Preliminary Major Subdivision Application

To the Town of Windham

Eventide Subdivision

Eventide Drive off River Road
Windham, Maine

Applicant:
Row Even LLC
17 Bucket Lane
Yarmouth, ME 04096

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

DM ROMA

CONSULTING ENGINEERS

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	☒ $1,300.00 ☒ $2,100	**AMOUNT PAID:** $_____ DATE: _____ *Office Use:*	*Office Stamp:*	
	REVIEW ESCROW: Up to 10 Lots = $2,500 11 – 15 Lots = $3,000 16 – 30 Lots = $4,000 30 + Lots = $5,000	☒ $4,000			

PROPERTY DESCRIPTION	**Parcel ID**	**Map(s) #**		**Lot(s) #**	8, 8-1 & 8-2	**Zoning District(s)**	FARM
	# Lots/dwelling units:	17	**Total Distr. >1Ac.**	☒ Y ☐ N		**Total Land Area SF:**	1,216,303±
	Physical Address					**Est. Road Length(ft):**	1,850 ft
						Watershed:	PRESUMPSCOT RIVER

PROPERTY OWNER'S INFORMATION	**Name**	MICHAEL E. TEVANIAN	**Name of Business**	
	Phone		**Mailing Address:**	135 MAIN STREET
	Fax or Cell			WESTBROOK, MAINE
	Email			
APPLICANT'S INFORMATION ( )	**Name**		**Name of Business:**	
	Phone		**Mailing Address**	17 BUCKET LANE
	Fax or Cell			YARMOUTH, MAINE 04096
	Email			
APPLICANT'S AGENT INFORMATION	**Name**		**Name of Business**	DM ROMA CONSULTING ENGINEERS
	Phone		**Mailing Address**	PO BOX 1116
	Fax or Cell			WINDHAM, MAINE 04062
	Email			

PROJECT INFORMATION

Existing Land Use ˘ ˘ ^·:

The property is currently undeveloped meadow and woodland.

Provide a narrative description of the Proposed Project ˘ ˘ ^· :

The applicant is proposing a conservation subdivision, consisting of seventeen (17) proposed residential house lots, with approximately 1850 lf of road.

Each new residential lot will require an on-site well and on-site wastewater disposal system. Each of the homes in the development will include the installation of a sprinkler system, and all electrical service will be installed underground.

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

The allowable net residential density and amount of open space required has been calculated based on development of the 27 acres of land consisting of tax lots 8-1, 8-2 and a portion of Lot 8. To meet the minimum open space requirements, we are proposing to deed tax lot 9 in its entirety to the Town of Windham, which will provide an additional 4 acres of open space and owned frontage along the the Presumpscot River.

Project site includes wetlands and a stream. The stream is proposed to be crossed with the subdivision road. Total wetland impact is approximately 3,563 sf.

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.

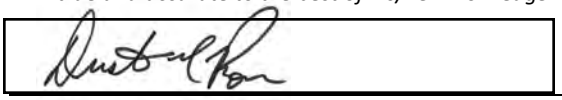
Staff recommends the applicant provide a proposed construction schedule, a draft Homeowner's Association (HOA) documentation, public open space to be provided, and written offers of cession to the Town, and/or road maintenance agreement with at the Preliminary Plan application submission.

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	☐ N/A	☐	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.	☐ N/A	☐	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.	☐ N/A	☐	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.	☐ N/A	☐
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	☑	☐
			20. Approximate location of treeline after development.	☑	☐
i. Estimated costs of development, and an itemization of major costs.	☑	☐	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.	☐ N/A	☐
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. Technical Capacity:	☑	☐	2. Landscape Plan	☐	☐
			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).	☐ N/A	☐	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.	☐ N/A	☐
			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.*



4-6-2026

DUSTIN M. ROMA - AUTHORIZED AGENT

APPLICANT OR AGENT'S SIGNATURE | DATE | PLEASE TYPE OR PRINT THE NAME

SECTION 2

AGENT AUTHORIZATION

November 3, 2025

Re: Agent Authorization

Row Even, LLC intends to develop the property located at 100 River Road in Windham, Maine shown as lots 8-1, 8-2, 9 and a portion of Lot 8 on Tax Map 1, totaling approximately 32 acres. Row Even, LLC has retained the services of DM Roma Consulting Engineers to act as its authorized agent to apply for land use permits associated with the development of this property.

Sincerely,

Ronald Goddard
Row Even, LLC

SECTION 3

WAIVER REQUESTS

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: Eventide Subdivision

Tax Map: Map 1

Lot(s): 8, 8-1 & 8-2

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

Ordinance Section	Standard	Mark which waiver this form is for
911.K.6.B	MINIMUM OPEN SPACE FOR CONSERVATION SUBDIVISION, PERFORMANCE STANDARD	☑
		☐
		☐
		☐
		☐

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

The project's open space design, provides four (4) open space areas totalling a combined area of 13.87 ac. The project requires 16.21 acres of open space; however in addition to the designated open space, the project will convey Lot 9 to the Town which consists of 4.11± acres.

The Open Space Area 4 provides an undisturbed natural buffer to the Mountain Division Rail Trail, Open Space Area 2 and 3 provide a buffer to the stream crossing the subject property and Open Space Area 1 will function as the location for stormwater BMPs. Additionally, Lot 9, will further improve the project's ability to preserve and protect the frontage of the project along both the Presumpscot River and the Mountain Division Rail Trail.

(continued next page)

Ordinance Section: 911.K.6.B

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.

TOWN OF WINDHAM
MINOR\MAJORSUBDIVISION APPLICATION

Performance and Design Standards Waiver Request Form

(Section 120-908 – Minor\Major Subdivision Review, Waivers)

For each waiver request from the Performance and Design Standards detailed in Section 120-911 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: Eventide Subdivision

Tax Map: Map 1

Lot(s): 8, 8-1, 8-2

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

Ordinance Section	Standard	Mark which waiver this form is for
120-911(M)(2)(a)	Appendix B - Table 2 - Min. access spacing	☒
120-911(M)(5)(a)(1)	Appendix B - Table 2 - Min. access spacing	☒
		☐
		☐
		☐

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

Access to the project site is from River Road with a posted speed limit of 45mph. Table 2 in Appendix B of the Windham Land Use Ordinance requires minimum access spacing of 265 feet for points of access that will carry Medium Volume of vehicle traffic. The proposed street intersection with River Road will be located closer than 265 feet to several existing driveways to the north that provide access to individual single-family homes (some homes have multiple driveways in a loop). The proposed street intersection provides the greatest amount of sight distance, which is the most important factor in determining the street access point. The Maine DOT recognizes that proper separation from existing driveways on adjacent lots cannot always be accomplished, and they regularly approve driveway entrances to state-regulated roads that do not meet the access spacing requirements established in the rules. We have proposed to eliminate two existing driveway curb cuts to the south that would be located within 145 feet of the new street intersection.

(Continued next page)

120-911-M-2-A
120-911-M-5-A-1

Ordinance Section: _____ (PLEASE PROVIDE A SEPERATE IMPACT CRITERIA FRO EACH ORDIANCE SECTION)

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.

TOWN OF WINDHAM
MINOR\MAJORSUBDIVISION APPLICATION

Performance and Design Standards Waiver Request Form

(Section 120-908 – Minor\Major Subdivision Review, Waivers)

For each waiver request from the Performance and Design Standards detailed in Section 120-911 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: Eventide Subdivision

Tax Map: <Map 1

Lot(s): 8, 8-1, 8-2

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

Ordinance Section	Standard	Mark which waiver this form is for
120-911(J)(6)	Stormwater Flooding Standard	☐
		☐
		☐
		☐
		☐

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

The stormwater management system has been designed to reduce peak rates of stormwater runoff to abutting properties. We have chosen to significantly reduce runoff that drains to the north by directing runoff towards the stormwater filter basins that will be constructed near the project's entrance on River Road. As a result, there will be minor increases in peak rates of runoff entering an existing drainage culvert that runs under River Road to an existing wooded wetland on the east side of River Road for the less-frequent storm events (10-year and 25-year recurrence). Peak flows will be maintained for the more frequent 2-year storm event. The drainage infrastructure and receiving are is capable of receiving this minor increase in additional flow from less frequent but larger storm events.

(Continued next page)

Ordinance Section: 120-911(J)(6) (PLEASE PROVIDE A SEPERATE IMPACT CRITERIA FRO EACH ORDIANCE SECTION)

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

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Feb 16 2026 10:15:15. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
ROW EVEN LLC	202515473DC	LIMITED LIABILITY COMPANY	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
06/20/2025	N/A	MAINE

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

NONE

Principal Home Office Address

Physical	Mailing

Clerk/Registered Agent

Physical	Mailing
ANDRE J HUNGERFORD 14 MASON STREET PORTLAND, ME 04103	ANDRE J HUNGERFORD PO BOX 7584 PORTLAND, ME 04112-7584

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)

SECTION 5

PROJECT NARRATIVE

Section 5 – Project Narrative

Zoning:	Farm (F)
Acreage:	27.62± Acres
Tax Map/Lot:	Map 1 Lot 8, 8-1, & 8-2
Existing Use:	Undeveloped Land
Proposed Use:	Conservation Subdivision - residential

Row Even, LLC, applicant, is under a purchase and sales agreement with the current land owner of a parcel of land off River Road in Windham. The existing conditions of the land consists of meadow and natural woodland thru which a stream crosses flowing to the north in the middle of property. The property is also divided by the Mountain Division Rail Trail.

The proposed project includes the construction of a single-family development consisting of seventeen (17) proposed home lots. The dwellings will be accessed by an 1,850± foot roadway designed to the Town of Windham Minor Local Street standard.

The development will be served by on-site well and on-site wastewater disposal systems. Each of the homes in the development will include the installation of a sprinkler system, and all electrical service will be installed underground. Stormwater infrastructure will be installed throughout the project to provide the required stormwater management goals. Information related to the utilities and stormwater management have been included in this submission.

The development will be part of a Homeowner's / Road Association, including the maintenance of the roadway and stormwater management infrastructure. It is the intent of the developer to convey the roadway to the Town of Windham as a public street. The stormwater infrastructure outside of the future public right of way will remain the responsibility of the homeowner's association. Homeowner documents will be submitted as part of the Final Subdivision Plan submission.

SECTION 6

NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS

Section 6 – Names and Addresses of Abutting Property Owners

Map/Lot	Owner Name	Mailing Address
SUBJECT PARCEL		
1/8, 8-1, & 8-2	MICHAEL E. TEVANIAN	135 MAIN STREET WESTBROOK, ME 04092
1/4, 1/5 & 2/20	BEVERLY & HILLMAN E LORD JOHN ANDERSON LORD TRUST	410 NORTH LAKE SYBELIA DRIVE MATELAND, FL 32751
1/6 & 2-19	HOLLY DICKINSON-AMIDON	93 RIVER ROAD WINDHAM, ME 04062
1/6-1	TOWN OF WINDHAM ANDERSON CEMETARY	8 SCHOOL ROAD WINDHAM, ME 04062
1/9	MICHAEL E. TEVANIAN	135 MAIN STREET WESTBROOK, ME 04092
1/10	NATHAN P &SARAH E GADBOIS	104 RIVER ROAD WINDHAM, ME 04062
1/10A	FORTIER LIVING TRUST FORTIER THOMAS J & PATRICIA A TRUSTEES	102 RIVER ROAD WINDHAM, ME 04062
1/11 & 12	JOSEPH HARRY CARLIN	114 RIVER ROAD WINDHAM, ME 04062
1/11-1	STEVEN R & PAULA L POCK	112 RIVER ROAD WINDHAM, ME 04062
1/11-A	PETER W CARLIN	110 RIVER ROAD WINDHAM, ME 04062
1/20	STATE OF MAINE- DOT RAILROAD	16 STATE HOUSE STATION AUGUSTA, ME 04333
4/19	GARY & BARBARA WINSHIP	111 RIVER ROAD WINDHAM, ME 04062

4/20-A	SUSAN D FORTIER	105 RIVER ROAD WINDHAM, ME 04062
4/20-D	BRUCE B 7 JANET P RAEBURN	17 BRACKETT FARM LANE WINDHAM, ME 04062
4/20-H	JOSEPH MCGEE & MEGAN FORTIER	6 BRACKETT FARM LANE WINDHAM, ME 04062
4/20-H01	ANTONIO 7 KATHRYN VILLACCI	2 GILBERT DRIVE STANDISH, ME 04084
4/20-I	DOUGLAS R FORTIER	47 BRACKETT FARM LANE WINDHAM, ME 04062

<u>GORHAM PARCEL:</u>

49/1	ROGER MASON	284 MOSHER ROAD GORHAM, ME 04038
34/7	ABBOTT MASON	294 MOSHER ROAD GORHAM, ME 04038
34/17	PHILIP & ANN MASON	59 HAYFIELD DRIVE GORHAM, ME 04038

SECTION 7

RIGHT, TITLE OR INTEREST DOCUMENTS

DLN: 3773105

WARRANTY DEED

Know All By These Presents that I, **Michael E. Tevanian, a/k/a Michael Tevanian**, of 135 Main Street, Westbrook, ME 04092, for consideration paid, grant to **Michael E. Tevanian**, of 135 Main Street, Westbrook, ME 04092, with **WARRANTY COVENANTS**, the following real property:

A certain parcel of land situated on the southwesterly side of River Road in the Town of Windham, County of Cumberland, State of Maine being bounded and described as follows:

Beginning on the southwesterly sideline of River Road at land now or formerly of Fortier Living Trust as described in a deed recorded in Book 40893 Page 238 in the Cumberland County Registry of Deeds;

Thence S 43° 31' 29" W, by and along the southwesterly sideline of River Road, a distance of 93.75 feet;

Thence S 46° 28' 31" W a distance of 291.71 feet;

Thence southwesterly by and along a curve concave to the left having a radius of 275.00 feet, an arc distance of 62.65 feet;

Thence S 28° 05' 00" W a distance of 396.89 feet to land now or formerly of Holly Dickinson-Amidon as described in a deed recorded in Book 41239 Page 316 in the Cumberland County Registry of Deeds;

Thence S 47° 45' 50" W, by and along land of Holly Dickinson-Amidon, a distance of 2349.26 feet to the northeasterly sideline of the Mountain Division Rail Line;

Thence N 33° 57' 48" W, by and along land of the Mountain Division Rail Line, a distance of 506.54 feet to land now or formerly of Joseph Harry Carlin as described in a deed recorded in Book 37889 Page 80 in the Cumberland County Registry of Deeds;

Thence N 47° 55' 36" E, by and along land of Joseph Harry Carlin and land of Fortier Living Trust, a distance of 2724.87 feet to the Point of Beginning.

The parcel contains approximately 27.92 acres.

Bearings are Grid North.

Reference is made to a plan entitled Lot Division Plan 100 River Road Windham, Maine for: Michael Tevanian dated 2-12-2026 by DM Roma Consulting Engineers.

For title, reference is made to deeds recorded in the Cumberland County Registry of Deeds in Book 25337, Page 227 and Book 25337, Page 230. Further reference is made to an Abstract of Divorce Judgment recorded in said Registry in Book 34307, Page 30.

[*Signatures on following page*]

DOC :12446 BK:42154 PG:256
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
04/02/2026, 12:13:14P
Register of Deeds Jessica M. Spaulding E-RECORDED

In Witness Whereof, I, the said **Michael E. Tevanian, a/k/a Michael Tevanian**, hereunto set my hands and seal this 19th day of March, 2026.

Michael E. Tevanian, a/k/a Michael Tevanian

STATE OF MAINE
COUNTY OF CUMBERLAND

The foregoing instrument was acknowledged before me this 19th day of March, 2026, by Michael E. Tevanian, a/k/a Michael Tevanian to be his free act and deed.

Notary Public/Attorney at law

KEVIN J. GERSPACH
MAINE BAR #6477

Option to Purchase Real Property at 100 River Road, Windham, ME

This Option to Purchase Real Property at 100 River Road Windham, ME ("option") is an agreement between Row Even LLC, a Maine limited liability company, or its assignees, and Michael E. Tevanian, an adult individual, with the terms more fully described below:

1. Row Even LLC or its assignees shall have the option to purchase real property at 100 River Road in Windham, Maine more fully described in Exhibit A and depicted in Exhibit B (Parcel Map), which are attached and incorporated into this option ("the property"), from Michael E. Tevanian.

2. Michael E. Tevanian agrees and warrants that he has the unimpeded right to sign this option.

3. Row Even LLC or its assignees shall pay as consideration for this option to Michael E. Tevanian.

4. If Row Even LLC or its assignees exercise this option, Row Even LLC or its assignees will pay Michael E. Tevanian within 60 days after final approval of a subdivision of the property by the Town of Windham, Maine.

At the time of any payment by Row Even LLC, Michael E. Tevanian will convey the property or subdivided lots and any associated rights via warranty deed to Row Even LLC or its assignees and will cooperate with signing all necessary documents to convey the property or subdivided lots.

5. Row Even LLC or its assignees shall have 425 calendar days following the date of the last party to sign below to exercise this option.

6. An agent or owner of Row Even LLC or its assignees may exercise this option by notifying Michael E. Tevanian via email, text message, or written notice via hand delivery.

7. Without notice, Row Even LLC or its assignees shall have the right to inspect, survey, and perform work regarding subdivision on the property during the option period with the full cooperation of Michael E. Tevanian.

8. During the option period Michael E. Tevanian shall keep the property free from additional mortgages, encumbrances and/or liens while paying all property taxes. Michael E. Tevanian will pay off any existing mortgages, encumbrances and liens on the property no later than the closing of any or all lots on the property.

9. Upon conveyance of the property to Row Even LLC, Michael E. Tevanian shall make sure that the property is free and clear of any trust or family interests. If requested by Row Even LLC, Michael E. Tevanian shall expressly revoke any recorded transfer on death deed associated with the property.

10. This option may be recorded at the Registry of Deeds.

11. Any disputes concerning the terms of this option are subject to binding arbitration in accordance with the Maine Uniform Arbitration Act, found in Title 14 of the Maine Revised Statutes, sections 5927 through 5949 or as amended, with such arbitration taking place in Portland, Maine. The parties shall mutually agree in writing upon one neutral arbitrator located in Portland, Maine within 14 calendar days of notification of a dispute.

12. If any term in this option is held by an arbitrator or tribunal to be invalid, void, or unenforceable, the remaining terms will, nevertheless, continue in effect without being impaired or invalidated in any way.

13. Any changes to this option must be signed in a writing by both parties.

14. For valuable consideration, the parties signing below agree to the above terms of this option, with electronic or printed copies of the document having the same legal effect as an original signed version.

Date: 10/31/25

Michael E. Tevanian

STATE OF MAINE
COUNTY OF CUMBERLAND

Signed before me on 10/30/2025 by Michael E. Tevanian.

Notary Public/~~Attorney~~
Name legibly printed:
My commission expires:

STEPHANIE J. BAILEY
NOTARY PUBLIC
State of Maine
My Commission Expires
August 19, 2030

OPTION TO PURCHASE REAL PROPERTY AT 100 RIVER ROAD, WINDHAM, ME

Date: 10/30/25

Ronald D. Goddard Jr.,
Manager of Row Even LLC

STATE OF MAINE
COUNTY OF CUMBERLAND

Signed before me on 10/30/25 by Ronald D. Goddard Jr.

Notary Public/Attorney
Name legibly printed:
My commission expires:

STEPHANIE J. BAILEY
NOTARY PUBLIC
State of Maine
My Commission Expires
August 19, 2030

Exhibit A (Option to Purchase Real Property at 100 River Road, Windham, ME)

Parcel 1, Identified on Town of Windham records as Tax Map 1, Lots 8 (portion), 8-1 and 8-2:

A certain parcel of land situated on the southwesterly side of River Road in the Town of Windham, County of Cumberland, State of Maine being bounded and described as follows:

Beginning on the southwesterly sideline of River Road at the eastern corner of land now or formerly of Thomas Fortier as described in a deed recorded in Book 16294 Page 21 in the Cumberland County Registry of Deeds;

Thence S 43° 31' 28" E, by and along the southwesterly sideline of River Road, a distance of 93.75 feet;

Thence S 46° 28' 31" W a distance of 291.71 feet to a point of curvature;

Thence southerly along a curve to the left, having a radius of 275.00 feet, and an arc distance of 62.65 feet to a point of tangency;

Thence S 28° 05' 00" E a distance of 396.89 feet to the westerly sideline of land now or formerly of Donald Dickinson as described in a deed recorded in Book 11721 page 67 in the Cumberland County Registry of Deeds;

Thence S 47° 45' 50" W a distance of 2,349.26 feet by and along said land of Dickinson to the northeasterly sideline of land now or formerly of Maine Central Railroad, at or near railroad stationing 81+48;

Thence about N 33° 57' 48" W by and along said land of Maine Central Railroad a distance of 506.64 feet to the southerly corner of land now or formerly of Harry Carlin as described in a deed recorded in Book 3060 page 67 in the Cumberland County Registry of Deeds;

Thence N 47° 55' 36" E by and along said land of Carlin a distance of 747.26 feet to the southerly corner of land now or formerly of Richard Boulanger as described

in a deed recorded in Book 20329 page 185 in the Cumberland County Registry of Deeds;

Thence continuing N 47° 55' 36" E by and along said land of Boulanger and along said land of Fournier a distance of 1,978.58 feet to the point of beginning.

Parcel 1 contains approximately 27.92 acres.

Bearings are Grid North.

Reference is made to a plan entitled "Boundary Survey, River Road and Presumpscot River, Windham, Cumberland County, State of Maine made for Mike Tevanian" dated 5-13-2007 by Lewis & Wasina, Inc. and recorded in Plan Book 207 page 448 in the Cumberland County Registry of Deeds.

Parcel 2, identified on Town of Windham records as Tax Map 1, Lot 9:

A certain parcel of land situated off, and not adjacent to, the southwesterly side of River Road on the southwesterly side of land now or formerly of Maine Central Railroad, in the Town of Windham, County of Cumberland and State of Maine being bounded and described as follows:

Beginning on the southwesterly sideline of land now or formerly of Maine Central Railroad (formerly Portland & Ogdensburg Railroad Company), at the northerly corner of land now or formerly of Donald Dickinson, as described in a deed recorded in Book 11721 page 67 in the Cumberland County Registry of Deeds;

Thence S 47° 45' 50" W a distance of 275.11 feet by and along said land of Dickinson to a set rebar, this rebar lying S 47° 45' 50" W a distance of 403.55 feet from a set rebar on the southeasterly line of land now or formerly of Epworth S. Moulton, Trustee of the Epworth S. Moulton Revocable Trust 2002, that are situated on the northeasterly side of Maine Central Railroad;

Thence continuing S 47° 45' 50" W along said land of Dickinson, to the Presumpscot River;

Thence continuing in a southwesterly direction along said land of Dickinson, to the thread of the Presumpscot River;

Thence in a northerly direction along the thread of the Presumpscot River to land now or formerly of Harry Carlin, as described in a deed recorded in Book 3060, page 827 in the Cumberland County Registry of Deeds;

Thence in a northeasterly direction along said land of Carlin, to the bank of the Presumpscot River;

Thence N 47° 55' 36" E by and along said land of Carlin a distance of 30 feet, more or less, to a set rebar, this rebar lines N 52° 33' 23" W a distance of 511.07 feet from the last mentioned set rebar and lying S 47° 55' 36" W a distance of 569.40 feet from a set rebar on the northwesterly line of said land of Moulton Revocable Trust situated on the northeasterly side of said land of Maine Central Railroad;

Thence continuing N 47° 55' 36" E by and along said land of Carlin a distance of 438.55 feet, more or less, to said land of Maine Central Railroad;

Thence about S 33° 57' 48" E by and along said land of Maine Central Railroad a distance of 506.68 feet, more or less, to the point of beginning.

Parcel 2 contains approximately 4.11 acres, more or less.

Bearings are Grid North.

Reference is made to a plan entitled "Boundary Survey, River Road and Presumpscot River, Windham, Cumberland County, State of Maine made for Mike Tevanian" dated 5-13-2007 by Lewis & Wasina, Inc. and recorded in Plan Book 207 page 448 in the Cumberland County Registry of Deeds.

SECTION 8

EXISTING OR PROPOSED EASEMENTS OR COVENANTS

Section 8 – Existing or Proposed Easements or Covenants

The property is intended to be developed as conservation subdivision that will include the creation of a 50' wide right of way for the construction of Eventide Drive, the subdivision road to providing access and frontage to the new proposed lots. The intent is for the roadway and right of way to be conveyed to the Town of Windham as a public road upon construction completion.

As part of the proposed improvements two existing curb cuts in River Road for 100 River Road will be eliminated. Access will then be provided from a proposed driveway extending from Eventide Drive. An easement will be provided to the homeowner to access Eventide Drive until, and if ever, the road is accepted as a public road.

An easement to the benefit of the Town of Windham will also be granted over the area extending from the end of the 50' wide right of way for Eventide Drive to the property limits. This easement is intended to provide an opportunity for a future road connection to the property to the north.

Several proposed easements are shown on the Subdivision Plan, including two (2) new easements for the proposed hammerhead turnarounds and four (4) additional easements located over the proposed lots which contain three (3) proposed stormwater BMPs.

A Homeowners Association will be created to provide the framework for maintenance of Eventide Drive, stormwater management infrastructure and the Open Space Areas. Easement documents and Homeowner's Association documents will be prepared and submitted with the Final Subdivision Plan application for review.

SECTION 9

TECHNICAL CAPACITY OF THE APPLICANT

Section 9 – Technical Capacity of the Applicant

The developer, Row Even, LLC, has hired several professionals to aid in the design and permitting of the project. These professionals are listed below:

DM Roma Consulting Engineers has been retained to perform civil engineering design and land permitting services for the project. 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 and the wetland delineation. Alex Finamore is a Maine licensed site evaluator experienced in septic system design, natural resources investigations, soils analysis and environmental permitting.

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 certified soil scientist and licensed site evaluator in the State of Maine.

Main-Land Development Consultants, Inc. (MLDC) has been retained to perform hydrologic assessment for the project. MLDC also performed land surveying services on this property for a previous owner. MLDC has been providing land use planning services since its inception in 1974, and is a multi-disciplined firm that has the ability to provide comprehensive land use planning services within a single entity due to its wide range of respected professionals. MLDC employs licensed land surveyors, engineers, geologists and site evaluators.

SECTION 10

CAPACITY OF EXISTING UTILITIES TO SERVE THE PROJECT

Section 10 – Capacity of Existing Utilities to Serve the Project

Potable Water –Proposed lots will be served by private on-site potable wells.

