

St.Germain ■ Collins



APPLICATION FOR MINOR SITE PLAN APPROVAL

**HANNA REALTY ASSOCIATES, LLC
PRATT ABBOTT CLEANERS
835 ROOSEVELT TRAIL
WINDHAM, MAINE 04062**

Submitted to:

**Town of Windham
8 School Road
Windham, Maine 04062**

Prepared by:

**St.Germain Collins
846 Main Street
Westbrook, Maine 04092**

**September 2016
St.Germain Collins File No. 3580**

EXPERIENCE YOU CAN RELY ON WHEN IT COUNTS



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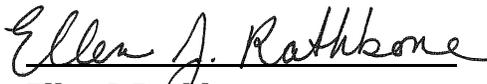
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**September 2016
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**Ellen J. Rathbone
Project Manager**


**Peter Dalfonso, P.E.
Senior Civil Engineer**

St.Germain ■ Collins



September 30, 2016

Ms. Amanda Lessard
Town Planner
Town of Windham
8 School Road
Windham, ME 04062

RE: Minor Site Plan Application
Hanna Realty Associates, LLC
835 Roosevelt Trail
Windham, ME
St.Germain Collins File No.: 3580

Dear Ms. Lessard:

St.Germain Collins is pleased to present the following Minor Site Plan Application on behalf of Hanna Realty Associates, LLC for the replacement of the Pratt Abbott Cleaners facility on Roosevelt Trail in Windham.

Enclosed also is a check for fees totaling \$ 2,850.00, determined as follows:

Application Fee	\$850.00
Escrow	\$2,000.00

If you have any questions during the review of the enclosed materials, please call me at (207) 591-7000 or e-mail me at ellenr@stgermaincollins.com.

Sincerely,
ST.GERMAIN COLLINS



Ellen J. Rathbone
Project Manager

cc: David Machesney, Hanna Realty Associates, LLC

enclosure

EXPERIENCE YOU CAN RELY ON
WHEN IT COUNTS



Introduction

This application has been prepared by St.Germain Collins on behalf of Hanna Realty Associates, LLC.

Hanna Realty Associates, LLC proposes to construct a new building for Pratt Abbott Cleaners (Pratt Abbott) a retail garment care and coin operated laundry business in Windham, Maine (see Site Location Map, in Plan Set, Exhibit 11). The new building will be constructed next to the current Pratt Abbott location and will provide a larger and more efficient building for the business. The new building is not expected to draw significantly more traffic or use more water or electricity than the current location. Garment care will be provided onsite with Green Earth technology, which generates no hazardous wastes.

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Project Name: Pratt Abbott Cleaners

Tax Map: 71 **Lot:** 6 and 7

Estimated square footage of building(s): 4,800

If no buildings proposed, estimated square footage of total development/disturbance:

Contact Information

1. Applicant Hanna Realty Associates, LLC

Name: David Machesney

Mailing Address: PO Box 1120, Portland, ME 04104

Telephone: 207-854-5405 x 15 Fax:

E-mail: dmachesney@prattabbott.com

2. Record owner of property

_____ (Check here if same as applicant)

Name: Hanna Associates

Mailing Address: PO Box 1120, Portland, ME 04104

Telephone: 207-854-5405 x 15 Fax:

E-mail: dmachesney@prattabbott.com

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

Name: Ellen J. Rathbone

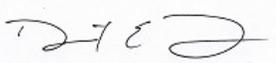
Company Name: St. Germain Collins

Mailing Address: 846 Main Street, Westbrook ME 04092

Telephone: 207-591-7000 x 19 Fax:

E-mail: ellenr@stgermaincollins.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

**Abutters to Pratt Abbott Windham
Touching or across public way from lots 71-6 and 71-7**

MBLU	Location	Owner Name	Address
71/ 26/ A01/ /	831 ROOSEVELT TR	Wendco of Maine, LLC	4 Brimstone Hill Road, STE 7, Epsom, NH 03234
71/ 3/ 1/ /	2 AMATO DR	Tim Donut U.S. Limited Inc; c/o Ryan Property Tax Services	PO BOX 460389, Houston, TX 77056
71/ 3/ 2/ /	1 AMATO DR	Amato Drive, LLC; c/o CBRE/The Boulos Company	Property Management One Canal Plaza, Portland ME 04101
71/ 3/ 3/ /	9 AMATO DR	Amato Drive, LLC; c/o CBRE/The Boulc	Property Management One Canal Plaza, Portland ME 04101
71/ 49/ A/ /	850 ROOSEVELT TR	Richardson Windham Properties	PO BOX 1807, Windham, ME 04062
71/ 49/ B/ /	848 ROOSEVELT TR	Richardson Windham Properties	PO BOX 1807, Windham, ME 04062
71/ 49/ B/ L/	848 ROOSEVELT TR	Windham Drifters	PO BOX 869, Windham, ME 04062
71/ 49/ C/ /	840 ROOSEVELT TR	Roosevelt Trail 840 LLC	840 Roosevelt Trail, Windham, ME 04062
18/ 25/ B/ /	847 ROOSEVELT TR	Sebago Lake Holdings, LLC	PO BOX 1330, Windham, ME 04062

012408

PERSONAL REPRESENTATIVE'S DEED

RUTH A. LOWELL, of Portland, Maine, duly appointed and acting Personal Representative of the ESTATE OF RODERICK L. LOWELL, deceased (testate), as shown by the probate records of Cumberland County, Maine, and not having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, such notice not being required under the terms of the decedent's Will, by the power conferred by the Probate Code, and every other power, for consideration paid, grants to HANNA ASSOCIATES, a Maine general partnership with a place of business in Portland, Maine, that certain real estate located in the City of Westbrook, Town of Windham and City of Portland, County of Cumberland and State of Maine, more particularly described on the attached Exhibit A.

Executed this *2nd* day of *March*, 1998.

Ruth A. Lowell
Ruth A. Lowell
Personal Representative
Estate of Roderick L. Lowell

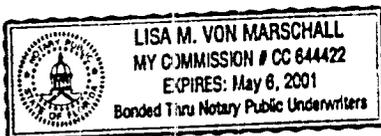
STATE OF FLORIDA
SARASOTA, ss.

March 2nd, 1998

Personally appeared the above-named, RUTH A. LOWELL, Personal Representative of the Estate of Roderick L. Lowell, and acknowledged the foregoing to be her free act and deed in her capacity as Personal Representative.

Before me,

Lisa M. von Marschall
Notary Public



Print or Type Name

My Commission Expires:

Not Presented: Florida Drivers License

MAIN STREET, WESTBROOK PROPERTY

A certain lot or parcel of land with the buildings thereon, situated in that part of Westbrook, County of Cumberland and State of Maine, known as Cumberland Mills, or the East End, and bounded and described as follows, viz: Commencing at the intersection formed by the westerly line of Seavey Street with the southerly line of Main Street; thence southerly by said Seavey Street, one hundred and fifty (150) feet; thence westerly, parallel with said Main Street, fifty-five (55) feet; thence northerly, parallel with said Seavey Street, one hundred and fifty (150) feet to said Main Street; thence easterly by said Main Street, fifty-five (55) feet to the place of beginning.

Also a certain lot or parcel of land situated on the southerly side of Main Street in Westbrook, County of Cumberland and State of Maine, bounded and described as follows: Beginning at a point on said southerly side of Main Street at the northwesterly corner of land conveyed to Pratt-Abbott, Inc. by deed of Luther Small; thence westerly along said southerly side of said Main Street, twenty-five (25) feet to a point; thence southerly and parallel to the westerly sideline of said land formerly of Luther Small, one hundred and seventy-five (175) feet, more or less, to land conveyed by Mary T. Verrill, et al to George Secord by deed dated December 1, 1939, and recorded in Cumberland County Registry of Deeds in Book 1590, Page 499; thence easterly along said land so conveyed to said George Secord, twenty-five (25) feet, more or less, to other land formerly of said George Secord now of Walter B. Hand; thence northerly along said land of said Hand and said land formerly of Luther Small, one hundred and seventy-five (175) feet, more or less, to the point of beginning.

Being a portion, parcels numbered 1 and 2, of the same premises conveyed from P-A Realty Corp. to Roderick L. Lowell by deed dated December 31, 1976 and recorded in the Cumberland County Registry of Deeds in Book 3959, Page 35.

ROUTE 302, WINDHAM PROPERTYPARCEL ONE

A certain lot or parcel of land, with the buildings thereon, situated on the easterly side of the Bridgton Road, so-called, in the Town of Windham, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the easterly sideline of Bridgton Road at a point one hundred ninety-five and seventeen hundredths (195.17) feet northerly thereon from the westerly corner of land conveyed by Charles Rosenbloom to Maurice H. Barter, et al by deed dated June 5, 1945, and recorded in the Cumberland County Registry of

Deeds in Book 1781, Page 326; thence North 13° 35' West by the easterly sideline of Bridgton Road, one hundred (100) feet to a point; thence North 76° 25' East, four hundred (400) feet to a point; thence South 13° 35' East, one hundred five and eight tenths (105.8) feet to the northwesterly sideline of said Barter land; thence South 52° West by said Barter land; thence South 52° West by said Barter land, two hundred twenty-one and twenty-five hundredths (221.25) feet to a point; thence North 13° 35' West, one hundred and fifty-seven hundredths (100.57) feet to a point; thence South 76° 25' West, two hundred (200) feet to the point of beginning.

The above described courses are magnetic and are derive from a survey of said premises by C.C. Legrow dated July, 1963.

Being the same premises conveyed from Windham Laundry Services, Inc. to Roderick Lowell by deed dated December 29, 1978 and recorded in the Cumberland County Registry of Deeds in Book 4312, Page 144.

PARCEL TWO

A certain lot or parcel of land located on the easterly side of the Bridgton Road (Route 302) in the Town of Windham, County of Cumberland and the State of Maine, more fully described as follows:

Beginning at the northwesterly corner of land of Peter R. and Jeannette A. Tetrault as recorded in the Cumberland County Registry of Deeds in Book 4756, Page 96; thence South 13° 35' East along said Bridgton Road, a distance of thirty-six and eighty-nine hundredths (36.89) feet to an iron; thence North 75° 32' 45" East a distance of two hundred and two hundredths (200.02) feet to an iron; thence North 13° 35' West along land of Roderick Lowell as recorded in the Cumberland County Registry of Deeds in Book 4362, Page 144, a distance of thirty-three and eighty-five hundredths (33.85) feet to a point; thence South 76° 25' West along said land of Lowell, a distance of two hundred (200) feet to a point of beginning.

This parcel contains 7.073 square feet, more or less, and the bearings are based on magnetic meridian, 1963.

Reference is made to a survey completed for Peter R. and Jeannette A. Tetrault by James C. Lauzier, Registered Land Surveyor #1076, and dated August 7, 1981.

Being the same premises conveyed from Peter R. Tetrault and Jeannette A. Tetrault to Roderick L. Lowell by deed dated April 4, 1985 and recorded in the Cumberland County Registry of Deeds in Book 6725, Page 89.

PARCEL THREE

A certain lot or parcel of land situated on the easterly side of the Bridgton Road (Route 302), in the Town of Windham, County of Cumberland and State of Maine, more fully described as follows:

Beginning at the southwest corner of land of Peter R. and Jeannette A. Tetrault, as recorded in the Cumberland County Registry of Deeds in Book 4756, Page 96; thence North 13° 35' West along Bridgton Road, a distance of one hundred fifty-eight and twenty-eight hundredths (158.28) feet to an iron at land of Roderick L. Lowell; thence North 75° 32' 45" East, a distance of two hundred and two hundredths (200.02) feet to an iron at land of Roderick Lowell, as recorded in said Registry of Deeds in Book 4362, Page 144; thence South 13° 35' East along said land of Lowell, a distance of sixty-six and seventy-two hundredths (66.72) feet to land of Lester Marcus, as recorded in said Registry of Deeds in Book 2961, Page 376; thence South 51° 06' 10" West along said land of Marcus, a distance of two hundred twenty-one and twenty-five hundredths (221.25) feet to the point of beginning.

The above parcel contains 22,499 square feet, more or less, and the bearings are based on magnetic meridian, 1963.

Being the same premises conveyed from Peter R. Tetrault and Jeannette A. Tetrault to Roderick L. Lowell by deed dated April 4, 1985 and recorded in the Cumberland County Registry of Deeds in Book 6725, Page 91.

FOREST AVENUE & BELL STREET, PORTLAND PROPERTY

A certain lot or parcel of land, with the buildings thereon, on the easterly side of Forest Avenue in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the said Avenue (being the County Road) leading from Morrill's Corner to Woodford's Corner and at the southerly corner of land formerly of E.P. Briggs and now or formerly of Lowney; thence easterly on line of said Lowney land, one hundred (100) feet to a point; thence southerly on a line parallel with said Avenue, fifty (50) feet to a point; thence westerly on a line parallel with said Lowney land, one hundred (100) feet to said Forest Avenue; thence northerly on the line of said Forest Avenue, fifty (50) feet to the point of beginning. Containing five thousand (5000) feet.

Also, a certain lot or parcel of land on the northerly side of Bell Street in said Portland, bounded and described as follows:

Beginning on said northerly side of said Bell Street at a point one hundred (100) feet easterly from the point of intersection of said northerly sideline of Bell Street and the easterly sideline of Forest Avenue, otherwise known as the County Road; thence northerly fifty (50) feet along the easterly sideline of land conveyed by said Deering Improvement Company to Annie B. Colby by deed dated May 14, 1913, and recorded in the Cumberland County Registry of Deeds in Book 913, Page 187, and northerly in the same course fifty (50) feet along the easterly sideline of land conveyed by said Deering Improvement Company to Mildred Waterhouse by deed dated August 14, 1911, and recorded in said Registry of Deeds, Book 879, Page 325, to said land formerly of E.P. Briggs and now or formerly of one Lowney; thence easterly on line of said Lowney land, fifty (50) feet to a point and land now or formerly of one Curran; thence southerly along the westerly sideline of said Curran land, one hundred (100) feet to said Bell Street; thence westerly along the northerly sideline of said Bell Street, fifty (50) feet to the point of beginning. Containing five thousand (5000) square feet.

Being the same premises conveyed from Mildred Waterhouse Ackley to Roderick L. Lowell by deed dated April 7, 1967 and recorded in said Registry of Deeds in Book 2990, Page 867.

Also, a certain lot or parcel of land, with the buildings thereon, situated in Portland, County of Cumberland and State of Maine, on the easterly side of Forest Avenue and on the northerly side of Bell Street, and more particularly bounded and described as follows, viz:

On the North and East by line of land conveyed to Roderick L. Lowell by deed of Mildred W. Ackley dated April 7, 1967 and recorded in the Cumberland County Registry of Deeds in Book 2990, Page 867; on the south by Bell Street; and on the West by Forest Avenue.

