Preliminary Major Subdivision Application

To the Town of Windham

Dolley Farm Subdivision

River Road
Windham, Maine

Applicant:
25 River Road LLC
PO Box 957
Windham, ME 04062

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

DM ROMA

CONSULTING ENGINEERS

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MAJOR SUBDIVISION PRELIMINARY APPLICATION TO TOWN OF WINDHAM

DOLLEY FARM SUBDIVISION

SECTION 1

APPLICATION FORM & SUBMISSION CHECKLIST

Town of Windham
Planning Department:
8 School Road
Windham, Maine 04062
Tel: (207) 894-5960 ext. 2
Fax: (207) 892-1916 -
www.windhammaine.us

MAJOR SUBDIVISION - PRELIMINARY PLAN - REVIEW APPLICATION

FEES FOR MAJOR SUBDIVISION PRELIMINARY PLAN REVIEW	**APPLICATION FEE:** + EACH LOT > 10 = $300/LOT	[X] $1,300.00 [X] $ 9,600	**AMOUNT PAID:** $ 15,900 **DATE:** _____				
	REVIEW ESCROW: Up to 10 Lots = $2,500 11 – 15 Lots = $3,000 16 – 30 Lots = $4,000 30 + Lots = $5,000	[X] $ 5,000	*Office Use:*			*Office Stamp:*	

PROPERTY DESCRIPTION	Parcel ID	Map(s) # 5	Lot(s) # 25		Zoning District(s)	RM	Total Land Area SF: 1,458,226 SF
	# Lots/dwelling units: 42	Total Distr. >1Ac. [X] Y [ ] N					Est. Road Length(ft): 1,600 LF
	Physical Address	0 RIVER ROAD			Watershed:	PRESUMPSCOT RIVER	
PROPERTY OWNER'S INFORMATION	Name	25 RIVER ROAD, LLC			Name of Business	25 RIVER ROAD, LLC	
	Phone	(207) 310 - 8507			Mailing Address:	PO BOX 957	
	Fax or Cell					WINDHAM, ME 04062	
	Email	CUMMINGSPROPERTYSERVICES@YAHOO.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, PE			Name of Business	DM ROMA CONSULTING ENGINEERS	
	Phone	(207) 591 - 5055			Mailing Address	PO BOX 1116	
	Fax or Cell	(207) 310 - 0506				WINDHAM, ME 04062	
	Email	DUSTIN@DMROMA.COM					

PROJECT INFORMATION

Existing Land Use *(Use extra paper, if necessary)*:

VACANT LAND CONSISTING OF OPEN FIELD AND WOODLAND.

Provide a narrative description of the Proposed Project *(Use extra paper, if necessary)*:

CONSTRUCT APPROXIMATELY 1,600 LINEAR FEET OF CONDOMINIUM ACCESS DRIVEWAY AND 42 TOTAL DWELLING UNITS IN 21 DUPLEX BUILDINGS. THIS IS THE FIRST PHASE OF A MULTI-PHASE DEVELOPMENT. ALL UNITS WILL BE SERVED BY PUBLIC WATER AND PRIVATE ON-SITE WASTEWATER DISPOSAL.

Provide a narrative description of construction constraints (wetlands, shoreland zone, flood plain, non-conformance, etc.):

THE SITE CONTAINS WETLANDS AND THERE ARE SOME AREAS OF SHALLOW LEDGE.

MAJOR SUBDIVISION - PRELIMINARY PLAN - REVIEW APPLICATION REQUIREMENTS

Section 910 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 a waiver of a submission requirement is granted.

The Major Plan document/map:

A) Plan size: 24" X 36"
B) Plan Scale: No greater 1":100'
C) Title block: Applicant's 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 before the desired Staff Review Committee 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 sjpuleo@windhammaine.us
  Amanda Lessard, Planning Director allessard@windhammaine.us

APPLICANT/PLANNER'S CHECKLIST FOR MAJOR SUBDIVISION REVIEW

SUBMITTALS THAT THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.

The following checklist includes items generally required for development by the Town of Windham's LAND USE ORDINANCE, Sections 907.B., 910.C., & 911. Due to projects specifics, are required to provide a complete and accurate set of plans, reports, and supporting documentation (as listed in the checklist below).

IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

Staff recommends the applicant provide a proposed construction schedule, a draft Homeowner's Association (HOA) documentation, public open space to be provided, and written offers of cession to the Town, and/or road maintenance agreement with at the Preliminary Plan application submission.

Major Subdivision Preliminary Plan Submission Requirements:			**Major Subdivision Preliminary Plan Submission Requirements (Continued):**	**Applicant**	**Staff**
A. Mandatory Written Information submitted in a bound format:	**Applicant**	**Staff**	6. Vicinity plan showing the area within 250 feet, to include:	☒	☐
1. A fully executed application form, signed by a person with right, title, or interest in the property or Authorized Agent.	☒	☐	i. approximate location of all property lines and acreage of parcels.	☒	☐
2. Evidence of payment of the application and escrow fees.	☒	☐	ii. locations, widths, and names of existing, filed, or proposed streets, easements, or building footprints.	☒	☐
3. Proposed name of the Subdivision.	☒	☐	iii. location and designations of any public spaces.	☒	☐
4. Verification of right, title, or interest in the property, and any abutting property, by deed, purchase and sales agreement, option to purchase, or some other proof of interest.	☒	☐	iv. outline of the proposed subdivision, together with its street system and an indication of future probably street system, if the proposed subdivision encompasses only part of the applicant's entire property.	☒	☐
5. Copy(ies) of the most recently recorded deed for the parcel, along with a copy(ies) of all existing deed restrictions, easements, rights-of-way, or some other proof of interest.	☒	☐	7. Standard boundary survey of the parcel, including all contiguous land in common ownership within the last 5 years.	☒	☐
6. Copy(ies) of any existing and/or proposed covenants, deed restrictions intended to cover all or part of the lots or dwellings in the subdivision.	☒	☐	8. Existing and proposed street names, pedestrian ways, lot easements, and areas to be reserved or dedicated to public use.	☒	☐
7. Copy(ies) of any existing or proposed easements on the property	☒	☐	9. Contour lines at 2-foot intervals, or intervals required by the Board, showing elevations to the required datum.	☒	☐
8. Name, registration number, and seal of Maine Licensed Professional Land Surveyor who conducted the survey.	☒	☐	10. Typical cross-sections of the proposed grading for roadways, sidewalks, etc., including width, type of pavement, elevations, and grades.	☒	☐
9. Name, registration number, and seal of the licensed professional who prepared the plan (if applicable).	☒	☐			
10. An indication of the type of sewage disposal to be used in the subdivision.			11. Wetland areas shall be delineated on the survey. If none, please note.	☒	☐
i. If connecting to the public sewer, provide a letter from Portland Water District stating the District can collect and treat the wastewater	☒	☐	12. The number of acres within the proposed subdivision, location of property lines, existing buildings, vegetative cover type, specimen trees, if present, and other essential existing physical features.	☒	☐

Mandatory Written Information submitted in a bound format (continued):	Applicant	Staff			
ii. If using subsurface wastewater disposal systems (septic), submit test pit analyses prepared by a Maine Licensed Site Evaluator or Certified Soil Scientist. Test pit locations must be shown on a map.	☒	☐	13. Rivers, streams, and brooks within or adjacent to the proposed subdivision. If any portion of the proposed subdivision is in the direct watershed of a great pond, note which great pond.	☒	☐
11. Indicate the type of water supply system(s) to be used in the subdivision.	☒	☐	14. Rivers, streams, and brooks within or adjacent to the proposed subdivision. If any portion of the proposed subdivision is in the direct watershed of a great pond, note which great pond.	☒	☐
12. If connecting to public water, submit a written statement from the Portland Water District indicating there is adequate supply and pressure for the subdivision.	☒	☐	15. Location & size of existing and proposed sewers, water mains, culverts, bridges, and drainage ways on or adjacent to the property to be subdivided. The Board may require this information to be depicted via cross-section, plan, or profile views.	☒	☐
13. Names and addresses of the record owner, applicant, and adjoining property owners.	☒	☐	16. Location, names, and present width of existing streets, highways, easements, building lines, parks, and other open spaces on or adjacent to the subdivision.	☒	☐
14. An acceptable title opinion proving the right of access to the proposed subdivision or site for any property proposed for development on or off a private way or private road.	☐	☐	17. Location and widths of any streets, public improvements, or open space within the subdivision (if any) are shown on the official map and the comprehensive plan.	☒	☐
15. The name and contact information for the road association whose private way or road is used to access the subdivision.	☐	☐	18. All parcels of land proposed to be dedicated to public use and the conditions of such dedication.	☐	☐
16. Financial Capacity. Estimated costs of development, and an itemization of major costs.			19. Location of any open space to be preserved or common areas to be created, and general description of proposed ownership, improvement, and management	☒	☐
i. Estimated costs of development, and an itemization of major costs.	☒	☐	20. Approximate location of treeline after development.	☒	☐
			21. Delineate boundaries of any flood hazard areas and the 100-year flood elevation as depicted on the Town's Flood Insurance Rate Map.	☒	☐
			22. Show any areas within or adjacent to the proposed subdivision which has been identified by the Maine Department of Inland Fisheries and Wildlife "Beginning with Habitat project maps or within the Comprehensive Plan.		
ii. Financing - provide one of the following:	☒	☐	23. Show areas within or adjacent to the proposed subdivision which is either listed on or eligible for the National Register of Historic Places, or have been identified in the comprehensive plan or by the Maine Historic Preservation Commission as sensitive or likely to contain such sites.	☒	☐
a. Letter of commitment to funding from a financial institution, governmental agency, or other funding agency.	☐	☐			
b. Annual corporate report with explanatory material showing the availability of liquid assets to finance development	☐	☐	24. Erosion & Sedimentation control plan, prepared by MDEP Stormwater Law Chapter 500 Basic Standards, and the MDEP Maine Erosion and Sediment Control Best Management Practices, published March 2003.	☒	☐
c. Bank statement showing the availability of funds if personally financing development	☐	☐	25. A stormwater management plan, prepared by a Maine licensed Professional Engineer by the most recent edition of Stormwater Management For Maine: BMPS Technical Design Manual, published by the MDEP 2006.	☒	☐
d. Cash equity commitment.	☐	☐			
e. Financial plan for remaining financing.	☐	☐	26. For Cluster Subdivisions that do not maximize the development potential of the property being subdivided, a conceptual master plan for the remaining land showing future roads, Open Space, and lot layout, consistent with the requirements of 911.K., Custer Developments will be submitted.	☐	☐
f. Letter from financial institution indicating an intention to finance.	☒	☐	**C. Submission information for which a waiver may be granted.**	**Applicant**	**Staff**
iii. If a corporation, Certificate of Good Standing from the Secretary of State	☒	☐	1. High-intensity soil survey by a Certified Soil Scientist	☒	☐
			2. Landscape Plan	☒	☐
2. Technical Capacity:			3. Hydrogeologic assessment - required if i) subdivision is not served by public sewer and either any part of the subdivision is over a sand and gravel aquifer or has an average density of more than one dwelling unit per 100,000 square feet, or ii) where site considerations or development design indicate the greater potential of adverse impacts on groundwater quality.	☒	☐

i. A statement of the applicant's experience and training related to the nature of the development, including developments receiving permits from the Town.	☒	☐	a) Map showing basic soil types.	☒	☐
			b) Depth to the water table at representative points	☒	☐
ii. Resumes or similar documents showing experience and qualifications of full-time, permanent, or temporary staff contracted with or employed by the applicant who will design the development.	☒	☐	c) Drainage conditions throughout the subdivision.	☒	☐
			d) Data on existing groundwater quality.	☒	☐
			e) Analysis and evaluation of the effect of the subdivision on groundwater.	☒	☐
2. Name and contact information for the road association whose private way or road is used to access the subdivision (if applicable).	☒	☐	f) map showing the location of any subsurface wastewater disposal systems and drinking water wells within the subdivision & within 200 feet of the subdivision boundaries.	☒	☐
			4. Estimate the amount and type of vehicular traffic to be generated on a daily basis and at peak hours.	☒	☐
B. Mandatory Preliminary Plan Information	**Applicant**	**Staff**	5. Traffic Impact Analysis for subdivisions involving 28 or more parking spaces or projected to generate more than 140 vehicle trips per day.	☒	☐
1. Name of subdivision, date, and scale.	☒	☐			
2. Stamp of the Maine License Professional Land Surveyor that conducted the survey, including at least one copy of the original stamped seal that is embossed and signed.	☒	☐	6. If any portion of the subdivision is in the direct watershed of a great pond.	☐	☐
			i. phosphorous impact analysis and control plan.	☐	☐
3. Stamp with the date and signature of the Maine Licensed Professional Engineer that prepared the plans.	☒	☐	ii. long term maintenance plan for all phosphorous control measures.	☐	☐
4. North arrow identifying all of the following: Grid North, Magnetic North, declination between Grid and Magnetic, and whether Magnetic or Grid bearings were used in the plan design.	☒	☐	iii. contour lines at an interval of 2 feet.	☐	☐
			iv. delineate areas with sustained slopes greater than 25% covering more than one acre.	☐	☐
5. Location map showing the subdivision within the municipality.	☒	☐	**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.*

Dustin Roma	4-21-2025	DUSTIN ROMA - AUTHORIZED AGENT
APPLICANT OR AGENT'S SIGNATURE	DATE	PLEASE TYPE OR PRINT THE NAME

SECTION 2

AGENT AUTHORIZATION

25 RIVER ROAD LLC
PO Box 957
Windham, Maine 04062

December 23, 2024

Re: Agent Authorization
River Road Residential Development
Windham, Maine

I am an authorized member of 25 River Road, LLC, the applicant for a proposed residential project located off of River Road in Windham, Maine. The property is an approximately 32.8±-acre parcel identified as Lot 25 on the Town of Windham Assessor's Map 5. I have retained the services of Dustin Roma and DM Roma Consulting Engineers to act as our agent to apply for land use permits associated with the development of the property.

Sincerely,

Jim Cummings
Member of 25 River Road, LLC

SECTION 3

WAIVER REQUESTS

Section 3 – Waiver Requests

The following waivers are requested:

Section 120-814(B)(6)(C): Curb Cuts required to be separated by a minimum of 75 feet.

See attached form for additional information.

TOWN OF WINDHAM
MINOR\MAJORSUBDIVISION APPLICATION

Performance and Design Standards Waiver Request Form

(Section 908 – Minor\Major Subdivision Review, Waivers)

For each waiver request from the Performance and Design Standards detailed in Section 911 of the Town of Windham Land Use Ordinance, please submit separate completed copy of this waiver request form for all waivers requested

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Subdivision or

Project Name: DOLLEY FARM SUBDIVISION

Tax Map: 5

Lot(s): 25

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

Ordinance Section	Standard	Mark which waiver this form is for
814(B)(6)(C)	CURB CUTS SEPARATED BY 75 FEET	☒
		☐
		☐
		☐
		☐

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.

WE ARE PROPOSING SEPARATE DRIVEWAYS FOR EACH UNIT, WHICH RESULTS IN DRIVEWAYS BEING CLOSER THAN 75 FEET. IF WE COMBINE THE DRIVEWAYS TO MEET THE REQUIRED 75 FOOT SEPARATION WE WOULD HAVE VERY WIDE CURB CUTS WHICH IS UNDESIRABLE FOR AESTHETICS, USE AND DRAINAGE.

(continued next page)

Ordinance Section: 814(B)(6)(C)

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: Mon Dec 23 2024 10:46:50. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
25 RIVER ROAD LLC	202507460DC	LIMITED LIABILITY COMPANY	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
11/01/2024	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Principal Home Office Address

Physical	Mailing

Clerk/Registered Agent

Physical	Mailing
DAVID E CURRIER 57 EXCHANGE STREET PORTLAND, ME 04101	DAVID E CURRIER 57 EXCHANGE STREET PORTLAND, ME 04101-5020

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 ($30.00)	Long Form with amendments ($30.00)
Certificate of Legal Existence (more info)	Short Form without amendments ($30.00)	Long Form with amendments ($30.00)

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

Download

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Division of Corporations, UCC & Commissions Reporting and Information Section at 207-624-7752 or e-mail.

SECTION 5

PROJECT NARRATIVE

Section 5 – Project Narrative

Zoning:	Medium Density Residential (RM)
Acreage:	33.5 Acres
Tax Map/Lot:	Map 5 Lot 25
Existing Use:	Undeveloped Land
Proposed Use:	Dwelling, Two-Family

The proposed project includes the construction of 21 Two-Family residential buildings for a total of 42 dwelling units and approximately 1,600 feet of new private driveway construction that will be built to the Major Private Road standards. All residential units will be served by public water, underground electrical service and on-site subsurface wastewater disposal systems. Each dwelling is intended to be sold as a Condominium Unit.

Off-site improvements will include the extension of public water main in River Road and the construction of a widened paved shoulder on River Road to provide improved pedestrian access to the intersection of River Road and Gambo/Newhall Roads.

SECTION 6

NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS

Section 6 – Names and Addresses of Abutting Property Owners

Map/Lot	Owner Name	Mailing Address
5/24-A	Todd Coons Angela Coons	477 River Road Windham, ME 04062
5/23-E	New Communities, Inc.	869 Main St, Ste 600 Westbrook, ME 04092
5/23-A	Jeffrey Malier	83 Fall Ridge Rd Windham, ME 04062
5/25-A	Victoria Kapusta	469 River Rd Windham, ME 04062
42/1	Kyle Rasmussen Sarah Rasmussen	10 Newhall Rd Windham, ME 04062
42/3-1 42/3-1A	Blaine Davis	24 Newhall Rd Windham, ME 04062
42/3-2 42/3-3	Robert York	32 Newhall Rd Windham, ME 04062
42/3-C	Valerie Morrissette Robert Morrissette	40 Newhall Rd Windham, ME 04062
42/3-A	Steven Bodlovick Kathren Bodlovick	42 Newhall Rd Windham, ME 04062
42/3-B	Samuel Clift Shawna Clift	44 Newhall Rd Windham, ME 04062
42/3-D	Derek Patnaude Elizabeth Patnaude	236 Main St Windham, ME 04062
42/5	Constant Kabuyenge Prisca Niyonzima	228 Main St Windham, ME 04062
42/7	Randy Sloan Kay Sloan	240 Gray Rd Windham, ME 04062
41/1	Joshua Gelston	53 Falmouth Rd Windham, ME 04062

SECTION 7

RIGHT, TITLE OR INTEREST DOCUMENTS

MAINE REAL ESTATE TAX-Paid

QUITCLAIM DEED
(with covenant)

DLN: 2109453

CHARLES R. HADDOCK ("Grantor"), an individual residing in Windham, Maine, with a mailing address of 472 River Road, Windham, ME 04062, for consideration paid, grants to **25 RIVER ROAD LLC**, a Maine limited liability company with a mailing address of P.O. Box 957, Windham, ME 04062, with Quitclaim Covenant, the real property located on and near River Road in the Town of Windham, Cumberland County, Maine, more particularly described on Exhibit A.

Meaning and intending to convey the premises conveyed to Grantor by two deeds, the first from Hazel T. Haddock to the said Hazel T. Haddock, the Grantor and Warren B. Haddock, which deed is dated October 11, 2005 and recorded in the Cumberland County Registry of Deeds in Book 23629, Page 192, and the second from Warren B. Haddock to the Grantor, dated March 20, 2020 and recorded in the Cumberland County Registry of Deeds in Book 36545, Page 301.

IN WITNESS WHEREOF, the Grantor has executed this deed under seal as of November 26, 2024.

Witness

Charles R. Haddock

State of Maine
County of Cumberland, ss

Date: November 26, 2024

Then personally appeared the above-named Charles R. Haddock and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Notary Public

DAVID E. CURRIER

Printed Name

DAVID E. CURRIER
NOTARY PUBLIC
MAINE
My Commission Expires January 6, 2030

Date Commission Expires:

DOC :45297 BK:41151 PG:336
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
11/27/2024, 09:26:44A
Register of Deeds Jessica M. Spaulding E-RECORDED

Exhibit A
Charles R. Haddock to 25 River Road LLC

A certain lot or parcel of land with the buildings thereon situated in said Windham, County of Cumberland, and State of Maine, and being a part of the former homestead farm of the late John Dolley, bounded and described as follows:

Beginning at a point on the northerly side of Newhall Road at the southeasterly corner of land now or formerly owned by Edward W. Thayer, thence northerly and westerly by land of said Edward W. Thayer to the easterly side of the River Road; thence northerly by said easterly side of River Road to land now or formerly of Christian Kragelund; thence easterly by said Kragelund land to land now or formerly of the heirs of Daniel Plummer; thence southerly by said land of Plummer and land of Ralph and Lillian Prescott to land believed to be owned now or formerly by Arthur E. Cobb; thence westerly by land of Arthur E. Cobb, and lands now or formerly of William H. Cobb, Robert York, and Gordon Mains, et. al. to a corner; thence southerly and along said land of Gordon Mains et al. to the northerly side of Newhall Road; thence westerly by the northerly side of Newhall Road to land now or formerly of Warren A. Knight et. al.; thence northerly, westerly, and southerly by said land of Warren A. Knight et al. to the northerly side of Newhall Road; thence westerly by the northerly side of Newhall Road to the point of beginning containing thirty-nine (39) acres, more or less.

Excepting therefrom a portion of said premises conveyed by Charles R. Haddock and Warren B. Haddock to Charles R. Haddock dated August 28, 2018 and recorded in the Cumberland County Registry of Deed in Book 35132, Page 317.

SECTION 8

EXISTING OR PROPOSED EASEMENTS OR COVENANTS

Section 8 – Existing or Proposed Easements or Covenants

The property is intended to be developed as a Condominium. A Condominium Declaration will be submitted with the Final Plan Application and will outlined the rights and responsibilities of the Condominium Association and each unit owner.

The site currently contains an easement for a well that provides water to the abutting property located at 469 River Road. A copy of the easement document is attached to this section. We have had some preliminary discussions with the property owner at 469 River Road regarding the possibility of moving the well or connecting the existing home to public water when we run the main past the property, but no final decisions have been made at this time. The project has been designed so that the well can remain in its current location.

Easement

KNOW ALL MEN BY THESE PRESENTS that We, Charles R. Haddock and Warren B. Haddock of Windham, County of Cumberland and State of Maine, in consideration of one dollar and other valuable consideration paid by Victoria Ivy Kapusta whose mailing address is:

42 New Road
Casco, Maine 04105

The receipt whereof hereby acknowledged do hereby give grant bargain sell and convey unto the said Victoria Ivy Kapusta to her and her heirs and assigns forever.

An easement across the land of the Grantors herein located on the northeasterly side of the River Road in the Town of Windham, County of Cumberland and State of Maine.

The land of the Grantors herein being the same premises conveyed to Hazel T. Haddock, Charles R. Haddock and Warren B. Haddock as joint tenants by Deed of Hazel T. Haddock dated October 11, 2005 and recorded in Book 23269, Page 1919 in the Cumberland County Registry of Deeds.

The Grantors hereby grant, sell, and convey to the Grantee the right to take water from a well on Grantors' land as the water source for the multi-family residence located at 469 River Road and for no other purpose.

The Grantee shall have reasonable rights of access across Grantors' land solely to complete maintenance work on the existing well. The Grantee shall have the right to mow the grass on the easement but shall have no right to store articles within the easement area. No other activity is allowed within the easement area by the Grantee herein.

The right-of-way easement established for the purpose of maintaining the existing well is bounded and described as follows:

DOC :15401 BK:36526 PG:123
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
03/23/2020, 01:15:22P
Register of Deeds Nancy A. Lane E-RECORDED

The right of way easement shall encompass a 20-foot wide rectangular area, which is perpendicular to the northern boundary of the property of Grantee located at 469 River Road Windham, Maine. The centerline of the easement will encompass the perpendicular from the well location to the northern boundary of the property of the Grantee located at 469 River Road. The easement will extend 10 feet beyond the well along the perpendicular to said well.

Grantors herein retain the right at their sole discretion to extinguish this easement at any time by, with the cooperation of Grantee, installing and hooking up a new well on the property of the Grantee located at 469 River Road within the mirror footprint of this easement on the land of Grantee located at 469 River Road. The Grantors will pay for said installation and hookup of a new well. This new well will become the water source for the existing multi-family residence located at 469 River Road.

In Witness Whereof, we, the said Charles R. Haddock and Warren B. Haddock have hereunto set our hands and seals this 6th day of March 2020.

Signed Sealed and Delivered in the presence of:

M. L V. Hews
Witness

Charles R. Haddock

M. L V. Hews
Witness

Warren B. Haddock

State of Maine
Cumberland, ss.

March 6, 2020

Then personal appeared the above-named Charles R. Haddock and Warren B. Haddock and acknowledged the foregoing instrument to be their free act and deed.

Before me,

Notary Public /Attorney-at-law
Maine Bar # 1203

SECTION 9

TECHNICAL CAPACITY OF THE APPLICANT

Section 9 – Technical Capacity of the Applicant

25 River Road LLC is the developer of the project. The principals of 25 River Road LLC have developed many single-family subdivisions and multi-family residential developments that included road construction, utility installation, lot development and building construction.

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.

Survey, Inc. has been retained to perform Land Surveying services for the project. Bill Shippen is a Licensed Professional Land Surveyor with extensive experience in all aspects of land surveying and subdivision planning.

Mainely Soils LLC has been retained to perform subsurface soil evaluations, wetlands delineation and to assist in the preparation of the subsurface wastewater disposal system design. Alex Finamore is experienced in septic system design, wetland delineation, soils analysis and environmental permitting.

Main-Land Development Consultants has been retained to perform Geologic analysis of the subsurface soils and their ability to support the proposed development. Scott Dixon is a Licensed Site Evaluator, Professional Engineer and Certified Geologist with experience in hydrogeologic modeling and soils analysis.

Barton & Loguidice has been retained to perform Traffic Engineering services for the project. John Adams, PE, PTOE is a traffic and transportation engineer with decades of experience in performing traffic impact analysis and roadway design.

Mark Hampton Associates has been retained to perform soil classification in accordance with the standards required by the State of Maine for High Intensity Soil Surveys. Mark Hampton is a Licensed Soil Scientist and Licensed Site Evaluator in the State of Maine.

SECTION 10

CAPACITY OF EXISTING UTILITIES TO SERVE THE PROJECT

Section 10 – Capacity of Existing Utilities to Serve the Project

Potable Water – The existing 12-inch water main located in River Road will be extended approximately 450 feet to the project driveway entrance. A new public 8-inch water main will be installed throughout the project to provide water service to the homes. The Portland Water District is currently reviewing our project plans, and has provided the infrastructure map that is attached to this section showing the location of existing water mains.

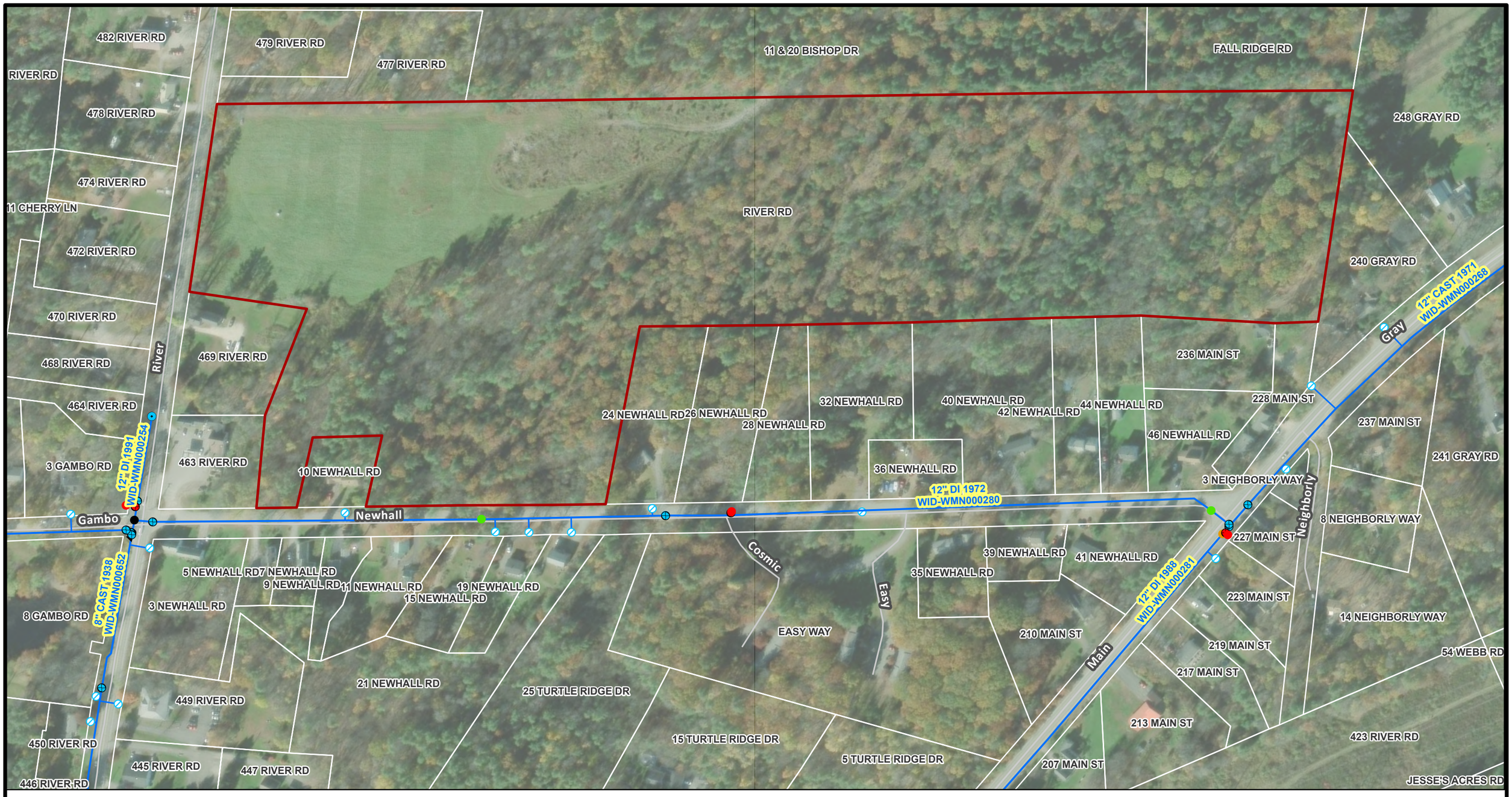
Fire Protection Water – The water main extension will include the installation of fire hydrants to provide fire protection water to the project. We are not proposing to install sprinkler systems in the homes unless requested by the unit purchaser.

Electrical Service – Existing overhead power is available on River Road to serve the proposed development. Primary electrical service will be extended through the project underground and will connect to pad-mounted transformers. Secondary electrical service will be installed underground from the transformers to the dwellings.

Wastewater Disposal – There is no public sewer available to the property, so on-site wastewater disposal systems will be installed. We have included the design of six (6) wastewater disposal fields in Section 19.

Natural Gas – Natural gas mains are not available in River Road, so we anticipate each unit will require bottled gas.

Storm Drainage – The project includes off-site improvements that will alter the drainage collection system on River Road. The existing ditch line that runs on the east side of River Road is proposed to be replaced with a curb and catch basin system and widened paved shoulder.



0 112.5 225 450 675 900 Feet

1 IN = 200 FT

Portland Water District

From Sebago Lake to Casco Bay

225 Douglass Street
PO Box 3553
Portland, Maine 04104

Legend

- Air Valve
- Blow Off
- By Pass
- Distribution
- Transmission
- Connection
- Attribute Change
- Reducer
- Hydrant Control
- Hydrant
- Private Hydrants
- Meter Pits
- Combined Service
- Domestic Service
- Fire Service
- Shallow Water Main
- Proposed Water Main
- Deep Water Main
- Manhole
- CSO
- Gravity
- Force

460 River Road

Windham

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

Drawn By: HAF

Scale: As Noted

Infrastructure Map

Date: October 25, 2024

SECTION 11

SOLID WASTE DISPOSAL

Section 11 – Solid Waste Disposal

Most of the project site has already been cleared of trees and has been maintained as a field. Some additional tree clearing and stumping will be required. Tree stumps will be hauled off site by the site contractor and disposed in accordance with all applicable regulations, or ground on-site to create erosion control mix. Brush will be burned or chipped.

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

We intend to utilize the Town's curbside trash collection program for the disposal of household waste generated by the dwelling occupants.

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

Each dwelling will include the installation of exterior lighting that is mounted to the building to provide illumination of the sidewalks and driveways so that on-street lighting will not be required for the internal driveways. Pole-mounted cobra-head style light fixtures will be mounted on the existing utility poles at each driveway entrance as indicated on the plans.

SECTION 13

SITE LANDSCAPING

Section 13 – Site Landscaping

The individual buildings will be landscaped with ornamental grasses, shrubs and perennials between the front entry porches adjacent to the foundations. Landscaping preference will be left to the individual unit owners to determine the amount of landscaping that is desired. Street trees are proposed to be installed on both sides of the street as indicated on the Site and Landscaping Plan. The existing mature trees that exist along the River Road frontage will be preserved except for the road entrance locations, and the treeline will also be preserved that runs along the northern property line adjacent to the existing dwelling at 477 River Road.

SECTION 14

VEHICLE TRAFFIC

Traffic Assessment

Date: April 17, 2025

To: **Dustin M. Roma, P.E.**
DM Roma Consulting Engineers

From:
Jacob W. Sirois, E.I.
Engineer II
Barton & Loguidice, LLC

John Q. Adams, P.E., PTOE
Senior Associate
Barton & Loguidice, LLC

Re: **Dolly Farm Subdivision**
River Road, Windham, Maine

1 Introduction

The applicant is proposing the development of a 21-duplex subdivision on River Road in the Town of Windham. Refer to Image 1 for the development site location. The project will provide 42 condominium units. Access to the site will be provided by two driveway entrances, located on the northerly and southerly bounds of the property, which connect to the eastern side of River Road.

Image 1 – Site Location

The purpose of this traffic assessment is to evaluate and measure the level of impact on traffic operations and safety resulting with the development of the proposed project. Site generated trip projections are provided for "key" peak hour time periods throughout a typical week; road safety conditions were determined based upon a review of MaineDOT's latest crash data, and intersection sight distance was field reviewed and measured to ensure safe and acceptable sight distance is provided at the proposed driveway entrances.

383 U.S. Route 1, Suite 2E, Scarborough, ME 04038

2 Trip Generation

Daily and peak hour site trip generation estimates have been prepared for the proposed 42 duplex units based on the trip generation tables presented in the 11th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The ITE Manual provides numerous land use codes (LUC) and the volume of site-generated trips produced by each category.

Trip generation estimates for the subdivision have been prepared using LUC #215 – Single-Family Attached Housing, described by ITE as "*any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.*" Calculations of the total number of trips generated per each corresponding time period are summarized below in Table 1:

Table 1
ITE Trip Generation Calculations

Land Use	Single-Family Attached Housing - LUC 215						
Time Period	**Dwelling Units (X)**	**R^2**	**Fitted Curve Equation**	**Trips Generated (T)**	**Distribution Entering / Exiting**	**Enter**	**Exit**
Weekday	42	0.94	T = 7.62(X) - 50.48	270	50% / 50%	135	135
AM Weekday Peak Hour (Street)	42	0.92	T = 0.52(X) - 5.70	16	31% / 69%	5	11
PM Weekday Peak Hour (Street)	42	0.91	T = 0.60(X) - 3.93	21	57% / 43%	12	9
AM Weekday Peak Hour (Generator)	42	0.91	Ln(T) = 0.92Ln(X) - 0.26	24	25% / 75%	6	18
PM Weekday Peak Hour (Generator)	42	0.87	Ln(T) = 0.88Ln(X) + 0.06	28	62% / 38%	17	11
Saturday Peak Hour	42	0.91	Ln(T) = 0.82Ln(X) + 0.43	33	48% / 52%	16	17

Table 1 shows that the proposed development is expected to generate 16 trips during the AM peak hour of the adjacent street and 21 trips during the PM peak hour of the adjacent street. During the peak hours of the generator, the site is expected to produce 24 trips in the AM peak hour, 28 trips in the PM peak hour, and 33 trips during the Saturday peak hour.

3 Intersection Sight Distance

Intersection sight distances were recorded at the site's proposed intersections with River Road in accordance with the criteria established within the MaineDOT's *Highway Driveway and Entrance Rules* publication, which require the following minimum sight distance for non-mobility roadways based on the posted speed limit:

MaineDOT
Sight Distance Standards

Posted Speed Limit	Minimum Sight Distance
25 mph	200 ft.
30 mph	**250 ft.**
35 mph	305 ft.
40 mph	360 ft.
45 mph	425 ft.
50 mph	495 ft.

The Section of River Road fronting the development site is posted at 30 mph, requiring a minimum sight distance of 250 feet. MaineDOT's Rules and Regulations require sight distance to be measured in accordance with the following procedures: *"Sight distance is measured to and from the point on the centerline of the proposed access that is located 10 feet from the edge of traveled way. The height of the hypothetical person's view is considered to be 3½ feet above the pavement and the height of the object being viewed is considered to be 4¼ feet above the pavement."*

Northerly Driveway: Our field measurements, looking both left and right directionally onto River Road, indicate that the existing sight distances are in excess of the requirements, based on the posted speed limit of 30 mph. Looking both left and right, we recorded measurements in excess of 400 feet.

Southerly Driveway: Our field measurements, looking both left and right directionally onto River Road, indicate that the existing sight distances are in excess of the requirements, based on the posted speed limit of 30 mph. Looking left, we recorded a sight distance measurement of 400 feet, and looking right, we recorded a measurement in excess of 500 feet.

4 Existing Road Safety Conditions

Crash data for the latest three-year time period (2022-2024) was provided by MaineDOT's Crash Records Section for the section of River Road between Newhall Road and Laskey Road, for a distance of 0.60 miles. A summary of the roadway section fronting the site is provided below in Table 2:

Table 2
2022 - 2024 Crash Summary
River Road between Gambo Rd/Newhall Rd and Laskey Rd

#	Location		Total Crashes	Critical Rate Factor
1	River Rd @	Gambo Rd and Newhall Rd	3	0.95
2	River Rd @	Laskey Rd	2	0.65
3	River Rd btw.	Gambo Rd/Newhall Rd and Laskey Rd	13	0.96

MaineDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents in the latest 3-year period***
- ***A Critical Rate Factor greater than 1.00***

Table 2 shows that there are no high crash locations in the defined study area.

5 Summary

Overall, it is the opinion of Barton & Loguidice that the proposed project should not have an adverse impact on traffic operations and safety at the site entrance and on the adjacent roadway system.

- The proposed development is expected to generate 16 trips during the AM peak hour of the adjacent street and 21 trips during the PM peak hour of the adjacent street. During the peak hours of the generator, the site is expected to produce 24 trips in the AM peak hour and 28 trips in the PM peak hour. The proposed development is expected to generate 33 trips during the Saturday

peak hour. The project will not be a significant traffic generator and will not require a Maine DOT Traffic Movement Permit, as it does not meet the minimum threshold of 100 peak hour trips.

- Vehicle sight distance measurements were field recorded, looking both left and right from the proposed site entrances onto River Road.
  - **Northerly Driveway:** Our field measurements, looking both left and right directionally onto River Road, indicate that the existing sight distances are in excess of the requirements, based on the posted speed limit of 30 mph. Looking both left and right, we recorded measurements in excess of 400 feet.

  - **Southerly Driveway:** Our field measurements, looking both left and right directionally onto River Road, indicate that the existing sight distances are in excess of the requirements, based on the posted speed limit of 30 mph. Looking left, we recorded a sight distance measurement of 400 feet, and looking right, we recorded a measurement in excess of 500 feet.

- Crash data for the latest 3-year time period (2022 to 2024) was provided by MaineDOT's Crash Records Section for the section of River Road between Newhall Road and Laskey Road, for a distance of 0.60 miles. The crash data shows that there are no high crash locations within the study area.