Fire Protection Water – Sprinkler system installation will be required within all residential structures.

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 – The project will utilize private on-site septic disposal areas. Mainely Soils, LLC performed test pit investigations within each lot to ensure adequate soils for a first-time subsurface wastewater disposal system. A nitrate analysis has also been prepared by MLDC to ensure all disposal field size and locations meet the Maine Drinking Water program standards. Each lot will be required to have a site-specific wastewater disposal system designed by a licensed site evaluator prior to construction.

SECTION 11

SOLID WASTE DISPOSAL

Section 11 – Solid Waste Disposal

Additional tree clearing will be required prior to site construction. 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.

As the road is anticipated to be accepted by the Town as a "Public Road", Town trash collection could be a future consideration. Until that time, the Homeowner's Association will contract with a private waste hauler for trash disposal generated by the residents of the subdivision

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

SECTION 12

ROADWAY ACCESS

Section 12 – Roadway Access

Public Road proposed.

SECTION 13

CONSERVATION SUBDIVISION – OPEN SPACE DESIGN

Section 13 – Conservation Subdivision – Open Space Design

The project has been designed in accordance with the standards outlined in Section 911.K of the Land Use Ordinance which specifies the standards and procedures for developing Conservation Subdivisions in the Town of Windham. The area designated as open space has been delineated based upon an evaluation of the site and the identification of Primary and Secondary Conservation Areas. The property contains a total of 13.87 acres of land proposed within four (4) proposed open space areas as delineated on the Subdivision Plan. We have designed the building envelopes so that a 50-ft setback is maintained around the perimeter of the overall subdivision lot.

Strict adherence to the Minimum Required Open Space standards would have negative impacts to the project because it would require a shorter road and narrower lots that are even more clustered together than what we are currently proposing. We have requested a waiver from this standard. However, as part of the waiver request consideration the applicant is willing to deed the land to the west of the Mountain Division Rail Trail to the Town to be used as access and conservation land adjacent to the Presumpscot River, and this area could provide public access to the Presumpscot River from the Mountain Division Rail Trail.

SECTION 14

VEHICLE TRAFFIC

Section 14 – Vehicle Traffic

The project consists of 17 residential dwelling units.

The Institute of Transportation Engineers (ITE) Trip Generation handbook (10th edition) estimates that single-family detached housing (Land Use Code #210) is expected to generate the following vehicle trips:

Weekday	= 9.44 trips per dwelling unit
AM Peak Hour	= 0.74 trips per dwelling unit
PM Peak Hour	= 0.99 trips per dwelling unit

Accordingly, the proposed 17 single-family homes can be expected to generate a total of 161 trips during a typical weekday, 13 trips in the morning peak hour and 17 trips in the evening peak hour.

The ITE Handbook also provides the following directional distribution rates for a single-family home:

AM Peak Hour	= 25% enter site and 75% exit site
PM Peak Hour	= 63% enter site and 37% exit site

Based upon the above distribution patterns, 3 trips during the morning peak hour and 11 trips during the evening peak hour will enter the site. Accordingly, 10 trips during the morning peak hour and 6 trips during the evening peak hour will exit the site.

SECTION 15

IMPACT TO IMPORTANT OR UNIQUE NATURAL AREAS

Section 15 – Impact to Important or Unique Natural Areas

The attached review letter from the Maine Department of Inland Fisheries and Wildlife (DIFW) indicates 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.

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
353 WATER STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

October 21, 2025

Dustin Roma
DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062

RE: Information Request - 100 River Road, Subdivision, Windham Project ID 9551-11083

Dear Dustin:

Per your request received on **September 29, 2025**, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information sources for known locations of Endangered, Threatened, and Special Concern (Rare) species; designated Essential and Significant Wildlife Habitats; inland fisheries and aquatic habitats; and other protected natural resource concerns within the vicinity of the ***100 River Road, Subdivision, Windham*** project, pursuant to MDIFW's authority. It is understood the project proposes a residential subdivision with open space plans as shown in the site plan (dated 9/18/2025). It is understood the project will require tree clearing and stream crossings. Given this scope, we have tailored our review accordingly. Please note our comments should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be affected by this project.

ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

Bat Species
Of the eight species of bats that occur in Maine, four species are afforded protection under Maines Endangered Species Act (MESA, 12 M.R.S 12801 et. seq.): little brown bat (State Endangered), northern long-eared bat (State Endangered), eastern small-footed bat (State Threatened), and tri-colored bat (State Threatened). The four remaining bat species are designated as Species of Special Concern: big brown bat, red bat, hoary bat, and silver-haired bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during spring/fall migration, the summer breeding season, and/or for overwintering. However, our Department does not anticipate significant impacts to any of the bat species as a result of project activities.

SIGNIFICANT WILDLIFE HABITAT

Significant Vernal Pools
At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of Significant Vernal Pools (SVPs) in the project search area. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. SVPs are not included on

MDIFW maps until project areas have been surveyed using approved methods and the survey results confirmed. Therefore, their absence from resource maps is not necessarily indicative of an absence on the ground.

Our Department recommends that any potential Significant Vernal Pool depressions be avoided as well as the 250-feet surrounding the pool, which is the associated Critical Terrestrial Habitat. If not already completed, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

AQUATIC RESOURCES

Fish Habitat

We recommend that 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species.

Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e., natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fisheries and aquatic habitat.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance, we

recommend additional consultation with the municipality, and other state resource and regulatory agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance. For information on federally listed species, contact the U.S. Fish and Wildlife Service's Maine Field Office (207-469-7300, mainefieldoffice@fws.gov).

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

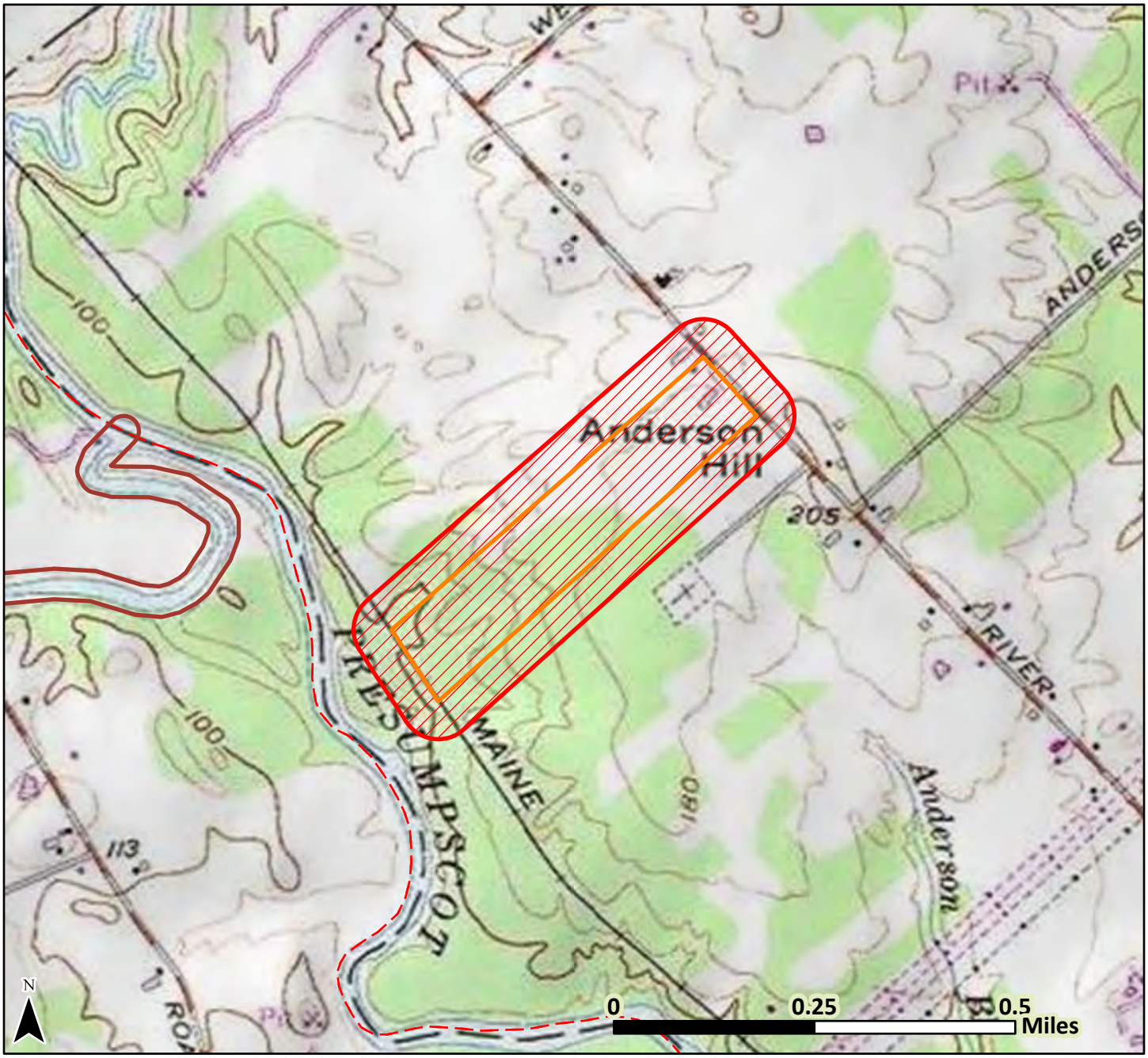
Best regards,

Laura Hatmaker
Natural Resource Biologist

Maine Department of Inland Fisheries and Wildlife
Project Area Review of Fish and Wildlife Observations and Priority Habitats

100 River Road, Subdivision, Windham

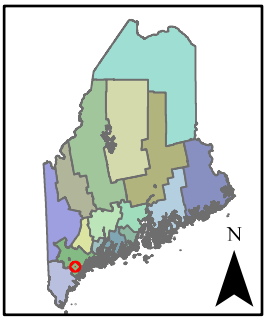
Project ID 9551, Version ID 11083



Legend only lists resources visible in the map; see response letter for all resources that were evaluated.

- County Boundary
- Township Boundary
- Project Footprint
- Search Area
- Special Concern Fish

Date: 10/6/2025
UTM Zone 19N, NAD83



This map contains sensitive information - do not distribute it beyond the project applicant, consultant, or the permitting agency.

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

October 16, 2025

JP Connolly
DM Roma
PO Box 1116
Windham, ME 04062

Via email: jp@dmromal.com

Re: Rare and exemplary botanical features in proximity to: Project #23056, 100 River Road Subdivision, 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 September 30, 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 species 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 also no other 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.

The land use history, landform, topography, and current land use at the project site indicate that the site does not currently have suitable habitat for Small Whorled Pogonia. MNAP does not recommend a survey for this species at this location and finds that the project is Not Likely to Adversely Affect 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: #23056, 100 River Road Subdivision, Windham, ME

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
Beach Plum						
	E	S1	G4	1933-05-19	10	Rocky coastal (non-forested, upland)
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)
Creeping Spike-moss						
	E	S2	G5	2008-09-25	12	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)

Creeping Spike-moss					
	E	S2	G5	1924-08-21	8	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Dioecious Sedge					
	SC	S3	G4G5	1936-07-14	7	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not coastal nor rivershore (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)
Fern-leaved False Foxglove					
	SC	S3	G5	1902-09-02	13	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	2014-06-18	24	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)
	SC	S2	G5	1972-06-13	3	

Horned Pondweed					
					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)
Mountain Honeysuckle					
E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Parker's Pipewort					
SC	S3	G3	1924-08-20	8	Tidal wetland (non-forested, wetland)
Pitch Pine Woodland					
	S3	G2	2005-12-08	28	
Screwstem					
T	S1	G5T3T5	2020-09-17	4	
Small Reed Grass					
SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)

Southern Bog-clubmoss					
E	S1	G5	2011-08-31	1	Open wetland, not coastal nor rivershore (non-forested, wetland),Non-tidal rivershore (non-forested, seasonally wet)
Spo ed Pondweed					
T	S1	G5	2016-06-22	3	Open water (non-forested, wetland)
Upper Floodplain Hardwood Forest					
	S3	GNR	2017-06-14	63	
Vasey's Pondweed					
SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Water-plantain Spearwort					
PE	SH	G4	1862-08	3	Open water (non-forested, wetland)

Date Exported: 10/2/2025

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. 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. Included in this section is further information related to the stormwater design and applicable review standards.

DM ROMA
CONSULTING ENGINEERS

STORMWATER MANAGEMENT REPORT

EVENTIDE SUBDIVISION
WINDHAM, MAINE

A. Narrative

Row Even, LLC, the applicant, are proposing to develop a 27.9-acre parcel at 100 River Road in Windham, Maine, identified as Lot 8 (a portion of), 8-1, and 9 on the Town of Windham Assessor's Map 1.

The applicant is proposing a 17-lot single-family residential subdivision. The property is located in the Farm zone and the project will be designed utilizing the standards for a Conservation Subdivision. The existing parcel contains two single-family detached homes, which will be retained on a 3.7-acre lot with 200 feet of frontage on River Road. The remaining land will be subdivided including the construction of a new subdivision road that will provide access from River Road to the new lots.

B. Existing Conditions

The existing project site consists of existing residential development, undeveloped meadow (hay fields) and woodland. The project property also abuts the Mountain Division Rail Trail to the southwest. In the location of the project site, the land is moderately sloped (3%-8%) with steeper slopes at the limits of the meadow to the southwest 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 are planned to be excavated in the general locations of the proposed Best Management Practices, described in later sections of this report. Test pit logs that have been performed have also been included as Attachment 1 of this report.

In general, the majority of the property drains to the west and northwest, ultimately into the Presumpscot River. A smaller portion of the site's runoff is tributary to River Road, draining to the road and being conveyed under River Road in an existing road culvert. Stormwater discharge from the existing road culvert is initially conveyed overland, then captured in a constructed swale that conveys stormwater to the north behind the existing residence at the southeasterly corner of River Road and Brackett Farm Lane. The drainage swale appears to have been constructed and is part of a series of agricultural related drainage swales, that confluence on the property that operates as Winny Knowl Farm, before crossing under River Road (east to west) and continuing to drain to the west before discharging into an existing farm pond. Discharge from the existing farm pond is ultimately conveyed overland to the Presumpscot River.

The westerly portion of the site consists of meadow (hayfields) and woodland, and also consists of finger like wetland complex, and two streams that cross the site in a south to north direction. One of the streams (westerly stream) will be crossed with the proposed subdivision road, and just before the terminus of the proposed subdivision road a wetland finger is also crossed.

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 approximated lot development, the project will generate approximately 104,499 square feet (2.40± acres) of impervious surfaces. The project will also generate approximately 338,090 square feet (7.76± acres) of lawn, landscaping, and best management practices, resulting in a total project developed area of 442,589 square feet (10.16± 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 and Town to provide permanent and temporary Erosion Control Best Management Practices. These methods are outlined in detail in the plan set.

F. General Standard

The proposed project is required to meet the General Standard outlined in the MDEP Chapter 500 to provide water quality treatment for 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 five (5) underdrained filter basins 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 94% of the project's impervious surface and over 76% of the site's developed area. The General Standards calculations have been included 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 the release of stormwater from the basins 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.

The locations and construction detail of the proposed roofline dripedges have been included on 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 through SP-4 drain in a northwesterly direction onto the abutting property to the north, and SP-5 drains to the River Road right of way and into the existing roadway culvert. 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	6.41	5.60	13.93	13.17	20.53	20.28
SP-2	9.93	9.55	22.13	20.82	32.93	30.66
SP-3	3.91	1.74	8.28	3.93	12.09	5.2
SP-4	1.46	0.28	3.10	0.62	4.53	0.93
SP-5	4.30	3.25	9.33	10.92	13.75	14.62

As illustrated in Table 1, the proposed project's design, including the integration of the proposed BMPs, reduces the peak rates of runoff at Study Points SP-1, SP-2, SP-3, and SP-4 in all the modeled storm events.

In developing the project's stormwater design, we were particularly concerned with the discharge of stormwater at SP-4 in the developed condition. SP-4 is located along the northerly property limit between an existing single-family residence and River Road. At this location there is a small depression adjacent to an existing driveway that doesn't appear to have any drainage improvements. As a result, the depression fills during a rain storm event and overtops the gravel driveway. To alleviate the concern of runoff overtopping abutting gravel driveway, the goal was to minimize stormwater discharge at this location and re-direct it to the existing formalized drainage system in River Road. Therefore, Underdrained Filter Basin (FB-4) was designed with a spillway and underdrain system that drains to FB-5 whose outlets discharge to the road side swale and existing culvert in River Road. Both underdrained filter basins FB-4 and FB-5 have been oversized to provide as much mitigation of the post-developed discharge as possible. With this design the discharge to SP-4 in the developed condition is reduced by 80% or more in comparison to the existing condition during all storm events.

With re-directing the runoff from the abutting driveway to the north, the design does result in an approximately 17% increase in peak rates of runoff during the 10-year storm event and approximately 6.3% increase in peak rates of runoff during the 25-year storm event. The stormwater design does provide a significant decrease in runoff leaving the property during the more frequent 2-year storm event. We anticipate this increase in discharge during the 10-year and 25-year storm event at SP-5 will not create a significant downstream flooding hazard as discharge is conveyed to a formalized drainage system conveying runoff below River Road and into well-established drainage swales constructed for agricultural purposes. Once discharged on the west side of River Road, stormwater is conveyed overland and discharges into a large farm pond, which is then discharged into a constructed drainage swale that empties into a natural drainage path before discharging into the Presumpscot River. Since the increased flow at SP-5 is relatively small, we do not anticipate pipe capacity problems, significant downstream flooding or increased erosion as a result of the proposed project. As such we also believe that this design will benefit the existing residential property to the north by significantly reducing the flows over their driveway from the existing conditions.

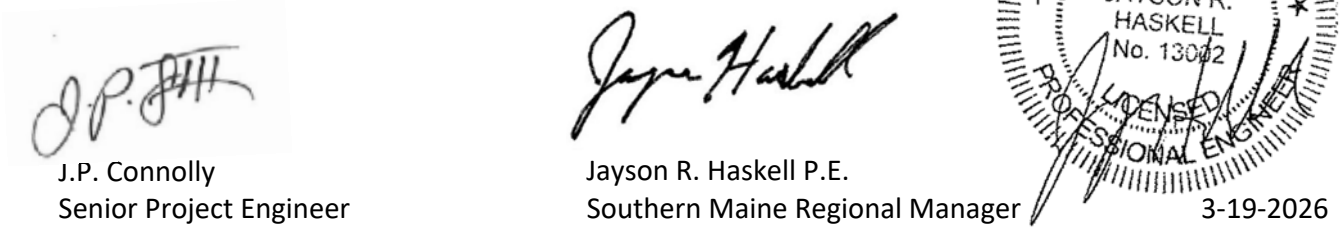
The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 5 of this report.

H. Maintenance of common facilities or property

The applicant will be responsible for the maintenance of the stormwater facilities until a homeowner's 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



J.P. Connolly
Senior Project Engineer

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

3-19-2026

ATTACHMENT 1

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

MARK HAMPTON ASSOCIATES, INC.
SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8431

100 River Road
Windham, ME
DM Roma Consulting Engineers

Soil Narrative Report

DATE:	Soil Profiles observed on September 23, 2025
BASE MAP:	Base plan prepared 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.

Mark J. Hampton C.S.S. #216, L.S.E. #263 9/29/25

Mark J. Hampton Date

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEY • WETLAND PERMITTING

8431

100 River 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:	(B) 3-8%, (C) 8-15%, (D) 15-25%

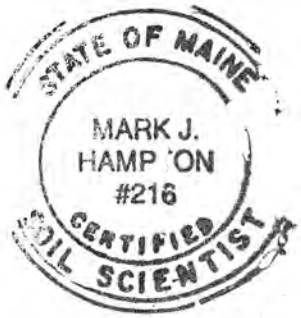
COMPOSITION AND SOIL CHARACTERISTICS

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, Lyman-Tunbridge

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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SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8431

100 River 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)3-8%

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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8431

100 River 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%, (B) 3-8%

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

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Buxton, Lamoine, Lyman-Tunbridge

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.

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8431

100 River Road
Windham, ME
DM Roma Consulting Engineers

Made Land

SETTING

PARENT MATERIAL:	Derived from various fill materials.
LANDFORM:	N/A
POSITION IN LANDSCAPE:	N/A
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:	Generally well drained to moderately well drained
TYPICAL PROFILE:	Varies in profile and onsite from gravel to sandy loam
HYDROLOGIC GROUP:	Group B
SURFACE RUNOFF:	Rapid
PERMEABILITY:	Slow
DEPTH TO BEDROCK:	Less than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Buxton, Lamoine

USE AND MANAGEMENT

Development: There may be limiting factors for building site development.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

8431

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road | Applicant Name: | Project Location (municipality): 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	F. Sandy Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
Cd	Olive	Silty Clay	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: 4 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	F.Sandy Loam	Weak Angular	Very Friable	
Bw	Brown	Silt Loam	Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay	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-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	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Firm	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Thin Platy	Firm	
Cd	Olive	Silty Clay	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	Black	Silt Loam	Grand	Friable	
Bg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cd	Olive Gray	Silty Clay	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:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road

Applicant Name:

Project Location (municipality): 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	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw	Brown	F. Sandy Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
Cd	Olive	Silty Clay	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 12 " 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	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " 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	F. Sandy Loam	Fine Grandul	Friable	
Bw	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bc	Olive Gray	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cd	Olive	Silty Clay	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-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	
Bg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cd	Olive Gray	Silty Clay	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:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road | Applicant Name: | Project Location (municipality): 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	
Bw	Brown	F. Sandy Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
Cd	Olive	Silty Clay	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 12 " 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-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	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " 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	F. Sandy Loam	Fine Grandul	Friable	
Bw	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bc	Olive Gray	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cd	Olive	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

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

Slope: 16 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	
Bg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cd	Olive Gray	Silty Clay	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

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

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

Slope: 2 Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road

Applicant Name:

Project Location (municipality): 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	Black	Silt Loam	Grand	Very Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Fine Grandu	Firm	
Cd	Olive	Silty Clay	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: 4 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic 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	Dark Brown	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

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

Slope: 16 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-15 ☐ 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	F. Sandy Loam	Fine Grandul	Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Thin Platy	Firm	
Cd	Olive	Silty Clay	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-16 ☐ 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	F. Sandy Loam	Grand	Friable	
Bw	Brown	F. Sandy Loam	Fine Grandul	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	Common and Distinct
Cd	Olive	Silty Clay	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:

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road | Applicant Name: | Project Location (municipality): Windham

Exploration Symbol # SS-17 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Grand	Very Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Fine Grandu	Firm	
Cd	Olive	Silty Clay	Platy	Very Firm	

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

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: 4 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-18 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

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

Slope: 10 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-19 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	F. Sandy Loam	Fine Grandul	Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Thin Platy	Firm	
Cd	Olive	Silty Clay	Medium Platy	Very Firm	

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

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 # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

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

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group:

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ATTACHMENT 2

GENERAL STANDARDS CALCULATIONS

DM ROMA
CONSULTING ENGINEERS

Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/4/2026
Job #23056

Stormwater Treatment Requirements

Pecentage of Developed Area to Land Available for Development

Total Land Area=	1,376,614	sf	
Deductions			
Area Slopes Steeper than 25%	5,458	sf	
Area Protected Natural Resources	100,927	sf	
Total Available Land for Development	**1,270,229**	**sf**	
Total Developed Area	**525,237**	**sf**	**442,589**

% of Developed Area to Land Available for Development=	**41%**

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

Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/4/2026
Job #23056

Stormwater Treatment Table

	Total Watershed Area (SF)	New Roof Area (SF) **	New Paved/Gravel 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-1***	121,736	0	0	26,949	0	0	94,322	No	0	0	None
WS-1B**	288	288	0	0	0	0	0	Dripedge	288	0	Dripedge Only
WS-11	47,205	0	9,500	37,693	0	0	12	Yes	9,500	37,693	Filter Basin -FB1
WS-11B**	2,412	2,412	0	0	0	0	0	Dripedge	2,412	0	Dripedge Only
WS-12	192,518	0	4,796	48,987	693	2,895	135,147	Yes	4,796	48,987	Filter Basin -FB2
WS-12B**	6,251	6,251	0	0	0	0	0	Dripedge	6,251	0	Dripedge Only
WS-13	1,985	0	1,871	114	0	0	0	Yes	1,871	114	Filter Basin -FB1
WS-14***	20,826	0	0	4,116	0	0	16,385	No	0	0	None
WS-2***	112,063	0	1,105	30,491	0	0	80,013	No	0	0	None
WS-2B**	3,600	3,600	0	0	0	0	0	Dripedge	3,600	0	Dripedge Only
WS-21***	401,112	0	0	24,534	5,394	20,145	350,531	No	0	0	None
WS-21B**	3,277	3,277	0	0	0	0	0	Dripedge	3,277	0	Dripedge Only
WS-22	4,284	0	4,125	159	0	0	0	Yes	4,125	159	Filter Basin -FB1
WS-23	4,209	0	4,023	186	0	0	0	Yes	4,023	186	Filter Basin -FB1
WS-24	20,075	0	7,804	12,272	0	0	0	Yes	7,804	12,272	Filter Basin -FB1
WS-24B**	1,512	1,512	0	0	0	0	0	Dripedge	1,512	0	Dripedge Only
WS-25	23,026	0	7,465	15,561	0	0	0	Yes	7,465	15,561	Filter Basin -FB1
WS-25B**	2,329	2,329	0	0	0	0	0	Dripedge	2,329	0	Dripedge Only
WS-26	266	0	266	0	0	0	0	Yes	266	0	Filter Basin -FB1
WS-3	29,031	0	0	2,855	0	8,766	17,410	No	0	0	None
WS-31*	55,285	0	0	26,438	0	0	28,846	Yes	0	26,438	Filter Basin -FB3
WS-31B**	2,700	2,700	0	0	0	0	0	Dripedge	2,700	0	Dripedge Only
WS-4	9,898	0	0	4,070	0	0	5,828	No	0	0	None
WS-41	41,249	0	10,723	28,101	0	0	2,425	Yes	10,723	28,101	Filter Basin -FB4
WS-41B**	2,088	2,088	0	0	0	0	0	Dripedge	2,088	0	Dripedge Only
WS-5	271,906	0	4,229	0	32,366	59,363	175,948	No	0	0	None
WS-51	102,079	0	0	4,581	9,809	11,580	76,109	No	0	0	None
WS-51B**	612	612	0	0	0	0	0	Dripedge	612	0	Dripedge Only
WS-52	167,531	0	13,881	60,689	2,942	7,968	82,051	Yes	13,881	60,689	Filter Basin -FB5
WS-52B**	5,531	5,531	0	0	0	0	0	Dripedge	5,531	0	Dripedge Only
WS-53	14,030	0	3,734	10,296	0	0	0	Yes	3,734	10,296	Filter Basin -FB5
WS-54	5,956	0	377	0	1,212	4,366	0	No	0	0	None
Total		**30,600**	**73,899**	**338,090**					**98,788**	**240,495**	