Excepting and reserving all that certain lot or parcel of land conveyed to the City of Portland by deed recorded in said Registry of Deeds in Book 2166, Page 326.

Being the same premises conveyed from Grace A. Quint to Roderick L. Lowell by deed dated December 23, 1967 and recorded in said Registry of Deeds in Book 3024, Page 259.

Also, a certain lot or parcel of land, with the buildings thereon, situated in Portland, County of Cumberland and State of Maine, on the easterly side of Forest Avenue and on the northerly side of Bell Street, and more particularly bounded and described as follows, viz:

OK 13646PG071

On the North and East by line of land conveyed to Roderick L. Lowell by deed of Mildred W. Ackley dated April 7, 1967 and recorded in the Cumberland County Registry of Deeds in Book 2990, Page 867; on the south by Bell Street; and on the West by Forest Avenue.

Being the same premises conveyed from Tim O'Donovan, et als to Roderick L. Lowell by deed recorded in said Registry of Deeds in Book 3208, Page 4713.

RECEIVED
CUMBERLAND COUNTY REGISTRY OF DEEDS

1998 MAR -6 PM 1:29

CUMBERLAND COUNTY

John B. O'Brien

Hanna Realty Associates, LLC

PO Box 1120
Portland, ME 04104

September 30, 2016

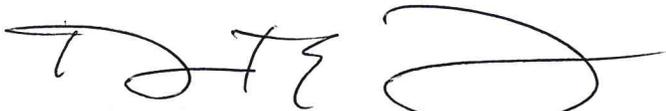
Amanda Lessard, Planner
Town of Windham
8 School Road
Windham, ME 04062

Dear Ms. Lessard,

Please be aware that as of June 2004, all of Hanna Associates properties and assets are owned by Hanna Realty Associates, LLC.

If you have any questions or require additional information, please don't hesitate to contact me at (207) 653-2863, or Ellen Rathbone, with St. Germain Collins, at (207) 591-7000, ext. 19.

Sincerely,

A handwritten signature in black ink, appearing to read 'DM', followed by a large, stylized circular flourish.

David Machesney
Partner

cc: Ellen Rathbone, St. Germain Collins

Technical Capability

Hanna Realty Associates, LLC has retained the services of Custom Concepts, Inc. an established architecture firm to prepare the plans for the new building and St.Germain Collins for the civil design.

Engineer/Consultant for project:

St.Germain Collins

846 Main Street

Westbrook, Maine 04092

Architect

Custom Concepts, Inc.

636 U.S. Route 1, Box 6

Scarborough, Maine 04074

Services and Utilities

The site will be served by public water and a letter confirming adequate service from Portland Water District is in this exhibit. The washing machines to be installed in the building will use less water than the ones currently in use. See Sheet C-301 in the plan set for detail of pavement repair to follow installation of water line.

Wastewater disposal will be to an existing on-site septic system sized appropriately for the project. The design flow of the subsurface wastewater disposal system is 5,500 gallons per day. Utility poles are shown on the existing conditions plan in the Plan Set. The adequacy of stormwater management has been assured as provided in the Stormwater Report.

The building will be heated with natural gas.



Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

October 23, 2015

St. Germain Collins
846 Main Street Suite 3
Westbrook, ME 04092

Attn: Ellen Rathbone
Re: 835 Roosevelt Trail - Windham
Ability to Serve with PWD Water

Dear Ms. Rathbone:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on September 25, 2015. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter.

Conditions of Service

The following conditions of service apply:

- A new service may be installed from the 12-inch ductile iron main in Roosevelt Trail. It is recommended to install a minimum service size of 2-inch for domestic usage. The service should enter through the properties frontage at least 10-feet from side property lines.
- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.

Existing Site Service

According to District records, the project site does not currently have existing water service.

Water System Characteristics

According to District records, there is a 12-inch diameter ductile iron water main and an 8" cast iron water main on the west side of Roosevelt Trail and a public fire hydrant located across from the site. Recent flow data is not available in this area. The most recent static pressure reading was 80 psi on 3/5/2015.

Public Fire Protection

It is not anticipated that this project will include the installation of new public hydrants to be accepted into the District water system. It is your responsibility to contact the Windham Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

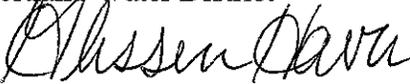
The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have not indicated whether this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Should private fire protection be required, please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Glissen Havu, E.I.
Design Engineer



835 Roosevelt Trail

Windham



PORTLAND WATER DISTRICT
225 Douglass Street
Portland, ME 04104



Legend

- | | | | |
|----------------|--------------------|--------------------|-----------|
| ● Air Valve | ● Connection | Ⓜ Combined Service | ● Manhole |
| ● Blow Off | ● Attribute Change | Ⓜ Domestic Service | ● CSO |
| ● By Pass | ▲ Reducer | Ⓜ Fire Service | → Gravity |
| ⊗ Distribution | ● Hydrant | ● Private Hydrants | → Force |
| ⊗ Transmission | ⊗ Hydrant Control | Ⓜ Meter Pits | |



Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.

Drawn By: BSJ

Scale: As Noted

Date: September 28, 2015

Traffic

No increase in traffic is expected due to this project, because vehicles using the existing location (next door to the project site) will relocate to the new building once it opens.

Natural and Historic Considerations

The site is a previously developed location on a busy commercial corridor. The site is on a sand and gravel aquifer. No wells exist or are planned for the site.

The site does not have any of these features:

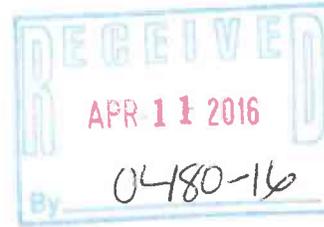
- Unique natural areas
- Floodplains
- Deer wintering areas
- Significant wildlife habitats
- Fisheries
- Scenic areas
- Rare and endangered plants or animals
- Unique natural communities or natural areas
- History and/or archeological resources

Please see attached letter from Maine Historic Preservation.

St.Germain • Collins

April 6, 2016

Kirk F. Mohney
Director and State Historic Preservation Officer
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station,
Augusta, Maine 04333



Re: MHPC Project Review
Hanna Realty Associates, LLC
835 Roosevelt Trail, Windham, Maine
St.Germain Collins File No.: 3580

Dear Mr. Mohney:

St.Germain Collins, on behalf of Hanna Realty Associates, LLC, hereby requests a review of the proposed side development by the State Historic Preservation Commission. A location plan identifying the site is attached.

The site is a 1.80-acre parcel that is currently developed with a commercial building and septic system. There are no remaining natural conditions on the site. The proposal includes construction of a new building to replace the existing facility located next door.

No buildings over fifty years of age were identified on, adjacent to, or across the street from the project site.

Please send the results of your review to us at the address below. If you have any questions, please contact us at 207-591-7000 or ellenr@stgermaincollins.com

Sincerely,
ST.GERMAIN COLLINS

Ellen J. Rathbone
Regulatory Specialist

attachment

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney,
Deputy State Historic Preservation Officer
Maine Historic Preservation Commission

4/19/16
Date

cc: David Machesney, Hanna Realty Associates, LLC

EXPERIENCE YOU CAN RELY ON
WHEN IT COUNTS



Matthew J. Stringer
Vice President

Commercial Banking
Mail-code: ME-01-CP-0404
One Canal Plaza
Portland, Maine 04101

Tel. 207-874-7066
Fax 207-874-7750

Matthew_J_Stringer@Keybank.com

September 26, 2016

Mr. David Machesney
Hanna Realty Associates, LLC
55 Bradley Drive
Westbrook, ME 04092

RE: Hanna Realty Associates, LLC

To whom it may concern:

Hanna Realty Associates, LLC, and David Machesney, as its owner, have the capacity through net worth and potential financing to expand and improve the property at 835-839 Roosevelt Trail, Route 302, Windham, Maine. Hanna Realty Associates, LLC is in good standing with the Bank handling business checking and borrowing activities as agreed.

This letter is based on my present understanding of your financial position. Any changes in circumstances relating to this transaction may require revisions to the Bank's assessment of Hanna Realty Associates, LLC and David Machesney's capacity.

If you have any questions regarding this letter, please call me at 874-7066, or send an e-mail to matthew_j_stringer@keybank.com.

Sincerely,

Matthew Stringer
Vice President

State of Maine



Department of the Secretary of State

I, the Secretary of State of Maine, certify that according to the provisions of the Constitution and Laws of the State of Maine, the Department of the Secretary of State is the legal custodian of the Great Seal of the State of Maine which is hereunto affixed and of the reports of formation, amendment and cancellation of articles of organization of limited liability companies and annual reports filed by the same.

I further certify that HANNA REALTY ASSOCIATES, LLC is a duly formed limited liability company under the laws of the State of Maine and that the date of formation is January 10, 2002.

I further certify that on:

<i>January 10, 2002</i>	<i>ARTICLES OF ORGANIZATION were filed.</i>
<i>June 04, 2004</i>	<i>ARTICLES OF MERGER OR SHARE EXCHANGE were filed.</i>
<i>April 08, 2008</i>	<i>CHANGE OF AGENT was filed.</i>
<i>August 14, 2013</i>	<i>CHANGE OF AGENT was filed.</i>

No further amendments have been filed to date.

I further certify that said limited liability company has filed annual reports due to this Department, and that no action is now pending by or on behalf of the State of Maine to forfeit the articles of organization and that according to the records in the Department of the Secretary of State, said limited liability company is a legally existing limited liability company in good standing under the laws of the State of Maine at the present time.

In testimony whereof, I have caused the Great Seal of the State of Maine to be hereunto affixed. Given under my hand at Augusta, Maine, this twenty-second day of September 2016.



A handwritten signature in black ink, appearing to read 'Matthew Dunlap', written over a horizontal line.

Matthew Dunlap
Secretary of State

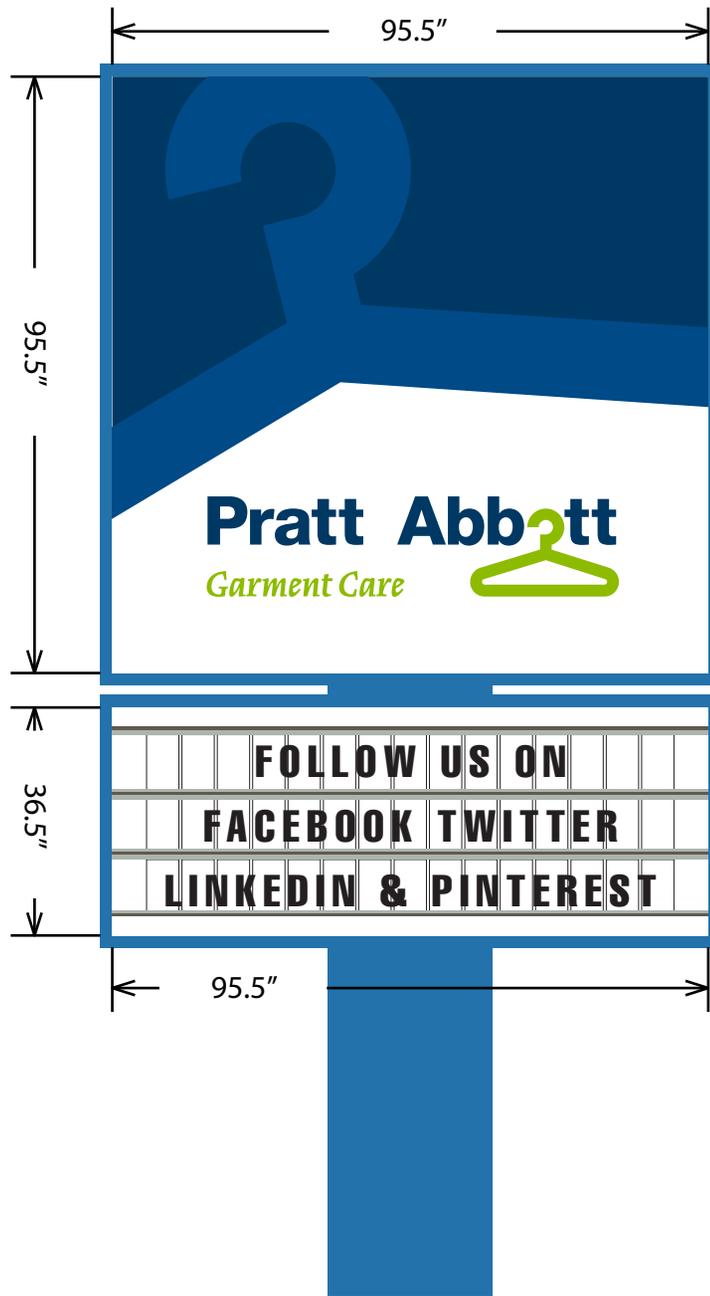
Design Standards

Please see the attached plan set for design details. Examples of the proposed sign and a lighting cut sheet are provided in this exhibit.