John Q. Adams, P.E., PTOE
April 17, 2025

APPENDIX

- **MAINEDOT CRASH REPORT**


MAYNARD RD
Pleasant River
19520
19523
TANGLEWOOD LN
ADALYNN DR
FIGLIA WAY
59516
GRAY RD
19525
CASKEY RD
19524
Lowell Cemetery
WINDHAM
19552
19553
15720
PLAINVIEW RD
Mugford Family Cemetery
BISHOP DR
RIVER RD
202
4
EASY WAY
MAIN ST
13830
Crendell Hill
COSMIC WAY
NEWHALL RD
WASHOUT WAY
BARNES RD
74431
Newhall
15961
15725
GAMBO RD
CHERRY LN
72420
Scale: 1:7635
400ft

Maine Department Of Transportation - Office of Safety, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ **Crash Summary I** ☐ **Section Detail** ☑ **Crash Summary II** ☐ **1320 Public** ☐ **1320 Private** ☐ **1320 Summary**

REPORT DESCRIPTION

Windham
River Rd from Gambo Rd-Newhall Rd (15961) to Laskey Rd (19523)

REPORT PARAMETERS

Year 2022, Start Month 1 through Year 2024 End Month: 12

Route: **0500782**	Start Node: **19523**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **15961**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
15961	0500782 - 5.47	Int of GAMBO RD NEWHALL RD RIVER RD	2	3	0	0	0	0	3	0.0	2.698	0.37	0.39	0.00
												Statewide Crash Rate:	0.13	
19523	0500782 - 4.87	Int of LASKEY RD RIVER RD	2	2	0	0	0	0	2	0.0	2.567	0.26	0.40	0.00
												Statewide Crash Rate:	0.13	
Study Years:	3.00	**NODE TOTALS:**		5	0	0	0	0	5	0.0	5.265	0.32	0.33	0.95

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
15961	19523	3939504	0 - 0.60	0500782 - 4.87	0.60	2	13	0	0	1	1	11	15.4	0.01533	282.75	295.75	0.96
Int of GAMBO RD	NEWHALL RD	RIVER RD		RD INV 05 00782											Statewide Crash Rate: 156.39		
Study Years:	3.00			**Section Totals:**	0.60		13	0	0	1	1	11	15.4	0.01533	282.75	295.75	0.96
				Grand Totals:	0.60		18	0	0	1	1	16	11.1	0.01533	391.50	432.59	0.91

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
15961	19523	3939504	0 - 0.60	0500782 - 4.87	13	0	0	1	1	11	2024-3220	01/25/2024	4.90	C
											2024-26473	09/23/2024	4.91	PD
											2022-13060	05/09/2022	5.04	PD
											2023-30461	10/20/2023	5.14	PD
											2023-5695	02/14/2023	5.16	PD
											2023-23061	08/05/2023	5.21	PD
											2024-2142	01/19/2024	5.37	PD
											2022-33086	11/13/2022	5.39	PD
											2023-21958	06/03/2023	5.42	B
											2024-23405	08/24/2024	5.43	PD
											2023-9444	03/25/2023	5.43	PD
											2022-22891	08/12/2022	5.44	PD
											2022-23265	08/15/2022	5.44	PD
				Totals:	13	0	0	1	1	11				

Crash Summary II - Characteristics

Crashes by Day and Hour

	AM												PM												
	Hour of Day																								
Day Of Week	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Un**	**Tot**
SUNDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
MONDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	4
TUESDAY	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
WEDNESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THURSDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
FRIDAY	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2	0	0	1	0	0	6
SATURDAY	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	4
Totals	0	1	0	0	0	1	0	1	0	0	1	2	0	2	0	1	0	3	0	4	0	0	1	1	0	**18**

Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	8	23-Bicyclist	0
2-(Sport) Utility Vehicle	11	24-Witness	0
3-Passenger Van	1	25-Other	1
4-Cargo Van (10K lbs or Less)	0	26-Construction	0
5-Pickup	6	27-Farm Vehicle	0
6-Motor Home	0	28-Horse and Buggy	0
7-School Bus	0	**Total**	**27**
8-Transit Bus	0		
9-Motor Coach	0		
10-Other Bus	0		
11-Motorcycle	0		
12-Moped	0		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	0		
17-Medium/Heavy Trucks (More than 10,000 lbs)	0		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	0		

Crash Summary II - Characteristics

Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	5	7	0	0	0	0	12
Ran Off Roadway	2	0	0	0	0	0	2
Failed to Yield Right-of-Way	1	1	0	0	0	0	2
Ran Red Light	0	0	0	0	0	0	0
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	2	0	0	0	0	0	2
Drove Too Fast For Conditions	1	0	0	0	0	0	1
Improper Turn	0	0	0	0	0	0	0
Improper Backing	0	0	0	0	0	0	0
Improper Passing	1	0	0	0	0	0	1
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	2	1	0	0	0	0	3
Failed to Keep in Proper Lane	2	0	0	0	0	0	2
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	0	0	0	0	0	0	0
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	0	0	0	0	0	0	0
Other Contributing Action	2	0	0	0	0	0	2
Unknown	0	0	0	0	0	0	0
Total	**18**	**9**	**0**	**0**	**0**	**0**	**27**

Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	17	9	0	0	0	0	26
Physically Impaired	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	1	0	0	0	0	0	1
Other	0	0	0	0	0	0	0
Total	**18**	**9**	**0**	**0**	**0**	**0**	**27**

Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	0	0	0	0	0	0
10-14	0	0	0	0	0	0
15-19	1	0	0	0	0	1
20-24	6	0	0	0	0	6
25-29	3	0	0	0	0	3
30-39	6	0	0	0	0	6
40-49	4	0	0	0	0	4
50-59	4	0	0	0	0	4
60-69	1	0	0	0	0	1
70-79	2	0	0	0	0	2
80-Over	0	0	0	0	0	0
Unknown	0	0	0	0	0	0
Total	**27**	**0**	**0**	**0**	**0**	**27**

Crash Summary II - Characteristics

Most Harmful Event

Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	0	38-Other Fixed Object (wall, building, tunnel, etc.)	0
2-Fire / Explosion	0	39-Unknown	0
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	**Total**	**26**
6-Fell / Jumped from Motor Vehicle	0		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	0		
10-Pedalcycle	0		
11-Railway Vehicle - Train, Engine	0		
12-Animal	1		
13-Motor Vehicle in Transport	19		
14-Parked Motor Vehicle	0		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0		
16-Work Zone / Maintenance Equipment	0		
17-Other Non-Fixed Object	0		
18-Impact Attenuator / Crash Cushion	0		
19-Bridge Overhead Structure	0		
20-Bridge Pier or Support	0		
21-Bridge Rail	0		
22-Cable Barrier	0		
23-Culvert	0		
24-Curb	0		
25-Ditch	2		
26-Embankment	0		
27-Guardrail Face	2		
28-Guardrail End	0		
29-Concrete Traffic Barrier	0		
30-Other Traffic Barrier	0		
31-Tree (Standing)	1		
32-Utility Pole / Light Support	1		
33-Traffic Sign Support	0		
34-Traffic Signal Support	0		
35-Fence	0		
36-Mailbox	0		
37-Other Post, Pole, or Support	0		

Injury Data

Severity Code	Injury Crashes	Number Of Injuries
K	0	0
A	0	0
B	1	1
C	1	2
PD	16	0
Total	**18**	**3**

Road Character

Road Grade	Total
1-Level	12
2-On Grade	4
3-Top of Hill	1
4-Bottom of Hill	1
5-Other	0
Total	**18**

Traffic Control Devices

Traffic Control Device	Total
1-Traffic Signals (Stop & Go)	0
2-Traffic Signals (Flashing)	0
3-Advisory/Warning Sign	0
4-Stop Signs - All Approaches	0
5-Stop Signs - Other	0
6-Yield Sign	0
7-Curve Warning Sign	0
8-Officer, Flagman, School Patrol	0
9-School Bus Stop Arm	0
10-School Zone Sign	0
11-R.R. Crossing Device	0
12-No Passing Zone	0
13-None	18
14-Other	0
Total	**18**

Light

Light Condition	Total
1-Daylight	10
2-Dawn	1
3-Dusk	0
4-Dark - Lighted	2
5-Dark - Not Lighted	4
6-Dark - Unknown Lighting	1
7-Unknown	0
Total	**18**

Crash Summary II - Characteristics

Crashes by Year and Month

Month	2022	2023	2024	Total
JANUARY	0	0	2	2
FEBRUARY	0	1	0	1
MARCH	0	1	0	1
APRIL	0	0	0	0
MAY	1	0	0	1
JUNE	0	1	0	1
JULY	0	0	0	0
AUGUST	2	2	1	5
SEPTEMBER	1	1	1	3
OCTOBER	0	1	0	1
NOVEMBER	1	0	0	1
DECEMBER	0	1	1	2
Total	**5**	**8**	**5**	**18**

Report is limited to the last 10 years of data.

Crash Summary II - Characteristics

Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Traffic Circle-Roundabout	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End - Sideswipe	3	0	0	3	0	1	0	0	0	0	0	0	0	0	7
Head-on - Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intersection Movement	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	5	1	2	0	0	0	0	0	0	0	0	0	0	0	8
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**9**	**1**	**2**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Blowing Sand, Soil, Dirt												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Blowing Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Clear												
Dark - Lighted	1	0	0	0	0	0	0	0	0	0	1	2
Dark - Not Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	7	0	0	0	0	0	0	0	0	0	0	7
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Fog, Smog, Smoke												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Other												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Rain												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	1	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	1	1
Daylight	0	0	0	0	0	0	0	0	0	0	2	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Severe Crosswinds												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Sleet, Hail (Freezing Rain or Drizzle)												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	1	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	1	1
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	1	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	1	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**18**

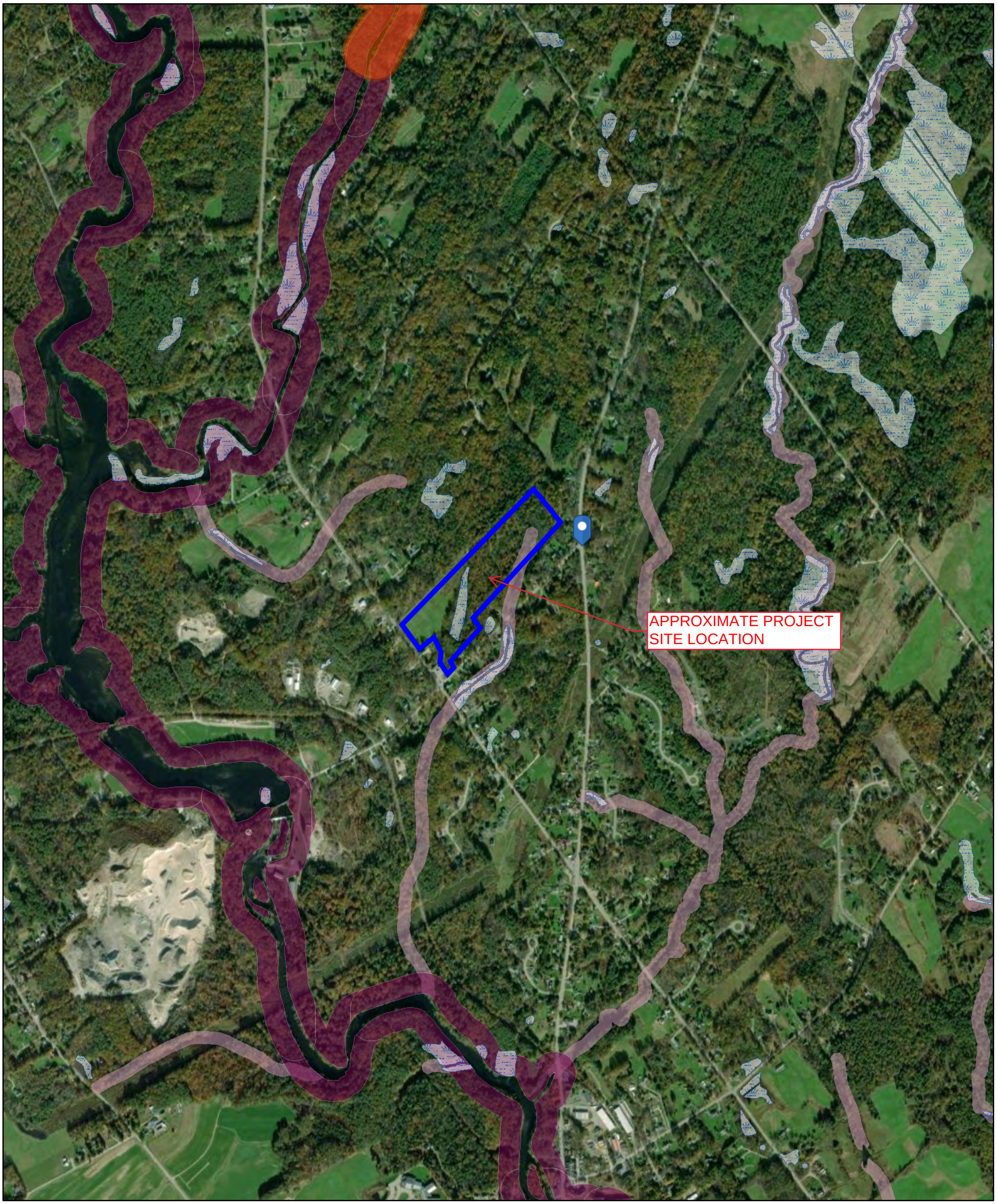
SECTION 15

IMPACT TO IMPORTANT OR UNIQUE NATURAL AREAS

Section 15 – Impact to Important or Unique Natural Areas

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. We have also included a letter from the Maine Natural Areas Program indicating that there are no rare or threatened botanical species documented in the project area.

Beginning With Habitat



April 4, 2025

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

1:18,056

0 0.15 0.3 0.6 mi

0 0.23 0.45 0.9 km

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Beginning with Habitat Program for Planning Purposes Only
Map Created With BWH Map Viewer

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

April 7, 2025

JP Connolly
DM Roma
PO Box 1116
Windham, ME 04062

Via email: jp@dmroma.com

Re: Rare and exemplary botanical features in proximity to: #24047, Dolley Farm Subdivision, 25 River Road, Windham, Maine

Dear JP Connolly:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received April 4, 2025 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Windham, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

MNAP reviewed the site for Small Whorled Pogonia potential. Given the current conditions and past land use history on site, MNAP believes this site has low potential for Small Whorled Pogonia and does not recommend survey specifically for this species.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
90 BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-8044
WWW.MAINE.GOV/DACF/MNAP

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Lisa St. Hilaire

Lisa St. Hilaire | Information Manager | Maine Natural Areas Program
207-287-8044 | lisa.st.hilaire@maine.gov

Rare and Exemplary Botanical Features within 4 miles of Project: #24047, Dolley Farm Subdivision, Windham, ME

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G5	2000-06-06	5	Dry barrens (partly forested, upland)
Columbian Watermeal						
	SC	S2	G5	2016-09-12	11	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Fall Fimbry						
	SC	S2S3	G5	2020-09-17	33	Open wetland, not coastal nor rivershore (non-forested, wetland)
Fern-leaved False Foxglove						
	SC	S3	G5	2011-10-03	38	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)

Fern-leaved False Foxglove					
SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
SC	S3	G5	2020	2	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Great Blue Lobelia					
PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed					
SC	S2	G5	2011-10-22	22	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Horned Pondweed					
SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
Marsh Milkwort					
PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress					
T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Pitch Pine Woodland					
	S3	G2	2005-12-08	28	
Scarlet Oak					
E	S1	G5	1916-08	2	

Scarlet Oak					
					Hardwood to mixed forest (forest, upland)
E	S1	G5	1999-10-03	10	Hardwood to mixed forest (forest, upland)
Small Whorled Pogonia					
E	S2	G2G3	2018-06-15	18	Hardwood to mixed forest (forest, upland)
Spicebush					
SC	S3	G5	2006-06-11	11	Forested wetland
Spo ed Pondweed					
T	S1	G5	2016-06-22	3	Open water (non-forested, wetland)
Vasey's Pondweed					
SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)

Date Exported: 2025-04-07

Conservation Status Ranks

State and Global Ranks: This ranking system facilitates a quick assessment of a species' or habitat type's rarity and is the primary tool used to develop conservation, protection, and restoration priorities for individual species and natural habitat types. Each species or habitat is assigned both a state (S) and global (G) rank on a scale of critically imperiled (1) to secure (5). Factors such as range extent, the number of occurrences, intensity of threats, etc., contribute to the assignment of state and global ranks. The definitions for state and global ranks are comparable but applied at different geographic scales; something that is state imperiled may be globally secure.

The information supporting these ranks is developed and maintained by the Maine Natural Areas Program (state ranks) and NatureServe (global ranks).

Rank	Definition
S1 **G1**	**Critically Imperiled** – At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
S2 **G2**	**Imperiled** – At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3 **G3**	**Vulnerable** – At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4 **G4**	**Apparently Secure** – At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5 **G5**	**Secure** – At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
SX **GX**	**Presumed Extinct** – Not located despite intensive searches and virtually no likelihood of rediscovery.
SH **GH**	**Possibly Extinct** – Known from only historical occurrences but still some hope of rediscovery.
S#S# **G#G#**	**Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem.
SU **GU**	**Unrankable** – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNR **SNR**	**Unranked** – Global or subnational conservation status not yet assessed.
SNA **GNA**	**Not Applicable** – A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., non-native species or ecosystems.
Qualifier	**Definition**
S#? **G#?**	**Inexact Numeric Rank** – Denotes inexact numeric rank.
Q	**Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable. The "Q" modifier is only used at a global level.
T#	**Infraspecific Taxon (trinomial)** – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank.

State Status: Endangered and Threatened are legal status designations authorized by statute. Please refer to MRSA Title 12, §544 and §544-B.

Status	Definition
E	**Endangered** – Any native plant species in danger of extinction throughout all or a significant portion of its range within the State or Federally listed as Endangered.
T	**Threatened** – Any native plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range in the State or Federally listed as Threatened.
SC	**Special Concern** – A native plant species that is rare in the State, but not rare enough to be considered Threatened or Endangered.
PE	**Potentially Extirpated** – A native plant species that has not been documented in the State in over 20 years, or loss of the last known occurrence.

Element Occurrence (EO) Ranks: Quality assessments that designate viability of a population or integrity of habitat. These ranks are based on size, condition, and landscape context. Range ranks (e.g., AB, BC) and uncertainty ranks (e.g., B?) are allowed. The Maine Natural Areas Program tracks all occurrences of rare plants and natural communities/ecosystems (S1-S3) as well as exemplary common natural community types (S4-S5 with EO ranks A/B).

Rank	Definition
A	**Excellent** – Excellent estimated viability/ecological integrity.
B	**Good** – Good estimated viability/ecological integrity.
C	**Fair** – Fair estimated viability/ecological integrity.
D	**Poor** – Poor estimated viability/ecological integrity.
E	**Extant** – Verified extant, but viability/ecological integrity not assessed.
H	**Historical** – Lack of field information within past 20 years verifying continued existence of the occurrence, but not enough to document extirpation.
X	**Extirpated** – Documented loss of population/destruction of habitat.
U	**Unrankable** – Occurrence unable to be ranked due to lack of sufficient information (e.g., possible mistaken identification).
NR	**Not Ranked** – An occurrence rank has not been assigned.

Visit the Maine Natural Areas Program website for more information
http://www.maine.gov/dacf/mnap

maine DEPARTMENT OF Agriculture Conservation & Forestry
NATURAL AREAS

SECTION 16

STORMWATER MANAGEMENT

Section 16 – Stormwater Management

The project has been designed in accordance with the standards found in the Maine Department of Environmental Protection (Maine DEP) Chapter 500 regulations and the Town of Windham Land Use Ordinance. A Stormwater Permit Application has been filed with the Maine DEP and is currently under review. We will provide the Town with a copy of the permit approval order once it is received. We understand that the Project is required to comply with the Post-Construction Stormwater Management Ordinance and that annual inspections and certifications will be required by the Town.

DM ROMA
CONSULTING ENGINEERS

STORMWATER MANAGEMENT REPORT

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE

A. Narrative

25 River Road, LLC, the applicants, are proposing to develop a 33.4-acre parcel on River Road in Windham, Maine, better identified as Lot 25 on the Town of Windham Assessor's Map 5.

The applicant is proposing a 21 duplex style building residential development, resulting in a total of 42 dwelling units. The development will also include the construction of two roads with a total length of approximately 1,640 linear feet. The units will be served by public water, shared subsurface wastewater disposal fields and underground electric, telephone and cable.

B. Existing Conditions

The project site consists of both undeveloped meadow and woodland. In the location of the project site, the land is moderately sloped (3%-8%) with steeper slopes closer to the larger wetland to the south of the proposed development, as steep as 3H:1V. A Class A High Intensity Soil Report and Map were prepared by Mark Hampton Associates, Inc. and utilized in the stormwater analysis. The report has been included as Attachment 1 of this report and the map has been included in the design plan set. Additional test pits were excavated in the general locations of the proposed Best Management Practices, described in later sections of this report. The resultant test pit logs have also been included as Attachment 1 of this report.

In general, the property drains to the center of the site to a large wetland complex. The wetlands drain southerly to Newhall Road where the runoff leaves the property. The flow is then conveyed beneath Newhall Road to an unnamed stream. The stream is then conveyed southerly beneath River Road, eventually discharging into 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 roadway and unit related development, the project will generate approximately 112,850 square feet (2.59 acres) of impervious surfaces. The project will also generate approximately 251,165 square feet (5.77 acres) of lawn, landscaping, and best management practices, resulting in a total project developed area of 364,015 square feet (8.36 acres).

Since the project will result in the construction of over one (1) acre of impervious surface and over five (5) acres of developed area, the project will be required to obtain a Stormwater Permit from the MDEP. As part of the requirements of the Stormwater Permit, the project will need to meet the Basic and General Standards of the MDEP Chapter 500 Stormwater Management regulations. The development is also subject to review by the Town of 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 MDEP 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 portions of the site development. Based on the calculation provided in Section 4C(2)(a) related to the amount of the property being developed and its corresponding treatment standards in Table 1 in Chapter 500, the project will require the treatment of more than 90% of the site's impervious area and more than 75% of the total developed area. This calculation is included as Attachment 2 of this report. The General Standard will be met by incorporating the construction of two (2) underdrained filter basins and a meadow stormwater treatment buffer located on the downhill side of a road as part of the project's stormwater infrastructure. In addition, roofline drip edges will be installed around each of the buildings 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 75% of the site's developed area. Calculations can be found on the Post Development Watershed Map and enclosed as Attachment 2 in this report.

Included as Attachment 3 of this report are the sizing calculations for the proposed underdrained filter basins. 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.
- Sizing calculations for the level spreaders located at the outfall of the discharge pipe from the basins meeting the sizing standards identified in *Section G(4) Level Spreaders* in Maine Erosion and Sediment Control Best Management Practices Manual for Designers and Engineers prepared by the MDEP.

Based on the sizing criteria in *Chapter 5.3 Buffer Adjacent to the Downhill Side of a Road* located in Volume III. BMP Technical Design Manual prepared by the MDEP, a meadow buffer receiving two lanes of road requires a flow path of 80 feet. Included within the plan set is the deed restricted buffer easement meeting the design standards.

The locations and construction detail of the proposed roofline dripedges have been included one the construction details sheets 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, five (5) 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 and SP-5 both drain in a northwesterly direction, SP-1 onto the abutting property and SP-5 within the River Road right of way. Study Points SP-2, SP-3 and SP-4 drain in a southeasterly direction toward Newhall Road. 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	1.30	0.01	2.88	0.03	4.32	0.05
SP-2	1.62	1.91	3.52	3.52	5.18	4.64
SP-3	11.88	10.10	25.77	23.39	37.96	37.96
SP-4	0.57	0.57	1.14	1.14	1.62	1.62
SP-5	0.10	0.06	0.20	0.10	0.28	0.13

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 Study Points SP-1, SP-3, SP-4 and SP-5 in all the modeled storm events.

The project design also reduces the peak rate of runoff during the larger 10- and 25-year storm events at Study Point SP-2, with an increase in the 2-year storm event. The flow from this study point is collected in the new closed drainage system within River Road. The storm drain within this system was designed to the 25-year storm event, indicating adequate capacity for the smaller 2-year storm. We do not anticipate pipe capacity problems, significant downstream flooding or increase erosion during the smaller storm event.

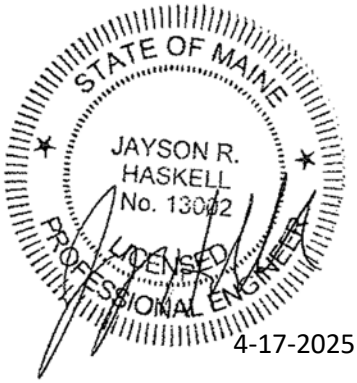
The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 5 of this report.

H. Maintenance of common facilities or property

The applicant will be responsible for the maintenance of the stormwater facilities until a condominium association is created. The responsibility will then be conveyed to the association. 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

4-17-2025

ATTACHMENT 1

CLASS A – HIGH INTENSITY SOIL SURVEY REPORT & STORMWATER DEVICE TEST PITS

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SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

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River Road/ Newhall Road
Windham, ME
DM Roma Consulting Engineers

Soil Narrative Report

DATE:	Soil Profiles observed on October 15, 2024
BASE MAP:	Base plan provided by DM Roma Consulting Engineers Scale 1 inch equals 100 feet and two foot contours.
GROUND CONTROL:	Soil survey boundaries located by Mark Hampton Associates, Inc. for Class A Soil Survey

Class A-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1/8 acre or larger.
Scale of 1"= 100 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located under direction of professional land surveyor or professional engineer.
Base Map –2 foot contour intervals

Provided:

Mapping units of 1/8 acre or larger
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by pacing and taping from know survey control points.
Ground topographic survey with two foot contours and ground control provided.

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

C.S.S. #216, L.S.E. #263 12/2/24

Mark J. Hampton Date

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SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

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River Road/Newhall Road
Windham, ME
DM Roma Consulting Engineers

Buxton
(Aquic Dystric Eutrochrepts)

SETTING

PARENT MATERIAL:	Derived from glaciomarine or glaciolaucustrine sediments
LANDFORM:	Coastal lowlands and river valleys
POSITION IN LANDSCAPE:	Intermediate positions on landform
SLOPE GRADIENT RANGES:	(A) 03%, (B) 3-8%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained with a perched watertable from 1.5 to 3.0 feet below the surface at some time from November to May or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark Brown, fine sandy loam 0-7"
Subsurface Layer:	Olive brown, silt loam, 8-15"
Subsoil Layer:	Olive gray silty clay loam, 15-32"
Substratum:	Gray silty clay loam +32"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 60 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Scantic, Lamoine,

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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8161

River Road/Newhall Road
Windham, ME
DM Roma Consulting Engineers

Lamoine
(Aeric Haplaquepts)

SETTING

PARENT MATERIAL:	Derived from glaciomarine or glaciolaucustrine sediments
LANDFORM:	Coastal lowlands and river valleys
POSITION IN LANDSCAPE:	Intermediate positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Somewhat poorly drained with a perched watertable from 0.5 to 2.0 feet below the surface at some time from November to June or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark Brown, fine sandy loam 0-7"
Subsurface Layer:	Lt. Olive brown silt loam, 7-14"
Subsoil Layer:	Olive silty clay loam, 14-21"
Substratum:	Olive, silty clay loam, 21-65"

HYDROLOGIC GROUP:	Group D
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Buxton, Scantic

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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8161

River Road/Newhall Road
Windham, ME
DM Roma Consulting Engineers

Scantic
(Aquic Haplorthod)

SETTING

PARENT MATERIAL:	Derived from glaciomarine or glaciolaucustrine sediments
LANDFORM:	Coastal lowlands and river valleys
POSITION IN LANDSCAPE:	Lower positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark grayish brown, silt loam 0-9"
Subsurface Layer:	Olive gray silt loam, 9-16"
Subsoil Layer:	Olive silty clay loam, 16-29"
Substratum:	Olive gray clay loam, 29-65"

HYDROLOGIC GROUP:	Group D
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Buxton, Lamoine

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

E161

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-1 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
C	Olive	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 17 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-2 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Sandy Loam	Weak Angular	Very Friable	
Bw	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
C	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 16 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 12 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-3 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Fine Grandul	Friable	
Eg	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	
Cg	Olive	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-4 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Grand	Friable	
Bw1	Brown	Silt Loam	Fine Grandul	Friable	
Bw2	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 13 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

11/21/2024
Date

Mark J. Hampton
Name Printed

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-5

☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	F. Sandy Loam	Grand	Very Friable	
Eg	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-6

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Sandy Loam	Weak Angular	Very Friable	
Bw1	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 14 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 12 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-7

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Fine Grandul	Friable	
Eg	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 16 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-8

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Grand	Friable	
Eg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

11/21/2024
Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-9

☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw1	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
C	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 18 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 6 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-10

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Sandy Loam	Weak Angular	Very Friable	
Bw1	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 18 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 6 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-11

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Fine Grandul	Friable	
Bw1	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 13 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-12

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Grand	Friable	
Eg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

Mark J. Hampton

Name Printed

11/21/2024

Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-13 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw1	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
C	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
Buxton	18 " Depth	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD	10 Percent	☐ No ☒ Yes	_____ Soil Group

Exploration Symbol # SS-14 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Sandy Loam	Weak Angular	Very Friable	
Eg	Gray	F. Sandy Loam	Sub Ang Blocky	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
Scantic	6 " Depth	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☒ PD ☐ VPD	2 Percent	☐ No ☒ Yes	_____ Soil Group

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
	_____ " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD	_____ Percent	☐ No ☐ Yes	_____ Soil Group

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
	_____ " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD	_____ Percent	☐ No ☐ Yes	_____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

11/21/2024
Date

Mark J. Hampton
Name Printed

216
SS License No.

STATE OF MAINE MARK J. HAMPTON #216 CERTIFIED SOIL SCIENTIST

affix professional seal

ATTACHMENT 2

GENERAL STANDARDS CALCULATIONS

DM ROMA
CONSULTING ENGINEERS

Dolley Farm Subdivision
Calculated by: JRH
Printed 4/17/2025
Job #24047

Stormwater Treatment Requirements

Pecentage of Developed Area to Land Available for Development

Total Land Area=	1,455,442	sf
Deductions		
Area Slopes Steeper than 25%	14,390	sf
Area Protected Natural Resources	-	sf
Total Available Land for Development	**1,441,052**	**sf**
Total Developed Area	**364,015**	**sf**

% of Developed Area to Land Available for Development=	**25%**

From Table 1 Stormwater Treatment Based on Percentage of Parcel Developed of Chapter 500 Stormwater Management Rules for <60% of site developed

Percentage of Total Impervious Area Requiring Treatment=	**90%**
Percentage of Total Developed Area Requiring Treatment=	**75%**

DM ROMA
CONSULTING ENGINEERS

Dolley Farm Subdivision
Calculated by: JRH
Printed 4/17/2025
Job #24047

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	700	0	0	700	0	0	0	None	0	0	None
WS-20	6,605	6,085	0	520	0	0	0	Yes	6,085	520	Buffer
WS-21	46,040	2,815	2,165	14,785	4,450	4,335	17,490	Dripedge	2,165	0	Dripedge Only
WS-22	17,710	2,740	2,520	8,425	2,650	1,375	0	Dripedge	2,520	0	Dripedge Only
WS-23	11,770	0	0	0	7,445	4,325	0	No	0	0	None
WS-23A	34,000	0	0	0	4,690	24,340	4,970	No	0	0	None
WS-24	8,475	0	0	5,425	0	0	3,050	No	0	0	None
WS-25	1,100	985	0	115	0	0	0	Yes	985	115	Buffer
WS-26	1,100	60	0	390	650	0	0	No	0	0	None
WS-30	4,260	3,650	0	610	0	0	0	Yes	3,650	610	FB-1
WS-31	12,050	8,100	1,685	2,265	0	0	0	Yes	9,785	2,265	FB-1
WS-32	14,630	0	1,545	13,085	0	0	0	Yes	1,545	13,085	FB-1
WS-33	2,415	0	0	2,415	0	0	0	Yes	0	2,415	FB-1
WS-34	12,980	6,080	2,075	4,825	0	0	0	Yes	8,155	4,825	FB-1
WS-35	15,480	9,735	3,035	2,710	0	0	0	Yes	12,770	2,710	FB-1
WS-36	37,565	0	0	33,960	0	0	3,605	Yes	0	33,960	FB-1
WS-37	47,830	0	4,950	33,525	0	0	9,355	Yes	4,950	33,525	FB-2
WS-38	8,730	4,350	2,085	2,295	0	0	0	Yes	6,435	2,295	FB-2
WS-39	8,590	4,600	2,005	1,985	0	0	0	Yes	6,605	1,985	FB-2
WS-40	12,410	5,690	2,440	4,280	0	0	0	Yes	8,130	4,280	FB-2
WS-41	14,475	7,530	3,225	3,720	0	0	0	Yes	10,755	3,720	FB-2
WS-42	11,120	6,000	2,775	2,345	0	0	0	Yes	8,775	2,345	FB-1
WS-43	20,495	0	2,960	17,535	0	0	0	Yes	2,960	17,535	FB-2
WS-44	607,725	0	8,815	53,260	1,740	21,300	522,610	Dripedge	8,815	0	Dripedge Only
WS-45	44,140	0	2,150	41,990	0	0	0	Yes	2,150	41,990	FB1
WS-50	24,960	0	0	0	0	0	24,960	No	0	0	None
Totals	**1,027,355**	**68,420**	**44,430**	**251,165**					**107,235**	**168,180**	

* 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.

** All proposed buildings shall be installed with a roofline drip edge to provide treatment for the rooftop impervious surface. The buildings' impervious area is included in the watershed and overall treatment calculations below, but not included in the BMP sizing calculations for each treatment device.

Impervious Area =	112,850	sf
New Impervious Area Requiring Treatment (90%)	101,565	sf
Provided Impervious Treatment=	107,235	sf
	95.02%	Impervious Area Treated
Developed Area =	364,015	sf
Developed Area Requiring Treatment (75%)=	273,011	sf
Developed Area Treated=	275,415	sf
	75.66%	Developed Area Treated

ATTACHMENT 3

UNDERDRAINED FILTER BASIN SIZING CALCULATIONS

DM ROMA
CONSULTING ENGINEERS

Dolley Farm Subdivision
Calculated by: JRH
Printed 4/17/2025
Job #24047

Underdrained Filter Basin FB1 Sizing Calculations

Tributary Watershed Areas

Tributary Impervious Area=	33,565	sf	(WS-30 thru 36 & 42 & 45 Impervious Area)
Tributary Landscaped Area=	104,205	sf	(WS-30 thru 36 & 42 & 45 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 6,271 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
225	5,185	0
226	7,275	6,201
226.5	8,417	10,120

Outlet Elevation = 226.50

Storage Volume Provided= 10,120 cf > Required

Filter Bottom Calculation

Filter Area (Required) = 5%xImpervious Area + 2%xLandscaped Area

Filter Area Required = 3,762 sf

Filter Area Provided = 5,185 sf > Required

Sediment Pre-Treatment Calculation

Tributary Impervious Area Requiring Sanding: 33,565 sf

Required Sediment Forebay Volume :

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

Sediment Volume (Required) 42.8 cf

Runoff is collected in 5 Catch Basins with 2' Sumps

CB with 2' sump = 25.13 cf of storage

Sediment Storage Volume Provided: 125.65 cf > Required

Level Spreader Sizing Calculations

Length of Level Spreader = Stormwater discharge flow during the 10-year storm event x 1/4" per foot

10-year discharge flow = 1.11 cfs

Required Length of Level Spreader = 4.44 ft

Provided Length of Level Spreader = 10 ft > Required

Hydrograph for Pond FB1: Filter Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	225.00	0.00	0.00	**0.00**
7.50	0.02	0	225.00	0.02	0.02	0.00
10.00	**0.09**	0	225.00	0.09	0.09	0.00
12.50	**1.38**	6,788	226.08	0.14	0.14	0.00
15.00	0.28	**9,636**	**226.44**	**0.14**	**0.14**	0.00
17.50	0.14	**10,099**	**226.50**	**0.14**	**0.14**	0.00
20.00	0.10	9,828	226.47	0.14	0.14	0.00
22.50	0.08	9,336	226.41	0.14	0.14	0.00
25.00	0.00	8,480	226.30	0.14	0.14	0.00
27.50	0.00	7,235	226.14	0.14	0.14	0.00
30.00	0.00	6,022	225.98	0.13	0.13	0.00
32.50	0.00	4,840	225.81	0.13	0.13	0.00
35.00	0.00	3,693	225.64	0.13	0.13	0.00
37.50	0.00	2,582	225.46	0.12	0.12	0.00
40.00	0.00	1,509	225.28	0.12	0.12	0.00
42.50	0.00	477	225.09	0.11	0.11	0.00
45.00	0.00	0	225.00	0.00	0.00	0.00
47.50	0.00	0	225.00	0.00	0.00	0.00
50.00	0.00	0	225.00	0.00	0.00	0.00
52.50	0.00	0	225.00	0.00	0.00	0.00
55.00	0.00	0	225.00	0.00	0.00	0.00
57.50	0.00	0	225.00	0.00	0.00	0.00
60.00	0.00	0	225.00	0.00	0.00	0.00

Summary for Pond FB1: Filter Basin 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 154,640 sf, 30.28% Impervious, Inflow Depth > 3.73" for 25-Year event
Inflow = 14.04 cfs @ 12.10 hrs, Volume= 48,101 cf
Outflow = 4.24 cfs @ 12.47 hrs, Volume= 27,217 cf, Atten= 70%, Lag= 21.9 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Secondary = 4.24 cfs @ 12.47 hrs, Volume= 27,217 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 227.90' @ 12.47 hrs Surf.Area= 12,065 sf Storage= 24,414 cf

Plug-Flow detention time= 229.6 min calculated for 27,214 cf (57% of inflow)
Center-of-Mass det. time= 118.7 min (925.7 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1	225.00'	25,594 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
225.00	5,185	393.0	0	0	5,185
226.00	7,275	416.0	6,201	6,201	6,720
228.00	12,340	560.0	19,393	25,594	17,947

Device	Routing	Invert	Outlet Devices
#1	Primary	222.73'	**12.0" Round Culvert X 0.00** L= 39.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 222.73' / 222.00' S= 0.0187 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	222.83'	**1.7" Vert. 1-3/4" Orifice Cap** C= 0.600
#3	Device 2	225.00'	**2.410 in/hr Exfiltration over Surface area**
#4	Device 1	226.50'	**5.5" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	227.35'	**Neenah R4345 Beehive Grate Light Duty-req. structure** Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600
#6	Secondary	227.60'	**10.0' long x 10.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.51 2.57 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=225.00' TW=222.00' (Dynamic Tailwater)
- **1=Culvert** (Controls 0.00 cfs)
  - **2=1-3/4" Orifice Cap** (Passes 0.00 cfs of 0.11 cfs potential flow)
    - **3=Exfiltration** (Passes 0.00 cfs of 0.29 cfs potential flow)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
  - **5=Neenah R4345 Beehive Grate Light Duty-req. structure** (Controls 0.00 cfs)

Secondary OutFlow Max=4.21 cfs @ 12.47 hrs HW=227.90' TW=222.41' (Dynamic Tailwater)
- **6=Broad-Crested Rectangular Weir** (Weir Controls 4.21 cfs @ 1.40 fps)

DM ROMA
CONSULTING ENGINEERS

Dolley Farm Subdivision
Calculated by: JRH
Printed 4/17/2025
Job #24047

Underdrained Filter Basin FB2 Sizing Calculations

Tributary Watershed Areas

Tributary Impervious Area=	22,170	sf	(WS-37 thru 41 & 43 Impervious Area)
Tributary Landscaped Area=	63,340	sf	(WS-37 thru 41 & 43 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 3,959 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
228.5	2,600	0
230	3,745	4,733

Outlet Elevation = 230.00

Storage Volume Provided= 4,733 cf > Required

Filter Bottom Calculation

Filter Area (Required) = 5%xImpervious Area + 2%xLandscaped Area

Filter Area Required = 2,375 sf

Filter Area Provided = 2,600 sf > Required

Sediment Pre-Treatment Calculation

Tributary Impervious Area Requiring Sanding: 22,170 sf

Required Sediment Forebay Volume :

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

Sediment Volume (Required) 28.3 cf

Runoff is collected in 5 Catch Basins

CB with 2' sump = 25.13 cf of storage

Sediment Storage Volume Provided: 125.65 cf > Required

Level Spreader Sizing Calculations

Length of Level Spreader = Stormwater discharge flow during the 10-year storm event x 1/4" per foot

10-year discharge flow = 2.54 cfs

Required Length of Level Spreader = 10.16 ft

Provided Length of Level Spreader = 13 ft > Required

Hydrograph for Pond FB2: Filter Basin 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	228.50	0.00	0.00	**0.00**
7.50	0.00	0	228.50	0.00	0.00	0.00
10.00	**0.04**	0	228.50	0.04	0.04	0.00
12.50	**0.69**	3,089	229.54	0.07	0.07	0.00
15.00	0.14	**4,515**	**229.94**	**0.07**	**0.07**	0.00
17.50	0.07	**4,749**	**230.00**	**0.07**	**0.07**	0.00
20.00	0.05	4,617	229.97	0.07	0.07	0.00
22.50	0.04	4,375	229.90	0.07	0.07	0.00
25.00	0.00	3,952	229.79	0.07	0.07	0.00
27.50	0.00	3,333	229.61	0.07	0.07	0.00
30.00	0.00	2,730	229.43	0.07	0.07	0.00
32.50	0.00	2,144	229.25	0.06	0.06	0.00
35.00	0.00	1,577	229.06	0.06	0.06	0.00
37.50	0.00	1,030	228.88	0.06	0.06	0.00
40.00	0.00	502	228.69	0.06	0.06	0.00
42.50	0.00	0	228.50	0.01	0.01	0.00
45.00	0.00	0	228.50	0.00	0.00	0.00
47.50	0.00	0	228.50	0.00	0.00	0.00
50.00	0.00	0	228.50	0.00	0.00	0.00
52.50	0.00	0	228.50	0.00	0.00	0.00
55.00	0.00	0	228.50	0.00	0.00	0.00
57.50	0.00	0	228.50	0.00	0.00	0.00
60.00	0.00	0	228.50	0.00	0.00	0.00

Summary for Pond FB2: Filter Basin 2

[82] Warning: Early inflow requires earlier time span
[93] Warning: Storage range exceeded by 0.04'
[80] Warning: Exceeded Pond CB-5 by 0.35' @ 33.95 hrs (0.34 cfs 5,451 cf)

