

Major Site Plan Application

To the Town of Windham, Maine

241 Roosevelt Trail Commercial Building Amendment to 302 North Business Park

**241 Roosevelt Trail
Windham, Maine**

**Applicant:
Lussier Apartments LLC
243 Roosevelt Trail
Windham, Maine 04062**

**Prepared By:
DM Roma Consulting Engineers
PO Box 1116
Windham, ME 04062**



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241 ROOSEVELT TRAIL COMMERCIAL BUILDING

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SECTION 1

APPLICATION FORM & SUBMISSION CHECKLIST



MAJOR SITE PLAN REVIEW APPLICATION

FEES FOR MAJOR SITE PLAN REVIEW		APPLICATION FEE: (No Bldg.) (W/Bldg.: \$25/1,000 SF up to 5,000 SF)		☒ \$1,3000.00 ☐ \$ _____	TOTAL AMOUNT PAID: \$ 3,300.00				
		REVIEW ESCROW: (GFA) 2,000 SF - 5,000 SF = \$2,000 5,000 SF - 15,000 SF = \$3,000 15,000 SF - 35,000 SF = \$4,000 Over 35,000 SF = \$5,000 No Building = \$2,000		☒ \$ 2,000.00 ☐ \$ _____ ☐ \$ _____ ☐ \$ _____ ☐ \$ _____ ☐ \$ _____	DATE: 10-6-2025 <i>Office Use:</i>				
☐ Amended Site Plan – (Each Revision)		AMENDED APPLICATION FEE: AMENDED REVIEW ESCROW:		☐ \$350.00 ☐ \$250.00			<i>Office Stamp:</i>		
PROPERTY DESCRIPTION	Parcel Information:	Map(s):	10-A	Lot(s):	25-A	Zoning District(s):	C-3	Size of the Parcel in SF:	54,470 SF
	Total Disturbance: >1Ac		☐ Y ☒ N	Estimated Building SF:	4,980 SF	IF NO BUILDING; Estimated SF of Total Development:			
	Physical Address:	241 Roosevelt Trail				Watershed:	Colley Wright Brook to Presumpscot River		
PROPERTY OWNER'S INFORMATION	Name:					Name of the Business:	Lussier Apartments, LLC		
	Phone:	(207) 807 - 8831				Mailing Address:	243 Roosevelt Trail Windham, ME 04062		
	Fax or Cell:								
	Email:	brandon.lussier@pillartopost.com							
APPLICANT'S INFORMATION (IF DIFFERENT FROM OWNER)	Name:	Same as owner				Name of Business:			
	Phone:					Mailing Address:			
	Fax or Cell:								
	Email:								
APPLICANT'S AGENT INFORMATION	Name:	Dustin Roma				Name of Business:	DM Roma Consulting Engineers		
	Phone:	(207) 591 - 5055				Mailing Address:	PO Box 1116 Windham, ME 04062		
	Fax or Cell:	(207) 310 - 0506							
	Email:	dustin@dmroma.com							
PROJECT INFORMATION	Existing Land Use (Use extra paper, if necessary): Vacant land - divided from previously approved site plan with commercial use.								
	Provide a narrative description of the Proposed Project (Use extra paper, if necessary): Construct a 4,980 sf commercial building with associated paved parking and driveway. Building will require on-site well and on-site wastewater disposal field.								
	Provide a narrative description of construction constraints (wetlands, shoreland zone, flood plain, non-conformance, etc.): No significant limitations to note								



MAJOR SITE PLAN REVIEW APPLICATION REQUIREMENTS

Section 120-811 of the Land Use Ordinance

The submission shall contain five (5) copies of the following information, including full plan sets. Along with one (1) electronic version of the entire submission, unless waiver of a submission requirement is granted, and one (1) complete plan set.

The Major Plan document/map: A) Plan size: 24" X 36" B) Plan Scale: No greater 1":100' C) Title block: Applicant's name, project name, and address • Name of the preparer of plans with professional information • Parcel's tax map identification (map and lot) and street address, if available	• Complete application submission deadline: three (3) weeks (21-days) before the desired Planning Board meeting. - Five copies of the application and plans - Application Payment and Review Escrow • A pre-submission meeting with the Town staff is required. • Contact information: Windham Planning Department (207) 894-5960, ext. 2 Steve Puleo, Town Planner sipuleo@windhammaine.us Amanda Lessard, Planning Director allessard@windhammaine.us
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APPLICANT/PLANNER'S CHECKLIST FOR MAJOR SITE PLAN REVIEW

<u>SUBMITTALS THAT THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.</u> <i>The following checklist includes items generally required for development by the Town of Windham's LAND USE ORDINANCE, Sections 120-811, 120-812, 120-813 & 120-814. Due to projects specifics, the applicant is required to provide a complete and accurate set of plans, reports, and supporting documentation (as listed in the checklist below).</i>	<u>IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.</u>
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Column #1.			Column #2.		
1. Final Plan -Major Site Plan: Submission Requirements	Applicant	Staff	Plan Requirements – Existing Conditions (Continued):	Applicant	Staff
A. Completed Major Site Plan Application form	☒	☐	vii. Zoning classification(s), including overlay and/or subdistricts, of the property and the location of zoning district boundaries if the property is located in 2 or more districts or abuts a different district	☒	☐
B. Evidence of Payment of application & escrow fees	☒	☐	viii. Bearings and lengths of all property lines of the property to be developed, and the stamp of the surveyor that performed the survey	☒	☐
C. Written information – submitted in a bounded and tabbed report			ix. Existing topography of the site at 2-foot contour intervals.	☒	☐
1. A narrative describing the proposed use or activity.	☒	☐	x. Location and size of any existing sewer and water mains, culverts and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property and on abutting streets or land that may serve the development.	☒	☐
2. Name, address, & phone number of record owner, and applicant if different (see Agent Autorotation form).	☒	☐	xi. Location, names, and present widths of existing public and/or private streets and rights-of-way within or adjacent to the proposed development.	☒	☐
3. Names and addresses of all abutting property owners	☒	☐	xii. Location, dimensions, and ground floor elevation of all existing buildings.	☒	☐
4. Documentation demonstrating right, title, or interest in the property	☒	☐	xiii. Location and dimensions of existing driveways, parking and loading areas, walkways, and sidewalks on or adjacent to the site.	☒	☐
5. Copies of existing proposed covenants or deed restrictions.	☒	☐	xiv. Location of intersecting roads or driveways within 200 feet of the site.	☒	☐
6. Copies of existing or proposed easements on the property.	☒	☐	xv. Location of the following		
7. Name, registration number, and seal of the licensed professional who prepared the plan, if applicable.	☒	☐	a. Open drainage courses	☒	☐
8. Evidence of applicant's technical capability to carry out the project.	☒	☐	b. Wetlands	☒	☐
			c. Stone walls	☒	☐
9. Assessment of the adequacy of any existing sewer and water mains, culverts and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property.	☒	☐	d. Graveyards	☒	☐



Continued from Column #1. (Page 2)			Continued from Column #2. (Page 2)		
10. Estimated demands for water and sewage disposal.	☒	☐	e. Fences	☒	☐
			f. Stands of trees or treeline, and	☐	☐
			g. Other important or unique natural areas and site features, including but not limited to, floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources.	☒	☐
11. Provisions for handling all solid wastes, including hazardous and special wastes.	☒	☐	xvi. Direction of existing surface water drainage across the site	☒	☐
12. Detail sheets of proposed light fixtures.	☒	☐	xvii. Location, front view, dimensions, & lighting of existing signs.	N/A	☐
13. Listing of proposed trees or shrubs to be used for landscaping	☒	☐			
14. Estimate weekday AM and PM and Saturday peak hours and daily traffic to be generated by the project.	☒	☐	xviii. Location & dimensions of existing easements that encumber or benefit the site.	N/A	☐
15. Description of important or unique natural areas and site features, including floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and	☒	☐	xix. Location of the nearest fire hydrant, dry hydrant, or other water supply.	☒	☐
16. If the project requires a stormwater permit from MaineDEP or if the Planning Board or if the Staff Review Committee determines that such information is required, submit the following.			E. Plan Requirements - Proposed Development Activity		
			i. Location and dimensions of all provisions for water supply and wastewater disposal, and evidence of their adequacy for the proposed use, including soils test pit data if on-site sewage disposal is proposed	☒	☐
a. stormwater calculations.	☒	☐	ii. Grading plan showing the proposed topography of the site at 2-foot contour intervals	☒	☐
b. erosion and sedimentation control measures.	☒	☐	iii. The direction of proposed surface water drainage across the site and from the site, with an assessment of impacts on downstream properties.	☒	☐
c. water quality and/or phosphorous export management provisions.	☒	☐	iv. Location and proposed screening of any on-site collection or storage facilities	☒	☐
17. If public water or sewerage will be utilized, provide a statement from the utility district regarding the adequacy of water supply in terms of quantity and pressure for both domestic and fire flows, and the capacity of the sewer system to accommodate additional wastewater.	N/A	☐	v. Location, dimensions, and materials to be used in the construction of proposed driveways, parking, and loading areas, and walkways, and any changes in traffic flow onto or off-site	☒	☐
18. Financial Capacity			vi. Proposed landscaping and buffering	☒	☐
i. Estimated costs of development and itemize estimated major expenses.	☒	☐	vii. Location, dimensions, and ground floor elevation of all buildings or expansions	☒	☐
ii. Financing (submit one of the following)			viii. Location, front view, materials, and dimensions of proposed signs together with a method for securing sign	☒	☐
a. Letter of commitment to fund	☐	☐	ix. Location and type of exterior lighting. Photometric plan to demonstrate the coverage area of all lighting may be required by the Planning Board.	☒	☐
b. Self-financing	☐	☐	x. Location of all utilities, including fire protection systems	☒	☐
1. Annual corporate report	☐	☐	xi. Approval block: Provide space on the plan drawing for the following words, "Approved: Town of Windham Planning Board" along with space for signatures and date	☒	☐
2. Bank Statement	☐	☐	2. Major Final Site Plan Requirements as Exhibits to the Application		
c. Other			a. Narrative and/or plan describing how the proposed development plan relates to the sketch plan.	☒	☐
1. Cash equity commitment of 20% of the total cost of development	☐	☐	b. Stormwater drainage and erosion control program shows:		
2. Financial plan for remaining financing.	☐	☐	1. The existing and proposed method of handling stormwater runoff	☒	☐



Continued from Column #1. (Page 3)			Continued from Column #2. (Page 3)		
3. Letter from institution indicating intent to finance.	☒	☐	2. The direction of the flow of the runoff, through the use of arrows and a description of the type of flow (e.g., sheet flow, concentrated flow, etc.)	☒	☐
iii. If a registered corporation a Certificate of Good Standing from:			3. Location, elevation, and size of all catch basins, dry wells, drainage ditches, swales, retention basins, and storm sewers	☒	☐
- Secretary of State, or	☒	☐	4. Engineering calculations were used to determine drainage requirements based on the 25-year, 24-hour storm frequency.	☒	☐
- the statement signed by a corporate officer	☐	☐	5. Methods of minimizing erosion and controlling sedimentation during and after construction.	☒	☐
19. Technical Capacity (address both).			c. A groundwater impact analysis prepared by a groundwater hydrologist for projects involving on-site water supply or sewage disposal facilities with a capacity of 2,000 gallons or more per day	N/A ☐	☐
i. Prior experience relating to developments in the Town.	☒	☐	d. Name, registration number, and seal of the Maine Licensed Professional Architect, Engineer, Surveyor, Landscape Architect, and/or similar professional who prepared the plan.	☒	☐
ii. Personnel resumes or documents showing experience and qualification of development designers	☒	☐	e. A utility plan showing, in addition to provisions for water supply and wastewater disposal, the location and nature of electrical, telephone, cable TV, and any other utility services to be installed on the site.	☒	☐
D. Plan Requirements – Existing Conditions			f. A planting schedule keyed to the site plan indicating the general varieties and sizes of trees, shrubs, and other vegetation to be planted on the site, as well as information of provisions that will be made to retain and protect existing trees, shrubs, and other vegetation.	☒	☐
i. Location Map adequate to locate project within the municipality	☒	☐	g. Digital transfer of any site plan data to the town (GIS format)	☒	☐
ii. Vicinity Plan. Drawn to a scale of not over 400 feet to the inch, and showing area within 250 feet of the property line, and shall show the following:	☒	☐			
a. Approximate location of all property lines and acreage of the parcel(s).	☒	☐			
b. Locations, widths, and names of existing, filed, or proposed streets, easements, or building footprints.	☒	☐	h. A traffic impact study if the project expansion will generate 50 or more trips during the AM or PM peak hour, or if required by the Planning Board)	N/A ☐	☐
c. Location and designations of any public spaces.	☒	☐			
d. Outline of the proposed site plan, together with its street system and an indication of the future probable street system of the remaining portion of the tract.	☒	☐			
iii. North Arrow identifying Grid North; Magnetic North with the declination between Grid and Magnetic; and whether Magnetic or Grid bearings were used.	☒	☐			
iv. Location of all required building setbacks, yards, and buffers.	☒	☐			
v. Boundaries of all contiguous property under the total or partial control of the owner or applicant.	☒	☐			
vi. Tax map and lot number of the parcel(s) on which the project is located	☒	☐	PDF\Electronic Submission.	☒	☐

The undersigned hereby makes an application to the Town of Windham for approval of the proposed project and declares the foregoing to be true and accurate to the best of his/her knowledge.

<i>Dustin Roma</i>	10-6-2025
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APPLICANT OR AGENT'S SIGNATURE

DATE

Dustin Roma - Authorized Agent

PLEASE TYPE OR PRINT NAME

SECTION 2

AGENT AUTHORIZATION

October 6, 2025

Re: Agent Authorization

Lussier Apartments, LLC is the owner of property located at 241 Roosevelt Trail, Identified on Tax Map 10-A, Lot 25-A. Lussier Apartments, LLC has retained the services of DM Roma Consulting Engineers to act as its authorized agent to apply for land use permits associated with the development of this property.

Sincerely,

Brandon Lussier
Lussier Apartments, LLC

A handwritten signature in blue ink, consisting of a stylized 'B' followed by a long horizontal stroke.

SECTION 3

WAIVER REQUESTS

TOWN OF WINDHAM

SITE PLAN APPLICATION

Performance Standards Waiver Request Form (Section 808 – Site Plan Review, Waivers)

For each waiver request from the Submission Requirements found in Section 811 and Performance Standards detailed in Section 812 of the Town of Windham Land Use Ordinance, please submit a separate copy of this form for all waivers.

Project Name: 241 Roosevelt Trail Commercial Building

Tax Map: 10-A

Lot(s): 25-A

**Waivers are requested from the following Performance and Design Standards
(Add forms as necessary):**

Ordinance Section	Standard	Mark which waiver this form is for
120-812(B)(3)(a)	Accessway location and spacing	☒
		☐
		☐
		☐
		☐

- a. Describe how a waiver from the standard indicated above will improve the ability of the project to take the property's pre-development natural features into consideration. Natural features include, but are not limited to, topography, location of water bodies, location of unique or valuable natural resources, relation to abutting properties or land uses. Attach a separate sheet if necessary.

The project is located on Roosevelt Trail with a posted speed limit of 45 mph. The proposed driveway entrance is approximately 550 feet north of the new traffic signal at the intersection of Roosevelt Trail and Albion Road. Appendix B (Street Design and Construction Standards) requires driveway spacing of at least 265 feet, and there are two driveways located within 265 feet on the north side of Roosevelt Trail and two driveways located within 265 feet on the south side of Roosevelt Trail. There is no location on the property where a driveway can be constructed that would allow the driveway separation standard to be met. Moving the driveway location would potentially improve two separation distances while making the other two separation distances worse. Sight distance was measured to be over 800 feet and estimated to be well over 1,000 feet in both directions, so the driveway can be built and utilized without creating unsafe conditions.

(continues next page)

Ordinance Section: 120-812(B)(3)(a)

b. Will the waiver have an impact on any of the following criteria?

	Yes	No
Water or air pollution	☐	☒
Light pollution or glare	☐	☒
Water supply	☐	☒
Soil erosion	☐	☒
Traffic congestion or safety	☐	☒
Pedestrian safety or access	☐	☒
Supply of parking	☐	☒
Sewage disposal capacity	☐	☒
Solid waste disposal capacity	☐	☒
Scenic or natural beauty, aesthetics, historic sites, or rare or irreplaceable natural areas	☐	☒
Flooding or drainage issues on abutting properties	☐	☒
The Town's ability to provide the subdivision with public safety services (if subdivision)	☐	☒

If granting the waiver will result in an impact on any of the criteria above, please provide more detail below.