The following design standards are met as described here:

			C-1	
A. Architecture/Building				
1	Building Style		R ¹	New England architectural detailing
2	Materials		R	Painted lapped wood siding
3	Color		R	Color will be low reflectance
4	Roofline		R	Pitched roof
5	Façade		R	Windows exceed 40% of facing length
6	Building style coordination (multi-building)		R	N/A
7	Entrance		R	Customer entrance clearly defined
8	Architectural Details		R	See elevations
9	LEED certification			
B. Site/Parking				
1	Parking location		0	Most of the parking is at back of building.
2	Internal traffic flow		0	Pavement markings will effectively control traffic.
3	Interconnected Parking Lots		0	Potential to share parking with development on the adjoining lot.
4	Orientation of Building		0	The building faces the street.
5	Screening - parking			
6	Screening - utilities & service		R	Service entrance at back of building.
7	Parking Lot Landscaping			
8	Low-Impact Design Stormwater		0	Yes, see Stormwater Report
9	Shared Stormwater Treatment		0	Yes, see Stormwater Report

C. Landscaping/Lighting			
1	Lighting/Photometric plan	R	Cut sheet with photometric info in this exhibit.
2	Lighting coordinated with architecture	R	Meets
3	Lighting coordinated with landscaping	R	Meets
4	Existing trees preserved		
5	Snow storage areas designated	R	Area shown on site plan
6	Planting variety	O	Plantings in the landscape buffer will meet this requirement. See Landscape Plan in this exhibit.
7	Planting suitability	O	Plantings in the landscape buffer will meet this requirement. See Landscape Plan in this exhibit.
8	Mass plantings		
9	Illumination levels		
D. Bike/Ped			
1	Internal walkways	R	Traffic flow on the lot is designed to be smooth and predictable, which facilitates pedestrian access. A continuous walkway from the sidewalk is not practical for the site.
2	Links to community	R	There is potential for internal pedestrian access connecting to future development on lot to the west.
3	Outdoor activity area		
4	Sidewalks	R	Shown on plan
5	Crosswalks	R	Will be striped as appropriate.
6	Bike parking/racks	R	Shown on Plan C-101 of Plan Set



Digital / Vinyl Job Specifications	
Job Name:	Pratt-Abbott
Job #:	16020
Customer Name:	Pratt-Abbott
Scope:	Monument sign
Sales Rep/Drawn By:	JS/JK
Revision #:	
Date:	7.27.2014
File Location:	Pratt-Abbott
 <p>WELCH SIGNAGE EST. 1855</p> <p>207.883.6200 www.welchusa.com</p>	
Sign Components	
Rigid Substrate/Thickness:	3/16" Lexan
Roll Stock:	Translucent
Vinyl Color:	NA
Corners:	Square
Machine Process	
Process:	Front applied print, gemini track, vinyl
Sides:	[x] Double
Artboard Size:	See Drawing
[] iCut [] Cut Contour	
First Surface Color:	CMYK
Second Surface Color:	NA
Finishing	
Edge Treatment:	NA
Holes [] YES [x] NO	Location:
Mounting Location:	Existing Pylon
Hardware:	Gemini track
Tape:	NA
Frame	
Style/Size:	NA
Color:	NA
Proofed - In Design:	In Production:

Approved By: _____ Date: _____

DISCLAIMER: Welch is not responsible for the output of customer supplied files or logos. It is the customer's responsibility to make sure they have supplied the files in the correct resolution and PMS colors. Colors will vary from monitor to printer, Welch is not responsible for color variation. Custom proof color matching is available for an additional fee. Please call or visit www.welchusa.com/artwork for file information

VEHICLES: Although Vehicle Graphics are meant to last 3-5 years, Welch will only warranty the replacement of vehicle graphics 60 days from the install date. Graphics are a temporary advertisement. Please note that sunlight, bad weather, rocks, pressure washing and incorrect care of your graphics can shorten life span.

CIMARRON LED

Cat.#

Job

Type



Approvals

SPECIFICATIONS

Construction:

- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:

- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:

- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available

- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:

- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:

- L90 at 60,000 hours (Projected per IESNA TM-21-11)

Installation:

- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern

- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

Finish:

- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

Warranty:

Five year limited warranty (for more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>)

Listings:

- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: <http://www.designlights.org/QPL>
- IDA approved • IP65

PRODUCT IMAGE(S)



90 LED 3/4 VIEW



30 LED

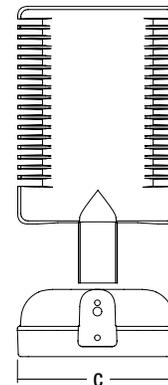
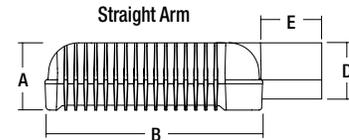
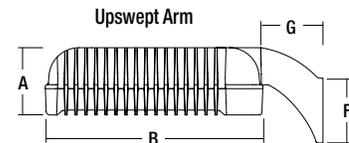


60 LED



90 LED

DIMENSIONS



A	B	C	D	E	F	G
6 3/4"	21 3/4"	16"	6 5/8"	6 5/16"	5 5/8"	6 1/8"
171mm	552mm	406mm	168mm	160mm	143mm	155mm

CERTIFICATIONS/LISTINGS



*3000K and warmer CCTs only

ORDERING INFORMATION SEE NEXT PAGE

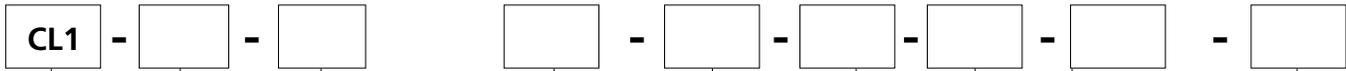


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Due to our continued efforts to improve our products, product specifications are subject to change without notice.



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ORDERING INFORMATION ORDERING EXAMPLE: CL1-A-90LU-5K-3-DB-RPA3



SERIES	NO. OF LEDs	VOLTAGE	CCT	DRIVE CURRENT	OPTIONS
CL1 Cimarron LED	90L 90 High brightness LEDs 60L 60 High brightness LEDs 30L 30 High brightness LEDs	U¹ Universal 120V-277V, 50/60 Hz 1 120V 2 208V 3 240V 4 277V 5 480V, 60 Hz F 347V, 60 Hz E⁴ 220V, 50 Hz	3K 3000K 4K 4000K 5K 5000K AM⁴ Amber (590 nm available for "Turtle Friendly" applications (consult factory))	Leave blank for 700mA (standard) 035 350mA Amber CCT only 105 1050 mA (use with 90L only for higher lumen output)	BC³ Backlight control CD Continuous dimming WB Wall bracket RPA3 3" Round pole adapter RPA4 4" Round pole adapter RPA5 5" Round pole adapter RPA6 6" Round pole adapter F(X)² Fusing (replace X with voltage: 1-120V, 2-208V, 3-240V, 4-277V, 5-480V, F-347V) VG Vandal guard 7PR Photocell receptacle (7-pin ANSI C136.41—2013 receptacle for use with standard Twist-Lock® photo controls, shorting caps, and ANSI C136.41 external wireless control devices. Select SCL option to add occupancy sensing capability when using with compatible external wireless devices.

MOUNTING

- A** Arm mount construction (6" straight rigid arm included & acceptable for 90° configurations)
- AD** Decorative arm mount const. (6" decorative upswept arm incl. & acceptable for 90° configurations)
- MAF** Mast arm fitter for mounting to standard 2 3/8" mast arm bracket, includes 6" straight rigid arm

DISTRIBUTION

- 2** Type II
- 3** Type III
- 4** Type IV
- 5M** Type V Medium
- 5S** Type V Short
- 5W** Type V Wide
- 2L** Type II Rotated 90° left
- 3L** Type III Rotated 90° left
- 4L** Type IV Rotated 90° left
- 2R** Type II Rotated 90° right
- 3R** Type III Rotated 90° right
- 4R** Type IV Rotated 90° right
- 1A** Auto Front Row Type I
- 1AR** Auto Front Row Type I Rotated 90° right
- 1AL** Auto Front Row Type I Rotated 90° left
- 2A** Auto Front Row Type II
- 2AR** Auto Front Row Type II Rotated 90° right
- 2AL** Auto Front Row Type II Rotated 90° left

COLOR

- DB** Dark Bronze
- BL** Black
- WH** White
- GR** Gray
- PS** Platinum Silver
- RD** Red (premium color)
- FG** Forest Green (premium color)
- CC** Custom Color

Notes: 1 - Fuse option not available with universal voltage
 2 - Select F3 fusing option for 220V
 3 - Recommended for Type III and IV distributions only
 4 - Available in 350mA drive current only Type IV, 5M
 5 - 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, must order minimum of one SCP-REMOTE control to program dimming settings (see accessories)
 6 - Not available with AD arm
 7 - Not available with WIR or WIRSC
 8 - Not available with SCO, SCL, SCP or SCPW

PIR MOTION/OCCUPANCY CONTROL OPTIONS

- SCO^{6,7}** On/Off control (line voltage device not for use with 7PR receptacle option and external wireless control devices)
- SCL^{6,7}** Add-on occupancy sensor for use with ext. wireless control device connected thru 7PR receptacle. Consult control manufacturer for compatibility.
- SCP^{5,6,7}** Programmable dimming control (line voltage device not for use with 7PR receptacle option and external wireless control devices). A minimum of one SCP-REMOTE accessory remote control required for configuration; (Standard lens with greater sensitivity; motion detection radius equal to .75 X luminaire mounting height (approx. distance))
- SCPW^{5,6,7}** Programmable dimming control (line voltage device not for use with 7PR receptacle option and external wireless control devices); A minimum of one SCP-REMOTE accessory remote control required for configuration. (Wide lens with motion detection radius equal to 1.3 X luminaire mounting height (approx. distance))

WIRELESS CONTROL OPTIONS

- WIR⁸** wiSCAPE Fixture Module, in-fixture relay for wireless lighting control
- WIRSC^{6,8}** wiSCAPE Fixture Module, in-fixture relay for wireless lighting control and motion/occupancy control

CONTROLS GUIDE
 As energy codes become more restrictive and we push for sustainable lighting designs, the integration of lighting controls and luminaires have become more and more important. Hubbell Lighting offers numerous outdoor lighting controls solutions for the most demanding applications. Visit the link below to learn more about energy-saving controls.

www.hubbellighting.com/solutions/controls/



ENERGY SAVING DATA

#LEDS	DRIVE CURRENT	SYSTEM WATTS		DIST. TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					Amber (590)							
					LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G			
		120-277V	347-480V																			
30		70W	80W	1A	8244	118	1	0	1	8162	117	1	0	1	—	—	—	—				
				2A	8202	117	1	0	1	8121	116	1	0	1	—	—	—	—				
				2	7715	110	2	0	3	7639	109	2	0	2	—	—	—	—				
				3	7712	110	2	0	2	7635	109	2	0	2	—	—	—	—				
				4	7803	111	1	0	2	7726	110	1	0	2	—	—	—	—				
				5S	8374	120	3	0	0	8291	118	3	0	0	—	—	—	—				
				5M	7940	113	3	0	1	7862	112	3	0	1	—	—	—	—				
				5W	7667	110	3	0	2	7591	108	3	0	2	—	—	—	—				
				60	700 mA	135W	150W	1A	16171	120	1	0	2	16011	119	1	0	1	—	—	—	—
								2A	16088	119	1	0	2	15929	118	1	0	2	—	—	—	—
2	15134	112	3					0	3	14984	111	3	0	3	—	—	—	—				
3	15127	112	3					0	3	14977	111	3	0	3	—	—	—	—				
4	15306	113	2					0	3	15154	112	2	0	3	2488	51	0	0	1			
5S	16426	122	4					0	0	16263	120	4	0	0	—	—	—	—				
5M	15575	115	4					0	2	15421	114	4	0	2	2533	51	2	0	1			
5W	15040	111	4					0	3	14891	110	4	0	3	—	—	—	—				
90		205W	225W					1A	23781	116	2	0	2	23546	115	2	0	2	—	—	—	—
								2A	23659	115	2	0	2	23425	114	2	0	2	—	—	—	—
				2	22255	109	3	0	4	22035	107	3	0	4	—	—	—	—				
				3	22246	109	3	0	4	22026	107	3	0	4	—	—	—	—				
				4	22509	110	3	0	4	22286	109	3	0	4	3558	76	1	0	1			
				5S	24156	118	5	0	0	23916	117	5	0	0	—	—	—	—				
				5M	22905	112	4	0	2	22678	111	4	0	2	3596	76	2	0	1			
				5W	22117	108	5	0	3	21899	107	5	0	3	—	—	—	—				
				90	1050mA	325W	350W	1A	31708	98	2	0	2	31394	97	2	0	2	—	—	—	—
								2A	31545	97	2	0	2	31233	96	2	0	2	—	—	—	—
2	29674	91	4					0	5	29380	90	3	0	5	—	—	—	—				
3	29661	91	3					0	4	29367	90	3	0	4	—	—	—	—				
4	30011	92	3					0	5	29714	91	3	0	5	—	—	—	—				
5S	32207	99	5					0	0	31888	98	5	0	0	—	—	—	—				
5M	30539	94	5					0	3	30237	93	5	0	3	—	—	—	—				
5W	29490	91	5					0	4	29198	90	5	0	4	—	—	—	—				

ENERGY DATA	
Power Factor	>.9
Total Harmonic Distortion	<10%

AUTOMOTIVE DEALERSHIP OPTICS

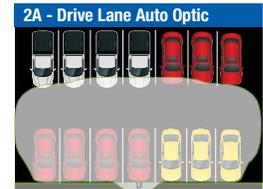
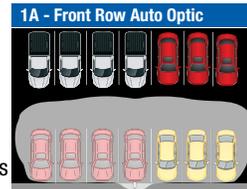
For Automotive Dealership applications Spaulding Lighting has developed two optics designed for enhanced and proper lighting of the auto dealership merchandise and the front row 1A and interior rows 2A (See CL1 distribution information for details)

Optic 1A

- Maximum illumination on front row display
- Maximum pole spacing

Optic 2A

- Excellent front row illumination and drive lane
- Optimal uniformity for drive lane and interior rows

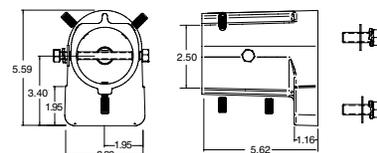
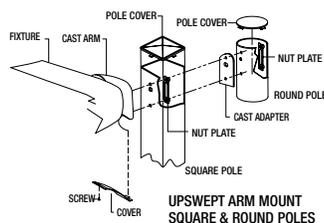
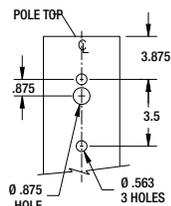


ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
CR-RPA3-XX ¹	Round pole adapter for straight arm (3/4 - 3/4")
CR-RPA4-XX ¹	Round pole adapter for straight arm (3/8 - 4 1/2")
CR-RPA5-XX ¹	Round pole adapter for straight arm (5")
CR-RPA6-XX ¹	Round pole adapter for straight arm (6")
CRD-RPA2-XX ¹	Round pole adapter for upswept arm (2 3/4 - 3 1/8")
CRD-RPA3-XX ¹	Round pole adapter for upswept arm (3/4 - 3 3/4")
CRD-RPA4-XX ¹	Round pole adapter for upswept arm (3/8 - 4 1/2")
CRD-RPA5-XX ¹	Round pole adapter for upswept arm (5")
CRD-RPA6-XX ¹	Round pole adapter for upswept arm (6")
WB-AREA-XX ¹	Wall bracket
TPLB-XX ¹	Twin parallel luminaire bracket
MAF-CL-XX ³	Horizontal mast arm fitter for 2 3/8" OD arm. Mounts to standard 6" arm (ordered with fixture)

Catalog Number	Description
SCP-REMOTE ⁹	Remote control for SCP option. Order at least one per project to program and control.
93052458	20KA surge protection with an end of life LED indicator

1 - Replace XX with color choice, eg.: DB for Dark Bronze 2 -When ordering poles, specify Pole Drill Pattern #2 3 - Fixture must include standard 6" arm



#2 DRILL PATTERN FOR POLES

MAF - HORIZONTAL MAST ARM FITTER



MOUNTING ACCESSORIES

Catalog Number	Description
ARM-CL-K-TA-XX ¹	Adjustable mounting arm for single fixture (2-3/8 tenon) – 5 lbs. 2.3 kgs.
ARM-CL-TK-TA-XX ¹	Adjustable mounting arm for two fixtures at 180° (2-3/8 tenon) – 7 lbs. 3.2 kgs.
ARM-CL-K-S-XX ¹	10" adjustable arm – .5 lbs. .05 kgs. – 5.75 lbs. 2.6 kgs.