Inflow Area =	113,630 sf,	35.92% Impervious,	Inflow Depth >	3.86"	for 25-Year event
Inflow =	10.02 cfs @	12.10 hrs,	Volume=	36,562 cf	
Outflow =	7.66 cfs @	12.21 hrs,	Volume=	24,782 cf,	Atten= 24%, Lag= 6.3 min
Primary =	0.00 cfs @	5.00 hrs,	Volume=	0 cf	
Secondary =	7.66 cfs @	12.21 hrs,	Volume=	24,782 cf	

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 232.04' @ 12.21 hrs Surf.Area= 5,470 sf Storage= 13,893 cf

Plug-Flow detention time= 174.8 min calculated for 24,781 cf (68% of inflow)
Center-of-Mass det. time= 76.3 min (881.9 - 805.6)

Volume	Invert	Avail.Storage	Storage Description
#1	228.50'	13,893 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
228.50	2,600	240.5	0	0	2,600
230.00	3,745	268.8	4,733	4,733	3,809
232.00	5,470	306.5	9,161	13,893	5,628

Device	Routing	Invert	Outlet Devices
#1	Primary	226.23'	**12.0" Round Culvert X 0.00** L= 29.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 226.23' / 225.00' S= 0.0424 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	226.33'	**1.2" Vert. 1-1/4" Orifice Cap** C= 0.600
#3	Device 2	228.50'	**2.410 in/hr Exfiltration thru Filter over Surface area**
#4	Device 1	230.00'	**6.0" W x 16.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	231.35'	**Neenah R4345 Beehive Grate Light Duty-req. structure** Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600
#6	Secondary	231.60'	**10.0' long x 11.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.53 2.59 2.70 2.68 2.67 2.68 2.66 2.64

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=228.50' TW=225.00' (Dynamic Tailwater)
- **1=Culvert** (Controls 0.00 cfs)
- **2=1-1/4" Orifice Cap** (Passes 0.00 cfs of 0.06 cfs potential flow)
  - **3=Exfiltration thru Filter** (Passes 0.00 cfs of 0.15 cfs potential flow)
- **4=Orifice/Grate** (Controls 0.00 cfs)
- **5=Neenah R4345 Beehive Grate Light Duty-req. structure** (Controls 0.00 cfs)

Secondary OutFlow Max=7.35 cfs @ 12.21 hrs HW=232.03' TW=225.21' (Dynamic Tailwater)
- **6=Broad-Crested Rectangular Weir** (Weir Controls 7.35 cfs @ 1.71 fps)

ATTACHMENT 4

ROOFLINE DRIPEDGE SIZING CALCULATIONS

DM ROMA
CONSULTING ENGINEERS

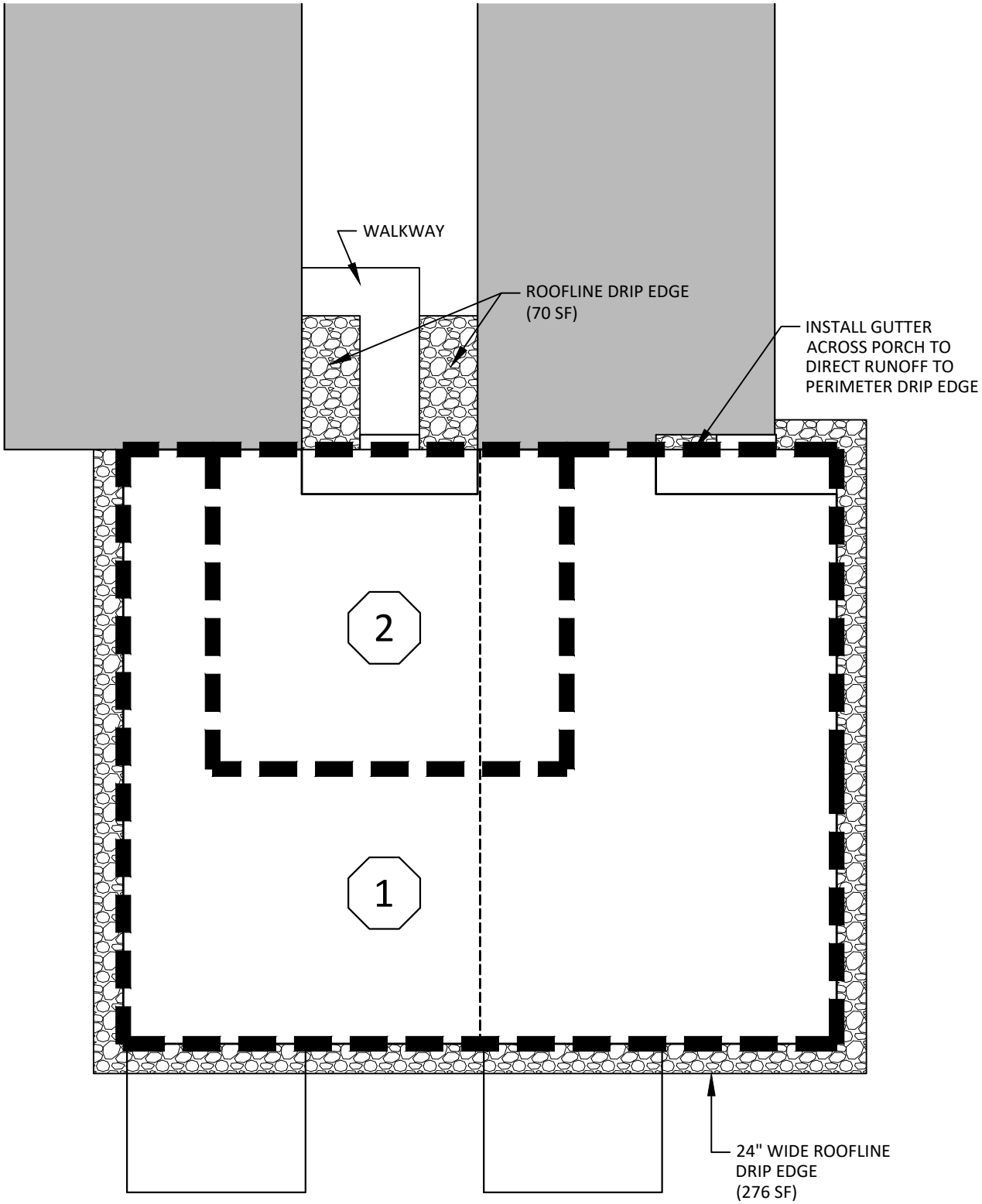
Dolley Farm Subdivision
Calculated by: JRH
Printed 4/17/2025
Job #24047

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%

BUILDING DRIP EDGE LOCATION

Roof Watershed	Tributary Roof Area (sf)	Water Quality Volume (Required)	Dripedge Surface Area (sf)	Reservoir Layer Depth (ft)	Filter Layer Depth (ft)	WQV (Provided)
DUPLEX STYLE 1 - AREA 1	1,408	117.33	276.00	1.25	0.50	179.40
DUPLEX STYLE 1 - AREA 2	512	42.67	70.00	1.25	0.50	45.50
DUPLEX STYLE 2	1,826	152.17	304.00	1.25	0.50	197.60



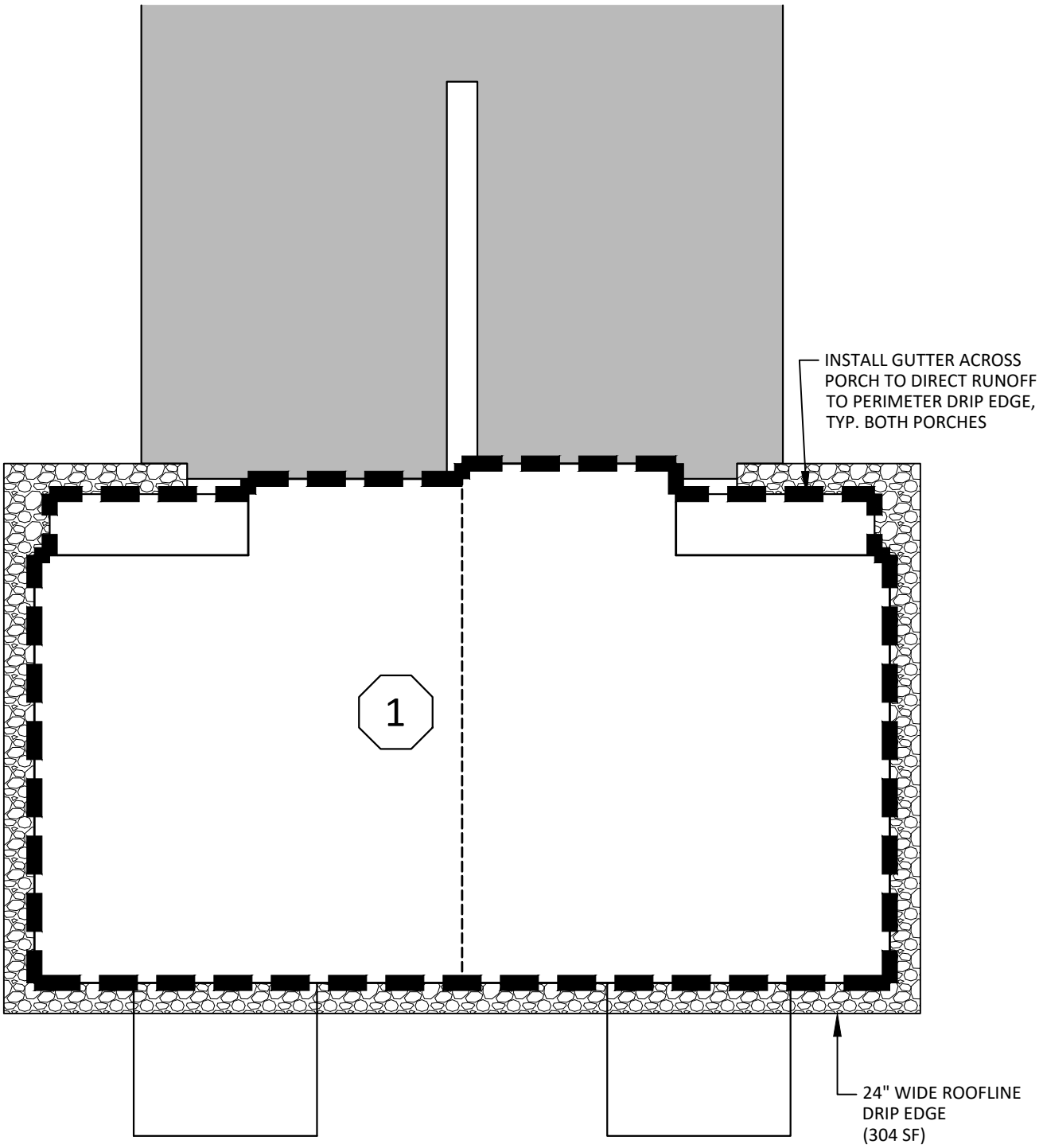
DUPLEX STYLE 1 - ROOFLINE DRIP EDGE SIZING

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE

FOR RECORD OWNER:
25 RIVER ROAD LLC
PO BOX 957
WINDHAM, MAINE, 04062

SCALE: 1"=20'
DATE: 3-18-2025
JOB NUMBER: 24047

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055



DUPLEX STYLE 2 - ROOFLINE DRIP EDGE SIZING

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE

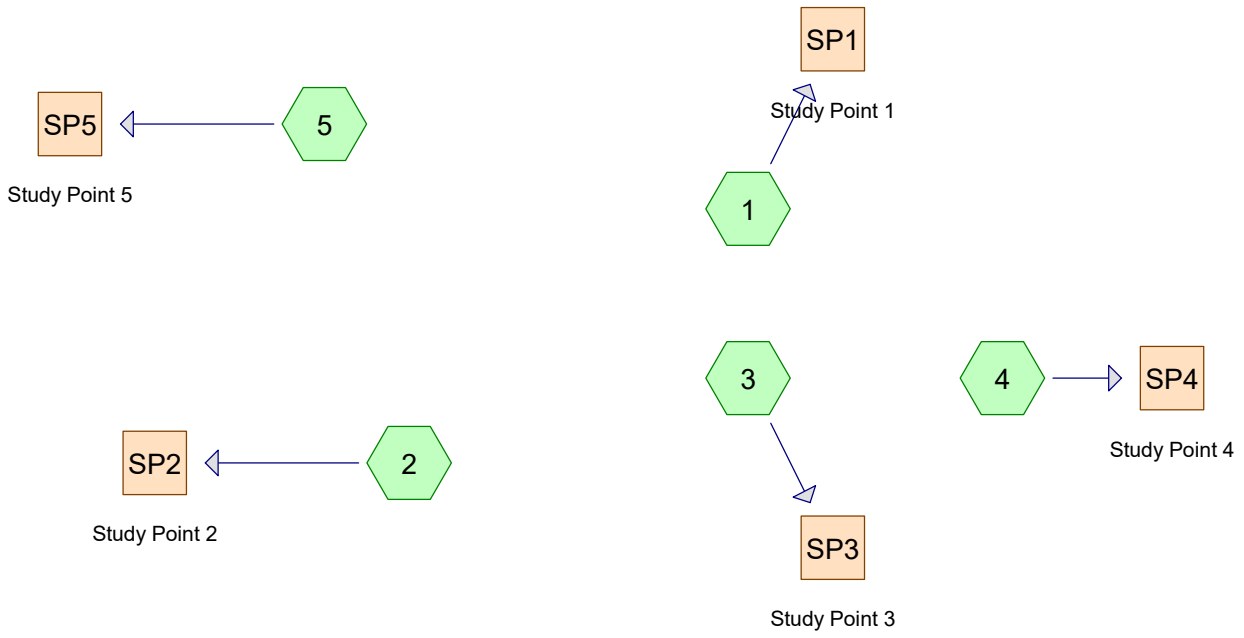
FOR RECORD OWNER:
25 RIVER ROAD LLC
PO BOX 957
WINDHAM, MAINE, 04062

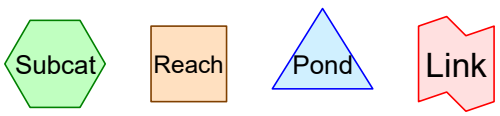
SCALE: 1"=20'
DATE: 3-18-2025
JOB NUMBER: 24047

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

ATTACHMENT 5

STORMWATER MODEL OUTPUT





Routing Diagram for 24047-PRE
Prepared by DM Roma Consulting Engineers, Printed 4/17/2025

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 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

Subcatchment 1: Runoff Area=65,805 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=220' Tc=12.3 min CN=74 Runoff=4.32 cfs 16,547 cf

Subcatchment 2: Runoff Area=95,925 sf 5.63% Impervious Runoff Depth=3.11"
Flow Length=432' Tc=22.1 min CN=75 Runoff=5.18 cfs 24,879 cf

Subcatchment 3: Runoff Area=791,810 sf 0.22% Impervious Runoff Depth=3.11"
Flow Length=2,020' Tc=29.1 min CN=75 Runoff=37.96 cfs 205,365 cf

Subcatchment 4: Runoff Area=24,960 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=266' Tc=18.8 min CN=79 Runoff=1.62 cfs 7,283 cf

Subcatchment 5: Runoff Area=3,090 sf 10.03% Impervious Runoff Depth=3.50"
Flow Length=147' Slope=0.0500 '/' Tc=6.0 min CN=79 Runoff=0.28 cfs 902 cf

Reach SP1: Study Point 1 Inflow=4.32 cfs 16,547 cf
Outflow=4.32 cfs 16,547 cf

Reach SP2: Study Point 2 Inflow=5.18 cfs 24,879 cf
Outflow=5.18 cfs 24,879 cf

Reach SP3: Study Point 3 Inflow=37.96 cfs 205,365 cf
Outflow=37.96 cfs 205,365 cf

Reach SP4: Study Point 4 Inflow=1.62 cfs 7,283 cf
Outflow=1.62 cfs 7,283 cf

Reach SP5: Study Point 5 Inflow=0.28 cfs 902 cf
Outflow=0.28 cfs 902 cf

Summary for Subcatchment 1:

Runoff = 4.32 cfs @ 12.17 hrs, Volume= 16,547 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
57,748	74	Pasture/grassland/range, Good, HSG C
8,057	72	Woods/grass comb., Good, HSG C
65,805	74	Weighted Average
65,805		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	150	0.0367	0.23		**Sheet Flow, A TO B** Grass: Short n= 0.150 P2= 3.10"
0.7	38	0.0158	0.88		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
0.8	32	0.0158	0.63		**Shallow Concentrated Flow, C TO D** Woodland Kv= 5.0 fps
12.3	220	Total			

Summary for Subcatchment 2:

Runoff = 5.18 cfs @ 12.31 hrs, Volume= 24,879 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,400	98	Existing-Offsite Pavement
*	7,965	74	Existing-Offsite Grass C
	82,530	74	Pasture/grassland/range, Good, HSG C
*	30	96	Gravel surface
	95,925	75	Weighted Average
	90,525		94.37% Pervious Area
	5,400		5.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	150	0.0300	0.15		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
2.3	167	0.0300	1.21		**Shallow Concentrated Flow, C TO D** Short Grass Pasture Kv= 7.0 fps
2.7	115	0.0100	0.70		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
22.1	432	Total			

Summary for Subcatchment 3:

Runoff = 37.96 cfs @ 12.41 hrs, Volume= 205,365 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
	234,720	74	Pasture/grassland/range, Good, HSG C
	252,340	72	Woods/grass comb., Good, HSG C
	281,510	79	Woods/grass comb., Good, HSG D
*	18,245	74	Existing grass cover, Good, HSG C
*	3,255	80	Existing grass cover, Good, HSG D
*	1,425	98	Existing roofs
*	315	98	Existing paved driveway
	791,810	75	Weighted Average
	790,070		99.78% Pervious Area
	1,740		0.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	144	0.0764	0.14		**Sheet Flow, A TO B** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	71	0.0560	1.18		**Shallow Concentrated Flow, B TO C** Woodland Kv= 5.0 fps
11.0	1,805	0.0105	2.74	181.89	**Channel Flow, C TO D** Area= 66.4 sf Perim= 132.9' r= 0.50' n= 0.035 Earth, dense weeds
29.1	2,020	Total			

Summary for Subcatchment 4:

Runoff = 1.62 cfs @ 12.26 hrs, Volume= 7,283 cf, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
24,960	79	Woods/grass comb., Good, HSG D
24,960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	113	0.0398	0.10		**Sheet Flow, A TO B** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	153	0.0327	4.83	345.65	**Channel Flow, B TO C** Area= 71.5 sf Perim= 143.1' r= 0.50' n= 0.035 Earth, dense weeds
18.8	266	Total			

Summary for Subcatchment 5:

Runoff = 0.28 cfs @ 12.09 hrs, Volume= 902 cf, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	310	98	Existing-Offsite Pavement
*	355	96	Existing-Offsite Gravel surface
	2,425	74	Pasture/grassland/range, Good, HSG C
	3,090	79	Weighted Average
	2,780		89.97% Pervious Area
	310		10.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	11	0.0500	0.11		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
0.3	136	0.0500	6.57	11.50	**Trap/Vee/Rect Channel Flow, B TO C** Bot.W=1.00' D=0.50' Z= 5.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
4.0					**Direct Entry, 6 MINUTE MIN. TC**
6.0	147	Total			

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 65,805 sf, 0.00% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 4.32 cfs @ 12.17 hrs, Volume= 16,547 cf
Outflow = 4.32 cfs @ 12.17 hrs, Volume= 16,547 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 95,925 sf, 5.63% Impervious, Inflow Depth = 3.11" for 25-Year event
Inflow = 5.18 cfs @ 12.31 hrs, Volume= 24,879 cf
Outflow = 5.18 cfs @ 12.31 hrs, Volume= 24,879 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP3: Study Point 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 791,810 sf, 0.22% Impervious, Inflow Depth = 3.11" for 25-Year event
Inflow = 37.96 cfs @ 12.41 hrs, Volume= 205,365 cf
Outflow = 37.96 cfs @ 12.41 hrs, Volume= 205,365 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP4: Study Point 4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 24,960 sf, 0.00% Impervious, Inflow Depth = 3.50" for 25-Year event
Inflow = 1.62 cfs @ 12.26 hrs, Volume= 7,283 cf
Outflow = 1.62 cfs @ 12.26 hrs, Volume= 7,283 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP5: Study Point 5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3,090 sf, 10.03% Impervious, Inflow Depth = 3.50" for 25-Year event
Inflow = 0.28 cfs @ 12.09 hrs, Volume= 902 cf
Outflow = 0.28 cfs @ 12.09 hrs, Volume= 902 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 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

Subcatchment 1: Runoff Area=65,805 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=220' Tc=12.3 min CN=74 Runoff=1.30 cfs 5,332 cf

Subcatchment 2: Runoff Area=95,925 sf 5.63% Impervious Runoff Depth=1.03"
Flow Length=432' Tc=22.1 min CN=75 Runoff=1.62 cfs 8,208 cf

Subcatchment 3: Runoff Area=791,810 sf 0.22% Impervious Runoff Depth=1.03"
Flow Length=2,020' Tc=29.1 min CN=75 Runoff=11.88 cfs 67,751 cf

Subcatchment 4: Runoff Area=24,960 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=266' Tc=18.8 min CN=79 Runoff=0.57 cfs 2,625 cf

Subcatchment 5: Runoff Area=3,090 sf 10.03% Impervious Runoff Depth=1.26"
Flow Length=147' Slope=0.0500 '/' Tc=6.0 min CN=79 Runoff=0.10 cfs 325 cf

Reach SP1: Study Point 1 Inflow=1.30 cfs 5,332 cf
Outflow=1.30 cfs 5,332 cf

Reach SP2: Study Point 2 Inflow=1.62 cfs 8,208 cf
Outflow=1.62 cfs 8,208 cf

Reach SP3: Study Point 3 Inflow=11.88 cfs 67,751 cf
Outflow=11.88 cfs 67,751 cf

Reach SP4: Study Point 4 Inflow=0.57 cfs 2,625 cf
Outflow=0.57 cfs 2,625 cf

Reach SP5: Study Point 5 Inflow=0.10 cfs 325 cf
Outflow=0.10 cfs 325 cf

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 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

Subcatchment 1: Runoff Area=65,805 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=220' Tc=12.3 min CN=74 Runoff=2.88 cfs 11,239 cf

Subcatchment 2: Runoff Area=95,925 sf 5.63% Impervious Runoff Depth=2.13"
Flow Length=432' Tc=22.1 min CN=75 Runoff=3.52 cfs 17,019 cf

Subcatchment 3: Runoff Area=791,810 sf 0.22% Impervious Runoff Depth=2.13"
Flow Length=2,020' Tc=29.1 min CN=75 Runoff=25.77 cfs 140,484 cf

Subcatchment 4: Runoff Area=24,960 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=266' Tc=18.8 min CN=79 Runoff=1.14 cfs 5,118 cf

Subcatchment 5: Runoff Area=3,090 sf 10.03% Impervious Runoff Depth=2.46"
Flow Length=147' Slope=0.0500 '/' Tc=6.0 min CN=79 Runoff=0.20 cfs 634 cf

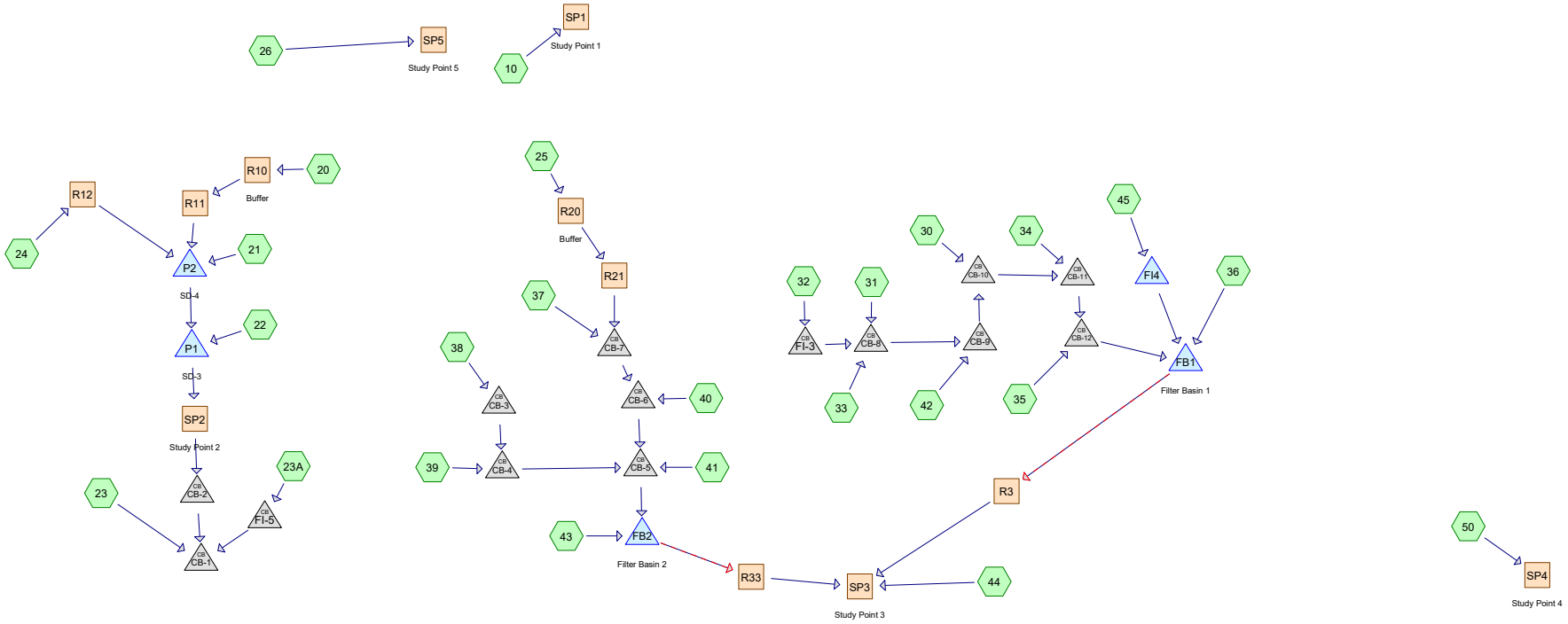
Reach SP1: Study Point 1 Inflow=2.88 cfs 11,239 cf
Outflow=2.88 cfs 11,239 cf

Reach SP2: Study Point 2 Inflow=3.52 cfs 17,019 cf
Outflow=3.52 cfs 17,019 cf

Reach SP3: Study Point 3 Inflow=25.77 cfs 140,484 cf
Outflow=25.77 cfs 140,484 cf

Reach SP4: Study Point 4 Inflow=1.14 cfs 5,118 cf
Outflow=1.14 cfs 5,118 cf

Reach SP5: Study Point 5 Inflow=0.20 cfs 634 cf
Outflow=0.20 cfs 634 cf



Routing Diagram for 24047-POST

Prepared by DM Roma Consulting Engineers, Printed 4/17/2025

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 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

Subcatchment 10: Runoff Area=700 sf 0.00% Impervious Runoff Depth=2.83"
Tc=6.0 min CN=72 Runoff=0.05 cfs 165 cf

Subcatchment 20: Runoff Area=6,605 sf 92.13% Impervious Runoff Depth>5.24"
Tc=6.0 min CN=96 Runoff=0.83 cfs 2,886 cf

Subcatchment 21: Runoff Area=46,040 sf 20.48% Impervious Runoff Depth=3.40"
Flow Length=249' Slope=0.0300 '/' Tc=17.0 min CN=78 Runoff=3.02 cfs 13,056 cf

Subcatchment 22: Runoff Area=17,710 sf 44.66% Impervious Runoff Depth=4.11"
Tc=6.0 min CN=85 Runoff=1.89 cfs 6,072 cf

Subcatchment 23: Runoff Area=11,770 sf 58.75% Impervious Runoff Depth>4.54"
Flow Length=333' Tc=12.0 min CN=89 Runoff=1.13 cfs 4,452 cf

Subcatchment 23A: Runoff Area=34,000 sf 4.63% Impervious Runoff Depth=3.31"
Flow Length=209' Tc=14.7 min CN=77 Runoff=2.30 cfs 9,364 cf

Subcatchment 24: Runoff Area=8,475 sf 0.00% Impervious Runoff Depth=2.92"
Tc=6.0 min CN=73 Runoff=0.65 cfs 2,065 cf

Subcatchment 25: Runoff Area=1,100 sf 89.55% Impervious Runoff Depth>5.15"
Tc=6.0 min CN=95 Runoff=0.14 cfs 472 cf

Subcatchment 26: Runoff Area=1,100 sf 64.55% Impervious Runoff Depth>4.54"
Tc=6.0 min CN=89 Runoff=0.13 cfs 416 cf

Subcatchment 30: Runoff Area=4,260 sf 85.68% Impervious Runoff Depth>5.15"
Tc=6.0 min CN=95 Runoff=0.53 cfs 1,829 cf

Subcatchment 31: Runoff Area=12,050 sf 81.20% Impervious Runoff Depth>4.95"
Tc=6.0 min CN=93 Runoff=1.47 cfs 4,975 cf

Subcatchment 32: Runoff Area=14,630 sf 10.56% Impervious Runoff Depth=3.31"
Tc=6.0 min CN=77 Runoff=1.28 cfs 4,029 cf

Subcatchment 33: Runoff Area=2,415 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=55' Slope=0.0150 '/' Tc=6.9 min CN=74 Runoff=0.19 cfs 607 cf

Subcatchment 34: Runoff Area=12,980 sf 62.83% Impervious Runoff Depth>4.54"
Tc=6.0 min CN=89 Runoff=1.49 cfs 4,908 cf

Subcatchment 35: Runoff Area=15,480 sf 82.49% Impervious Runoff Depth>5.05"
Tc=6.0 min CN=94 Runoff=1.91 cfs 6,520 cf

Subcatchment 36: Runoff Area=37,565 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=124' Slope=0.1000 '/' Tc=9.0 min CN=74 Runoff=2.70 cfs 9,446 cf

Subcatchment 37: Runoff Area=47,830 sf 10.35% Impervious Runoff Depth=3.21"
Flow Length=133' Tc=11.7 min CN=76 Runoff=3.40 cfs 12,787 cf

Subcatchment 38: Runoff Area=8,730 sf 73.71% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=92 Runoff=1.05 cfs 3,530 cf

Subcatchment 39: Runoff Area=8,590 sf 76.89% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=92 Runoff=1.03 cfs 3,473 cf

Subcatchment 40: Runoff Area=12,410 sf 65.51% Impervious Runoff Depth>4.64"
Tc=6.0 min CN=90 Runoff=1.45 cfs 4,802 cf

Subcatchment 41: Runoff Area=14,475 sf 74.30% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=92 Runoff=1.74 cfs 5,853 cf

Subcatchment 42: Runoff Area=11,120 sf 78.91% Impervious Runoff Depth>4.95"
Tc=6.0 min CN=93 Runoff=1.36 cfs 4,591 cf

Subcatchment 43: Runoff Area=20,495 sf 14.44% Impervious Runoff Depth=3.31"
Tc=6.0 min CN=77 Runoff=1.79 cfs 5,645 cf

Subcatchment 44: Runoff Area=607,725 sf 1.74% Impervious Runoff Depth=3.21"
Flow Length=2,020' Tc=29.1 min CN=76 Runoff=30.05 cfs 162,476 cf

Subcatchment 45: Runoff Area=44,140 sf 4.87% Impervious Runoff Depth=3.11"
Flow Length=141' Tc=6.9 min CN=75 Runoff=3.54 cfs 11,448 cf

Subcatchment 50: Runoff Area=24,960 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=266' Tc=18.8 min CN=79 Runoff=1.62 cfs 7,283 cf

Reach R10: Buffer Avg. Flow Depth=0.17' Max Vel=0.28 fps Inflow=0.83 cfs 2,886 cf
n=0.240 L=132.0' S=0.0303 '/' Capacity=5.69 cfs Outflow=0.66 cfs 2,886 cf

Reach R11: Avg. Flow Depth=0.05' Max Vel=1.20 fps Inflow=0.66 cfs 2,886 cf
n=0.030 L=117.0' S=0.0385 '/' Capacity=51.26 cfs Outflow=0.65 cfs 2,886 cf

Reach R12: Avg. Flow Depth=0.31' Max Vel=0.89 fps Inflow=0.65 cfs 2,065 cf
n=0.035 L=127.0' S=0.0039 '/' Capacity=1.76 cfs Outflow=0.62 cfs 2,065 cf

Reach R20: Buffer Avg. Flow Depth=0.06' Max Vel=0.14 fps Inflow=0.14 cfs 472 cf
n=0.240 L=80.0' S=0.0250 '/' Capacity=5.17 cfs Outflow=0.11 cfs 472 cf

Reach R21: Avg. Flow Depth=0.02' Max Vel=0.61 fps Inflow=0.11 cfs 472 cf
n=0.030 L=53.0' S=0.0377 '/' Capacity=50.78 cfs Outflow=0.11 cfs 472 cf

Reach R3: Avg. Flow Depth=0.51' Max Vel=1.59 fps Inflow=4.75 cfs 48,101 cf
n=0.035 L=1,137.2' S=0.0088 '/' Capacity=1,152.50 cfs Outflow=3.83 cfs 48,101 cf

Reach R33: Avg. Flow Depth=0.24' Max Vel=2.51 fps Inflow=6.69 cfs 36,563 cf
n=0.035 L=482.0' S=0.0270 '/' Capacity=307.96 cfs Outflow=6.45 cfs 36,563 cf

Reach SP1: Study Point 1 Inflow=0.05 cfs 165 cf
Outflow=0.05 cfs 165 cf

Reach SP2: Study Point 2 Inflow=4.64 cfs 24,078 cf
Outflow=4.64 cfs 24,078 cf

Reach SP3: Study Point 3 Inflow=37.96 cfs 247,140 cf
Outflow=37.96 cfs 247,140 cf

Reach SP4: Study Point 4 Inflow=1.62 cfs 7,283 cf
Outflow=1.62 cfs 7,283 cf

Reach SP5: Study Point 5 Inflow=0.13 cfs 416 cf
Outflow=0.13 cfs 416 cf

Pond CB-1: Peak Elev=221.07' Inflow=7.92 cfs 37,894 cf
18.0" Round Culvert n=0.013 L=40.0' S=0.0487 '/' Outflow=7.92 cfs 37,894 cf

Pond CB-10: Peak Elev=234.59' Inflow=4.82 cfs 16,031 cf
15.0" Round Culvert n=0.013 L=157.0' S=0.0257 '/' Outflow=4.82 cfs 16,031 cf

Pond CB-11: Peak Elev=230.87' Inflow=6.31 cfs 20,940 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=6.31 cfs 20,940 cf

Pond CB-12: Peak Elev=230.43' Inflow=8.22 cfs 27,460 cf
18.0" Round Culvert n=0.013 L=148.0' S=0.0069 '/' Outflow=8.22 cfs 27,460 cf

Pond CB-2: Peak Elev=230.24' Inflow=4.64 cfs 24,078 cf
15.0" Round Culvert n=0.013 L=260.0' S=0.0358 '/' Outflow=4.64 cfs 24,078 cf

Pond CB-3: Peak Elev=233.37' Inflow=1.05 cfs 3,530 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=1.05 cfs 3,530 cf

Pond CB-4: Peak Elev=233.30' Inflow=2.09 cfs 7,003 cf
15.0" Round Culvert n=0.013 L=148.0' S=0.0055 '/' Outflow=2.09 cfs 7,003 cf

Pond CB-5: Peak Elev=232.94' Inflow=8.25 cfs 30,918 cf
18.0" Round Culvert n=0.013 L=119.0' S=0.0130 '/' Outflow=8.25 cfs 30,918 cf

Pond CB-6: Peak Elev=233.78' Inflow=4.63 cfs 18,062 cf
18.0" Round Culvert n=0.013 L=19.0' S=0.0079 '/' Outflow=4.63 cfs 18,062 cf

Pond CB-7: Peak Elev=234.40' Inflow=3.51 cfs 13,260 cf
15.0" Round Culvert n=0.013 L=91.0' S=0.0055 '/' Outflow=3.51 cfs 13,260 cf

Pond CB-8: Peak Elev=235.28' Inflow=2.93 cfs 9,612 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0132 '/' Outflow=2.93 cfs 9,612 cf

Pond CB-9: Peak Elev=235.00' Inflow=4.29 cfs 14,203 cf
15.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=4.29 cfs 14,203 cf

Pond FB1: Filter Basin 1 Peak Elev=227.58' Storage=20,670 cf Inflow=14.04 cfs 48,101 cf
Primary=4.75 cfs 48,101 cf Secondary=0.00 cfs 0 cf Outflow=4.75 cfs 48,101 cf

Pond FB2: Filter Basin 2 Peak Elev=231.61' Storage=11,809 cf Inflow=10.02 cfs 36,562 cf
Primary=6.69 cfs 36,561 cf Secondary=0.01 cfs 2 cf Outflow=6.69 cfs 36,563 cf

Pond FI-3: Peak Elev=236.59' Inflow=1.28 cfs 4,029 cf
12.0" Round Culvert n=0.013 L=136.0' S=0.0114 '/' Outflow=1.28 cfs 4,029 cf

Pond FI-5: Peak Elev=221.40' Inflow=2.30 cfs 9,364 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=2.30 cfs 9,364 cf

Pond FI4: Peak Elev=231.94' Storage=591 cf Inflow=3.54 cfs 11,448 cf
Outflow=3.37 cfs 11,195 cf

Pond P1: SD-3 Peak Elev=231.81' Storage=626 cf Inflow=4.81 cfs 24,078 cf
15.0" Round Culvert n=0.013 L=56.0' S=0.0196 '/' Outflow=4.64 cfs 24,078 cf

Pond P2: SD-4 Peak Elev=232.74' Storage=402 cf Inflow=4.08 cfs 18,006 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0067 '/' Outflow=3.80 cfs 18,006 cf

Summary for Subcatchment 10:

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 165 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
0	74	Pasture/grassland/range, Good, HSG C
700	72	Woods/grass comb., Good, HSG C
700	72	Weighted Average
700		100.00% Pervious Area

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

Summary for Subcatchment 20:

Runoff = 0.83 cfs @ 12.09 hrs, Volume= 2,886 cf, Depth> 5.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,085	98	New Pavement
	520	74	>75% Grass cover, Good, HSG C
	6,605	96	Weighted Average
	520		7.87% Pervious Area
	6,085		92.13% Impervious Area

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

Summary for Subcatchment 21:

Runoff = 3.02 cfs @ 12.24 hrs, Volume= 13,056 cf, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,815	98	New Pavement
*	2,165	98	New Building
	14,785	74	>75% Grass cover, Good, HSG C
*	4,450	98	Existing-Offsite Pavement
*	4,335	74	Existing-Offsite Grass C
	17,490	71	Meadow, non-grazed, HSG C
	46,040	78	Weighted Average
	36,610		79.52% Pervious Area
	9,430		20.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	132	0.0300	0.14		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
1.6	117	0.0300	1.21		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
17.0	249	Total			

Summary for Subcatchment 22:

Runoff = 1.89 cfs @ 12.09 hrs, Volume= 6,072 cf, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,740	98	New Pavement
*	2,520	98	New Building
	8,425	74	>75% Grass cover, Good, HSG C
*	2,650	98	Existing-Offsite Pavement
*	1,375	74	Existing-Offsite Grass C
	17,710	85	Weighted Average
	9,800		55.34% Pervious Area
	7,910		44.66% Impervious Area

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

Summary for Subcatchment 23:

Runoff = 1.13 cfs @ 12.16 hrs, Volume= 4,452 cf, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,755	98	Existing-Offsite Pavement
*	1,160	98	Existing-Offsite Building
*	530	96	Existing-Offsite Gravel
*	4,325	74	Existing-Offsite Grass C
	11,770	89	Weighted Average
	4,855		41.25% Pervious Area
	6,915		58.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	75	0.0200	0.11		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.10"
0.5	258	0.0450	9.50	59.35	**Trap/Vee/Rect Channel Flow, B TO C** Bot.W=0.00' D=0.50' Z= 0.0 & 50.0 '/' Top.W=25.00' n= 0.013 Asphalt, smooth
12.0	333	Total			

Summary for Subcatchment 23A:

Runoff = 2.30 cfs @ 12.21 hrs, Volume= 9,364 cf, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,575	98	Existing-Offsite Building
*	3,115	96	Existing-Offsite Gravel
*	24,340	74	Existing-Offsite Grass C
	4,970	72	Woods/grass comb., Good, HSG C
	34,000	77	Weighted Average
	32,425		95.37% Pervious Area
	1,575		4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	150	0.0600	0.19		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.10"
1.8	59	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	209	Total			

Summary for Subcatchment 24:

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 2,065 cf, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
5,425	74	>75% Grass cover, Good, HSG C
3,050	71	Meadow, non-grazed, HSG C
8,475	73	Weighted Average
8,475		100.00% Pervious Area

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

Summary for Subcatchment 25:

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 472 cf, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	985	98	New Pavement
	115	74	>75% Grass cover, Good, HSG C
	1,100	95	Weighted Average
	115		10.45% Pervious Area
	985		89.55% Impervious Area

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

Summary for Subcatchment 26:

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 416 cf, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	60	98	New Pavement
*	650	98	Existing-Offsite Pavement
	390	74	>75% Grass cover, Good, HSG C
	1,100	89	Weighted Average
	390		35.45% Pervious Area
	710		64.55% Impervious Area

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

Summary for Subcatchment 30:

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 1,829 cf, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	3,650	98	New Pavement
	610	74	>75% Grass cover, Good, HSG C
	4,260	95	Weighted Average
	610		14.32% Pervious Area
	3,650		85.68% Impervious Area