SECTION 4

CERTIFICATE OF CORPORATE GOOD STANDING



MAINE

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

Corporate Name Search

Information Summary

[Subscriber activity report](#)

This record contains information from the CEC database and is accurate as of: Thu Oct 02 2025 16:28:08. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
LUSSIER APARTMENTS LLC	20152871DC	LIMITED LIABILITY COMPANY	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
01/26/2015	N/A	MAINE

Other Names (A=Assumed ; F=Former)

LUSSIER BUILDERS, LLC	A
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Principal Home Office Address

Physical

243 ROOSEVELT TRAIL
WINDHAM, ME 04062

Mailing

243 ROOSEVELT TRAIL
WINDHAM, ME 04062

Clerk/Registered Agent

Physical

JAMES B. HADDOW
TWO MONUMENT SQUARE, SUITE 900
PORTLAND, ME 04101

Mailing

JAMES B. HADDOW
POST OFFICE BOX 17555
PORTLAND, ME 04112-8555

New Search

Click on a link to obtain additional information.

List of Filings

[View list of filings](#)

Obtain additional information:

Certificate of Existence (Good Standing) [\(more info\)](#)

Short Form without amendments	Long Form with amendments
(\$30.00)	(\$30.00)

SECTION 5

PROJECT NARRATIVE

Section 5 – Project Narrative

Zoning:	Commercial 3
Acreage:	1.25 Acres
Tax Map/Lot:	Map 10-A, Lot 25-A
Existing Use:	Vacant Land – part of a previously approved Site Plan
Proposed Use:	Contractor Services

The proposed project includes the construction of a 4,980 square foot building for commercial use as a Contractor Services facility, along with a paved parking area. The property will be accessed from an existing curb cut on Roosevelt Trail that will be improved with gravel and pavement. The project will require an on-site well and on-site wastewater disposal.

This property was divided from a larger parcel. The larger parcel received Site Plan approval from the Windham Planning Board and we have included a copy of the plan that we believe to be the approved plan (unsigned) as Sheet 2 in our plan set.

SECTION 6

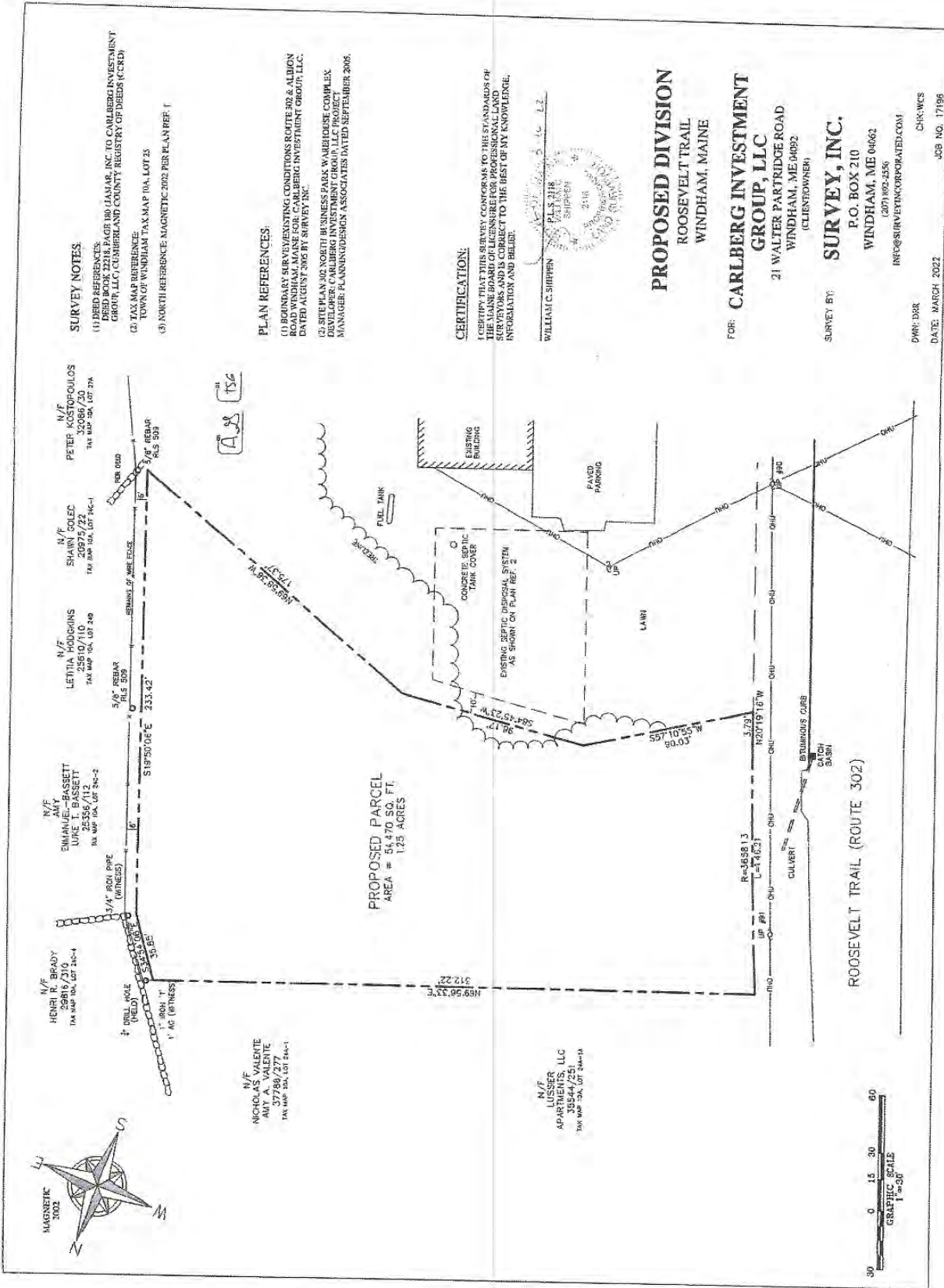
NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS

Section 6 – Names and Addresses of Abutting Property Owners

<u>Map/Lot</u>	<u>Owner Name</u>	<u>Mailing Address</u>
10-A/24-A-1-A	Lussier Apartments, LLC	243 Roosevelt Trail, Unit 1 Windham, ME 04062
10-A/24-A-1-B	Oak Hill Properties, LLC	PO Box 1855 Windham, ME 04062
10-A/24-C-2	Emanuel-Bassett Family Revoc Trust	185 Austin St, Unit A-1 Portsmouth, NH 03801
10-A/24-D	Letitia Hodgkins	16 Davis Avenue Windham, ME 04062
10-A/24-C-1	Shawn Golec Rachel Harriman	12 Davis Avenue Windham, ME 04062
10-A/27-A	Peter Kostopoulos Laura Gresik	86 Albion Rd Windham, ME 04062
10-A/25	Roosevelt Leasing LLC C/O Drummond & Drummond LLP	1 Monument Way Portland, ME 04101

SECTION 7

RIGHT, TITLE OR INTEREST DOCUMENTS



SURVEY NOTES:
(1) DEED REFERENCES:
DEED BOOK 2218, PAGE 180 (JANAR, INC. TO CARLBERG INVESTMENT GROUP, LLC, CUMBERLAND COUNTY REGISTRY OF DEEDS (CEND)
(2) TAX MAP REFERENCE:
TOWN OF WINDHAM TAX MAP 10A, LOT 23
(3) NORTH REFERENCE: MAGNETIC 2002 PER PLAN REF. 1

PLAN REFERENCES:
(1) BOUNDARY SURVEYING: CONDITIONS ROUTE 302 & ALBION ROAD WINDHAM, MAINE FOR CARLBERG INVESTMENT GROUP, LLC, DATED AUGUST 2005 BY SURVEY, INC.
(2) SITE PLAN 02 NORTH BUSINESS PARK WAREHOUSE COMPLEX DEVELOPER: CARLBERG INVESTMENT GROUP, LLC, DATED SEPTEMBER 2005, MANAGER: PLANNINGDESIGN ASSOCIATES DATED SEPTEMBER 2005.

CERTIFICATION:
I CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

WILLIAM C. SHIPPEN
P.L.S. 2118
SHIPPEN
2018
MAINE
REGISTERED PROFESSIONAL LAND SURVEYOR

PROPOSED DIVISION
ROOSEVELT TRAIL
WINDHAM, MAINE

FOR: **CARLBERG INVESTMENT GROUP, LLC**
21 WALTER PARTRIDGE ROAD
WINDHAM, ME 04092
(CLIENT/OWNER)

SURVEY BY: **SURVEY, INC.**
P.O. BOX 210
WINDHAM, ME 04092
(207) 892-2556
INFO@SURVEYINCORPORATED.COM

DRAWN BY: **CHK: WCS**
DATE: MARCH 2022
JOB NO. 17196

DS
BT

Initial
H

WARRANTY DEED
Statutory Short Form

DLN: 3057367

KNOW ALL BY THESE PRESENTS, That, **Q Hien LLC, a Maine Limited Liability Company**, with a principal place of business in **3 Deering Road, Gorham, Cumberland County, State of Maine**, for consideration paid, grants to **Lussier Apartments LLC, a Maine Limited Liability Company**, whose mailing address is **243 Roosevelt Trail, Windham, ME 04062**, with Warranty Covenants, the real property in the Town of **Windham, County of Cumberland and State of Maine**, more particularly described as follows:

The following lot or parcel of land situated on the northeasterly side of Roosevelt Trail, also known as Route 302, in the Town of Windham, County of Cumberland, and State of Maine being bounded and described, to wit:

Beginning on the northeasterly sideline of Roosevelt Trail at land now or formerly of Lussier Apartments, LLC as described in a deed recorded in Book 35544, Page 251 in the Cumberland County Registry of Deeds (CCRD);

Thence N 69° 56' 33" E, by and along land of Lussier Apartments, LLC and land now or formerly of Nicholas Valente and Amy A. Valente as described in a deed recorded in Book 37788, Page 277 CCRD, a distance of 312.22 feet;

Thence S 34° 54' 06" E a distance of 35.85 feet;

Thence S 19° 50' 06" E a distance of 233.42 feet;

Thence N 69° 58' 36" W a distance of 175.37 feet;

Thence S 84° 45' 23" W a distance of 98.17 feet;

Thence S 57° 10' 55" W a distance of 90.03 feet the easterly sideline of Roosevelt Trail;

Thence N 20° 19' 16" W, by and along the easterly sideline of Roosevelt Trail, a distance of 3.79 feet;

Thence northwesterly, by and along the northeasterly sideline of Roosevelt Trail, along a curve concave to the left having a radius of 3658.13 feet an arc distance of 146.21 feet to the Point of Beginning.

The parcel contains approximately 1.25 acres. Bearings are Magnetic 2002.

Reference is made to a plan entitled "Proposed Division Roosevelt Trail Windham, Maine for Carlberg Investment Group, LLC" dated March 2022 by Survey Inc.

Meaning and intending to convey and conveying the real property described in a deed to **Q Hien LLC**, dated November 14, 2024 and recorded with the Cumberland County Registry of Deeds in Book 41124, Page 44.

Witness our hands and seals this August 26, 2025.

Witness:

Q Hien LLC

By: _____

Hien Quach, Member

By: _____

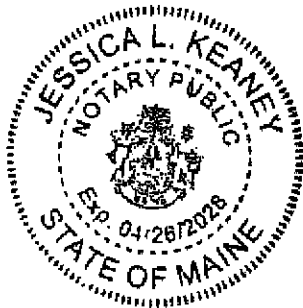
Bien Thach, Member

STATE OF MAINE

COUNTY OF CUMBERLAND, ss.

August 26, 2025

Personally appeared on the above date, the above-named **Hien Quach and Bien Thach**, Members of said **Q Hien LLC**, and acknowledged the foregoing to be their free act and deed in their said capacity and the free act and deed of said **Q Hien LLC**.



Before me,

Notary Public/Attorney at Law

Print name: Jessica L. Keane

Exp: 04/26/2028

SECTION 8

EXISTING OR PROPOSED EASEMENTS OR COVENANTS

Section 8 – Existing or Proposed Easements or Covenants

We are not aware of any existing easements on the property, and we are not proposing any additional easements that would benefit other properties.

SECTION 9

TECHNICAL CAPACITY OF THE APPLICANT

Section 9 – Technical Capacity of the Applicant

Lussier Apartments, LLC is the developer of the project and intends to operate the facility for commercial use. The business that will utilize the facility is an established business that is currently operating out of a smaller facility adjacent to this site, which was also constructed by the applicant.

DM Roma Consulting Engineers has been retained to perform Civil Engineering design and Land Permitting through the Town and State. The Licensed Professional Engineers at DM Roma have been designing land development projects for over 20 years and have extensive experience with Stormwater Management Design, Roadway and Utility engineering, Site grading, Erosion Control design, Engineering of on-site wastewater disposal systems, and regulatory permitting through local municipalities, the Maine Department of Environmental Protection, the Maine Department of Transportation, US Army Corps of Engineers and other affiliated agencies.

Mainely Soils LLC has been retained to perform septic system design services for the project. Alex Finamore is the principal of Mainely Soils LLC and a Licensed Site Evaluator, and he has extensive experience in soils evaluation, wetland delineation and septic system design.

SECTION 10

CAPACITY OF EXISTING UTILITIES TO SERVE THE PROJECT

Section 10 – Capacity of Existing Utilities to Serve the Project

Potable Water – The property requires a new well to be installed. The public water main is located approximately 550 feet away to the south at the intersection of Albion Road and Roosevelt Trail.

Fire Protection Water – An existing fire hydrant is located at the intersection of Albion Road and Roosevelt Trail. The hydrant is located within 1,000 feet of the proposed building.

Electrical Service – Existing overhead power is available on Roosevelt Trail to serve the proposed development. The project will extend underground electrical service to the property from the existing overhead lines.

Wastewater Disposal – There is no public sewer available to the property, so an on-site wastewater disposal system will be installed.

Natural Gas – We intend to use on-site bottled gas for natural gas supply.

Storm Drainage – We are not proposing any direct connection into a municipal stormwater collection system.

SECTION 11

SOLID WASTE DISPOSAL

Section 11 – Solid Waste Disposal

The project site has already been cleared of trees. Stumps and excavated pavement material will be hauled off site by the site contractor and disposed in accordance with all applicable regulations. There are no existing structures to demolish on the property.

During construction of the building, a temporary on-site dumpster will be placed on the property and emptied by a licensed waste hauling company.

Waste generated by the employees of the business and from normal business operations will be stored in an on-site dumpster that will be privately maintained by the property owner. The dumpster will be placed on a concrete pad that will be screened with fencing, as shown on the Civil Design Plans.

We do not anticipate that the project will create any hazardous solid waste that will require special treatment.

SECTION 12

SITE LIGHTING

Section 12 – Site Lighting

The project will include light fixtures installed on the exterior of the building with an anticipated mounting height of approximately 14 feet. The building-mounted lighting will provide illumination of the building entrances and driveway. Attached are specifications for lighting fixtures that are similar to what will be installed on the building. Light fixtures will be down-cast with cutoff lenses so that light does not pass over the property lines.

KWPD Series - Wattage & CCT Selectable LED Full Cutoff Wall Pack

Project Name:	
Catalog Number:	
Notes:	



Product Description:

The Konlite KWPD Series LED Full Cut-Off Wall Pack is both Wattage selectable and CCT selectable, covers 21 single SKUs, and can replace up to a 400W MH. With uniform light distribution and an excellent LED lumen maintenance rating, this slim wall pack is an energy efficient lighting solution that's made to last.

This model offers an optional emergency backup battery and a photocell making it an ideal choice for wall mounted lighting applications.

Applications:

Parking Areas, Building Façades, Loading Areas, Driveways, Carports, and more.

Features & Specifications:

Construction

Two-piece die-cast aluminum housing ensures maximum heat dissipation for optimal performance

Electric

120-277 VAC input voltage.
Power factor >90%, THD <20%, 0-10V Dimmable.
Operating Temperature Range: -40°F - + 113°F
Note: Operating Temperature With Emergency Backup Battery:
+40°F - + 104°F

Certification

UL Listed, suitable for wet locations.
DesignLights Consortium® (DLC) Premium 5.1 qualified product.
Note: Please refer to the DLC website for specific product qualifications at www.designlights.org.

Installation

Can be mounted directly onto a Junction Box or via Conduit Mounting

Optic

CCT Selectable with Selections of 3000K/4000K/5000K
70 CRI Selectable Set Lumens from 3,900 to a Max. of 14,040 Lumens
Anti-UV prismatic translucent lens designed to distribute light uniformly

Warranty

5-year limited warranty

Ordering Information				Example: KWPDLMWMCLV	
Series	Wattage	CCT	Voltage	Emergency	Finish
KWPD	LMW=63W/45W/30W (63W default setting)	MC=3000K/4000K/5000K 5000K (default setting)	LV=120-277V	Blank=Without Emergency Battery Backup EM=With Emergency Battery Backup	B=Bronze W=White
	MMW=90W/63W/45W (90W default setting)				
	HMW=125W/105W/76W (125W default setting)				

Note: * 8W Emergency Battery Backup for LMW & MMW(63W/45W/30W) & (90W/63W/45W).