1 Replace XX with color choice, eg.: DB for Dark Bronze
 2 Fixture must include standard 6" straight arm

ARM-CL-K-TA-XX
 ARM-CL-TK-TA-XX



ARM-CL-K-S-XX



TENON TOP POLE BRACKET ACCESSORIES

(2 3/8" OD tenon) (RSS version requires 4" round pole adapter)

Catalog Number	Description
SETA2-XX ¹	Square pole tenon adapter (4 at 90 degrees)
RETA-XX ¹	Round pole tenon adapter (4 at 90 degrees)
TETA-XX ¹	Hexagonal pole tenon adapter (3 at 120 degrees)

1 Replace XX with color choice, eg.: DB for Dark Bronze

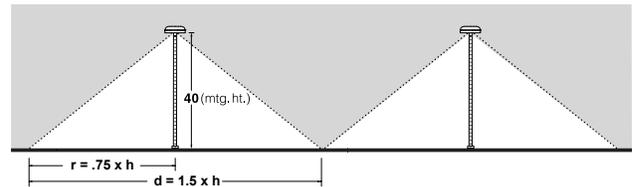
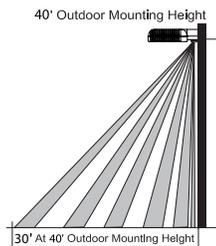
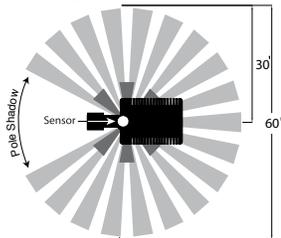
PHOTOCONTROL EQUIPMENT

Catalog Number	Description
PTL-1	Photocontrol - twist-lock cell (120V)
PTL-8	Photocontrol - twist-lock cell (120-277V)
PTL-5	Photocontrol - twist-lock cell (480V)
PTL-6	Photocontrol - twist-lock cell (347V)
PSC	Shorting cap - twist-lock

MOTION CONTROLS

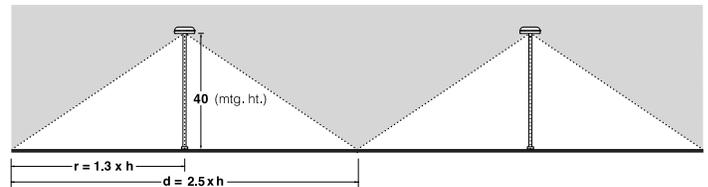
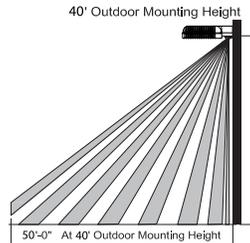
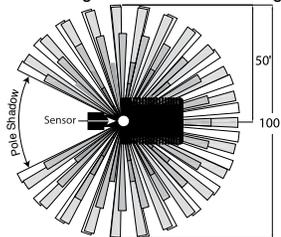
- Start up delay from initial motion detection to fixture illumination is approximately 1-2 seconds
- Vehicle detection is possible however less reliable than human detection; Vehicle detection is dependent upon the following: rate of speed, mounting height of luminaire and vehicle temperature

SCP - Designed for intermediate coverage area



Note: Extreme heat or cold temperatures may limit detection.

SCPW - Designed for widest coverage area



Note: Extreme heat or cold temperatures may limit detection.

SURGE PROTECTION

- Field replaceable surge protection device (SPD) provides 20KA and 10KV protection meeting ANSI/IEEE C62.41.2 Category C High and Surge Location Category C3
- The SPD is designed with a clamping voltage of 1600V at 20KA using industry standard 8/20µs waveform
- Max surge current = 20,000 Amps (see table)
- LED Indicator – Green LED is unlit at end of life

Pulse Rating (8 x 20 µSec)	
Strikes	Surge
1	20,000 A
2	15,000 A
15	10,000 A
120	3,000 A

	cRUus	CE
I _n	10KA	5KA



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 Due to our continued efforts to improve our products, product specifications are subject to change without notice.
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Date : 21 Sep 2016

Title : 3580

Desc : Enter the description here...

Luminaire

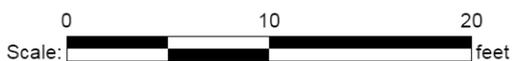
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Description : CL1-60L-4K-4-BC
CIMARRON CL1
60 LEDs - 4000K - 70 CRI

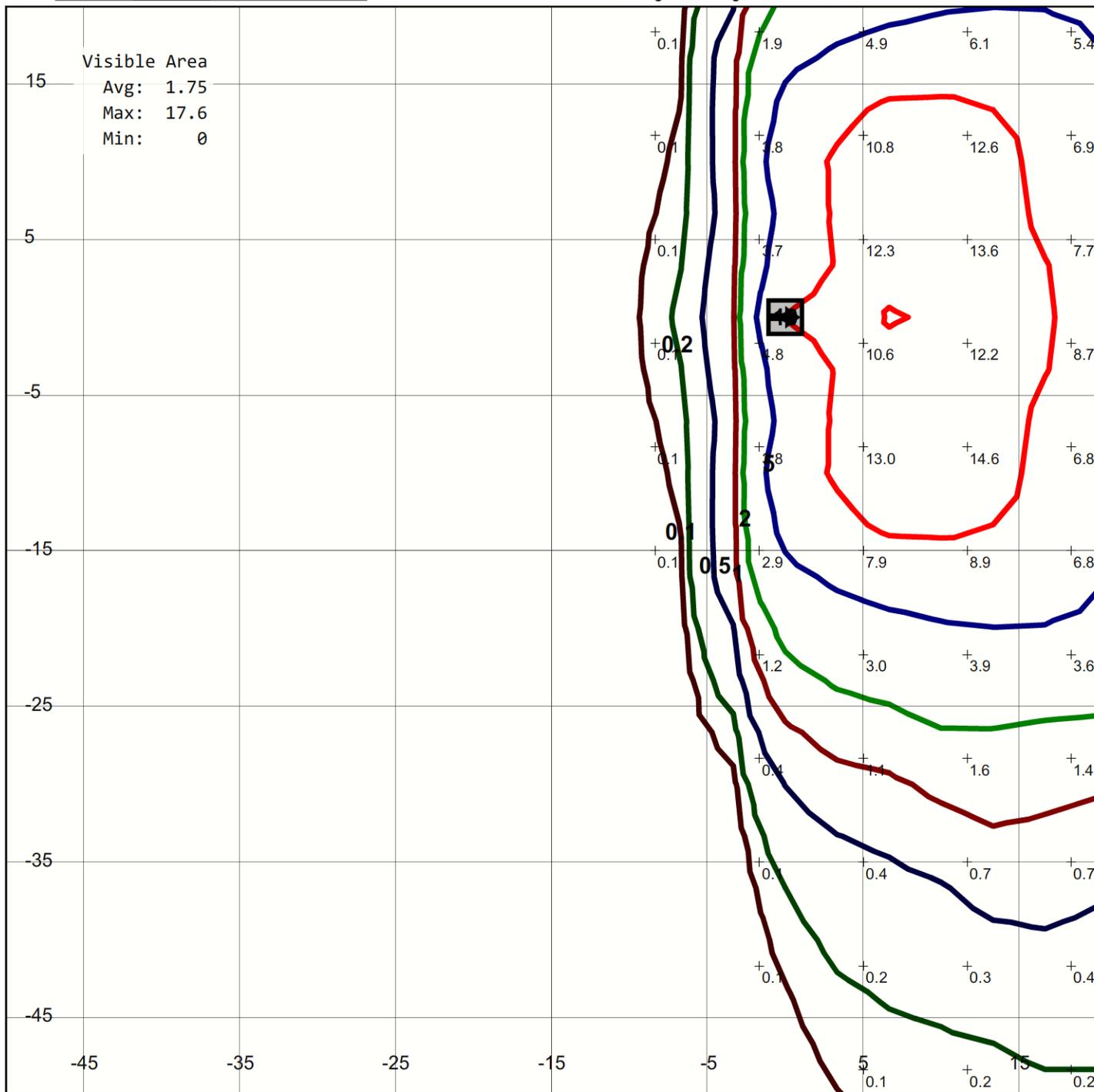
For :

By : Your name or company...

Light Loss Factor : 1.00
Number of Lamps : 1
Lamp Lumens : -1 lms
Luminaire Watts : 135 W



Arrangement Magnification: 100 %



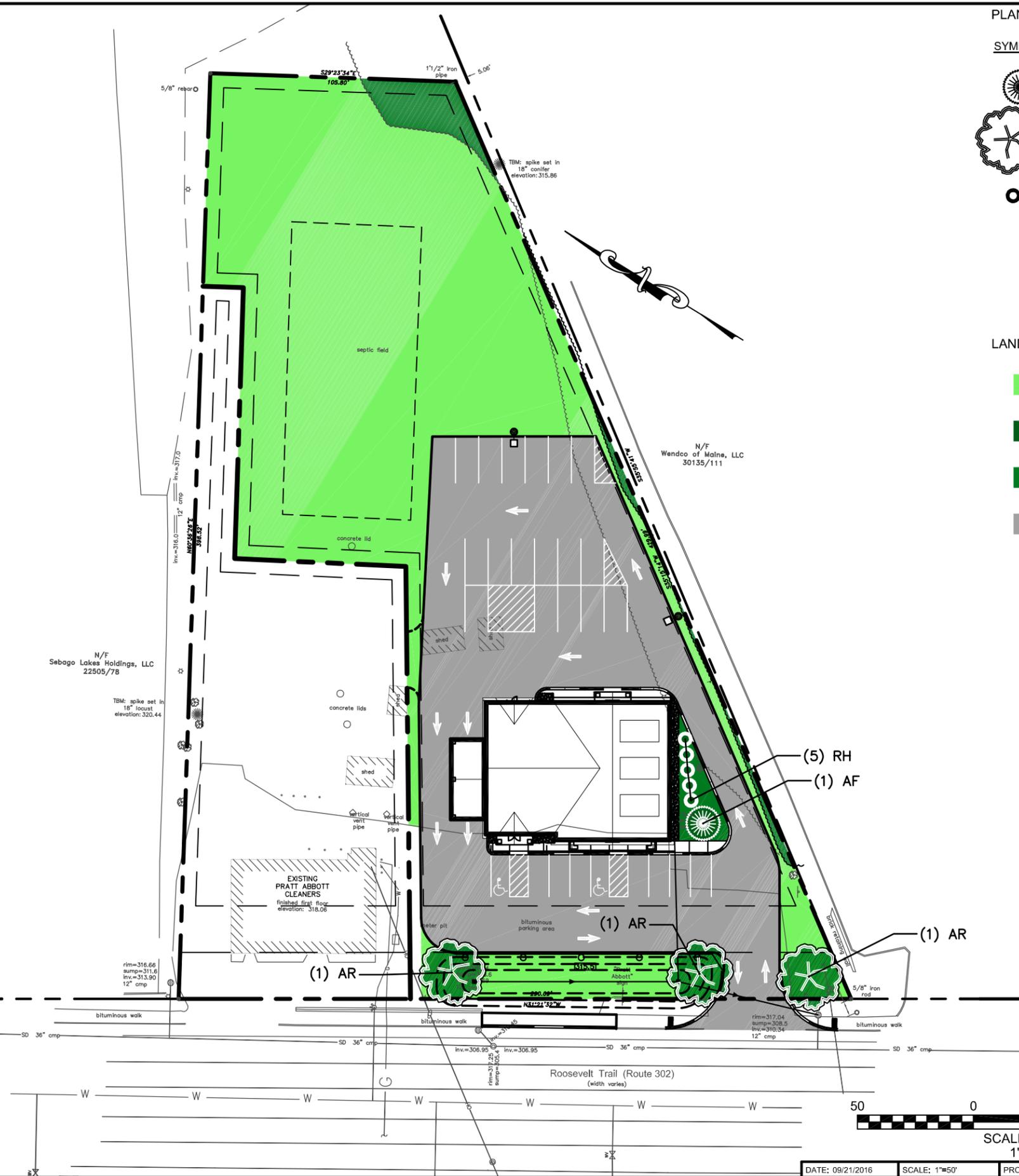
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PLANT LIST:

SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME	QTY
	AF	ABIES FRASERI	FRASER FIR	1
	AR	ACER RUBRUM 'BURGUNDY BELLE'	RED MAPLE	3
	RH	RHODODENDRON 'AGLO'	RHODODENDRON (SMALL-LEAF)	5

LANDSCAPING LEGEND:

	GRASS
	PLANTS
	TREES
	PAVEMENT



LANDSCAPE PLAN
 PRATT ABBOTT CLEANERS
 839 ROOSEVELT TRAIL
 WINDHAM, MAINE

HANNA REALTY ASSOCIATES, LLC
 PO BOX 1120
 PORTLAND, ME 04104

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L-101

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STORMWATER MANAGEMENT REPORT

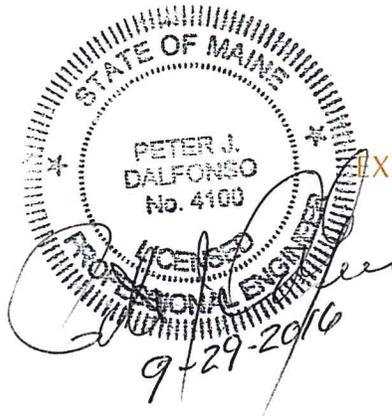
Pratt Abbott Cleaners
839 Roosevelt Trail
Windham, Maine 04062

Prepared for:

Hanna Realty Associates, LLC
P.O. Box 1120
Portland, Maine 04104

September 2016

St.Germain Collins File No.: 3580



EXPERIENCE YOU CAN RELY ON WHEN IT COUNTS



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D-101	Existing Conditions Watershed Plan
D-102	Post Development Watershed Plan

APPENDICES

Appendix A	Existing Conditions
Appendix B	Proposed Post Development Conditions
Appendix C	Stormwater Treatment Calculations
Appendix D	Maintenance Plan for Stormwater Facilities

1.0 INTRODUCTION

Hanna Realty Associates, LLC is proposing to construct a new facility for Pratt Abbott Cleaners at the existing site (Map 71, Lots 6 and 7) on Roosevelt Trail in Windham. The project will include a new 4,750-square-foot laundromat and garment care facility and associated parking on the south portion of the lot. The project will also include a vacant lot for future development on the north side of the lot.

The site is developed with an existing 2,500 square foot laundromat, paved parking, and an engineered septic system to serve the laundry facility.