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

Summary for Subcatchment 31:

Runoff = 1.47 cfs @ 12.09 hrs, Volume= 4,975 cf, Depth> 4.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	8,100	98	New Pavement
*	1,685	98	New Building
	2,265	74	>75% Grass cover, Good, HSG C
	12,050	93	Weighted Average
	2,265		18.80% Pervious Area
	9,785		81.20% Impervious Area

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

Summary for Subcatchment 32:

Runoff = 1.28 cfs @ 12.09 hrs, Volume= 4,029 cf, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,545	98	New Building
	13,085	74	>75% Grass cover, Good, HSG C
	14,630	77	Weighted Average
	13,085		89.44% Pervious Area
	1,545		10.56% Impervious Area

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

Summary for Subcatchment 33:

Runoff = 0.19 cfs @ 12.10 hrs, Volume= 607 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
2,415	74	>75% Grass cover, Good, HSG C
2,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0150	0.13		**Sheet Flow, A TO B** Grass: Short n= 0.150 P2= 3.10"

Summary for Subcatchment 34:

Runoff = 1.49 cfs @ 12.09 hrs, Volume= 4,908 cf, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,080	98	New Pavement
*	2,075	98	New Building
	4,825	74	>75% Grass cover, Good, HSG C
	12,980	89	Weighted Average
	4,825		37.17% Pervious Area
	8,155		62.83% Impervious Area

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

Summary for Subcatchment 35:

Runoff = 1.91 cfs @ 12.09 hrs, Volume= 6,520 cf, Depth> 5.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	9,735	98	New Pavement
*	3,035	98	New Building
	2,710	74	>75% Grass cover, Good, HSG C
	15,480	94	Weighted Average
	2,710		17.51% Pervious Area
	12,770		82.49% Impervious Area

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

Summary for Subcatchment 36:

Runoff = 2.70 cfs @ 12.13 hrs, Volume= 9,446 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
33,960	74	>75% Grass cover, Good, HSG C
3,605	70	Woods, Good, HSG C
37,565	74	Weighted Average
37,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	124	0.1000	0.23		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 37:

Runoff = 3.40 cfs @ 12.16 hrs, Volume= 12,787 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	4,950	98	New Building
	33,525	74	>75% Grass cover, Good, HSG C
	9,355	71	Meadow, non-grazed, HSG C
	47,830	76	Weighted Average
	42,880		89.65% Pervious Area
	4,950		10.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	80	0.0250	0.12		**Sheet Flow, A TO B** Grass: Dense n= 0.240 P2= 3.10"
0.6	53	0.0377	1.36		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
11.7	133	Total			

Summary for Subcatchment 38:

Runoff = 1.05 cfs @ 12.09 hrs, Volume= 3,530 cf, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	4,350	98	New Pavement
*	2,085	98	New Building
	2,295	74	>75% Grass cover, Good, HSG C
	8,730	92	Weighted Average
	2,295		26.29% Pervious Area
	6,435		73.71% Impervious Area

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

Summary for Subcatchment 39:

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 3,473 cf, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	4,600	98	New Pavement
*	2,005	98	New Building
	1,985	74	>75% Grass cover, Good, HSG C
	8,590	92	Weighted Average
	1,985		23.11% Pervious Area
	6,605		76.89% Impervious Area

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

Summary for Subcatchment 40:

Runoff = 1.45 cfs @ 12.09 hrs, Volume= 4,802 cf, Depth> 4.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,690	98	New Pavement
*	2,440	98	New Building
	4,280	74	>75% Grass cover, Good, HSG C
	12,410	90	Weighted Average
	4,280		34.49% Pervious Area
	8,130		65.51% Impervious Area

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

Summary for Subcatchment 41:

Runoff = 1.74 cfs @ 12.09 hrs, Volume= 5,853 cf, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,530	98	New Pavement
*	3,225	98	New Building
	3,720	74	>75% Grass cover, Good, HSG C
	14,475	92	Weighted Average
	3,720		25.70% Pervious Area
	10,755		74.30% Impervious Area

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

Summary for Subcatchment 42:

Runoff = 1.36 cfs @ 12.09 hrs, Volume= 4,591 cf, Depth> 4.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,000	98	New Pavement
*	2,775	98	New Building
	2,345	74	>75% Grass cover, Good, HSG C
	11,120	93	Weighted Average
	2,345		21.09% Pervious Area
	8,775		78.91% Impervious Area

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

Summary for Subcatchment 43:

Runoff = 1.79 cfs @ 12.09 hrs, Volume= 5,645 cf, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,960	98	New Building
	17,535	74	>75% Grass cover, Good, HSG C
	20,495	77	Weighted Average
	17,535		85.56% Pervious Area
	2,960		14.44% Impervious Area

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

Summary for Subcatchment 44:

Runoff = 30.05 cfs @ 12.41 hrs, Volume= 162,476 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
	234,005	72	Woods/grass comb., Good, HSG C
	281,490	79	Woods/grass comb., Good, HSG D
*	53,260	74	Onsite Grass HSG C
	7,115	74	Pasture/grassland/range, Good, HSG C
*	18,245	74	Existing Grass cover, Good, HSG C
*	3,055	80	Existing Grass cover, Good, HSG D
*	1,425	98	Existing roofs
*	8,815	98	Proposed roofs
*	315	98	Existing paved driveway
	607,725	76	Weighted Average
	597,170		98.26% Pervious Area
	10,555		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	144	0.0764	0.14		**Sheet Flow, A TO B** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	71	0.0560	1.18		**Shallow Concentrated Flow, B TO C** Woodland Kv= 5.0 fps
11.0	1,805	0.0105	2.74	181.89	**Channel Flow, C TO D** Area= 66.4 sf Perim= 132.9' r= 0.50' n= 0.035 Earth, dense weeds
29.1	2,020	Total			

Summary for Subcatchment 45:

Runoff = 3.54 cfs @ 12.10 hrs, Volume= 11,448 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,150	98	New Building
	41,990	74	>75% Grass cover, Good, HSG C
	44,140	75	Weighted Average
	41,990		95.13% Pervious Area
	2,150		4.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	83	0.0430	0.22		**Sheet Flow, A TO B** Grass: Short n= 0.150 P2= 3.10"
0.6	58	0.0520	1.60		**Shallow Concentrated Flow, B TO C** Short Grass Pasture Kv= 7.0 fps
6.9	141	Total			

Summary for Subcatchment 50:

Runoff = 1.62 cfs @ 12.26 hrs, Volume= 7,283 cf, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
24,960	79	Woods/grass comb., Good, HSG D
24,960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	113	0.0398	0.10		**Sheet Flow, A TO B** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	153	0.0327	4.83	345.65	**Channel Flow, B TO C** Area= 71.5 sf Perim= 143.1' r= 0.50' n= 0.035 Earth, dense weeds
18.8	266	Total			

Summary for Reach R10: Buffer

Inflow Area = 6,605 sf, 92.13% Impervious, Inflow Depth > 5.24" for 25-Year event
Inflow = 0.83 cfs @ 12.09 hrs, Volume= 2,886 cf
Outflow = 0.66 cfs @ 12.15 hrs, Volume= 2,886 cf, Atten= 21%, Lag= 4.1 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.28 fps, Min. Travel Time= 8.0 min
Avg. Velocity = 0.07 fps, Avg. Travel Time= 29.8 min

Peak Storage= 314 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 5.69 cfs

10.00' x 0.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 25.0 '/' Top Width= 35.00'
Length= 132.0' Slope= 0.0303 '/'
Inlet Invert= 242.00', Outlet Invert= 238.00'

‡

Summary for Reach R11:

Inflow Area = 6,605 sf, 92.13% Impervious, Inflow Depth > 5.24" for 25-Year event
Inflow = 0.66 cfs @ 12.15 hrs, Volume= 2,886 cf
Outflow = 0.65 cfs @ 12.17 hrs, Volume= 2,886 cf, Atten= 1%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.20 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 5.5 min

Peak Storage= 63 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 51.26 cfs

10.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 25.0 '/' Top Width= 35.00'
Length= 117.0' Slope= 0.0385 '/'
Inlet Invert= 238.00', Outlet Invert= 233.50'

‡

Summary for Reach R12:

Inflow Area = 8,475 sf, 0.00% Impervious, Inflow Depth = 2.92" for 25-Year event
Inflow = 0.65 cfs @ 12.09 hrs, Volume= 2,065 cf
Outflow = 0.62 cfs @ 12.12 hrs, Volume= 2,065 cf, Atten= 6%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.89 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.30 fps, Avg. Travel Time= 7.1 min

Peak Storage= 88 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 0.50' Flow Area= 1.5 sf, Capacity= 1.76 cfs

1.00' x 0.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 5.00'
Length= 127.0' Slope= 0.0039 '/'
Inlet Invert= 234.00', Outlet Invert= 233.50'

‡

Summary for Reach R20: Buffer

Inflow Area = 1,100 sf, 89.55% Impervious, Inflow Depth > 5.15" for 25-Year event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 472 cf
Outflow = 0.11 cfs @ 12.16 hrs, Volume= 472 cf, Atten= 23%, Lag= 4.4 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.14 fps, Min. Travel Time= 9.3 min
Avg. Velocity = 0.04 fps, Avg. Travel Time= 32.3 min

Peak Storage= 59 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 5.17 cfs

10.00' x 0.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 25.0 '/' Top Width= 35.00'
Length= 80.0' Slope= 0.0250 '/'
Inlet Invert= 242.00', Outlet Invert= 240.00'

‡

Summary for Reach R21:

Inflow Area = 1,100 sf, 89.55% Impervious, Inflow Depth > 5.15" for 25-Year event
Inflow = 0.11 cfs @ 12.16 hrs, Volume= 472 cf
Outflow = 0.11 cfs @ 12.17 hrs, Volume= 472 cf, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.61 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 3.1 min

Peak Storage= 9 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 50.78 cfs

10.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 25.0 '/' Top Width= 35.00'
Length= 53.0' Slope= 0.0377 '/'
Inlet Invert= 240.00', Outlet Invert= 238.00'

‡

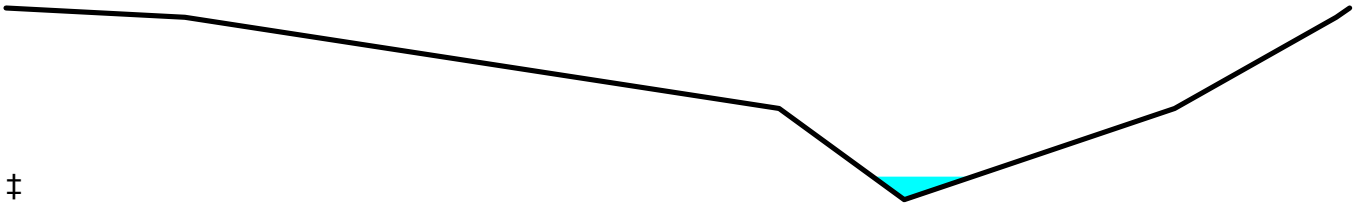
Summary for Reach R3:

Inflow Area = 154,640 sf, 30.28% Impervious, Inflow Depth > 3.73" for 25-Year event
Inflow = 4.75 cfs @ 12.43 hrs, Volume= 48,101 cf
Outflow = 3.83 cfs @ 12.60 hrs, Volume= 48,101 cf, Atten= 19%, Lag= 10.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.59 fps, Min. Travel Time= 12.0 min
Avg. Velocity = 0.71 fps, Avg. Travel Time= 26.8 min

Peak Storage= 2,747 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.51'
Bank-Full Depth= 4.20' Flow Area= 209.3 sf, Capacity= 1,152.50 cfs

Custom cross-section, Length= 1,137.2' Slope= 0.0088 '/' (102 Elevation Intervals)
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 222.00', Outlet Invert= 212.00'



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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	218.20	0.00
17.08	218.00	0.20
73.84	216.00	2.20
85.79	214.00	4.20
111.62	216.00	2.20
127.04	218.00	0.20
128.33	218.20	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
2.00	37.8	38.0	42,963	149.77
4.00	185.5	110.4	210,973	1,044.21
4.20	209.3	128.8	238,072	1,152.50

Summary for Reach R33:

Inflow Area = 113,630 sf, 35.92% Impervious, Inflow Depth > 3.86" for 25-Year event
Inflow = 6.69 cfs @ 12.24 hrs, Volume= 36,563 cf
Outflow = 6.45 cfs @ 12.29 hrs, Volume= 36,563 cf, Atten= 4%, Lag= 2.9 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.51 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 12.7 min

Peak Storage= 1,240 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 2.00' Flow Area= 36.0 sf, Capacity= 307.96 cfs

10.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 4.0 '/' Top Width= 26.00'
Length= 482.0' Slope= 0.0270 '/'
Inlet Invert= 225.00', Outlet Invert= 212.00'

‡

Summary for Reach SP1: Study Point 1

Inflow Area = 700 sf, 0.00% Impervious, Inflow Depth = 2.83" for 25-Year event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 165 cf
Outflow = 0.05 cfs @ 12.09 hrs, Volume= 165 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

Inflow Area = 78,830 sf, 29.72% Impervious, Inflow Depth = 3.67" for 25-Year event
Inflow = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf
Outflow = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP3: Study Point 3

Inflow Area = 875,995 sf, 11.21% Impervious, Inflow Depth > 3.39" for 25-Year event
Inflow = 37.96 cfs @ 12.41 hrs, Volume= 247,140 cf
Outflow = 37.96 cfs @ 12.41 hrs, Volume= 247,140 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP4: Study Point 4

Inflow Area = 24,960 sf, 0.00% Impervious, Inflow Depth = 3.50" for 25-Year event
Inflow = 1.62 cfs @ 12.26 hrs, Volume= 7,283 cf
Outflow = 1.62 cfs @ 12.26 hrs, Volume= 7,283 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Reach SP5: Study Point 5

Inflow Area = 1,100 sf, 64.55% Impervious, Inflow Depth > 4.54" for 25-Year event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 416 cf
Outflow = 0.13 cfs @ 12.09 hrs, Volume= 416 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Summary for Pond CB-1:

Inflow Area = 124,600 sf, 25.61% Impervious, Inflow Depth > 3.65" for 25-Year event
Inflow = 7.92 cfs @ 12.21 hrs, Volume= 37,894 cf
Outflow = 7.92 cfs @ 12.21 hrs, Volume= 37,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.92 cfs @ 12.21 hrs, Volume= 37,894 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 221.07' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	219.45'	**18.0" Round SD-1** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 219.45' / 217.50' S= 0.0487 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=7.89 cfs @ 12.21 hrs HW=221.06' (Free Discharge)
1=SD-1 (Inlet Controls 7.89 cfs @ 4.47 fps)

Summary for Pond CB-10:

Inflow Area = 44,475 sf, 53.41% Impervious, Inflow Depth > 4.33" for 25-Year event
Inflow = 4.82 cfs @ 12.09 hrs, Volume= 16,031 cf
Outflow = 4.82 cfs @ 12.09 hrs, Volume= 16,031 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.82 cfs @ 12.09 hrs, Volume= 16,031 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 234.59' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	233.30'	**15.0" Round SD-15** L= 157.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 233.30' / 229.27' S= 0.0257 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.70 cfs @ 12.09 hrs HW=234.56' TW=230.75' (Dynamic Tailwater)
1=SD-15 (Inlet Controls 4.70 cfs @ 3.83 fps)

Summary for Pond CB-11:

Inflow Area = 57,455 sf, 55.54% Impervious, Inflow Depth > 4.37" for 25-Year event
Inflow = 6.31 cfs @ 12.09 hrs, Volume= 20,940 cf
Outflow = 6.31 cfs @ 12.09 hrs, Volume= 20,940 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.31 cfs @ 12.09 hrs, Volume= 20,940 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 230.87' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	229.02'	**18.0" Round SD-16** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 229.02' / 228.82' S= 0.0111 '/' Cc= 0.900

n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.08 cfs @ 12.09 hrs HW=230.75' TW=230.40' (Dynamic Tailwater)
1=SD-16 (Inlet Controls 5.08 cfs @ 2.87 fps)

Summary for Pond CB-12:

Inflow Area = 72,935 sf, 61.26% Impervious, Inflow Depth > 4.52" for 25-Year event
Inflow = 8.22 cfs @ 12.09 hrs, Volume= 27,460 cf
Outflow = 8.22 cfs @ 12.09 hrs, Volume= 27,460 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.22 cfs @ 12.09 hrs, Volume= 27,460 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 230.43' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	228.72'	**18.0" Round SD-17** L= 148.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.72' / 227.70' S= 0.0069 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=8.03 cfs @ 12.09 hrs HW=230.39' TW=226.86' (Dynamic Tailwater)
1=SD-17 (Barrel Controls 8.03 cfs @ 5.08 fps)

Summary for Pond CB-2:

Inflow Area = 78,830 sf, 29.72% Impervious, Inflow Depth = 3.67" for 25-Year event
Inflow = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf
Outflow = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 230.24' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	229.00'	**15.0" Round SD-2** L= 260.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 229.00' / 219.70' S= 0.0358 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.63 cfs @ 12.28 hrs HW=230.23' TW=220.98' (Dynamic Tailwater)
1=SD-2 (Inlet Controls 4.63 cfs @ 3.78 fps)

Summary for Pond CB-3:

Inflow Area = 8,730 sf, 73.71% Impervious, Inflow Depth > 4.85" for 25-Year event
Inflow = 1.05 cfs @ 12.09 hrs, Volume= 3,530 cf
Outflow = 1.05 cfs @ 12.09 hrs, Volume= 3,530 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.09 hrs, Volume= 3,530 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Peak Elev= 233.37' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	232.62'	**12.0" Round SD-5** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 232.62' / 232.42' S= 0.0111 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.60 cfs @ 12.09 hrs HW=233.31' TW=233.24' (Dynamic Tailwater)
↑—**1=SD-5** (Outlet Controls 0.60 cfs @ 1.47 fps)

Summary for Pond CB-4:

Inflow Area = 17,320 sf, 75.29% Impervious, Inflow Depth > 4.85" for 25-Year event
Inflow = 2.09 cfs @ 12.09 hrs, Volume= 7,003 cf
Outflow = 2.09 cfs @ 12.09 hrs, Volume= 7,003 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.09 cfs @ 12.09 hrs, Volume= 7,003 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 233.30' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	232.32'	**15.0" Round SD-6** L= 148.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 232.32' / 231.50' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.55 cfs @ 12.09 hrs HW=233.24' TW=232.87' (Dynamic Tailwater)
↑—**1=SD-6** (Outlet Controls 1.55 cfs @ 2.24 fps)

Summary for Pond CB-5:

Inflow Area = 93,135 sf, 40.65% Impervious, Inflow Depth > 3.98" for 25-Year event
Inflow = 8.25 cfs @ 12.11 hrs, Volume= 30,918 cf
Outflow = 8.25 cfs @ 12.11 hrs, Volume= 30,918 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.25 cfs @ 12.11 hrs, Volume= 30,918 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 232.94' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	231.25'	**18.0" Round SD-7** L= 119.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 231.25' / 229.70' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=8.14 cfs @ 12.11 hrs HW=232.91' TW=231.30' (Dynamic Tailwater)
↑—**1=SD-7** (Inlet Controls 8.14 cfs @ 4.60 fps)

Summary for Pond CB-6:

Inflow Area = 61,340 sf, 22.93% Impervious, Inflow Depth > 3.53" for 25-Year event
Inflow = 4.63 cfs @ 12.14 hrs, Volume= 18,062 cf
Outflow = 4.63 cfs @ 12.14 hrs, Volume= 18,062 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.63 cfs @ 12.14 hrs, Volume= 18,062 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 233.78' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	232.55'	**18.0" Round SD-8** L= 19.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 232.55' / 232.40' S= 0.0079 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.59 cfs @ 12.14 hrs HW=233.78' TW=232.83' (Dynamic Tailwater)
↑—**1=SD-8** (Barrel Controls 4.59 cfs @ 4.04 fps)

Summary for Pond CB-7:

Inflow Area = 48,930 sf, 12.13% Impervious, Inflow Depth = 3.25" for 25-Year event
Inflow = 3.51 cfs @ 12.16 hrs, Volume= 13,260 cf
Outflow = 3.51 cfs @ 12.16 hrs, Volume= 13,260 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.51 cfs @ 12.16 hrs, Volume= 13,260 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 234.40' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	233.15'	**15.0" Round SD-9** L= 91.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 233.15' / 232.65' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.44 cfs @ 12.16 hrs HW=234.38' TW=233.76' (Dynamic Tailwater)
↑—**1=SD-9** (Outlet Controls 3.44 cfs @ 3.55 fps)

Summary for Pond CB-8:

Inflow Area = 29,095 sf, 38.94% Impervious, Inflow Depth > 3.96" for 25-Year event
Inflow = 2.93 cfs @ 12.09 hrs, Volume= 9,612 cf
Outflow = 2.93 cfs @ 12.09 hrs, Volume= 9,612 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.93 cfs @ 12.09 hrs, Volume= 9,612 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 235.28' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	234.20'	**15.0" Round SD-13** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 234.20' / 233.75' S= 0.0132 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.22 cfs @ 12.09 hrs HW=235.23' TW=234.96' (Dynamic Tailwater)
1=SD-13 (Outlet Controls 2.22 cfs @ 2.80 fps)

Summary for Pond CB-9:

Inflow Area = 40,215 sf, 49.99% Impervious, Inflow Depth > 4.24" for 25-Year event
Inflow = 4.29 cfs @ 12.09 hrs, Volume= 14,203 cf
Outflow = 4.29 cfs @ 12.09 hrs, Volume= 14,203 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.29 cfs @ 12.09 hrs, Volume= 14,203 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 235.00' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	233.65'	**15.0" Round SD-14** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 233.65' / 233.40' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.73 cfs @ 12.09 hrs HW=234.96' TW=234.56' (Dynamic Tailwater)
1=SD-14 (Inlet Controls 3.73 cfs @ 3.04 fps)

Summary for Pond FB1: Filter Basin 1

Inflow Area = 154,640 sf, 30.28% Impervious, Inflow Depth > 3.73" for 25-Year event
Inflow = 14.04 cfs @ 12.10 hrs, Volume= 48,101 cf
Outflow = 4.75 cfs @ 12.43 hrs, Volume= 48,101 cf, Atten= 66%, Lag= 19.9 min
Primary = 4.75 cfs @ 12.43 hrs, Volume= 48,101 cf
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 227.58' @ 12.43 hrs Surf.Area= 11,168 sf Storage= 20,670 cf

Plug-Flow detention time= 381.2 min calculated for 48,057 cf (100% of inflow)
Center-of-Mass det. time= 382.2 min (1,189.2 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1	225.00'	25,594 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
225.00	5,185	393.0	0	0	5,185
226.00	7,275	416.0	6,201	6,201	6,720
228.00	12,340	560.0	19,393	25,594	17,947

Device	Routing	Invert	Outlet Devices
#1	Primary	222.73'	**12.0" Round Culvert** L= 39.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 222.73' / 222.00' S= 0.0187 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	222.83'	**1.7" Vert. 1-3/4" Orifice Cap** C= 0.600
#3	Device 2	225.00'	**2.410 in/hr Exfiltration over Surface area**
#4	Device 1	226.50'	**5.5" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	227.35'	**Neenah R4345 Beehive Grate Light Duty-req. structure** Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600
#6	Secondary	227.60'	**10.0' long x 10.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.51 2.57 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.73 cfs @ 12.43 hrs HW=227.58' TW=222.45' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.73 cfs of 7.89 cfs potential flow)
  - **2=1-3/4" Orifice Cap** (Orifice Controls 0.16 cfs @ 10.42 fps)
    - **3=Exfiltration** (Passes 0.16 cfs of 0.62 cfs potential flow)
  - **4=Orifice/Grate** (Orifice Controls 1.47 cfs @ 3.85 fps)
  - **5=Neenah R4345 Beehive Grate Light Duty-req. structure** (Custom Controls 3.09 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=225.00' TW=222.01' (Dynamic Tailwater)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond FB2: Filter Basin 2

Inflow Area = 113,630 sf, 35.92% Impervious, Inflow Depth > 3.86" for 25-Year event
Inflow = 10.02 cfs @ 12.10 hrs, Volume= 36,562 cf
Outflow = 6.69 cfs @ 12.24 hrs, Volume= 36,563 cf, Atten= 33%, Lag= 8.2 min
Primary = 6.69 cfs @ 12.24 hrs, Volume= 36,561 cf
Secondary = 0.01 cfs @ 12.25 hrs, Volume= 2 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 231.61' @ 12.24 hrs Surf.Area= 5,104 sf Storage= 11,809 cf

Plug-Flow detention time= 223.6 min calculated for 36,530 cf (100% of inflow)
Center-of-Mass det. time= 224.6 min (1,030.2 - 805.6)

Volume	Invert	Avail.Storage	Storage Description
#1	228.50'	13,893 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
228.50	2,600	240.5	0	0	2,600
230.00	3,745	268.8	4,733	4,733	3,809
232.00	5,470	306.5	9,161	13,893	5,628

Device	Routing	Invert	Outlet Devices
#1	Primary	226.23'	**12.0" Round Culvert** L= 29.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 226.23' / 225.00' S= 0.0424 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	226.33'	**1.2" Vert. 1-1/4" Orifice Cap** C= 0.600
#3	Device 2	228.50'	**2.410 in/hr Exfiltration thru Filter over Surface area**
#4	Device 1	230.00'	**6.0" W x 16.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	231.35'	**Neenah R4345 Beehive Grate Light Duty-req. structure** Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600
#6	Secondary	231.60'	**10.0' long x 11.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.53 2.59 2.70 2.68 2.67 2.68 2.66 2.64

Primary OutFlow Max=6.65 cfs @ 12.24 hrs HW=231.60' TW=225.23' (Dynamic Tailwater)
- **1=Culvert** (Passes 6.65 cfs of 8.35 cfs potential flow)
  - **2=1-1/4" Orifice Cap** (Orifice Controls 0.09 cfs @ 11.00 fps)
    - **3=Exfiltration thru Filter** (Passes 0.09 cfs of 0.28 cfs potential flow)
  - **4=Orifice/Grate** (Orifice Controls 3.03 cfs @ 4.55 fps)
  - **5=Neenah R4345 Beehive Grate Light Duty-req. structure** (Custom Controls 3.53 cfs)

Secondary OutFlow Max=0.01 cfs @ 12.25 hrs HW=231.61' TW=225.23' (Dynamic Tailwater)
- **6=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.18 fps)

Summary for Pond FI-3:

Inflow Area = 14,630 sf, 10.56% Impervious, Inflow Depth = 3.31" for 25-Year event
Inflow = 1.28 cfs @ 12.09 hrs, Volume= 4,029 cf
Outflow = 1.28 cfs @ 12.09 hrs, Volume= 4,029 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.09 hrs, Volume= 4,029 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 236.59' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	236.00'	**12.0" Round SD-12** L= 136.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 236.00' / 234.45' S= 0.0114 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.24 cfs @ 12.09 hrs HW=236.59' TW=235.23' (Dynamic Tailwater)
- **1=SD-12** (Outlet Controls 1.24 cfs @ 3.73 fps)

Summary for Pond FI-5:

Inflow Area = 34,000 sf, 4.63% Impervious, Inflow Depth = 3.31" for 25-Year event
Inflow = 2.30 cfs @ 12.21 hrs, Volume= 9,364 cf
Outflow = 2.30 cfs @ 12.21 hrs, Volume= 9,364 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.30 cfs @ 12.21 hrs, Volume= 9,364 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 221.40' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	220.15'	**12.0" Round SD-21** L= 6.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 220.15' / 219.95' S= 0.0333 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.09 cfs @ 12.21 hrs HW=221.37' TW=221.06' (Dynamic Tailwater)
↑**1=SD-21** (Inlet Controls 2.09 cfs @ 2.66 fps)

Summary for Pond FI4:

Inflow Area = 44,140 sf, 4.87% Impervious, Inflow Depth = 3.11" for 25-Year event
Inflow = 3.54 cfs @ 12.10 hrs, Volume= 11,448 cf
Outflow = 3.37 cfs @ 12.13 hrs, Volume= 11,195 cf, Atten= 5%, Lag= 1.5 min
Primary = 3.37 cfs @ 12.13 hrs, Volume= 11,195 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 231.94' @ 12.13 hrs Surf.Area= 1,791 sf Storage= 591 cf

Plug-Flow detention time= 20.3 min calculated for 11,195 cf (98% of inflow)
Center-of-Mass det. time= 7.4 min (836.2 - 828.8)

Volume	Invert	Avail.Storage	Storage Description
#1	231.00'	698 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
231.00	4	8.0	0	0	4
232.00	2,000	311.6	698	698	7,727

Device	Routing	Invert	Outlet Devices
#1	Primary	227.50'	**12.0" Round SD-18 & 19** L= 164.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.50' / 226.50' S= 0.0061 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	231.70'	**Neenah R4345 Beehive Grate Light Duty-req. structure** Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600

Primary OutFlow Max=3.30 cfs @ 12.13 hrs HW=231.94' TW=227.05' (Dynamic Tailwater)
↑**1=SD-18 & 19** (Passes 3.30 cfs of 5.15 cfs potential flow)
↑**2=Neenah R4345 Beehive Grate Light Duty-req. structure** (Custom Controls 3.30 cfs)

Summary for Pond P1: SD-3

Inflow Area = 78,830 sf, 29.72% Impervious, Inflow Depth = 3.67" for 25-Year event
Inflow = 4.81 cfs @ 12.16 hrs, Volume= 24,078 cf
Outflow = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf, Atten= 4%, Lag= 7.0 min
Primary = 4.64 cfs @ 12.28 hrs, Volume= 24,078 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 231.81' @ 12.28 hrs Surf.Area= 727 sf Storage= 626 cf

Plug-Flow detention time= 1.2 min calculated for 24,056 cf (100% of inflow)
Center-of-Mass det. time= 1.2 min (820.9 - 819.6)

Volume	Invert	Avail.Storage	Storage Description
#1	230.20'	768 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
230.20	10	45.0	0	0	10
231.00	465	161.0	145	145	1,913
232.00	795	172.9	623	768	2,271

Device	Routing	Invert	Outlet Devices
#1	Primary	230.20'	**15.0" Round SD-3** L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 230.20' / 229.10' S= 0.0196 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.63 cfs @ 12.28 hrs HW=231.81' TW=0.00' (Dynamic Tailwater)
↑**1=SD-3** (Inlet Controls 4.63 cfs @ 3.77 fps)

Summary for Pond P2: SD-4

Inflow Area = 61,120 sf, 25.38% Impervious, Inflow Depth = 3.54" for 25-Year event
Inflow = 4.08 cfs @ 12.21 hrs, Volume= 18,006 cf
Outflow = 3.80 cfs @ 12.28 hrs, Volume= 18,006 cf, Atten= 7%, Lag= 4.2 min
Primary = 3.80 cfs @ 12.28 hrs, Volume= 18,006 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 232.74' @ 12.28 hrs Surf.Area= 1,079 sf Storage= 402 cf

Plug-Flow detention time= 0.9 min calculated for 17,990 cf (100% of inflow)
Center-of-Mass det. time= 0.9 min (825.6 - 824.8)

Volume	Invert	Avail.Storage	Storage Description
#1	231.45'	4,016 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
231.45	20	13.0	0	0	20
232.00	100	38.0	30	30	122
234.00	5,160	532.0	3,986	4,016	22,537

Device	Routing	Invert	Outlet Devices
#1	Primary	231.45'	**15.0" Round SD-4** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 231.45' / 231.05' S= 0.0067 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.78 cfs @ 12.28 hrs HW=232.73' TW=231.81' (Dynamic Tailwater)
↑—**1=SD-4** (Inlet Controls 3.78 cfs @ 3.08 fps)

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 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

Subcatchment 10: Runoff Area=700 sf 0.00% Impervious Runoff Depth=0.87"
Tc=6.0 min CN=72 Runoff=0.01 cfs 51 cf

Subcatchment 20: Runoff Area=6,605 sf 92.13% Impervious Runoff Depth>2.64"
Tc=6.0 min CN=96 Runoff=0.43 cfs 1,451 cf

Subcatchment 21: Runoff Area=46,040 sf 20.48% Impervious Runoff Depth=1.20"
Flow Length=249' Slope=0.0300 '/' Tc=17.0 min CN=78 Runoff=1.04 cfs 4,606 cf

Subcatchment 22: Runoff Area=17,710 sf 44.66% Impervious Runoff Depth=1.67"
Tc=6.0 min CN=85 Runoff=0.78 cfs 2,468 cf

Subcatchment 23: Runoff Area=11,770 sf 58.75% Impervious Runoff Depth=1.99"
Flow Length=333' Tc=12.0 min CN=89 Runoff=0.51 cfs 1,952 cf

Subcatchment 23A: Runoff Area=34,000 sf 4.63% Impervious Runoff Depth=1.14"
Flow Length=209' Tc=14.7 min CN=77 Runoff=0.76 cfs 3,232 cf

Subcatchment 24: Runoff Area=8,475 sf 0.00% Impervious Runoff Depth=0.92"
Tc=6.0 min CN=73 Runoff=0.19 cfs 649 cf

Subcatchment 25: Runoff Area=1,100 sf 89.55% Impervious Runoff Depth>2.54"
Tc=6.0 min CN=95 Runoff=0.07 cfs 233 cf

Subcatchment 26: Runoff Area=1,100 sf 64.55% Impervious Runoff Depth=1.99"
Tc=6.0 min CN=89 Runoff=0.06 cfs 182 cf

Subcatchment 30: Runoff Area=4,260 sf 85.68% Impervious Runoff Depth>2.54"
Tc=6.0 min CN=95 Runoff=0.27 cfs 902 cf

Subcatchment 31: Runoff Area=12,050 sf 81.20% Impervious Runoff Depth>2.35"
Tc=6.0 min CN=93 Runoff=0.72 cfs 2,359 cf

Subcatchment 32: Runoff Area=14,630 sf 10.56% Impervious Runoff Depth=1.14"
Tc=6.0 min CN=77 Runoff=0.43 cfs 1,391 cf

Subcatchment 33: Runoff Area=2,415 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=55' Slope=0.0150 '/' Tc=6.9 min CN=74 Runoff=0.06 cfs 196 cf

Subcatchment 34: Runoff Area=12,980 sf 62.83% Impervious Runoff Depth=1.99"
Tc=6.0 min CN=89 Runoff=0.68 cfs 2,153 cf

Subcatchment 35: Runoff Area=15,480 sf 82.49% Impervious Runoff Depth>2.44"
Tc=6.0 min CN=94 Runoff=0.96 cfs 3,153 cf

Subcatchment 36: Runoff Area=37,565 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=124' Slope=0.1000 '/' Tc=9.0 min CN=74 Runoff=0.82 cfs 3,044 cf

Subcatchment 37: Runoff Area=47,830 sf 10.35% Impervious Runoff Depth=1.08"
Flow Length=133' Tc=11.7 min CN=76 Runoff=1.10 cfs 4,317 cf

Subcatchment 38: Runoff Area=8,730 sf 73.71% Impervious Runoff Depth>2.26"
Tc=6.0 min CN=92 Runoff=0.51 cfs 1,641 cf

Subcatchment 39: Runoff Area=8,590 sf 76.89% Impervious Runoff Depth>2.26"
Tc=6.0 min CN=92 Runoff=0.50 cfs 1,615 cf

Subcatchment 40: Runoff Area=12,410 sf 65.51% Impervious Runoff Depth=2.08"
Tc=6.0 min CN=90 Runoff=0.67 cfs 2,147 cf

Subcatchment 41: Runoff Area=14,475 sf 74.30% Impervious Runoff Depth>2.26"
Tc=6.0 min CN=92 Runoff=0.84 cfs 2,721 cf

Subcatchment 42: Runoff Area=11,120 sf 78.91% Impervious Runoff Depth>2.35"
Tc=6.0 min CN=93 Runoff=0.67 cfs 2,177 cf

Subcatchment 43: Runoff Area=20,495 sf 14.44% Impervious Runoff Depth=1.14"
Tc=6.0 min CN=77 Runoff=0.60 cfs 1,949 cf

Subcatchment 44: Runoff Area=607,725 sf 1.74% Impervious Runoff Depth=1.08"
Flow Length=2,020' Tc=29.1 min CN=76 Runoff=9.71 cfs 54,845 cf

Subcatchment 45: Runoff Area=44,140 sf 4.87% Impervious Runoff Depth=1.03"
Flow Length=141' Tc=6.9 min CN=75 Runoff=1.11 cfs 3,777 cf

Subcatchment 50: Runoff Area=24,960 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=266' Tc=18.8 min CN=79 Runoff=0.57 cfs 2,625 cf

Reach R10: Buffer Avg. Flow Depth=0.11' Max Vel=0.22 fps Inflow=0.43 cfs 1,451 cf
n=0.240 L=132.0' S=0.0303 '/' Capacity=5.69 cfs Outflow=0.32 cfs 1,451 cf

Reach R11: Avg. Flow Depth=0.03' Max Vel=0.93 fps Inflow=0.32 cfs 1,451 cf
n=0.030 L=117.0' S=0.0385 '/' Capacity=51.26 cfs Outflow=0.32 cfs 1,451 cf

Reach R12: Avg. Flow Depth=0.17' Max Vel=0.63 fps Inflow=0.19 cfs 649 cf
n=0.035 L=127.0' S=0.0039 '/' Capacity=1.76 cfs Outflow=0.17 cfs 649 cf

Reach R20: Buffer Avg. Flow Depth=0.04' Max Vel=0.11 fps Inflow=0.07 cfs 233 cf
n=0.240 L=80.0' S=0.0250 '/' Capacity=5.17 cfs Outflow=0.05 cfs 233 cf

Reach R21: Avg. Flow Depth=0.01' Max Vel=0.46 fps Inflow=0.05 cfs 233 cf
n=0.030 L=53.0' S=0.0377 '/' Capacity=50.78 cfs Outflow=0.05 cfs 233 cf

Reach R3: Avg. Flow Depth=0.17' Max Vel=0.79 fps Inflow=0.23 cfs 18,907 cf
n=0.035 L=1,137.2' S=0.0088 '/' Capacity=1,152.50 cfs Outflow=0.23 cfs 18,907 cf

Reach R33: Avg. Flow Depth=0.06' Max Vel=1.03 fps Inflow=0.62 cfs 14,622 cf
n=0.035 L=482.0' S=0.0270 '/' Capacity=307.96 cfs Outflow=0.61 cfs 14,622 cf

Reach SP1: Study Point 1 Inflow=0.01 cfs 51 cf
Outflow=0.01 cfs 51 cf

Reach SP2: Study Point 2 Inflow=1.91 cfs 9,175 cf
Outflow=1.91 cfs 9,175 cf

Reach SP3: Study Point 3 Inflow=10.10 cfs 88,374 cf
Outflow=10.10 cfs 88,374 cf

Reach SP4: Study Point 4 Inflow=0.57 cfs 2,625 cf
Outflow=0.57 cfs 2,625 cf

Reach SP5: Study Point 5 Inflow=0.06 cfs 182 cf
Outflow=0.06 cfs 182 cf

Pond CB-1: Peak Elev=220.29' Inflow=3.16 cfs 14,359 cf
18.0" Round Culvert n=0.013 L=40.0' S=0.0487 '/' Outflow=3.16 cfs 14,359 cf

Pond CB-10: Peak Elev=234.03' Inflow=2.14 cfs 7,024 cf
15.0" Round Culvert n=0.013 L=157.0' S=0.0257 '/' Outflow=2.14 cfs 7,024 cf

Pond CB-11: Peak Elev=229.98' Inflow=2.82 cfs 9,177 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=2.82 cfs 9,177 cf

Pond CB-12: Peak Elev=229.70' Inflow=3.78 cfs 12,330 cf
18.0" Round Culvert n=0.013 L=148.0' S=0.0069 '/' Outflow=3.78 cfs 12,330 cf

Pond CB-2: Peak Elev=229.68' Inflow=1.91 cfs 9,175 cf
15.0" Round Culvert n=0.013 L=260.0' S=0.0358 '/' Outflow=1.91 cfs 9,175 cf

Pond CB-3: Peak Elev=233.04' Inflow=0.51 cfs 1,641 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.51 cfs 1,641 cf

Pond CB-4: Peak Elev=232.87' Inflow=1.01 cfs 3,256 cf
15.0" Round Culvert n=0.013 L=148.0' S=0.0055 '/' Outflow=1.01 cfs 3,256 cf

Pond CB-5: Peak Elev=232.13' Inflow=3.44 cfs 12,673 cf
18.0" Round Culvert n=0.013 L=119.0' S=0.0130 '/' Outflow=3.44 cfs 12,673 cf

Pond CB-6: Peak Elev=233.22' Inflow=1.66 cfs 6,696 cf
18.0" Round Culvert n=0.013 L=19.0' S=0.0079 '/' Outflow=1.66 cfs 6,696 cf

Pond CB-7: Peak Elev=233.76' Inflow=1.15 cfs 4,549 cf
15.0" Round Culvert n=0.013 L=91.0' S=0.0055 '/' Outflow=1.15 cfs 4,549 cf

Pond CB-8: Peak Elev=234.77' Inflow=1.21 cfs 3,946 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0132 '/' Outflow=1.21 cfs 3,946 cf

Pond CB-9: Peak Elev=234.39' Inflow=1.87 cfs 6,123 cf
15.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.87 cfs 6,123 cf