15W Emergency Battery Backup for HMW(125W/105W/76W).

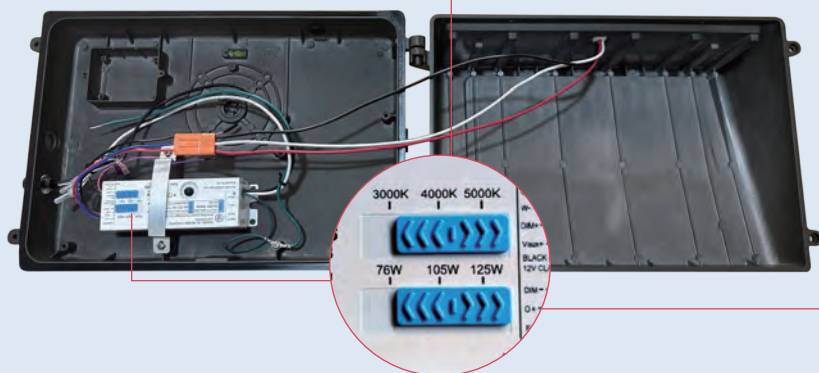
* When the light fixture is installed with the emergency battery, CCT can not be switched to 3000K.



1520 Broadmoor Blvd, Suite B, Buford, GA 30518
Toll Free: 877-718-0808 Fax: 770-817-0127 www.revolved.com

For informational purposes only.
Content is subject to change.

Power Selection



CCT Setting

CW	5000K
NW	4000K
WW	3000K

Power Setting

Wattage Selections	Default Setting
125/105/76W	125W
90/63/45W	90W
63/45/30W	63W

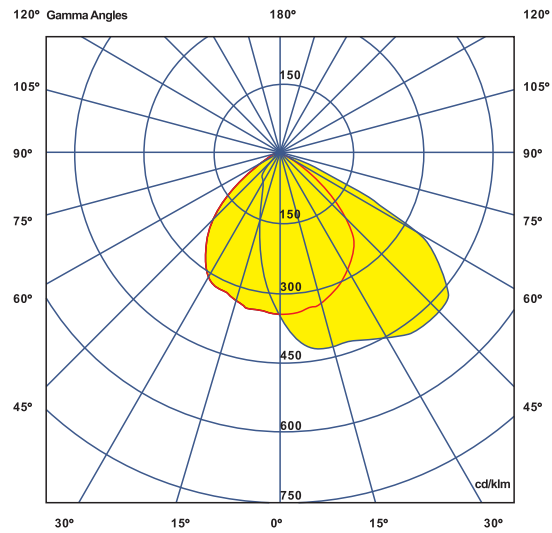
Performance Data

Lumen values are based on the 120 AC configuration.

Data on any configurations not shown here. Please contact us if needed.

Model	Wattage	CCT (Kelvin)	Luminous Flux (Lumen)	Efficacy (Lpw)	Color Rendering Index (CRI)
KWPDLMMWMCLV	30W	3000K	4,750	158	>70
		4000K	5,150	172	
		5000K	4,950	165	
	45W	3000K	6,900	153	
		4000K	7,550	168	
		5000K	7,250	161	
	63W	3000K	9,200	146	
		4000K	10,250	163	
		5000K	9,850	156	
KWPDMMWMCLV	45W	3000K	7,300	162	
		4000K	7,900	176	
		5000K	7,600	169	
	63W	3000K	9,650	153	
		4000K	10,600	168	
		5000K	10,150	161	
	90W	3000K	13,200	147	
		4000K	14,450	161	
		5000K	13,900	154	
KWPDHMMWMCLV	76W	3000K	12,000	158	
		4000K	13,500	178	
		5000K	12,750	168	
	105W	3000K	15,800	150	
		4000K	17,900	170	
		5000K	17,050	162	
	125W	3000K	18,200	146	
		4000K	20,800	166	
		5000K	19,700	158	

Photometrics



Electrical Data

Model Series	Wattage(W)	Current (AC)			
		Input Voltage (V)			
		120	208	240	277
KWPDLMWMCLV	30	0.28	0.16	0.14	0.12
	45	0.42	0.24	0.21	0.18
	63	0.58	0.34	0.29	0.25
KWPDMMWMCLV	45	0.42	0.24	0.21	0.18
	63	0.58	0.34	0.29	0.25
	90	0.83	0.48	0.42	0.36
KWPDHMWMCLV	76	0.72	0.42	0.36	0.31
	105	0.97	0.56	0.49	0.42
	125	1.16	0.67	0.58	0.50

Maintenance

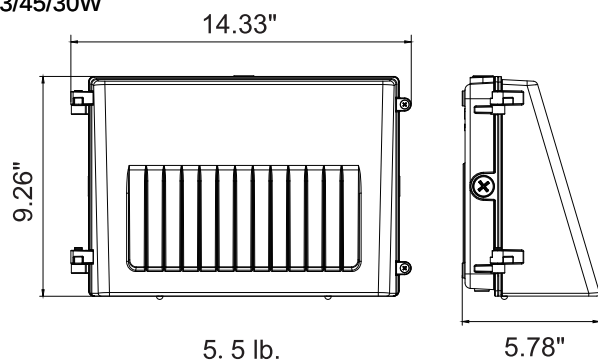
Operating hours	25,000	50,000	75,000	100,000
Lumen Maintenance Factor	>0.95	>0.89	>0.84	>0.79

Dimensions

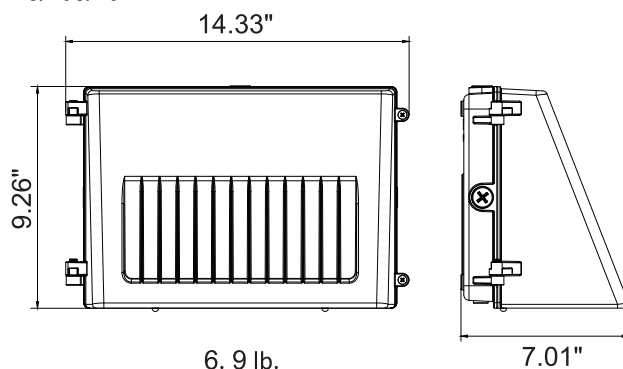
Without Emergency Battery

90/63/45W

63/45/30W



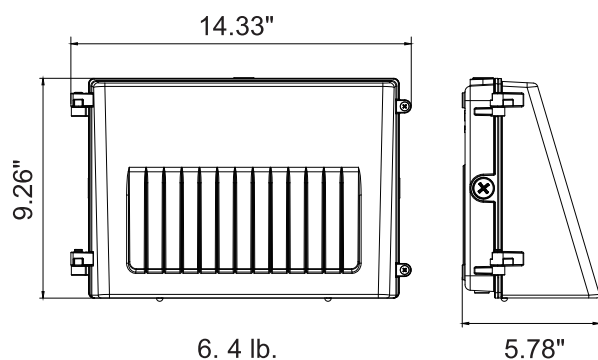
125/105/76W



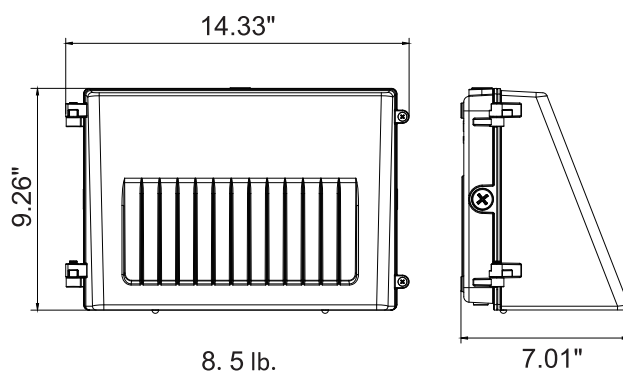
With Emergency Battery

90/63/45W

63/45/30W



125/105/76W



SECTION 13

SITE LANDSCAPING

Section 13 – Site Landscaping

Street trees are proposed to be planted along Roosevelt Trail. A 50-foot landscaped buffer will be preserved along the rear property line adjacent to the residential uses, and a stand of existing trees will be maintained along the northern property line. Landscaping around the building is not proposed because there will be paved surface right up to the building and the project site is for Contractor Services use that does not have regular visits by customers. The dumpster pad will be enclosed with a fence for screening. Landscaping for the project is detailed on the Site Plan.

SECTION 14

VEHICLE TRAFFIC

Section 14 – Vehicle Traffic

Site Trip Generation

The 4,980 sf building will be built for Contractor Services use as defined by the Town of Windham. The Institute of Transportation Engineers (ITE) Trip Generation Manual (11th edition) estimates that Specialty Trade Contractor (Land Use Code #180) is expected to generate the following vehicle trips per 1,000 sf (ksf) of building floor area:

Weekday	= 9.82 trips per 1 ksf
AM Peak Hour	= 1.98 trips per 1 ksf
PM Peak Hour	= 2.18 trips per 1 ksf

Accordingly, the proposed site development can be expected to generate an additional 49 trips during a typical weekday, 10 trips in the morning peak hour and 11 trips in the evening peak hour.

The ITE Handbook also provides the following directional distribution rates for a Specialty Trade Contractor building:

AM Peak Hour	= 77% enter site and 23% exit site
PM Peak Hour	= 38% enter site and 62% exit site

Based upon the above distribution patterns, 8 trips during the morning peak hour and 4 trips during the evening peak hour will enter the site. Accordingly, 2 trips during the morning peak hour and 7 trip during the evening peak hour will exit the site.

Vehicle Sight Distance

The project driveway entrance on Roosevelt Trail has an existing curb cut and culvert. Roosevelt Trail has a posted speed limit of 45 mph in the vicinity of the project parcel which requires 710 feet of vehicle sight distance using Mobility Corridor standards. The project driveway has a sight distance looking left that extends through the signalized intersection of Albion Road and Roosevelt Trail to a distance at least 800 feet away, and a sight distance looking right in excess of 800 feet.

Center median on Roosevelt Trail

An existing concrete median is located in Roosevelt Trail along the project frontage that delineates a left-turn lane at the intersection of Roosevelt Trail and Albion Road. The median is almost flush with the pavement surface and is easily crossed by turning vehicles when entering or exiting the site.

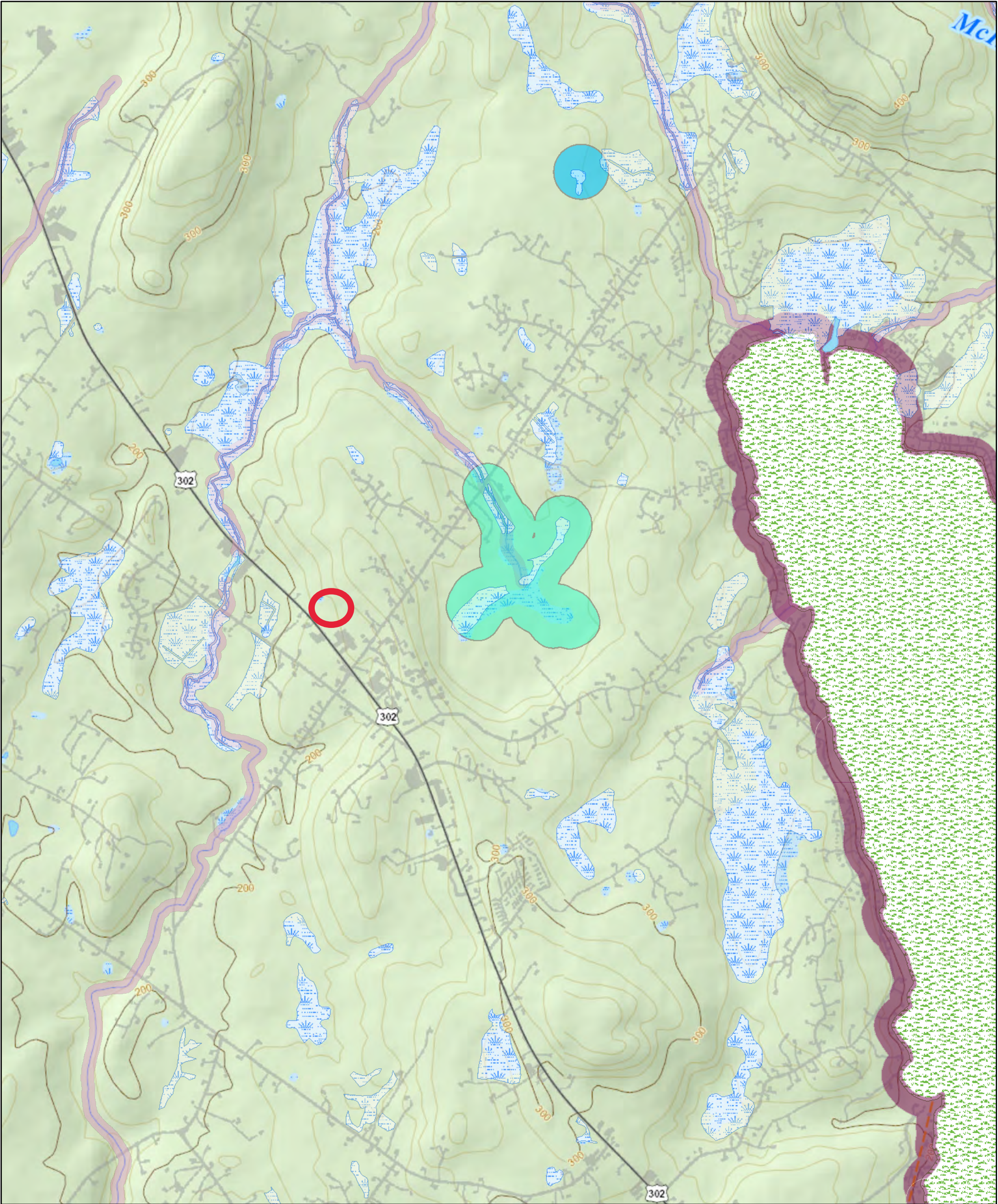
SECTION 15

IMPACT TO IMPORTANT OR UNIQUE NATURAL AREAS

Section 15 – Impact to Important or Unique Natural Areas

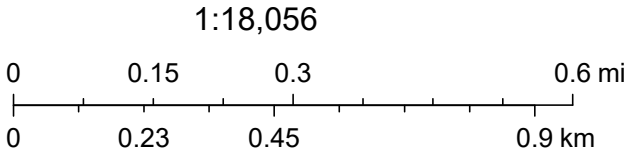
The 1.2-acre project site was divided from a larger parcel and has historically been used as a construction yard based on evidence of the existing curb cut and trailers that were left on the property. The trees have been cut in the area proposed for development, and the surrounding area has been developed with commercial and residential uses. The attached “Beginning with Habitat” map provided from the Maine Department of Inland Fisheries and Wildlife indicates that there are no significant wildlife habitats located within the vicinity of the proposed development.

Beginning With Habitat



October 6, 2025

- | | |
|---|---|
| Aquifers | Tidal Waterfowl / Wading Bird Habitat |
| National Wetlands Inventory Wetlands | Inland Waterfowl / Wading Bird Habitat |
| Shellfish Beds | Significant Vernal Pools |
| Stream Buffer (75 feet) | Deer Wintering Areas |
| Great Ponds, Rivers and Coastal Buffer (250 feet) | Essential Wildlife Habitats |
| Atlantic Salmon Habitat | Endangered, Threatened, and Special Concern Species |
| Shorebird Habitat | Natural Communities |
| Seabird Nesting Island | Rare Plants and Natural Communities |



SECTION 16

STORMWATER MANAGEMENT



STORMWATER MANAGEMENT REPORT

**302 NORTH BUSINESS PARK – COMMERCIAL BUILDING
WINDHAM, MAINE**

A. Narrative

Lussier Apartments, LLC, the applicant, is proposing to develop a 1.25-acre parcel on Roosevelt Trail (Route 302) in Windham, Maine, better identified as Lot 25-A on the Town of Windham Assessor's Map 10-A.

The applicant is proposing to construct a 4,980 square foot commercial building consisting of office space and associated garage. The development will also include paved driveway and parking, private utility installation and stormwater infrastructure.

B. Existing Conditions

The project site consists of undeveloped woodland with the exception of a paved apron on Roosevelt Trail. The lot was divided from a larger parcel which was approved as a Site Plan identified as 302 North Business Park. The original Site Plan included a warehouse complex which has been constructed and located to the south of the subject parcel.