Runoff from the front portion of the site generally flows to the storm drain system in Roosevelt Trail. Runoff from the rear portion of the site flows east to a drainage swale and off site which leaves the parcel to the east. The entire site is within the Tarkill Pond watershed and ultimately discharges into the Presumpscot River. Tarkill pond is not on the State List of Lakes Most at Risk from New Development. The site is not subject to The Maine Stormwater Law (Chapter 500) since the site is not in the direct watershed of a lake most at risk from new development and the proposed impervious surface is less than one acre.

2.0 METHOD OF ANALYSIS

Runoff was evaluated using the HydroCAD® 8.5 Model, a TR-20 based model. The post development runoff conditions and rates were compared to the existing conditions. The model utilized a Type III 24 hour design storm distribution and antecedent moisture condition two. Runoff rates were modeled at 4 Analysis Points in both the existing and proposed conditions for the 2-year, 10-year, and 25-year storms to comply with local and state requirements.

3.0 EXISTING CONDITIONS

In the existing condition, the site is 1.89 acres and includes a 2,500 sqft laundromat, 0.45 acres of parking and circulation, 1.10 acres of lawn, field, and landscaping, and an 8,000 sqft septic system.

The site is comprised of four subcatchments, three of which discharge to the west and one that discharges to the east. Runoff from the site was evaluated at four locations (Analysis Points). Analysis Point 1 is located in the southeast corner of the site. Analysis Points 2A, 2B, and 2C are located along the west side of the site, adjacent Roosevelt Trail and discharge to the existing storm drain system in Roosevelt Trail.

Table 1 is a summary of the runoff rates for the existing condition based on modeling with HydroCAD® 8.5.

Table 1
Existing Conditions Summary

Analysis Point	Peak Flow (CFS)		
	2-Year	10-Year	25-Year
1	0.98	2.38	3.65
2A	0.34	0.51	0.64
2B	0.74	1.11	1.40
2C	0.19	0.37	0.53

See Appendix A for the HydroCAD® analysis of the existing condition.

4.0 PROPOSED POST DEVELOPMENT CONDITIONS

Proposed development includes construction of a new 4,750 square foot building, new parking and circulation areas, and an infiltration stormwater treatment system. The project also includes changing the existing lots into two reconfigured lots; one with the new building and existing septic system (1.35 acres) and the other with the old building and existing associated pavement (0.45 acres). The existing building will remain until the new building is complete and operational.

The post development conditions were calculated with the existing building in place. For the post development condition, the site includes 7,250 sqft of building, 0.75 acres of existing and new parking and circulation, and 0.97 acres of lawn, field, and landscaping.

The site is divided into seven Subcatchments that drain to the same four Analysis Points as in the existing condition. The stormwater management system has been designed to utilize the existing discharge points to minimize any impact to the existing natural drainage patterns beyond the property line.

Table 2 is a summary of the runoff rates for the post development conditions based on modeling with HydroCAD® 8.5.

Table 2
Post Development Summary

Analysis Point	Peak Flow (CFS)		
	2-Year	10-Year	25-Year
1	1.07	1.74	2.48
2A	0.34	0.51	0.64
2B	0.16	0.24	0.30
2C	0.25	0.39	0.51

See Appendix B for the HydroCAD® analysis for the proposed post development conditions.

5.0 ANALYSIS

The following table presents a comparison of the existing and post development runoff rates at the Analysis Points. The runoff rates in the post development conditions are less than in the existing conditions at all Analysis Points except at Analysis Point 1 in the 2-Year storm and at Analysis 2C in the 2- and 10-Year storms where they are slightly higher than existing. These slight increases are insignificant and are completely offset by the overall reduction in runoff rates.

Table 3
Runoff Comparison at Analysis Points

Analysis Point	Design Storm	Peak Flow (CFS)		
		Existing	Post	Difference Existing to Post
1	2-Year	0.98	1.07	+0.09
	10-Year	2.38	1.74	-0.64
	25-Year	3.65	2.48	-1.17
2A	2-Year	0.34	0.34	0.00
	10-Year	0.51	0.51	0.00
	25-Year	0.64	0.64	0.00
2B	2-Year	0.74	0.16	-0.58
	10-Year	1.11	0.24	-0.87
	25-Year	1.40	0.30	-1.10
2C	2-Year	0.19	0.25	+0.06
	10-Year	0.37	0.39	+0.02
	25-Year	0.53	0.51	-0.02

6.0 STORMWATER QUALITY

The proposed post development improvements include the construction of an infiltration basin, the installation of two drywells, and the installation of several sections of dripline filter around the building. The improvements have been designed to conform to MEDEP Maine Stormwater Best Practices Manual Chapter 6 – Infiltration BMPs and Chapter 7.5 – Roof Dripline Filters.

7.0 MAINTENANCE

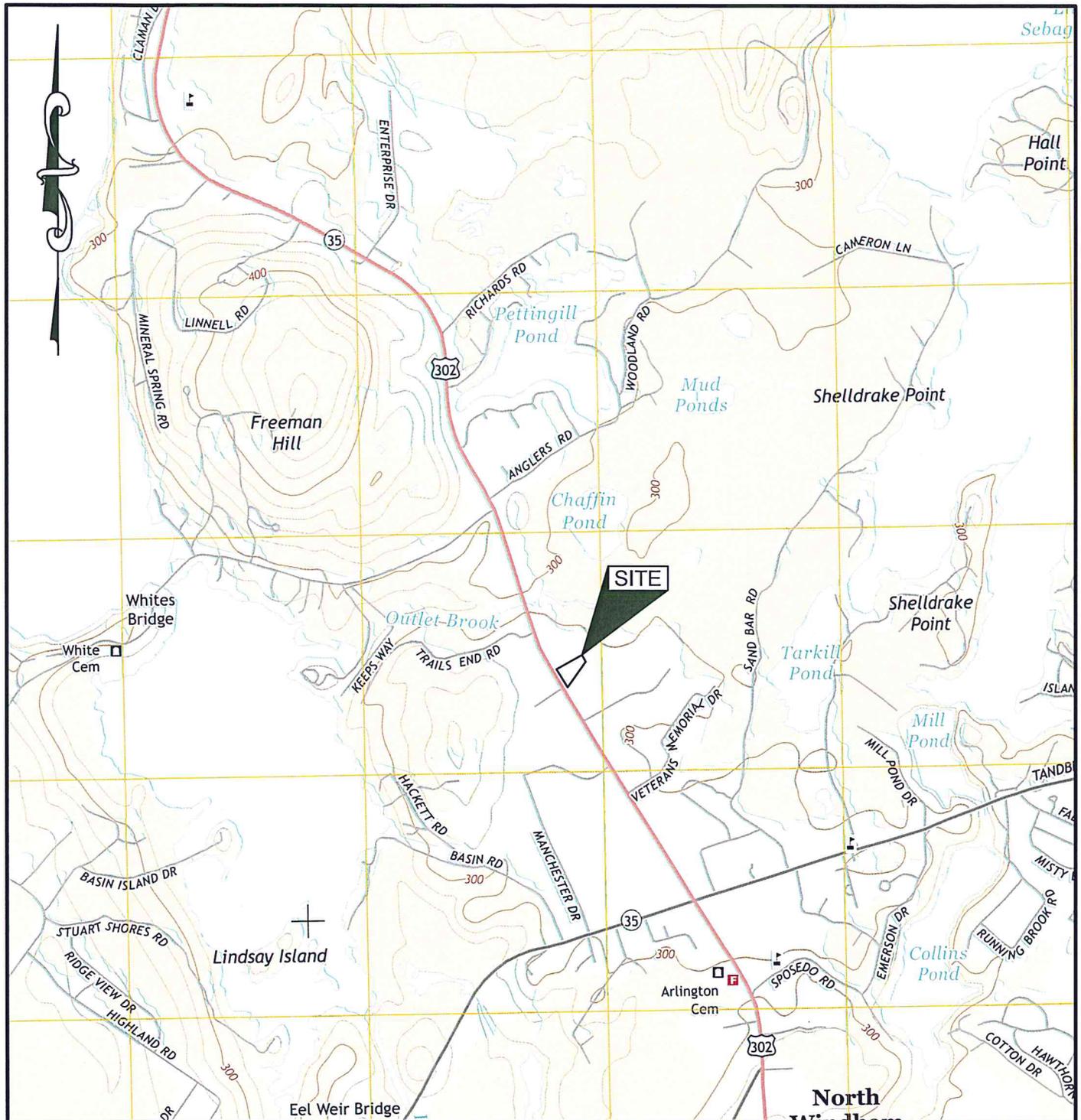
Maintenance of existing and proposed stormwater facilities will be in conformance with the Maintenance Plan for Stormwater Facilities included in Appendix D. Additionally, as required by the Post-Construction Stormwater Ordinance in Chapter 144 from the Code of

the Town of Windham, a qualified third-party inspector shall, on or by May 1 of each year, provide a completed and signed certification to the enforcement authority certifying that the person has inspected the stormwater management facilities. Using the form in Appendix 1 of the Ordinance, the inspector shall certify that the stormwater management facilities are adequately maintained and functioning as intended by approved post-construction stormwater management plan, or that they require maintenance or repair, describing any required maintenance and any deficiencies found during inspection of the stormwater management facilities. If the stormwater management facilities require maintenance or repair of deficiencies in order to function as intended by approved post-construction stormwater management plan, the person shall provide a record of the required maintenance or deficiency and corrective action(s) taken.

8.0 SUMMARY

The development as proposed will meet Town of Windham requirements for stormwater management. Stormwater runoff quantity requirements are met by maintaining or reducing the rate of stormwater runoff from the site. In addition, stormwater runoff quality will be improved by construction of an infiltration basin, the installation of two drywells, and the installation of several sections of dripline filter.

FIGURES



REFERENCE:
 USGS SERIES 7.5 TOPOGRAPHIC MAP, NORTH WINDHAM, ME 2014
 QUADRANGLE.

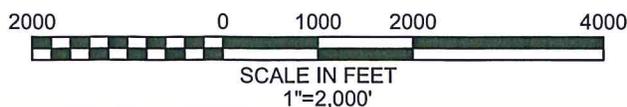
SITE LOCATION MAP

PRATT ABBOTT CLEANERS
 839 ROOSEVELT TRAIL
 WINDHAM, MAINE

HANNA REALTY ASSOCIATES, LLC
 PO BOX 1120
 PORTLAND, ME 04104

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FIGURE 1



H:\Dwg\3580 Windham\3580 Site Loc.dwg 9/20/2016 1:44:31 PM

DATE: 03/17/2016

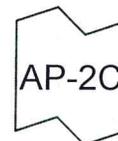
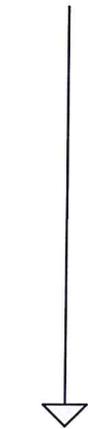
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PROJECT NO.: 3580

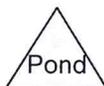
FILE: 3580 Site Loc

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Appendix A
Existing Conditions



Analysis Point 1 Analysis Point 2A Analysis Point 2B Analysis Point 2C



PA Existing [3580]

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.056	49	50-75% Grass cover, Fair, HSG A (SC-2C)
1.308	68	<50% Grass cover, Poor, HSG A (SC-1)
0.521	98	Paved parking & roofs (SC-1,SC-2A,SC-2B,SC-2C)
1.885		TOTAL AREA

PA Existing [3580]

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Type III 24-hr 2-Year Rainfall=3.10"

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Page 3

Time span=1.00-100.00 hrs, dt=0.01 hrs, 9901 points

Runoff by SCS TR-20 method, UH=SCS

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

Subcatchment SC-1: Runoff Area=62,306 sf 8.57% Impervious Runoff Depth=0.82"
Flow Length=330' Tc=12.9 min CN=71 Runoff=0.98 cfs 0.098 af

Subcatchment SC-2A: Runoff Area=4,107 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=60' Slope=0.0150 '/' Tc=0.9 min CN=98 Runoff=0.34 cfs 0.023 af

Subcatchment SC-2B: Runoff Area=9,076 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=80' Slope=0.0150 '/' Tc=1.2 min CN=98 Runoff=0.74 cfs 0.050 af

Subcatchment SC-2C: Runoff Area=6,614 sf 63.08% Impervious Runoff Depth=1.33"
Flow Length=107' Slope=0.0150 '/' Tc=12.0 min CN=80 Runoff=0.19 cfs 0.017 af

Link AP-1: Analysis Point 1 Inflow=0.98 cfs 0.098 af
Primary=0.98 cfs 0.098 af

Link AP-2A: Analysis Point 2A Inflow=0.34 cfs 0.023 af
Primary=0.34 cfs 0.023 af

Link AP-2B: Analysis Point 2B Inflow=0.74 cfs 0.050 af
Primary=0.74 cfs 0.050 af

Link AP-2C: Analysis Point 2C Inflow=0.19 cfs 0.017 af
Primary=0.19 cfs 0.017 af

Total Runoff Area = 1.885 ac Runoff Volume = 0.187 af Average Runoff Depth = 1.19"
72.36% Pervious = 1.364 ac 27.64% Impervious = 0.521 ac

PA Existing [3580]

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Type III 24-hr 2-Year Rainfall=3.10"

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Page 4

Summary for Subcatchment SC-1:

Runoff = 0.98 cfs @ 12.20 hrs, Volume= 0.098 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
5,337	98	Paved parking & roofs
56,969	68	<50% Grass cover, Poor, HSG A
62,306	71	Weighted Average
56,969		Pervious Area
5,337		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0150	0.15		Sheet Flow, Segment A-B Grass: Short n= 0.150 P2= 3.00"
0.8	60	0.0330	1.27		Shallow Concentrated Flow, Segment B-C Short Grass Pasture Kv= 7.0 fps
0.7	170	0.0130	4.05	13.50	Parabolic Channel, Segment C-D W=5.00' D=1.00' Area=3.3 sf Perim=5.5' n= 0.030 Earth, grassed & winding
12.9	330	Total			

Summary for Subcatchment SC-2A:

Runoff = 0.34 cfs @ 12.01 hrs, Volume= 0.023 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,107	98	Paved parking & roofs
4,107		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	60	0.0150	1.07		Sheet Flow, Segment A-B Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment SC-2B:

Runoff = 0.74 cfs @ 12.02 hrs, Volume= 0.050 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

PA Existing [3580]

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Type III 24-hr 2-Year Rainfall=3.10"

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Page 5

Area (sf)	CN	Description
9,076	98	Paved parking & roofs
9,076		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	80	0.0150	1.14		Sheet Flow, Segment A-B Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment SC-2C:

Runoff = 0.19 cfs @ 12.17 hrs, Volume= 0.017 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,172	98	Paved parking & roofs
2,442	49	50-75% Grass cover, Fair, HSG A
6,614	80	Weighted Average
2,442		Pervious Area
4,172		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	107	0.0150	0.15		Sheet Flow, Segment A-B Grass: Short n= 0.150 P2= 3.00"

Summary for Link AP-1: Analysis Point 1

Inflow Area = 1.430 ac, 8.57% Impervious, Inflow Depth = 0.82" for 2-Year event
 Inflow = 0.98 cfs @ 12.20 hrs, Volume= 0.098 af
 Primary = 0.98 cfs @ 12.20 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

Summary for Link AP-2A: Analysis Point 2A

Inflow Area = 0.094 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-Year event
 Inflow = 0.34 cfs @ 12.01 hrs, Volume= 0.023 af
 Primary = 0.34 cfs @ 12.01 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

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Type III 24-hr 2-Year Rainfall=3.10"

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Page 6

Summary for Link AP-2B: Analysis Point 2B

Inflow Area = 0.208 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-Year event
Inflow = 0.74 cfs @ 12.02 hrs, Volume= 0.050 af
Primary = 0.74 cfs @ 12.02 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

Summary for Link AP-2C: Analysis Point 2C

Inflow Area = 0.152 ac, 63.08% Impervious, Inflow Depth = 1.33" for 2-Year event
Inflow = 0.19 cfs @ 12.17 hrs, Volume= 0.017 af
Primary = 0.19 cfs @ 12.17 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

PA Existing [3580]

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Type III 24-hr 10-Year Rainfall=4.60"

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Page 7

Time span=1.00-100.00 hrs, dt=0.01 hrs, 9901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC-1: Runoff Area=62,306 sf 8.57% Impervious Runoff Depth=1.82"
Flow Length=330' Tc=12.9 min CN=71 Runoff=2.38 cfs 0.217 af

Subcatchment SC-2A: Runoff Area=4,107 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=60' Slope=0.0150 '/' Tc=0.9 min CN=98 Runoff=0.51 cfs 0.034 af

Subcatchment SC-2B: Runoff Area=9,076 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=80' Slope=0.0150 '/' Tc=1.2 min CN=98 Runoff=1.11 cfs 0.076 af

Subcatchment SC-2C: Runoff Area=6,614 sf 63.08% Impervious Runoff Depth=2.55"
Flow Length=107' Slope=0.0150 '/' Tc=12.0 min CN=80 Runoff=0.37 cfs 0.032 af

Link AP-1: Analysis Point 1 Inflow=2.38 cfs 0.217 af
Primary=2.38 cfs 0.217 af

Link AP-2A: Analysis Point 2A Inflow=0.51 cfs 0.034 af
Primary=0.51 cfs 0.034 af

Link AP-2B: Analysis Point 2B Inflow=1.11 cfs 0.076 af
Primary=1.11 cfs 0.076 af

Link AP-2C: Analysis Point 2C Inflow=0.37 cfs 0.032 af
Primary=0.37 cfs 0.032 af

Total Runoff Area = 1.885 ac Runoff Volume = 0.359 af Average Runoff Depth = 2.29"
72.36% Pervious = 1.364 ac 27.64% Impervious = 0.521 ac

PA Existing [3580]

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Type III 24-hr 25-Year Rainfall=5.80"

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Time span=1.00-100.00 hrs, dt=0.01 hrs, 9901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC-1: Runoff Area=62,306 sf 8.57% Impervious Runoff Depth=2.74"
Flow Length=330' Tc=12.9 min CN=71 Runoff=3.65 cfs 0.326 af

Subcatchment SC-2A: Runoff Area=4,107 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=60' Slope=0.0150 '/' Tc=0.9 min CN=98 Runoff=0.64 cfs 0.044 af

Subcatchment SC-2B: Runoff Area=9,076 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=80' Slope=0.0150 '/' Tc=1.2 min CN=98 Runoff=1.40 cfs 0.097 af

Subcatchment SC-2C: Runoff Area=6,614 sf 63.08% Impervious Runoff Depth=3.60"
Flow Length=107' Slope=0.0150 '/' Tc=12.0 min CN=80 Runoff=0.53 cfs 0.046 af

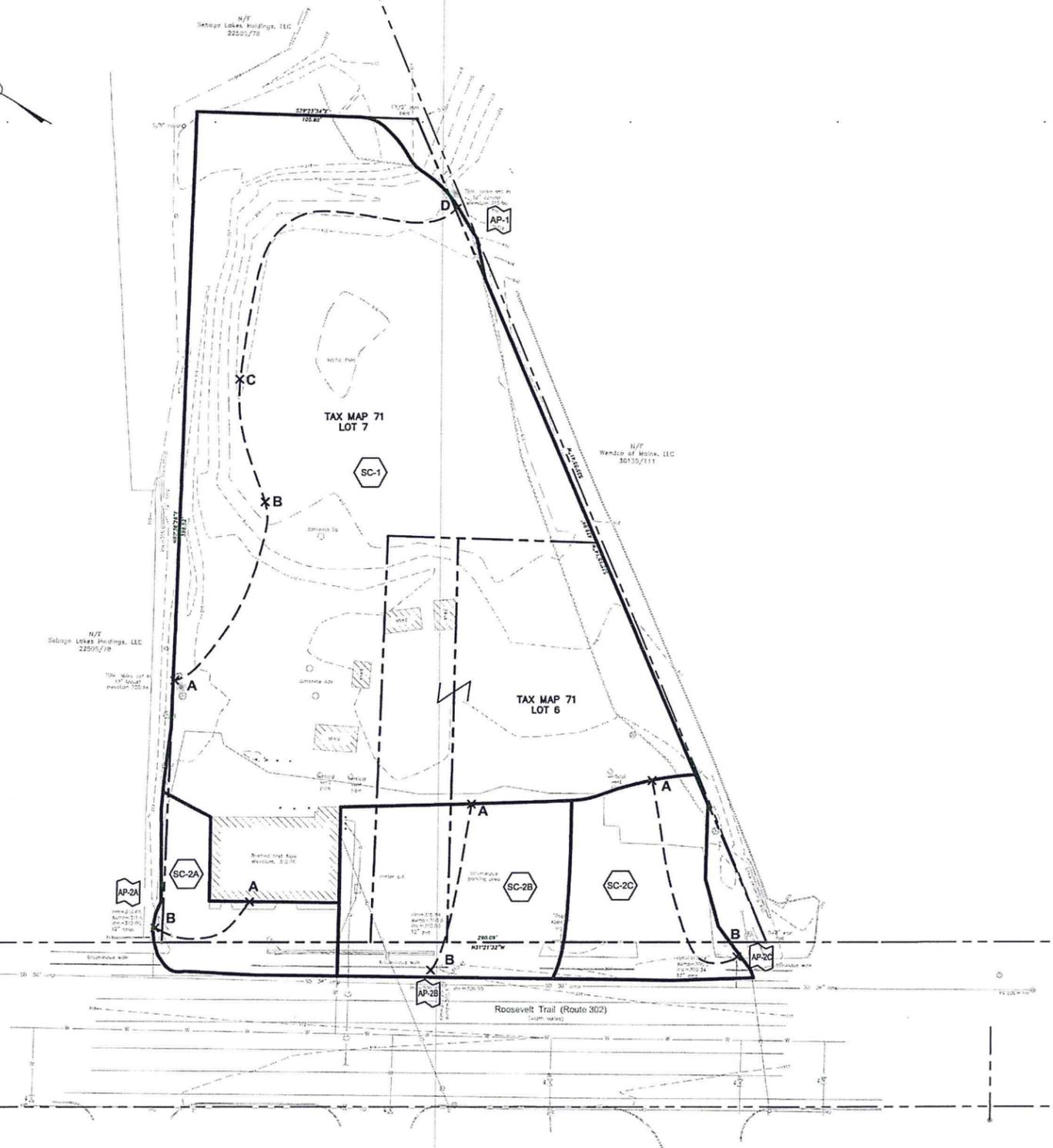
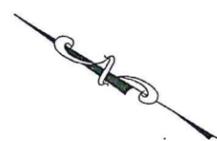
Link AP-1: Analysis Point 1 Inflow=3.65 cfs 0.326 af
Primary=3.65 cfs 0.326 af

Link AP-2A: Analysis Point 2A Inflow=0.64 cfs 0.044 af
Primary=0.64 cfs 0.044 af

Link AP-2B: Analysis Point 2B Inflow=1.40 cfs 0.097 af
Primary=1.40 cfs 0.097 af

Link AP-2C: Analysis Point 2C Inflow=0.53 cfs 0.046 af
Primary=0.53 cfs 0.046 af

Total Runoff Area = 1.885 ac Runoff Volume = 0.512 af Average Runoff Depth = 3.26"
72.36% Pervious = 1.364 ac 27.64% Impervious = 0.521 ac



LEGEND:

	EXISTING		PROPOSED
	PROPERTY LINE		ADJACENT PROPERTY LINE
	MONUMENTS		CONTOURS (1')
	CONTOURS (5')		EDGE OF GRAVEL
	EDGE OF PAVEMENT		CURB
	PAVEMENT STRIPING		BUILDINGS
	TREES		SIGNS
	BOLLARDS		UTILITY POLE & OVERHEAD LINE
	LIGHTS		GAS LINE
	WATER SHUTOFF, VALVE, HYDRANT & WATER LINE		CATCH BASIN & STORM DRAIN
	SUBCATCHMENT		ANALYSIS POINT
	TIME OF CONCENTRATION FLOW PATH		WATERSHED BOUNDARY

SC-1 AREA: 62,306 S.F.
 Tc: A-B SF L=100' S=0.0150
 B-C SHC L=60' S=0.0330
 C-D C L=170' S=0.0130

SC-2A AREA: 4,107 S.F.
 Tc: A-B SF L=60' S=0.0150

SC-2B AREA: 9,076 S.F.
 Tc: A-B SF L=80' S=0.0150

SC-2C AREA: 6,614 S.F.
 Tc: A-B SF L=107' S=0.0150

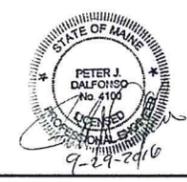
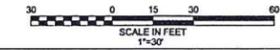
- NOTES:**
1. PLAN REFERENCE: "EXISTING CONDITIONS SURVEY, 839 ROOSEVELT TRAIL, WINDHAM, ME" BY TITCOMB ASSOCIATES, MAY 25, 2015.
 2. ELEVATIONS BASED ON NAVD88 DERIVED FROM GPS OBSERVATIONS.
 3. BEARINGS ARE REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, NAD83, WEST ZONE, DERIVED FROM GPS OBSERVATIONS.

EXISTING CONDITIONS WATERSHED PLAN
 PRATT ABBOTT CLEANERS
 839 ROOSEVELT TRAIL
 WINDHAM, MAINE

HANNA REALTY ASSOCIATES, LLC
 PO BOX 1120
 PORTLAND, ME 04104

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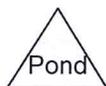
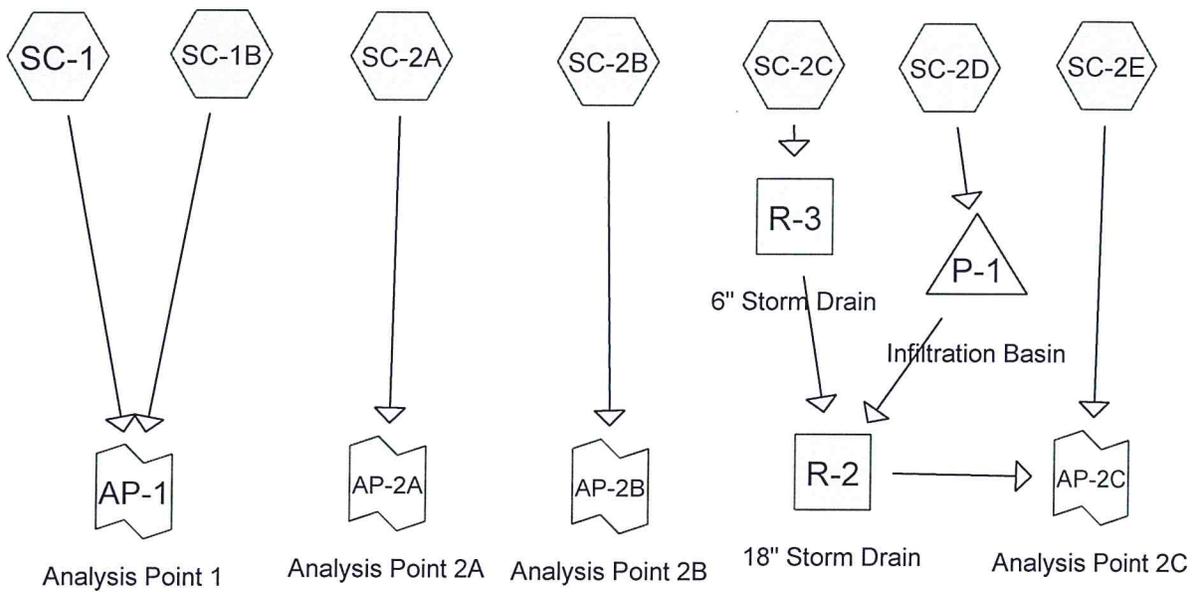


REV.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
1.	09/29/2016	SUBMITTED TO TOWN OF WINDHAM	MCA	PJD

DATE: 08/20/2015 SCALE: 1"=30' PROJECT NO.: 3580 FILE: 3580 D-101 Pre-WS

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Appendix B
Proposed Post Development Conditions



Drainage Diagram for PA Proposed [3580]
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PA Proposed [3580]

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.094	39	>75% Grass cover, Good, HSG A (SC-2C,SC-2D)
0.862	49	50-75% Grass cover, Fair, HSG A (SC-1,SC-2E)
0.009	68	<50% Grass cover, Poor, HSG A (SC-1B)
0.919	98	Paved parking & roofs (SC-1,SC-1B,SC-2A,SC-2B,SC-2C,SC-2D,SC-2E)
1.885		TOTAL AREA

Time span=1.00-100.00 hrs, dt=0.01 hrs, 9901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC-1: Runoff Area=42,099 sf 11.39% Impervious Runoff Depth=0.22"
Flow Length=335' Tc=13.2 min CN=55 Runoff=0.08 cfs 0.018 af

Subcatchment SC-1B: Runoff Area=14,042 sf 97.20% Impervious Runoff Depth=2.76"
Flow Length=250' Tc=2.7 min CN=97 Runoff=1.07 cfs 0.074 af

Subcatchment SC-2A: Runoff Area=4,105 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=60' Slope=0.0150 '/' Tc=0.9 min CN=98 Runoff=0.34 cfs 0.023 af

