NOTES:
SOIL INFORMATION FOR THE SITE WAS OBTAINED VIA THE USDA UNITED STATES DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE'S WEB SOIL SURVEY. THE HYDROLOGIC SOIL GROUP (HSG) OF THE SITE SOILS ARE CLASSIFIED BY TECHNICAL RELEASE TR_55 OF THE SOIL CONSERVATION SERVICE.

PRE-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (A — B)
- REACH
- S — WATERSHED LABEL
- R — REACH
- SP — STUDY POINT
- P — STORMWATER TREATMENT/DETENTION POND
- HSG # / HSG # — SOILS BOUNDARY

JAMES R. SEYMOUR, PE 9984

STATE OF MAINE — JAMES R. SEYMOUR — No. 9984 — REGISTERED PROFESSIONAL ENGINEER — 11/05/18

DESIGNED	CHECKED
ARF	JRS

REV.:	BY:	DATE:	STATUS:
A	JRS	11-05-18	SITE PLAN SUBMITTED TO TOWN

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

PRE-DEVELOPMENT STORMWATER PLAN
OF:
CRR LANDSCAPING MATERIALS
56 ROOSEVELT TRAIL
WINDHAM, MAINE
FOR:
C&E PROPERTIES, LLC.
77 BLACKSTRAP RD
CUMBERLAND, MAINE

PROJECT NO.	SCALE
05103	1"=100'