The land is moderately sloped (6%-10%) closer to Roosevelt Trail and relatively flat (2%-5%) further to the east. Soils on the property were determined utilizing the Medium Intensity Soil Maps for Cumberland County, Maine published by the Natural Resources Conservation Service. The soils boundaries and hydrologic soils group (HSG) designations are indicated on the watershed maps within the design plan set and a Soils Map has been included as Attachment 1 of this report.

In general, the property drains either northwesterly to a drainage swale along Roosevelt Trail or collected in the middle of the site and directed northerly to the abutting property to the north. Both drainage paths are collected in the Roosevelt Trail drainage ditch, directed northerly, eventually discharging into the Colley Wright Brook. The brook travels in a southerly direction and is a tributary of the Presumpscot River. The site's downstream waterbodies are not identified by the Maine Department of Environmental Protection (MDEP) as Urban Impaired Streams in Chapter 502.

C. Alterations to Land Cover

Based on the proposed development, the project will generate approximately 19,275 square feet (0.44 acres) of impervious surfaces. The project will also generate approximately 18,135 square feet (0.42 acres) of lawn, landscaping, and best management practices, resulting in a total project developed area of 37,410 square feet (0.86 acres).

Since the project requires Site Plan approval from the Windham Planning Board, the current land use ordinance requires that new developments meet the Basic, General and Flooding Standards of the MDEP Chapter 500 Stormwater Management regulations.

D. Methodology and Modeling Assumptions

The proposed stormwater management system has been designed utilizing Best Management Practices to maintain existing drainage patterns while providing stormwater quality improvement measures. The goal of the storm drainage system design is to remove potential stormwater pollutants from runoff generated by the development while providing attenuation of the peak rates of runoff leaving the site. The method utilized to predict the surface water runoff rates in this analysis is a computer program entitled HydroCAD, which is based on the same methods that were originally developed by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, and utilized in the TR-20 modeling program. Peak rates of runoff are forecasted based upon land use, hydrologic soil conditions, vegetative cover, contributing watershed area, time of concentration, rainfall data, storage volumes of detention basins and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time, with the ability to include the attenuation effect due to dams, lakes, large wetlands, floodplains, and constructed stormwater management basins. The input data for rainfalls with statistical recurrence frequencies of 2-, 10- and 25 years was obtained from Appendix H of the MDEP, Chapter 500 Stormwater Management, last revised in 2015. The National Weather Service developed four synthetic storm types to simulate rainfall patterns around the country. For analysis in Cumberland County, Maine, the type III rainfall pattern with a 24-hour duration is appropriate.

E. Basic Standards

The project is required by the Town to provide permanent and temporary Erosion Control Best Management Practices. These methods are outlined in detail in the plan set.

F. General Standard

The proposed project is required to meet the General Standard outlined in the MDEP Chapter 500 to provide water quality treatment for 95% of the new impervious area and 80% of the total developed area. The General Standard will be met by incorporating an underdrained filter basin and the use of a roofline drip edge along the southern side of the building to provide the required treatment.

As a result of the proposed stormwater infrastructure, treatment is provided for over 95% of the project's impervious surface and over 82% of the site's developed area. The General Standard Calculations are included as Attachment 2 in this report.

Included as Attachment 3 of this report are the sizing calculations for the proposed underdrained filter basin. These calculations include:

- Storage Volume and Basin Floor surface area meeting *Chapter 7.1 Grassed Underdrained Soil Filter BMP* sizing criteria included in Volume III. BMP Technical Design Manual prepared by the MDEP.
- Sediment pre-treatment calculations

- Spillway sizing calculations demonstrating one foot of freeboard to the top of berm during the 25-year storm event assuming failure of the other discharge devices.
- Hydrograph tables demonstrating the outlet controls to release the stormwater from the basin between 24 and 48 hours.

The location and construction detail of the proposed roofline drip edge has been included within the design plan set and the sizing calculations to meet *Chapter 7.5 Roof Dripline Filters* sizing criteria included in Volume III. BMP Technical Design Manual prepared by the MDEP have been included as Attachment 4 of this report.

G. Flooding Standard

The project is required by the Town of Windham to meet the MDEP Chapter 500 Flooding Standard indicating the project must detain, retain, or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater generated by the project site do not exceed the peak flows of stormwater prior to undertaking the project. To demonstrate compliance with the Flooding Standard, two (2) study points were analyzed.

The study points utilized in the stormwater analysis are located where runoff generated by the site is collected and discharged across the property limits. Study Point SP-1 is the location where runoff generated by the site drains into the drainage swale along Roosevelt Trail. Study Point SP-2 is the location where runoff from the site drains northerly across the northern property boundary. All study points ultimately discharge to the Presumpscot River.

The results of the stormwater model incorporating the stormwater best management practices are summarized below in Table 1:

Table 1 – Peak Rates of Stormwater Runoff						
Study Point	2-Year (cfs)		10-Year (cfs)		25-Year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP-1	0.30	0.30	0.74	0.56	1.13	1.12
SP-2	5.18	4.67	11.00	9.92	16.06	14.55

As illustrated in the table above, the proposed project's design, including the integration of the proposed BMPs, maintains or reduces the peak rates of runoff at all study points during all the modeled storm events.

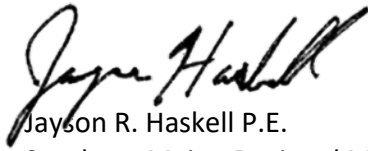
The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 5 of this report.

H. Maintenance of common facilities or property

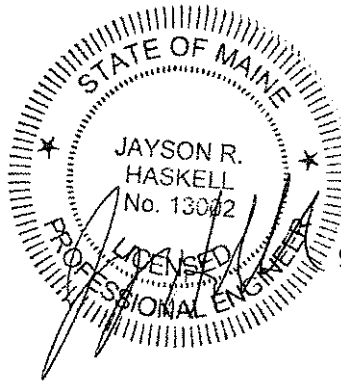
The applicant will be responsible for the maintenance of the stormwater facilities. An Inspection, Maintenance and Housekeeping Plan for the project has been created and has been included as Attachment 6 of this report.

Prepared by:

DM ROMA CONSULTING ENGINEERS



Jayson R. Haskell P.E.
Southern Maine Regional Manager

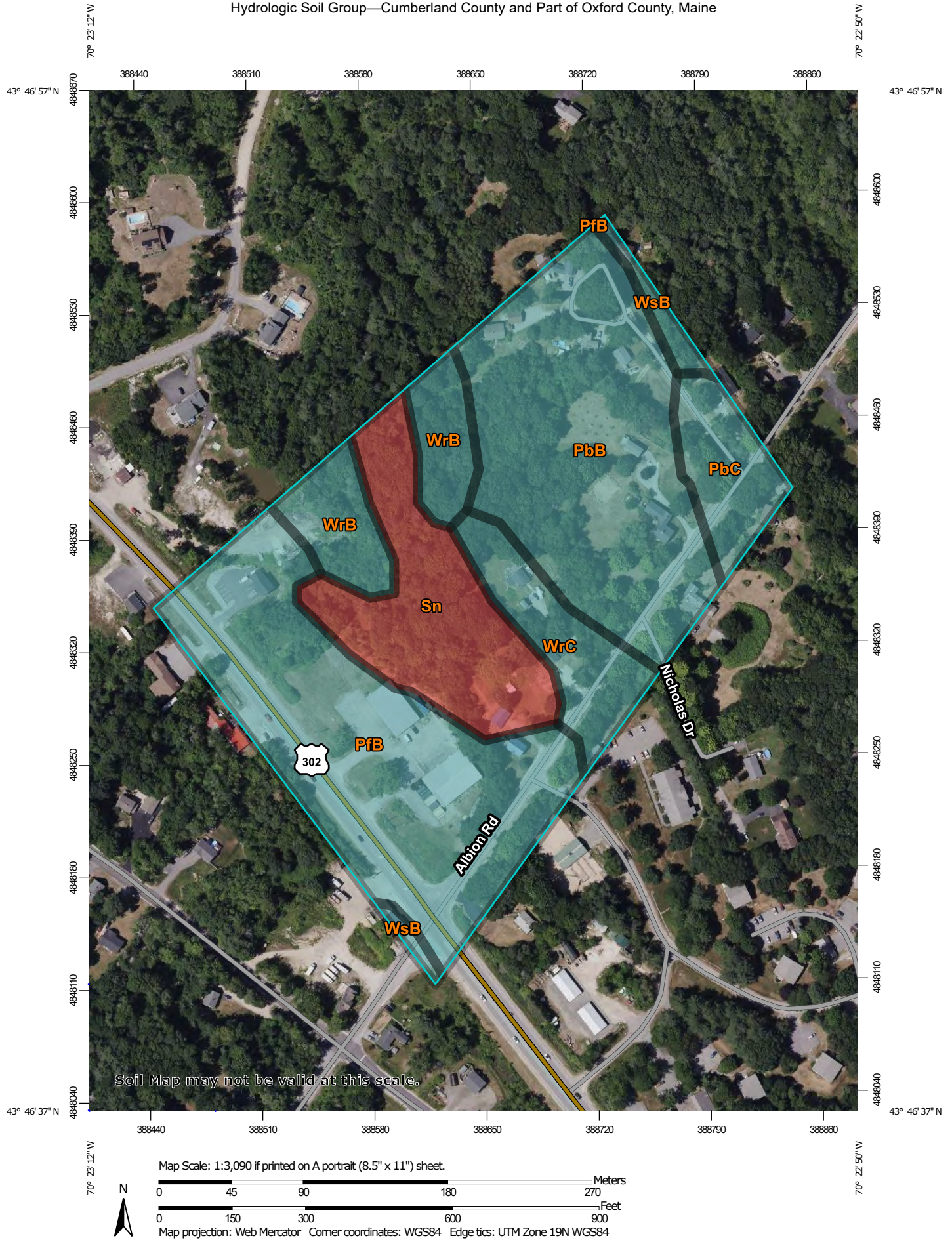


9-29-2025

ATTACHMENT 1

SOILS MAP

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
 Survey Area Data: Version 21, Aug 26, 2024

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

Date(s) aerial images were photographed: Mar 1, 2022—Jul 1, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PbB	Paxton fine sandy loam, 3 to 8 percent slopes	C	6.7	29.7%
PbC	Paxton fine sandy loam, 8 to 15 percent slopes	C	1.3	5.8%
PfB	Paxton very stony fine sandy loam, 3 to 8 percent slopes	C	7.3	32.0%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	3.4	15.1%
WrB	Woodbridge fine sandy loam, 0 to 8 percent slopes	C	1.9	8.2%
WrC	Woodbridge fine sandy loam, 8 to 15 percent slopes	C	1.6	7.2%
WsB	Woodbridge very stony fine sandy loam, 0 to 8 percent slopes	C	0.5	2.0%
Totals for Area of Interest			22.7	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

ATTACHMENT 2

GENERAL STANDARD CALCULATIONS

Stormwater Treatment Table

	Total Watershed Area (SF)	New Paved/Gravel Area (SF)	New Building Area (SF)	New Landscaped Area (SF)	Existing/Offsite Impervious Area (SF)*	Existing/Offsite Landscaping Area (SF)*	Existing Undeveloped Area (SF)	Treatment Provided	New Impervious Area Treated (SF)	New Landscaped Area Treated (SF)	Treatment Device
WS-10	29,185	2,925	380	6,720	0	3,735	15,425	Yes	3,305	6,720	FB1
WS-11	10,315	4,330	60	5,855	0	0	70	Yes	4,390	5,855	FB1
WS-12	8,700	6,020	2,680	0	0	0	0	Yes	8,700	0	FB1
WS-13	1,920	0	1,920	0	0	0	0	Dripedge	1,920	0	Dripedge
WS-14	4,350	960	0	1,165	60	2,165	0	No	0	0	None
WS-20	229,085	0	0	4,395	18,960	96,120	109,610	No	0	0	None
Totals	283,555	14,235	5,040	18,135					18,315	12,575	

* The project is not taking credit for the Existing / Offsite impervious and landscaped areas, but are included in the BMP sizing calculations for each treatment device.

Impervious Area = 19,275 sf
 New Impervious Area Requiring Treatment (90%) 18,311 sf
 Provided Impervious Treatment= 18,315 sf
 95.02% Impervious Area Treated

Developed Area = 37,410 sf
 Developed Area Requiring Treatment (75%)= 29,928 sf
 Developed Area Treated= 30,890 sf
 82.57% Developed Area Treated

ATTACHMENT 3

UNDERDRAINED FILTER BASIN SIZING CALCULATIONS

Underdrained Filter Basin FB1 Sizing Calculations

Tributary Watershed Areas

Tributary Impervious Area=	16,395 sf	(WS-10 thru 12 Impervious Area)
Tributary Landscaped Area=	16,310 sf	(WS-10 thru 12 Landscaped Area)

Water Quality Volume (WQV) Calculation

WQV (Required) = 1"xImpervious Area + 0.4"xLandscaped Area

WQV (Required) = 1,910 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
227.9	1,160	0
230	2,295	3,618
232	3,615	9,528
Outlet Elevation =	229.25	
Storage Volume Provided=	2,050 cf	> Required

Filter Bottom Calculation

Filter Area (Required) = 5% x Impervious Area + 2% x Landscaped Area

Filter Area Required = 1,146 sf

Filter Area Provided = 1,160 sf > Required

Sediment Pre-Treatment Calculation

Tributary Impervious Area Requiring Sanding: 13,275 sf

Required Sediment Forebay Volume :

10 storms/year x sanded area (acres) x 500lbs/acre-storm / 90 lbs/cf

Sediment Volume (Required) 16.9 cf

Runoff is collected in 1 Catch Basin with 2' Sump and long flat swale

CB with 2' sump = 25.13 cf of storage

Sediment Storage Volume Provided: 42.98 cf > Required

FILTER BASIN FB-1 ~ DRAINDOWN CALCULATION

25056-Post

Type III 24-hr WQ Storm Rainfall=1.96"

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Hydrograph for Pond FB1: Filter Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
5.00	0.00	0	227.90	0.00	0.00	0.00	0.00
6.00	0.00	0	227.90	0.00	0.00	0.00	0.00
7.00	0.01	0	227.90	0.01	0.01	0.00	0.00
8.00	0.01	0	227.90	0.01	0.01	0.00	0.00
9.00	0.01	0	227.90	0.01	0.01	0.00	0.00
10.00	0.02	0	227.90	0.02	0.02	0.00	0.00
11.00	0.03	16	227.91	0.02	0.02	0.00	0.00
12.00	0.44	325	228.17	0.02	0.02	0.00	0.00
13.00	0.12	1,544	228.97	0.03	0.03	0.00	0.00
14.00	0.08	1,784	229.11	0.03	0.03	0.00	0.00
15.00	0.06	1,925	229.18	0.03	0.03	0.00	0.00
16.00	0.04	2,009	229.23	0.03	0.03	0.00	0.00
17.00	0.03	2,046	229.25	0.03	0.03	0.00	0.00
18.00	0.03	2,056	229.25	0.03	0.03	0.00	0.00
19.00	0.02	2,046	229.25	0.03	0.03	0.00	0.00
20.00	0.02	2,028	229.24	0.03	0.03	0.00	0.00
21.00	0.02	2,004	229.23	0.03	0.03	0.00	0.00
22.00	0.02	1,973	229.21	0.03	0.03	0.00	0.00
23.00	0.02	1,937	229.19	0.03	0.03	0.00	0.00
24.00	0.01	1,895	229.17	0.03	0.03	0.00	0.00
25.00	0.00	1,811	229.12	0.03	0.03	0.00	0.00
26.00	0.00	1,718	229.07	0.03	0.03	0.00	0.00
27.00	0.00	1,625	229.02	0.03	0.03	0.00	0.00
28.00	0.00	1,533	228.96	0.03	0.03	0.00	0.00
29.00	0.00	1,441	228.91	0.03	0.03	0.00	0.00
30.00	0.00	1,350	228.86	0.03	0.03	0.00	0.00
31.00	0.00	1,260	228.80	0.02	0.02	0.00	0.00
32.00	0.00	1,170	228.75	0.02	0.02	0.00	0.00
33.00	0.00	1,081	228.69	0.02	0.02	0.00	0.00
34.00	0.00	993	228.63	0.02	0.02	0.00	0.00
35.00	0.00	905	228.58	0.02	0.02	0.00	0.00
36.00	0.00	818	228.52	0.02	0.02	0.00	0.00
37.00	0.00	732	228.46	0.02	0.02	0.00	0.00
38.00	0.00	647	228.40	0.02	0.02	0.00	0.00
39.00	0.00	562	228.34	0.02	0.02	0.00	0.00
40.00	0.00	478	228.28	0.02	0.02	0.00	0.00
41.00	0.00	395	228.22	0.02	0.02	0.00	0.00
42.00	0.00	312	228.16	0.02	0.02	0.00	0.00
43.00	0.00	231	228.09	0.02	0.02	0.00	0.00
44.00	0.00	150	228.03	0.02	0.02	0.00	0.00
45.00	0.00	71	227.96	0.02	0.02	0.00	0.00
46.00	0.00	0	227.90	0.00	0.00	0.00	0.00
47.00	0.00	0	227.90	0.00	0.00	0.00	0.00
48.00	0.00	0	227.90	0.00	0.00	0.00	0.00