Subcatchment SC-2B: Runoff Area=1,961 sf 100.00% Impervious Runoff Depth=2.87"
Flow Length=100' Slope=0.0150 '/' Tc=1.4 min CN=98 Runoff=0.16 cfs 0.011 af

Subcatchment SC-2C: Runoff Area=6,331 sf 89.37% Impervious Runoff Depth=2.26"
Flow Length=153' Tc=42.0 min CN=92 Runoff=0.18 cfs 0.027 af

Subcatchment SC-2D: Runoff Area=10,370 sf 67.10% Impervious Runoff Depth=1.26"
Flow Length=89' Slope=0.0150 '/' Tc=1.3 min CN=79 Runoff=0.41 cfs 0.025 af

Subcatchment SC-2E: Runoff Area=3,183 sf 91.86% Impervious Runoff Depth=2.45"
Flow Length=91' Slope=0.0150 '/' Tc=10.5 min CN=94 Runoff=0.17 cfs 0.015 af

Reach R-2: 18" Storm Drain Avg. Depth=0.12' Max Vel=2.87 fps Inflow=0.18 cfs 0.027 af
D=18.0" n=0.013 L=62.0' S=0.0200 '/' Capacity=14.86 cfs Outflow=0.18 cfs 0.027 af

Reach R-3: 6" Storm Drain Avg. Depth=0.16' Max Vel=3.47 fps Inflow=0.18 cfs 0.027 af
D=6.0" n=0.013 L=60.0' S=0.0233 '/' Capacity=0.86 cfs Outflow=0.18 cfs 0.027 af

Pond P-1: Infiltration Basin Peak Elev=316.62' Storage=136 cf Inflow=0.41 cfs 0.025 af
Discarded=0.15 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.025 af

Link AP-1: Analysis Point 1 Inflow=1.07 cfs 0.092 af
Primary=1.07 cfs 0.092 af

Link AP-2A: Analysis Point 2A Inflow=0.34 cfs 0.023 af
Primary=0.34 cfs 0.023 af

Link AP-2B: Analysis Point 2B Inflow=0.16 cfs 0.011 af
Primary=0.16 cfs 0.011 af

Link AP-2C: Analysis Point 2C Inflow=0.25 cfs 0.042 af
Primary=0.25 cfs 0.042 af

Total Runoff Area = 1.885 ac Runoff Volume = 0.193 af Average Runoff Depth = 1.23"
51.21% Pervious = 0.965 ac 48.79% Impervious = 0.919 ac

Summary for Subcatchment SC-1:

Runoff = 0.08 cfs @ 12.46 hrs, Volume= 0.018 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,796	98	Paved parking & roofs
37,303	49	50-75% Grass cover, Fair, HSG A
42,099	55	Weighted Average
37,303		Pervious Area
4,796		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0150	0.15		Sheet Flow, Segment A-B Grass: Short n= 0.150 P2= 3.00"
1.0	50	0.0150	0.86		Shallow Concentrated Flow, Segment B-C Short Grass Pasture Kv= 7.0 fps
0.8	185	0.0130	4.05	13.50	Parabolic Channel, Segment C-D W=5.00' D=1.00' Area=3.3 sf Perim=5.5' n= 0.030 Earth, grassed & winding

13.2 335 Total

Summary for Subcatchment SC-1B:

Runoff = 1.07 cfs @ 12.04 hrs, Volume= 0.074 af, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
13,649	98	Paved parking & roofs
393	68	<50% Grass cover, Poor, HSG A
14,042	97	Weighted Average
393		Pervious Area
13,649		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	30	0.3300	3.21		Sheet Flow, Segment A-B Smooth surfaces n= 0.011 P2= 3.00"
0.6	110	0.0200	2.87		Shallow Concentrated Flow, Segment B-C Paved Kv= 20.3 fps
1.9	110	0.0200	0.99		Shallow Concentrated Flow, Segment C-D Short Grass Pasture Kv= 7.0 fps

2.7 250 Total

Summary for Subcatchment SC-2A:

Runoff = 0.34 cfs @ 12.01 hrs, Volume= 0.023 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,105	98	Paved parking & roofs
4,105		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	60	0.0150	1.07		Sheet Flow, Segment A-B Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment SC-2B:

Runoff = 0.16 cfs @ 12.02 hrs, Volume= 0.011 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,961	98	Paved parking & roofs
1,961		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0150	1.19		Sheet Flow, Segment A-B Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment SC-2C:

Runoff = 0.18 cfs @ 12.55 hrs, Volume= 0.027 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
5,658	98	Paved parking & roofs
673	39	>75% Grass cover, Good, HSG A
6,331	92	Weighted Average
673		Pervious Area
5,658		Impervious Area

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Type III 24-hr 2-Year Rainfall=3.10"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	31	0.3300	3.23		Sheet Flow, Segment A-B Smooth surfaces n= 0.011 P2= 3.00"
41.8	122	0.0050	0.05	0.00	Trap/Vee/Rect Channel Flow, Segment B-C Bot.W=4.00' D=0.01' n= 0.100 Earth, dense brush, high stage
42.0	153	Total			

Summary for Subcatchment SC-2D:

Runoff = 0.41 cfs @ 12.02 hrs, Volume= 0.025 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
6,958	98	Paved parking & roofs
3,412	39	>75% Grass cover, Good, HSG A
10,370	79	Weighted Average
3,412		Pervious Area
6,958		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	89	0.0150	1.16		Sheet Flow, Segmnet A-b Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment SC-2E:

Runoff = 0.17 cfs @ 12.14 hrs, Volume= 0.015 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
2,924	98	Paved parking & roofs
259	49	50-75% Grass cover, Fair, HSG A
3,183	94	Weighted Average
259		Pervious Area
2,924		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	91	0.0150	0.14		Sheet Flow, Segment A-B Grass: Short n= 0.150 P2= 3.00"

Summary for Reach R-2: 18" Storm Drain

Inflow Area = 0.383 ac, 75.54% Impervious, Inflow Depth = 0.86" for 2-Year event
 Inflow = 0.18 cfs @ 12.56 hrs, Volume= 0.027 af
 Outflow = 0.18 cfs @ 12.58 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.87 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 1.20 fps, Avg. Travel Time= 0.9 min

Peak Storage= 4 cf @ 12.57 hrs, Average Depth at Peak Storage= 0.12'
 Bank-Full Depth= 1.50', Capacity at Bank-Full= 14.86 cfs

18.0" Diameter Pipe, n= 0.013 Corrugated PE, smooth interior
 Length= 62.0' Slope= 0.0200 '/'
 Inlet Invert= 311.70', Outlet Invert= 310.46'



Summary for Reach R-3: 6" Storm Drain

Inflow Area = 0.145 ac, 89.37% Impervious, Inflow Depth = 2.26" for 2-Year event
 Inflow = 0.18 cfs @ 12.55 hrs, Volume= 0.027 af
 Outflow = 0.18 cfs @ 12.56 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.47 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 1.40 fps, Avg. Travel Time= 0.7 min

Peak Storage= 3 cf @ 12.56 hrs, Average Depth at Peak Storage= 0.16'
 Bank-Full Depth= 0.50', Capacity at Bank-Full= 0.86 cfs

6.0" Diameter Pipe, n= 0.013 Corrugated PE, smooth interior
 Length= 60.0' Slope= 0.0233 '/'
 Inlet Invert= 314.50', Outlet Invert= 313.10'



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Type III 24-hr 2-Year Rainfall=3.10"

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Summary for Pond P-1: Infiltration Basin

Inflow Area = 0.238 ac, 67.10% Impervious, Inflow Depth = 1.26" for 2-Year event
 Inflow = 0.41 cfs @ 12.02 hrs, Volume= 0.025 af
 Outflow = 0.15 cfs @ 12.25 hrs, Volume= 0.025 af, Atten= 63%, Lag= 13.8 min
 Discarded = 0.15 cfs @ 12.25 hrs, Volume= 0.025 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs
 Peak Elev= 316.62' @ 12.25 hrs Surf.Area= 1,323 sf Storage= 136 cf

Plug-Flow detention time= 4.8 min calculated for 0.025 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (848.1 - 843.3)

Volume	Invert	Avail.Storage	Storage Description
#1	316.50'	1,121 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
316.50	966	0	0
317.00	2,470	859	859
317.10	2,767	262	1,121

Device	Routing	Invert	Outlet Devices
#1	Primary	314.00'	18.0" x 80.0' long Culvert CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 311.00' S= 0.0375 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior
#2	Device 1	316.95'	2.00' x 2.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600
#3	Discarded	316.50'	5.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.15 cfs @ 12.25 hrs HW=316.62' (Free Discharge)
 ↳3=Exfiltration (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=316.50' (Free Discharge)
 ↳1=Culvert (Passes 0.00 cfs of 8.89 cfs potential flow)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Summary for Link AP-1: Analysis Point 1

Inflow Area = 1.289 ac, 32.85% Impervious, Inflow Depth = 0.86" for 2-Year event
 Inflow = 1.07 cfs @ 12.04 hrs, Volume= 0.092 af
 Primary = 1.07 cfs @ 12.04 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

Summary for Link AP-2A: Analysis Point 2A

Inflow Area = 0.094 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-Year event
Inflow = 0.34 cfs @ 12.01 hrs, Volume= 0.023 af
Primary = 0.34 cfs @ 12.01 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

Summary for Link AP-2B: Analysis Point 2B

Inflow Area = 0.045 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-Year event
Inflow = 0.16 cfs @ 12.02 hrs, Volume= 0.011 af
Primary = 0.16 cfs @ 12.02 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

Summary for Link AP-2C: Analysis Point 2C

Inflow Area = 0.456 ac, 78.15% Impervious, Inflow Depth = 1.11" for 2-Year event
Inflow = 0.25 cfs @ 12.16 hrs, Volume= 0.042 af
Primary = 0.25 cfs @ 12.16 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-100.00 hrs, dt= 0.01 hrs

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Type III 24-hr 10-Year Rainfall=4.60"

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Time span=1.00-100.00 hrs, dt=0.01 hrs, 9901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC-1: Runoff Area=42,099 sf 11.39% Impervious Runoff Depth=0.79"
Flow Length=335' Tc=13.2 min CN=55 Runoff=0.52 cfs 0.063 af

Subcatchment SC-1B: Runoff Area=14,042 sf 97.20% Impervious Runoff Depth=4.25"
Flow Length=250' Tc=2.7 min CN=97 Runoff=1.62 cfs 0.114 af

Subcatchment SC-2A: Runoff Area=4,105 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=60' Slope=0.0150 '/' Tc=0.9 min CN=98 Runoff=0.51 cfs 0.034 af

Subcatchment SC-2B: Runoff Area=1,961 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=100' Slope=0.0150 '/' Tc=1.4 min CN=98 Runoff=0.24 cfs 0.016 af

Subcatchment SC-2C: Runoff Area=6,331 sf 89.37% Impervious Runoff Depth=3.70"
Flow Length=153' Tc=42.0 min CN=92 Runoff=0.29 cfs 0.045 af

Subcatchment SC-2D: Runoff Area=10,370 sf 67.10% Impervious Runoff Depth=2.46"
Flow Length=89' Slope=0.0150 '/' Tc=1.3 min CN=79 Runoff=0.81 cfs 0.049 af

Subcatchment SC-2E: Runoff Area=3,183 sf 91.86% Impervious Runoff Depth=3.91"
Flow Length=91' Slope=0.0150 '/' Tc=10.5 min CN=94 Runoff=0.27 cfs 0.024 af

Reach R-2: 18" Storm Drain Avg. Depth=0.15' Max Vel=3.32 fps Inflow=0.29 cfs 0.045 af
D=18.0" n=0.013 L=62.0' S=0.0200 '/' Capacity=14.86 cfs Outflow=0.29 cfs 0.045 af

Reach R-3: 6" Storm Drain Avg. Depth=0.20' Max Vel=3.95 fps Inflow=0.29 cfs 0.045 af
D=6.0" n=0.013 L=60.0' S=0.0233 '/' Capacity=0.86 cfs Outflow=0.29 cfs 0.045 af

Pond P-1: Infiltration Basin Peak Elev=316.81' Storage=445 cf Inflow=0.81 cfs 0.049 af
Discarded=0.22 cfs 0.049 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.049 af

Link AP-1: Analysis Point 1 Inflow=1.74 cfs 0.178 af
Primary=1.74 cfs 0.178 af

Link AP-2A: Analysis Point 2A Inflow=0.51 cfs 0.034 af
Primary=0.51 cfs 0.034 af

Link AP-2B: Analysis Point 2B Inflow=0.24 cfs 0.016 af
Primary=0.24 cfs 0.016 af

Link AP-2C: Analysis Point 2C Inflow=0.39 cfs 0.069 af
Primary=0.39 cfs 0.069 af

Total Runoff Area = 1.885 ac Runoff Volume = 0.346 af Average Runoff Depth = 2.20"
51.21% Pervious = 0.965 ac 48.79% Impervious = 0.919 ac

Time span=1.00-100.00 hrs, dt=0.01 hrs, 9901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC-1: Runoff Area=42,099 sf 11.39% Impervious Runoff Depth=1.40"
Flow Length=335' Tc=13.2 min CN=55 Runoff=1.09 cfs 0.113 af

Subcatchment SC-1B: Runoff Area=14,042 sf 97.20% Impervious Runoff Depth=5.44"
Flow Length=250' Tc=2.7 min CN=97 Runoff=2.05 cfs 0.146 af

Subcatchment SC-2A: Runoff Area=4,105 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=60' Slope=0.0150 '/' Tc=0.9 min CN=98 Runoff=0.64 cfs 0.044 af

Subcatchment SC-2B: Runoff Area=1,961 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=100' Slope=0.0150 '/' Tc=1.4 min CN=98 Runoff=0.30 cfs 0.021 af

Subcatchment SC-2C: Runoff Area=6,331 sf 89.37% Impervious Runoff Depth=4.87"
Flow Length=153' Tc=42.0 min CN=92 Runoff=0.38 cfs 0.059 af

Subcatchment SC-2D: Runoff Area=10,370 sf 67.10% Impervious Runoff Depth=3.50"
Flow Length=89' Slope=0.0150 '/' Tc=1.3 min CN=79 Runoff=1.16 cfs 0.069 af

Subcatchment SC-2E: Runoff Area=3,183 sf 91.86% Impervious Runoff Depth=5.10"
Flow Length=91' Slope=0.0150 '/' Tc=10.5 min CN=94 Runoff=0.35 cfs 0.031 af

Reach R-2: 18" Storm Drain Avg. Depth=0.17' Max Vel=3.58 fps Inflow=0.38 cfs 0.059 af
D=18.0" n=0.013 L=62.0' S=0.0200 '/' Capacity=14.86 cfs Outflow=0.38 cfs 0.059 af