SHEET 1 OF 2

05103SWP.dwg, TAB:PRE

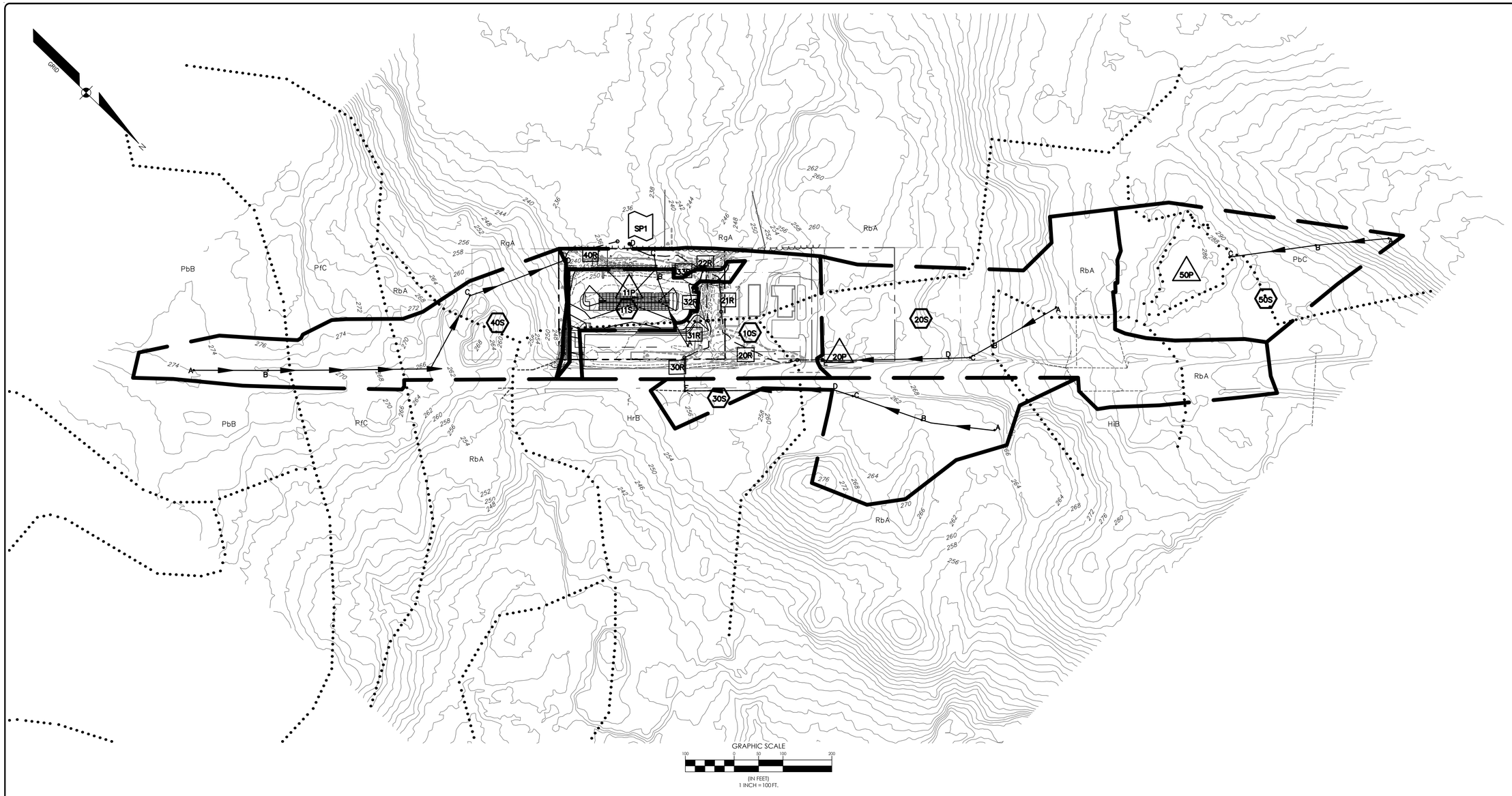


Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 05103

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED* (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10S	102,746	40,496	0	56,150	6,100	6,100	96,646	NO	0	0	0	
11S	36,466	0	35,793	0	673	36,466	0	YES	35,793	673	36,466	SSSF1
20S	199,069	61,855	0	137,214	0	0	199,069	NO	0	0	0	
30S	101,930	39,640	0	62,291	0	0	101,931	NO	0	0	0	
40S	124,582	47,916	0	76,666	0	0	124,582	NO	0	0	0	
50S	117,612	6,534	0	111,078	0	0	117,612	NO	0	0	0	
TOTAL (S.F.)	682,405	196,441	35,793	443,399	6,773	42,566	639,840		35,793	673	36,466	

TOTAL NEW IMPERVIOUS AREA (S.F.)	35,793	TOTAL DEVELOPED AREA (S.F.)	42,566
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	35,793	TOTAL DEV. AREA RECEIVING TREATMENT (S.F.)	36,466
% OF IMPERVIOUS AREA RECEIVING TREATMENT	100.00%	% OF DEV. AREA RECEIVING TREATMENT	85.67%

STORMWATER PEAK DISCHARGE SUMMARY TABLE

STUDY POINT	2-YEAR STORM		10-YEAR STORM		25-YEAR STORM	
	PRE (CFS)	POST (CFS)	PRE (CFS)	POST (CFS)	PRE (CFS)	POST (CFS)
SP-1	7.1	6.7	14.5	13.9	20.8	20.5

SOIL TYPES

SYMBOL	SOIL SERIES	HSG	DRAINAGE CLASS
HlB	HINCKLEY GRAVELLY SANDY LOAM	A	VERY WELL DRAINED
HrB	HOLLIS FINE SANDY LOAM	C/D	POORLY DRAINED
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PfC	PAXTON VERY STONY FINE SANDY LOAM	D	POORLY DRAINED
RbA	RIDGEBURY FINE SANDY LOAM	D	POORLY DRAINED
RgA	RIDGEBURY VERY STONY FINE SANDY LOAM	D	POORLY DRAINED

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- SOILS BOUNDARY

JAMES R. SEYMOUR, PE 9984

STATE OF MAINE — JAMES R. SEYMOUR No. 9984 — REGISTERED PROFESSIONAL ENGINEER — 04/05/18

DESIGNED	CHECKED
ARF	JRS

REV:	BY:	DATE:	STATUS:
A	JRS	11-05-18	SITE PLAN SUBMITTED TO TOWN

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

POST-DEVELOPMENT STORMWATER PLAN
OF:
CRR LANDSCAPING MATERIALS
56 ROOSEVELT TRAIL
WINDHAM, MAINE
FOR:
C&E PROPERTIES, LLC.
77 BLACKSTRAP RD
CUMBERLAND, MAINE

PROJECT NO.	SCALE
05103	1"=100'

SHEET 2 OF 2

05103SWP.dwg, TAB:POST

Exhibit 14

Corporate Certificate of Good Standing

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Wed Oct 31 2018 11:02:07. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
C & E ENTERPRISES LLC	20184476DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
02/26/2018	N/A	MAINE

Other Names	(A=Assumed ; F=Former)
NONE	

Clerk/Registered Agent

ERIC M. ALBEE SR.
1834 RIVERSIDE DRIVE
VASSALBORO, ME 04989

Back to previous screen | New Search

Click on a link to obtain additional information.

List of Filings	View list of filings	
Obtain additional information:		
Certificate of Existence (more info)	Short Form without amendments ($30.00)	Long Form with amendments ($30.00)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.

If you encounter technical difficulties while using these services, please contact the Webmaster. If

Exhibit 15

Landscaping

Exhibit 15 – Landscaping

Please see the plan set for any landscaping information.

Exhibit 16

Waivers

Exhibit 16 – Waivers

No waivers are requested at this time.