STORM EVENT
THAT FILLS POND
TO CHANNEL
PROTECTION
VOLUME

POND AT CHANNEL PROTECTION
VOLUME AT 17 HRS
EMPTY AT 46 HRS
DRAINDOWN TIME = 46-17=29 HRS

SPILLWAY CALCULATION - FILTER BASIN FB-1

25056-Post

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

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Page 1

Summary for Pond FB1: Filter Pond

Inflow Area = 50,120 sf, 36.54% Impervious, Inflow Depth > 4.00" for 25-Year event
 Inflow = 3.58 cfs @ 12.11 hrs, Volume= 16,720 cf
 Outflow = 2.00 cfs @ 12.47 hrs, Volume= 9,080 cf, Atten= 44%, Lag= 21.5 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
 Tertiary = 2.00 cfs @ 12.47 hrs, Volume= 9,080 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 231.61' @ 12.47 hrs Surf.Area= 3,361 sf Storage= 8,185 cf

Plug-Flow detention time= 223.3 min calculated for 9,068 cf (54% of inflow)

Center-of-Mass det. time= 111.4 min (917.1 - 805.7)

Volume	Invert	Avail.Storage	Storage Description
#1	227.90'	9,528 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.90	1,160	0	0
228.00	1,205	118	118
230.00	2,295	3,500	3,618
232.00	3,615	5,910	9,528

Device	Routing	Invert	Outlet Devices
#1	Primary	225.00'	0.7" Vert. 3/4" Orifice in Cap X 0.00 C= 0.600
#2	Device 1	225.73'	4.0" Round 4" Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.73' / 225.00' S= 0.0182 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	227.90'	2.410 in/hr Exfiltration over Surface area
#4	Secondary	225.73'	6.0" Round 6" Culvert X 0.00 L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.73' / 225.00' S= 0.0192 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#5	Device 4	229.25'	2.7" Vert. (2) 2-3/4" Holes X 2.00 C= 0.600
#6	Device 4	231.20'	6.0" Horiz. 6" Riser C= 0.600 Limited to weir flow at low heads
#7	Tertiary	231.45'	12.0' long x 10.0' breadth Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Peak water surface = 231.61

Top of Berm = 231.60

Freeboard = 231.61 - 231.60 = 0.99' = 1.0'+/-

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

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Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=227.90' TW=0.00' (Dynamic Tailwater)

└─1=3/4" Orifice in Cap (Controls 0.00 cfs)

└─└─2=4" Culvert (Passes 0.00 cfs of 0.41 cfs potential flow)

└─└─└─3=Exfiltration (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=227.90' TW=0.00' (Dynamic Tailwater)

└─4=6" Culvert (Controls 0.00 cfs)

└─└─5=(2) 2-3/4" Holes (Controls 0.00 cfs)

└─└─└─6=6" Riser (Controls 0.00 cfs)

Tertiary OutFlow Max=1.95 cfs @ 12.47 hrs HW=231.61' TW=0.00' (Dynamic Tailwater)

└─7=Spillway (Weir Controls 1.95 cfs @ 1.00 fps)

ATTACHMENT 4

ROOFLINE DRIP EDGE SIZING CALCULATIONS

Drip Edge Sizing Calculations

WQV (Required) = 1.0"xImpervious Area + 0.4"xLandscaped Area

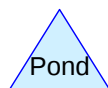
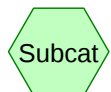
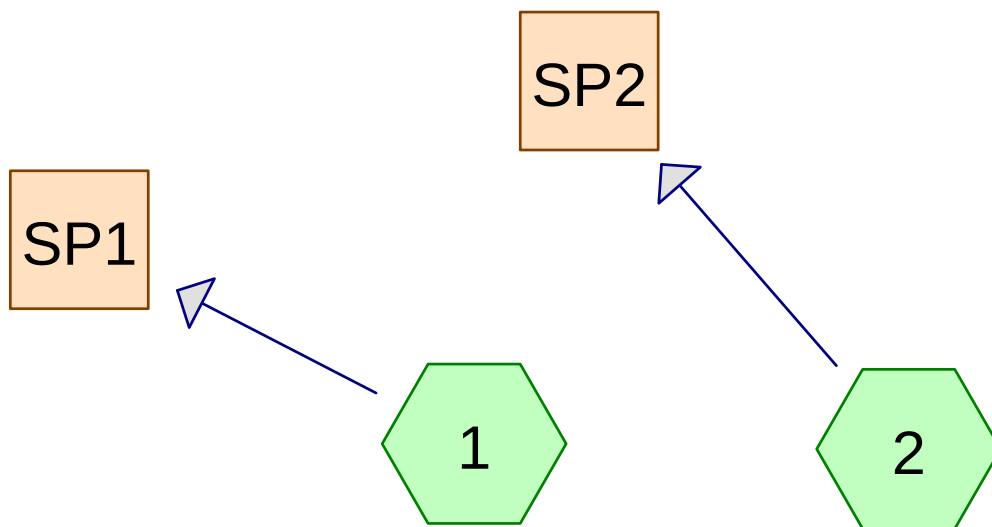
Void Ratio of Reservoir Layer 40%

Void Ratio of Filter Layer 30%

Roof Watershed	Tributary Roof Area (sf)	Water Quality Volume (Required)	Dripedge Surface Area (sf)	Reservoir Layer Depth (ft)	Filter Layer Depth (ft)	WQV (Provided)
WS-13	1,920	160.00	240.00	1.50	0.33	167.76

ATTACHMENT 5

STORMWATER MODEL OUTPUT



25056-Pre - Copy*Type III 24-hr 25-Year Rainfall=5.80"*

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Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1:Runoff Area=22,160 sf 0.27% Impervious Runoff Depth=2.74"
Flow Length=209' Tc=18.4 min CN=71 Runoff=1.13 cfs 5,057 cf**Subcatchment2:**Runoff Area=261,395 sf 7.25% Impervious Runoff Depth=3.21"
Flow Length=729' Tc=17.3 min CN=76 Runoff=16.06 cfs 69,884 cf**Reach SP1:**Inflow=1.13 cfs 5,057 cf
Outflow=1.13 cfs 5,057 cf**Reach SP2:**Inflow=16.06 cfs 69,884 cf
Outflow=16.06 cfs 69,884 cf

25056-Pre - Copy

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

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Summary for Subcatchment 1:

Runoff = 1.13 cfs @ 12.26 hrs, Volume= 5,057 cf, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	60	98	Pavement
	3,565	74	>75% Grass cover, Good, HSG C
	110	80	>75% Grass cover, Good, HSG D
	18,180	70	Woods, Good, HSG C
	245	77	Woods, Good, HSG D
	22,160	71	Weighted Average
	22,100		99.73% Pervious Area
	60		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.8	150	0.0750	0.14		Sheet Flow, A to B
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	59	0.1000	1.58		Shallow Concentrated Flow, B to C
					Woodland Kv= 5.0 fps
18.4	209	Total			

Summary for Subcatchment 2:

Runoff = 16.06 cfs @ 12.24 hrs, Volume= 69,884 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,170	98	Pavement
*	5,790	98	Buildings
	78,940	74	>75% Grass cover, Good, HSG C
	19,920	80	>75% Grass cover, Good, HSG D
	62,920	70	Woods, Good, HSG C
	80,655	77	Woods, Good, HSG D
	261,395	76	Weighted Average
	242,435		92.75% Pervious Area
	18,960		7.25% Impervious Area

25056-Pre - Copy

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

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	130	0.0380	0.23		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.10"
0.4	60	0.1650	2.84		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
2.3	220	0.1000	1.58		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
3.1	174	0.0350	0.94		Shallow Concentrated Flow, D to E Woodland Kv= 5.0 fps
2.0	145	0.0600	1.22		Shallow Concentrated Flow, E to F Woodland Kv= 5.0 fps
17.3	729	Total			

Summary for Reach SP1:

Inflow Area = 22,160 sf, 0.27% Impervious, Inflow Depth = 2.74" for 25-Year event
Inflow = 1.13 cfs @ 12.26 hrs, Volume= 5,057 cf
Outflow = 1.13 cfs @ 12.26 hrs, Volume= 5,057 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Reach SP2:

Inflow Area = 261,395 sf, 7.25% Impervious, Inflow Depth = 3.21" for 25-Year event
Inflow = 16.06 cfs @ 12.24 hrs, Volume= 69,884 cf
Outflow = 16.06 cfs @ 12.24 hrs, Volume= 69,884 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

25056-Pre - Copy*Type III 24-hr 2-Year Rainfall=3.10"*

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Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1:Runoff Area=22,160 sf 0.27% Impervious Runoff Depth=0.82"
Flow Length=209' Tc=18.4 min CN=71 Runoff=0.30 cfs 1,512 cf**Subcatchment2:**Runoff Area=261,395 sf 7.25% Impervious Runoff Depth=1.08"
Flow Length=729' Tc=17.3 min CN=76 Runoff=5.18 cfs 23,590 cf**Reach SP1:**Inflow=0.30 cfs 1,512 cf
Outflow=0.30 cfs 1,512 cf**Reach SP2:**Inflow=5.18 cfs 23,590 cf
Outflow=5.18 cfs 23,590 cf

25056-Pre - Copy*Type III 24-hr 10-Year Rainfall=4.60"*

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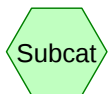
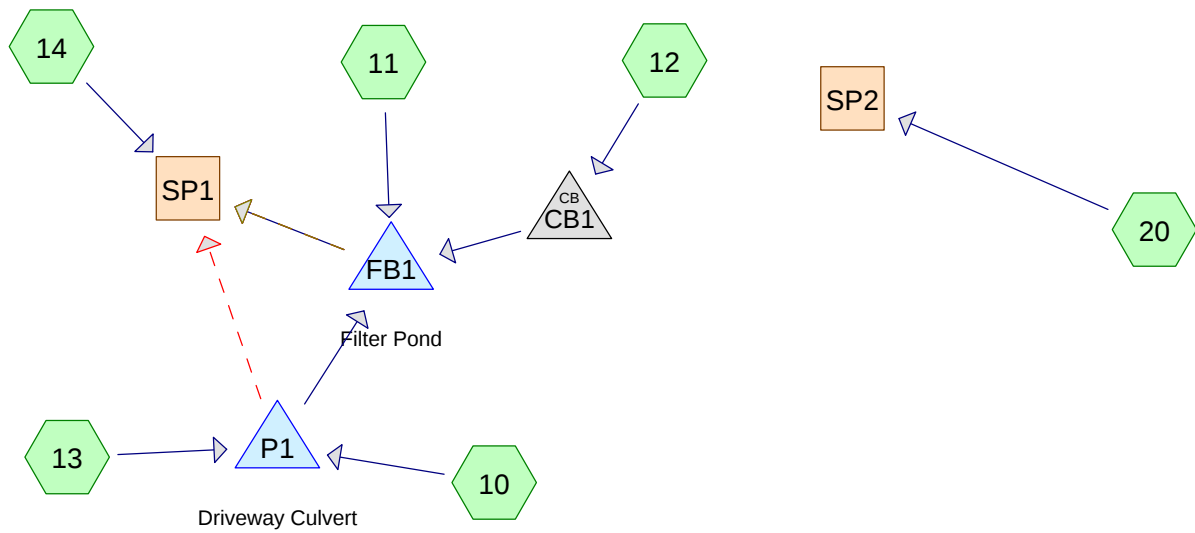
Page 2

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

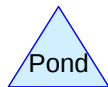
Subcatchment1:Runoff Area=22,160 sf 0.27% Impervious Runoff Depth=1.82"
Flow Length=209' Tc=18.4 min CN=71 Runoff=0.74 cfs 3,359 cf**Subcatchment2:**Runoff Area=261,395 sf 7.25% Impervious Runoff Depth=2.21"
Flow Length=729' Tc=17.3 min CN=76 Runoff=11.00 cfs 48,138 cf**Reach SP1:**Inflow=0.74 cfs 3,359 cf
Outflow=0.74 cfs 3,359 cf**Reach SP2:**Inflow=11.00 cfs 48,138 cf
Outflow=11.00 cfs 48,138 cf



Subcat



Reach



Pond



Link

Routing Diagram for 25056-Post

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25056-Post

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

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Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10: Runoff Area=29,185 sf 11.32% Impervious Runoff Depth=3.50"
Flow Length=427' Tc=19.3 min CN=79 Runoff=1.88 cfs 8,516 cf

Subcatchment11: Runoff Area=10,315 sf 42.56% Impervious Runoff Depth=4.01"
Tc=6.0 min CN=84 Runoff=1.07 cfs 3,447 cf

Subcatchment12: Runoff Area=8,700 sf 100.00% Impervious Runoff Depth>5.40"
Tc=6.0 min CN=98 Runoff=1.11 cfs 3,916 cf

Subcatchment13: Runoff Area=1,920 sf 100.00% Impervious Runoff Depth>5.40"
Tc=6.0 min CN=98 Runoff=0.24 cfs 864 cf

Subcatchment14: Runoff Area=4,350 sf 23.45% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=80 Runoff=0.41 cfs 1,305 cf

Subcatchment20: Runoff Area=229,085 sf 8.28% Impervious Runoff Depth=3.21"
Flow Length=731' Tc=16.0 min CN=76 Runoff=14.55 cfs 61,246 cf

Reach SP1: Inflow=1.12 cfs 17,968 cf
Outflow=1.12 cfs 17,968 cf

Reach SP2: Inflow=14.55 cfs 61,246 cf
Outflow=14.55 cfs 61,246 cf

Pond CB1: Peak Elev=234.13' Inflow=1.11 cfs 3,916 cf
12.0" Round Culvert n=0.013 L=112.0' S=0.0089 ' Outflow=1.11 cfs 3,916 cf

Pond FB1: Filter Pond Peak Elev=231.45' Storage=7,642 cf Inflow=3.58 cfs 16,743 cf
Primary=0.03 cfs 3,937 cf Secondary=1.03 cfs 12,726 cf Tertiary=0.00 cfs 0 cf Outflow=1.06 cfs 16,663 cf

Pond P1: Driveway Culvert Peak Elev=231.53' Storage=26 cf Inflow=1.99 cfs 9,380 cf
Primary=1.99 cfs 9,380 cf Secondary=0.00 cfs 0 cf Outflow=1.99 cfs 9,380 cf

25056-Post

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

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Summary for Subcatchment 10:

Runoff = 1.88 cfs @ 12.27 hrs, Volume= 8,516 cf, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,925	98	New Pavement
*	380	98	New Building
*	3,435	74	New Grass C
*	3,285	80	New Grass D
*	1,525	74	Existing Grass C
*	2,210	80	Existing Grass D
	15,135	77	Woods, Good, HSG D
	290	77	Woods, Good, HSG D
	29,185	79	Weighted Average
	25,880		88.68% Pervious Area
	3,305		11.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	150	0.0900	0.15		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.10"
2.4	102	0.0200	0.71		Shallow Concentrated Flow, B to C Woodland Kv= 5.0 fps
0.1	15	0.5000	4.95		Shallow Concentrated Flow, C to D Short Grass Pasture Kv= 7.0 fps
0.3	160	0.0200	9.66	115.94	Trap/Vee/Rect Channel Flow, D to E Bot.W=1.00' D=2.00' Z= 2.0 & 3.0 ' Top.W=11.00' n= 0.022 Earth, clean & straight
19.3	427	Total			

Summary for Subcatchment 11:

Runoff = 1.07 cfs @ 12.09 hrs, Volume= 3,447 cf, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	4,330	98	New Pavement
*	60	98	New Building
*	5,855	74	New Grass C
	70	70	Woods, Good, HSG C
	10,315	84	Weighted Average
	5,925		57.44% Pervious Area
	4,390		42.56% Impervious Area

25056-Post

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

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 12:

Runoff = 1.11 cfs @ 12.09 hrs, Volume= 3,916 cf, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,680	98	New Building
*	6,020	98	New Pavement
	8,700	98	Weighted Average
	8,700		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 13:

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 864 cf, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,920	98	New Building
	1,920		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 14:

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 1,305 cf, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

25056-Post

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

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	Area (sf)	CN	Description
*	960	98	New Pavement
*	60	98	Existing Pavement
*	1,165	74	New Grass C
*	2,165	74	Existing Grass C
	4,350	80	Weighted Average
	3,330		76.55% Pervious Area
	1,020		23.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 20:

Runoff = 14.55 cfs @ 12.22 hrs, Volume= 61,246 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,170	98	Existing Pavement
*	5,790	98	Existing Buildings
*	3,645	74	New Grass C
*	750	80	New Grass D
*	78,405	74	Existing Grass C
*	17,715	80	Existing Grass D
	56,435	70	Woods, Good, HSG C
	53,175	77	Woods, Good, HSG D
	229,085	76	Weighted Average
	210,125		91.72% Pervious Area
	18,960		8.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	130	0.0380	0.23		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.10"
0.4	60	0.1650	2.84		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
2.3	220	0.1000	1.58		Shallow Concentrated Flow, C to D Woodland Kv= 5.0 fps
3.6	200	0.0350	0.94		Shallow Concentrated Flow, D to E Woodland Kv= 5.0 fps
0.0	8	0.5000	4.95		Shallow Concentrated Flow, E to F Short Grass Pasture Kv= 7.0 fps
0.2	113	0.0200	9.72	136.02	Trap/Vee/Rect Channel Flow, F to G Bot.W=1.00' D=2.00' Z= 3.0 '/' Top.W=13.00' n= 0.022 Earth, clean & straight
16.0	731	Total			

Summary for Reach SP1:

Inflow Area = 54,470 sf, 35.50% Impervious, Inflow Depth > 3.96" for 25-Year event
 Inflow = 1.12 cfs @ 12.65 hrs, Volume= 17,968 cf
 Outflow = 1.12 cfs @ 12.65 hrs, Volume= 17,968 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Reach SP2:

Inflow Area = 229,085 sf, 8.28% Impervious, Inflow Depth = 3.21" for 25-Year event
 Inflow = 14.55 cfs @ 12.22 hrs, Volume= 61,246 cf
 Outflow = 14.55 cfs @ 12.22 hrs, Volume= 61,246 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond CB1:

Inflow Area = 8,700 sf, 100.00% Impervious, Inflow Depth > 5.40" for 25-Year event
 Inflow = 1.11 cfs @ 12.09 hrs, Volume= 3,916 cf
 Outflow = 1.11 cfs @ 12.09 hrs, Volume= 3,916 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.11 cfs @ 12.09 hrs, Volume= 3,916 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 234.13' @ 12.09 hrs

Flood Elev= 237.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	233.50'	12.0" Round Culvert L= 112.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 233.50' / 232.50' S= 0.0089 ' S= 0.0089 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.09 hrs HW=234.12' TW=230.23' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 1.08 cfs @ 2.11 fps)

Summary for Pond FB1: Filter Pond

Inflow Area = 50,120 sf, 36.54% Impervious, Inflow Depth > 4.01" for 25-Year event
 Inflow = 3.58 cfs @ 12.11 hrs, Volume= 16,743 cf
 Outflow = 1.06 cfs @ 12.67 hrs, Volume= 16,663 cf, Atten= 70%, Lag= 33.8 min
 Primary = 0.03 cfs @ 12.67 hrs, Volume= 3,937 cf
 Secondary = 1.03 cfs @ 12.67 hrs, Volume= 12,726 cf
 Tertiary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 231.45' @ 12.67 hrs Surf.Area= 3,252 sf Storage= 7,642 cf

Plug-Flow detention time= 271.5 min calculated for 16,663 cf (100% of inflow)

Center-of-Mass det. time= 268.5 min (1,074.2 - 805.8)

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Volume	Invert	Avail.Storage	Storage Description
#1	227.90'	9,528 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.90	1,160	0	0
228.00	1,205	118	118
230.00	2,295	3,500	3,618
232.00	3,615	5,910	9,528

Device	Routing	Invert	Outlet Devices
#1	Primary	225.00'	0.7" Vert. 3/4" Orifice in Cap C= 0.600
#2	Device 1	225.73'	4.0" Round 4" Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.73' / 225.00' S= 0.0182 ' /' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	227.90'	2.410 in/hr Exfiltration over Surface area
#4	Secondary	225.73'	6.0" Round 6" Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.73' / 225.00' S= 0.0192 ' /' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#5	Device 4	229.25'	2.7" Vert. (2) 2-3/4" Holes X 2.00 C= 0.600
#6	Device 4	231.20'	6.0" Horiz. 6" Riser C= 0.600 Limited to weir flow at low heads
#7	Tertiary	231.45'	12.0' long x 10.0' breadth Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.03 cfs @ 12.67 hrs HW=231.45' TW=0.00' (Dynamic Tailwater)

↑ **1=3/4" Orifice in Cap** (Orifice Controls 0.03 cfs @ 12.20 fps)
 ↑ **2=4" Culvert** (Passes 0.03 cfs of 0.64 cfs potential flow)
 ↑ **3=Exfiltration** (Passes 0.03 cfs of 0.18 cfs potential flow)

Secondary OutFlow Max=1.03 cfs @ 12.67 hrs HW=231.45' TW=0.00' (Dynamic Tailwater)

↑ **4=6" Culvert** (Passes 1.03 cfs of 1.74 cfs potential flow)
 ↑ **5=(2) 2-3/4" Holes** (Orifice Controls 0.55 cfs @ 6.96 fps)
 ↑ **6=6" Riser** (Orifice Controls 0.47 cfs @ 2.41 fps)

Tertiary OutFlow Max=0.00 cfs @ 5.00 hrs HW=227.90' TW=0.00' (Dynamic Tailwater)

↑ **7=Spillway** (Controls 0.00 cfs)

Summary for Pond P1: Driveway Culvert

Inflow Area = 31,105 sf, 16.80% Impervious, Inflow Depth > 3.62" for 25-Year event
 Inflow = 1.99 cfs @ 12.26 hrs, Volume= 9,380 cf
 Outflow = 1.99 cfs @ 12.26 hrs, Volume= 9,380 cf, Atten= 0%, Lag= 0.2 min
 Primary = 1.99 cfs @ 12.26 hrs, Volume= 9,380 cf
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 231.53' @ 12.57 hrs Surf.Area= 41 sf Storage= 26 cf

Plug-Flow detention time= 1.3 min calculated for 9,380 cf (100% of inflow)

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

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Center-of-Mass det. time= 0.5 min (824.6 - 824.1)

Volume	Invert	Avail.Storage	Storage Description
#1	230.50'	394 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
230.50	10	0	0
232.00	55	49	49
234.00	290	345	394

Device	Routing	Invert	Outlet Devices
#1	Primary	230.50'	12.0" Round Culvert L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 230.50' / 230.25' S= 0.0056 ' / ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	233.00'	3.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.97 cfs @ 12.26 hrs HW=231.47' TW=230.90' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 1.97 cfs @ 3.24 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=230.52' TW=0.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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

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Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10:Runoff Area=29,185 sf 11.32% Impervious Runoff Depth=1.26"
Flow Length=427' Tc=19.3 min CN=79 Runoff=0.66 cfs 3,070 cf**Subcatchment11:**Runoff Area=10,315 sf 42.56% Impervious Runoff Depth=1.60"
Tc=6.0 min CN=84 Runoff=0.44 cfs 1,374 cf**Subcatchment12:**Runoff Area=8,700 sf 100.00% Impervious Runoff Depth>2.82"
Tc=6.0 min CN=98 Runoff=0.59 cfs 2,043 cf**Subcatchment13:**Runoff Area=1,920 sf 100.00% Impervious Runoff Depth>2.82"
Tc=6.0 min CN=98 Runoff=0.13 cfs 451 cf**Subcatchment14:**Runoff Area=4,350 sf 23.45% Impervious Runoff Depth=1.33"
Tc=6.0 min CN=80 Runoff=0.15 cfs 480 cf**Subcatchment20:**Runoff Area=229,085 sf 8.28% Impervious Runoff Depth=1.08"
Flow Length=731' Tc=16.0 min CN=76 Runoff=4.67 cfs 20,674 cf**Reach SP1:**Inflow=0.30 cfs 7,403 cf
Outflow=0.30 cfs 7,403 cf**Reach SP2:**Inflow=4.67 cfs 20,674 cf
Outflow=4.67 cfs 20,674 cf**Pond CB1:**Peak Elev=233.94' Inflow=0.59 cfs 2,043 cf
12.0" Round Culvert n=0.013 L=112.0' S=0.0089 ' Outflow=0.59 cfs 2,043 cf**Pond FB1: Filter Pond**Peak Elev=229.79' Storage=3,154 cf Inflow=1.51 cfs 6,937 cf
Primary=0.03 cfs 3,703 cf Secondary=0.25 cfs 3,220 cf Tertiary=0.00 cfs 0 cf Outflow=0.28 cfs 6,923 cf**Pond P1: Driveway Culvert**Peak Elev=231.01' Storage=9 cf Inflow=0.72 cfs 3,520 cf
Primary=0.72 cfs 3,520 cf Secondary=0.00 cfs 0 cf Outflow=0.72 cfs 3,520 cf

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

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Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10: Runoff Area=29,185 sf 11.32% Impervious Runoff Depth=2.46"
Flow Length=427' Tc=19.3 min CN=79 Runoff=1.32 cfs 5,984 cf

Subcatchment11: Runoff Area=10,315 sf 42.56% Impervious Runoff Depth=2.91"
Tc=6.0 min CN=84 Runoff=0.79 cfs 2,499 cf

Subcatchment12: Runoff Area=8,700 sf 100.00% Impervious Runoff Depth>4.26"
Tc=6.0 min CN=98 Runoff=0.88 cfs 3,085 cf

Subcatchment13: Runoff Area=1,920 sf 100.00% Impervious Runoff Depth>4.26"
Tc=6.0 min CN=98 Runoff=0.19 cfs 681 cf

Subcatchment14: Runoff Area=4,350 sf 23.45% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=80 Runoff=0.29 cfs 923 cf

Subcatchment20: Runoff Area=229,085 sf 8.28% Impervious Runoff Depth=2.21"
Flow Length=731' Tc=16.0 min CN=76 Runoff=9.92 cfs 42,188 cf

Reach SP1: Inflow=0.56 cfs 13,111 cf
Outflow=0.56 cfs 13,111 cf

Reach SP2: Inflow=9.92 cfs 42,188 cf
Outflow=9.92 cfs 42,188 cf

Pond CB1: Peak Elev=234.05' Inflow=0.88 cfs 3,085 cf
12.0" Round Culvert n=0.013 L=112.0' S=0.0089 ' Outflow=0.88 cfs 3,085 cf

Pond FB1: Filter Pond Peak Elev=230.84' Storage=5,766 cf Inflow=2.64 cfs 12,249 cf
Primary=0.03 cfs 3,853 cf Secondary=0.46 cfs 8,335 cf Tertiary=0.00 cfs 0 cf Outflow=0.50 cfs 12,188 cf

Pond P1: Driveway Culvert Peak Elev=231.27' Storage=17 cf Inflow=1.40 cfs 6,665 cf
Primary=1.40 cfs 6,665 cf Secondary=0.00 cfs 0 cf Outflow=1.40 cfs 6,665 cf

ATTACHMENT 6

INSPECTION, MAINTENANCE AND HOUSEKEEPING PLAN



INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

302 NORTH BUSINESS PARK – COMMERCIAL BUILDING

WINDHAM, MAINE

Responsible Party

Owner: **Lussier Apartments, LLC**
243 Roosevelt Trail
Windham, ME 04062

Prepared by

Engineer: **DM Roma Consulting Engineers**
Designer: Jayson Haskell, PE #13002
DEP Erosion Control Certification #4769

The owner/applicant is responsible for the maintenance of all stormwater management structures and related site components and the keeping of a maintenance log book with service records. Records of all inspections and maintenance work performed must be kept on file with the owner and retained for a minimum of five years. The maintenance log will be made available to the Town upon request. At a minimum, the maintenance of stormwater management systems will be performed on the prescribed schedule.

The procedures outlined in this plan are provided as a general overview of the anticipated practices to be utilized on this site. In some instances, additional measures may be required due to unexpected conditions. *The Maine Erosion and Sedimentation Control BMP and Stormwater Management for Maine: Best Management Practices* Manuals published by the Maine Department of Environmental Protection (MDEP) should be referenced for additional information.

During Construction

- 1. Inspection and Corrective Action:** It is the contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. Inspection shall occur on all disturbed and impervious areas, erosion control measures, material storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected, including winter work, at least once a week as well as 24 hours before and after a storm event generating more than 0.5 inch of rainfall over a 24-hour period and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.

2. **Maintenance:** Erosion controls shall be maintained in effective operating condition until areas are permanently stabilized. If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any rainfall event.
3. **Construction vehicles and equipment:** Construction vehicles and equipment shall not be driven or stored within any proposed stormwater treatment pond.
4. **Documentation:** A report summarizing the inspections and any corrective action taken must be maintained on site. The log must include the name(s) and qualifications of the person making the inspections; the date(s) of the inspections; and the major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to Town staff, and a copy must be provided upon request. The owner shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

Housekeeping

1. **Spill prevention:** Controls must be used to prevent pollutants from construction and waste materials on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.
2. **Groundwater protection:** During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

3. **Fugitive sediment and dust:** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.
4. **Debris and other materials:** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.
5. **Excavation de-watering:** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.
6. **Authorized Non-stormwater discharges:** It is the contractor's responsibility to identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
 - (a) Discharges from firefighting activity;
 - (b) Fire hydrant flushings;
 - (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
 - (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
 - (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
 - (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
 - (g) Uncontaminated air conditioning or compressor condensate;
 - (h) Uncontaminated groundwater or spring water;
 - (i) Foundation or footer drain-water where flows are not contaminated;
 - (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));

- (k) Potable water sources including waterline flushings; and
- (l) Landscape irrigation.

- 7. Unauthorized non-stormwater discharges:** Approval from the Town does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Section 6 above. Specifically, the Town's approval does not authorize discharges of the following:
- (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
 - (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
 - (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
 - (d) Toxic or hazardous substances from a spill or other release.

Post construction

- 1. Inspection and Corrective Action:** All measures must be maintained by the owner in effective operating condition. A qualified third-party inspector hired by the owner shall at least annually inspect the stormwater management facilities. This person should have knowledge of erosion and stormwater control, including the standards and conditions of the site's approvals. The following areas, facilities, and measures must be inspected, and identified deficiencies must be corrected. Areas, facilities, and measures other than those listed below may also require inspection on a specific site.
- A. Vegetated Areas:** Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.
 - B. Vegetated Swales:** Inspect swales in the spring, late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, control vegetative growth that could obstruct flow, and repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Grass to be mowed to a minimum height of six inches. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.
 - C. Culverts:** Inspect culverts in the spring, late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the riprap inlet, at the riprap outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.

D. Catch Basins: Inspect and, if required, clean out catch basins at least once a year, preferably in early spring. Clean out must include the removal and legal disposal of any accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins. If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils (using oil-absorptive pads).

E. Underdrained Filter Basin: The filter basin is not intended to function as snow storage areas. Inspector to verify that winter plowing operations are not dumping or pushing snow into the basins. The basins shall also not be used for vehicle or heavy equipment storage. Basins should be inspected after several major storm events (0.5 inches rainfall over 24 hours) to determine drawdown time during the first year. The basins to be inspected every six months thereafter with at least one inspection after a major storm event.

The basins should drain dry within 24 to 48 hours following a one-inch storm. If ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity. If water ponds on the surface of the bed for more than 72 hours, the top several inches of the filter shall be replaced with fresh material. Inspect for debris and sediment build up in the basin and remove as needed. Mowing of the basins can only occur semi-annually to a height of no less than 6 inches utilizing a hand-held string trimmer or push-mower. Any bare areas or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. The basins should also be inspected annually for destabilization of side slopes, embankment settling and other signs of structural failure.

F. Emergency Spillway: Spillways should be inspected semi-annually and following major storm events for the first year and every six months thereafter to remove any obstructions to flow. Any woody vegetation growing through riprap lining must be removed. Replace riprap on areas where any underlying filter fabric is showing through the stone or where stones have been dislodged.

G. Roofline Drip edges: The drip edges should be inspected semi-annually and following major storm events for the first year and every six months thereafter. The reservoir crushed stone should drain within 24 to 48 hours following a major storm event. If ponding exceeds 48 hours, the stone reservoir course shall be removed and the filter bed be rototilled to reestablish the soil's filtration capacity. If water ponds in the reservoir course for more than 72 hours, the top several inches of the filter shall be replaced with fresh material. Inspect for debris and sediment build up at surface and remove as needed. The drip edges are part of the stormwater management plan and cannot be paved over or altered in anyway.