Pond FB1: Filter Basin 1 Peak Elev=226.65' Storage=11,379 cf Inflow=5.44 cfs 18,897 cf
Primary=0.23 cfs 18,907 cf Secondary=0.00 cfs 0 cf Outflow=0.23 cfs 18,907 cf

Pond FB2: Filter Basin 2 Peak Elev=230.49' Storage=6,647 cf Inflow=4.03 cfs 14,622 cf
Primary=0.62 cfs 14,622 cf Secondary=0.00 cfs 0 cf Outflow=0.62 cfs 14,622 cf

Pond FI-3: Peak Elev=236.32' Inflow=0.43 cfs 1,391 cf
12.0" Round Culvert n=0.013 L=136.0' S=0.0114 '/' Outflow=0.43 cfs 1,391 cf

Pond FI-5: Peak Elev=220.59' Inflow=0.76 cfs 3,232 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=0.76 cfs 3,232 cf

Pond FI4: Peak Elev=231.81' Storage=384 cf Inflow=1.11 cfs 3,777 cf
Outflow=1.05 cfs 3,524 cf

Pond P1: SD-3 Peak Elev=230.98' Storage=135 cf Inflow=1.92 cfs 9,175 cf
15.0" Round Culvert n=0.013 L=56.0' S=0.0196 '/' Outflow=1.91 cfs 9,175 cf

Pond P2: SD-4 Peak Elev=232.12' Storage=47 cf Inflow=1.48 cfs 6,706 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0067 '/' Outflow=1.47 cfs 6,706 cf

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 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

Subcatchment 10: Runoff Area=700 sf 0.00% Impervious Runoff Depth=1.89"
Tc=6.0 min CN=72 Runoff=0.03 cfs 111 cf

Subcatchment 20: Runoff Area=6,605 sf 92.13% Impervious Runoff Depth>4.09"
Tc=6.0 min CN=96 Runoff=0.65 cfs 2,249 cf

Subcatchment 21: Runoff Area=46,040 sf 20.48% Impervious Runoff Depth=2.38"
Flow Length=249' Slope=0.0300 '/' Tc=17.0 min CN=78 Runoff=2.10 cfs 9,115 cf

Subcatchment 22: Runoff Area=17,710 sf 44.66% Impervious Runoff Depth=3.00"
Tc=6.0 min CN=85 Runoff=1.39 cfs 4,428 cf

Subcatchment 23: Runoff Area=11,770 sf 58.75% Impervious Runoff Depth>3.39"
Flow Length=333' Tc=12.0 min CN=89 Runoff=0.86 cfs 3,325 cf

Subcatchment 23A: Runoff Area=34,000 sf 4.63% Impervious Runoff Depth=2.29"
Flow Length=209' Tc=14.7 min CN=77 Runoff=1.59 cfs 6,494 cf

Subcatchment 24: Runoff Area=8,475 sf 0.00% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=73 Runoff=0.44 cfs 1,392 cf

Subcatchment 25: Runoff Area=1,100 sf 89.55% Impervious Runoff Depth>3.99"
Tc=6.0 min CN=95 Runoff=0.11 cfs 366 cf

Subcatchment 26: Runoff Area=1,100 sf 64.55% Impervious Runoff Depth>3.39"
Tc=6.0 min CN=89 Runoff=0.10 cfs 311 cf

Subcatchment 30: Runoff Area=4,260 sf 85.68% Impervious Runoff Depth>3.99"
Tc=6.0 min CN=95 Runoff=0.42 cfs 1,417 cf

Subcatchment 31: Runoff Area=12,050 sf 81.20% Impervious Runoff Depth>3.79"
Tc=6.0 min CN=93 Runoff=1.14 cfs 3,809 cf

Subcatchment 32: Runoff Area=14,630 sf 10.56% Impervious Runoff Depth=2.29"
Tc=6.0 min CN=77 Runoff=0.88 cfs 2,794 cf

Subcatchment 33: Runoff Area=2,415 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=55' Slope=0.0150 '/' Tc=6.9 min CN=74 Runoff=0.13 cfs 412 cf

Subcatchment 34: Runoff Area=12,980 sf 62.83% Impervious Runoff Depth>3.39"
Tc=6.0 min CN=89 Runoff=1.13 cfs 3,667 cf

Subcatchment 35: Runoff Area=15,480 sf 82.49% Impervious Runoff Depth>3.89"
Tc=6.0 min CN=94 Runoff=1.49 cfs 5,022 cf

Subcatchment 36: Runoff Area=37,565 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=124' Slope=0.1000 '/' Tc=9.0 min CN=74 Runoff=1.82 cfs 6,416 cf

Subcatchment 37: Runoff Area=47,830 sf 10.35% Impervious Runoff Depth=2.21"
Flow Length=133' Tc=11.7 min CN=76 Runoff=2.33 cfs 8,808 cf

Subcatchment 38: Runoff Area=8,730 sf 73.71% Impervious Runoff Depth>3.69"
Tc=6.0 min CN=92 Runoff=0.81 cfs 2,686 cf

Subcatchment 39: Runoff Area=8,590 sf 76.89% Impervious Runoff Depth>3.69"
Tc=6.0 min CN=92 Runoff=0.80 cfs 2,643 cf

Subcatchment 40: Runoff Area=12,410 sf 65.51% Impervious Runoff Depth>3.49"
Tc=6.0 min CN=90 Runoff=1.11 cfs 3,610 cf

Subcatchment 41: Runoff Area=14,475 sf 74.30% Impervious Runoff Depth>3.69"
Tc=6.0 min CN=92 Runoff=1.34 cfs 4,454 cf

Subcatchment 42: Runoff Area=11,120 sf 78.91% Impervious Runoff Depth>3.79"
Tc=6.0 min CN=93 Runoff=1.05 cfs 3,515 cf

Subcatchment 43: Runoff Area=20,495 sf 14.44% Impervious Runoff Depth=2.29"
Tc=6.0 min CN=77 Runoff=1.24 cfs 3,915 cf

Subcatchment 44: Runoff Area=607,725 sf 1.74% Impervious Runoff Depth=2.21"
Flow Length=2,020' Tc=29.1 min CN=76 Runoff=20.58 cfs 111,917 cf

Subcatchment 45: Runoff Area=44,140 sf 4.87% Impervious Runoff Depth=2.13"
Flow Length=141' Tc=6.9 min CN=75 Runoff=2.41 cfs 7,831 cf

Subcatchment 50: Runoff Area=24,960 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=266' Tc=18.8 min CN=79 Runoff=1.14 cfs 5,118 cf

Reach R10: Buffer Avg. Flow Depth=0.15' Max Vel=0.25 fps Inflow=0.65 cfs 2,249 cf
n=0.240 L=132.0' S=0.0303 '/' Capacity=5.69 cfs Outflow=0.51 cfs 2,249 cf

Reach R11: Avg. Flow Depth=0.04' Max Vel=1.09 fps Inflow=0.51 cfs 2,249 cf
n=0.030 L=117.0' S=0.0385 '/' Capacity=51.26 cfs Outflow=0.50 cfs 2,249 cf

Reach R12: Avg. Flow Depth=0.25' Max Vel=0.80 fps Inflow=0.44 cfs 1,392 cf
n=0.035 L=127.0' S=0.0039 '/' Capacity=1.76 cfs Outflow=0.40 cfs 1,392 cf

Reach R20: Buffer Avg. Flow Depth=0.05' Max Vel=0.13 fps Inflow=0.11 cfs 366 cf
n=0.240 L=80.0' S=0.0250 '/' Capacity=5.17 cfs Outflow=0.08 cfs 366 cf

Reach R21: Avg. Flow Depth=0.01' Max Vel=0.55 fps Inflow=0.08 cfs 366 cf
n=0.030 L=53.0' S=0.0377 '/' Capacity=50.78 cfs Outflow=0.08 cfs 366 cf

Reach R3: Avg. Flow Depth=0.31' Max Vel=1.16 fps Inflow=1.11 cfs 34,640 cf
n=0.035 L=1,137.2' S=0.0088 '/' Capacity=1,152.50 cfs Outflow=1.08 cfs 34,640 cf

Reach R33: Avg. Flow Depth=0.13' Max Vel=1.77 fps Inflow=2.54 cfs 26,484 cf
n=0.035 L=482.0' S=0.0270 '/' Capacity=307.96 cfs Outflow=2.51 cfs 26,484 cf

Reach SP1: Study Point 1 Inflow=0.03 cfs 111 cf
Outflow=0.03 cfs 111 cf

Reach SP2: Study Point 2 Inflow=3.52 cfs 17,184 cf
Outflow=3.52 cfs 17,184 cf

Reach SP3: Study Point 3 Inflow=23.39 cfs 173,040 cf
Outflow=23.39 cfs 173,040 cf

Reach SP4: Study Point 4 Inflow=1.14 cfs 5,118 cf
Outflow=1.14 cfs 5,118 cf

Reach SP5: Study Point 5 Inflow=0.10 cfs 311 cf
Outflow=0.10 cfs 311 cf

Pond CB-1: Peak Elev=220.69' Inflow=5.90 cfs 27,003 cf
18.0" Round Culvert n=0.013 L=40.0' S=0.0487 '/' Outflow=5.90 cfs 27,003 cf

Pond CB-10: Peak Elev=234.31' Inflow=3.61 cfs 11,948 cf
15.0" Round Culvert n=0.013 L=157.0' S=0.0257 '/' Outflow=3.61 cfs 11,948 cf

Pond CB-11: Peak Elev=230.39' Inflow=4.74 cfs 15,615 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=4.74 cfs 15,615 cf

Pond CB-12: Peak Elev=230.08' Inflow=6.23 cfs 20,637 cf
18.0" Round Culvert n=0.013 L=148.0' S=0.0069 '/' Outflow=6.23 cfs 20,637 cf

Pond CB-2: Peak Elev=229.99' Inflow=3.52 cfs 17,184 cf
15.0" Round Culvert n=0.013 L=260.0' S=0.0358 '/' Outflow=3.52 cfs 17,184 cf

Pond CB-3: Peak Elev=233.21' Inflow=0.81 cfs 2,686 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.81 cfs 2,686 cf

Pond CB-4: Peak Elev=233.08' Inflow=1.61 cfs 5,330 cf
15.0" Round Culvert n=0.013 L=148.0' S=0.0055 '/' Outflow=1.61 cfs 5,330 cf

Pond CB-5: Peak Elev=232.51' Inflow=6.07 cfs 22,568 cf
18.0" Round Culvert n=0.013 L=119.0' S=0.0130 '/' Outflow=6.07 cfs 22,568 cf

Pond CB-6: Peak Elev=233.54' Inflow=3.27 cfs 12,784 cf
18.0" Round Culvert n=0.013 L=19.0' S=0.0079 '/' Outflow=3.27 cfs 12,784 cf

Pond CB-7: Peak Elev=234.11' Inflow=2.41 cfs 9,174 cf
15.0" Round Culvert n=0.013 L=91.0' S=0.0055 '/' Outflow=2.41 cfs 9,174 cf

Pond CB-8: Peak Elev=235.04' Inflow=2.15 cfs 7,016 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0132 '/' Outflow=2.15 cfs 7,016 cf

Pond CB-9: Peak Elev=234.71' Inflow=3.20 cfs 10,531 cf
15.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=3.20 cfs 10,531 cf

Pond FB1: Filter Basin 1 Peak Elev=227.25' Storage=17,100 cf Inflow=10.15 cfs 34,631 cf
Primary=1.11 cfs 34,640 cf Secondary=0.00 cfs 0 cf Outflow=1.11 cfs 34,640 cf

Pond FB2: Filter Basin 2 Peak Elev=231.33' Storage=10,418 cf Inflow=7.30 cfs 26,483 cf
Primary=2.54 cfs 26,484 cf Secondary=0.00 cfs 0 cf Outflow=2.54 cfs 26,484 cf

Pond FI-3: Peak Elev=236.48' Inflow=0.88 cfs 2,794 cf
12.0" Round Culvert n=0.013 L=136.0' S=0.0114 '/' Outflow=0.88 cfs 2,794 cf

Pond FI-5: Peak Elev=220.94' Inflow=1.59 cfs 6,494 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=1.59 cfs 6,494 cf

Pond FI4: Peak Elev=231.89' Storage=498 cf Inflow=2.41 cfs 7,831 cf
Outflow=2.30 cfs 7,578 cf

Pond P1: SD-3 Peak Elev=231.39' Storage=347 cf Inflow=3.57 cfs 17,184 cf
15.0" Round Culvert n=0.013 L=56.0' S=0.0196 '/' Outflow=3.52 cfs 17,184 cf

Pond P2: SD-4 Peak Elev=232.45' Storage=168 cf Inflow=2.89 cfs 12,756 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0067 '/' Outflow=2.83 cfs 12,756 cf

ATTACHMENT 6

INSPECTION, MAINTENANCE AND HOUSEKEEPING PLAN

DM ROMA
CONSULTING ENGINEERS

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

(Prepared by Jayson Haskell, PE #13002)

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE

Responsible Party

Owner: 25 River Road, LLC
P.O. Box 957
Windham, ME 04062

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 until such time that a condominium association is created. Once the association is established, maintenance will be the responsibility of the association. A permit transfer will be required to be issued to the Maine Department of Environmental Protection (MDEP) upon conveyance of the maintenance responsibility to the condominium association.

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 and MDEP 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 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 or buffer. To ensure the buffer's natural condition and filtration capacity is maintained, prohibiting vehicles and equipment from these areas will limit the risk of inhibiting the function of the buffer due to compaction or vegetation impact.

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 Post-Construction Stormwater 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 and Outlet Control Structures:** 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. **Permeable Road Base Section:** Inspect upslope face of stone layer and remove debris and sediment, as needed, to prevent clogging of the permeability of the stone section.

F. **Meadow Stormwater Treatment Buffer:** A meadow buffer must have a dense cover of grasses, or a combination of grasses and shrubs or trees. A buffer must be maintained as a meadow with a generally tall stand of grass, not as a lawn. It must not be mown more than twice per calendar year to a height no less than 6". These areas shall not be fertilized and maintained in its natural condition. The buffer area is deed restricted as described in the Stormwater Management Meadow Buffer Declaration of Restrictions in Appendix A of this document.

G. **Underdrained Filter Basin:** The filter basins are 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 forebays and basins 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.

H. **Level Spreader:** Level spreader 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. Stormwater runoff should discharge from the level spreader as sheet flow, and any observed channelization of flows or erosion should be corrected immediately. Any woody vegetation growing through riprap must be removed. Replace riprap on areas where any underlying soil or sediment buildup is showing through the stone or where stones have been dislodged.

I. **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.

J. **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.

K. **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.

L. **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.

Re-certification

As a requirement of the MDEP, a certification of the following items must be submitted within three months of the expiration of each five-year interval from the date of issuance of the permit.

(a) Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
(b) Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

(c) Maintenance. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Town of Windham Re-certification

As a requirement of the Town, the stormwater infrastructure shall be inspected yearly by a qualified third-party inspector. The third-party inspector shall perform an initial inspection to determine the status of the stormwater management facilities. If the initial inspection identifies any deficiencies with the facilities, the same third-party inspector shall re-inspect the facilities after they have been maintained or repaired to determine if they are performing as intended. Once the site is satisfactory, the third-party inspector shall submit the Annual Stormwater Management Facilities Certification form and report to the Office of Code Enforcement. The certification form shall be submitted to the Town prior to May 1 of each year.

Duration of Maintenance

Perform maintenance as described.

MAINTENANCE LOG

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE
(GENERAL INSPECTION FORM PAGE 1 OF 2)

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 and MDEP 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.			
Meadow Stormwater Buffer	Areas to be mown not more than twice a year to a height of 6”.			
	See Appendix A – Meadow Stormwater Treatment Buffer Declaration of Restrictions for further restrictions and maintenance requirements.			

MAINTENANCE LOG

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE
(GENERAL INSPECTION FORM PAGE 2 OF 2)

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 and MDEP 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
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.			
Permeable Road Base	Inspect the uphill side of the stone and remove debris and/or sediment collected on the slope to prevent clogging of the stone section.			
Regular Maintenance	Clear accumulation of winter sand in paved areas annually.			

MAINTENANCE LOG

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE
(UNDERDRAINED FILTER BASIN FB-_____)

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 Structure	Inspect to ensure that structure 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.			

APPENDIX A

DRAFT – MEADOW STORMWATER TREATMENT BUFFER DECLARATION OF RESTRICTIONS

THIS DECLARATION OF RESTRICTIONS is made this _____day of _____, 20___, by

_____, _____
(name) (street address)

_____, _____County, Maine _____, (herein referred to as the
(city or town) (county) (zip code)

"Declarant"), pursuant to a permit received from the Maine Department of Environmental Protection under the Stormwater Management Law, to preserve a buffer area on a parcel of land near

_____, _____ .
(road name) (known feature and/or town)

WHEREAS, the Declarant holds title to certain real property situated in _____, Maine
(town)

described in a deed from _____ to _____, dated
(name) (name of Declarant)

_____, 20____, and recorded in Book ____ Page ____ at the _____County Registry of Deeds, herein referred to as the "property"; and

WHEREAS, Declarant desires to place certain restrictions, under the terms and conditions herein, over a portion of said real property (hereinafter referred to as the "Restricted Buffer") described as follows: (Note: Insert description of restricted buffer location here)

WHEREAS, pursuant to the Stormwater Management Law, 38 M.R.S. Section 420-D and Chapter 500 of rules promulgated by the Maine Board of Environmental Protection ("Stormwater Management Rules"), Declarant has agreed to impose certain restrictions on the Restricted Buffer Area as more particularly set forth herein and has agreed that these restrictions may be enforced by the Maine Department of Environmental Protection or any successor (hereinafter the "MDEP"),

NOW, THEREFORE, the Declarant hereby declares that the Restricted Buffer Area is and shall forever be held, transferred, sold, conveyed, occupied and maintained subject to the conditions and restrictions set forth herein. The Restrictions shall run with the Restricted Buffer Area and shall be binding on all parties having any right, title or interest in and to the Restricted Buffer Area, or any portion thereof, and their heirs, personal representatives, successors, and assigns. Any present or future owner or occupant of the Restricted Buffer Area or any portion thereof, by the acceptance of

a deed of conveyance of all or part of the Covenant Area or an instrument conveying any interest therein, whether or not the deed or instrument shall so express, shall be deemed to have accepted the Restricted Buffer Area subject to the Restrictions and shall agree to be bound by, to comply with and to be subject to each and every one of the Restrictions hereinafter set forth.

1. Restrictions on Restricted Buffer Area. Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows.
    a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material will be placed, stored or dumped on the Restricted Buffer Area, nor may the topography or the natural mineral soil of the area be altered or manipulated in any way;
    b. A dense cover of grassy vegetation must be maintained over the Restricted Buffer Area, except that shrubs, trees and other woody vegetation may also be planted or allowed to grow in the area. The Restricted Buffer Area may not be maintained as a lawn or used as a pasture. If vegetation in the Restricted Buffer Area is mowed, it may be mown no more than two times per year.
    c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole or fence (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors;
    d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area, except for vehicles used in mowing;
    e. Any level lip spreader directing flow to the Restricted Buffer Area must be regularly inspected and adequately maintained to preserve the function of the level spreader.

    Any activity on or use of the Restricted Buffer Area inconsistent with the purpose of these Restrictions is prohibited. Any future alterations or changes in use of the Restricted Buffer Area must receive prior approval in writing from the MDEP. The MDEP may approve such alterations and changes in use if such alterations and uses do not impede the stormwater control and treatment capability of the Restricted Buffer Area or if adequate and appropriate alternative means of stormwater control and treatment are provided.

2. Enforcement. The MDEP may enforce any of the Restrictions set forth in Section 1 above.

3. Binding Effect. The restrictions set forth herein shall be binding on any present or future owner of the Restricted Buffer Area. If the Restricted Buffer Area is at any time owned by more than one owner, each owner shall be bound by the foregoing restrictions to the extent that any of the Restricted Buffer Area is included within such owner's property.

4. Amendment. Any provision contained in this Declaration may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of the Restricted Buffer Area and by the MDEP.

5. Effective Provisions of Declaration. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a land use restriction running with the land as a burden and upon the title to the Restricted Buffer Area.

6. Severability. Invalidity or unenforceability of any provision of this Declaration in whole or in part shall not affect the validity or enforceability of any other provision or any valid and enforceable part of a provision of this Declaration.

7. Governing Law. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.

_____
(NAME)

STATE OF MAINE, _____, County, dated _____, 20__ .
(County)

Personally appeared before me the above named _____, who swore to the truth of the foregoing to the best of (his/her) knowledge, information and belief and acknowledged the foregoing instrument to be (his/her) free act and deed.

_____
Notary Public

_____

SECTION 17

SOILS INFORMATION

Section 17 – Soils Information

A Class-A High Intensity Soil Survey was performed by Mark Hampton. The Soils Report and Test Pit Logs are included in this section, and the Soils Map is included in the Plan Set. Additional test pits were conducted by Alex Finamore to determine groundwater elevations in the vicinity of the stormwater management features, and to design the wastewater disposal fields. The soils logs that are associated with the Stormwater Management Features are included in this section, and the soils logs associated with the wastewater management systems are contained in Section 19.

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
460 River Road	DM ROMA Consulting Engineers	Windham

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-5** [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		BROWN	
SANDY LOAM W/ ANGULAR STONES		YELLOWISH BROWN	
STONY REFUSAL @ 23"			

[X] hydric [ ] non-hydric | Slope %: 2 | Limiting factor: 23" | [x] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-7** [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
VERY FINE SANDY LOAM		BROWN	
SANDY LOAM		OLIVE	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 26"			

[x] hydric [ ] non-hydric | Slope %: 3 | Limiting factor: 13" | [X] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 2 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-8** [X] Test Pit [ ] Boring

1 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
FINE SANDY LOAM		BROWN	
	FIRM		
		OLIVE	COMMON, MEDIUM & DISTINCT
LIMIT OF EXCAVATION = 36"			

[ ] hydric [■] non-hydric | Slope %: 3-5 | Limiting factor: 20" | [■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: [X] Test Pit [ ] Boring

* Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

[ ] hydric [ ] non-hydric | Slope % | Limiting factor | [ ] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: (Profile) | (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature:	Date: 3/20/25
	name printed/typed: Alexander A. Finamore	Lic.#: LSE #391

MARK HAMPTON ASSOCIATES, INC.
SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8161

River Road/ Newhall Road
Windham, ME
DM Roma Consulting Engineers

Soil Narrative Report

DATE:	Soil Profiles observed on October 15, 2024
BASE MAP:	Base plan provided by DM Roma Consulting Engineers Scale 1 inch equals 100 feet and two foot contours.
GROUND CONTROL:	Soil survey boundaries located by Mark Hampton Associates, Inc. for Class A Soil Survey

Class A-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1/8 acre or larger.
Scale of 1"= 100 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located under direction of professional land surveyor or professional engineer.
Base Map –2 foot contour intervals

Provided:

Mapping units of 1/8 acre or larger
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by pacing and taping from know survey control points.
Ground topographic survey with two foot contours and ground control provided.

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

C.S.S. #216, L.S.E. #263 12/2/24

Mark J. Hampton Date

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River Road/Newhall Road
Windham, ME
DM Roma Consulting Engineers

Buxton
(Aquic Dystric Eutrochrepts)

SETTING

PARENT MATERIAL:	Derived from glaciomarine or glaciolaucustrine sediments
LANDFORM:	Coastal lowlands and river valleys
POSITION IN LANDSCAPE:	Intermediate positions on landform
SLOPE GRADIENT RANGES:	(A) 03%, (B) 3-8%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained with a perched watertable from 1.5 to 3.0 feet below the surface at some time from November to May or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark Brown, fine sandy loam 0-7"
Subsurface Layer:	Olive brown, silt loam, 8-15"
Subsoil Layer:	Olive gray silty clay loam, 15-32"
Substratum:	Gray silty clay loam +32"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 60 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Scantic, Lamoine,

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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River Road/Newhall Road
Windham, ME
DM Roma Consulting Engineers

Lamoine
(Aeric Haplaquepts)

SETTING

PARENT MATERIAL:	Derived from glaciomarine or glaciolaucustrine sediments
LANDFORM:	Coastal lowlands and river valleys
POSITION IN LANDSCAPE:	Intermediate positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Somewhat poorly drained with a perched watertable from 0.5 to 2.0 feet below the surface at some time from November to June or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark Brown, fine sandy loam 0-7"
Subsurface Layer:	Lt. Olive brown silt loam, 7-14"
Subsoil Layer:	Olive silty clay loam, 14-21"
Substratum:	Olive, silty clay loam, 21-65"

HYDROLOGIC GROUP:	Group D
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Buxton, Scantic

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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8161

River Road/Newhall Road
Windham, ME
DM Roma Consulting Engineers

Scantic
(Aquic Haplorthod)

SETTING

PARENT MATERIAL:	Derived from glaciomarine or glaciolaucustrine sediments
LANDFORM:	Coastal lowlands and river valleys
POSITION IN LANDSCAPE:	Lower positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark grayish brown, silt loam 0-9"
Subsurface Layer:	Olive gray silt loam, 9-16"
Subsoil Layer:	Olive silty clay loam, 16-29"
Substratum:	Olive gray clay loam, 29-65"

HYDROLOGIC GROUP:	Group D
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Buxton, Lamoine

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

E161

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-1 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
C	Olive	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 17 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-2 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Sandy Loam	Weak Angular	Very Friable	
Bw	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
C	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 16 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 12 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-3 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Fine Grandul	Friable	
Eg	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	
Cg	Olive	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-4 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Grand	Friable	
Bw1	Brown	Silt Loam	Fine Grandul	Friable	
Bw2	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 13 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

11/21/2024
Date

Mark J. Hampton
Name Printed

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SS License No.

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PAGE ____ OF ____

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-5

☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	F. Sandy Loam	Grand	Very Friable	
Eg	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-6

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Sandy Loam	Weak Angular	Very Friable	
Bw1	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 14 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 12 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-7

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Fine Grandul	Friable	
Eg	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 16 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-8

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Grand	Friable	
Eg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

11/21/2024
Date

Mark J. Hampton
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FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-9

☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw1	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
C	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 18 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 6 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-10

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Sandy Loam	Weak Angular	Very Friable	
Bw1	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 18 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 6 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-11

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Fine Grandul	Friable	
Bw1	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 13 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-12

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Grand	Friable	
Eg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

Limiting Factor: 6 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

Mark J. Hampton

Name Printed

11/21/2024

Date

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FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
River Road/Newhall Road	DM Roma Consulting Engineers	Windham

Exploration Symbol # SS-13 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw1	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bw2	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
C	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
Buxton	18 " Depth	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD	10 Percent	☐ No ☒ Yes	_____ Soil Group

Exploration Symbol # SS-14 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Sandy Loam	Weak Angular	Very Friable	
Eg	Gray	F. Sandy Loam	Sub Ang Blocky	Friable	Common and Distinct
Bg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	
Cg	Olive Gray	Silty Clay Loam	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
Scantic	6 " Depth	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☒ PD ☐ VPD	2 Percent	☐ No ☒ Yes	_____ Soil Group

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
	_____ " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD	_____ Percent	☐ No ☐ Yes	_____ Soil Group

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details

Soil Series/Phase Name:	Limiting Factor		Drainage Class	Slope	Hydric Soil	Hydrologic
	_____ " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD	_____ Percent	☐ No ☐ Yes	_____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

11/21/2024
Date

Mark J. Hampton
Name Printed

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Legend for Soil Maps

1. Drainage Class

Excessively Well Drained	EWD
Well Drained	WD
Moderately Well Drained	MWD
Somewhat Poorly Drained	SPD
Poorly Drained	PD
Very Poorly Drained	VPD

2. Slope Designation

0-3%	A
3-8%	B
8-15%	C
15-25%	D
>25%	E

3. Note: High Intensity Soil Survey has been prepared by Mark Hampton Associates, Inc. in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

SECTION 18

WATER SUPPLY FOR DOMESTIC AND FIRE PROTECTION USE

Section 18 – Water Supply for Domestic and Fire Protection Use

The project plans have been submitted to the Portland Water District for review and approval. Once an Ability to Serve Approval Letter has been issued by the PWD, we will provide a copy of the letter to the Town.

SECTION 19

PROVISIONS FOR WASTEWATER DISPOSAL

Section 19 – Provisions for Wastewater Disposal

The project has a total wastewater design flow of 11,340 gallons per day based on 42 dwelling units each having 3 bedrooms. The wastewater disposal has been divided into 6 individual wastewater disposal fields each having a design capacity of 1,890 gallons per day. The disposal fields are designed to meet the separation requirements outlined in the Maine Wastewater Disposal Rules. The HHE-200 designs are included in this section.

A Nitrate-Nitrogen impact assessment was performed by Main-Land Development Consultants and is attached in Section 26. The results of the analysis indicate that proposed disposal fields B, E and F are not expected to create nitrate concentrations in excess of 10 mg/l at a property line. Disposal fields A, C and D have the potential to exceed 10 mg/l of Nitrate-Nitrogen concentration at a property boundary, so we will be installing Fuji Clean CEN-21 Advanced Treatment Units that are designed to reduce Nitrate-Nitrogen concentration to below 10 mg/l before the wastewater enters the disposal field.

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

City, Town, or Plantation	Windham
Street or Road	Dolly Farm Subdivision - Bed A
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): 25 River Road, LLC — Owner ☒ Applicant

Mailing Address of Owner/Applicant: PO Box 957, Windham, ME 04062

Daytime Tel. #:

OWNER OR APPLICANT STATEMENT

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.

Signature of Owner or Applicant _____ Date _____

>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<

Town_____ Permit#_____

Date Permit Issued / / Fee:$_____ Double Fee Charged [ ]

L.P.I. # _____

Local Plumbing Inspector

☐ Owner ☐ Town ☐ State

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.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

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

33.5 SQ. FT. ☒ ACRES

SHORELAND ZONING

Yes ☒No

DISPOSAL SYSTEM TO SERVE

1. Single Family Dwelling Unit, No. of Bedrooms: ____
☒2. Multiple Family Dwelling, No. of Units: 7X3 BDRM UNITS
3. Other: _____ (specify)

Current Use Seasonal Year Round ☒Undeveloped

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: 1000x7 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: 6237 ☒ 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

1890 gallons per day
BASED ON:
☒1. Table 501.1 (dwelling unit(s))
2. Table 501.2 (other facilities)
SHOW CALCULATIONS for other facilites
3BDRM @ 270 GPD X 7 UNITS = 1890 GPD
3. Section 503.0 (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
2 / C
at Observation Hole # TP-1
Depth 19 "
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. f.t / 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. 43 d 45 m 11.78 s
Lon. -70 d 25 m 58.08 s

SITE EVALUATOR STATEMENT

I certify that on 4/3/2025 (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 _____ SE # 391 Date 4/8/2025

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.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

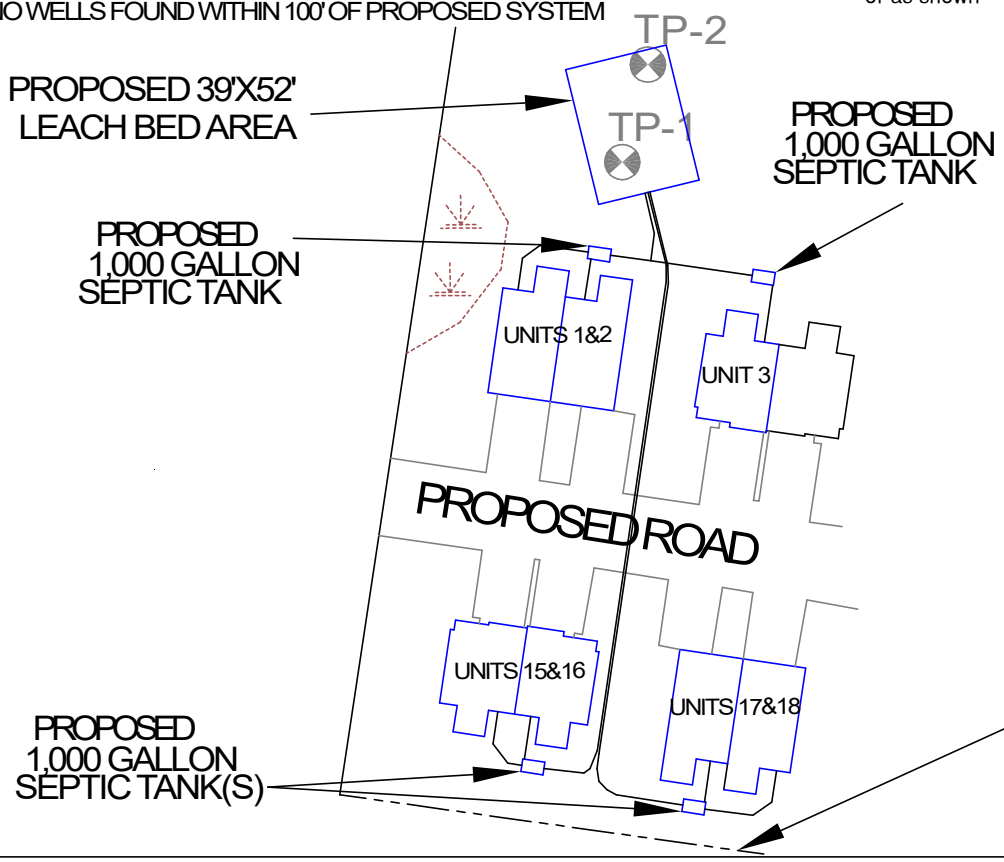
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolly Farm Subdivision - Bed A	25 River Road LLC

SITE PLAN

Scale 1"= Ft. 75 or as shown

NOTE:
NO WELLS FOUND WITHIN 100' OF PROPOSED SYSTEM

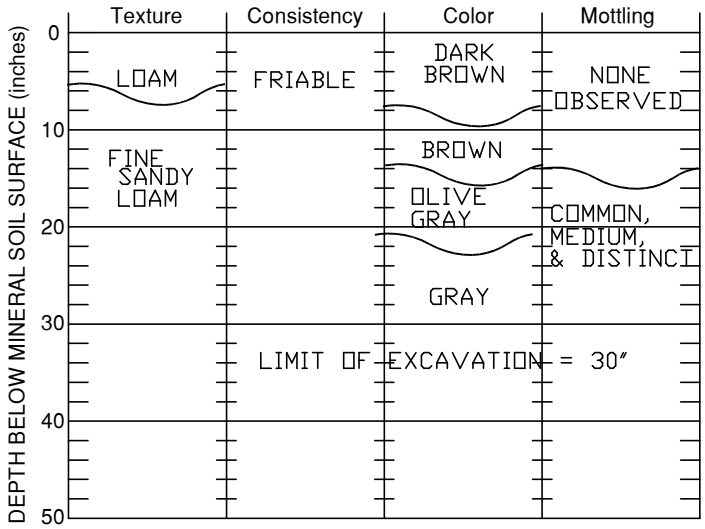


SITE LOCATION PLAN

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-1 ☒ Test pit ☐ Boring

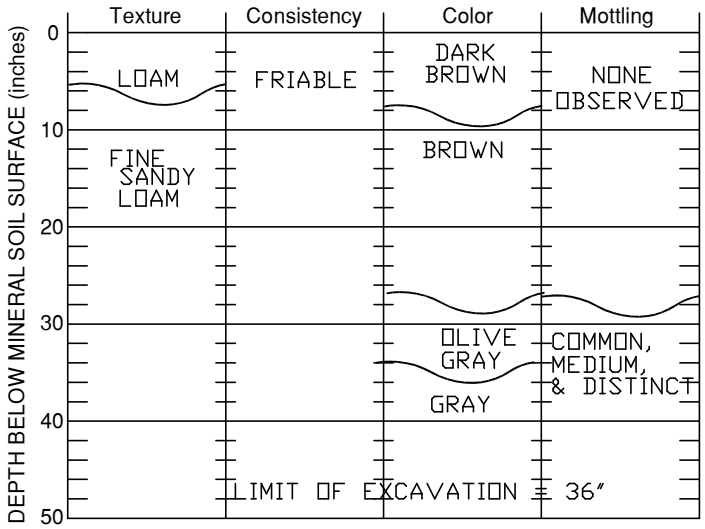
0 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
2 Profile / C Condition	0-3 %	12 "	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-2 ☒ Test pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
2 Profile / C Condition	0-3 %	27 "	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Site Evaluator Signature | 391 SE # | 4/8/2025 Date

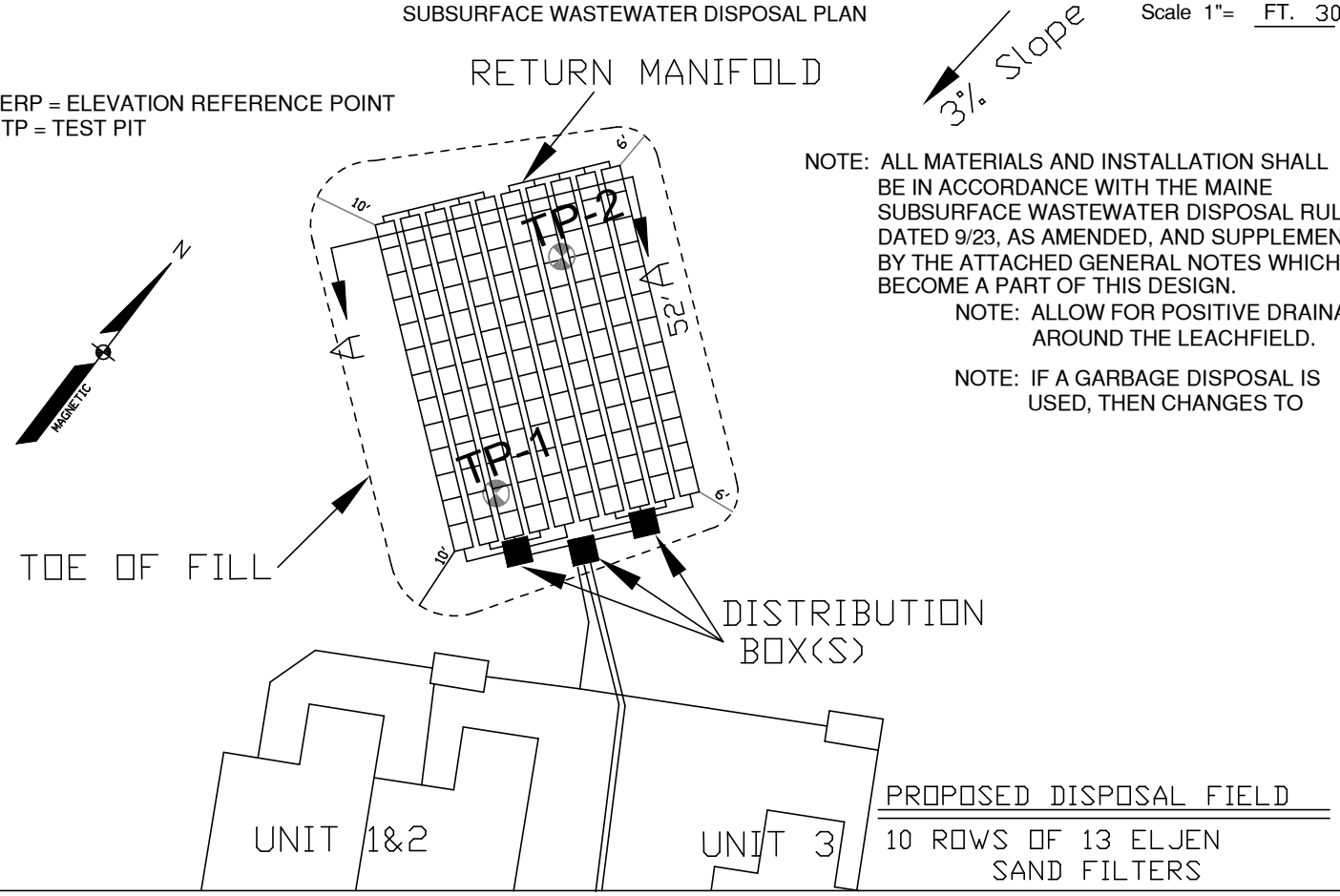
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed A	25 River Road LLC

SUBSURFACE WASTEWATER DISPOSAL PLAN

Scale 1"= FT. 30



NOTE: ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAINE SUBSURFACE WASTEWATER DISPOSAL RULES DATED 9/23, AS AMENDED, AND SUPPLEMENTED BY THE ATTACHED GENERAL NOTES WHICH BECOME A PART OF THIS DESIGN.

NOTE: ALLOW FOR POSITIVE DRAINAGE AROUND THE LEACHFIELD.