* 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 buildings shall install a roofline drip edge to provide treatment for the rooftop impervious surface.
The building's impervious area is included in the watershed and overall treatment calculations below, but not included
in the BMP sizing calculations for the wet pond or the underdrained filter basins.
*** Development associated with wetland & stream road crossings are exempt from the Chapter 500 General Standards:

WS-1 - 465.44± sf Grass
WS-2 - 454.59± sf Grass
WS-14 - 324.77± sf Grass
WS-21 - 507.13± sf Grass

New Impervious Area =	104,499	
New Impervious Area Requiring Treatment (90%)	94,049	
Provided New Impervious Treatment=	98,788	
	95%	New Impervious Area Treated
New Developed Area =	442,589	
New Developed Area Requiring Treatment (75%)=	331,942	
New Developed Area Treated=	339,282	
	77%	New Developed Area Treated

ATTACHMENT 3

UNDERDRAINED FILTER BASIN SIZING CALCULATIONS

DM ROMA
CONSULTING ENGINEERS

Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/4/2026
Job #23056

Underdrained Filter Basin Sizing Calculations

Filter Basin 1

Tributary Impervious Area=	35,054	sf	(WS-11, 13 & 22-26 Impervious Area)
Tributary Landscaped Area=	65,985	sf	(WS-11, 13 & 22-26 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 5,121 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
138	3,169	0
139.5	4,235	5,533
140	4,624	7,747

Outlet Elevation = 139.50

Storage Volume Provided= 5,533 cf > Required

Filter Bottom Calculation

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

Filter Area Required = 3,072 sf

Filter Area Provided = 3,169 sf > Required

Sediment Forebay Sizing

Tributary Impervious Area Requiring Sanding: 35,054 sf

Required Sediment Forebay Volume :

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

Sediment Volume (Required) 44.7 cf

Sediment Volume (Provided): 100.5 cf > Required

Runoff is collected in four (4) CB's, and discharged into grassed swale:

CB/DMH with 2' sump = 25.13 cf of storage;

Total storage provided:

(4x 25.13) = **100.52 cf**

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 = 2.58 cfs

Required Length of Level Spreader = 10.32 ft

Provided Length of Level Spreader = 15 ft > Required

FILTER BASIN FB-1- SPILLWAY RUN

Summary for Pond FB1:

[62] Hint: Exceeded Reach R1 OUTLET depth by 2.99' @ 12.35 hrs

Inflow Area = 107,303 sf, 36.79% Impervious, Inflow Depth = 4.08" for 25-Year event
Inflow = 9.03 cfs @ 12.14 hrs, Volume= 36,499 cf
Outflow = 6.64 cfs @ 12.28 hrs, Volume= 24,493 cf, Atten= 27%, Lag= 8.6 min
Primary = 6.64 cfs @ 12.28 hrs, Volume= 24,493 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 141.25' @ 12.28 hrs Surf.Area= 5,795 sf Storage= 14,248 cf

PEAK WS ELEV. = 141.25
TOP OF BERM = 142.25
FREEBOARD =
142.25-141.25 = 1.00'

Plug-Flow detention time= 177.9 min calculated for 24,493 cf (67% of inflow)
Center-of-Mass det. time= 79.4 min (883.2 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1	138.00'	18,876 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)
138.00	3,169	223.6	0	0	3,169
140.00	4,624	261.3	7,747	7,747	4,702
142.00	6,561	317.8	11,129	18,876	7,370

Device	Routing	Invert	Outlet Devices
#1	Primary	140.85'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	135.73'	**12.0" Round Culvert X 0.00** L= 39.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 135.73' / 135.50' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	139.50'	**8.0" W x 15.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 2	140.75'	**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
#5	Device 2	135.83'	**1.2" Vert. 1-1/4" DRILL HOLE IN END CAP** C= 0.600
#6	Device 5	135.83'	**4.0" Vert. 4" UD** C= 0.600
#7	Device 6	138.00'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=6.58 cfs @ 12.28 hrs HW=141.25' TW=135.91' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 6.58 cfs @ 1.65 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=138.00' TW=135.50' (Dynamic Tailwater)
└─**2=Culvert** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  ├─**4=Neenah R4345 Beehive Grate Light Duty-req. structure** (Controls 0.00 cfs)
  └─**5=1-1/4" DRILL HOLE IN END CAP** (Passes 0.00 cfs of 0.06 cfs potential flow)
    └─**6=4" UD** (Passes 0.00 cfs of 0.59 cfs potential flow)
      └─**7=Exfiltration** (Passes 0.00 cfs of 0.18 cfs potential flow)

FILTER BASIN FB-1- DRAWDOWN

23056 - DEVELOPED

Type III 24-hr WQ Event - FB-1 Rainfall=2.22"

Prepared by DM ROMA CONSULTING ENGINEERS

Printed 3/4/2026

Hydrograph for Pond FB1:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	138.00	0.00	**0.00**	0.00
2.50	0.00	0	138.00	0.00	0.00	0.00
5.00	0.00	0	138.00	0.00	0.00	0.00
7.50	0.01	0	138.00	0.01	0.00	0.01
10.00	**0.03**	0	138.00	0.03	0.00	0.03
12.50	**0.91**	3,452	138.99	0.07	0.00	0.07
15.00	0.15	5,216	139.42	0.07	0.00	0.07
17.50	0.08	**5,539**	**139.50**	**0.07**	0.00	**0.07**
20.00	0.05	**5,452**	**139.48**	**0.07**	0.00	**0.07**
22.50	0.04	5,241	139.43	0.07	0.00	0.07
25.00	0.00	4,842	139.33	0.07	0.00	0.07
27.50	0.00	4,216	139.18	0.07	0.00	0.07
30.00	0.00	3,605	139.02	0.07	0.00	0.07
32.50	0.00	3,009	138.87	0.07	0.00	0.07
35.00	0.00	2,429	138.71	0.06	0.00	0.06
37.50	0.00	1,864	138.56	0.06	0.00	0.06
40.00	0.00	1,315	138.40	0.06	0.00	0.06
42.50	0.00	784	138.24	0.06	0.00	0.06
45.00	0.00	270	138.08	0.06	0.00	0.06
47.50	0.00	0	138.00	0.00	0.00	0.00
50.00	0.00	0	138.00	0.00	0.00	0.00
52.50	0.00	0	138.00	0.00	0.00	0.00
55.00	0.00	0	138.00	0.00	0.00	0.00
57.50	0.00	0	138.00	0.00	0.00	0.00
60.00	0.00	0	138.00	0.00	0.00	0.00
62.50	0.00	0	138.00	0.00	0.00	0.00
65.00	0.00	0	138.00	0.00	0.00	0.00
67.50	0.00	0	138.00	0.00	0.00	0.00
70.00	0.00	0	138.00	0.00	0.00	0.00
72.50	0.00	0	138.00	0.00	0.00	0.00
75.00	0.00	0	138.00	0.00	0.00	0.00
77.50	0.00	0	138.00	0.00	0.00	0.00
80.00	0.00	0	138.00	0.00	0.00	0.00
82.50	0.00	0	138.00	0.00	0.00	0.00
85.00	0.00	0	138.00	0.00	0.00	0.00
87.50	0.00	0	138.00	0.00	0.00	0.00
90.00	0.00	0	138.00	0.00	0.00	0.00
92.50	0.00	0	138.00	0.00	0.00	0.00
95.00	0.00	0	138.00	0.00	0.00	0.00

POND AT CPV AT 17.5 HRS
EMPTY AT 47.5 HRS
DRAWDOWN TIME = 47.5-17.5 = 30 HRS

DM ROMA
CONSULTING ENGINEERS

Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/13/2026
Job #23056

Underdrained Filter Basin Sizing Calculations

Filter Basin 2

Tributary Impervious Area=	5,489	sf	(WS-12 Impervious Area)
Tributary Landscaped Area=	51,883	sf	(WS-12 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 2,187 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
146	1,349	0
147.25	2,290	2,248
148	2,973	4,216

Outlet Elevation = 147.50

Storage Volume Provided= 2,248 cf > Required

Filter Bottom Calculation

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

Filter Area Required = 1,312 sf

Filter Area Provided = 1,349 sf > Required

Sediment Forebay Sizing

Tributary Impervious Area Requiring Sanding: 5,489 sf

Required Sediment Forebay Volume :

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

Sediment Volume (Required) 7.0 cf

Sediment Volume (Provided): 100.5 cf > Required

Runoff is collected in four (4) CB's, two (2) DMH's and one (1) Type F CB's:

CB/DMH with 2' sump = 25.13 cf of storage; Type F CB with 2' sump = 8 cf of storage

Total storage provided:

(4x 25.13) = **100.52 cf**

FILTER BASIN FB-2 - SPILLWAY RUN

23056 - DEVELOPED *Type III 24-hr 25-Year Rainfall=5.80"*
Prepared by DM ROMA CONSULTING ENGINEERS Printed 3/5/2026

Summary for Pond FB2:

Inflow Area = 198,769 sf, 5.56% Impervious, Inflow Depth = 3.31" for 25-Year event
Inflow = 11.56 cfs @ 12.30 hrs, Volume= 54,745 cf
Outflow = 11.38 cfs @ 12.33 hrs, Volume= 49,101 cf, Atten= 2%, Lag= 2.2 min
Primary = 11.38 cfs @ 12.33 hrs, Volume= 49,101 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 149.01' @ 12.33 hrs Surf.Area= 3,919 sf Storage= 7,700 cf

PEAK WS ELEV. = 149.01
TOP OF BERM = 150.0
FREEBOARD =
150.0-149.01 = 0.99' => 1.0'

Plug-Flow detention time= 76.1 min calculated for 49,101 cf (90% of inflow)
Center-of-Mass det. time= 26.1 min (863.5 - 837.4)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	12,068 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)
146.00	1,349	239.6	0	0	1,349
148.00	2,973	292.5	4,216	4,216	3,651
150.00	4,963	356.5	7,851	12,068	7,020

Device	Routing	Invert	Outlet Devices
#1	Primary	148.45'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	143.73'	**12.0" Round Culvert X 0.00** L= 47.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.73' / 143.50' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	143.83'	**0.8" Vert. 13/16" DRILL HOLE IN END CAP** C= 0.600
#4	Device 3	143.83'	**4.0" Vert. 4" UD** C= 0.600
#5	Device 4	146.00'	**2.410 in/hr Exfiltration over Surface area**
#6	Device 2	147.25'	**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=11.32 cfs @ 12.33 hrs HW=149.01' TW=144.03' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 11.32 cfs @ 2.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=143.50' (Dynamic Tailwater)
└─**2=Culvert** (Controls 0.00 cfs)
  └─**3=13/16" DRILL HOLE IN END CAP** (Passes 0.00 cfs of 0.02 cfs potential flow)
    └─**4=4" UD** (Passes 0.00 cfs of 0.59 cfs potential flow)
      └─**5=Exfiltration** (Passes 0.00 cfs of 0.08 cfs potential flow)
  └─**6=Neenah R4345 Beehive Grate Light Duty-req. structure** (Controls 0.00 cfs)

FILTER BASIN FB-2 - DRAWDOWN

23056 - DEVELOPED

Type III 24-hr WQ Event - FB-2 Rainfall=1.61"

Prepared by DM ROMA CONSULTING ENGINEERS

Printed 3/4/2026

Hydrograph for Pond FB2:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	146.00	0.00	**0.00**	0.00
2.50	0.00	0	146.00	0.00	0.00	0.00
5.00	0.00	0	146.00	0.00	0.00	0.00
7.50	0.00	0	146.00	0.00	0.00	0.00
10.00	**0.00**	0	146.00	0.00	0.00	0.00
12.50	**0.61**	692	146.46	0.03	0.00	0.03
15.00	0.11	**2,219**	**147.24**	**0.03**	0.00	**0.03**
17.50	0.06	**2,256**	**147.25**	**0.06**	0.00	**0.06**
20.00	0.04	2,251	147.25	0.04	0.00	0.04
22.50	0.03	2,249	147.25	0.03	0.00	0.03
25.00	0.00	2,169	147.22	0.03	0.00	0.03
27.50	0.00	1,895	147.09	0.03	0.00	0.03
30.00	0.00	1,626	146.96	0.03	0.00	0.03
32.50	0.00	1,362	146.83	0.03	0.00	0.03
35.00	0.00	1,105	146.70	0.03	0.00	0.03
37.50	0.00	853	146.55	0.03	0.00	0.03
40.00	0.00	609	146.41	0.03	0.00	0.03
42.50	0.00	371	146.26	0.03	0.00	0.03
45.00	0.00	141	146.10	0.03	0.00	0.03
47.50	0.00	0	146.00	0.00	0.00	0.00
50.00	0.00	0	146.00	0.00	0.00	0.00
52.50	0.00	0	146.00	0.00	0.00	0.00
55.00	0.00	0	146.00	0.00	0.00	0.00
57.50	0.00	0	146.00	0.00	0.00	0.00
60.00	0.00	0	146.00	0.00	0.00	0.00
62.50	0.00	0	146.00	0.00	0.00	0.00
65.00	0.00	0	146.00	0.00	0.00	0.00
67.50	0.00	0	146.00	0.00	0.00	0.00
70.00	0.00	0	146.00	0.00	0.00	0.00
72.50	0.00	0	146.00	0.00	0.00	0.00
75.00	0.00	0	146.00	0.00	0.00	0.00
77.50	0.00	0	146.00	0.00	0.00	0.00
80.00	0.00	0	146.00	0.00	0.00	0.00
82.50	0.00	0	146.00	0.00	0.00	0.00
85.00	0.00	0	146.00	0.00	0.00	0.00
87.50	0.00	0	146.00	0.00	0.00	0.00
90.00	0.00	0	146.00	0.00	0.00	0.00
92.50	0.00	0	146.00	0.00	0.00	0.00
95.00	0.00	0	146.00	0.00	0.00	0.00

POND AT CPV AT 17.5 HRS
EMPTY AT 47.5 HRS
DRAWDOWN TIME = 47.5-17.5 = 30 HRS

Underdrained Filter Basin Sizing Calculations

Filter Basin 3

Tributary Impervious Area=	0	sf	(WS-31 Impervious Area)
Tributary Landscaped Area=	26,438	sf	(WS-31 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 881 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
172	591	0
173.1	1,316	1,023
175	3,041	5,124

Outlet Elevation =	173.10	
Storage Volume Provided=	1,023	cf > Required

Filter Bottom Calculation

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

Filter Area Required = 529 sf

Filter Area Provided = 591 sf > Required

FILTER BASIN FB-3 - SPILLWAY RUN

23056 - DEVELOPED *Type III 24-hr 25-Year Rainfall=5.80"*
Prepared by DM ROMA CONSULTING ENGINEERS Printed 3/13/2026
HydroCAD® 10.00-26 s/n 09237 © 2020 HydroCAD Software Solutions LLC

Summary for Pond FB3:

Inflow Area = 57,985 sf, 4.66% Impervious, Inflow Depth = 3.40" for 25-Year event
Inflow = 3.97 cfs @ 12.21 hrs, Volume= 16,443 cf
Outflow = 3.92 cfs @ 12.24 hrs, Volume= 15,420 cf, Atten= 1%, Lag= 1.4 min
Primary = 3.92 cfs @ 12.24 hrs, Volume= 15,420 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 173.38' @ 12.24 hrs Surf.Area= 1,550 sf Storage= 1,429 cf

PEAK WS ELEV. = 173.38
TOP OF BERM = 175.0
FREEBOARD =
175.0-173.38 = 1.62'

Plug-Flow detention time= 50.3 min calculated for 15,412 cf (94% of inflow)
Center-of-Mass det. time= 17.3 min (846.5 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	5,124 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)
172.00	591	206.8	0	0	591
174.00	2,123	296.1	2,556	2,556	4,200
175.00	3,041	316.2	2,568	5,124	5,226

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	169.65'	**0.6" Vert. 5/8" DRILL HOLE IN 4" END CAP X 0.00** C= 0.600
#3	Device 2	169.83'	**4.0" Round Culvert X 0.00** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 169.83' / 169.65' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 3	169.83'	**4.0" Vert. 4" UD** C= 0.600
#5	Device 4	172.00'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=3.88 cfs @ 12.24 hrs HW=173.38' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 3.88 cfs @ 1.38 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.00' TW=0.00' (Dynamic Tailwater)
└─**2=5/8" DRILL HOLE IN 4" END CAP** (Controls 0.00 cfs)
└─**3=Culvert** (Controls 0.00 cfs)
└─**4=4" UD** (Passes 0.00 cfs of 0.59 cfs potential flow)
└─**5=Exfiltration** (Passes 0.00 cfs of 0.03 cfs potential flow)

FILTER BASIN FB-3 - DRAWDOWN

23056 - DEVELOPED

Type III 24-hr WQ Event - FB-3 Rainfall=1.77"

Prepared by DM ROMA CONSULTING ENGINEERS

Printed 3/13/2026

Hydrograph for Pond FB3:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	172.00	0.00	0.00	0.00
2.50	0.00	0	172.00	0.00	0.00	0.00
5.00	0.00	0	172.00	0.00	0.00	0.00
7.50	0.00	0	172.00	0.00	0.00	0.00
10.00	**0.00**	0	172.00	0.00	0.00	0.00
12.50	**0.24**	437	172.58	0.02	0.00	0.02
15.00	0.04	**929**	**173.03**	**0.02**	**0.00**	**0.02**
17.50	0.02	**1,027**	**173.10**	**0.02**	**0.01**	**0.02**
20.00	0.02	1,019	173.10	0.02	0.00	0.02
22.50	0.01	987	173.07	0.02	0.00	0.02
25.00	0.00	902	173.01	0.02	0.00	0.02
27.50	0.00	748	172.88	0.02	0.00	0.02
30.00	0.00	598	172.74	0.02	0.00	0.02
32.50	0.00	451	172.59	0.02	0.00	0.02
35.00	0.00	307	172.43	0.02	0.00	0.02
37.50	0.00	168	172.25	0.02	0.00	0.02
40.00	0.00	34	172.06	0.01	0.00	0.01
42.50	0.00	0	172.00	0.00	0.00	0.00
45.00	0.00	0	172.00	0.00	0.00	0.00
47.50	0.00	0	172.00	0.00	0.00	0.00
50.00	0.00	0	172.00	0.00	0.00	0.00
52.50	0.00	0	172.00	0.00	0.00	0.00
55.00	0.00	0	172.00	0.00	0.00	0.00
57.50	0.00	0	172.00	0.00	0.00	0.00
60.00	0.00	0	172.00	0.00	0.00	0.00
62.50	0.00	0	172.00	0.00	0.00	0.00
65.00	0.00	0	172.00	0.00	0.00	0.00
67.50	0.00	0	172.00	0.00	0.00	0.00
70.00	0.00	0	172.00	0.00	0.00	0.00
72.50	0.00	0	172.00	0.00	0.00	0.00
75.00	0.00	0	172.00	0.00	0.00	0.00
77.50	0.00	0	172.00	0.00	0.00	0.00
80.00	0.00	0	172.00	0.00	0.00	0.00
82.50	0.00	0	172.00	0.00	0.00	0.00
85.00	0.00	0	172.00	0.00	0.00	0.00
87.50	0.00	0	172.00	0.00	0.00	0.00
90.00	0.00	0	172.00	0.00	0.00	0.00
92.50	0.00	0	172.00	0.00	0.00	0.00
95.00	0.00	0	172.00	0.00	0.00	0.00

POND AT CPV AT 17.5 HRS
EMPTY AT 42.5 HRS
DRAWDOWN TIME = 42.5-17.5 = 25 HRS

DM ROMA
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Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/13/2026
Job #23056

Underdrained Filter Basin Sizing Calculations

Filter Basin 4

Tributary Impervious Area=	10,723	sf	(WS-41 Impervious Area)
Tributary Landscaped Area=	28,101	sf	(WS-41 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 1,830 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
176	3,855	0
177.2	5,181	5,402
178.7	7,038	14,558

Outlet Elevation = 176.60

Storage Volume Provided= 5,402 cf > Required

Filter Bottom Calculation

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

Filter Area Required = 1,098 sf

Filter Area Provided = 3,855 sf > Required

Sediment Forebay Sizing

Tributary Impervious Area Requiring Sanding: 10,723 sf

Required Sediment Forebay Volume :

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

Sediment Volume (Required) 13.7 cf

Sediment Volume (Provided): 70.4 cf > Required

Runoff is collected in 440'± grassed swale:

Trap channel roadside swale provides 0.16 cf per lf of swale

Total storage provided:

(440 x 0.16) = **70.4 cf**

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CONSULTING ENGINEERS

Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/13/2026
Job #23056

Underdrained Filter Basin Sizing Calculations

Filter Basin 5

Tributary Impervious Area=	20,557	sf	(WS-52 & 53 Impervious Area)
Tributary Landscaped Area=	78,952	sf	(WS-52 & 53 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 4,345 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
176	2,936	0
177.2	4,700	4,540
178.7	7,269	13,526

Outlet Elevation = 177.40

Storage Volume Provided= 4,540 cf > Required

Filter Bottom Calculation

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

Filter Area Required = 2,607 sf

Filter Area Provided = 2,936 sf > Required

Sediment Forebay Sizing

Tributary Impervious Area Requiring Sanding: 20,557 sf

Required Sediment Forebay Volume :

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

Sediment Volume (Required) 26.2 cf

Sediment Volume (Provided): 118.4 cf > Required

Runoff is collected in 740'± grassed swale:

Trap channel roadside swale provides 0.16 cf per lf of swale

Total storage provided:

(740 x 0.16) = **118.4 cf**

FILTER BASIN FB-4 & 5 - SPILLWAY RUN

Summary for Pond FB4&5:

Inflow Area = 227,364 sf, 15.83% Impervious, Inflow Depth = 3.59" for 25-Year event
Inflow = 7.46 cfs @ 12.75 hrs, Volume= 68,034 cf
Outflow = 7.32 cfs @ 12.86 hrs, Volume= 57,080 cf, Atten= 2%, Lag= 6.5 min
Primary = 7.32 cfs @ 12.86 hrs, Volume= 57,080 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 177.73' @ 12.86 hrs Surf.Area= 11,433 sf Storage= 15,558 cf

PEAK WS ELEV. = 177.73
TOP OF BERM = 178.7
FREEBOARD =
178.70-177.73 = 0.97' =>1'

Plug-Flow detention time= 118.4 min calculated for 57,080 cf (84% of inflow)
Center-of-Mass det. time= 49.8 min (896.9 - 847.1)

Volume	Invert	Avail.Storage	Storage Description
#1	176.00'	28,097 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)
176.00	6,791	877.0	0	0	6,791
178.00	12,279	952.4	18,801	18,801	17,919
178.70	14,307	978.8	9,296	28,097	22,032

Device	Routing	Invert	Outlet Devices
#1	Primary	177.30'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	173.73'	**15.0" Round Culvert X 0.00** L= 41.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 173.73' / 173.50' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	173.83'	**1.8" Vert. 1-3/4" DRILL HOLE IN 4" END CAP** C= 0.600
#4	Device 3	173.83'	**4.0" Vert. 4" UD** C= 0.600
#5	Device 4	176.00'	**2.410 in/hr Exfiltration over Surface area**
#6	Device 2	177.20'	**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=7.32 cfs @ 12.86 hrs HW=177.73' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 7.32 cfs @ 1.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=176.00' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Controls 0.00 cfs)
  └─**3=1-3/4" DRILL HOLE IN 4" END CAP** (Passes 0.00 cfs of 0.12 cfs potential flow)
    └─**4=4" UD** (Passes 0.00 cfs of 0.59 cfs potential flow)
      └─**5=Exfiltration** (Passes 0.00 cfs of 0.38 cfs potential flow)
  └─**6=Neenah R4345 Beehive Grate Light Duty-req. structure** (Controls 0.00 cfs)

FILTER BASIN FB-4 & 5 - DRAWDOWN

23056 - DEVELOPED

Type III 24-hr WQ Event - FB-4&5 Rainfall=2.46"

Prepared by DM ROMA CONSULTING ENGINEERS

Printed 3/13/2026

Hydrograph for Pond FB4&5:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	176.00	0.00	**0.00**	0.00
2.50	0.00	0	176.00	0.00	0.00	0.00
5.00	0.00	0	176.00	0.00	0.00	0.00
7.50	0.00	0	176.00	0.00	0.00	0.00
10.00	0.01	0	176.00	0.01	0.00	0.01
12.50	**1.68**	2,700	176.37	0.13	0.00	0.13
15.00	**0.35**	**9,134**	**177.12**	**0.15**	0.00	**0.15**
17.50	0.18	**9,983**	**177.20**	**0.18**	0.00	**0.18**
20.00	0.12	9,824	177.19	0.15	0.00	0.15
22.50	0.10	9,416	177.15	0.15	0.00	0.15
25.00	0.02	8,703	177.07	0.15	0.00	0.15
27.50	0.00	7,396	176.93	0.15	0.00	0.15
30.00	0.00	6,084	176.78	0.14	0.00	0.14
32.50	0.00	4,802	176.64	0.14	0.00	0.14
35.00	0.00	3,555	176.48	0.14	0.00	0.14
37.50	0.00	2,345	176.33	0.13	0.00	0.13
40.00	0.00	1,173	176.17	0.13	0.00	0.13
42.50	0.00	42	176.01	0.12	0.00	0.12
45.00	0.00	0	176.00	0.00	0.00	0.00
47.50	0.00	0	176.00	0.00	0.00	0.00
50.00	0.00	0	176.00	0.00	0.00	0.00
52.50	0.00	0	176.00	0.00	0.00	0.00
55.00	0.00	0	176.00	0.00	0.00	0.00
57.50	0.00	0	176.00	0.00	0.00	0.00
60.00	0.00	0	176.00	0.00	0.00	0.00
62.50	0.00	0	176.00	0.00	0.00	0.00
65.00	0.00	0	176.00	0.00	0.00	0.00
67.50	0.00	0	176.00	0.00	0.00	0.00
70.00	0.00	0	176.00	0.00	0.00	0.00
72.50	0.00	0	176.00	0.00	0.00	0.00
75.00	0.00	0	176.00	0.00	0.00	0.00
77.50	0.00	0	176.00	0.00	0.00	0.00
80.00	0.00	0	176.00	0.00	0.00	0.00
82.50	0.00	0	176.00	0.00	0.00	0.00
85.00	0.00	0	176.00	0.00	0.00	0.00
87.50	0.00	0	176.00	0.00	0.00	0.00
90.00	0.00	0	176.00	0.00	0.00	0.00
92.50	0.00	0	176.00	0.00	0.00	0.00
95.00	0.00	0	176.00	0.00	0.00	0.00