H. Regular Maintenance: Clear accumulations of winter sand along roadway once a year, preferably in the spring. Accumulations on pavement may be removed by

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

- I. **Documentation:** Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Town staff upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization. Attached is a sample log.

Duration of Maintenance

Perform maintenance as described.

MAINTENANCE LOG

302 NORTH BUSINESS PARK – COMMERCIAL BUILDING WINDHAM, MAINE

(GENERAL INSPECTION FORM PAGE 1 OF 1)

The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the Town upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Vegetated Areas	Inspect slopes and embankments early in Spring.			
Vegetated Swales	Inspect after major rainfall event			
	Inspect for erosion or slumping & repair			
	Mowed at least annually.			
Culverts	Inspect semiannually and after major rainfall.			
	Repair erosion at inlet or outlet of pipe.			
	Repair displaced riprap within inlet and outlet aprons.			
	Clean accumulated sediment in culverts when >20% full.			
Catch Basins	Inspect to ensure that structure is properly draining.			
	Remove accumulated sediment semiannually.			
	Inspect grates/inlets and remove debris as needed.			

MAINTENANCE LOG

302 NORTH BUSINESS PARK – COMMERCIAL BUILDING WINDHAM, MAINE

(GENERAL INSPECTION FORM PAGE 2 OF 2)

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Roofline Dripedges	Check after each rainfall event to ensure that the stone reservoir drains within 24-48 hours.			
	Replace top several inches of filter if reservoir does not drain within 72 hours.			
	Inspect and remove sediment or debris build up on the surface of the stone			
	Inspect semi-annually for erosion or sediment accumulation and repair as necessary.			
Regular Maintenance	Clear accumulation of winter sand in paved areas annually.			

MAINTENANCE LOG

302 NORTH BUSINESS PARK – COMMERCIAL BUILDING

WINDHAM, MAINE

(UNDERDRAINED FILTER BASIN)

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Underdrained Filter Basin	Check after each rainfall event to ensure that pond drains within 24-48 hours.			
	Replace top several inches of filter if pond does not drain within 72 hours.			
	Mow grass no more than twice a year to no less than 6 inches in height.			
	Inspect semi-annually for erosion or sediment accumulation and repair as necessary.			
	Inspector to verify basin not utilized for snow storage			
	Inspector to verify basin not utilized for vehicle or heavy equipment storage.			
Outlet Control Riser Pipe	Inspect to ensure that the riser is properly draining.			
	Remove accumulated sediment semiannually.			
	Inspect grates/inlets and remove debris as needed.			
Emergency Spillway	Inspect and remove obstructions as necessary.			
	Remove woody vegetation.			
	Replace riprap as necessary.			

SECTION 17

SOILS INFORMATION

Section 17 – Soils Information

The Medium Intensity Soil Survey published by the USDA Natural Resources Conservation Service indicates that the existing soils on the property are classified as Paxton very stony fine sandy loam, Scantic silt loam and Woodbridge fine sandy loam. These soils have a Hydrologic Soil rating of C, D and C respectively. The Medium Intensity Soil Survey is included in Section 16 of this application. Additional soils data for the septic system design is contained in Section 19.

SECTION 18

WATER SUPPLY FOR DOMESTIC AND FIRE PROTECTION USE

Section 18 – Water Supply for Domestic and Fire Protection Use

The project will require a new on-site well to be installed. Fire protection will be provided by an existing public hydrant that is located at the intersection of Albion Road and Roosevelt Trail.

SECTION 19

PROVISIONS FOR WASTEWATER DISPOSAL

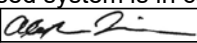
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 Fax: (207) 287-3165

PROPERTY LOCATION		>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<			
City, Town, or Plantation	Windham	Town _____	Permit# _____		
Street or Road	Roosevelt Trail - Map 10A, Lot 25A	Date Permit Issued / / Fee: \$ _____ Double Fee Charged []			
Subdivision, Lot #		L.P.I. # _____			
OWNER/APPLICANT INFORMATION		The Subsurface Wastewater Disposal System shall not be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.			
Name (last, first, MI)	Lussier Apartments, LLC			☐ Owner ☐ Town ☐ State	
Mailing Address of Owner/Applicant	243 Roosevelt Trail Windham, ME 04062				
Daytime Tel. #				Municipal Tax Map # _____ Lot # _____	
OWNER OR APPLICANT STATEMENT		CAUTION: INSPECTION REQUIRED			
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved			
_____ Signature of Owner or Applicant Date		_____ Local Plumbing Inspector Signature (2nd) date approved			

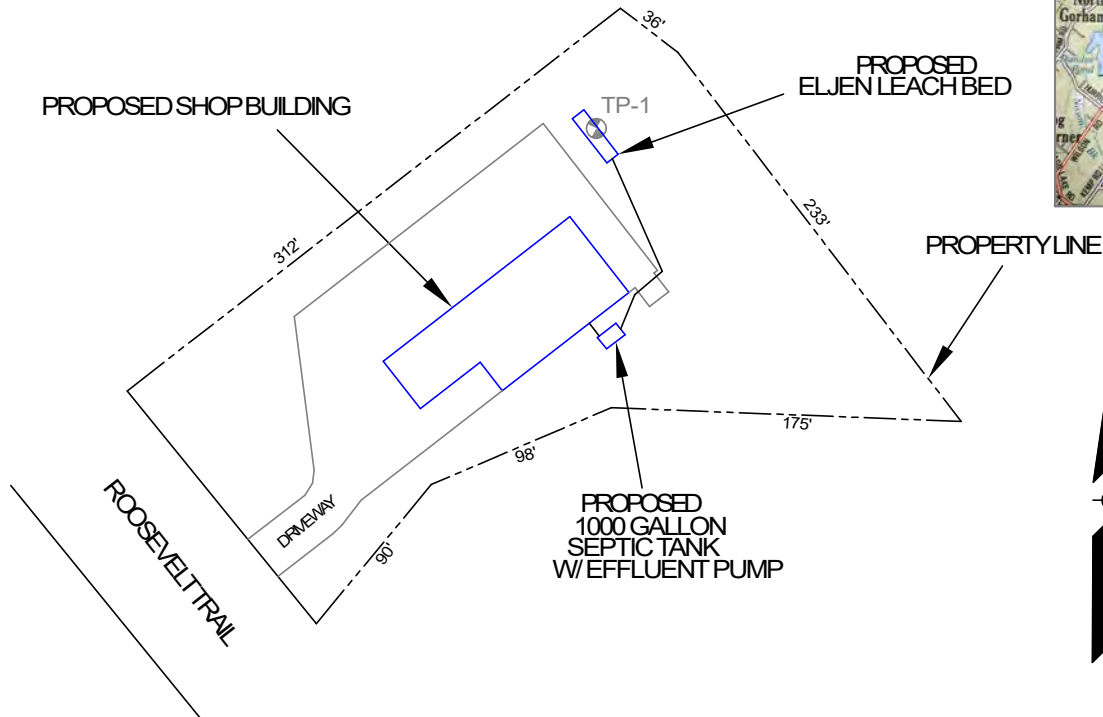
PERMIT INFORMATION			
TYPE OF APPLICATION ×1. First Time System 2. Replacement System Type replaced: _____ Year installed: _____ 3. Expanded System a. Minor Expansion b. Major Expansion 4. Experimental System 5. Seasonal Conversion	THIS APPLICATION REQUIRES ×1. No Rule Variance 2. First Time System Variance a. Local Plumbing Inspector Approval b. State & Local Plumbing Inspector Approval 3. Replacement System Variance a. Local Plumbing Inspector Approval b. State & Local Plumbing Inspector Approval 4. Minimum Lot Size Variance 5. Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS ×1. Complete Non-engineered System 2. Primitive System (graywater & alt. toilet) 3. Alternative Toilet, specify: _____ 4. Non-engineered Treatment Tank (only) 5. Holding Tank, _____ gallons 6. Non-engineered Disposal Field (only) 7. Separated Laundry System 8. Complete Engineered System (2000 gpd or more) 9. Engineered Treatment Tank (only) 10. Engineered Disposal Field (only) 11. Pre-treatment, specify: _____ 12. Miscellaneous Components	
SIZE OF PROPERTY 1.25 SQ. FT. × ACRES	DISPOSAL SYSTEM TO SERVE 1. Single Family Dwelling Unit, No. of Bedrooms: _____ 2. Multiple Family Dwelling, No. of Units: _____ ×3. Other: <u>shop - 10 employees</u> (specify) Current Use Seasonal Year Round Undeveloped		
SHORELAND ZONING Yes ×No	TYPE OF WATER SUPPLY ×1. Drilled Well 2. Dug Well 3. Private 4. Public 5. Other		

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
TREATMENT TANK ×1. Concrete ×a. Regular b. Low Profile 2. Plastic 3. Other: _____ CAPACITY: <u>1000</u> GAL.	DISPOSAL FIELD TYPE & SIZE 1. Stone Bed 2. Stone Trench ×3. Proprietary Device a. cluster array ×c. Linear b. regular load d. H-20 load 4. Other: _____ SIZE: <u>615</u> × sq. ft. lin. ft.	GARBAGE DISPOSAL UNIT ×1. No 2. Yes 3. Maybe If Yes or Maybe, specify one below: a. multi-compartment tank b. _____ tanks in series c. increase in tank capacity d. Filter on Tank Outlet	DESIGN FLOW <u>150</u> gallons per day BASED ON: ×1. Table 501.1 (dwelling unit(s)) 2. Table 501.2 (other facilities) SHOW CALCULATIONS for other facilities 10 employees @ 15gpd 3. Section 503.0 (meter readings) ATTACH WATER METER DATA
SOIL DATA & DESIGN CLASS PROFILE CONDITION 8 / C at Observation Hole # <u>TP-1</u> Depth <u>13</u> " of Most Limiting Soil Factor	DISPOSAL FIELD SIZING 1. Small---2.0 sq. ft. / gpd 2. Medium---2.6 sq. ft. / gpd 3. Medium---Large 3.3 sq. ft. / gpd ×4. Large---4.1 sq. ft. / gpd 5. Extra Large---5.0 sq. ft. / gpd	EFFLUENT/EJECTOR PUMP 1. Not Required 2. May Be Required ×3. Required Specify only for engineered systems: DOSE: _____ gallons	LATITUDE AND LONGITUDE at center of disposal area Lat. <u>43</u> ° <u>46</u> ' <u>47.75</u> " S Lon. <u>70</u> ° <u>23</u> ' <u>5.93</u> " S

SITE EVALUATOR STATEMENT		
I certify that on <u>10/2/2025</u> (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).		
 Site Evaluator Signature	<u>391</u> SE #	<u>10/6/2025</u> Date
Alexander A. Finamore Site Evaluator Name Printed	(207) 650-4313 Telephone Number	alfinamore@yahoo.com E-mail Address
Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.		

Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Owner or Applicant Name
Lussier Apartments, LLC



Soil Classification	Slope	Limiting Factor	☐ Ground Water
			☐ Restrictive Layer
Profile Condition	%	"	☐ Bedrock
			☐ Pit Depth

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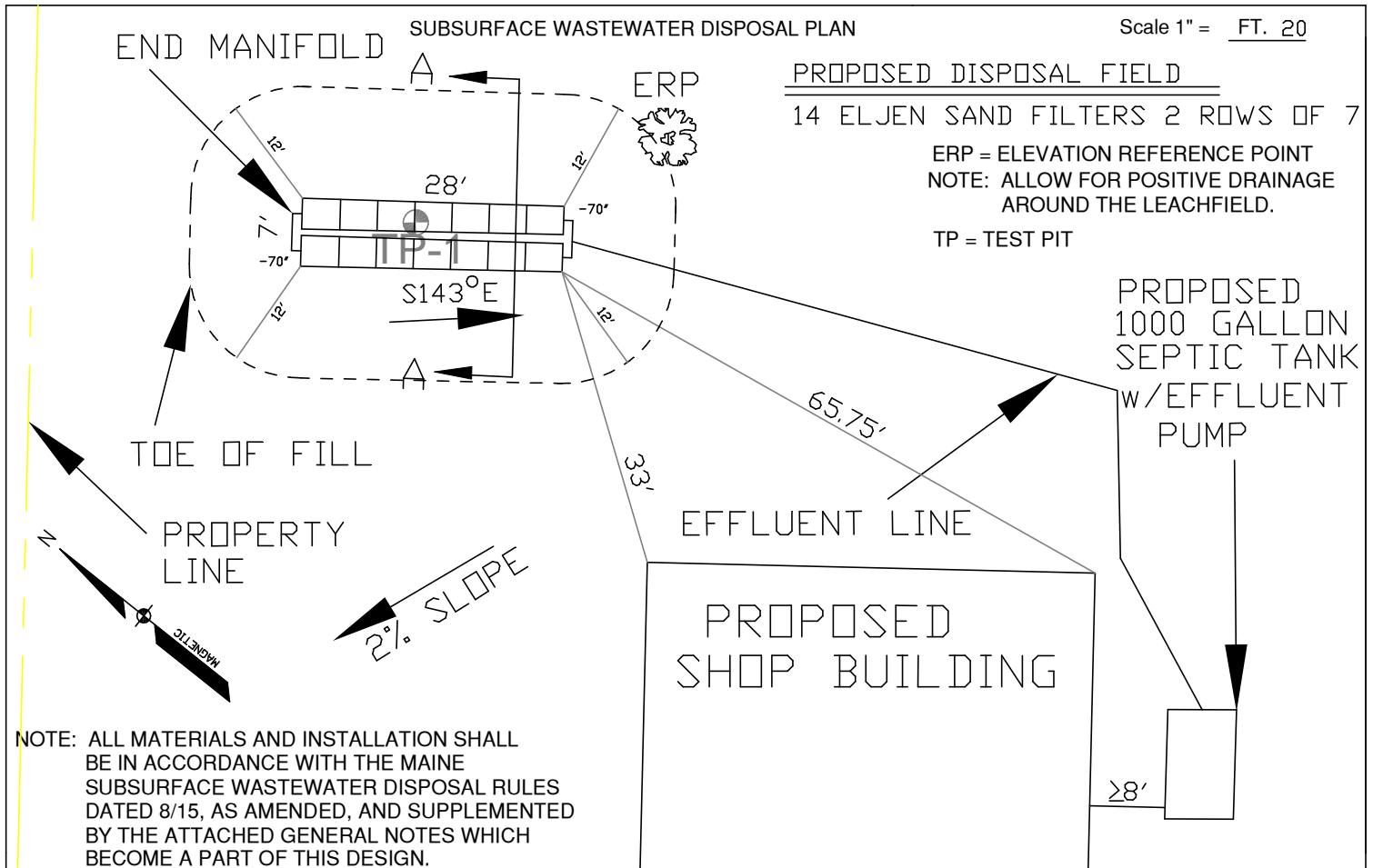
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City, Plantation
Windham

Street, Road, Subdivision
Roosevelt Trail - Map 10A, Lot 25A

Owner or Applicant Name
Lussier Apartments, LLC



BACKFILL REQUIREMENTS

Depth of Fill (Upslope)	31"
Depth of Fill (Downslope)	31"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	-39"
Top of Distribution Pipe or Proprietary Device	-47"
Bottom of Disposal Area (Bottom of Eljen)	-58"

ELEVATION REFERENCE POINT

Location & Description	Nail up 43"
in a 9" DBH Red Oak	
Reference Elevation	0"

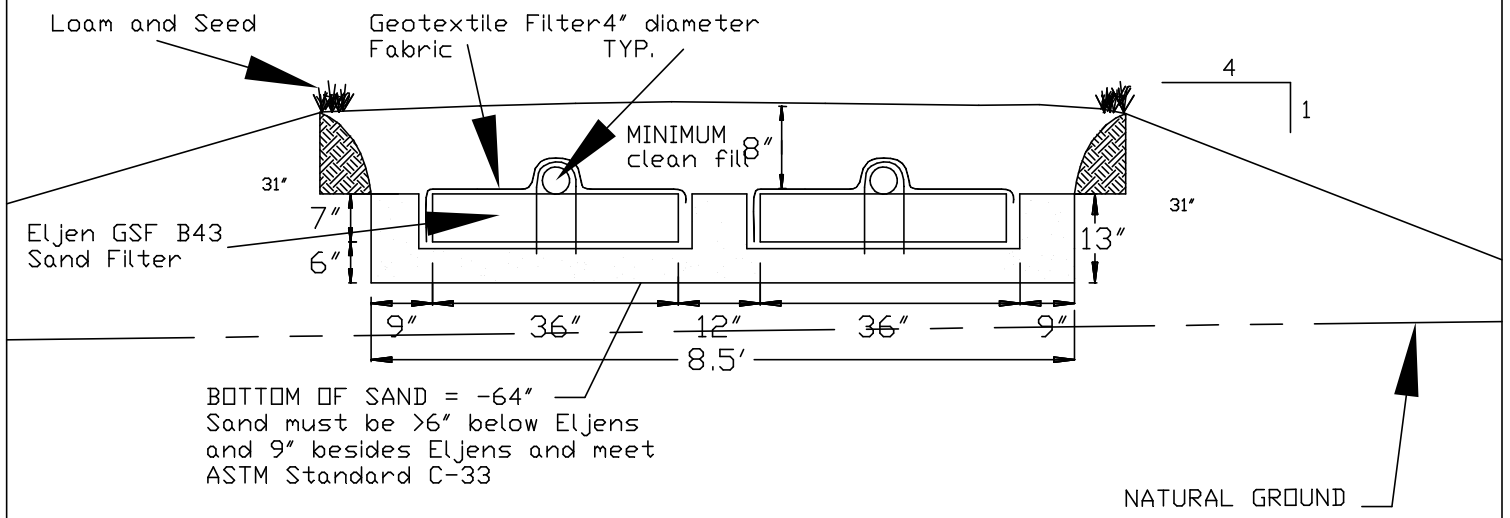
DISPOSAL FIELD CROSS SECTION

CROSS SECTION A-A'

12" SEPARATION USED IN DESIGN

SCALE:

VERTICAL: 1" = 3'
HORIZONTAL: 1" = 5'



Alan P.