NOTE: IF A GARBAGE DISPOSAL IS USED, THEN CHANGES TO

BACKFILL REQUIREMENTS

Depth of Fill (Upslope)	13"
Depth of Fill (Downslope)	25"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	238.10'
Top of Distribution Pipe	237.42'
Bottom of Disposal Area (Bottom of Sand)	236.00'

ELEVATION REFERENCE POINT

Location & Description: Onsite Datum

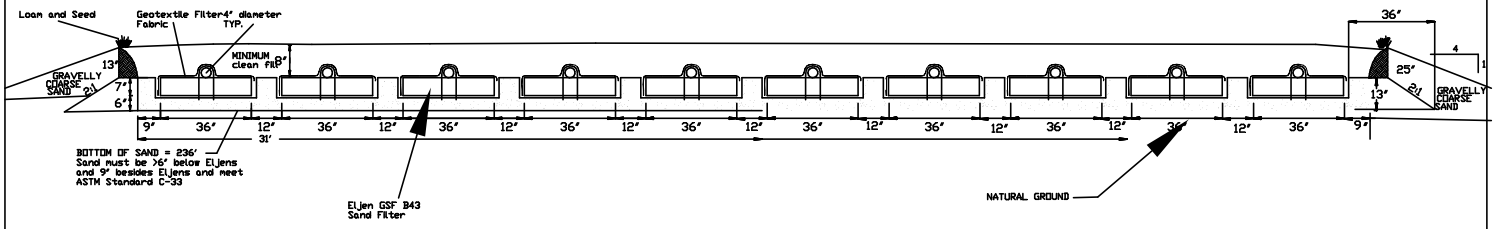
Reference Elevation = NAVD88

DISPOSAL FIELD CROSS SECTION

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

CROSS SECTION A-A'

12" SEPARATION USED IN DESIGN



NOTE: REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER ENTIRE FILL AREA

NOTE: THOROGHLY MIX CLEAN, COARSE, SHARP SAND INTO TOP 4 INCHES OF ORIGINAL SOIL TO CREATE A TRANSITION ZONE

Site Evaluator Signature	SE #	Date
	391	4/8/2025

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

City, Town, or Plantation	Windham
Street or Road	Dolley Farm Subdivision - Bed B
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): 25 River Road LLC — Owner ☒ Applicant

Mailing Address of Owner/Applicant: PO Box 957, Windham, ME 04062

Daytime Tel. #:

OWNER OR APPLICANT STATEMENT

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.

_____ Signature of Owner or Applicant _____ Date

>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<

Town_____ Permit#_____

Date Permit Issued / / Fee:$_____ Double Fee Charged [ ]

_____ L.P.I. # _____

Local Plumbing Inspector

☐ Owner ☐ Town ☐ State

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.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

_____ 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

33.5 SQ. FT. ☒ ACRES

SHORELAND ZONING

Yes ☒No

DISPOSAL SYSTEM TO SERVE

1. Single Family Dwelling Unit, No. of Bedrooms: ____
☒2. Multiple Family Dwelling, No. of Units: 7X3 BDRM UNITS
3. Other: _____ (specify)

Current Use Seasonal Year Round ☒Undeveloped

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: 3x1500 GAL. 1x1000 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: 6237 ☒ 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

1890 gallons per day
BASED ON:
☒1. Table 501.1 (dwelling unit(s))
2. Table 501.2 (other facilities)
SHOW CALCULATIONS for other facilites
3BDRM @ 270 GPD X 7 UNITS = 1890 GPD
3. Section 503.0 (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
2 / C
at Observation Hole # TP-3
Depth 12 "
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. f.t / 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. 43 d 45 m 12.69 s
Lon. -70 d 25 m 56.25 s

SITE EVALUATOR STATEMENT

I certify that on 4/3/2025 (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 | 391 SE # | 4/8/2025 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.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

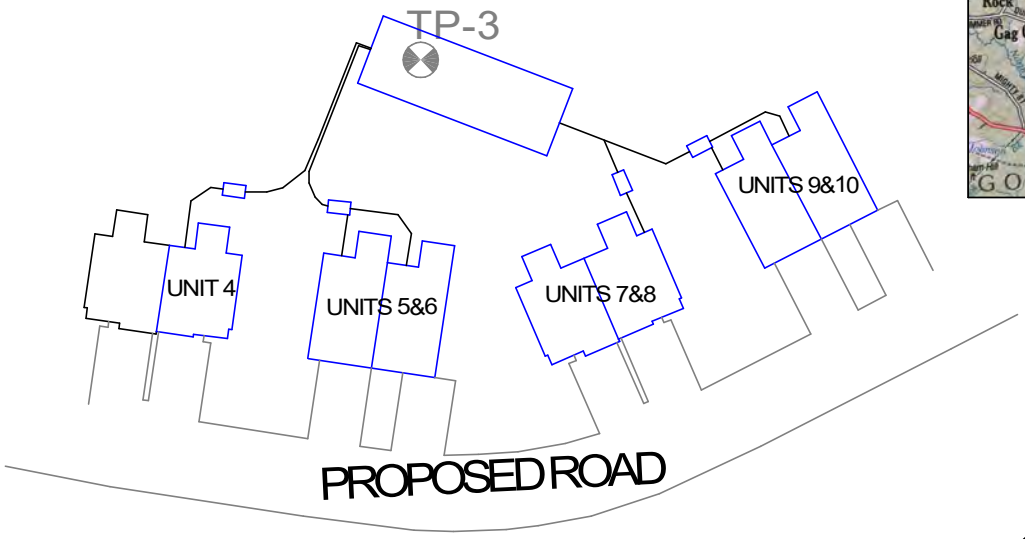
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed B	25 River Road LLC

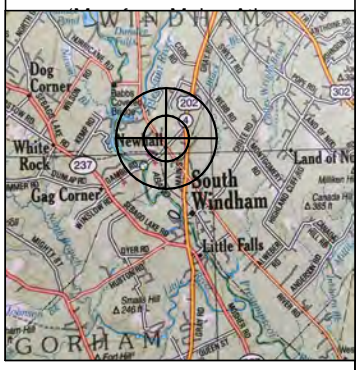
SITE PLAN

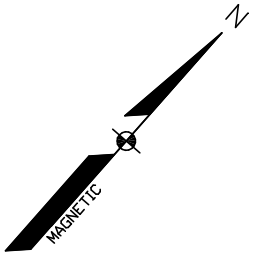
Scale 1"= Ft. 75 or as shown

NOTE:
NO WELLS FOUND WITHIN 100' OF PROPOSED SYSTEM



SITE LOCATION PLAN





SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-3 ☒ Test pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
10–20	SANDY LOAM		BROWN	
20–30	SANDY LOAM W/ ANGULAR STONES	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
30–40	LIMIT OF EXCAVATION = 30"			

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	0-3 %	25 "	☒ Ground Water ☒ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☒ Test pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–50				

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

Site Evaluator Signature

391
SE #

4/8/2025
Date

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	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed B	25 River Road LLC

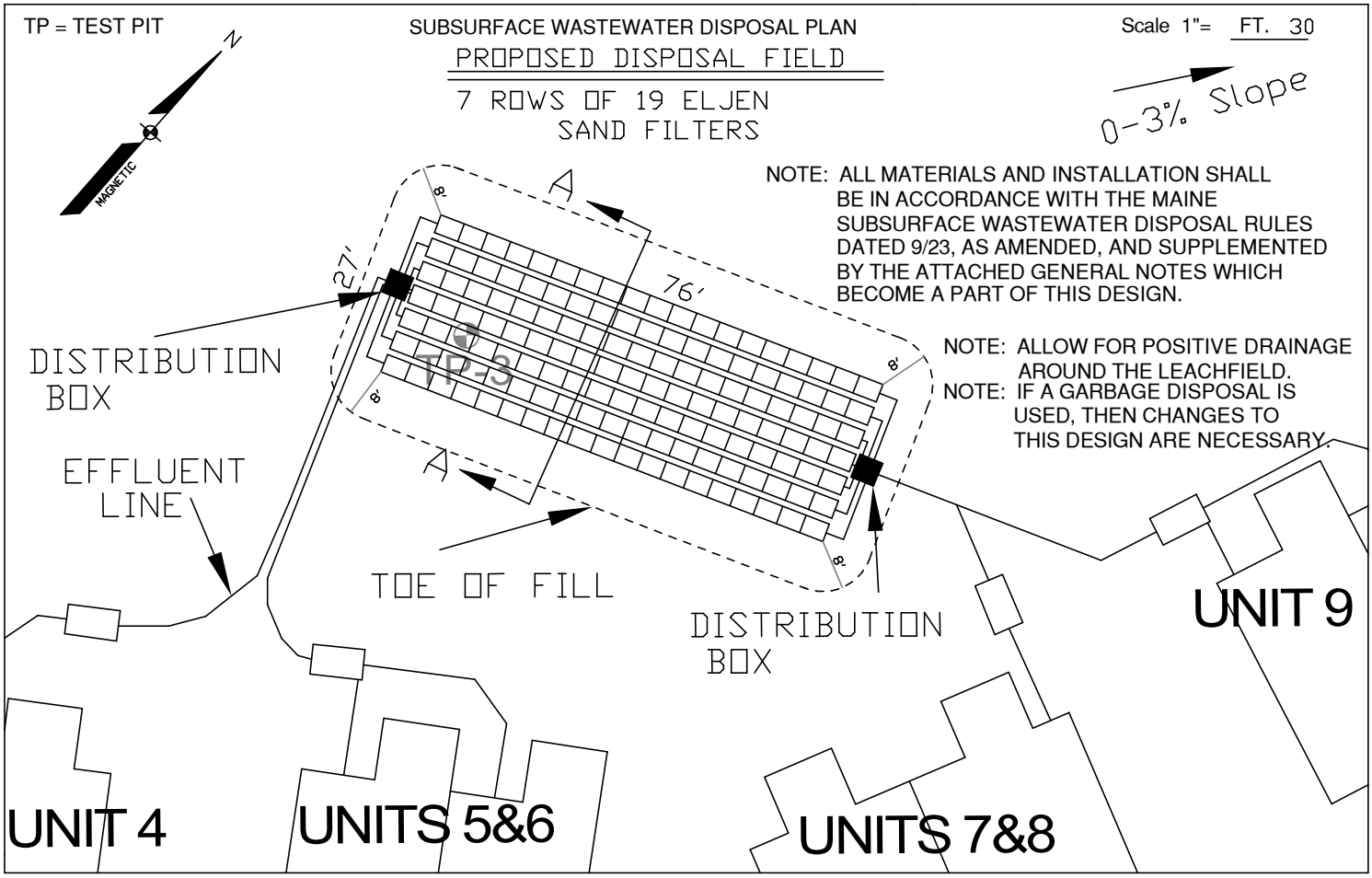
TP = TEST PIT

SUBSURFACE WASTEWATER DISPOSAL PLAN

PROPOSED DISPOSAL FIELD

7 ROWS OF 19 ELJEN SAND FILTERS

Scale 1"= FT. 30



NOTE: ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAINE SUBSURFACE WASTEWATER DISPOSAL RULES DATED 9/23, AS AMENDED, AND SUPPLEMENTED BY THE ATTACHED GENERAL NOTES WHICH BECOME A PART OF THIS DESIGN.

NOTE: ALLOW FOR POSITIVE DRAINAGE AROUND THE LEACHFIELD.

NOTE: IF A GARBAGE DISPOSAL IS USED, THEN CHANGES TO THIS DESIGN ARE NECESSARY.

BACKFILL REQUIREMENTS

Depth of Fill (Upslope)	19"
Depth of Fill (Downslope)	19"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	239.60'
Top of Distribution Pipe	238.92'
Bottom of Disposal Area (Bottom of Sand)	237.50'

ELEVATION REFERENCE POINT

Location & Description: Onsite Datum

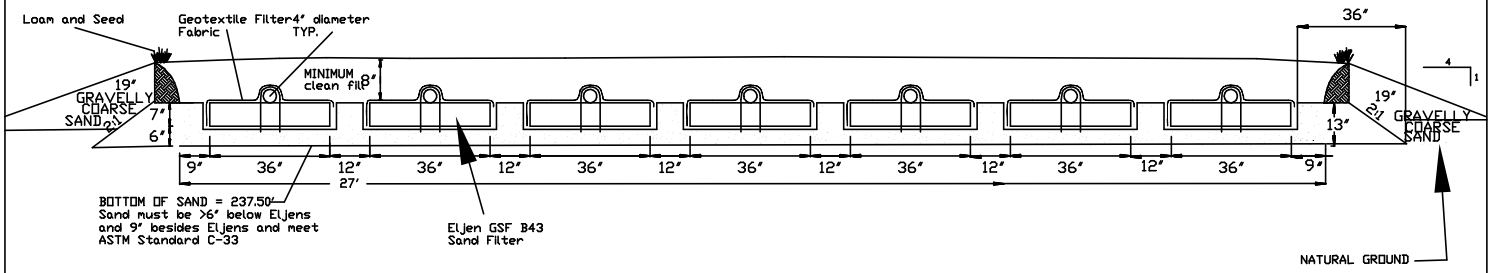
Reference Elevation = NAVD88

DISPOSAL FIELD CROSS SECTION

CROSS SECTION A-A'

12" SEPARATION USED IN DESIGN

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



NOTE: REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER ENTIRE FILL AREA

NOTE: THOROGHLY MIX CLEAN, COARSE, SHARP SAND INTO TOP 4 INCHES OF ORIGINAL SOIL TO CREATE A TRANSITION ZONE

Site Evaluator Signature	SE #	Date
	391	4/8/2025

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

City, Town, or Plantation	Windham
Street or Road	Dolley Farm Subdivision - Bed C
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): 25 River Road LLC — Owner ☒ Applicant

Mailing Address of Owner/Applicant: PO Box 957, Windham, ME 04062

Daytime Tel. #:

OWNER OR APPLICANT STATEMENT

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.

Signature of Owner or Applicant _____ Date _____

>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<

Town_____ Permit#_____

Date Permit Issued / / Fee:$_____ Double Fee Charged [ ]

L.P.I. # _____

Local Plumbing Inspector

☐ Owner ☐ Town ☐ State

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.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

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

33.5 SQ. FT. ☒ ACRES

SHORELAND ZONING

Yes ☒No

DISPOSAL SYSTEM TO SERVE

1. Single Family Dwelling Unit, No. of Bedrooms: ____
☒2. Multiple Family Dwelling, No. of Units: 7X3 BDRM UNITS
3. Other: _____ (specify)

Current Use Seasonal Year Round ☒Undeveloped

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: 3x1500 GAL.
1x1000 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: 6237 ☒ 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

1890 gallons per day
BASED ON:
☒1. Table 501.1 (dwelling unit(s))
2. Table 501.2 (other facilities)
SHOW CALCULATIONS for other facilites
3BDRM @ 270 GPD X 7 UNITS = 1890 GPD
3. Section 503.0 (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
2 / C
at Observation Hole # TP-10
Depth 11 "
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. f.t / 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. 43 d 45 m 15.43 s
Lon. -70 d 25 m 55.51 s

SITE EVALUATOR STATEMENT

I certify that on 4/4/2025 (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	SE #	Date
	391	4/8/2025

Site Evaluator Name Printed	Telephone Number	E-mail Address
Alexander A. Finamore	(207) 650-4313	alfinamore@yahoo.com

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

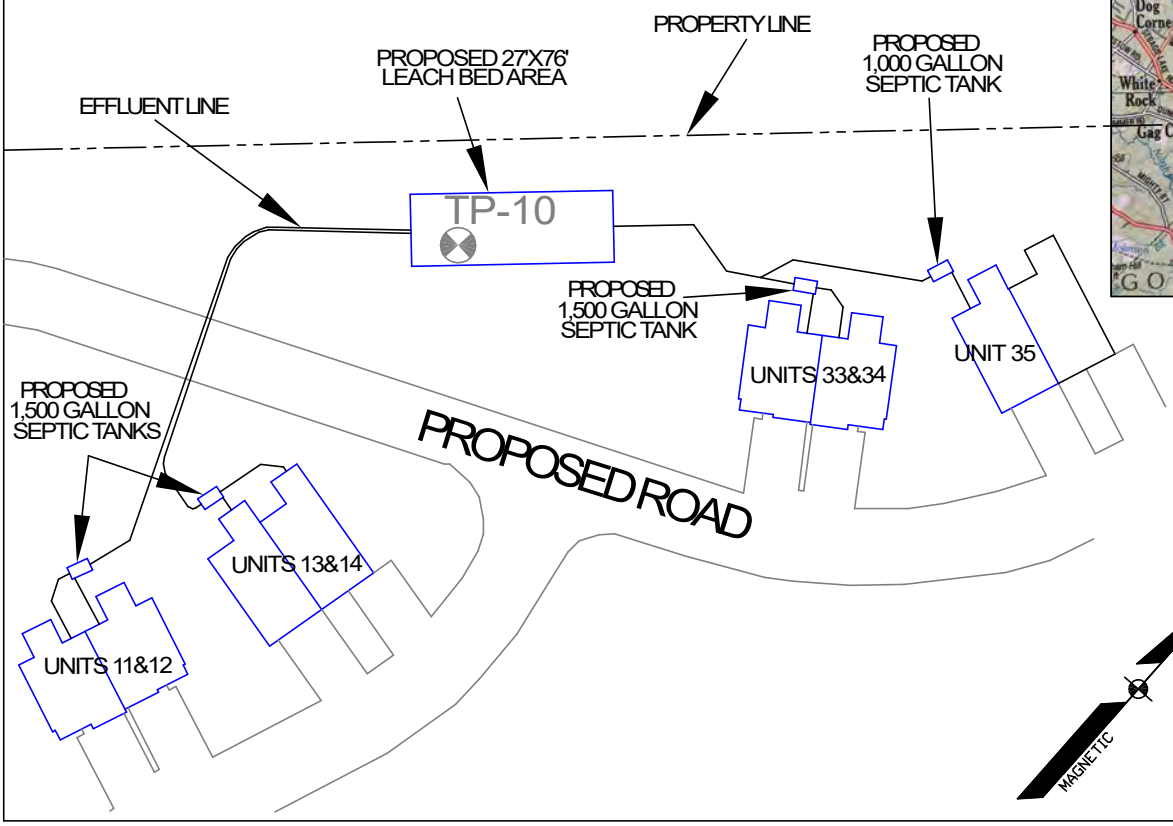
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed C	25 River Road LLC

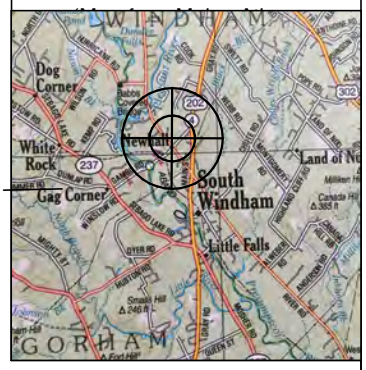
SITE PLAN

Scale 1"= Ft. 75 or as shown

NOTE:
NO WELLS FOUND WITHIN 100' OF PROPOSED SYSTEM



SITE LOCATION PLAN



SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-10 ☒ Test pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
10	VERY FINE SANDY LOAM		BROWN	
20			OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
30				
40	LIMIT OF EXCAVATION = 28"			
50				

Soil Classification	Slope	Limiting Factor	
2 Profile / C Condition	0 %	11 "	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☒ Test pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

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

Site Evaluator Signature | 391 SE # | 4/4/2025 Date

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	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed C	25 River Road LLC

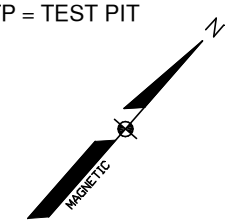
TP = TEST PIT

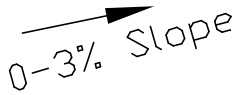
SUBSURFACE WASTEWATER DISPOSAL PLAN

PROPOSED DISPOSAL FIELD

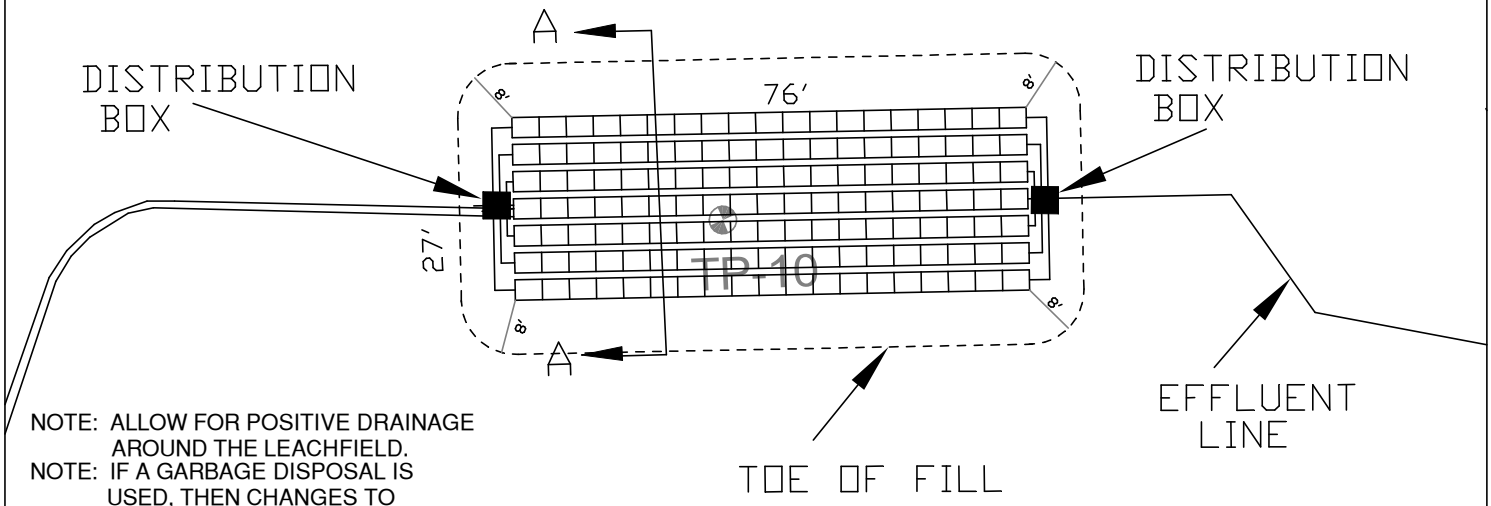
7 ROWS OF 19 ELJEN SAND FILTERS

Scale 1"= FT. 30





NOTE: ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAINE SUBSURFACE WASTEWATER DISPOSAL RULES DATED 9/23, AS AMENDED, AND SUPPLEMENTED BY THE ATTACHED GENERAL NOTES WHICH BECOME A PART OF THIS DESIGN.



NOTE: ALLOW FOR POSITIVE DRAINAGE AROUND THE LEACHFIELD.

NOTE: IF A GARBAGE DISPOSAL IS USED, THEN CHANGES TO THIS DESIGN ARE NECESSARY.

BACKFILL REQUIREMENTS

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

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	238.60'
Top of Distribution Pipe	237.92'
Bottom of Disposal Area (Bottom of Sand)	236.50'

ELEVATION REFERENCE POINT

Location & Description: Onsite Datum

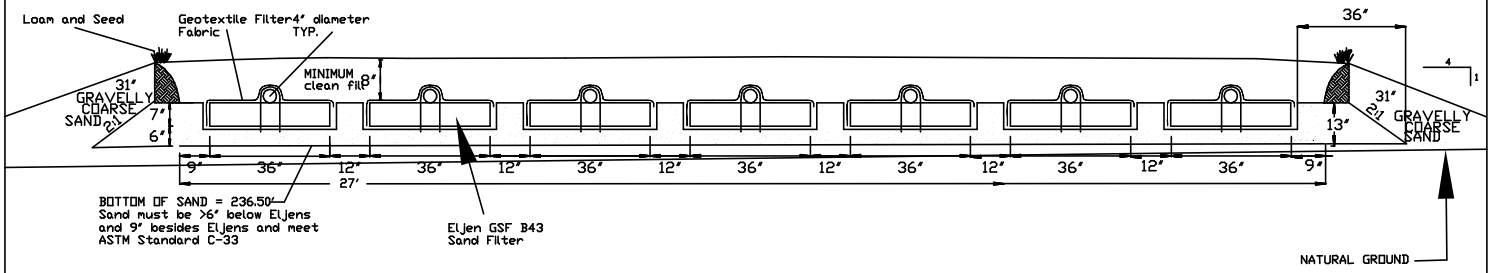
Reference Elevation = NAVD88

DISPOSAL FIELD CROSS SECTION

CROSS SECTION A-A'

15" SEPARATION USED IN DESIGN

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



NOTE: REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER ENTIRE FILL AREA

NOTE: THOROGHLY MIX CLEAN, COARSE, SHARP SAND INTO TOP 4 INCHES OF ORIGINAL SOIL TO CREATE A TRANSITION ZONE

Site Evaluator Signature	SE #	Date
	391	4/4/2025

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

City, Town, or Plantation	Windham
Street or Road	Dolley Farm Subdivision - Bed D
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): 25 River Road LLC — Owner ☒ Applicant

Mailing Address of Owner/Applicant	PO Box 957
	Windham, ME 04062
Daytime Tel. #	

OWNER OR APPLICANT STATEMENT

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.

_____ _____
Signature of Owner or Applicant — Date

>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<

Town_____ Permit#_____

Date Permit Issued / / Fee:$_____ Double Fee Charged [ ]

_____ L.P.I. # _____
Local Plumbing Inspector

☐ Owner ☐ Town ☐ State

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.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

_____ _____
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

33.5 SQ. FT. ☒ ACRES

SHORELAND ZONING

Yes ☒No

DISPOSAL SYSTEM TO SERVE

1. Single Family Dwelling Unit, No. of Bedrooms: ____
☒2. Multiple Family Dwelling, No. of Units: 7X3 BDRM UNITS
3. Other: _____ (specify)

Current Use Seasonal Year Round ☒Undeveloped

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: 3x1500 GAL.
1x1000 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: 6237 ☒ 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

1890 gallons per day
BASED ON:
☒1. Table 501.1 (dwelling unit(s))
2. Table 501.2 (other facilities)
SHOW CALCULATIONS for other facilites
3BDRM @ 270 GPD X 7 UNITS = 1890 GPD
3. Section 503.0 (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
3 / C
at Observation Hole # TP-9
Depth 12 "
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. f.t / 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. 43 d 45 m 18.31 s
Lon. -70 d 25 m 51.77 s

SITE EVALUATOR STATEMENT

I certify that on 4/4/2025 (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	SE #	Date
	391	4/8/2025

Site Evaluator Name Printed	Telephone Number	E-mail Address
Alexander A. Finamore	(207) 650-4313	alfinamore@yahoo.com

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

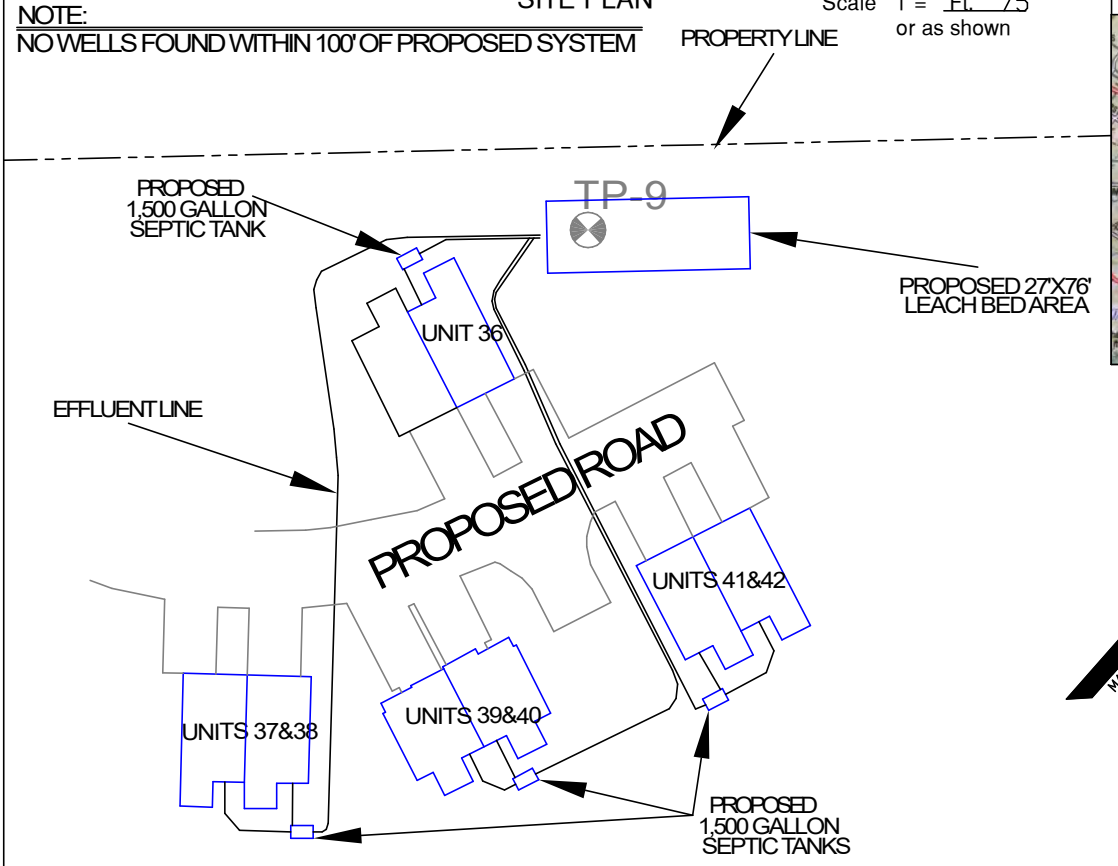
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed D	25 River Road LLC

SITE PLAN

Scale 1"= Ft. 75 or as shown

NOTE:
NO WELLS FOUND WITHIN 100' OF PROPOSED SYSTEM



SITE LOCATION PLAN

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-10 ☒ Test pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
10	FINE SANDY LOAM		BROWN	
20			OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
30				
40	LIMIT OF EXCAVATION = 28"			
50				

Soil Classification	Slope	Limiting Factor	
Profile: 2 Condition: C	3 %	12 "	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☒ Test pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

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

Site Evaluator Signature | 391 SE # | 4/4/2025 Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

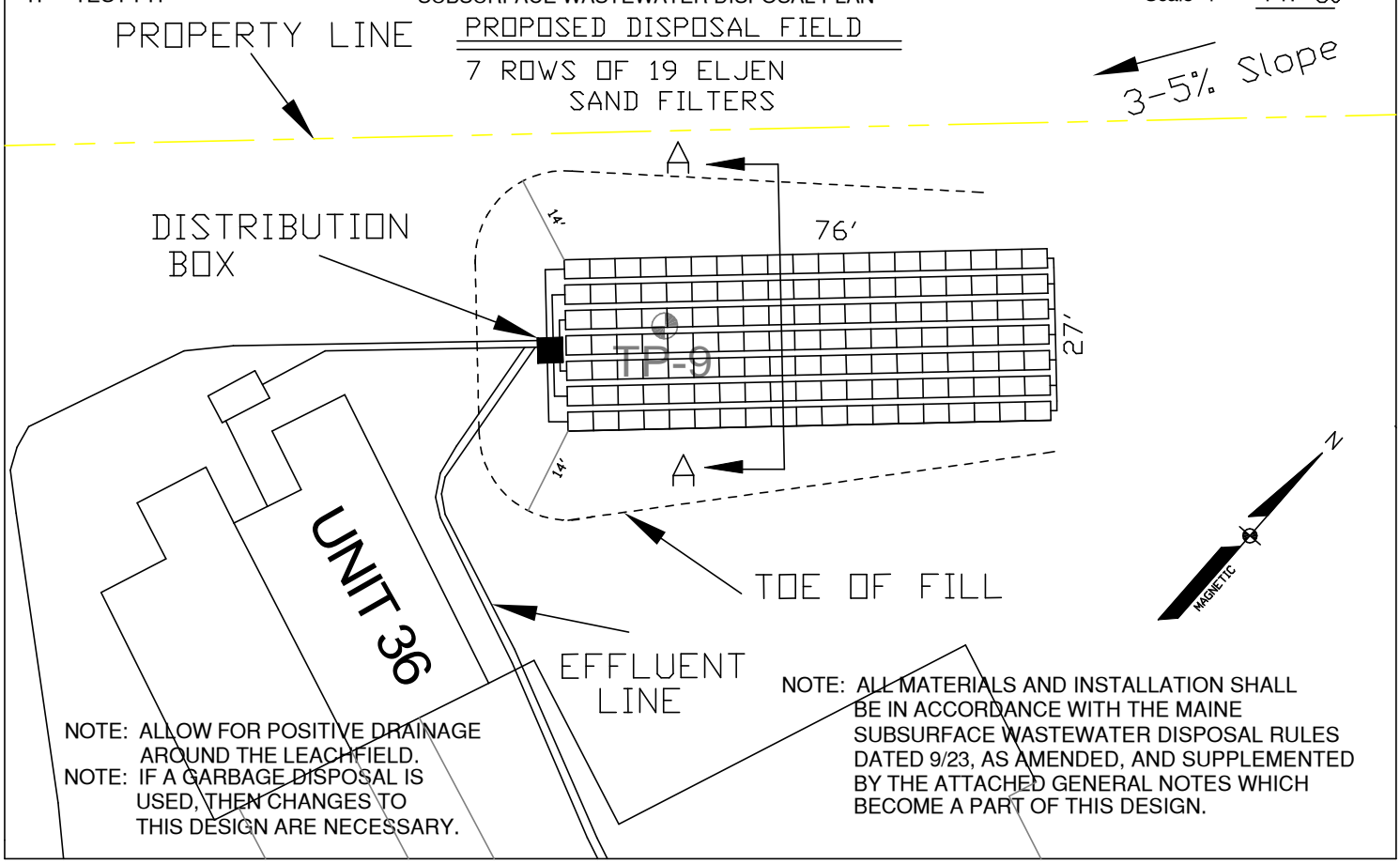
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed D	25 River Road LLC

TP = TEST PIT

SUBSURFACE WASTEWATER DISPOSAL PLAN

Scale 1"= FT. 30



NOTE: ALLOW FOR POSITIVE DRAINAGE AROUND THE LEACHFIELD.
NOTE: IF A GARBAGE DISPOSAL IS USED, THEN CHANGES TO THIS DESIGN ARE NECESSARY.

NOTE: ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAINE SUBSURFACE WASTEWATER DISPOSAL RULES DATED 9/23, AS AMENDED, AND SUPPLEMENTED BY THE ATTACHED GENERAL NOTES WHICH BECOME A PART OF THIS DESIGN.

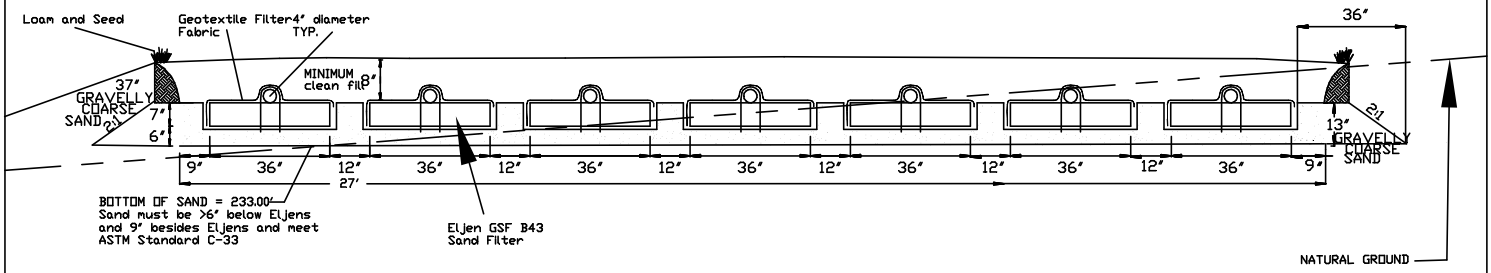
BACKFILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT	
Depth of Fill (Upslope)	37"	Finished Grade Elevation	235.10'	Location & Description	Onsite Datum
Depth of Fill (Downslope)	0"	Top of Distribution Pipe	234.42'		
		Bottom of Disposal Area (Bottom of Sand)	233.00'	Reference Elevation =	NAVD88

DISPOSAL FIELD CROSS SECTION

CROSS SECTION A-A'

12" SEPARATION USED IN DESIGN

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



NOTE: REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER ENTIRE FILL AREA
NOTE: THOROGHLY MIX CLEAN, COARSE, SHARP SAND INTO TOP 4 INCHES OF ORIGINAL SOIL TO CREATE A TRANSITION ZONE

Site Evaluator Signature	SE #	Date
	391	4/4/2025

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

City, Town, or Plantation	Windham
Street or Road	Dolley Farm Subdivision - Bed E
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): 25 River Road LLC — Owner ☒ Applicant

Mailing Address of Owner/Applicant: PO Box 957, Windham, ME 04062

Daytime Tel. #:

OWNER OR APPLICANT STATEMENT

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.

_____ Signature of Owner or Applicant _____ Date

>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<

Town_____ Permit#_____

Date Permit Issued / / Fee:$_____ Double Fee Charged [ ]

_____ L.P.I. # _____

Local Plumbing Inspector

☐ Owner ☐ Town ☐ State

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.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

_____ 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

33.5 SQ. FT. ☒ ACRES

SHORELAND ZONING

Yes ☒No

DISPOSAL SYSTEM TO SERVE

1. Single Family Dwelling Unit, No. of Bedrooms: ____
☒2. Multiple Family Dwelling, No. of Units: 7X3 BDRM UNITS
3. Other: _____ (specify)

Current Use Seasonal Year Round ☒Undeveloped

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: 3x1500 GAL. 1x1000 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: 6237 ☒ 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

1890 gallons per day
BASED ON:
☒1. Table 501.1 (dwelling unit(s))
2. Table 501.2 (other facilities)
SHOW CALCULATIONS for other facilites
3BDRM @ 270 GPD X 7 UNITS = 1890 GPD
3. Section 503.0 (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
3 / C
at Observation Hole # TP-4
Depth 14 "
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. f.t / gpd
4. Large---4.1 sq. ft. / gpd
5. Extra Large---5.0 sq. ft. / gpd

EFFLUENT/EJECTOR PUMP

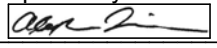
1. Not Required
2. May Be Required
☒3. Required
Specify only for engineered systems:
DOSE: _____ gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lat. 43 d 45 m 12.44 s
Lon. -70 d 25 m 52.56 s

SITE EVALUATOR STATEMENT

I certify that on 4/4/2025 (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 | 391 SE # | 4/8/2025 Date

Alexander A. Finamore | (207) 650-4313 Telephone Number | alfinamore@yahoo.com E-mail Address

Site Evaluator Name Printed

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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

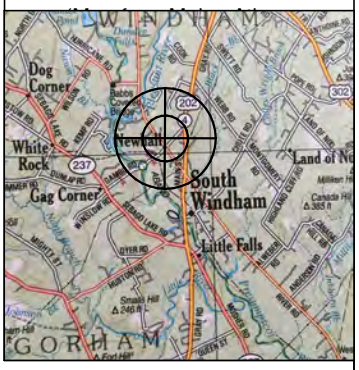
Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed E	25 River Road LLC

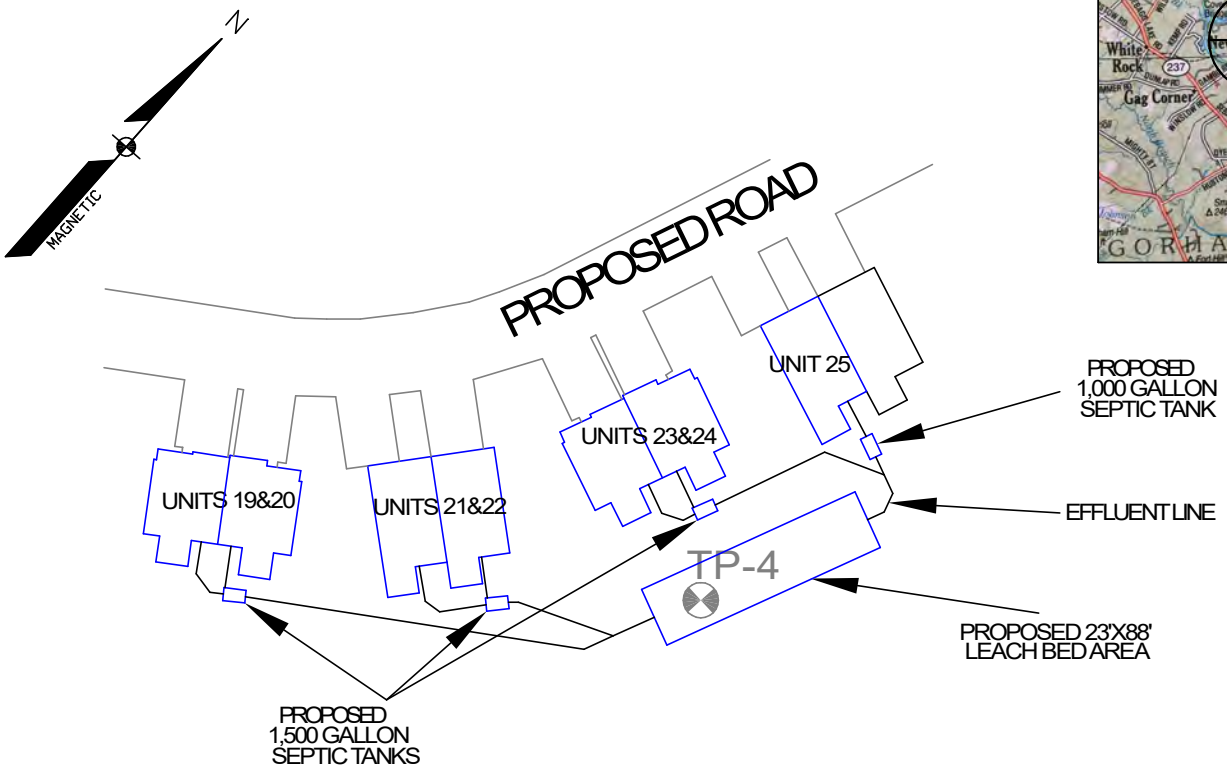
SITE PLAN

Scale 1"= Ft. 75 or as shown

NOTE:
NO WELLS FOUND WITHIN 100' OF PROPOSED SYSTEM

SITE LOCATION PLAN





SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-4 ☒ Test pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
10	SANDY LOAM	SOMEWHAT FIRM	BROWN / OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
20	SANDY LOAM W/SHALE FRAGMENTS			
30	LIMIT OF EXCAVATION = 26"			
40				
50				

Soil Classification	Slope	Limiting Factor	
2 Profile / C Condition	3 %	12 "	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☒ Test pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

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

Site Evaluator Signature

391
SE #

4/4/2025
Date

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	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed E	25 River Road LLC

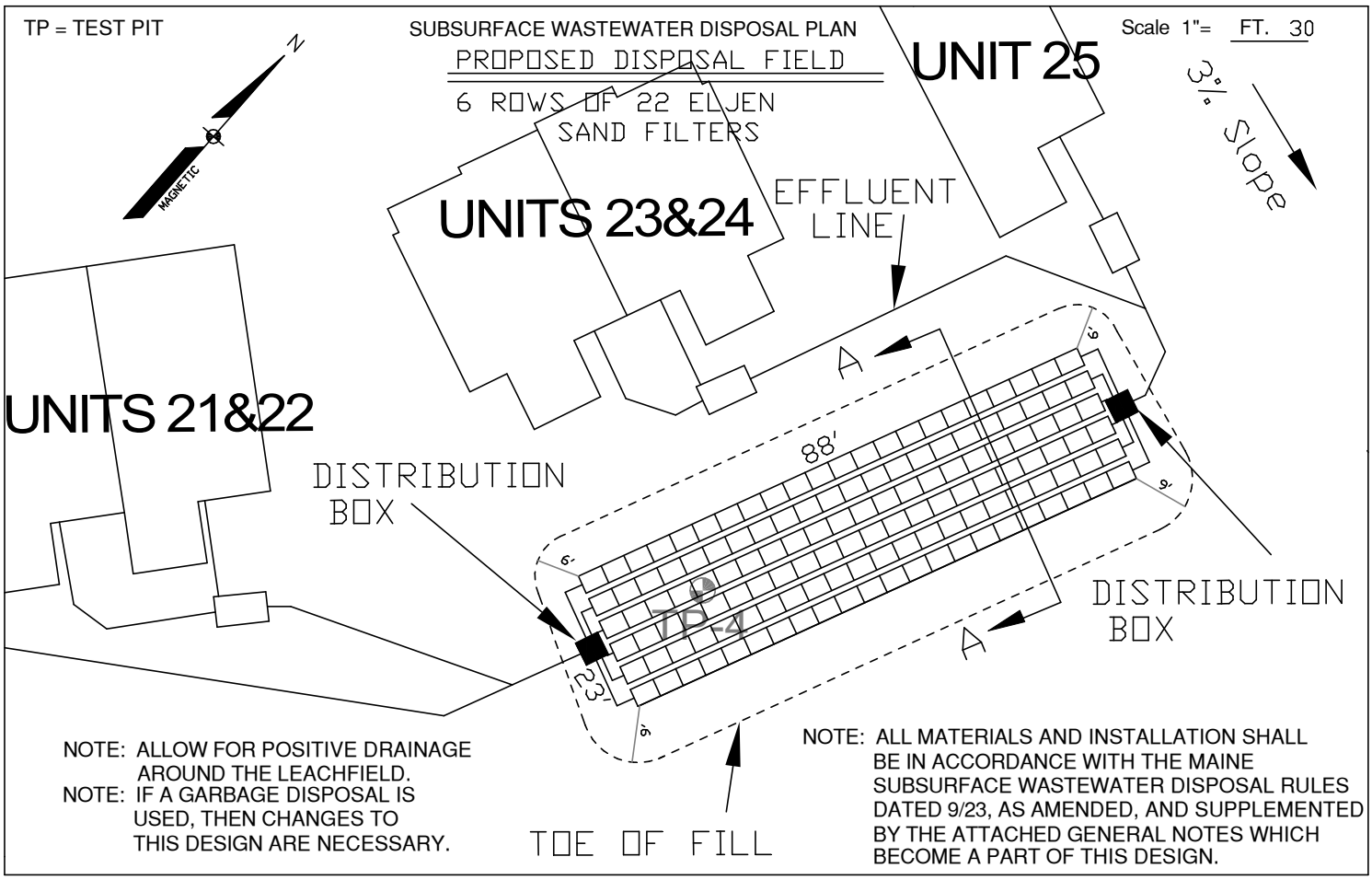
TP = TEST PIT

SUBSURFACE WASTEWATER DISPOSAL PLAN

PROPOSED DISPOSAL FIELD

6 ROWS OF 22 ELJEN SAND FILTERS

Scale 1"= FT. 30



NOTE: ALLOW FOR POSITIVE DRAINAGE AROUND THE LEACHFIELD.