POND AT CPV AT 17.5 HRS
EMPTY AT 45 HRS
DRAWDOWN TIME = 45-17.5 = 27.5 HRS

ATTACHMENT 4

ROOFLINE DRIPEDGE SIZING CALCULATIONS

DM ROMA
CONSULTING ENGINEERS

Eventide Subdivision - 100 River Road Windham
Calculated by: JPC
Printed 3/6/2026
Job #23056

Drip Edge Sizing Calculations

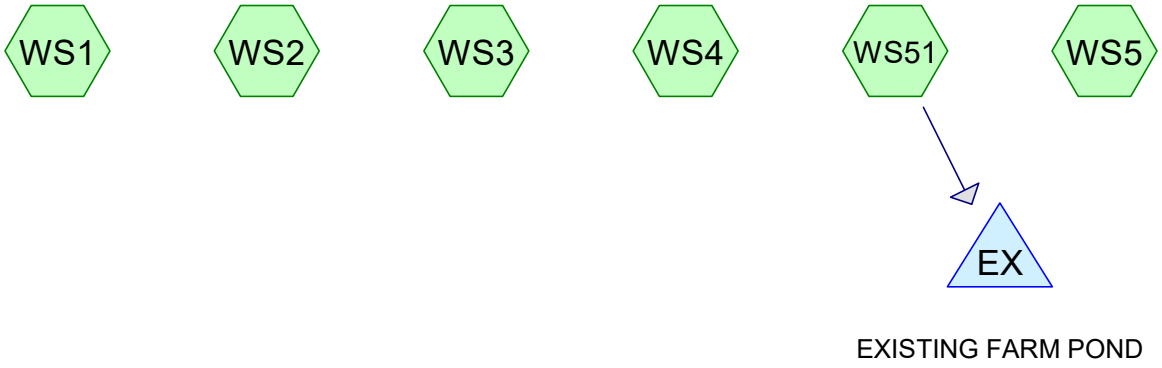
WQV (Required) = 1.0"xImpervious Area + 0.4"xLandscaped Area
Void Ratio of Reservoir Layer 40%
Void Ratio of Filter Layer 30%

SINGLE-FAMILY UNITS:

Roof Watershed	Tributary Roof Area (sf)	WQV (Required)	Dripedge Surface Area (sf)	Reservoir Layer Depth (ft)	Filter Layer Depth (ft)	WQV (Provided)
1 (REAR PORTION)	900	75.00	150.00	1.00	1.50	127.50
2 (FRONT PORTION)	900	75.00	95.00	1.00	1.50	80.75

ATTACHMENT 5

STORMWATER MODEL OUTPUT



Subcat Reach Pond Link

Routing Diagram for 23056 - EXIST
Prepared by DM ROMA CONSULTING ENGINEERS, Printed 3/4/2026

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 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 WS1: Runoff Area=384,406 sf 0.00% Impervious Runoff Depth=1.03"
Flow Length=1,479' Tc=22.7 min CN=75 Runoff=6.41 cfs 32,892 cf

Subcatchment WS2: Runoff Area=577,497 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=1,183' Tc=17.9 min CN=74 Runoff=9.93 cfs 46,791 cf

Subcatchment WS3: Runoff Area=246,186 sf 0.00% Impervious Runoff Depth=1.08"
Flow Length=792' Tc=29.5 min CN=76 Runoff=3.91 cfs 22,218 cf

Subcatchment WS4: Runoff Area=84,956 sf 2.62% Impervious Runoff Depth=1.08"
Flow Length=465' Tc=24.5 min CN=76 Runoff=1.46 cfs 7,667 cf

Subcatchment WS5: Runoff Area=288,955 sf 11.21% Impervious Runoff Depth=1.03"
Flow Length=1,266' Tc=29.6 min CN=75 Runoff=4.30 cfs 24,724 cf

Subcatchment WS51: Runoff Area=94,307 sf 10.40% Impervious Runoff Depth=1.03"
Flow Length=347' Tc=22.0 min CN=75 Runoff=1.59 cfs 8,069 cf

Pond EX: EXISTING FARM POND Peak Elev=183.01' Storage=3,792 cf Inflow=1.59 cfs 8,069 cf
Outflow=0.48 cfs 4,320 cf

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 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 WS1: Runoff Area=384,406 sf 0.00% Impervious Runoff Depth=2.13"
Flow Length=1,479' Tc=22.7 min CN=75 Runoff=13.93 cfs 68,202 cf

Subcatchment WS2: Runoff Area=577,497 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=1,183' Tc=17.9 min CN=74 Runoff=22.13 cfs 98,635 cf

Subcatchment WS3: Runoff Area=246,186 sf 0.00% Impervious Runoff Depth=2.21"
Flow Length=792' Tc=29.5 min CN=76 Runoff=8.28 cfs 45,337 cf

Subcatchment WS4: Runoff Area=84,956 sf 2.62% Impervious Runoff Depth=2.21"
Flow Length=465' Tc=24.5 min CN=76 Runoff=3.10 cfs 15,645 cf

Subcatchment WS5: Runoff Area=288,955 sf 11.21% Impervious Runoff Depth=2.13"
Flow Length=1,266' Tc=29.6 min CN=75 Runoff=9.33 cfs 51,267 cf

Subcatchment WS51: Runoff Area=94,307 sf 10.40% Impervious Runoff Depth=2.13"
Flow Length=347' Tc=22.0 min CN=75 Runoff=3.46 cfs 16,732 cf

Pond EX: EXISTING FARM POND Peak Elev=183.03' Storage=3,930 cf Inflow=3.46 cfs 16,732 cf
Outflow=4.16 cfs 12,983 cf

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 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 WS1: Runoff Area=384,406 sf 0.00% Impervious Runoff Depth=3.11"
Flow Length=1,479' Tc=22.7 min CN=75 Runoff=20.53 cfs 99,700 cf

Subcatchment WS2: Runoff Area=577,497 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=1,183' Tc=17.9 min CN=74 Runoff=32.93 cfs 145,213 cf

Subcatchment WS3: Runoff Area=246,186 sf 0.00% Impervious Runoff Depth=3.21"
Flow Length=792' Tc=29.5 min CN=76 Runoff=12.09 cfs 65,818 cf

Subcatchment WS4: Runoff Area=84,956 sf 2.62% Impervious Runoff Depth=3.21"
Flow Length=465' Tc=24.5 min CN=76 Runoff=4.53 cfs 22,713 cf

Subcatchment WS5: Runoff Area=288,955 sf 11.21% Impervious Runoff Depth=3.11"
Flow Length=1,266' Tc=29.6 min CN=75 Runoff=13.75 cfs 74,944 cf

Subcatchment WS51: Runoff Area=94,307 sf 10.40% Impervious Runoff Depth=3.11"
Flow Length=347' Tc=22.0 min CN=75 Runoff=5.10 cfs 24,460 cf

Pond EX: EXISTING FARM POND Peak Elev=183.04' Storage=3,956 cf Inflow=5.10 cfs 24,460 cf
Outflow=5.09 cfs 20,710 cf

Summary for Subcatchment WS1:

Runoff = 20.53 cfs @ 12.32 hrs, Volume= 99,700 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Exist. paved surfaces
*	702	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
*	0	71	Meadow, non-grazed, HSG C
	2,913	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	247,831	72	Woods/grass comb., Good, HSG C
	132,960	79	Woods/grass comb., Good, HSG D
	384,406	75	Weighted Average
	384,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	53	0.0569	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.2	12	0.0290	1.03		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
1.3	7	0.0447	0.09		**Sheet Flow, Seg C to D** Grass: Dense n= 0.240 P2= 3.10"
11.2	78	0.0640	0.12		**Sheet Flow, Seg D to E** Woods: Light underbrush n= 0.400 P2= 3.10"
1.2	100	0.0773	1.39		**Shallow Concentrated Flow, Seg E to F** Woodland Kv= 5.0 fps
1.0	342	0.0351	5.84	221.18	**Channel Flow, Seg F to G** Area= 37.9 sf Perim= 76.0' r= 0.50' n= 0.030 Earth, grassed & winding
2.1	887	0.0502	6.96	155.21	**Channel Flow, Seg G to H** Area= 22.3 sf Perim= 44.9' r= 0.50' n= 0.030 Earth, grassed & winding
22.7	1,479	Total			

Summary for Subcatchment WS2:

Runoff = 32.93 cfs @ 12.25 hrs, Volume= 145,213 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Exist. paved surfaces
*	5,385	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	17,626	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
	6,431	58	Meadow, non-grazed, HSG B
*	64,805	71	Meadow, non-grazed, HSG C
	26,072	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	281,045	72	Woods/grass comb., Good, HSG C
	176,133	79	Woods/grass comb., Good, HSG D
	577,497	74	Weighted Average
	577,497		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	109	0.0274	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.2	13	0.0233	0.96		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
2.8	232	0.0740	1.36		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
0.9	678	0.0339	13.24	712.42	**Channel Flow, Seg D to E** Area= 53.8 sf Perim= 107.8' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	35	0.0200	6.42	5.04	**Pipe Channel, Seg E to F** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.2	116	0.0258	11.56	560.59	**Channel Flow, Seg F to G** Area= 48.5 sf Perim= 97.1' r= 0.50' n= 0.013
17.9	1,183	Total			

Summary for Subcatchment WS3:

Runoff = 12.09 cfs @ 12.41 hrs, Volume= 65,818 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Exist. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
	8,985	58	Meadow, non-grazed, HSG B
*	33,453	71	Meadow, non-grazed, HSG C
	153,895	78	Meadow, non-grazed, HSG D
	634	58	Woods/grass comb., Good, HSG B
	33,443	72	Woods/grass comb., Good, HSG C
	15,776	79	Woods/grass comb., Good, HSG D
	246,186	76	Weighted Average
	246,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	150	0.0283	0.14		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.8	58	0.0068	1.24		**Shallow Concentrated Flow, Seg B to C** Grassed Waterway Kv= 15.0 fps
4.1	84	0.0047	0.34		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
1.4	87	0.0047	1.03		**Shallow Concentrated Flow, Seg D to E** Grassed Waterway Kv= 15.0 fps
1.7	35	0.0047	0.34		**Shallow Concentrated Flow, Seg E to F** Woodland Kv= 5.0 fps
3.2	199	0.0047	1.03		**Shallow Concentrated Flow, Seg F to G** Grassed Waterway Kv= 15.0 fps
0.8	179	0.0669	3.88		**Shallow Concentrated Flow, Seg G to H** Grassed Waterway Kv= 15.0 fps
29.5	792	Total			

Summary for Subcatchment WS4:

Runoff = 4.53 cfs @ 12.34 hrs, Volume= 22,713 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	788	98	Exist. roofs
*	1,440	98	Exist. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	7,074	80	>75% Exist. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
*	35,567	71	Meadow, non-grazed, HSG C
	40,087	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	84,956	76	Weighted Average
	82,728		97.38% Pervious Area
	2,228		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.6	150	0.0167	0.12		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
2.7	206	0.0073	1.28		**Shallow Concentrated Flow, Seg B to C** Grassed Waterway Kv= 15.0 fps
0.2	109	0.0732	8.65	343.28	**Channel Flow, Seg C to D** Area= 39.7 sf Perim= 76.6' r= 0.52' n= 0.030 Earth, grassed & winding
24.5	465	Total			

Summary for Subcatchment WS5:

Runoff = 13.75 cfs @ 12.42 hrs, Volume= 74,944 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	3,298	98	Exist. roofs
*	29,091	98	Exist. paved surfaces
*	3,600	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	13,781	74	>75% Exist. grass cover, Good, HSG C
*	63,822	80	>75% Exist. grass cover, Good, HSG D
	85,188	58	Meadow, non-grazed, HSG B
*	7,724	71	Meadow, non-grazed, HSG C
	12,617	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	9,089	72	Woods/grass comb., Good, HSG C
	60,745	79	Woods/grass comb., Good, HSG D
	288,955	75	Weighted Average
	256,566		88.79% Pervious Area
	32,389		11.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	150	0.0233	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
3.0	185	0.0216	1.03		**Shallow Concentrated Flow, Seg B to C** Short Grass Pasture Kv= 7.0 fps
1.4	50	0.0149	0.61		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
5.0	399	0.0018	1.32	36.76	**Channel Flow, Seg D to E** Area= 27.9 sf Perim= 56.2' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	29	0.0200	7.44	9.14	**Pipe Channel, Seg E to F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.6	217	0.0132	6.04	96.57	**Trap/Vee/Rect Channel Flow, Seg F to G** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
0.3	74	0.0050	3.72	4.57	**Pipe Channel, Seg G to H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.3	162	0.0247	8.26	132.10	**Trap/Vee/Rect Channel Flow, Seg H to I** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
29.6	1,266	Total			

Summary for Subcatchment WS51:

Runoff = 5.10 cfs @ 12.31 hrs, Volume= 24,460 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,328	98	Exist. roofs
*	4,481	98	Exist. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	11,580	80	>75% Exist. grass cover, Good, HSG D
	25,694	58	Meadow, non-grazed, HSG B
*	0	71	Meadow, non-grazed, HSG C
	38,972	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	8,252	79	Woods/grass comb., Good, HSG D
	94,307	75	Weighted Average
	84,498		89.60% Pervious Area
	9,809		10.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	150	0.0313	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
2.2	36	0.0029	0.27		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
3.0	161	0.0165	0.90		**Shallow Concentrated Flow, Seg C to D** Short Grass Pasture Kv= 7.0 fps
22.0	347	Total			

Summary for Pond EX: EXISTING FARM POND

Inflow Area = 94,307 sf, 10.40% Impervious, Inflow Depth = 3.11" for 25-Year event
Inflow = 5.10 cfs @ 12.31 hrs, Volume= 24,460 cf
Outflow = 5.09 cfs @ 12.33 hrs, Volume= 20,710 cf, Atten= 0%, Lag= 1.2 min
Primary = 5.09 cfs @ 12.33 hrs, Volume= 20,710 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 183.04' @ 12.33 hrs Surf.Area= 5,271 sf Storage= 3,956 cf

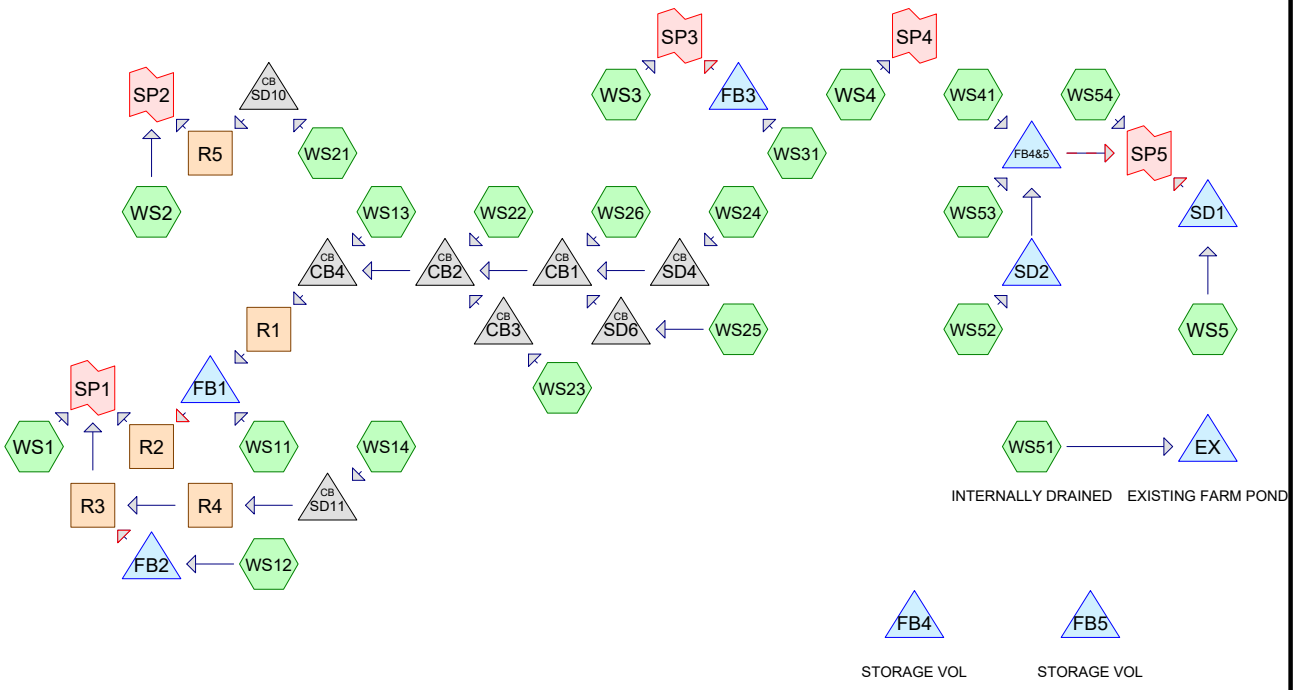
Plug-Flow detention time= 95.6 min calculated for 20,710 cf (85% of inflow)
Center-of-Mass det. time= 29.6 min (872.4 - 842.8)

Volume	Invert	Avail.Storage	Storage Description
#1	182.00'	6,564 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)
182.00	2,462	192.9	0	0	2,462
183.00	5,206	276.1	3,749	3,749	5,576
183.50	6,063	295.5	2,815	6,564	6,470

Device	Routing	Invert	Outlet Devices
#1	Primary	183.00'	**275.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.05 cfs @ 12.33 hrs HW=183.04' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 5.05 cfs @ 0.47 fps)



Subcat Reach Pond Link

Routing Diagram for 23056 - DEVELOPED

Prepared by DM ROMA CONSULTING ENGINEERS, Printed 3/19/2026

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 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 WS1: Runoff Area=122,024 sf 0.24% Impervious Runoff Depth=0.97"
Flow Length=490' Tc=12.5 min CN=74 Runoff=2.39 cfs 9,887 cf

Subcatchment WS11: Runoff Area=49,618 sf 24.01% Impervious Runoff Depth=1.33"
Flow Length=245' Tc=14.0 min CN=80 Runoff=1.35 cfs 5,481 cf

Subcatchment WS12: Runoff Area=198,769 sf 5.56% Impervious Runoff Depth=1.14"
Flow Length=926' Tc=21.4 min CN=77 Runoff=3.85 cfs 18,898 cf

Subcatchment WS13: Runoff Area=1,985 sf 94.26% Impervious Runoff Depth=2.76"
Tc=6.0 min CN=97 Runoff=0.13 cfs 456 cf

Subcatchment WS14: Runoff Area=20,826 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=211' Tc=28.3 min CN=74 Runoff=0.30 cfs 1,687 cf

Subcatchment WS2: Runoff Area=115,663 sf 4.07% Impervious Runoff Depth=1.26"
Flow Length=414' Tc=16.6 min CN=79 Runoff=2.78 cfs 12,165 cf

Subcatchment WS21: Runoff Area=404,389 sf 0.81% Impervious Runoff Depth=0.97"
Flow Length=818' Tc=18.0 min CN=74 Runoff=6.94 cfs 32,765 cf

Subcatchment WS22: Runoff Area=4,284 sf 87.56% Impervious Runoff Depth=2.76"
Tc=6.0 min CN=97 Runoff=0.28 cfs 984 cf

Subcatchment WS23: Runoff Area=4,209 sf 90.83% Impervious Runoff Depth=2.76"
Tc=6.0 min CN=97 Runoff=0.28 cfs 967 cf

Subcatchment WS24: Runoff Area=21,588 sf 40.11% Impervious Runoff Depth=1.75"
Flow Length=363' Tc=11.9 min CN=86 Runoff=0.83 cfs 3,146 cf

Subcatchment WS25: Runoff Area=25,353 sf 36.29% Impervious Runoff Depth=1.83"
Flow Length=337' Tc=6.6 min CN=87 Runoff=1.20 cfs 3,859 cf

Subcatchment WS26: Runoff Area=266 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=0.02 cfs 64 cf

Subcatchment WS3: Runoff Area=29,031 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=217' Tc=13.4 min CN=74 Runoff=0.56 cfs 2,352 cf

Subcatchment WS31: Runoff Area=57,985 sf 4.66% Impervious Runoff Depth=1.20"
Flow Length=314' Tc=15.3 min CN=78 Runoff=1.36 cfs 5,801 cf

Subcatchment WS4: Runoff Area=12,962 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=105' Slope=0.0681 '/' Tc=9.2 min CN=74 Runoff=0.28 cfs 1,050 cf

Subcatchment WS41: Runoff Area=40,273 sf 29.34% Impervious Runoff Depth=1.60"
Flow Length=433' Tc=8.4 min CN=84 Runoff=1.57 cfs 5,366 cf

Subcatchment WS5: Runoff Area=271,906 sf 13.07% Impervious Runoff Depth=0.97"
Flow Length=1,060' Tc=29.0 min CN=74 Runoff=3.83 cfs 22,031 cf

Subcatchment WS51: INTERNALLY Runoff Area=102,691 sf 10.15% Impervious Runoff Depth=1.03"
Flow Length=347' Tc=22.0 min CN=75 Runoff=1.73 cfs 8,787 cf

Subcatchment WS52: Runoff Area=173,061 sf 12.12% Impervious Runoff Depth=1.26"
Flow Length=898' Tc=43.9 min CN=79 Runoff=2.70 cfs 18,202 cf

Subcatchment WS53: Runoff Area=14,030 sf 22.83% Impervious Runoff Depth=1.33"
Tc=6.0 min CN=80 Runoff=0.49 cfs 1,550 cf

Subcatchment WS54: Runoff Area=5,956 sf 24.92% Impervious Runoff Depth=1.67"
Flow Length=146' Slope=0.0348 '/' Tc=15.7 min CN=85 Runoff=0.20 cfs 830 cf

Reach R1: Avg. Flow Depth=0.23' Max Vel=4.20 fps Inflow=2.62 cfs 9,476 cf
n=0.030 L=209.2' S=0.0717 '/' Capacity=225.07 cfs Outflow=2.61 cfs 9,476 cf

Reach R2: Avg. Flow Depth=0.16' Max Vel=2.02 fps Inflow=0.56 cfs 14,961 cf
n=0.030 L=244.7' S=0.0470 '/' Capacity=443.92 cfs Outflow=0.56 cfs 14,961 cf

Reach R3: Avg. Flow Depth=0.35' Max Vel=3.16 fps Inflow=3.98 cfs 20,587 cf
n=0.030 L=457.9' S=0.0426 '/' Capacity=422.57 cfs Outflow=3.95 cfs 20,587 cf

Reach R4: Avg. Flow Depth=0.14' Max Vel=1.82 fps Inflow=0.30 cfs 1,687 cf
n=0.030 L=268.0' S=0.0476 '/' Capacity=356.54 cfs Outflow=0.29 cfs 1,687 cf

Reach R5: Avg. Flow Depth=0.51' Max Vel=3.02 fps Inflow=6.94 cfs 32,765 cf
n=0.030 L=301.4' S=0.0232 '/' Capacity=263.28 cfs Outflow=6.88 cfs 32,765 cf

Pond CB1: Peak Elev=165.59' Inflow=1.95 cfs 7,068 cf
15.0" Round Culvert n=0.013 L=298.7' S=0.0075 '/' Outflow=1.95 cfs 7,068 cf

Pond CB2: Peak Elev=163.12' Inflow=2.49 cfs 9,020 cf
15.0" Round Culvert n=0.013 L=141.4' S=0.0103 '/' Outflow=2.49 cfs 9,020 cf

Pond CB3: Peak Elev=163.12' Inflow=0.28 cfs 967 cf
15.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.28 cfs 967 cf

Pond CB4: Peak Elev=155.56' Inflow=2.62 cfs 9,476 cf
18.0" Round Culvert n=0.013 L=223.6' S=0.0076 '/' Outflow=2.62 cfs 9,476 cf

Pond EX: EXISTING FARM POND Peak Elev=183.01' Storage=3,805 cf Inflow=1.73 cfs 8,787 cf
Outflow=0.71 cfs 5,037 cf

Pond FB1: Peak Elev=139.87' Storage=7,166 cf Inflow=3.74 cfs 14,957 cf
Primary=0.00 cfs 0 cf Secondary=0.56 cfs 14,961 cf Outflow=0.56 cfs 14,961 cf

Pond FB2: Peak Elev=147.52' Storage=2,890 cf Inflow=3.85 cfs 18,898 cf
Primary=0.00 cfs 0 cf Secondary=3.70 cfs 18,900 cf Outflow=3.70 cfs 18,900 cf

Pond FB3: Peak Elev=173.23' Storage=1,206 cf Inflow=1.36 cfs 5,801 cf
Primary=1.25 cfs 3,913 cf Secondary=0.02 cfs 1,889 cf Outflow=1.27 cfs 5,802 cf

Pond FB4: STORAGE VOL Peak Elev=0.00' Storage=0 cf

Pond FB4&5: Peak Elev=177.31' Storage=11,047 cf Inflow=2.88 cfs 25,117 cf
Primary=0.02 cfs 20 cf Secondary=1.19 cfs 25,106 cf Outflow=1.21 cfs 25,125 cf

Pond FB5: STORAGE VOL Peak Elev=0.00' Storage=0 cf

Pond SD1: Peak Elev=175.55' Storage=2,580 cf Inflow=3.83 cfs 22,031 cf
Primary=2.40 cfs 8,303 cf Secondary=0.69 cfs 13,728 cf Outflow=3.09 cfs 22,031 cf

Pond SD10: Peak Elev=162.39' Inflow=6.94 cfs 32,765 cf
48.0" Round Culvert w/ 24.0" inside fill n=0.013 L=64.6' S=0.0248 '/' Outflow=6.94 cfs 32,765 cf

Pond SD11: Peak Elev=161.73' Inflow=0.30 cfs 1,687 cf
15.0" Round Culvert n=0.013 L=74.3' S=0.0700 '/' Outflow=0.30 cfs 1,687 cf