Reach R-3: 6" Storm Drain Avg. Depth=0.23' Max Vel=4.23 fps Inflow=0.38 cfs 0.059 af
D=6.0" n=0.013 L=60.0' S=0.0233 '/' Capacity=0.86 cfs Outflow=0.38 cfs 0.059 af

Pond P-1: Infiltration Basin Peak Elev=316.95' Storage=746 cf Inflow=1.16 cfs 0.069 af
Discarded=0.27 cfs 0.069 af Primary=0.01 cfs 0.000 af Outflow=0.28 cfs 0.069 af

Link AP-1: Analysis Point 1 Inflow=2.48 cfs 0.259 af
Primary=2.48 cfs 0.259 af

Link AP-2A: Analysis Point 2A Inflow=0.64 cfs 0.044 af
Primary=0.64 cfs 0.044 af

Link AP-2B: Analysis Point 2B Inflow=0.30 cfs 0.021 af
Primary=0.30 cfs 0.021 af

Link AP-2C: Analysis Point 2C Inflow=0.51 cfs 0.090 af
Primary=0.51 cfs 0.090 af

Total Runoff Area = 1.885 ac Runoff Volume = 0.483 af Average Runoff Depth = 3.08"
51.21% Pervious = 0.965 ac 48.79% Impervious = 0.919 ac

LEGEND:		EXISTING	PROPOSED
---	PROPERTY LINE	---	---
---	ADJACENT PROPERTY LINE	---	---
---	MONUMENTS	---	---
---	CONTOURS (1')	---	---
---	CONTOURS (5')	---	---
---	EDGE OF GRAVEL	---	---
---	EDGE OF PAVEMENT	---	---
---	CURB	---	---
---	PAVEMENT STRIPING	---	---
---	BUILDINGS	---	---
---	TREES	---	---
---	SIGNS	---	---
---	BOLLARDS	---	---
---	UTILITY POLE & OVERHEAD LINE	---	---
---	LIGHTS	---	---
---	GAS LINE	---	---
---	WATER SHUTOFF, VALVE, & WATER LINE	---	---
---	CATCH BASIN & STORM DRAIN	---	---
SC-1	SUBCATCHMENT	SC-1	SC-1
AP-1	ANALYSIS POINT	AP-1	AP-1
RC-1	REACH	RC-1	RC-1
X---X	TIME OF CONCENTRATION FLOW PATH	X---X	X---X
A---B	WATERSHED BOUNDARY	A---B	A---B

SC-1 AREA: 42,099 S.F.
Tc: _____
A-B SF L=100' S=0.0150
B-C SHC L=50' S=0.0150
C-D C L=185' S=0.0130
SC-1B AREA: 14,042 S.F.
Tc: _____
A-B SF L=30' S=0.3300
B-C SCF L=110 S=0.0200
C-D SCF L=110 S=0.0200
SC-2A AREA: 4,105 S.F.
Tc: _____
A-B SF L=60' S=0.0150
SC-2B AREA: 1,961 S.F.
Tc: _____
A-B SF L=100' S=0.0150
SC-2C AREA: 6,331 S.F.
Tc: _____
A-B SF L=31' S=0.3300
B-C CH L=122' S=0.005
SC-2D AREA: 10,370 S.F.
Tc: _____
A-B SF L=89' S=0.0150
SC-2E AREA: 2,924 S.F.
Tc: _____
A-B SF L=91 S=0.0150

NOTES:

1. PLAN REFERENCE: EXISTING CONDITIONS SURVEY, 839 ROOSEVELT TRAIL, WINDHAM, ME BY TITCOMB ASSOCIATES, MAY 25, 2015.
2. ELEVATIONS BASED ON NAVD88 DERIVED FROM GPS OBSERVATIONS.
3. BEARINGS ARE REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, NAD83, WEST ZONE, DERIVED FROM GPS OBSERVATIONS.

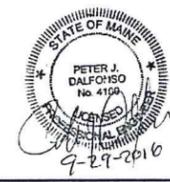
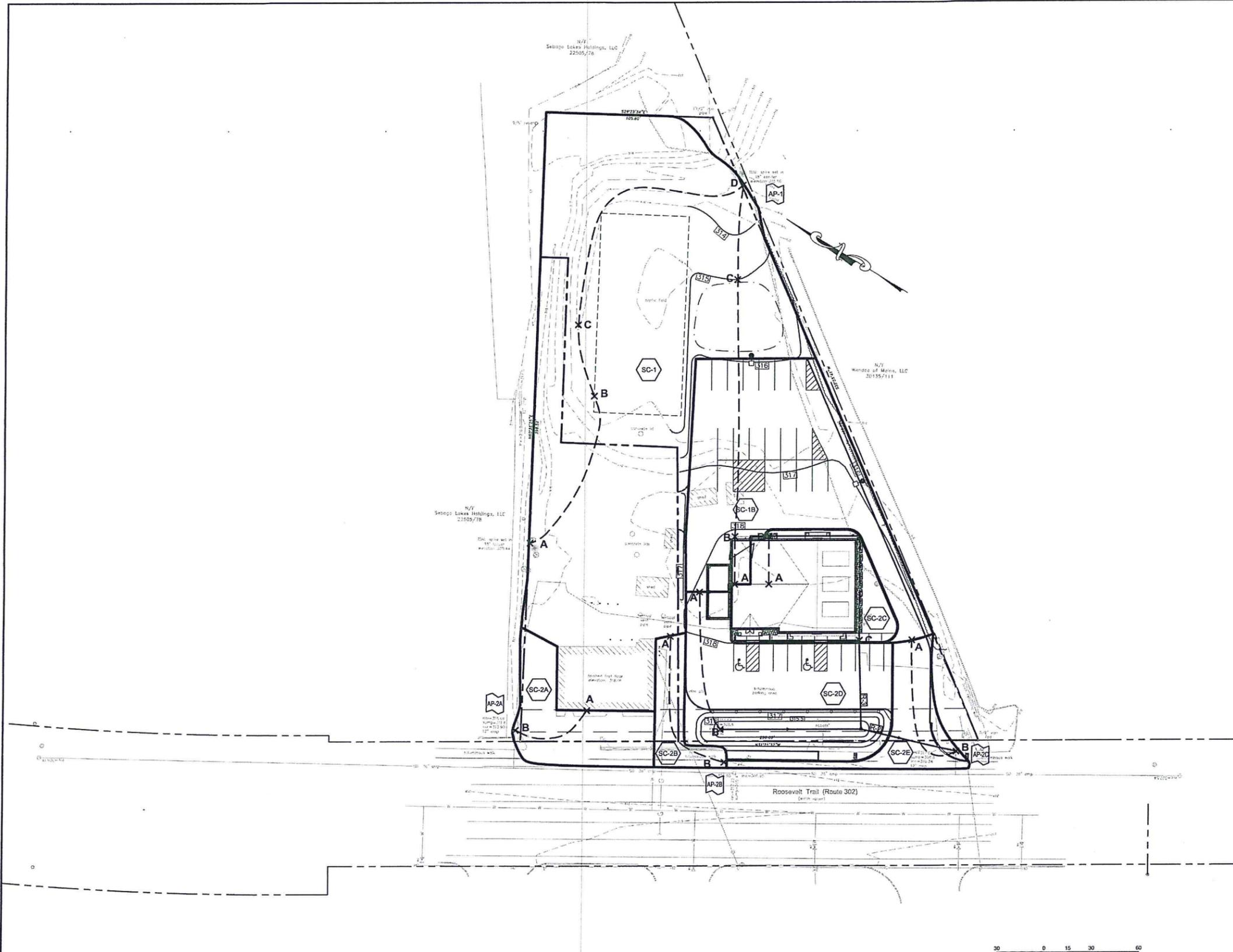
**PROPOSED CONDITIONS
WATERSHED PLAN**
PRATT ABBOTT CLEANERS
839 ROOSEVELT TRAIL
WINDHAM, MAINE

HANNA REALTY ASSOCIATES, LLC
PO BOX 1120
PORTLAND, ME 04104

St. Germain Collins

D-102

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REV.	DATE	REVISION DESCRIPTION	DRAWN	CHKD
1.	09/29/2016	SUBMITTED TO TOWN OF WINDHAM	MCA	PJD
DATE:	08/20/2015	SCALE: 1"=30'	PROJECT NO.: 3580	FILE: 3580 D-102 Post-WS

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Appendix C
Stormwater Treatment Calculations

Appendix C
Stormwater Treatment Calculations
Pratt Abbott Cleaners
839 Roosevelt Trail
Windham, ME 04062

Subcatchment	Impervious Area (Sqft)	Treated Impervious Area (Sqft)	% Treated	Treatment
2C	5,658	5,658	100%	Dripline filter
2D	6,958	6,958	100%	Infiltration Basin
2B	1,961	0	0%	
2E	2,924	0	0%	
1E	13,649	0	0%	
Total Impervious	31,150	12,616	41%	

Subcatchment	Landscape Area (Sqft)	Treated Landscape Area (Sqft)	% Treated	Treatment
2C	673	673	100%	Dripline filter
2D	3,412	3,412	100%	Infiltration Basin
2B	259	0	0%	
1B	393	0	0%	
Total Landscape	4,737	4,085	86%	

Total Developed Treatment	35,887	16,701	47%
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Proposed Treatment	Impervious Area (Sqft)	Volume Required (Cuft)	Landscaped Area (Sqft)	Volume Required (Cuft)	Water Quality Storage Depth (ft)	Total Area Required (Sqft)	Proposed Area (Sqft)	% Over Design
Infiltration Basin	6,958	1" x Area 579.83	3,412	0.4" x Area 113.73	1.5	462.38	966	109%

Appendix D

Maintenance Plan for Stormwater Facilities

**Pratt Abbott Cleaners
839 Roosevelt Trail
Windham, Maine
Maintenance Plan for Stormwater Facilities
September 2016**

Site Inspection and Maintenance During Construction

Weekly inspections, as well as routine inspections following rainfalls, shall be conducted by the Owner on all temporary and permanent erosion control devices until final acceptance of the project (90% grass catch). Necessary repairs shall be made to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned, and repaired as required. Disposal of all temporary erosion control devices shall be the responsibility of the Owner.

Post Construction Site Inspection and Maintenance

The Owner shall be responsible for inspecting, maintaining and ensuring proper function of all stormwater treatment and conveyance facilities after the facility is constructed.

Sweeping: Paved areas shall be mechanically swept annually or more often, as necessary. The first sweeping shall take place after winter sanding operations terminate (prior to May 1). A second sweeping may occur prior to winter sanding operations in order to ensure adequate capacity of collection systems.

Catch Basins/Drywells: Catch basins and drywells shall be inspected each spring and fall to determine if cleaning is required. The spring inspection (and cleaning) shall occur after spring sweeping and the fall cleaning shall occur after all leaves have fallen. The cleaning shall include removal and proper disposal of accumulated sediments and floatable debris. Contracting with a cleaning contractor with a vacuum truck is the preferred method of catch basin cleaning. Absorbent logs in drywells shall be replaced every six months at a minimum.

Ditches/Swales: Open swales and ditches shall be inspected on a quarterly basis or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth to vegetation for the stability of the structure and proper functioning.

Vegetated Ditches: Vegetative grasses shall be mowed at least monthly during the growing season to a height of not less than 8 inches. Larger brush or trees must not be allowed to become established in the channel. Unless finely mulched, clippings shall be removed to minimize the amount of organic material accumulating in the swales. Any areas where the vegetation fails will be subject to erosion and shall be repaired and revegetated as necessary.

Rip Rap Swales: Where stone is displaced from constructed riprap areas, it shall be replaced and chinked to assure stability. With time, additional riprap may need to be added. Vegetation growing through riprap shall be removed on a yearly schedule.

Culverts: If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it shall be removed. This may be accomplished by mechanical means or hydraulic flushing. Care shall be taken to prevent the release of the sediments into the downstream receiving areas. All pipes shall be inspected on an annual basis.

Rip Rap Inlets/Outlets: The culvert inlets/outlets shall be inspected (flow bypass or undermining) and debris removed, as necessary. Repair any channelization if occurring and remove sediment build-up to assure potential storage volume and sheet flow characteristics of the discharge lip. The inspections shall be performed on a semi-annual basis at a minimum.

Infiltration Basin: The infiltration basin shall be inspected as follows:

1. At regular intervals, embankment areas shall be examined for cracks that are produced either by settlement or the beginning of shear slides.
2. The discharge from the internal drains shall be inspected for solid matter. Any noticeable increase of drain flow with a constant reservoir level or abnormal movement of solids is apt to be an indication of erosion.
3. Grass on the slopes and the interior shall be kept cut short, less than 6".
4. Trees and shrubs must be kept from growing in the basin.
5. Inspect monthly to insure that the basin drains within 24 hours following a rain event.

All defects found in inspections must be repaired immediately to prevent progressive deterioration.

Maintenance Documentation: The Stormwater Facilities Inspection Checklist (attached) shall be completed after each inspection.

Stormwater Facilities Inspection Checklist

Facility: **Pratt Abbott Cleaners**

Location: **839 Roosevelt Trail**

Town: **Windham, Maine**

Date: _____

Time: _____

Inspector: _____

Inspection/Maintenance Item	Frequency	Satisfactory/ Unsatisfactory	Maintenance Performed
1. Parking Lots & Drives			
Sweep main drive and parking areas	Annual (Spring)		

Inspection/Maintenance Item	Frequency	Satisfactory/ Unsatisfactory	Maintenance Performed
2. Catch Basins, Drywells, Drain Pipes			
Clear debris	Semi-annual		
Check depth of sediment in sumps	Semi-annual		
Remove accumulated sediment	Annual		
Replace absorbent logs	Semi-annual		

Inspection/Maintenance Item	Frequency	Satisfactory/ Unsatisfactory	Maintenance Performed
3. Rip Rap Inlets/Outlets			
Inspect for bypassing	Semi-annual		
Remove accumulated sediment and debris	Semi-annual		

Inspection/Maintenance Item	Frequency	Satisfactory/ Unsatisfactory	Maintenance Performed
4. Culverts and Ditches			
Clear water course of debris	Semi-annual		
Check & repair visible erosion control stone	Semi-annual		
Check outlet stream for erosion or flooding	Semi-annual		
Repair / replace erosion control measures, as needed.	Semi-annual		

Stormwater Facilities Inspection Checklist

Inspection/Maintenance Item	Frequency	Satisfactory/ Unsatisfactory	Maintenance Performed
5. Infiltration basin			
Check pond embankments for erosion	Semi-annual		
Remove accumulated sediment and debris	Annual		
Check to insure draining in 24 hours	Semi-annual		
Mow weekly or as needed	As needed		

Additional Comments: _____

AUTHORIZED FACILITY PERSONNEL SIGNATURE: _____

DATE: _____