NOTE: IF A GARBAGE DISPOSAL IS USED, THEN CHANGES TO THIS DESIGN ARE NECESSARY.

NOTE: ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAINE SUBSURFACE WASTEWATER DISPOSAL RULES DATED 9/23, AS AMENDED, AND SUPPLEMENTED BY THE ATTACHED GENERAL NOTES WHICH BECOME A PART OF THIS DESIGN.

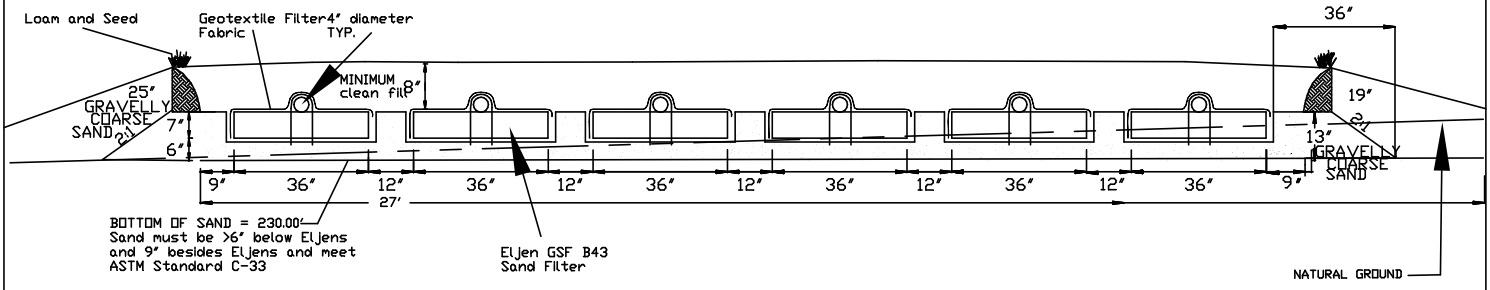
BACKFILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT	
Depth of Fill (Upslope)	19″	Finished Grade Elevation	232.10′	Location & Description	Onsite Datum
Depth of Fill (Downslope)	25″	Top of Distribution Pipe	231.42′		
		Bottom of Disposal Area (Bottom of Sand)	230.00′	Reference Elevation =	NAVD88

DISPOSAL FIELD CROSS SECTION

CROSS SECTION A-A'

12" SEPARATION USED IN DESIGN

SCALE:
VERTICAL: 1" = 3′
HORIZONTAL: 1" = 5′



NOTE: REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER ENTIRE FILL AREA

NOTE: THOROGHLY MIX CLEAN, COARSE, SHARP SAND INTO TOP 4 INCHES OF ORIGINAL SOIL TO CREATE A TRANSITION ZONE

Site Evaluator Signature	SE #	Date	
	391	4/5/2025	Page 3 of 3 HHE-200 Rev. 9/2023

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

City, Town, or Plantation	Windham
Street or Road	Dolley Farm Subdivision - Bed F
Subdivision, Lot #	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): 25 River Road LLC — Owner ☒ Applicant

Mailing Address of Owner/Applicant: PO Box 957, Windham, ME 04062

Daytime Tel. #:

OWNER OR APPLICANT STATEMENT

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.

_____ Signature of Owner or Applicant _____ Date

>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<

Town_____ Permit#_____

Date Permit Issued / / Fee:$_____ Double Fee Charged [ ]

_____ L.P.I. # _____

Local Plumbing Inspector

☐ Owner ☐ Town ☐ State

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.

Municipal Tax Map # _____ Lot # _____

CAUTION: INSPECTION REQUIRED

I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

_____ 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

33.5 SQ. FT. ☒ ACRES

SHORELAND ZONING

Yes ☒No

DISPOSAL SYSTEM TO SERVE

1. Single Family Dwelling Unit, No. of Bedrooms: ____
☒2. Multiple Family Dwelling, No. of Units: 7X3 BDRM UNITS
3. Other: _____ (specify)

Current Use Seasonal Year Round ☒Undeveloped

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: 3x1500 GAL. 1x1000 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: 6237 ☒ 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

1890 gallons per day
BASED ON:
☒1. Table 501.1 (dwelling unit(s))
2. Table 501.2 (other facilities)
SHOW CALCULATIONS for other facilites
3BDRM @ 270 GPD X 7 UNITS = 1890 GPD
3. Section 503.0 (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
3 / C
at Observation Hole # TP-6
Depth 13 "
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. f.t / gpd
4. Large---4.1 sq. ft. / gpd
5. Extra Large---5.0 sq. ft. / gpd

EFFLUENT/EJECTOR PUMP

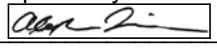
1. Not Required
2. May Be Required
☒3. Required
Specify only for engineered systems:
DOSE: _____ gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lat. 43 d 45 m 15.53 s
Lon. -70 d 25 m 51.27 s

SITE EVALUATOR STATEMENT

I certify that on 4/5/2025 (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 | 391 SE # | 4/8/2025 Date

Alexander A. Finamore | (207) 650-4313 Telephone Number | alfinamore@yahoo.com E-mail Address

Site Evaluator Name Printed

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

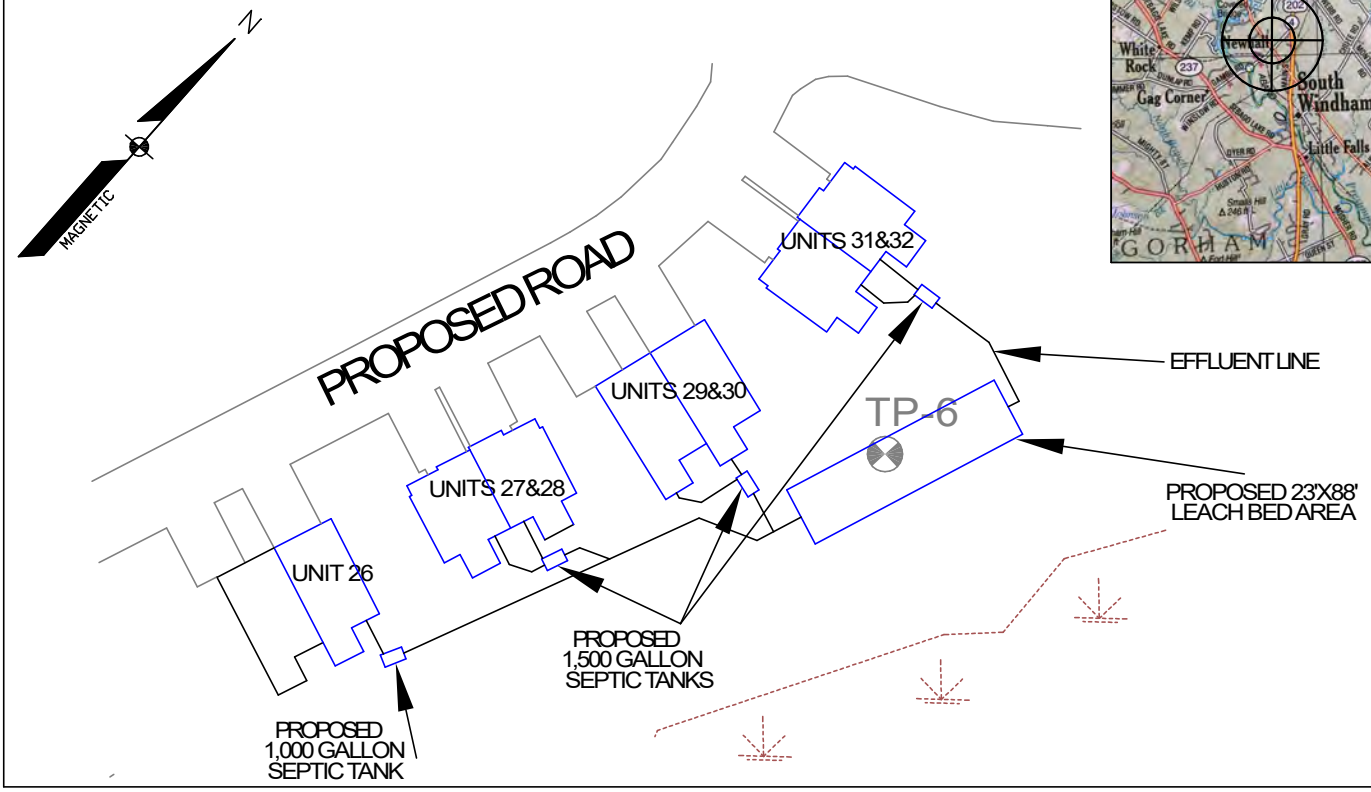
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed F	25 River Road LLC

SITE PLAN

Scale 1"= Ft. 75 or as shown

NOTE:
NO WELLS FOUND WITHIN 100' OF PROPOSED SYSTEM



SITE LOCATION PLAN

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-6 ☒ Test pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
10	SANDY LOAM	SOMEWHAT FIRM	BROWN / OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
20	SANDY LOAM STONY			
30	LIMIT OF EXCAVATION = 28"			
40				
50				

Soil Classification	Slope	Limiting Factor	
3 (Profile) C (Condition)	3 %	13 "	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☒ Test pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

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

Site Evaluator Signature | 391 SE # | 4/5/2025 Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

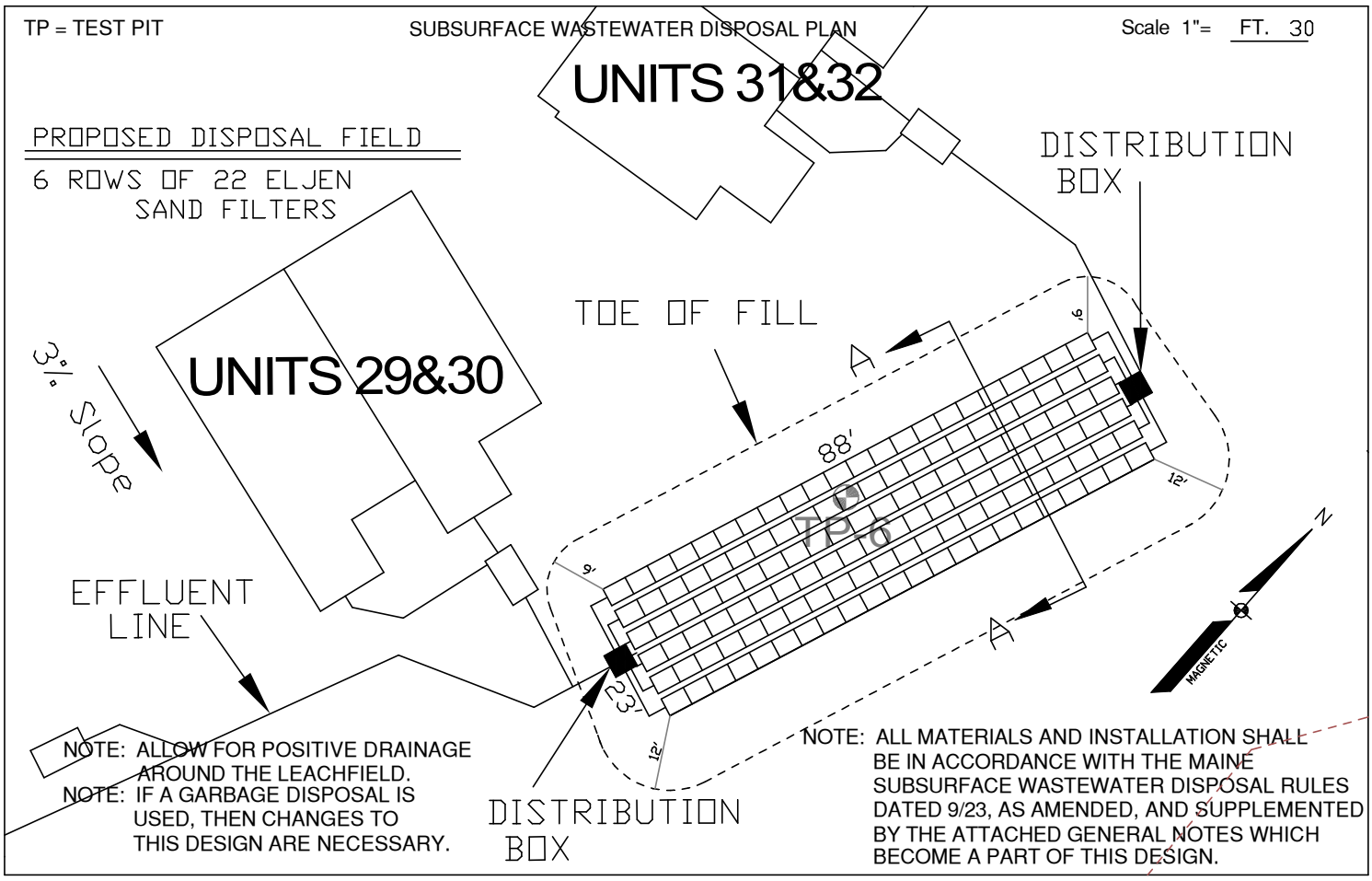
Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City ,Plantation	Street, Road, Subdivision	Owner or Applicant Name
Windham	Dolley Farm Subdivision - Bed F	25 River Road LLC

TP = TEST PIT

SUBSURFACE WASTEWATER DISPOSAL PLAN

Scale 1"= FT. 30



NOTE: ALLOW FOR POSITIVE DRAINAGE AROUND THE LEACHFIELD.

NOTE: IF A GARBAGE DISPOSAL IS USED, THEN CHANGES TO THIS DESIGN ARE NECESSARY.

NOTE: ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAINE SUBSURFACE WASTEWATER DISPOSAL RULES DATED 9/23, AS AMENDED, AND SUPPLEMENTED BY THE ATTACHED GENERAL NOTES WHICH BECOME A PART OF THIS DESIGN.

BACKFILL REQUIREMENTS

Depth of Fill (Upslope)	23"
Depth of Fill (Downslope)	31"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	228.10'
Top of Distribution Pipe	227.42'
Bottom of Disposal Area (Bottom of Sand)	226.00'

ELEVATION REFERENCE POINT

Location & Description: Onsite Datum

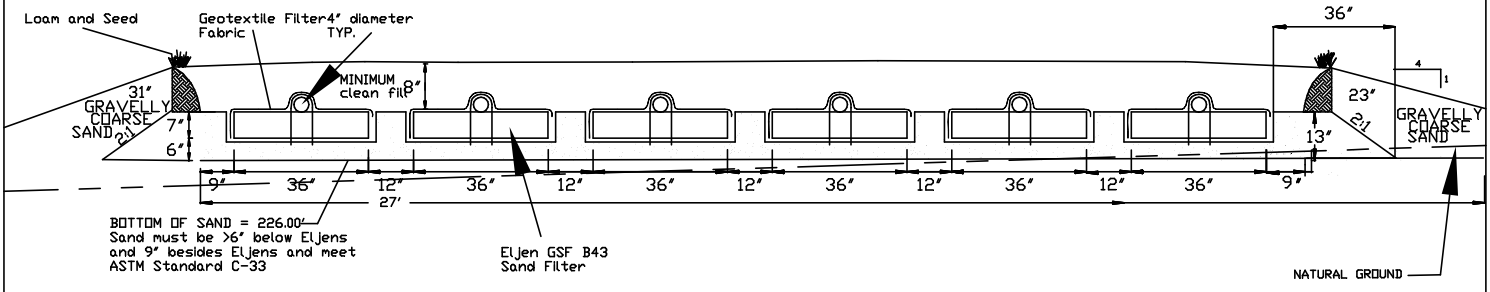
Reference Elevation = NAVD88

DISPOSAL FIELD CROSS SECTION

CROSS SECTION A-A'

12" SEPARATION USED IN DESIGN

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



NOTE: REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER ENTIRE FILL AREA

NOTE: THOROGHLY MIX CLEAN, COARSE, SHARP SAND INTO TOP 4 INCHES OF ORIGINAL SOIL TO CREATE A TRANSITION ZONE

Site Evaluator Signature	SE #	Date
	391	4/5/2025

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	$40,000
2.	Aggregates for Driveways & Sidewalks	$160,000
3.	Bituminous Pavement	$110,000
4.	Curbing and Sidewalks	$45,000
5.	Electrical Conduit and Risers	$35,000
6.	Stormwater BMPs	$60,000
7.	Storm Drain Collection	$50,000
8.	Water main and services	$135,000
9.	Wastewater collection & disposal	$225,000
10.	Off-Site Improvements	$300,000
11.	Landscaping & Lawns	$60,000
	Total Sitework Estimate:	$1,220,000

The 42-units of building cost is estimated at $9,240,000 based on $220,000 per unit.

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

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

Norway Savings Bank

April 22, 2025

Town of Windham
8 School Road
Windham, ME 04062

RE: Dolley Farm Subdivision

Ladies and Gentlemen,

At the request of Jim Cummings and Jay Hackett, I write this letter to provide to you my opinion on the financial capacity of 25 River Road, LLC, Jim Cummings and Jay Hackett to undertake the 42- lot subdivision at Dolley Farm.

I spoke with Jim about the plans and scope of the project in some detail recently. Jim Cummings and Jay Hackett maintain a comprehensive banking relationship with Norway Savings Bank so I am familiar with both their background and finances.

Based on my banking relationship with both and the information discussed with Jim about the proposal and plans for the subdivision, it is my opinion that 25 River Road, LLC, Jim Cummings and Jay Hackett have the financial capacity to support this project.

Sincerely,

Brian C. Desjardins
Regional Vice President
Commercial Lending

BCD/tbm

SECTION 21

MULTIFAMILY DEVELOPMENT STANDARDS

Section 21 – Multifamily Development Standards

The project has been designed to meet the following Multifamily development standards outlined in Section 814 of the Land Use Code:

A. Building Architecture
   1. Architectural Variety – We anticipate using at least 3 different colors for exterior siding of the units to provide variety of color between adjacent buildings. Siding materials will be a variety of clapboard, shake, board & batten style to create accent features. We have proposed 2 different building styles, and have generally alternated between the two stiles throughout the project.

   2. Façade – The buildings have been designed with gables, covered porches and roofline articulation to provide visual interest. Final Building Plans will provide a calculation demonstrating that the primary façade will have an area of fenestration a minimum of 25% of the total area facing the street.

   3. Orientation – River Road is a busy roadway, so we have oriented the buildings to face the new Access Driveway.

B. Site Design
   1. Parking – Each dwelling will have an attached garage and two vehicle parking spaces constructed as 90-degree driveway parking. The parking areas are designed as to not conflict with snow storage.

   2. Screening – There are no service areas, utility areas, trash dumpsters or significant mechanical equipment associated with this project development. Each unit will have an attached garage to store individual trash toters. The existing tree line will be maintained along the northern property line to provide screening to the existing residential abutters at 477 & 479 River Road. The southern property line will be supplemented with additional evergreen tree screening to provide buffering between Units 15-18 and the adjacent building at 469 River Road.

   3. Bicycle/Pedestrian – Sidewalks will be constructed throughout the new roadways to provide pedestrian access to River Road and for internal pedestrian movement. Bicycle parking for each unit will be available in the attached garage that will be part of each unit.

   4. Recreation and Open Space – A large grass lawn area approximately 43,300 sf will be maintained as open lawn to be utilized by the residents for recreation. This area of 43,300 sf does not include the meadow stormwater buffer area, which can only be cut no more than twice per year to a height of no less than 6 inches. Approximately 24 acres of the entire 34-acre parcel will be left as woodland for this initial phase of

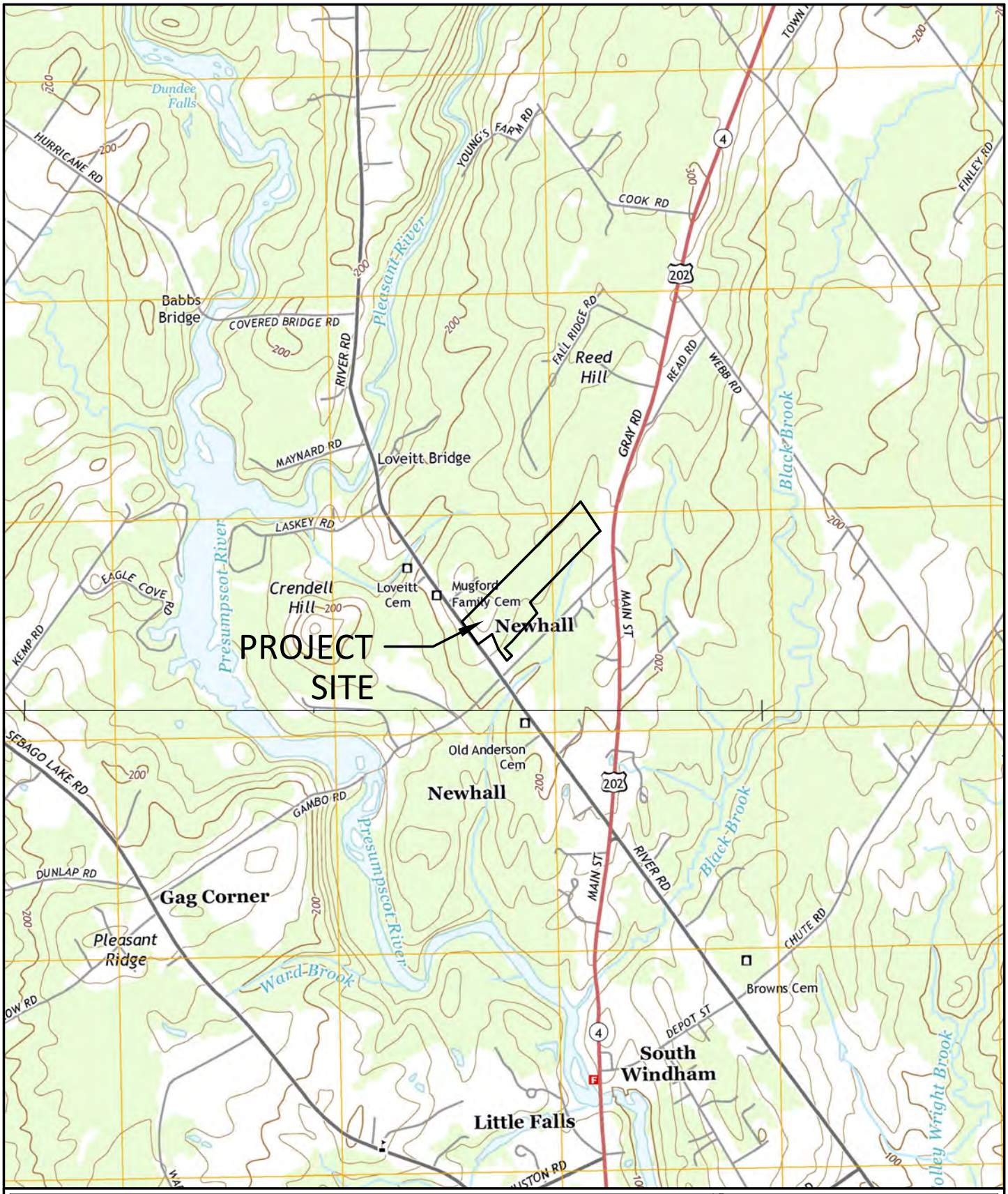
development that is easily walkable with very little understory. We have intentions to develop a few acres of this woodland with additional roads and dwelling units as part of a potential future project phase that must also comply with these multifamily development standards and must be approved by the Planning Board as a Subdivision Amendment. The 42 dwelling units require a minimum of 2,100 square feet of constructed amenities for passive use, which will be accommodated within the 33,300 sf field area through the designation of community garden areas, play fields and picnic table seating.

5. Landscape/Lighting – Each condominium unit owner will be responsible for determining the amount of landscaping that they wish to plant and maintain around the perimeter of their unit. Street trees are proposed to be planted on both sides of the street. Evergreen tree buffering will be planted along the southern property line adjacent to the building at 469 River Road. The existing mature trees along River Road will be preserved except for the driveway entrances. Cobra head lighting will be installed on the light poles at both project entrances.

6. Access Drive Standards – The project has been designed with service from a new Access Drive that will be built to the Major Private Road standard. We are requesting a waiver from the standard that requires curb cuts on the access drives to be separated by a minimum of 75 feet because we are proposing individual driveways for each unit. A note requiring Dolley Farm Road and Thayer Drive to remain private access drives appears on the Subdivision Plan and Site Plan.

SECTION 22

SITE VICINITY MAP – USGS QUADRANGLE



SITE LOCATION MAP

DOLLEY FARM SUBDIVISION
WINDHAM, MAINE

FOR RECORD OWNER:
25 RIVER ROAD LLC
PO BOX 957
WINDHAM, MAINE, 04062

SCALE: 1"=2000'
DATE: 4-2-2025
JOB NUMBER: 24047

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

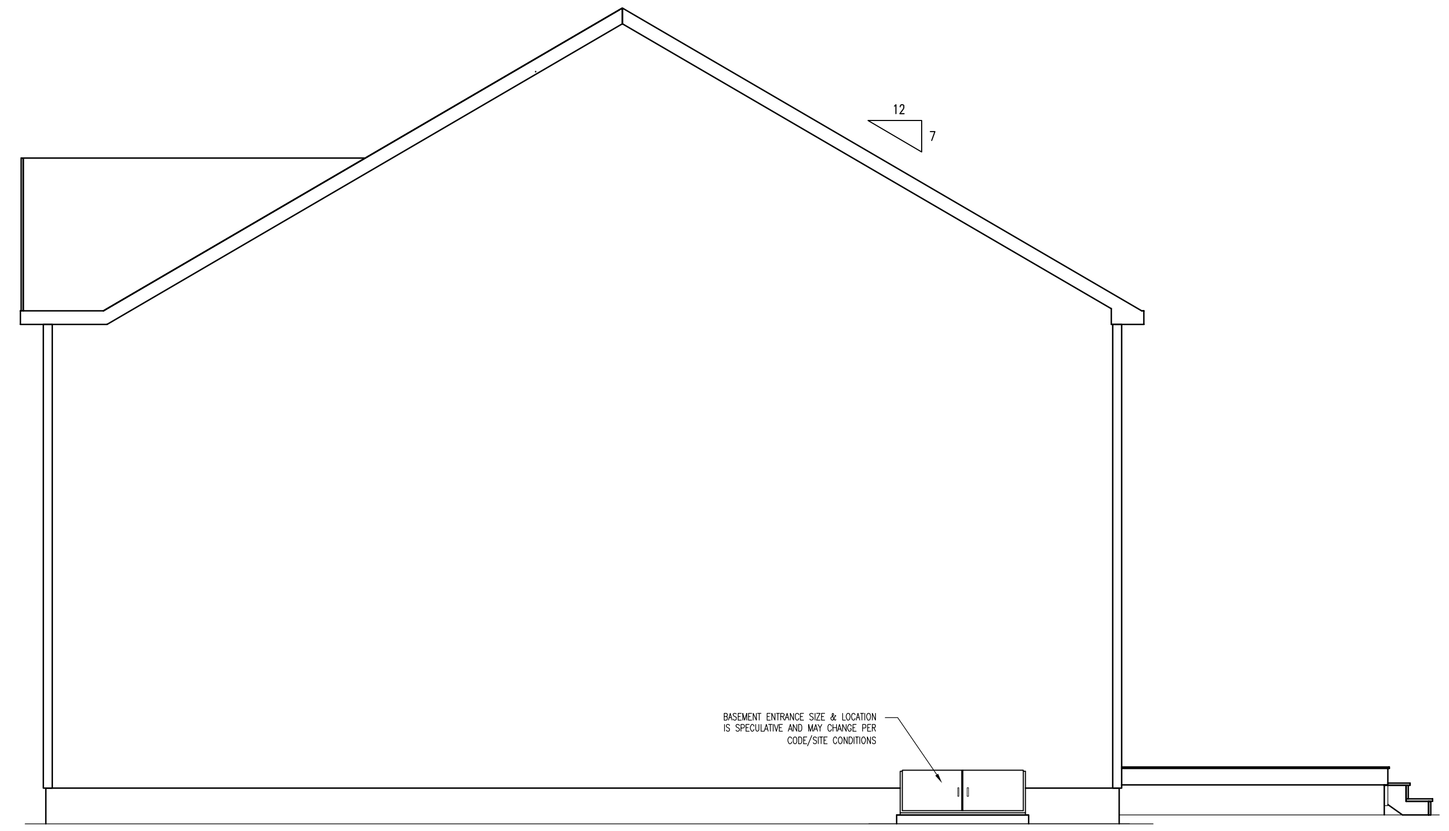
SECTION 23

BUILDING ARCHITECTURAL PLANS

FRONT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



RIGHT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

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REAR ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

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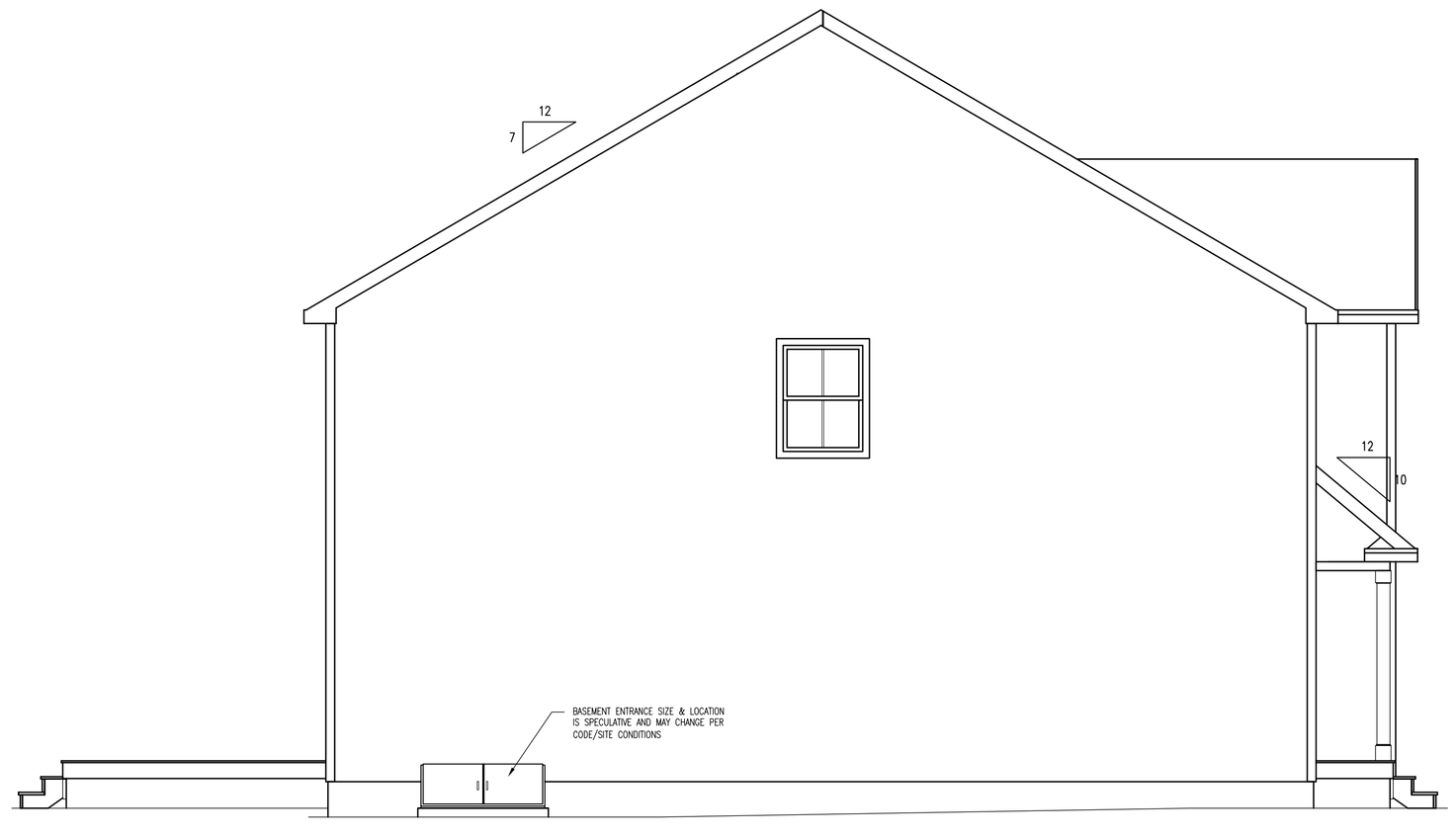


LEFT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.