Pond SD2: Peak Elev=177.91' Storage=947 cf Inflow=2.70 cfs 18,202 cf
18.0" Round Culvert n=0.013 L=65.5' S=0.0046 '/' Outflow=2.57 cfs 18,201 cf

Pond SD4: Peak Elev=165.74' Inflow=0.83 cfs 3,146 cf
15.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=0.83 cfs 3,146 cf

Pond SD6: Peak Elev=165.80' Inflow=1.20 cfs 3,859 cf
15.0" Round Culvert n=0.013 L=41.8' S=0.0048 '/' Outflow=1.20 cfs 3,859 cf

Link SP1: Inflow=5.60 cfs 45,435 cf
Primary=5.60 cfs 45,435 cf

Link SP2: Inflow=9.55 cfs 44,930 cf
Primary=9.55 cfs 44,930 cf

Link SP3: Inflow=1.74 cfs 8,154 cf
Primary=1.74 cfs 8,154 cf

Link SP4: Inflow=0.28 cfs 1,050 cf
Primary=0.28 cfs 1,050 cf

Link SP5: Inflow=3.30 cfs 47,987 cf
Primary=3.30 cfs 47,987 cf

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 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 WS1: Runoff Area=122,024 sf 0.24% Impervious Runoff Depth=2.05"
Flow Length=490' Tc=12.5 min CN=74 Runoff=5.32 cfs 20,841 cf

Subcatchment WS11: Runoff Area=49,618 sf 24.01% Impervious Runoff Depth=2.55"
Flow Length=245' Tc=14.0 min CN=80 Runoff=2.63 cfs 10,531 cf

Subcatchment WS12: Runoff Area=198,769 sf 5.56% Impervious Runoff Depth=2.29"
Flow Length=926' Tc=21.4 min CN=77 Runoff=7.99 cfs 37,966 cf

Subcatchment WS13: Runoff Area=1,985 sf 94.26% Impervious Runoff Depth=4.25"
Tc=6.0 min CN=97 Runoff=0.20 cfs 703 cf

Subcatchment WS14: Runoff Area=20,826 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=211' Tc=28.3 min CN=74 Runoff=0.66 cfs 3,557 cf

Subcatchment WS2: Runoff Area=115,663 sf 4.07% Impervious Runoff Depth=2.46"
Flow Length=414' Tc=16.6 min CN=79 Runoff=5.53 cfs 23,717 cf

Subcatchment WS21: Runoff Area=404,389 sf 0.81% Impervious Runoff Depth=2.05"
Flow Length=818' Tc=18.0 min CN=74 Runoff=15.46 cfs 69,068 cf

Subcatchment WS22: Runoff Area=4,284 sf 87.56% Impervious Runoff Depth=4.25"
Tc=6.0 min CN=97 Runoff=0.43 cfs 1,517 cf

Subcatchment WS23: Runoff Area=4,209 sf 90.83% Impervious Runoff Depth=4.25"
Tc=6.0 min CN=97 Runoff=0.42 cfs 1,490 cf

Subcatchment WS24: Runoff Area=21,588 sf 40.11% Impervious Runoff Depth=3.10"
Flow Length=363' Tc=11.9 min CN=86 Runoff=1.46 cfs 5,569 cf

Subcatchment WS25: Runoff Area=25,353 sf 36.29% Impervious Runoff Depth=3.19"
Flow Length=337' Tc=6.6 min CN=87 Runoff=2.07 cfs 6,744 cf

Subcatchment WS26: Runoff Area=266 sf 100.00% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=0.03 cfs 97 cf

Subcatchment WS3: Runoff Area=29,031 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=217' Tc=13.4 min CN=74 Runoff=1.24 cfs 4,958 cf

Subcatchment WS31: Runoff Area=57,985 sf 4.66% Impervious Runoff Depth=2.38"
Flow Length=314' Tc=15.3 min CN=78 Runoff=2.77 cfs 11,479 cf

Subcatchment WS4: Runoff Area=12,962 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=105' Slope=0.0681 '/' Tc=9.2 min CN=74 Runoff=0.62 cfs 2,214 cf

Subcatchment WS41: Runoff Area=40,273 sf 29.34% Impervious Runoff Depth=2.91"
Flow Length=433' Tc=8.4 min CN=84 Runoff=2.85 cfs 9,755 cf

Subcatchment WS5: Runoff Area=271,906 sf 13.07% Impervious Runoff Depth=2.05"
Flow Length=1,060' Tc=29.0 min CN=74 Runoff=8.50 cfs 46,441 cf

Subcatchment WS51: INTERNALLY Runoff Area=102,691 sf 10.15% Impervious Runoff Depth=2.13"
Flow Length=347' Tc=22.0 min CN=75 Runoff=3.77 cfs 18,220 cf

Subcatchment WS52: Runoff Area=173,061 sf 12.12% Impervious Runoff Depth=2.46"
Flow Length=898' Tc=43.9 min CN=79 Runoff=5.37 cfs 35,486 cf

Subcatchment WS53: Runoff Area=14,030 sf 22.83% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=80 Runoff=0.94 cfs 2,978 cf

Subcatchment WS54: Runoff Area=5,956 sf 24.92% Impervious Runoff Depth=3.00"
Flow Length=146' Slope=0.0348 '/' Tc=15.7 min CN=85 Runoff=0.35 cfs 1,489 cf

Reach R1: Avg. Flow Depth=0.31' Max Vel=4.91 fps Inflow=4.40 cfs 16,120 cf
n=0.030 L=209.2' S=0.0717 '/' Capacity=225.07 cfs Outflow=4.39 cfs 16,120 cf

Reach R2: Avg. Flow Depth=0.29' Max Vel=2.95 fps Inflow=2.58 cfs 26,653 cf
n=0.030 L=244.7' S=0.0470 '/' Capacity=443.92 cfs Outflow=2.58 cfs 26,653 cf

Reach R3: Avg. Flow Depth=0.44' Max Vel=3.71 fps Inflow=7.43 cfs 41,524 cf
n=0.030 L=457.9' S=0.0426 '/' Capacity=422.57 cfs Outflow=7.42 cfs 41,524 cf

Reach R4: Avg. Flow Depth=0.19' Max Vel=2.23 fps Inflow=0.66 cfs 3,557 cf
n=0.030 L=268.0' S=0.0476 '/' Capacity=356.54 cfs Outflow=0.65 cfs 3,557 cf

Reach R5: Avg. Flow Depth=0.69' Max Vel=3.69 fps Inflow=15.46 cfs 69,068 cf
n=0.030 L=301.4' S=0.0232 '/' Capacity=263.28 cfs Outflow=15.40 cfs 69,068 cf

Pond CB1: Peak Elev=165.94' Inflow=3.39 cfs 12,410 cf
15.0" Round Culvert n=0.013 L=298.7' S=0.0075 '/' Outflow=3.39 cfs 12,410 cf

Pond CB2: Peak Elev=163.64' Inflow=4.21 cfs 15,417 cf
15.0" Round Culvert n=0.013 L=141.4' S=0.0103 '/' Outflow=4.21 cfs 15,417 cf

Pond CB3: Peak Elev=163.64' Inflow=0.42 cfs 1,490 cf
15.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.42 cfs 1,490 cf

Pond CB4: Peak Elev=155.89' Inflow=4.40 cfs 16,120 cf
18.0" Round Culvert n=0.013 L=223.6' S=0.0076 '/' Outflow=4.40 cfs 16,120 cf

Pond EX: EXISTING FARM POND Peak Elev=183.04' Storage=3,951 cf Inflow=3.77 cfs 18,220 cf
Outflow=5.09 cfs 14,470 cf

Pond FB1: Peak Elev=140.61' Storage=10,731 cf Inflow=6.65 cfs 26,651 cf
Primary=0.00 cfs 0 cf Secondary=2.58 cfs 26,653 cf Outflow=2.58 cfs 26,653 cf

Pond FB2: Peak Elev=147.97' Storage=4,120 cf Inflow=7.99 cfs 37,966 cf
Primary=0.00 cfs 0 cf Secondary=6.77 cfs 37,967 cf Outflow=6.77 cfs 37,967 cf

Pond FB3: Peak Elev=173.32' Storage=1,336 cf Inflow=2.77 cfs 11,479 cf
Primary=2.71 cfs 9,498 cf Secondary=0.02 cfs 1,982 cf Outflow=2.73 cfs 11,480 cf

Pond FB4: STORAGE VOL Peak Elev=0.00' Storage=0 cf

Pond FB4&5: Peak Elev=177.46' Storage=12,584 cf Inflow=5.49 cfs 48,219 cf
Primary=1.59 cfs 4,552 cf Secondary=3.73 cfs 43,673 cf Outflow=5.32 cfs 48,225 cf

Pond FB5: STORAGE VOL Peak Elev=0.00' Storage=0 cf

Pond SD1: Peak Elev=176.32' Storage=7,164 cf Inflow=8.50 cfs 46,441 cf
Primary=4.77 cfs 25,373 cf Secondary=0.86 cfs 21,068 cf Outflow=5.63 cfs 46,441 cf

Pond SD10: Peak Elev=162.98' Inflow=15.46 cfs 69,068 cf
48.0" Round Culvert w/ 24.0" inside fill n=0.013 L=64.6' S=0.0248 '/' Outflow=15.46 cfs 69,068 cf

Pond SD11: Peak Elev=161.88' Inflow=0.66 cfs 3,557 cf
15.0" Round Culvert n=0.013 L=74.3' S=0.0700 '/' Outflow=0.66 cfs 3,557 cf

Pond SD2: Peak Elev=178.38' Storage=2,218 cf Inflow=5.37 cfs 35,486 cf
18.0" Round Culvert n=0.013 L=65.5' S=0.0046 '/' Outflow=4.97 cfs 35,486 cf

Pond SD4: Peak Elev=166.09' Inflow=1.46 cfs 5,569 cf
15.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=1.46 cfs 5,569 cf

Pond SD6: Peak Elev=166.14' Inflow=2.07 cfs 6,744 cf
15.0" Round Culvert n=0.013 L=41.8' S=0.0048 '/' Outflow=2.07 cfs 6,744 cf

Link SP1: Inflow=13.17 cfs 89,018 cf
Primary=13.17 cfs 89,018 cf

Link SP2: Inflow=20.82 cfs 92,785 cf
Primary=20.82 cfs 92,785 cf

Link SP3: Inflow=3.93 cfs 16,438 cf
Primary=3.93 cfs 16,438 cf

Link SP4: Inflow=0.62 cfs 2,214 cf
Primary=0.62 cfs 2,214 cf

Link SP5: Inflow=10.95 cfs 96,155 cf
Primary=10.95 cfs 96,155 cf

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 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 WS1: Runoff Area=122,024 sf 0.24% Impervious Runoff Depth=3.02"
Flow Length=490' Tc=12.5 min CN=74 Runoff=7.91 cfs 30,683 cf

Subcatchment WS11: Runoff Area=49,618 sf 24.01% Impervious Runoff Depth=3.60"
Flow Length=245' Tc=14.0 min CN=80 Runoff=3.70 cfs 14,891 cf

Subcatchment WS12: Runoff Area=198,769 sf 5.56% Impervious Runoff Depth=3.31"
Flow Length=926' Tc=21.4 min CN=77 Runoff=11.56 cfs 54,745 cf

Subcatchment WS13: Runoff Area=1,985 sf 94.26% Impervious Runoff Depth=5.44"
Tc=6.0 min CN=97 Runoff=0.25 cfs 901 cf

Subcatchment WS14: Runoff Area=20,826 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=211' Tc=28.3 min CN=74 Runoff=0.98 cfs 5,237 cf

Subcatchment WS2: Runoff Area=115,663 sf 4.07% Impervious Runoff Depth=3.50"
Flow Length=414' Tc=16.6 min CN=79 Runoff=7.87 cfs 33,750 cf

Subcatchment WS21: Runoff Area=404,389 sf 0.81% Impervious Runoff Depth=3.02"
Flow Length=818' Tc=18.0 min CN=74 Runoff=23.00 cfs 101,684 cf

Subcatchment WS22: Runoff Area=4,284 sf 87.56% Impervious Runoff Depth=5.44"
Tc=6.0 min CN=97 Runoff=0.54 cfs 1,944 cf

Subcatchment WS23: Runoff Area=4,209 sf 90.83% Impervious Runoff Depth=5.44"
Tc=6.0 min CN=97 Runoff=0.53 cfs 1,910 cf

Subcatchment WS24: Runoff Area=21,588 sf 40.11% Impervious Runoff Depth=4.22"
Flow Length=363' Tc=11.9 min CN=86 Runoff=1.97 cfs 7,591 cf

Subcatchment WS25: Runoff Area=25,353 sf 36.29% Impervious Runoff Depth=4.33"
Flow Length=337' Tc=6.6 min CN=87 Runoff=2.77 cfs 9,140 cf

Subcatchment WS26: Runoff Area=266 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=0.03 cfs 123 cf

Subcatchment WS3: Runoff Area=29,031 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=217' Tc=13.4 min CN=74 Runoff=1.84 cfs 7,300 cf

Subcatchment WS31: Runoff Area=57,985 sf 4.66% Impervious Runoff Depth=3.40"
Flow Length=314' Tc=15.3 min CN=78 Runoff=3.97 cfs 16,443 cf

Subcatchment WS4: Runoff Area=12,962 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=105' Slope=0.0681 '/' Tc=9.2 min CN=74 Runoff=0.93 cfs 3,259 cf

Subcatchment WS41: Runoff Area=40,273 sf 29.34% Impervious Runoff Depth=4.01"
Flow Length=433' Tc=8.4 min CN=84 Runoff=3.90 cfs 13,457 cf

Subcatchment WS5: Runoff Area=271,906 sf 13.07% Impervious Runoff Depth=3.02"
Flow Length=1,060' Tc=29.0 min CN=74 Runoff=12.65 cfs 68,371 cf

Subcatchment WS51: INTERNALLY Runoff Area=102,691 sf 10.15% Impervious Runoff Depth=3.11"
Flow Length=347' Tc=22.0 min CN=75 Runoff=5.56 cfs 26,634 cf

Subcatchment WS52: Runoff Area=173,061 sf 12.12% Impervious Runoff Depth=3.50"
Flow Length=898' Tc=43.9 min CN=79 Runoff=7.64 cfs 50,499 cf

Subcatchment WS53: Runoff Area=14,030 sf 22.83% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=80 Runoff=1.33 cfs 4,210 cf

Subcatchment WS54: Runoff Area=5,956 sf 24.92% Impervious Runoff Depth=4.11"
Flow Length=146' Slope=0.0348 '/' Tc=15.7 min CN=85 Runoff=0.48 cfs 2,042 cf

Reach R1: Avg. Flow Depth=0.36' Max Vel=5.34 fps Inflow=5.84 cfs 21,608 cf
n=0.030 L=209.2' S=0.0717 '/' Capacity=225.07 cfs Outflow=5.82 cfs 21,608 cf

Reach R2: Avg. Flow Depth=0.41' Max Vel=3.67 fps Inflow=6.30 cfs 36,503 cf
n=0.030 L=244.7' S=0.0470 '/' Capacity=443.92 cfs Outflow=6.28 cfs 36,503 cf

Reach R3: Avg. Flow Depth=0.51' Max Vel=4.08 fps Inflow=10.94 cfs 59,982 cf
n=0.030 L=457.9' S=0.0426 '/' Capacity=422.57 cfs Outflow=10.89 cfs 59,982 cf

Reach R4: Avg. Flow Depth=0.22' Max Vel=2.46 fps Inflow=0.98 cfs 5,237 cf
n=0.030 L=268.0' S=0.0476 '/' Capacity=356.54 cfs Outflow=0.97 cfs 5,237 cf

Reach R5: Avg. Flow Depth=0.80' Max Vel=4.08 fps Inflow=23.00 cfs 101,684 cf
n=0.030 L=301.4' S=0.0232 '/' Capacity=263.28 cfs Outflow=22.94 cfs 101,684 cf

Pond CB1: Peak Elev=166.38' Inflow=4.55 cfs 16,854 cf
15.0" Round Culvert n=0.013 L=298.7' S=0.0075 '/' Outflow=4.55 cfs 16,854 cf

Pond CB2: Peak Elev=164.26' Inflow=5.60 cfs 20,708 cf
15.0" Round Culvert n=0.013 L=141.4' S=0.0103 '/' Outflow=5.60 cfs 20,708 cf

Pond CB3: Peak Elev=164.27' Inflow=0.53 cfs 1,910 cf
15.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.53 cfs 1,910 cf

Pond CB4: Peak Elev=156.20' Inflow=5.84 cfs 21,608 cf
18.0" Round Culvert n=0.013 L=223.6' S=0.0076 '/' Outflow=5.84 cfs 21,608 cf

Pond EX: EXISTING FARM POND Peak Elev=183.04' Storage=3,968 cf Inflow=5.56 cfs 26,634 cf
Outflow=5.55 cfs 22,885 cf

Pond FB1: Peak Elev=140.93' Storage=12,441 cf Inflow=9.03 cfs 36,499 cf
Primary=0.58 cfs 306 cf Secondary=5.72 cfs 36,196 cf Outflow=6.30 cfs 36,503 cf

Pond FB2: Peak Elev=148.66' Storage=6,388 cf Inflow=11.56 cfs 54,745 cf
Primary=2.54 cfs 1,762 cf Secondary=7.42 cfs 52,983 cf Outflow=9.96 cfs 54,745 cf

Pond FB3: Peak Elev=173.38' Storage=1,428 cf Inflow=3.97 cfs 16,443 cf
Primary=3.90 cfs 14,400 cf Secondary=0.02 cfs 2,044 cf Outflow=3.92 cfs 16,444 cf

Pond FB4: STORAGE VOL Peak Elev=0.00' Storage=0 cf

Pond FB4&5: Peak Elev=177.53' Storage=13,371 cf Inflow=7.46 cfs 68,166 cf
Primary=2.84 cfs 10,915 cf Secondary=4.52 cfs 57,256 cf Outflow=7.37 cfs 68,171 cf

Pond FB5: STORAGE VOL Peak Elev=0.00' Storage=0 cf

Pond SD1: Peak Elev=177.05' Storage=12,785 cf Inflow=12.65 cfs 68,371 cf
Primary=6.22 cfs 42,154 cf Secondary=1.00 cfs 26,218 cf Outflow=7.22 cfs 68,371 cf

Pond SD10: Peak Elev=163.47' Inflow=23.00 cfs 101,684 cf
48.0" Round Culvert w/ 24.0" inside fill n=0.013 L=64.6' S=0.0248 '/' Outflow=23.00 cfs 101,684 cf

Pond SD11: Peak Elev=161.98' Inflow=0.98 cfs 5,237 cf
15.0" Round Culvert n=0.013 L=74.3' S=0.0700 '/' Outflow=0.98 cfs 5,237 cf

Pond SD2: Peak Elev=178.77' Storage=3,652 cf Inflow=7.64 cfs 50,499 cf
18.0" Round Culvert n=0.013 L=65.5' S=0.0046 '/' Outflow=6.78 cfs 50,499 cf

Pond SD4: Peak Elev=166.55' Inflow=1.97 cfs 7,591 cf
15.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=1.97 cfs 7,591 cf

Pond SD6: Peak Elev=166.61' Inflow=2.77 cfs 9,140 cf
15.0" Round Culvert n=0.013 L=41.8' S=0.0048 '/' Outflow=2.77 cfs 9,140 cf

Link SP1: Inflow=20.28 cfs 127,168 cf
Primary=20.28 cfs 127,168 cf

Link SP2: Inflow=30.66 cfs 135,435 cf
Primary=30.66 cfs 135,435 cf

Link SP3: Inflow=5.72 cfs 23,744 cf
Primary=5.72 cfs 23,744 cf

Link SP4: Inflow=0.93 cfs 3,259 cf
Primary=0.93 cfs 3,259 cf

Link SP5: Inflow=14.66 cfs 138,584 cf
Primary=14.66 cfs 138,584 cf

Summary for Subcatchment WS1:

Runoff = 7.91 cfs @ 12.18 hrs, Volume= 30,683 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	288	98	Prop. roofs
*	0	98	Exist. paved surfaces
*	0	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	27,003	74	>75% Prop. grass cover, Good, HSG C
*	411	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	72,859	72	Woods/grass comb., Good, HSG C
	21,463	79	Woods/grass comb., Good, HSG D
	122,024	74	Weighted Average
	121,736		99.76% Pervious Area
	288		0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	108	0.1153	0.16		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	382	0.0419	6.38	257.62	**Channel Flow, Seg B to C** Area= 40.4 sf Perim= 81.0' r= 0.50' n= 0.030 Earth, grassed & winding
12.5	490	Total			

Summary for Subcatchment WS11:

Runoff = 3.70 cfs @ 12.19 hrs, Volume= 14,891 cf, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	2,412	98	Prop. roofs
*	0	98	Exist. paved surfaces
	9,500	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	32,993	74	>75% Prop. grass cover, Good, HSG C
*	4,700	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	13	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	49,618	80	Weighted Average
	37,706		75.99% Pervious Area
	11,912		24.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	94	0.0319	0.14		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
2.4	28	0.1451	0.20		**Sheet Flow, Seg B to C** Grass: Dense n= 0.240 P2= 3.10"
0.2	123	0.0326	9.49	151.76	**Trap/Vee/Rect Channel Flow, Seg C to D** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
14.0	245	Total			

Summary for Subcatchment WS12:

Runoff = 11.56 cfs @ 12.30 hrs, Volume= 54,745 cf, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,251	98	Prop. roofs
*	0	98	Exist. roofs
	4,796	98	Prop. paved surfaces
*	0	98	Exist. paved surfaces
*	693	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	26,576	74	>75% Prop. grass cover, Good, HSG C
*	22,411	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
*	0	71	Meadow, non-grazed, HSG C
	2,895	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	80,765	72	Woods/grass comb., Good, HSG C
	54,382	79	Woods/grass comb., Good, HSG D
	198,769	77	Weighted Average
	187,722		94.44% Pervious Area
	11,047		5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	53	0.0569	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.2	12	0.0290	1.03		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
1.3	7	0.0447	0.09		**Sheet Flow, Seg C to D** Grass: Dense n= 0.240 P2= 3.10"
11.2	78	0.0640	0.12		**Sheet Flow, Seg D to E** Woods: Light underbrush n= 0.400 P2= 3.10"
1.2	100	0.0773	1.39		**Shallow Concentrated Flow, Seg E to F** Woodland Kv= 5.0 fps
1.0	342	0.0351	5.84	221.18	**Channel Flow, Seg F to G** Area= 37.9 sf Perim= 76.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.8	334	0.0478	6.79	151.46	**Channel Flow, Seg G to H** Area= 22.3 sf Perim= 44.9' r= 0.50' n= 0.030 Earth, grassed & winding
21.4	926	Total			

Summary for Subcatchment WS13:

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 901 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
	1,871	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	35	74	>75% Prop. grass cover, Good, HSG C
*	79	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	1,985	97	Weighted Average
	114		5.74% Pervious Area
	1,871		94.26% Impervious 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 WS14:

Runoff = 0.98 cfs @ 12.40 hrs, Volume= 5,237 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
*	0	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	2,079	74	>75% Prop. grass cover, Good, HSG C
*	2,362	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	12,343	72	Woods/grass comb., Good, HSG C
	4,042	79	Woods/grass comb., Good, HSG D
	20,826	74	Weighted Average
	20,826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.7	150	0.0271	0.09		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
1.6	61	0.0161	0.63		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
28.3	211	Total			

Summary for Subcatchment WS2:

Runoff = 7.87 cfs @ 12.23 hrs, Volume= 33,750 cf, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	3,600	98	Prop. roofs
*	0	98	Exist. paved surfaces
	1,105	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	16,349	74	>75% Prop. grass cover, Good, HSG C
*	14,596	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	9,141	72	Woods/grass comb., Good, HSG C
	70,872	79	Woods/grass comb., Good, HSG D
	115,663	79	Weighted Average
	110,958		95.93% Pervious Area
	4,705		4.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	115	0.0607	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	299	0.0234	4.78	286.72	**Channel Flow, Seg B to C** Area= 60.0 sf Perim= 119.8' r= 0.50' n= 0.030 Earth, grassed & winding
16.6	414	Total			

Summary for Subcatchment WS21:

Runoff = 23.00 cfs @ 12.25 hrs, Volume= 101,684 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	3,277	98	Prop. roofs
*	0	98	Exist. paved surfaces
*	0	98	Prop. paved surfaces
*	5,394	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	20,145	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	7,813	74	>75% Prop. grass cover, Good, HSG C
*	17,228	80	>75% Prop. grass cover, Good, HSG D
	6,216	58	Meadow, non-grazed, HSG B
	52,917	71	Meadow, non-grazed, HSG C
	5,933	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	226,718	72	Woods/grass comb., Good, HSG C
	58,748	79	Woods/grass comb., Good, HSG D
	404,389	74	Weighted Average
	401,112		99.19% Pervious Area
	3,277		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	109	0.0274	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.2	13	0.0233	0.96		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
2.8	232	0.0740	1.36		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
1.3	464	0.0354	5.86	315.47	**Channel Flow, Seg D to E** Area= 53.8 sf Perim= 107.8' r= 0.50' n= 0.030 Earth, grassed & winding
18.0	818	Total			

Summary for Subcatchment WS22:

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 1,944 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
	3,751	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	374	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	159	74	>75% Prop. grass cover, Good, HSG C
*	0	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	4,284	97	Weighted Average
	533		12.44% Pervious Area
	3,751		87.56% Impervious 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 WS23:

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 1,910 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
	3,823	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	200	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	0	74	>75% Prop. grass cover, Good, HSG C
*	186	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	4,209	97	Weighted Average
	386		9.17% Pervious Area
	3,823		90.83% Impervious 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 WS24:

Runoff = 1.97 cfs @ 12.16 hrs, Volume= 7,591 cf, Depth= 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	1,512	98	Prop. roofs
*	0	98	Exist. paved surfaces
	7,146	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	658	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	6,540	74	>75% Prop. grass cover, Good, HSG C
*	5,732	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	21,588	86	Weighted Average
	12,930		59.89% Pervious Area
	8,658		40.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	89	0.0282	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.1	64	0.0236	8.09	9.92	**Pipe Channel, Seg B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
0.3	210	0.0710	14.00	223.97	**Trap/Vee/Rect Channel Flow, Seg C to D** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
11.9	363	Total			

Summary for Subcatchment WS25:

Runoff = 2.77 cfs @ 12.10 hrs, Volume= 9,140 cf, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	2,329	98	Prop. roofs
*	0	98	Exist. paved surfaces
	6,871	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	594	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	0	74	>75% Prop. grass cover, Good, HSG C
*	15,559	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	25,353	87	Weighted Average
	16,153		63.71% Pervious Area
	9,200		36.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	47	0.0368	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.4	290	0.0635	13.24	211.81	**Trap/Vee/Rect Channel Flow, Seg B to C** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
6.6	337	Total			

Summary for Subcatchment WS26:

Runoff = 0.03 cfs @ 12.09 hrs, Volume= 123 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
	266	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	0	74	>75% Prop. grass cover, Good, HSG C
*	0	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	266	98	Weighted Average
	266		100.00% Impervious 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 WS3:

Runoff = 1.84 cfs @ 12.19 hrs, Volume= 7,300 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
*	0	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	7,704	74	>75% Exist. grass cover, Good, HSG C
*	1,063	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	2,855	74	>75% Prop. grass cover, Good, HSG C
*	0	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	13,642	72	Woods/grass comb., Good, HSG C
	3,767	79	Woods/grass comb., Good, HSG D
	29,031	74	Weighted Average
	29,031		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	118	0.1059	0.23		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
4.1	32	0.1328	0.13		**Sheet Flow, Seg B to C** Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	67	0.0783	1.40		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
13.4	217	Total			

Summary for Subcatchment WS31:

Runoff = 3.97 cfs @ 12.21 hrs, Volume= 16,443 cf, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	2,700	98	Prop. roofs
*	0	98	Exist. paved surfaces
*	0	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	26	74	>75% Prop. grass cover, Good, HSG C
*	26,413	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	11,371	71	Meadow, non-grazed, HSG C
	17,475	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	57,985	78	Weighted Average
	55,285		95.34% Pervious Area
	2,700		4.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	130	0.0327	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.6	184	0.0167	5.17	37.15	**Trap/Vee/Rect Channel Flow, Seg B to C** Bot.W=2.00' D=1.25' Z= 3.0 '/' Top.W=9.50' n= 0.030 Earth, grassed & winding
15.3	314	Total			

Summary for Subcatchment WS4:

Runoff = 0.93 cfs @ 12.13 hrs, Volume= 3,259 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
*	0	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	3,029	74	>75% Prop. grass cover, Good, HSG C
*	1,382	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	6,871	71	Meadow, non-grazed, HSG C
	1,680	78	Meadow, non-grazed, HSG D
	0	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	12,962	74	Weighted Average
	12,962		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	105	0.0681	0.19		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment WS41:

Runoff = 3.90 cfs @ 12.12 hrs, Volume= 13,457 cf, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
	2,088	98	Prop. roofs
*	0	98	Exist. paved surfaces
	9,727	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	996	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	8,983	74	>75% Prop. grass cover, Good, HSG C
*	17,137	80	>75% Prop. grass cover, Good, HSG D
	917	71	Meadow, non-grazed, HSG C
	425	78	Meadow, non-grazed, HSG D
	40,273	84	Weighted Average
	28,458		70.66% Pervious Area
	11,815		29.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	55	0.0323	0.12		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
1.0	378	0.0152	6.48	103.63	**Trap/Vee/Rect Channel Flow, Seg B to C** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
8.4	433	Total			

Summary for Subcatchment WS5:

Runoff = 12.65 cfs @ 12.41 hrs, Volume= 68,371 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
	2,723	98	Exist. roofs
*	0	98	Prop. roofs
*	28,698	98	Exist. paved surfaces
	4,117	98	Prop. paved surfaces
*	3,668	96	Exist. gravel surfaces
*	112	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	3,395	74	>75% Exist. grass cover, Good, HSG C
*	55,968	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	0	74	>75% Prop. grass cover, Good, HSG C
*	0	80	>75% Prop. grass cover, Good, HSG D
	83,425	58	Meadow, non-grazed, HSG B
	1,805	71	Meadow, non-grazed, HSG C
	18,447	78	Meadow, non-grazed, HSG D
	11,338	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	58,210	79	Woods/grass comb., Good, HSG D
	271,906	74	Weighted Average
	236,368		86.93% Pervious Area
	35,538		13.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	150	0.0233	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
3.0	185	0.0216	1.03		**Shallow Concentrated Flow, Seg B to C** Short Grass Pasture Kv= 7.0 fps
1.4	50	0.0149	0.61		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
5.0	399	0.0018	1.32	36.76	**Channel Flow, Seg D to E** Area= 27.9 sf Perim= 56.2' r= 0.50' n= 0.030
0.1	29	0.0200	7.44	9.14	**Pipe Channel, Seg E to F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
0.6	217	0.0132	6.04	96.57	**Trap/Vee/Rect Channel Flow, Seg F to G** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030
0.0	30	0.1988	23.42	374.77	**Trap/Vee/Rect Channel Flow, Seg G to H** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030
29.0	1,060	Total			

Summary for Subcatchment WS51: INTERNALLY DRAINED

Runoff = 5.56 cfs @ 12.31 hrs, Volume= 26,634 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,328	98	Exist. roofs
*	612	98	Prop. roofs
*	4,481	98	Exist. paved surfaces
*	0	96	Exist. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	11,580	80	>75% Exist. grass cover, Good, HSG D
*	4,581	80	>75% Prop. grass cover, Good, HSG D
	25,694	58	Meadow, non-grazed, HSG B
*	0	71	Meadow, non-grazed, HSG C
	42,163	78	Meadow, non-grazed, HSG D
	2,548	58	Woods/grass comb., Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	5,704	79	Woods/grass comb., Good, HSG D
	102,691	75	Weighted Average
	92,270		89.85% Pervious Area
	10,421		10.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	150	0.0313	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
2.2	36	0.0029	0.27		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
3.0	161	0.0165	0.90		**Shallow Concentrated Flow, Seg C to D** Short Grass Pasture Kv= 7.0 fps
22.0	347	Total			

Summary for Subcatchment WS52:

Runoff = 7.64 cfs @ 12.60 hrs, Volume= 50,499 cf, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
	1,362	98	Exist. roofs
	5,531	98	Prop. roofs
	1,580	98	Exist. paved surfaces
	12,500	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	1,381	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	7,968	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	3,805	74	>75% Prop. grass cover, Good, HSG C
*	56,884	80	>75% Prop. grass cover, Good, HSG D
	9,249	58	Meadow, non-grazed, HSG B
	14,626	71	Meadow, non-grazed, HSG C
	31,523	78	Meadow, non-grazed, HSG D
	735	58	Woods/grass comb., Good, HSG B
	12,338	72	Woods/grass comb., Good, HSG C
	13,579	79	Woods/grass comb., Good, HSG D
	173,061	79	Weighted Average
	152,088		87.88% Pervious Area
	20,973		12.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2	125	0.0241	0.09		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	110	0.0091	1.43		**Shallow Concentrated Flow, Seg B to C** Grassed Waterway Kv= 15.0 fps
1.2	388	0.0114	5.61	89.74	**Trap/Vee/Rect Channel Flow, Seg C to D** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
16.6	66	0.0062	0.07		**Sheet Flow, Seg D to E** Grass: Dense n= 0.240 P2= 3.10"
0.6	209	0.0186	6.06	59.05	**Trap/Vee/Rect Channel Flow, Seg E to F** Bot.W=2.00' D=1.50' Z= 3.0 '/' Top.W=11.00' n= 0.030 Earth, grassed & winding
43.9	898	Total			

Summary for Subcatchment WS53:

Runoff = 1.33 cfs @ 12.09 hrs, Volume= 4,210 cf, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	0	98	Exist. paved surfaces
	3,203	98	Prop. paved surfaces
*	0	96	Exist. gravel surfaces
*	531	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	0	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	10,296	74	>75% Prop. grass cover, Good, HSG C
*	0	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	14,030	80	Weighted Average
	10,827		77.17% Pervious Area
	3,203		22.83% Impervious 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 WS54:

Runoff = 0.48 cfs @ 12.21 hrs, Volume= 2,042 cf, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Exist. roofs
*	0	98	Prop. roofs
*	1,147	98	Exist. paved surfaces
	337	98	Prop. paved surfaces
*	65	96	Exist. gravel surfaces
*	40	96	Prop. gravel surfaces
*	0	61	>75% Exist. grass cover, Good, HSG B
*	0	74	>75% Exist. grass cover, Good, HSG C
*	4,367	80	>75% Exist. grass cover, Good, HSG D
*	0	61	>75% Prop. grass cover, Good, HSG B
*	0	74	>75% Prop. grass cover, Good, HSG C
*	0	80	>75% Prop. grass cover, Good, HSG D
	0	58	Meadow, non-grazed, HSG B
	0	71	Meadow, non-grazed, HSG C
	0	78	Meadow, non-grazed, HSG D
	5,956	85	Weighted Average
	4,472		75.08% Pervious Area
	1,484		24.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	146	0.0348	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"

Summary for Reach R1:

Inflow Area = 57,685 sf, 47.79% Impervious, Inflow Depth = 4.50" for 25-Year event
Inflow = 5.84 cfs @ 12.11 hrs, Volume= 21,608 cf
Outflow = 5.82 cfs @ 12.11 hrs, Volume= 21,608 cf, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.34 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.59 fps, Avg. Travel Time= 2.2 min

Peak Storage= 228 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 225.07 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 209.2' Slope= 0.0717 '/'
Inlet Invert= 153.00', Outlet Invert= 138.00'

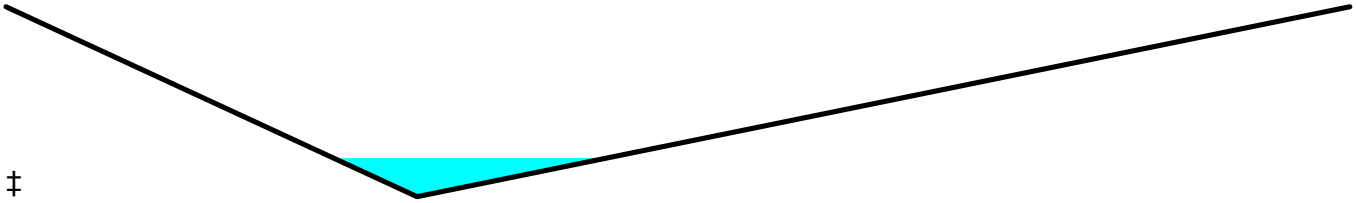
Summary for Reach R2:

Inflow Area = 107,303 sf, 36.79% Impervious, Inflow Depth = 4.08" for 25-Year event
Inflow = 6.30 cfs @ 12.31 hrs, Volume= 36,503 cf
Outflow = 6.28 cfs @ 12.32 hrs, Volume= 36,503 cf, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.67 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 3.1 min

Peak Storage= 417 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 2.00' Flow Area= 41.5 sf, Capacity= 443.92 cfs

Custom cross-section, Length= 244.7' Slope= 0.0470 '/'
Constant n= 0.030 Earth, grassed & winding
Inlet Invert= 135.50', Outlet Invert= 124.00'



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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	132.00	0.00
12.69	130.00	2.00
41.49	132.00	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	41.5	41.7	10,153	443.92

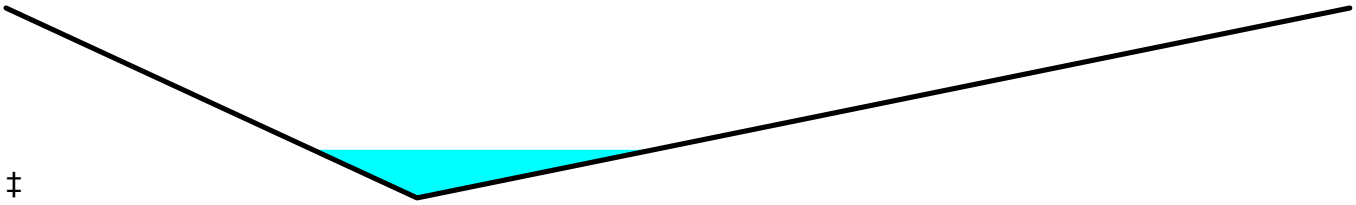
Summary for Reach R3:

Inflow Area = 219,595 sf, 5.03% Impervious, Inflow Depth = 3.28" for 25-Year event
Inflow = 10.94 cfs @ 12.43 hrs, Volume= 59,982 cf
Outflow = 10.89 cfs @ 12.46 hrs, Volume= 59,982 cf, Atten= 0%, Lag= 2.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.08 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 5.9 min

Peak Storage= 1,222 cf @ 12.46 hrs
Average Depth at Peak Storage= 0.51'
Bank-Full Depth= 2.00' Flow Area= 41.5 sf, Capacity= 422.57 cfs

Custom cross-section, Length= 457.9' Slope= 0.0426 '/'
Constant n= 0.030 Earth, grassed & winding
Inlet Invert= 143.50', Outlet Invert= 124.00'



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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	132.00	0.00
12.69	130.00	2.00
41.49	132.00	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	41.5	41.7	18,998	422.57

Summary for Reach R4:

Inflow Area = 20,826 sf, 0.00% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 0.98 cfs @ 12.40 hrs, Volume= 5,237 cf
Outflow = 0.97 cfs @ 12.42 hrs, Volume= 5,237 cf, Atten= 0%, Lag= 1.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.46 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 3.9 min

Peak Storage= 106 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 2.00' Flow Area= 33.2 sf, Capacity= 356.54 cfs

Custom cross-section, Length= 268.0' Slope= 0.0476 '/'
Constant n= 0.030 Earth, grassed & winding
Inlet Invert= 156.25', Outlet Invert= 143.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	150.00	0.00
16.89	148.00	2.00
33.16	150.00	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	33.2	33.4	8,887	356.54

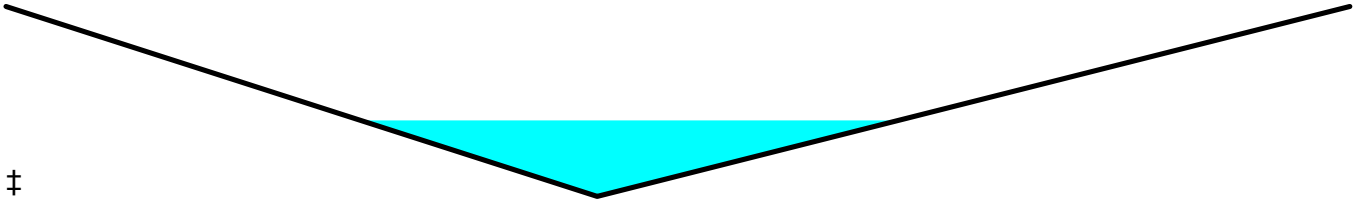
Summary for Reach R5:

Inflow Area = 404,389 sf, 0.81% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 23.00 cfs @ 12.25 hrs, Volume= 101,684 cf
Outflow = 22.94 cfs @ 12.27 hrs, Volume= 101,684 cf, Atten= 0%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.08 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.73 fps, Avg. Travel Time= 2.9 min

Peak Storage= 1,693 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.80'
Bank-Full Depth= 2.00' Flow Area= 35.0 sf, Capacity= 263.28 cfs

Custom cross-section, Length= 301.4' Slope= 0.0232 '/'
Constant n= 0.030 Earth, grassed & winding
Inlet Invert= 160.00', Outlet Invert= 153.00'



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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	160.00	0.00
15.41	158.00	2.00
35.03	160.00	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	35.0	35.3	10,558	263.28

Summary for Pond CB1:

Inflow Area = 47,207 sf, 38.39% Impervious, Inflow Depth = 4.28" for 25-Year event
Inflow = 4.55 cfs @ 12.11 hrs, Volume= 16,854 cf
Outflow = 4.55 cfs @ 12.11 hrs, Volume= 16,854 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.55 cfs @ 12.11 hrs, Volume= 16,854 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 166.38' @ 12.11 hrs
Flood Elev= 169.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	164.80'	**15.0" Round SD-5** L= 298.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 164.80' / 162.55' S= 0.0075 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.46 cfs @ 12.11 hrs HW=166.34' TW=164.19' (Dynamic Tailwater)
↑—**1=SD-5** (Inlet Controls 4.46 cfs @ 3.63 fps)

Summary for Pond CB2:

Inflow Area = 55,700 sf, 46.14% Impervious, Inflow Depth = 4.46" for 25-Year event
Inflow = 5.60 cfs @ 12.11 hrs, Volume= 20,708 cf
Outflow = 5.60 cfs @ 12.11 hrs, Volume= 20,708 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.60 cfs @ 12.11 hrs, Volume= 20,708 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 164.26' @ 12.11 hrs
Flood Elev= 166.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	162.20'	**15.0" Round SD-7** L= 141.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 162.20' / 160.75' S= 0.0103 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.51 cfs @ 12.11 hrs HW=164.22' TW=156.18' (Dynamic Tailwater)
↑—**1=SD-7** (Inlet Controls 5.51 cfs @ 4.49 fps)

Summary for Pond CB3:

Inflow Area = 4,209 sf, 90.83% Impervious, Inflow Depth = 5.44" for 25-Year event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 1,910 cf
Outflow = 0.53 cfs @ 12.09 hrs, Volume= 1,910 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.09 hrs, Volume= 1,910 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 164.27' @ 12.16 hrs
Flood Elev= 166.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	162.30'	**15.0" Round SD-8** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 162.30' / 162.10' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=163.73' TW=164.15' (Dynamic Tailwater)
1=SD-8 (Controls 0.00 cfs)

Summary for Pond CB4:

Inflow Area = 57,685 sf, 47.79% Impervious, Inflow Depth = 4.50" for 25-Year event
Inflow = 5.84 cfs @ 12.11 hrs, Volume= 21,608 cf
Outflow = 5.84 cfs @ 12.11 hrs, Volume= 21,608 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.84 cfs @ 12.11 hrs, Volume= 21,608 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 156.20' @ 12.11 hrs
Flood Elev= 165.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	154.70'	**18.0" Round SD-9** L= 223.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 154.70' / 153.00' S= 0.0076 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.78 cfs @ 12.11 hrs HW=156.19' TW=153.35' (Dynamic Tailwater)
1=SD-9 (Inlet Controls 5.78 cfs @ 3.28 fps)

Summary for Pond EX: EXISTING FARM POND

Inflow Area = 102,691 sf, 10.15% Impervious, Inflow Depth = 3.11" for 25-Year event
Inflow = 5.56 cfs @ 12.31 hrs, Volume= 26,634 cf
Outflow = 5.55 cfs @ 12.33 hrs, Volume= 22,885 cf, Atten= 0%, Lag= 1.3 min
Primary = 5.55 cfs @ 12.33 hrs, Volume= 22,885 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 183.04' @ 12.33 hrs Surf.Area= 5,275 sf Storage= 3,968 cf

Plug-Flow detention time= 90.8 min calculated for 22,885 cf (86% of inflow)

Center-of-Mass det. time= 27.4 min (870.2 - 842.8)

Volume	Invert	Avail.Storage	Storage Description
#1	182.00'	6,564 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)
182.00	2,462	192.9	0	0	2,462
183.00	5,206	276.1	3,749	3,749	5,576
183.50	6,063	295.5	2,815	6,564	6,470

Device	Routing	Invert	Outlet Devices
#1	Primary	183.00'	**275.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.50 cfs @ 12.33 hrs HW=183.04' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 5.50 cfs @ 0.48 fps)

Summary for Pond FB1:

Inflow Area = 107,303 sf, 36.79% Impervious, Inflow Depth = 4.08" for 25-Year event
Inflow = 9.03 cfs @ 12.14 hrs, Volume= 36,499 cf
Outflow = 6.30 cfs @ 12.31 hrs, Volume= 36,503 cf, Atten= 30%, Lag= 10.2 min
Primary = 0.58 cfs @ 12.31 hrs, Volume= 306 cf
Secondary = 5.72 cfs @ 12.31 hrs, Volume= 36,196 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 140.93' @ 12.31 hrs Surf.Area= 5,483 sf Storage= 12,441 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 268.0 min (1,071.8 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1	138.00'	18,876 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)
138.00	3,169	223.6	0	0	3,169
140.00	4,624	261.3	7,747	7,747	4,702
142.00	6,561	317.8	11,129	18,876	7,370

Device	Routing	Invert	Outlet Devices
#1	Primary	140.85'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	135.73'	**12.0" Round Culvert** L= 39.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 135.73' / 135.50' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	139.50'	**8.0" W x 15.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 2	140.75'	**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
#5	Device 2	135.83'	**1.2" Vert. 1-1/4" DRILL HOLE IN END CAP** C= 0.600
#6	Device 5	135.83'	**4.0" Vert. 4" UD** C= 0.600
#7	Device 6	138.00'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.55 cfs @ 12.31 hrs HW=140.93' TW=135.90' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.55 cfs @ 0.71 fps)

Secondary OutFlow Max=5.65 cfs @ 12.31 hrs HW=140.93' TW=135.90' (Dynamic Tailwater)
└─**2=Culvert** (Passes 5.65 cfs of 7.99 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 3.49 cfs @ 4.19 fps)
  ├─**4=Neenah R4345 Beehive Grate Light Duty-req. structure** (Custom Controls 2.08 cfs)
  └─**5=1-1/4" DRILL HOLE IN END CAP** (Orifice Controls 0.08 cfs @ 10.79 fps)
    └─**6=4" UD** (Passes 0.08 cfs of 0.93 cfs potential flow)
      └─**7=Exfiltration** (Passes 0.08 cfs of 0.31 cfs potential flow)

Summary for Pond FB2:

Inflow Area = 198,769 sf, 5.56% Impervious, Inflow Depth = 3.31" for 25-Year event
Inflow = 11.56 cfs @ 12.30 hrs, Volume= 54,745 cf
Outflow = 9.96 cfs @ 12.43 hrs, Volume= 54,745 cf, Atten= 14%, Lag= 7.7 min
Primary = 2.54 cfs @ 12.43 hrs, Volume= 1,762 cf
Secondary = 7.42 cfs @ 12.43 hrs, Volume= 52,983 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 148.66' @ 12.43 hrs Surf.Area= 3,577 sf Storage= 6,388 cf

Plug-Flow detention time= 65.7 min calculated for 54,717 cf (100% of inflow)
Center-of-Mass det. time= 66.4 min (903.7 - 837.4)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	12,068 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)
146.00	1,349	239.6	0	0	1,349
148.00	2,973	292.5	4,216	4,216	3,651
150.00	4,963	356.5	7,851	12,068	7,020

Device	Routing	Invert	Outlet Devices
#1	Primary	148.45'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	143.73'	**12.0" Round Culvert** L= 47.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.73' / 143.50' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	143.83'	**0.8" Vert. 13/16" DRILL HOLE IN END CAP** C= 0.600
#4	Device 3	143.83'	**4.0" Vert. 4" UD** C= 0.600
#5	Device 4	146.00'	**2.410 in/hr Exfiltration over Surface area**
#6	Device 2	147.25'	**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=2.47 cfs @ 12.43 hrs HW=148.66' TW=144.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 2.47 cfs @ 1.18 fps)

Secondary OutFlow Max=7.42 cfs @ 12.43 hrs HW=148.66' TW=144.00' (Dynamic Tailwater)
└─**2=Culvert** (Barrel Controls 7.42 cfs @ 9.44 fps)
  └─**3=13/16" DRILL HOLE IN END CAP** (Passes < 0.04 cfs potential flow)
    └─**4=4" UD** (Passes < 0.91 cfs potential flow)
      └─**5=Exfiltration** (Passes < 0.20 cfs potential flow)
  └─**6=Neenah R4345 Beehive Grate Light Duty-req. structure** (Passes < 11.65 cfs potential flow)

Summary for Pond FB3:

Inflow Area = 57,985 sf, 4.66% Impervious, Inflow Depth = 3.40" for 25-Year event
Inflow = 3.97 cfs @ 12.21 hrs, Volume= 16,443 cf
Outflow = 3.92 cfs @ 12.24 hrs, Volume= 16,444 cf, Atten= 1%, Lag= 1.4 min
Primary = 3.90 cfs @ 12.24 hrs, Volume= 14,400 cf
Secondary = 0.02 cfs @ 12.24 hrs, Volume= 2,044 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 173.38' @ 12.24 hrs Surf.Area= 1,549 sf Storage= 1,428 cf

Plug-Flow detention time= 86.0 min calculated for 16,435 cf (100% of inflow)
Center-of-Mass det. time= 86.5 min (915.8 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	5,124 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)
172.00	591	206.8	0	0	591
174.00	2,123	296.1	2,556	2,556	4,200
175.00	3,041	316.2	2,568	5,124	5,226

Device	Routing	Invert	Outlet Devices
#1	Primary	173.10'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	169.65'	**0.6" Vert. 5/8" DRILL HOLE IN 4" END CAP** C= 0.600
#3	Device 2	169.83'	**4.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 169.83' / 169.65' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 3	169.83'	**4.0" Vert. 4" UD** C= 0.600
#5	Device 4	172.00'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=3.87 cfs @ 12.24 hrs HW=173.38' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 3.87 cfs @ 1.37 fps)

Secondary OutFlow Max=0.02 cfs @ 12.24 hrs HW=173.38' TW=0.00' (Dynamic Tailwater)
└─**2=5/8" DRILL HOLE IN 4" END CAP** (Orifice Controls 0.02 cfs @ 9.27 fps)
└─**3=Culvert** (Passes 0.02 cfs of 0.52 cfs potential flow)
└─**4=4" UD** (Passes 0.02 cfs of 0.77 cfs potential flow)
└─**5=Exfiltration** (Passes 0.02 cfs of 0.09 cfs potential flow)

Summary for Pond FB4: STORAGE VOL

Volume	Invert	Avail.Storage	Storage Description
#1	176.00'	14,558 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)
176.00	3,855	367.5	0	0	3,855
178.00	6,173	405.2	9,937	9,937	6,299
178.70	7,038	418.4	4,621	14,558	7,210

Summary for Pond FB4&5:

Inflow Area = 227,364 sf, 15.83% Impervious, Inflow Depth = 3.60" for 25-Year event
Inflow = 7.46 cfs @ 12.75 hrs, Volume= 68,166 cf
Outflow = 7.37 cfs @ 12.84 hrs, Volume= 68,171 cf, Atten= 1%, Lag= 5.3 min
Primary = 2.84 cfs @ 12.84 hrs, Volume= 10,915 cf
Secondary = 4.52 cfs @ 12.84 hrs, Volume= 57,256 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 177.53' @ 12.84 hrs Surf.Area= 10,845 sf Storage= 13,371 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 210.3 min (1,058.1 - 847.8)