Site Evaluator Signature

391

SE #

10/6/2025

Date

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General Notes
(attachment to form HHE-200)
<1,000 gpd Septic System

The nature of the site evaluation profession is one of interpretation of soil and site conditions. We, in the field, attempt to both provide a satisfactory service to the client, and comply by the rules by which we are bound – The Maine Subsurface Wastewater Disposal Rules. If at any time you, the client, are not satisfied with the services provided or the results found, it is your right to hire another site evaluator for a second opinion.

Property information is supplied by the owner, applicant or representative. Such information presented herein shall be verified as correct by the owner or applicant prior to signing this application.

All work shall be in accordance with the Maine Subsurface Wastewater Disposal Rules dated 9/23, as amended.

All work should be performed under dry conditions only (for disposal area).

No vehicular or equipment traffic to be allowed on disposal area. Disposal field shall be constructed from outside the corner stakes located in the field. The downslope area is also to be protected in the same manner.

Backfill, if required, is to be gravelly coarse sand to coarse sand texture and to be free of foreign debris. If backfill is coarser than original soil, then mix top 4" of backfill and original soil with rototiller.

No neighboring wells are apparent (unless so indicated) within 100' of disposal area. Owner or applicant shall verify this prior to signing the application.

The disposal field stone shall be clean, uniform in size and free of fines, dust, ashes, or clay. It shall be no smaller than ¾ inch and no larger than 2 ½ inches in size (per Section 805.2.3 of the Maine subsurface Wastewater Disposal Rules).

Minimum separation distances required (unless reduced by variance or special circumstance).

- a) Wells with water usage of 2000 or more gpd or public water supply wells:
Disposal Fields: 300'
Septic Tanks and Holding Tanks: 100'
- b) Any well to disposal area: 100'
- c) Any well to septic tank: 50'
- d) Septic tank or disposal area to lake, river, stream or brook: 100' for major watercourse,
50' for minor watercourse
- e) House to treatment tank: 8'
- f) House to disposal area: 20'
- For all other separation distances, use separations for less than 1,000 gpd per Maine Subsurface Wastewater Disposal Rules Table 7B.

Location of septic system near a wetland may require a separate permit. As such, the owner, prior to construction of the septic system, shall hire a professional to evaluate proximity of adjacent wetlands and prepare necessary permit applications.

0. Garbage disposals are not recommended and, if installed, are done so at the owner's risk. The additional waste load requires increased maintenance frequency, higher potential for failure, and larger septic tanks.
1. Pump stations, when required, shall be installed watertight to prevent infiltration of ground and/or surface water.
2. Force mains and pressure lines shall be flushed of any foreign material and pumps shall be checked for proper on/off cycle before being put into service.
3. Force mains, pump stations, and/or gravity piping subject to freezing shall be installed below frost line or adequately insulated.

SECTION 20

PROJECT COST ESTIMATE AND FINANCIAL CAPACITY

Section 20 – Project Cost Estimate and Financial Capacity

The project sitework costs are estimated to be the following:

1. Site Preparation	\$15,000
2. Aggregates for Driveways	\$30,000
3. Well and Water Service	\$10,000
4. Electrical Services	\$15,000
5. Stormwater Collection & Treatment	\$20,000
6. Wastewater Collection & Disposal	\$20,000
7. Loam, Lawn & Landscaping	\$20,000
8. Curbing & Bituminous Paving	<u>\$80,000</u>

Total Sitework Estimate:	\$210,000
--------------------------	-----------

The building cost is approximately \$500,000 including concrete work.

The applicant previously purchased the land so there is no additional land acquisition cost.

Enclosed is a letter from Bangor Savings Bank indicating that the applicant has the financial capacity to complete the project.



October 3, 2025

Town of Windham Planning and Code
8 School Road
Windham, ME 04062

Re: Lussier Apartments/Maine Radon Project

To the Planning and Code Enforcement Office:

Please be advised that Brandon Lussier has a business relationship with Bangor Savings Bank through several entities including Lussier Apartments, LLC. All accounts have been maintained as agreed, his businesses are in good standing with the Bank, and Bangor Savings Bank has approved a loan for his upcoming project on Roosevelt Trail in Windham. If you have any questions, please feel free to reach out to me directly at (207)420-3920.

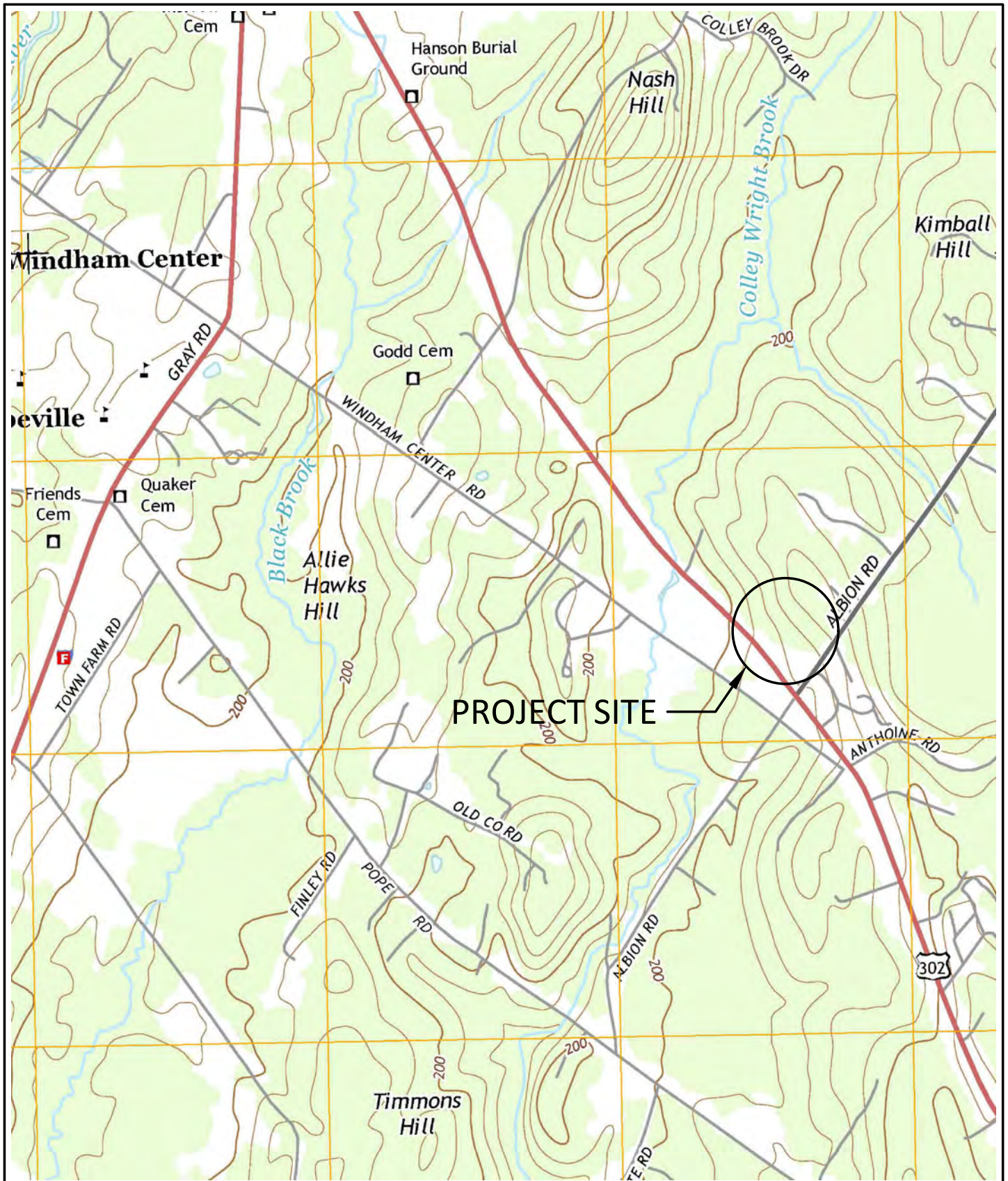
Sincerely,

Donald T. Hinkley
Vice President, Relationship Manager
Bangor Savings Bank

Notice: The Federal Equal Credit Opportunity Act prohibits creditors from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status, age (provided the applicant has the capacity to enter into a binding contract); because all or part of the applicant's income derives from any public assistance program; or because the applicant has in good faith exercised any right under the Consumer Credit Protection Act. The Federal agency that administers compliance with this law concerning this creditor is Federal Deposit Corporation, Consumer Response Center, 1100 Walnut Street, Box 11, Kansas City, MO 64016.

SECTION 21

SITE VICINITY MAP – USGS QUADRANGLE



SITE LOCATION MAP

COMMERCIAL BUILDING
WINDHAM, MAINE

FOR RECORD OWNER:
LUSSIER APARTMENTS LLC
243 ROOSEVELT TRAIL
WINDHAM, ME 04062

SCALE: 1"=1500'
DATE: 09-02-2025
JOB NUMBER: 25053

DM ROMA

CONSULTING ENGINEERS

P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

SECTION 22

BUILDING ARCHITECTURAL PLANS



SECTION 23

PROJECT SIGNS

Section 23 – Project Signs

The project will include a business sign similar to the sign that exists at the abutting property to the north, which is shown below for reference.



SECTION 24

COMMERCIAL DISTRICT DESIGN STANDARDS



APPLICANT/PLANNER'S CHECKLIST FOR MAJOR SITE PLAN REVIEW

COMMERCIAL DISTRICT DESIGN STANDARDS SECTION 120-813

The following checklist includes Design Standards for nonresidential developments within Windham's Commercial 1, Commercial 1 North, Commercial 2, Commercial 3, Village Commercial, and Windham Center Districts. Where there is a conflict between provision of the Design Standards and any other ordinance provision, the more restrictive provision shall apply. In addition to meeting all Design Standards required in the applicable zoning districts, development must comply with the minimum of eight (8) other Design Standards.

For purposed of this section, "development" shall mean that portion of the project that:

- a. Is subject to the site plan review under Article 8 Site Plan Review; or*
- b. Will renovate twenty percent (20%) or more of the entire wall area of a structure on the site. (For this type of renovation, the renovation will be subject to the required Design Standards in Section A. but will not be subject to other required Design Standards.)*

Design Standards Framework

		C-1	C-1N	C-2	C-3	VC	WC	Checklist	
A.	Architecture/Building							Applicant	Staff
1	Building Style	R ¹	R	R	R	R	R	☒	☐
2	Materials	R	R	R	R	R	R	☒	☐
3	Color	R	R	R	R	R	R	☒	☐
4	Roofline	R	R	R	R	R	R	☒	☐
5	Façade	R	R	R	R	R	R	☒	☐
6	Building style coordination (multi-building)	R	R	R	R	R	R	☒	☐
7	Entrance	R	R	R	R	R	R	☒	☐
8	Architectural Details	R	R	R	R	R	R	☒	☐
9	LEED certification							☐	☐
B	Site/Parking								
1	Parking location							☒	☐
2	Internal traffic flow							☒	☐
3	Interconnected Parking lots							☐	☐
4	Orientation of Building							☐	☐
5	Screening, Parking			R			R	☐	☐
6	Screening, utilities and service areas/structures	R	R	R		R	R	☒	☐
7	Parking Lot Landscaping							☐	☐
8	Low-Impact Design Stormwater							☒	☐
9	Shared Stormwater Treatment							☐	☐
C	Landscaping/Lighting								
1	Lighting/Photometric Plan	R	R			R		☐	☐
2	Lighting coordinated with architecture	R	R			R		☒	☐
3	Light coordinated with landscaping	R	R			R		☒	☐
4	Existing trees preserved				R		R	☒	☐
5	Snow area designated	R	R	R	R	R	R	☒	☐
6	Planting variety							☐	☐
7	Planting suitability							☒	☐
8	Mass plantings							☐	☐
9	Illumination levels							☒	☐
D.	Bike/Ped								
1	Internal walkways	R	R					☐	☐
2	Links to community	R	R	R		R	R	☐	☐
3	Outdoor activity area							☐	☐
4	Sidewalk	R	R				R	☐	☐
5	Crosswalk	R	R					☐	☐
6	Bike parking/racks	R	R	R		R	R	☐	☐

¹. Any item with an R in the Table is a required Design Standards in that zoning district.

Section 24 – Commercial District Design Standards

The project has been designed to meet the following required and optional standards outlined in Section 813 of the Land Use Code:

Required Design Standards for the C-3 Zone:

- A-1: Building Style. The building is not a national franchise prototype and is not stylized to the point where it is a form of advertising.
- A-2: Materials. The building will be metal siding with stone veneer on the lower portion. There are no proposed awnings or canopies.
- A-3: Color. The colors used for the siding will be dark brown with dark trim. All colors will be low-reflectance and non-fluorescent.
- A-4: Roofline. Roof pitch will meet the minimum 5/12 pitch required in this standard. The roofline is broken up through the installation of cupolas.
- A-5: Façade. The façade that faces Roosevelt Trail has been designed with windows and entry areas that have transparent openings to conform with the standard. There are no proposed vending machines. All windows and doors will be trimmed to create a frame around the opening.
- A-6: Building style coordination (multi-building). There is only one building proposed so this section is not applicable.
- A-7: Entrance. The building is designed with an overhang porch roof over the main entrance to clearly define the entrance location.
- A-8: Architectural Details. The architectural detailing and trim are proportional to the scale and design of the building.
- C-1: Lighting/Photometric Plan. Lighting specifications are contained in Section 12 of the Application.
- C-4: Existing Trees Preserved. The existing 50-foot buffer of natural woodland will be preserved along the rear portion of the lot as a requirement for commercial uses that abut a residentially zoned property. There are no significant trees within the project development area that will need to be removed because the site was cleared by a previous owner years ago.
- C-5: Snow Storage Areas Designated. The site has been designed to provide snow storage in multiple areas adjacent to the parking spaces, without damaging the landscaped areas or conflicting with the stormwater drainage.

Optional Design Standards for the C-3 Zone (8 Minimum):

- B-1: Parking Location. The proposed parking area is located to the side and rear of the proposed building.
- B-2: Internal Traffic Flow. The parking lot will be paved and striped with white reflective pavement marking so that parking spaces and drive aisles are clearly

identified. Paint striping will be applied to mark the location of designated spaces for no parking in front of the building entrances in the locations shown on the site plan.

- B-6: Screening, Utilities and service areas/structures. The dumpster pad will be screened with a fence and is located behind the building to be shielded from view.
- B-8: Low-Impact Design Stormwater. The stormwater basin has been designed utilizing low impact development techniques to provide stormwater attenuation on-site and provide water quality treatment through filtration.
- C-2: Lighting Coordinated with Architecture. The proposed light fixtures will provide illumination under the entries and over the doorways and will compliment the architecture of the building.
- C-3: Lighting coordinated with Landscaping: The proposed building-mounted lighting will not be obscured by mature growth of landscaping on the property, and will not result in eventual dark spots.
- C-7: Planting suitability. The chosen plant species require a low degree of maintenance and are suitable for Maine climate conditions.
- C-9: Illumination Levels. The light fixtures installed on the building will be in scale with the site and building development. The illumination levels are appropriate for the site and use.