Drafting & Design ME LLC
224 Roosevelt Trail #34
Windham, ME 04062
(207)-420-7484

Androscoggin Duplex
Elevations
Windham, ME

Revisions:	
00/00/00	-

Date : 05/23/2024

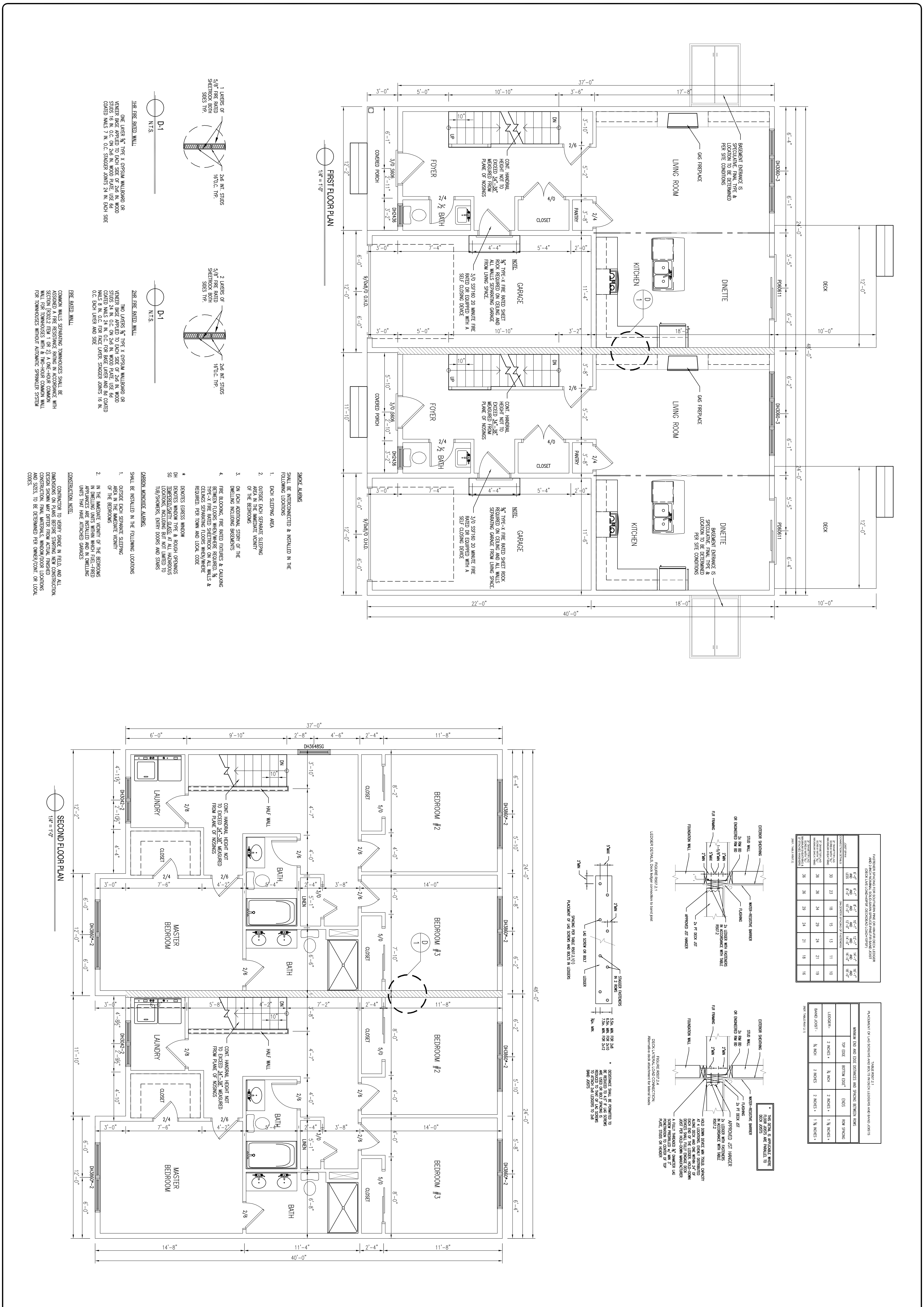
Scale : 1/4"=1'-0"

Drawn By: JTM

Project: D050824

Sheet Number:

1 of 5



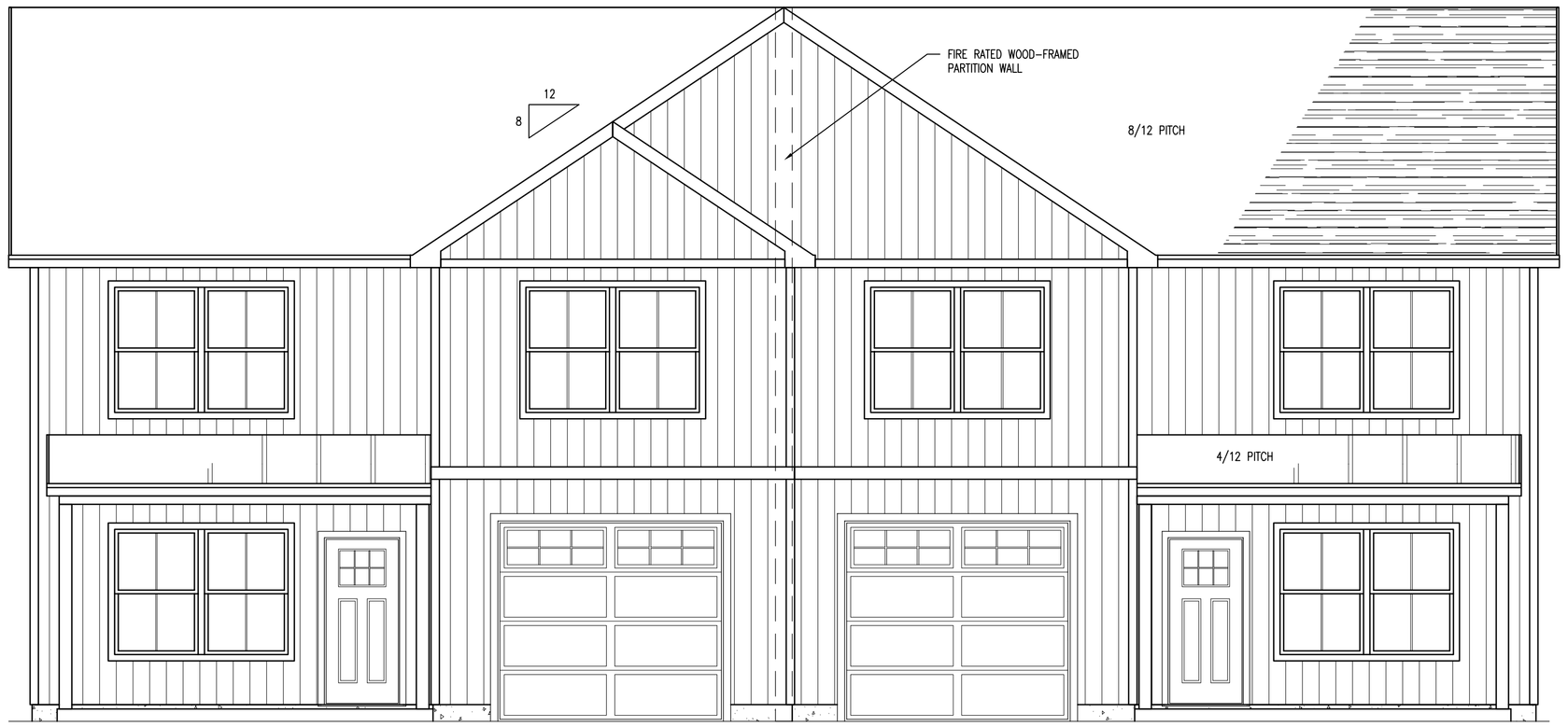
Androscoggin Duplex
1st & 2nd Floor Plans
Windham, ME

Drafting & Design ME LLC
824 Roosevelt Trail #114
Windham, ME 04062
(207)-420-7411

DRAWINGS ARE PROVIDED FOR INFORMATIONAL/PERMITING PURPOSES ONLY. IF USED FOR CONSTRUCTION. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR LOCAL CODE COMPLIANCE. ALL DRAWINGS, PLANS, SKETCHES ECT. ARE PROVIDED TO OUR CLIENTS BASED UPON INFORMATION PROVIDED BY THE CLIENT AND DRAWN IN ACCORDANCE WITH COMMON BUILDING PRACTICES AND LOCAL CODES. NONE OF THE EMPLOYEES OF DRAFTING & DESIGN ME, LLC ARE REGISTERED ARCHITECTS, ENGINEERS OR LAND SURVEYORS. ALL DIMENSIONS AND SPECIFICATIONS SHOULD BE VERIFIED BY CLIENT, CONTRACTOR, ARCHITECT AND/OR CODE OFFICER BEFORE ACTUAL CONSTRUCTION BEGINS. IF DIMENSIONS AND SPECIFICATIONS ARE NOT VERIFIED BY CLIENT AND/OR CONTRACTOR BEFORE ACTUAL CONSTRUCTION BEGINS DRAFTING & DESIGN ME, LLC WILL BE HELD HARMLESS, DRAFTING & DESIGN ME, LLC ASSUMES NO LIABILITY FOR CHANGES AND/OR REVISIONS MADE TO PLAN BY CLIENT AND/OR CONTRACTOR

Revisions:
00/00/00 .

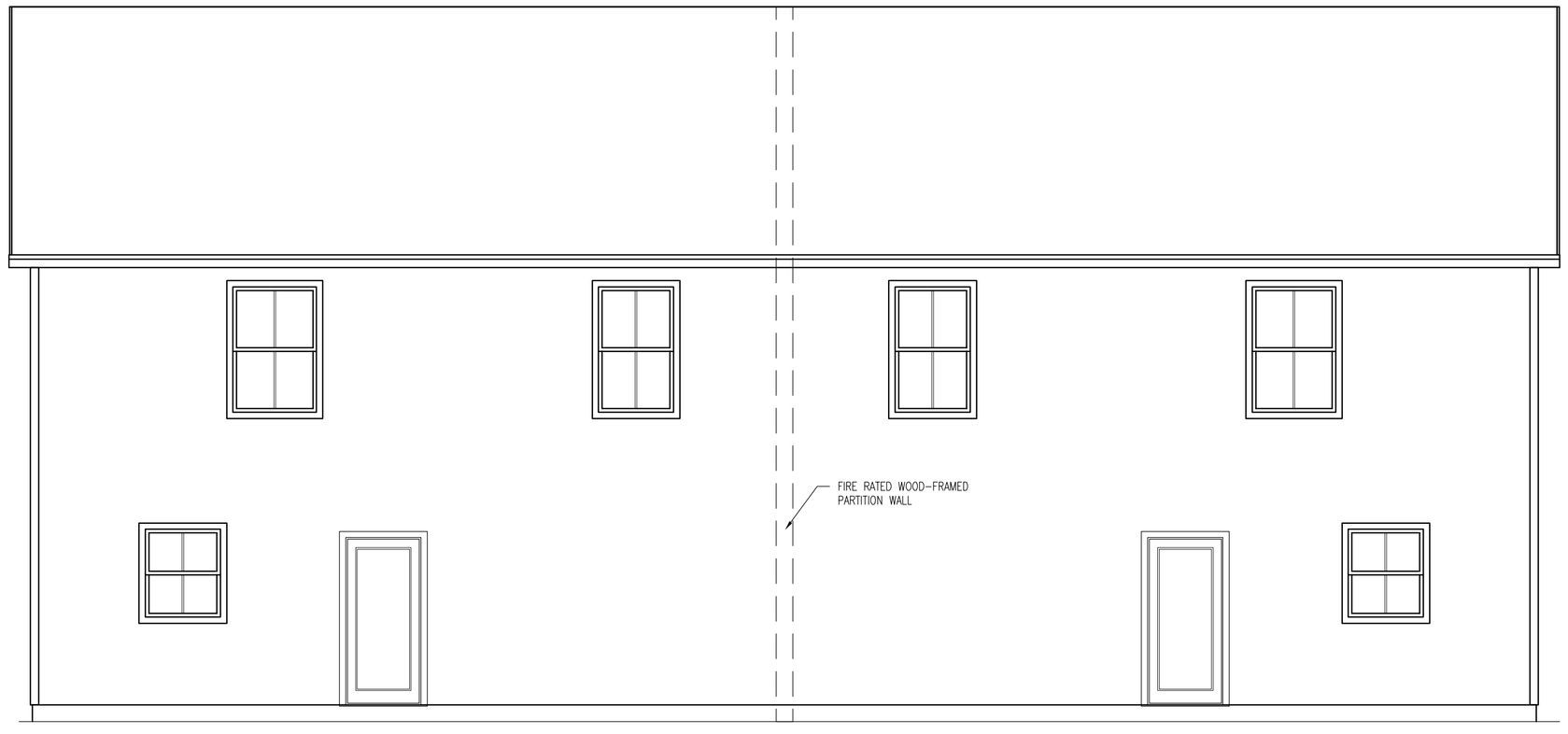
Date: 05/23/2024
Scale: 1/4"=1'-0"
Drawn By: JTM
Project: D050824
Sheet Number:



FRONT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



REAR ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.

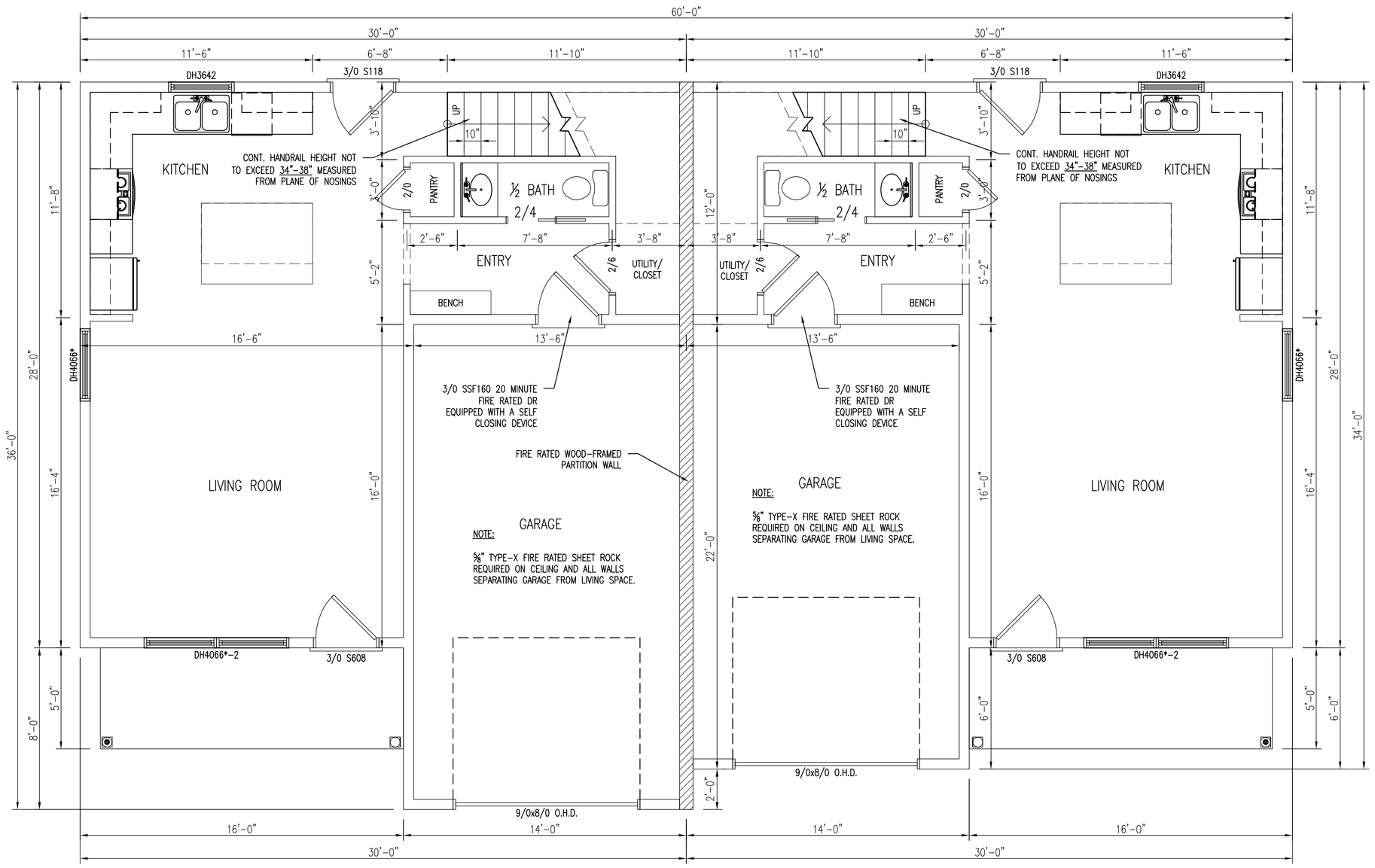
Drafting & Design ME LLC
224 Roosevelt Trail #34
Windham, ME 04062
(207)-420-7484

D011625-Sunrise Duplex
PRELIMINARY DRAWINGS
Windham, ME

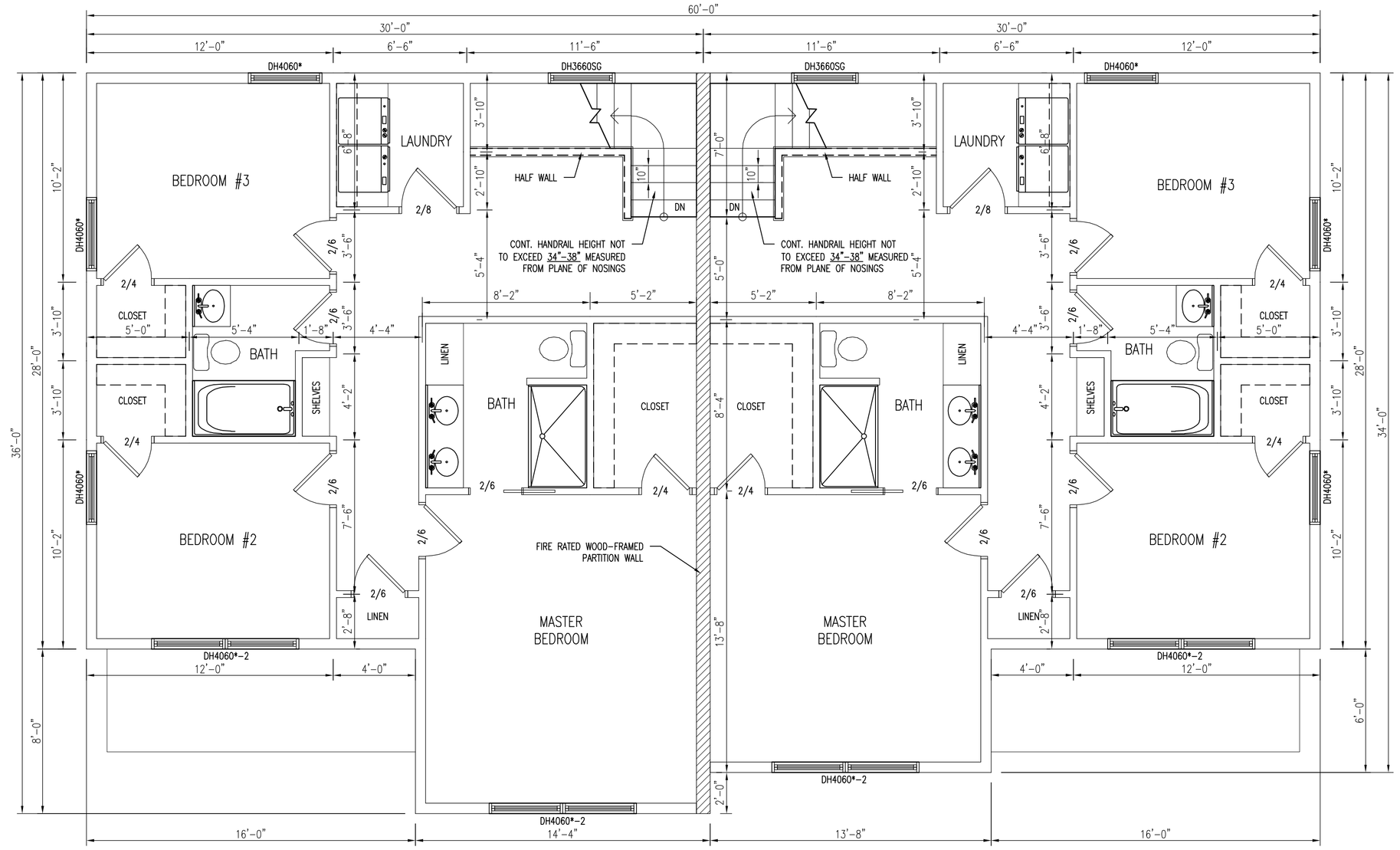
Revisions:

00/00/00	-

Date : 01/23/2025
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: D011625
Sheet Number:
1 of 2



FIRST FLOOR PLAN
1/4" = 1'-0"



SECOND FLOOR PLAN
1/4" = 1'-0"

SMOKE ALARMS

SHALL BE INTERCONNECTED & INSTALLED IN THE FOLLOWING LOCATIONS

1. EACH SLEEPING AREA
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
3. ON EACH ADDITIONAL STORY OF THE DWELLING INCLUDING BASEMENTS
4. FIRE BLOCKING, FIRE RATED FIXTURES & CAULKING BETWEEN FLOORS WHEN/WHERE REQUIRED. ⅝ TYPE-X FIRE RATED SHEETROCK ON ALL WALLS & CEILINGS SEPARATING FLOORS WHEN/WHERE REQUIRED. PER TOWN AND LOCAL CODE

* DENOTES EGRESS WINDOW

DH DENOTES WINDOW TYPE & ROUGH OPENINGS

SG TEMPERED/SAFTY GLASS; AT ALL HAZARDOUS LOCATIONS, INCLUDING BUT NOT LIMITED TO TUB/SHOWERS, ENTRY DOORS AND STAIRS

CARBON MONOXIDE ALARMS:

SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS

1. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
2. IN THE IMMEDIATE VICINITY OF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES

CONSTRUCTION NOTE:

CONTRACTOR TO VERIFY GRADE IN FIELD, AND ALL DIMENSIONS ON PLANS BEFORE STARTING NEW CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. OR LOCAL CODES.

Drafting & Design ME LLC
224 Roosevelt Trail #34
Windham ME 04062
(207)-420-7484

Sunrise Duplex
PRELIMINARY DRAWINGS
Windham, ME

Revisions:	
00/00/00	-

Date : 01/23/2025
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: D011625
Sheet Number:
2 of 2

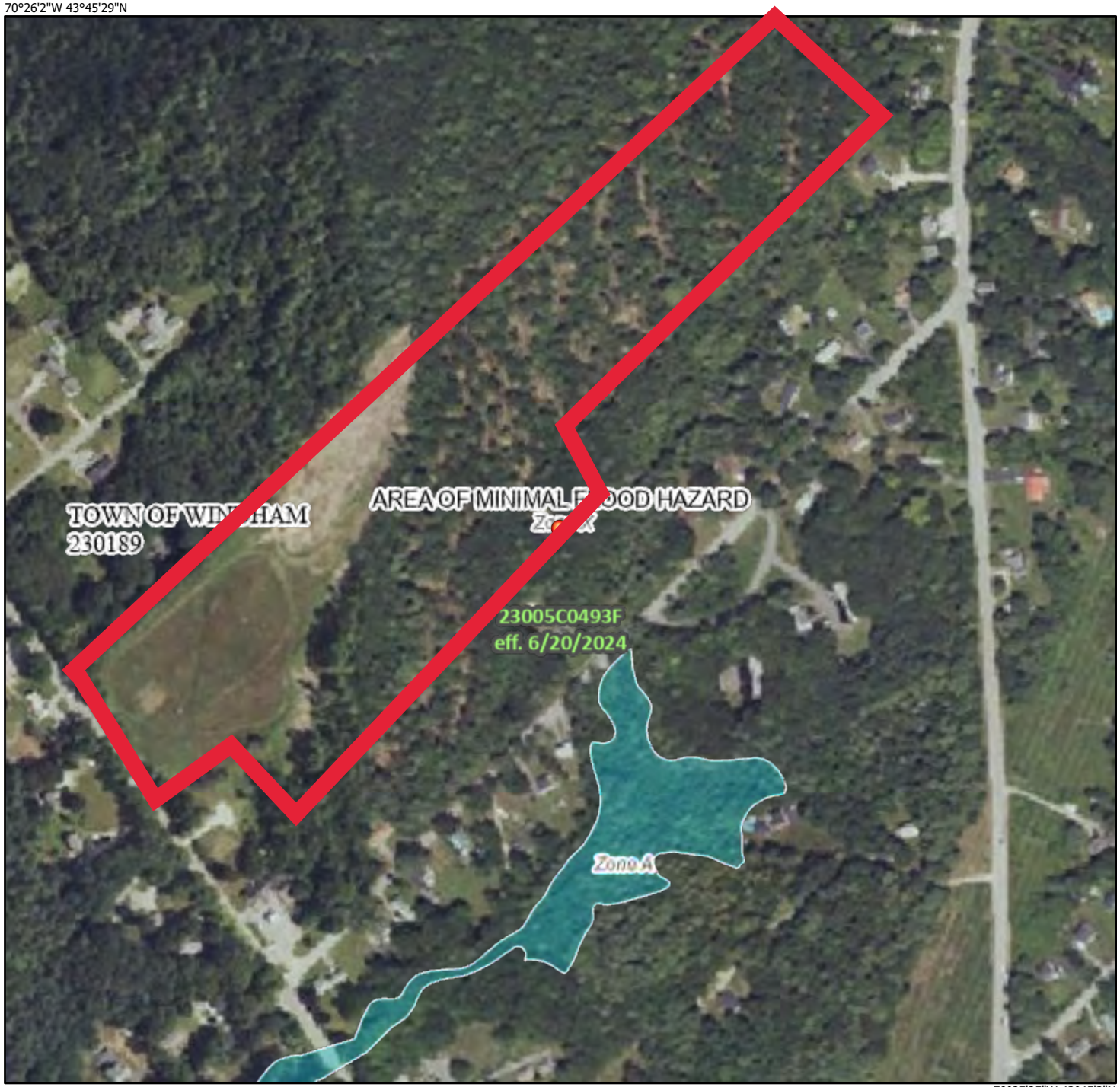
SECTION 24

FLOOD ZONES

National Flood Hazard Layer FIRMette

FEMA

70°26'2"W 43°45'29"N



70°25'25"W 43°45'3"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/21/2025 at 7:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

SECTION 25

IMPACT TO SITES OF HISTORICAL SIGNIFICANCE

Section 25 – Impact to Sites of Historical Significance

There are no buildings on the property, and no documented historical sites. We have sent a letter request to The Maine Historic Preservation Commission to request their assessment of the project site, and will provide copies of any correspondence we receive to the Town.

SECTION 26

GROUNDWATER IMPACT ANALYSIS

MAIN-LAND
DEVELOPMENT
CONSULTANTS, INC.

ENGINEERS, SURVEYORS, SCIENTISTS
P.O. BOX Q LIVERMORE FALLS, ME 04254
367 US ROUTE 1, N. BUILDING, FALMOUTH, ME 04105
TEL: (207) 897-6752/FAX: (207) 897-5404
WWW.MAIN-LANDDCI.COM

April 21, 2025

DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062
Attention: Mr. Dustin Roma, P.E.

Subject: Nitrate-nitrogen impact assessment
Proposed Dolley Farm Subdivision
Off River Road, Windham, Maine

Dear Mr. Roma,

In conjunction with Local permitting requirements which you are pursuing, Main-Land Development Consultants, Inc. (Main-Land) is pleased to submit the following nitrate-nitrogen impact assessment for the proposed project.

Main-Land has reviewed your Drawing GU-1, *Grading and Utility Plan*, dated 4/2/25. It appears that the concept leachfields "E" and "F" are considered exempt from a nitrate-nitrogen assessment because they are oriented such that subsurface wastewater flow is toward a drainage divide internal to the property. Based on the inferred directions of topographic and groundwater gradients, flow from these leachfields is not directly toward and is not anticipated to impact a downgradient property boundary.

Proposed Leachfields "A", "B", "C", and "D" appear to be oriented such that groundwater flow is toward a downgradient property boundary. For the purposes of Local review, Main-Land has selected these four proposed leachfields for nitrate attenuation analysis. Main-Land performed a nitrate-nitrogen attenuation analysis for soil conditions at each of these areas based on the Baetsle equation for modeling migration of a substance (nitrate) dissolved in groundwater through porous media. This approach allows an estimate of nitrate plume concentrations relative to time, distance, and initial concentration from a constant point source (i.e, the leachfield). Ultimately, this approach allows an estimate of the distribution of steady state plume concentrations downgradient from the leachfield.

As an example, the proposed Leachfield "C" (explored by Main-Land TP-1) will be used to show input parameters for the Baetsle equation which include the following:

Main-Land estimated hydraulic conductivity (k) of the glacial till soils using the Kozeny-Carmen equation and our grain size analysis of test pit samples. The estimated k value is approximately 4 feet/day. (Note: For reference, Main-Land reviewed hydraulic conductivity (k) data of the mapped Buxton soils provided in the USDA SCS *Soil Survey of Cumberland County, Maine*. The k value provided in this document over the upper 20 inches of Buxton soil ranges is approximately 2 feet/day).

Based on soil type and estimated in-situ density, the average effective porosity, n, of 0.42 has been assigned. Based on Main-Land's review of provided topographic site plan, the HHE 200 design for the leachfield, and observations during our field visit, the gradient of the seasonal high groundwater surface is approximately 3%. Based on this, the groundwater seepage velocity, v, is found as:

$V = ki/n = (4 \text{ ft/day})(0.03)/0.42 = 0.29 \text{ ft/day}$

This velocity is used to determine dispersion coefficients for the x, y, and z directions downgradient of the leachfield used in the Baetsle analysis. For this example, the 10 mg/l isocon (i.e., the contour of the plume where 10 mg/l concentration occurs) for Leachfield "A" extends approximately 195 feet from the center of Leachfield "A".

A summary of the Baetsle analyses conducted for all four leachfields is provided in Table 1 below.

Conceptual Leachfield Site	Design Flow	Estimated Hydraulic Conductivity, k	Estimated Distance to 10 mg/l Nitrate Isocon Downgradient from Leachfield (current distance to property line)
Leachfield "A"	1890 gpd	4 ft/day	195 feet (approx. 45 feet)
Leachfield "B"	1890 gpd	4 ft/day	220 feet (approx. 225 feet along contours)
Leachfield "C"	1890 gpd	4 ft/day	195 feet (approx. 20 feet)
Leachfield "D"	1890 gpd	4 ft/day	195 feet (approx. 20 feet)

This analysis was made assuming an initial standard nitrate concentration of 40 mg/l in residential wastewater, with no dilution by coincident rainwater. Baetsle analysis printouts for the estimated 10 mg/l plumes for the four Leachfields analyzed are attached. A test pit log, as well as the grain size and Kozeny-Carmen analyses are also attached.

In summary, for Leachfield "B", the nitrate plume meets the intent of the property line standard for not exceeding 10 mg/l at the southwestern property line toward which the subsurface effluent will be flowing. For Leachfields "A", "C", and "D", the nitrate standard is not met at the property line given the current location, configuration, and volume of these proposed leachfields. In order to decrease nitrates to meet the 10 mg/l threshold set by typical State and Local subdivision regulations, one option is to incorporate Advanced Tertiary Treatment units upstream of the leachfields which decrease the nitrate concentration to less than 10 mg/l within the treatment tank itself prior to discharge to the leachfields.

Main-Land appreciates the opportunity to provide environmental consulting services for this project, and we look forward to providing future input as needed.

Sincerely,
Main-Land Development Consultants, Inc.

Scott R. Dixon, P.E., C.G., L.S.E.
Senior Chief Environmental Scientist and GeoEngineer

Attachments: Test Pit Log
Grain Size and Kozeny-Carmen Analyses of test pit sample
Baetsle analysis printouts for the Leachfields

References

Chang, Tan-yueh "Philip", et. al., *Utilizing Baetsle's Equation to Model the Fate and Transport of MTBE in Groundwater*, Proceedings of the Petroleum Hydrocarbons and Organic Chemicals in Ground Water Prevention, Detection, and Remediation Conference, 1998, Houston, Texas.

Domenico, Patrick A., and Schwartz, Franklin W., 1990, Physical and Chemical Hydrogeology, John Wiley & Sons, Inc. publisher, New York City, New York, pp. 24-27

United States Dept. of Agriculture, Soil Conservation Service, Issued August 1974, *Soil Survey of Cumberland County, Maine*

FORM F Rev. 07/11a

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Prop. Dolley Farm Subd.	D M Roma	Windham, ME

Exploration Symbol # TP1 ☑ Test Pit ☐ Boring ☐ Probe
3 " Organic horizon thickness Ground surface elev. 236'±
30 " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–6	Loam		Dark brown gray	None
6–12	Sandy Loam, with gravel	Friable	Orange brown	
12–30			Brown	Common distinct
30–60		↓	Gray-brown	

Soil Details by S.E.: Soil Classification: Profile 2, Condition D; Slope 0-3 Percent; Limiting Factor 14 " Depth; ☑ Groundwater ☐ Restrictive Layer ☐ Bedrock

S.S.: Soil Series/Phase Name: ☐ Hydric ☐ Non-hydric; Hydrologic Soil Group:

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe
____ " Organic horizon thickness Ground surface elev. ____
____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–60				

Soil Details by S.E.: Soil Classification: Profile ____ Condition ____; Slope ____ Percent; Limiting Factor ____ " Depth; ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

S.S.: Soil Series/Phase Name: ☐ Hydric ☐ Non-hydric; Hydrologic Soil Group:

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe
____ " Organic horizon thickness Ground surface elev. ____
____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–60				

Soil Details by S.E.: Soil Classification: Profile ____ Condition ____; Slope ____ Percent; Limiting Factor ____ " Depth; ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

S.S.: Soil Series/Phase Name: ☐ Hydric ☐ Non-hydric; Hydrologic Soil Group:

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe
____ " Organic horizon thickness Ground surface elev. ____
____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0–60				

Soil Details by S.E.: Soil Classification: Profile ____ Condition ____; Slope ____ Percent; Limiting Factor ____ " Depth; ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

S.S.: Soil Series/Phase Name: ☐ Hydric ☐ Non-hydric; Hydrologic Soil Group:

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Scott R. Dixon (signed)	Date	4/21/25
Name Printed	Scott R. Dixon	Cert/Lic/Reg. #	LSE 406

Title ☒ Licensed Site Evaluator ☐ Certified Soil Scientist ☒ Certified Geologist ☒ Professional Engineer

STATE OF MAINE — SCOTT R. DIXON — LSE 406 — SITE EVALUATOR

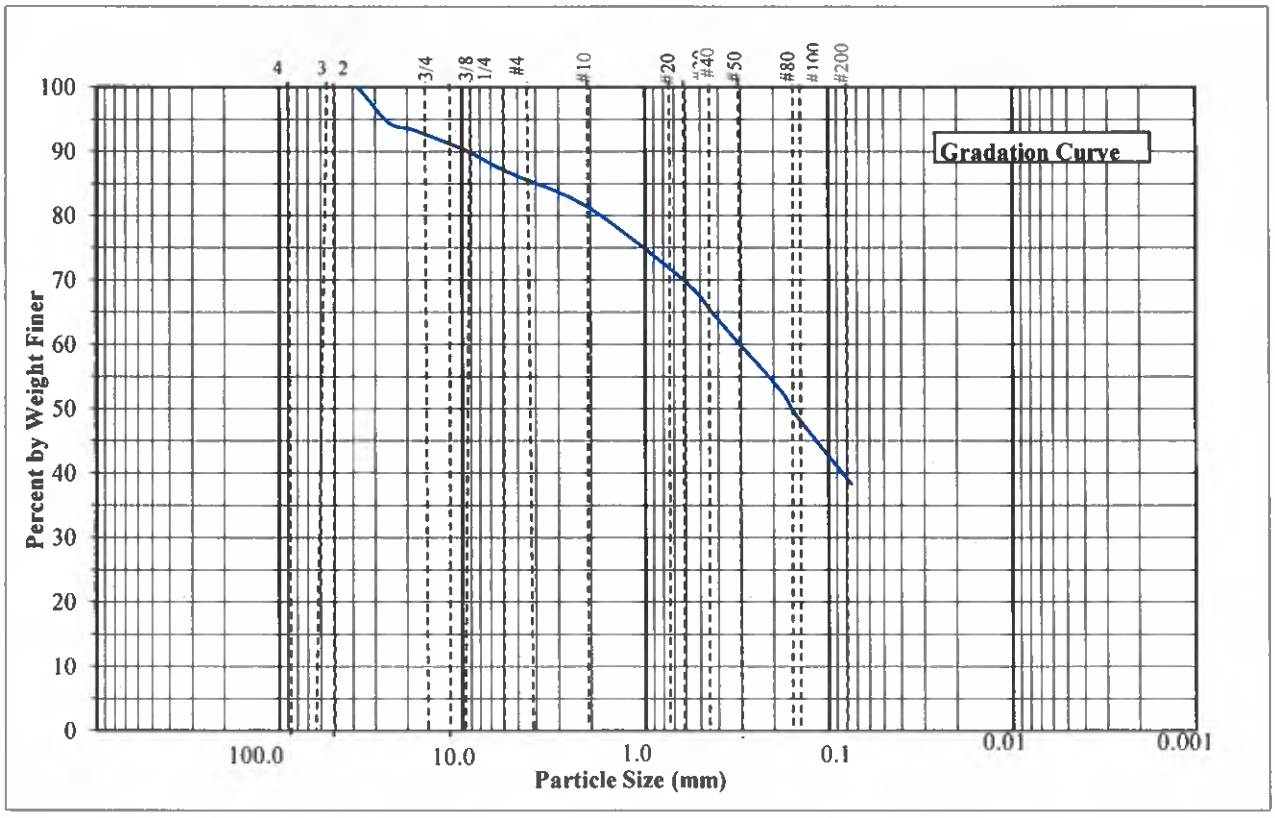
Main-Land Development Consultants, INC.
P.O. BOX Q LIVERMORE FALLS, ME 04254
TEL: (207) 897-6752/FAX: (207) 897-5404
WWW.MAIN-LANDDCI.COM

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	Dolley Rd. subd., Windham	PROJECT #:	25-132
CLIENT:	DM ROMA	MAIN-LAND SAMPLE	S1
M-L SOIL DES:	Glacial till	INTENDED USE:	Gradation
SOURCE:	Lf C area/TP1	SPECIFICATION:	N/A
DATE:	April 15, 2025	TECHNICIAN:	SRD

DATA

PARTICLE SIZE mm		% BY WT FINER	STRUCTURAL FILL SPECIFICATION	COMMENTS
50.80	(2 in)	100	N/A	N/A
38.10	(1-1/2 in)	100		
25.40	(1 in)	94.5		
19.05	(3/4 in)	93.5		
12.70	(1/2 in)	91.6		
9.53	(3/8 in)	90.2		
6.35	(1/4 in)	87.5		
4.75	(No. 4)	85.9		
2.00	(No. 10)	81.1		
0.60	(No. 30)	69.7		
0.43	(No. 40)	64.9		
0.30	(No. 50)	59.7		
0.18	(No. 80)	52.6		
0.15	(No. 100)	48.9		
0.075	(No. 200)	38.3		



REMARKS:

Reviewed: Scott R. Dixon, P.E.
Date: 4/18/25

Dolley Farm TP1

Sieve Sizes		
Sieve size metric	U.S. Standard Sieve No.	D_{ave} cm
10	4	
7.5	3	8.407395
5	2	5.880468
3.75	1.5	4.206612
2.5	1	2.942273
1.9	3/4	2.121418
1.25	1/2	1.480055
0.95	3/8	1.061444
0.63	1/4	0.74406
0.475	#4	0.532803
0.2	#10	0.284117
0.085	#20	0.120398
0.0425	#40	0.056413
0.018	#80	0.025572
0.0106	#140	0.013188
0.0075	#200	0.008667
0.00325	hyd #1	0.004582
0.00207	Hyd#2	0.002499
0.0012	Hyd#3	0.001506
0.00085	hyd#4	0.000984
0.0006	hyd#5	0.000696
0.0003	hyd#6	0.0004
0.00012	hyd#7	0.000175

Gradation Results

% Pass	Fi	Fi/D_{ave}
100		
100	0	0
100	0	0
100	0	0
94.5	5.5	1.869303
93.5	1	0.471383
91.6	1.9	1.283736
90.2	1.4	1.318958
87.5	2.7	3.62874
85.9	1.6	3.002989
81.1	4.8	16.89445
73	8.1	67.27669
64.9	8.1	143.5848
52.6	12.3	481.0042
42	10.6	803.7459
38.3	3.7	426.8907
0	38.3	8358.02
	0	0
	0	0
	0	0
	0	0
	0	0
0	38.3	16852.88

D_o est (cm)
0.001

Sum= 27161.87
porosity, n= 0.42
void ratio, e= 0.724138

Shape Factor	
Shape	SF
Spherical	6
Rounded	6.1
Worn	6.4
Sharp	7.4
Angular	7.7

k=	0.0016468	cm/sec	k=	4.668186	feet/day
k=	0.0015933	cm/sec	k=	4.516385	feet/day
k=	0.0014474	cm/sec	k=	4.102898	feet/day
k=	0.0010827	cm/sec	k=	3.068932	feet/day
k=	0.0009999	cm/sec	k=	2.834453	feet/day

Spreadsheet for Nitrate attenuation after Baetsle and Chang: Leachfld. on Lot 3 (TPB) - 10mg/l isograd

LF A, Dolley Farm Subd. Project, Windham, ME 4-18-25

$$C(x,y,z,t) = [CoVo/8(\pi t)^{1.5}((DxDyDz)^{.5}]\ e[-((x-vt)^2/4Dxt)-(y^2/4Dyt)-(z^2/4Dzt)]$$

Co = nitrate initial concetration
Vo = daily volume
T = time in days
Dxyt = Dispersion coefficient in x,y,z directions
x = distance of interest from source, parallel to g.w. flow
v = g.w. velocity

n = porosity	0.42					
D = av						
ax = dispersivity in x direction = $(0.83)[(\log_{10}(Lp)]^{2.414}$						
Lp = vt						
k=hydr. Cond	4	ft/day				
i=gradient	0.03	ft/ft	from HHE 200			
Variables:						
g.w. velocity	0.29	ft/day				
time	3650	days				
x, from source	195	feet		9.94557 mg/l	AFTER	10.0 years
y, from source cl	0	feet				
z, from source cl	3.5	feet				
Volume	1890	gal/day	252.673797 cubic feet			
Lp, plume length						
to center of mass	1042.857143	feet				
ax	24.9209473					
ay	8.306982435					
az	1.246047365					
Dx	7.120270659					
Dy	2.373423553					
Dz	0.356013533					
Initial concen	40					

Spreadsheet for Nitrate attenuation after Baetsle and Chang: Leachfld. on Lot 3 (TPB) - 10mg/l isograd

LF B, Dolley Farm Subd. Project, Windham, ME 4-18-25

$$C(x,y,z,t) = [CoVo/8(\pi t)^{1.5}((DxDyDz)^{.5}] \, e[-((x-vt)^2/4Dxt)-(y^2/4Dyt)-(z^2/4Dzt)]$$

Co = nitrate initial concetration
Vo = daily volume
T = time in days
Dxyt = Dispersion coefficient in x,y,z directions
x = distance of interest from source, parallel to g.w. flow
v = g.w. velocity

n = porosity	0.42					
D = av						
ax = dispersivity in x direction = $(0.83)[(\log_{10}(Lp)]^{2.414}$						
Lp = vt						
k=hydr. Cond	4	ft/day				
i=gradient	0.025	ft/ft	from HHE 200			
Variables:						
g.w. velocity	0.24	ft/day				
time	3650	days				
x, from source	220	feet		9.92401 mg/l	AFTER	10.0 years
y, from source cl	0	feet				
z, from source cl	3.5	feet				
Volume	1890	gal/day	252.673797	cubic feet		
Lp, plume length						
to center of mass	869.047619	feet				
ax	23.05974574					
ay	7.686581913					
az	1.152987287					
Dx	5.490415652					
Dy	1.830138551					
Dz	0.274520783					
Initial concen	40					

Spreadsheet for Nitrate attenuation after Baetsle and Chang: Leachfld. on Lot 3 (TPB) - 10mg/l isograd

LF C and D, Dolley Farm Subd. Project, Windham, ME 4-18-25

$$C(x,y,z,t) = [CoVo/8(\pi t)^{1.5}((DxDyDz)^{.5}]\, e[-((x-vt)^2/4Dxt)-(y^2/4Dyt)-(z^2/4Dzt)]$$

Co = nitrate initial concetration
Vo = daily volume
T = time in days
Dxyt = Dispersion coefficient in x,y,z directions
x = distance of interest from source, parallel to g.w. flow
v = g.w. velocity

n = porosity	0.42					
D = av						
ax = dispersivity in x direction = $(0.83)[(\log_{10}(Lp)]^{2.414}$						
Lp = vt						
k=hydr. Cond	4	ft/day				
i=gradient	0.03	ft/ft	from HHE 200			
Variables:						
g.w. velocity	0.29	ft/day				
time	3650	days				
x, from source	195	feet		9.94557 mg/l	AFTER	10.0 years
y, from source cl	0	feet				
z, from source cl	3.5	feet				
Volume	1890	gal/day	252.673797	cubic feet		
Lp, plume length						
to center of mass	1042.857143	feet				
ax	24.9209473					
ay	8.306982435					
az	1.246047365					
Dx	7.120270659					
Dy	2.373423553					
Dz	0.356013533					
Initial concen	40					