Volume	Invert	Avail.Storage	Storage Description
#1	176.00'	28,097 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)
176.00	6,791	877.0	0	0	6,791
178.00	12,279	952.4	18,801	18,801	17,919
178.70	14,307	978.8	9,296	28,097	22,032

Device	Routing	Invert	Outlet Devices
#1	Primary	177.30'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	173.73'	**15.0" Round Culvert** L= 41.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 173.73' / 173.50' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	173.83'	**1.8" Vert. 1-3/4" DRILL HOLE IN 4" END CAP** C= 0.600
#4	Device 3	173.83'	**4.0" Vert. 4" UD** C= 0.600
#5	Device 4	176.00'	**2.410 in/hr Exfiltration over Surface area**
#6	Device 2	177.20'	**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=2.84 cfs @ 12.84 hrs HW=177.53' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 2.84 cfs @ 1.24 fps)

Secondary OutFlow Max=4.52 cfs @ 12.84 hrs HW=177.53' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 4.52 cfs of 8.31 cfs potential flow)
  ├─**3=1-3/4" DRILL HOLE IN 4" END CAP** (Orifice Controls 0.16 cfs @ 9.17 fps)
  │ └─**4=4" UD** (Passes 0.16 cfs of 0.79 cfs potential flow)
  │ └─**5=Exfiltration** (Passes 0.16 cfs of 0.60 cfs potential flow)
  └─**6=Neenah R4345 Beehive Grate Light Duty-req. structure** (Custom Controls 4.36 cfs)

Summary for Pond FB5: STORAGE VOL

Volume	Invert	Avail.Storage	Storage Description
#1	176.00'	13,526 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)
176.00	2,936	509.5	0	0	2,936
178.00	6,106	547.2	8,851	8,851	6,278
178.70	7,269	560.4	4,675	13,526	7,504

Summary for Pond SD1:

Inflow Area = 271,906 sf, 13.07% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 12.65 cfs @ 12.41 hrs, Volume= 68,371 cf
Outflow = 7.22 cfs @ 12.77 hrs, Volume= 68,371 cf, Atten= 43%, Lag= 21.6 min
Primary = 6.22 cfs @ 12.77 hrs, Volume= 42,154 cf
Secondary = 1.00 cfs @ 12.77 hrs, Volume= 26,218 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 177.05' @ 12.77 hrs Surf.Area= 8,311 sf Storage= 12,785 cf

Plug-Flow detention time= 19.0 min calculated for 68,336 cf (100% of inflow)
Center-of-Mass det. time= 19.0 min (870.7 - 851.7)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	25,636 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)
174.00	112	40.4	0	0	112
176.00	6,526	339.1	4,995	4,995	9,141
178.00	10,101	427.6	16,497	21,493	14,594
178.40	10,618	435.1	4,143	25,636	15,137

Device	Routing	Invert	Outlet Devices
#1	Primary	174.65'	**15.0" Round SD-1** L= 58.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 174.65' / 174.01' S= 0.0109 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	174.00'	**6.0" Round Culvert** L= 66.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 174.00' / 173.67' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=6.22 cfs @ 12.77 hrs HW=177.05' TW=0.00' (Dynamic Tailwater)
↑—**1=SD-1** (Inlet Controls 6.22 cfs @ 5.07 fps)

Secondary OutFlow Max=1.00 cfs @ 12.77 hrs HW=177.05' TW=0.00' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 1.00 cfs @ 5.10 fps)

Summary for Pond SD10:

Inflow Area = 404,389 sf, 0.81% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 23.00 cfs @ 12.25 hrs, Volume= 101,684 cf
Outflow = 23.00 cfs @ 12.25 hrs, Volume= 101,684 cf, Atten= 0%, Lag= 0.0 min
Primary = 23.00 cfs @ 12.25 hrs, Volume= 101,684 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 163.47' @ 12.25 hrs
Flood Elev= 168.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	161.60'	**48.0" Round SD-10 w/ 24.0" inside fill** L= 64.6' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 159.60' / 158.00' S= 0.0248 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 6.28 sf

Primary OutFlow Max=22.94 cfs @ 12.25 hrs HW=163.47' TW=160.80' (Dynamic Tailwater)
└**1=SD-10** (Inlet Controls 22.94 cfs @ 3.72 fps)

Summary for Pond SD11:

Inflow Area = 20,826 sf, 0.00% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 0.98 cfs @ 12.40 hrs, Volume= 5,237 cf
Outflow = 0.98 cfs @ 12.40 hrs, Volume= 5,237 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.98 cfs @ 12.40 hrs, Volume= 5,237 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 161.98' @ 12.40 hrs
Flood Elev= 164.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	161.45'	**15.0" Round SD-11**
			L= 74.3' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 161.45' / 156.25' S= 0.0700 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.98 cfs @ 12.40 hrs HW=161.98' TW=156.47' (Dynamic Tailwater)
└**1=SD-11** (Inlet Controls 0.98 cfs @ 1.96 fps)

Summary for Pond SD2:

Inflow Area = 173,061 sf, 12.12% Impervious, Inflow Depth = 3.50" for 25-Year event
Inflow = 7.64 cfs @ 12.60 hrs, Volume= 50,499 cf
Outflow = 6.78 cfs @ 12.78 hrs, Volume= 50,499 cf, Atten= 11%, Lag= 10.9 min
Primary = 6.78 cfs @ 12.78 hrs, Volume= 50,499 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 178.77' @ 12.78 hrs Surf.Area= 4,211 sf Storage= 3,652 cf
Flood Elev= 180.46' Surf.Area= 8,160 sf Storage= 11,132 cf

Plug-Flow detention time= 9.1 min calculated for 50,499 cf (100% of inflow)
Center-of-Mass det. time= 8.1 min (861.4 - 853.2)

Volume	Invert	Avail.Storage	Storage Description
#1	177.00'	11,132 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)
177.00	250	250.0	0	0	250
178.00	2,400	650.0	1,142	1,142	28,901
180.00	8,160	850.0	9,990	11,132	52,822

Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**18.0" Round SD-2**

L= 65.5' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 177.00' / 176.70' S= 0.0046 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.78 cfs @ 12.78 hrs HW=178.77' TW=177.53' (Dynamic Tailwater)
└**1=SD-2** (Inlet Controls 6.78 cfs @ 3.83 fps)

Summary for Pond SD4:

Inflow Area = 21,588 sf, 40.11% Impervious, Inflow Depth = 4.22" for 25-Year event
Inflow = 1.97 cfs @ 12.16 hrs, Volume= 7,591 cf
Outflow = 1.97 cfs @ 12.16 hrs, Volume= 7,591 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.97 cfs @ 12.16 hrs, Volume= 7,591 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 166.55' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	165.10'	**15.0" Round SD-4**
			L= 26.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 165.10' / 164.90' S= 0.0077 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.55 cfs @ 12.16 hrs HW=166.51' TW=166.22' (Dynamic Tailwater)
└**1=SD-4** (Inlet Controls 2.55 cfs @ 2.08 fps)

Summary for Pond SD6:

Inflow Area = 25,353 sf, 36.29% Impervious, Inflow Depth = 4.33" for 25-Year event
Inflow = 2.77 cfs @ 12.10 hrs, Volume= 9,140 cf
Outflow = 2.77 cfs @ 12.10 hrs, Volume= 9,140 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.77 cfs @ 12.10 hrs, Volume= 9,140 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 166.61' @ 12.15 hrs
Flood Elev= 166.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	165.10'	**15.0" Round SD-6**
			L= 41.8' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 165.10' / 164.90' S= 0.0048 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.18 cfs @ 12.10 hrs HW=166.40' TW=166.34' (Dynamic Tailwater)
└**1=SD-6** (Inlet Controls 1.18 cfs @ 0.96 fps)

Summary for Link SP1:

Inflow Area = 448,922 sf, 11.32% Impervious, Inflow Depth = 3.40" for 25-Year event
Inflow = 20.28 cfs @ 12.39 hrs, Volume= 127,168 cf
Primary = 20.28 cfs @ 12.39 hrs, Volume= 127,168 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 520,052 sf, 1.53% Impervious, Inflow Depth = 3.13" for 25-Year event
Inflow = 30.66 cfs @ 12.26 hrs, Volume= 135,435 cf
Primary = 30.66 cfs @ 12.26 hrs, Volume= 135,435 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 87,016 sf, 3.10% Impervious, Inflow Depth = 3.27" for 25-Year event
Inflow = 5.72 cfs @ 12.22 hrs, Volume= 23,744 cf
Primary = 5.72 cfs @ 12.22 hrs, Volume= 23,744 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP4:

Inflow Area = 12,962 sf, 0.00% Impervious, Inflow Depth = 3.02" for 25-Year event
Inflow = 0.93 cfs @ 12.13 hrs, Volume= 3,259 cf
Primary = 0.93 cfs @ 12.13 hrs, Volume= 3,259 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link SP5:

Inflow Area = 505,226 sf, 14.45% Impervious, Inflow Depth = 3.29" for 25-Year event
Inflow = 14.66 cfs @ 12.81 hrs, Volume= 138,584 cf
Primary = 14.66 cfs @ 12.81 hrs, Volume= 138,584 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

ATTACHMENT 6

INSPECTION, MAINTENANCE AND HOUSEKEEPING PLAN

DM ROMA
CONSULTING ENGINEERS

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

(Prepared by Jayson Haskell, PE #13002)

EVENTIDE SUBDIVISION
WINDHAM, MAINE

Responsible Party

Applicant: ROW EVEN, LLC
17 Bucket Lane
Yarmouth, ME 04096

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. **Underdrained Filter Basins:** 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.

F. **Level Spreaders:** 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.

G. **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.

H. **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.

I. **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.

J. **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

EVENTIDE 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.			

MAINTENANCE LOG

EVENTIDE 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.			
Regular Maintenance	Clear accumulation of winter sand in paved areas annually.			

MAINTENANCE LOG

EVENTIDE 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.			

SECTION 17

SOILS INFORMATION AND NATURAL RESOURCES

Section 17 – Soils Information and Natural Resources

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. A wetlands evaluation and vernal pool assessment was also performed by Alex Finamore with Mainely Soils, LLC, and the Wetlands Report is included in this section for review.

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8431

100 River Road
Windham, ME
DM Roma Consulting Engineers

Soil Narrative Report

DATE:	Soil Profiles observed on September 23, 2025
BASE MAP:	Base plan prepared 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.

Mark J. Hampton C.S.S. #216, L.S.E. #263 9/29/25

Mark J. Hampton Date

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEY • WETLAND PERMITTING

8431

100 River 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:	(B) 3-8%, (C) 8-15%, (D) 15-25%

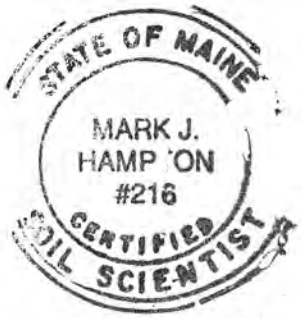
COMPOSITION AND SOIL CHARACTERISTICS

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, Lyman-Tunbridge

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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8431

100 River 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)3-8%

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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100 River 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%, (B) 3-8%

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

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Buxton, Lamoine, Lyman-Tunbridge

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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100 River Road
Windham, ME
DM Roma Consulting Engineers

Made Land

SETTING

PARENT MATERIAL:	Derived from various fill materials.
LANDFORM:	N/A
POSITION IN LANDSCAPE:	N/A
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:	Generally well drained to moderately well drained
TYPICAL PROFILE:	Varies in profile and onsite from gravel to sandy loam
HYDROLOGIC GROUP:	Group B
SURFACE RUNOFF:	Rapid
PERMEABILITY:	Slow
DEPTH TO BEDROCK:	Less than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Buxton, Lamoine

USE AND MANAGEMENT

Development: There may be limiting factors for building site development.

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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: 100 River Road | Applicant Name: | Project Location (municipality): 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	F. Sandy Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
Cd	Olive	Silty Clay	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: 4 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	F.Sandy Loam	Weak Angular	Very Friable	
Bw	Brown	Silt Loam	Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay	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-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	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Firm	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Thin Platy	Firm	
Cd	Olive	Silty Clay	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	Black	Silt Loam	Grand	Friable	
Bg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cd	Olive Gray	Silty Clay	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

09/29/2025
Date

Mark J. Hampton
Name Printed

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MARK J.
HAMPTON
#216
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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: 100 River Road

Applicant Name:

Project Location (municipality): 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	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bw	Brown	F. Sandy Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
Cd	Olive	Silty Clay	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 12 " 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	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " 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	F. Sandy Loam	Fine Grandul	Friable	
Bw	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bc	Olive Gray	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cd	Olive	Silty Clay	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-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	
Bg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cd	Olive Gray	Silty Clay	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

09/29/2025

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: 100 River Road | Applicant Name: | Project Location (municipality): 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	
Bw	Brown	F. Sandy Loam	Weak Sub Ang Blocky	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandu	Firm	Common and Distinct
Cd	Olive	Silty Clay	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Lamoine

Limiting Factor: 12 " 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-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	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " 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	F. Sandy Loam	Fine Grandul	Friable	
Bw	Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
Bc	Olive Gray	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cd	Olive	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

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

Slope: 16 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	
Bg	Gray	Silt Loam	Fine Grandul	Friable	Common and Distinct
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	
Cd	Olive Gray	Silty Clay	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Scantic

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

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

Slope: 2 Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group:

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SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

09/29/2025
Date

Mark J. Hampton
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road

Applicant Name:

Project Location (municipality): 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	Black	Silt Loam	Grand	Very Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Fine Grandu	Firm	
Cd	Olive	Silty Clay	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: 4 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic 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	Dark Brown	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

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

Slope: 16 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-15 ☐ 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	F. Sandy Loam	Fine Grandul	Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Thin Platy	Firm	
Cd	Olive	Silty Clay	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-16 ☐ 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	F. Sandy Loam	Grand	Friable	
Bw	Brown	F. Sandy Loam	Fine Grandul	Friable	
BC	Olive Brown	Silty Clay Loam	Fine Grandul	Firm	Common and Distinct
Cd	Olive	Silty Clay	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:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

09/29/2025
Date

Mark J. Hampton
Name Printed

216
SS License No.

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

8431

PAGE ____ OF ____

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: 100 River Road | Applicant Name: | Project Location (municipality): Windham

Exploration Symbol # SS-17 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	Silt Loam	Grand	Very Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Fine Grandu	Firm	
Cd	Olive	Silty Clay	Platy	Very Firm	

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

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: 4 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-18 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F.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
Cg	Olive Gray	Silty Clay	Medium Platy	Very Firm	

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name: Buxton

Limiting Factor: 15 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

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

Slope: 10 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-19 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Black	F. Sandy Loam	Fine Grandul	Friable	
Bg1	Gray	Silt Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
Bg2	Olive Gray	Silty Clay Loam	Thin Platy	Firm	
Cd	Olive	Silty Clay	Medium Platy	Very Firm	

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

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 # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

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

Horizon	Color	Texture	Structure	Consistence	Redox

Depth below mineral soil horizon (inches): 0, 10, 20, 30, 40, 50, 60

Soil Details

Soil Series/Phase Name:

Limiting Factor: ____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

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

Slope: ____ Percent

Hydric Soil: ☐ No ☐ Yes

Hydrologic Soil Group:

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

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

09/29/2025
Date

Mark J. Hampton
Name Printed

216
SS License No.

To: Dustin Roma
DM Roma Consulting Engineers
PO BOX 1116
Windham, ME 04062

Date: September 4, 2025

From: Alexander A. Finamore, LSE
Mainely Soils, LLC

Re: 100 River Road, Windham, ME – Wetland Delineation Memorandum

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At the request of DM Roma Consulting Engineers (the "Client"), Mainely Soils conducted on-site wetland and waterbody delineations on an approximately 27.89 acre parcel located at 100 River Road in Windham, Maine. The property owner proposes to create more residential lots. These field investigations were performed to provide baseline environmental data to inform the proposed expansion of use of the site. The natural resources assessments described in this memorandum were completed in August of 2025. In addition to describing the identified resources this report describes the existing conditions within the study area, and the methodologies employed for the assessments.

PROJECT DESCRIPTION

The project site is located within a zone of residential development along the River Road corridor identified as the Farming District in the Town of Windham. The proposed development site is currently occupied by a farmhouse, barn, open fields, and forested land on the southwestern portion of the site leading down to a railroad along the southwestern extent of the site. Surrounding land use of the site is residential. Access to the site will be from River Road. In total, the wetland and waterbody delineation survey area encompassed approximately 27.89 acres, identified by the Town of Windham as Tax Map 1, Lot 8.

SITE DESCRIPTION

The Study Area occurs in the Southern Coastal biophysical region of Maine (McMahon, 1990). The Southern Coastal biophysical region is characterized by relatively flat terrain, with elevations generally ranging up to 100 feet above sea level. Bedrock is frequently exposed and covered by thin glacial deposits. Along the immediate coast, soils are generally deep sands (where beaches occur) or shallow sandy loams that are well to excessively drained. Extensive coarse-grained glaciomarine deposits occur in the central portion of the South Coastal Region and along its western margin. The survey area is located within the Presumpscot River watershed (Hydrologic Unit Classification (HUC) 8 identification 01060001), although surface water drainage within the site and vicinity is highly altered by existing developed land surfaces and stormwater management systems.

The Natural Resource Conservation Service soil survey mapping identifies the majority of the native soils at the site as being formed within wind or water deposited material having a high content of silt and very fine sand. They are on lake plains and low benches on uplands.(Nicholville and Hartland series) (Web Soil Survey, 2025). Soils within the center portion of the Study Area are shown to have formed within glaciomarine or glaciolacustrine deposits on coastal lowlands and river valleys (Scantic series). The Nicholville series is moderately well drained, the Hartland series is well drained, and the Scantic series is poorly drained.

Study Methodology

Mainely Soils conducted wetland delineation field work within the survey area on August 7th, 2025. The boundary of wetlands were delineated in accordance with the Army Corps of Engineers 1987 Wetland Delineation Manual (1987

Manual) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (Regional Supplement, 2012). All wetland delineations were conducted using the Routine Determination Methods, which requires that a wetland contain a dominance of hydrophytic vegetation, hydric soils, and evidence of hydrology in order to be considered a wetland. Wetland boundaries were located and demarcated using pink day-glo flagging, with each flag labeled with the corresponding alphabetic wetland identification code and a flag number (i.e. A-1). Wetland flag locations were recorded in the field using a Trimble® GPS unit capable of sub meter accuracy, post processed, and transferred and incorporated onto project mapping.

Additional field notes were also taken to record the classification of each wetland in accordance with the Classification of Wetlands and Deepwater Habitats of the United States, general site characteristics, unique qualities observed during the site assessment, and other considerations relevant to investigation findings and the future completion of a wetlands functions and values assessment in accordance with the Highway Methodology Workbook: Supplement. Representative photographs of each wetland were taken, field sketches were labeled of the wetland boundary on an aerial photograph-based map, and notes were recorded on the flagging sequence for each wetland.

Mainely Soils also surveyed the site for streams, in accordance with the State of Maine Natural Resources Protection Act stream criteria and definitions. One intermittent stream and two perennial streams were delineated within the Study Area.

Vernal pools are small (usually less than one acre), seasonal wetlands that lack perennial inlet or outlet streams and have no permanent fish populations (Calhoun and deMaynadier 2004). Vernal pools are valuable wetland wildlife habitat because of their potentially high biological productivity and use as breeding habitat by specialized animal communities. The characteristics of vernal pools including size, duration of flooding, substrate type and vegetative community are directly affected by a variety of factors such as landscape setting, surficial geology, soil type, and surrounding vegetation (Maine Audubon Society 1999).

As onsite investigations took place in September outside of the vernal pool indicator breeding season, a preliminary Vernal pool survey was conducted at the 100 River Road site to identify and potential pool locations. No potential pools were identified onsite.

Study Results

Using the methodologies described above, a wetland delineation was performed on August 7th, 2025. A description of the identified resources follows. Supporting attachments include Representative Photographs (Attachment 1). Wetland Delineation Data Forms can be provided upon request.

Wetlands at the project site consisted of six distinct wetland features. Wetlands A, C, and D were isolated features within depressions in the surrounding landscape. Wetlands B, E, and F were located within narrow forested ravines and all drained in a westerly direction

Wetland A was located within a maintained hayfield and was classified as a seasonally saturated palustrine wet meadow wetland dominated by non-persistent emergent vegetation (PEM2E). Dominant vegetation included reed canary grass (*Phalaris arundinacea*), fringed sedge (*Carex crinita*), woolgrass (*Scirpus cyperinus*), purple loosestrife (*Lythrum salicaria*), and arrowleaf tearthumb (*Persicaria sagittata*). The soils within the wetland had a thick, dark loamy surface overlaying a depleted very fine sandy loam substratum. Evidence of wetland hydrology included small pockets of water, water stained leaves, and saturation to the soil surface at the time of field investigations on August 7th, 2025.

Wetlands C and D were located within the forested portion of the site and were located in natural depressions within the surrounding landscape. Vegetation was dominated by red maple (Acer rubrum), green ash (*Fraxinus pennsylvanica*), glossy buckthorn (*Frangula alnus*), winterberry (*Ilex verticillata*), sensitive fern (*Onoclea sensibilis*), fringed sedge, and

trillium (*Trillium erectum*). The soils within the wetland had a thin, dark loamy surface overlaying a depleted very fine sandy loam substratum. Evidence of wetland hydrology included water stained leaves, geomorphic position, and saturation to the soil surface at the time of field investigations on August 7th, 2025. Wetlands were characterised as seasonally saturated palustrine deciduous forested wetlands (PFO1E) and had similar vegetative dominance to Wetlands C and D. Wetlands B and E were associated with stream channels.

One intermittent stream was delineated within Wetland B. It was approximately 2 feet wide with 6" vertical banks. It had a sand/mud substrate with no flowing water at the time of the delineation. One perennial stream was located within Wetland E. It was approximately 3-4 feet wide, had 10-12 inch vertical banks, a sand/gravel substrate, and 1 inch of flowing water at the time of the delineation.

Summary

The information contained in this memorandum was collected in order to provide detailed, on-site information regarding wetland and waterbody resources. This information is intended to be used for project planning purposes and to support permitting needs. Six wetland areas were delineated on the site, and were identified as Wetlands A, B, C, D, E, and F. All wetlands generally exhibited a saturated hydroperiod, and provided groundwater discharge, floodflow alteration, and stormwater/water quality maintenance functions. One intermittent stream and One perennial stream was identified on the site. No potential vernal pools were identified.

Wetlands are regulated by the U.S. Army Corps of Engineers under the federal Clean Water Act, and by the Maine Department of Environmental Protection under the Maine Natural Resources Protection Act (NRPA). The State of Maine further differentiates wetlands under NRPA by regulating certain wetlands as "wetlands of special significance" (WOSS). Only those wetlands within 25 feet of the perennial streams constitute as a WOSS under NRPA, although all wetlands are still subject to NRPA jurisdiction as non-WOSS wetlands.

Wetlands within the survey area may be further regulated under municipal ordinances, such as Shoreland Zone, Site Plan Review, or other local ordinances. Impacts to wetlands resulting from proposed project development require that permits first be obtained from the MDEP and the USACE before proceeding with construction, and where applicable, municipal governing bodies. Consultation with these agencies early in the project design process is encouraged.

References:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe.1979. Classification of Wetlands and Deepwater Habitat in the United States. U.S. Fish and Wildlife Service. FWS/OBD-79/31 103pp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

McMahon, J.S. 1990. The Biophysical Regions of Maine: Patterns in the Landscape and Vegetation. University of Maine.

U.S. Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. ERDC/EL TR-12-01. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Web Soil Survey. 2025. U.S. Department of Agriculture – Natural Resources Conservation Service. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Attachments:

1. Representative Site Photographs

Attachment 1

Representative Site Photographs

Natural Resource Photographs – 8/7/2025
100 River Road, Windham, Maine

Photo 1: View looking southerly at Wetland A from flag 3

Photo 2: View looking southwesterly at Wetland B from flag 3

Photo 3: View looking northerly at Wetland C from flag 1

Photo 4: View looking easterly within the central portion of Wetland D

Photo 5: View looking westerly at Wetland E from flag 19

Photo 6: View looking northeasterly at Wetland F from flag 58

Photo 7: View looking upstream at Stream S1 within Wetland E

Photo 8: View looking upstream at Stream S1 within Wetland E

Photo 9: View looking upstream at Stream S2 within Wetland B

Photo 10: View looking southwesterly at the existing farm pond onsite

Photo 11: View looking at existing residential dwelling onsite

SECTION 18

WATER SUPPLY FOR DOMESTIC AND FIRE PROTECTION USE

Section 18 – Water Supply for Domestic and Fire Protection Use

Private on-site wells are proposed to serve each lot. The wells are intended to provide a potable water and fire protection source, with each proposed dwelling being required to have fire sprinklers installed.

Included in Section 19 - Provisions for Wastewater Disposal is a Nitrate and Groundwater Feasibility Assessment report prepared by Main-Land Development Consultants, Inc. Included within the section titled “Groundwater Feasibility Assessment” is information related to the groundwater and surrounding well’s capacity with their determination of capacity for review.

SECTION 19

PROVISIONS FOR WASTEWATER DISPOSAL

Section 19 – Provisions for Wastewater Disposal

The project has a total wastewater design flow of approximately 6,120 gallons per day based on each house containing four (4) bedrooms or less. To ensure adequate existing soil conditions for a first-time septic system, Mainely Soils, LLC performed test pits within each lot. A narrative and the test pit logs have been included in this section for review. Site specific HHE-200 wastewater disposal system designs will need to be performed by a licensed site evaluator for each lot prior to construction.

Since the project site and abutting properties are served by private on-site wastewater disposal systems and on-site potable wells, a hydrogeologic assessment was performed on the project. Scott Dixon, certified geologist with Main-Land Development Consultants, Inc., performed the assessment and the report has been included in this section for review.

December 16, 2025

Dustin Roma
DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062

RE: Soil Evaluation for Subsurface Wastewater Disposal Systems and Stormwater
100 River Road, Windham, Maine

Dear Mr. Roma:

On December 16, 2025, twenty test pits were dug and assessed on 17 proposed residential house lots within the proposed subdivision located on the southwest side of River Road in Windham by Alexander Finamore, LSE #391. Each test pit was located by DM Roma Consulting Engineers and marked in the field with a stake and pink flag. All of the test pits were located in deep lacustrine silt loam soils and contained suitable soils to support a 'First Time System' according to the Maine Subsurface Waste Water Disposal Rules. Please find the soil profile descriptions of the test pits attached.

If you have any questions, please feel free to email me at: mainelysoils@gmail.com or call 207-650-4313.

Sincerely,

Alexander A. Finamore, LSE #391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
100 River Road	DM ROMA Consulting Engineers	Windham

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-1** [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
	FRIABLE	DARK BROWN	NONE
LOAM			OBSERVED
		BROWN	
VERY FINE SANDY LOAM		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	FEW, FINE FAINT

[X] hydric [ ] non-hydric | Slope %: 2-5 | Limiting factor: 28" | [x] ground water [x] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-2** [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
	FRIABLE	DARK BROWN	NONE
LOAM			OBSERVED
		BROWN	
VERY FINE SANDY LOAM		YELLOWISH BROWN	
SILT LOAM	SOMEWHAT FIRM		FEW, FINE FAINT
	FIRM		COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 28"			

[x] hydric [ ] non-hydric | Slope %: 3 | Limiting factor: 17" | [X] ground water [ ] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-3** [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
	FRIABLE	DARK BROWN	NONE
SANDY LOAM			OBSERVED
		BROWN	
SILT LOAM		YELLOWISH BROWN	
	SOMEWHAT FIRM	OLIVE BROWN	FEW, FINE & FAINT
LARGE BOULDER/POTENTIAL BEDROCK @ 30"			

[ ] hydric [■] non-hydric | Slope %: 0-2 | Limiting factor: 30" | [■] ground water [ ] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8/AIII (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-4** [X] Test Pit [ ] Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

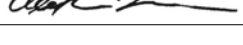
Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE
			OBSERVED
		BROWN	
VERY FINE SANDY LOAM			
		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 32"			

[■] hydric [ ] non-hydric | Slope %: 5 | Limiting factor: 27" | [ ] ground water [■] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: 	Date: 12/16/25
	name printed/typed: Alexander A. Finamore	Lic.#: LSE #391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
100 River Road	DM ROMA Consulting Engineers	Windham

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-5** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
VERY FINE SANDY LOAM		BROWN	
SILT LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 28"			

[ ] hydric [X] non-hydric | Slope %: 5 | Limiting factor: 13" | [X] ground water [X] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-6** [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
		BROWN	
VERY FINE SANDY LOAM		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	FEW, FINE FAINT

[x] hydric [ ] non-hydric | Slope %: 0-2 | Limiting factor: 28" | [X] ground water [X] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (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
FINE SANDY LOAM		BROWN	
SILT LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM,
LIMIT OF EXCAVATION = 26"			

[ ] hydric [■] non-hydric | Slope %: 3-5 | Limiting factor: 13" | [■] ground water [ ] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-8** [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

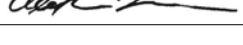
Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
VERY FINE SANDY LOAM		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXACATION = 28"			

[■] hydric [ ] non-hydric | Slope %: 0-3 | Limiting factor: 18" | [■] ground water [ ] restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: 	Date: 12/16/25
	name printed/typed: Alexander A. Finamore	Lic.#: LSE #391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
100 River Road	DM ROMA Consulting Engineers	Windham

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-9** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
VERY FINE SANDY LOAM w/ COBBLES			
SILT LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 28"			

[X] hydric [ ] non-hydric | Slope %: 0-3 | Limiting factor: 18" | x ground water | x restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-10** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
VERY FINE SANDY LOAM			
		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXACATION = 32"			

[x] hydric [ ] non-hydric | Slope %: 5 | Limiting factor: 26" | X ground water | X restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-11** [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
		BROWN	
VERY FINE SANDY LOAM			
SILT LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 30"			

[ ] hydric [■] non-hydric | Slope %: 3-5 | Limiting factor: 15" | ■ ground water | restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-12** [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
		BROWN	
VERY FINE SANDY LOAM		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXACATION = 30"			

[■] 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: 8 (Profile) | C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: 	Date: 12/16/25
	name printed/typed: Alexander A. Finamore	Lic.#: LSE #391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
100 River Road	DM ROMA Consulting Engineers	Windham

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-13** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
FINE SANDY LOAM		BROWN	
VERY FINE SANDY LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 34"			

[X] hydric [ ] non-hydric | Slope %: 3-5 | Limiting factor: 26" | [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-14** [X] Test Pit [ ] Boring

2 " 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		YELLOWISH BROWN	
		LIGHT YELLOWISH BROWN	
SILT LOAM	SOMEWHAT FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXACATION = 32"			

[x] hydric [ ] non-hydric | Slope %: 8 | Limiting factor: 26" | [X] ground water restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-15** [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
		BROWN	
VERY FINE SANDY LOAM			
SILT LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 30"			

[ ] hydric [■] non-hydric | Slope %: 3 | Limiting factor: 19" | [■] ground water restrictive layer bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-16** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
VERY FINE SANDY LOAM		YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXACATION = 30"			

[■] 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: 8 (Profile) | C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: 	Date: 12/16/25
	name printed/typed: Alexander A. Finamore	Lic.#: LSE #391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
100 River Road	DM ROMA Consulting Engineers	Windham

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-17** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
FINE SANDY LOAM			
VERY FINE SANDY LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 34"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
X non-hydric	3-5	26"	x ground water

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-18** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		YELLOWISH BROWN	
FINE SANDY LOAM			
		LIGHT YELLOWISH BROWN	
SILT LOAM	SOMEWHAT FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXACATION = 32"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
x non-hydric	3	24"	X restrictive layer bedrock

C.S.S. Soil Series / phase name: — Drainage Class — Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) — C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-19** [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
		BROWN	
VERY FINE SANDY LOAM			
SILT LOAM	SOMEWHAT FIRM	OLIVE	FEW, FINE FAINT
	FIRM	OLIVE GRAY	COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 34"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
[ ] non-hydric	5-8	22"	[ ] ground water

C.S.S. Soil Series / phase name: — Drainage Class — Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) — C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-16** [X] Test Pit [ ] Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SILT LOAM	SOMEWHAT FIRM	OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
	FIRM	GRAY	
			MANY, COARSE, & PROMINENT
LIMIT OF EXACATION = 28"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
[ ] non-hydric	0-3	6"	[ ] restrictive layer bedrock

C.S.S. Soil Series / phase name: — Drainage Class — Hydrologic Group

L.S.E. Soil Classification: 8 (Profile) — C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: 	Date: 12/16/25
	name printed/typed: Alexander A. Finamore	Lic.#: LSE #391

Nitrate and groundwater feasibility assessments

Proposed Eventide Subdivision
100 River Road
Windham, Maine

Prepared for: DM Roma Consulting Engineers

MAIN-LAND DEVELOPMENT CONSULTANTS, INC.
PO BOX Q, 69 MAIN STREET, LIVERMORE FALLS, MAINE 04254
367 U.S. ROUTE 1, N. BUILDING, FALMOUTH, MAINE 04105
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MAIN-LAND
DEVELOPMENT
CONSULTANTS, INC.

ENGINEERS, SURVEYORS, SCIENTISTS

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TEL: (207) 897-6752
WWW.MAIN-LANDDCI.COM

March 24, 2026

DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062
Attention: Mr. Jayson Haskell, P.E.
Mr. Dustin Roma, P.E.

Subject: Nitrate-nitrogen Impact and Groundwater Feasibility Assessments
Proposed Eventide Subdivision
100 River Road, Windham, Maine

Dear Gentlemen,

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 and groundwater availability assessments for the proposed project. The project site is depicted on the attached *Site Location Map*.

Nitrate-Nitrogen Assessment

Main-Land has reviewed your Drawing SB-1, *Subdivision Plan*, dated 3/6/26. The concept leachfields for all lots except Lots 1 through 3 are considered exempt from a nitrate-nitrogen assessment because they are oriented such that subsurface wastewater flow is toward a drainage divide and/or are 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. Please see Drawing E1.0, *Existing Conditions and Groundwater Assessments* attached, which depicts estimated groundwater flow directions for the lots.

Proposed leachfields for Lots 1 through 3 are oriented such that groundwater flow is toward a downgradient property boundary. For the purposes of Local review, Main-Land has selected these three concept leachfield locations 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 concept leachfield for Lot 2 (explored by Main-Land TP-A) will be used to show input parameters for the Baetsle equation which include the following:

Main-Land estimated hydraulic conductivity (k) of the observed lacustrine/Profile 8 soils using the Kozeny-Carmen equation and our grain size analysis of test pit samples. The estimated k-value based on the K-C analysis is approximately 1.5 feet/day. In addition, Main-Land reviewed hydraulic conductivity data of the mapped Lamoine/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 silt loam soil is approximately 0.5 feet/day. Based on this, Main-Land selected of value of k = 1 feet/day for the following analyses. Main-Land's log for TP-A, as well as the grain size and Kozeny-Carmen analyses are attached.

Based on soil type and estimated in-situ density, the average effective porosity, n, of 0.39 has been assigned. Based on Main-Land's review of provided topographic site plan and observations during our field visit, the gradient of the seasonal high groundwater surface is approximately 4%. Based on this, the groundwater seepage velocity, v, is found as:

$V = ki/n = (1 \text{ ft/day})(0.04)/0.39 = 1.02 \sim 1 \text{ ft/day}$

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 Lot 1 extends approximately 132 feet from the center of that lot's concept leachfield.

A summary of the Baetsle analyses conducted for the three concept leachfields is provided 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 boundary)
Lot 1	360 gpd	1 ft/day	132 feet (approx. 158 feet to property boundary along flow line)
Lot 2	360 gpd	1 ft/day	132 feet (approx. 200 feet to property boundary)
Lot 3	360 gpd	1 ft/day	132 feet (approx. 220 feet to property boundary)

This analysis was made assuming an initial standard nitrate concentration of 40 mg/l in residential wastewater from a 4-bedroom residential home (i.e., 360 gpd design flow), with no dilution by coincident rainwater. Baetsle analysis printouts for the estimated 10 mg/l plumes for the three leachfields analyzed are attached.

Concept leachfield locations for Lots 1 through 3, location of Main-Land's TP-A, estimated groundwater flow directions, and estimated nitrate plumes and shown on Drawing E1.0. An existing drilled well that serves the property at Map 1/Lot 10-A is depicted on this drawing. The estimated nitrate concentration at this well from the upgradient concept leachfield on Lot 2 is approximately 4.4 mg/l; this nitrate concentration is below the EPA's National Primary Drinking Water Standard of 10 mg/l and therefore does not exceed the standard.

In summary, the nitrate plumes from Lots 1 through 3 meet the intent of the standard of ***not exceeding*** 10 mg/l at the closest downgradient property line toward which the subsurface effluent will be

flowing. Furthermore, for existing wells and properly placed wells on the new lots, the 10 mg/l nitrate standard will also ***not be exceeded***.

Groundwater Feasibility Assessment

Main-Land reviewed groundwater data available from the Maine Geological Survey with respect to drilled bedrock water supply wells in the vicinity of the proposed subdivision. The proposed development will be served by private wells for water supply. Wells will be drilled into the underlying bedrock aquifer, which is mapped as Silurian/Ordovician-aged metamorphosed calcareous sandstone of the Vassalboro Formation.

Information provided on Maine Geological Survey (MGS) maps relative to existing bedrock water supply wells in the area indicates that twenty-three wells are located within an approximately 0.5 mile-radius of the project site for which well information is available. The wells mapped by the MGS range from about 71 to 500 feet in depth, and reported yields range from about 0.5 to 30 gpm; the average of the reported yields is approximately 11.5 gpm. See the attached *Well Data Map* for this supporting information.

Based on the above information regarding existing bedrock water supply wells in the area, the bedrock aquifer is likely to have adequate capacity to supply potable water to meet domestic demand without resulting in adverse on- or off-site influences such as excessive drawdown. In addition, review of the *Site Location Map* shows that the site is bounded on the west by the Presumpscot river, with uplands to the east. Due to the site's relative location in the lower part of the local watershed, groundwater will flow toward it to discharge at or near the river. The location relative to groundwater flow is beneficial to recharge groundwater extracted from the bedrock aquifer by the site and surrounding lots, and helps to buffer against adverse offsite impacts of the proposed subdivision.

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: *Site Location Plan*
Drawing E1.0 - *Existing Conditions and Groundwater Assessments*

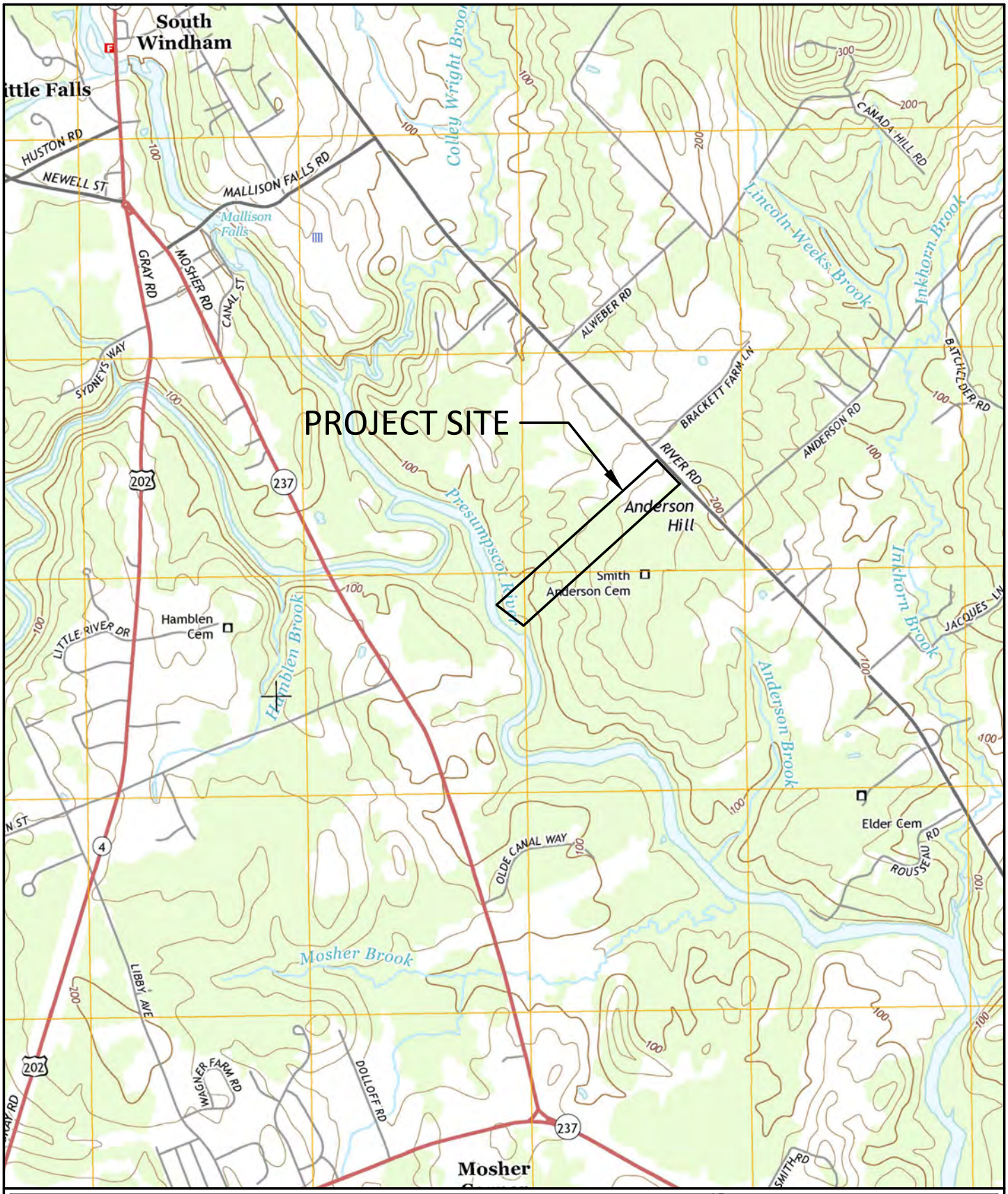
Test Pit Log
Grain Size and Kozeny-Carmen Analyses of test pit sample
Baetsle analysis printouts for nitrate assessments
Well Data Map

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*

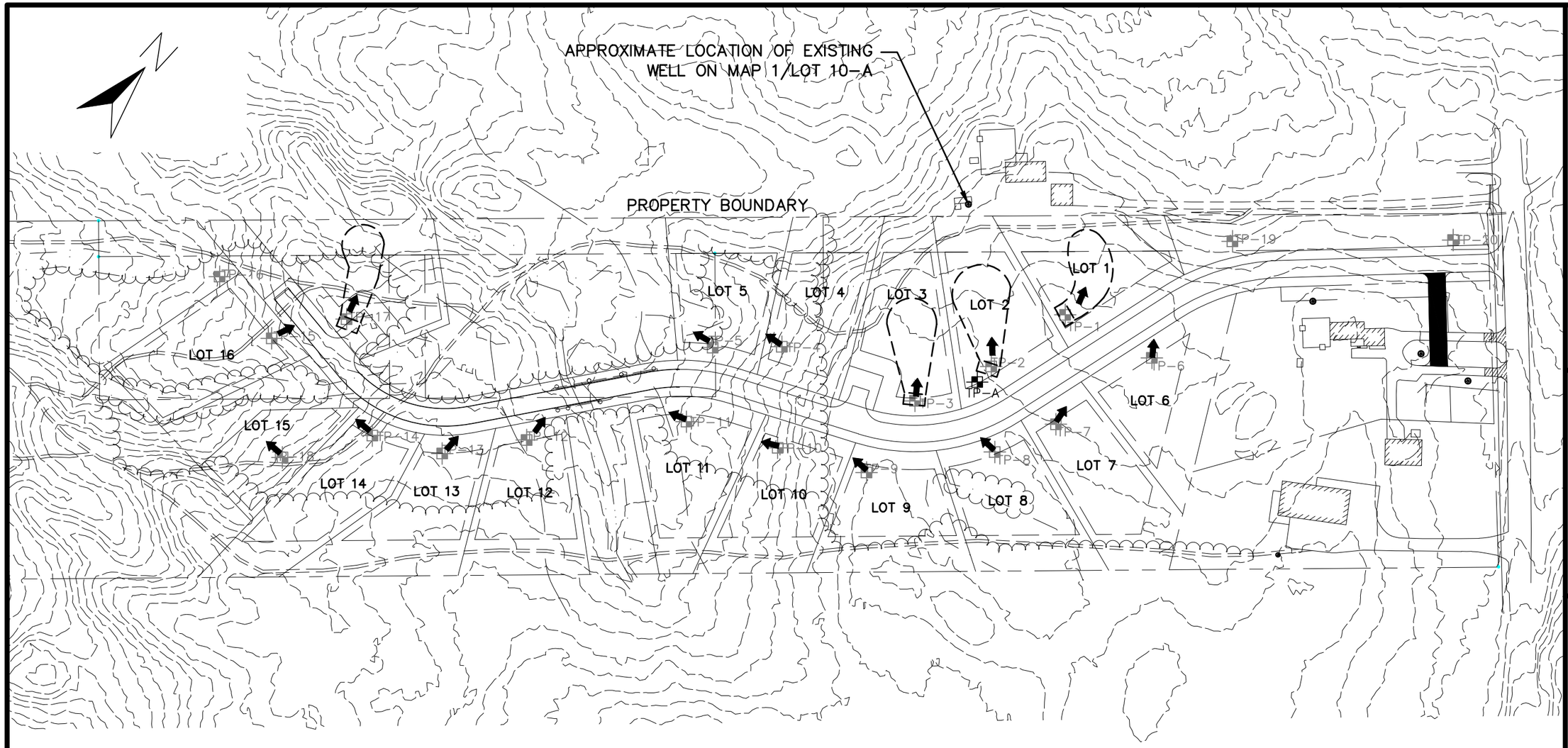


SITE LOCATION MAP

100 RIVER ROAD
WINDHAM, MAINE

SCALE: 1"=2000'
DATE: 09-30-2025
JOB NUMBER: 23056

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



150 0 75 150

(IN FEET)

1 INCH = 150 FT

LEGEND

- INFERRED GROUNDWATER FLOW DIRECTION
- CONCEPT 4-BR LEACHFIELD LOCATIONS
- ESTIMATED EXTENT OF 10 mg/l NITRATE PLUME
- TP-A — MAIN-LAND TEST PIT MADE ON 03/12/26
- TP-2 — SEPTIC SUITABILITY TEST PITS BY OTHERS

MAIN-LAND DEVELOPMENT CONSULTANTS, INC.
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MLDC NO. 26-099
PROJ. MGR: SRD
DRAWN BY: HRD
CHECKED BY: SRD
REVISION NO. N/A
SURVEY DATE: N/A
ISSUE DATE: 2026-03-24
ISSUED FOR: REVIEW

NOT FOR CONSTRUCTION

PROJECT
PROPOSED EVENTIDE SUBDIVISION
100 RIVER ROAD, WINDHAM, ME

MADE FOR

EXISTING CONDITIONS AND GROUNDWATER ASSESSMENTS

DRAWING NO. E1.0

1 OF 1

FORM F Rev. 07/11a

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Eventide Subd.	DM Roma Cons. Engrs.	Windham, ME

Exploration Symbol # TP-A ☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. ____

____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth (approx.)	Texture	Consistency	Color	Redox Features
0–8	Loam	Friable	Dark brown	None
8–32	Silt Loam		Light yellowish brown	Few, faint
32–60	Friable till	Firm		

Soil Details by S.E.:

Soil Classification (Profile)	Soil Classification (Condition)	Slope (Percent)	Limiting Factor (Depth)	
8	C	3-5	18 "	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Details by 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	Texture	Consistency	Color	Redox Features
0–60				

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	Texture	Consistency	Color	Redox Features
0–60				

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	Texture	Consistency	Color	Redox Features
0–60				

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: [signature]	Date: 3/12/26
Name Printed: Scott R. Dixon	Cert/Lic/Reg. #: SE 406

Title: ☒ Licensed Site Evaluator ☐ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

STATE OF MAINE — SCOTT R. DIXON — LSE 406 — Licensed professional soil SITE EVALUATOR

Main-Land Development Consultants, INC.
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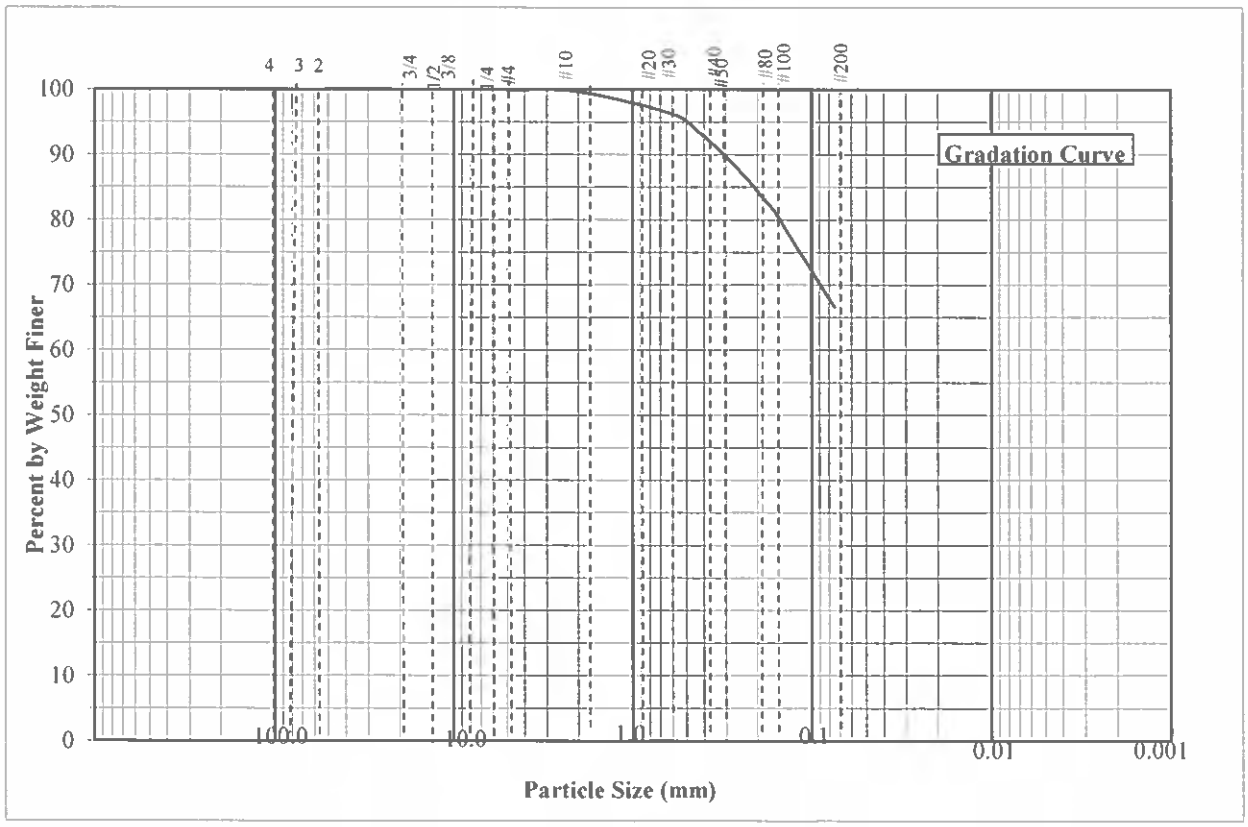
GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	Eventide Subdivision	PROJECT #:	26-099
CLIENT:	DM Roma Cons. Eng.	MAIN-LAND SAMPLE:	TP-A
M-L SOIL DES:	Silt Loam	INTENDED USE:	Gradation
SOURCE:	TP-A	SPECIFICATION:	N/A
DATE:	Sampled 3/12/26	TECHNICIAN:	JLD

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)	100		
19.05	(3/4 in)	100		
12.70	(1/2 in)	100		
9.53	(3/8 in)	100		
6.35	(1/4 in)	100		
4.75	(No. 4)	99.9		
2.00	(No. 10)	99.6		
0.60	(No. 30)	96.2		
0.43	(No. 40)	93.4		
0.30	(No. 50)	89.6		
0.18	(No. 80)	82.8		
0.15	(No. 100)	79.8		
0.075	(No. 200)	66.6		



REMARKS:

Reviewed: Scott R. Dixon, P.E.
Date 3/17/26

Eventide TP-A

Sieve Sizes			Gradation Results		
Sieve size	U.S. Standar	D_{ave}			
metric	Sieve No.	cm	% Pass	Fi	Fi/D_{ave}
10	4		100		
7.5	3	8.407395	100	0	0
5	2	5.880468	100	0	0
3.75	1.5	4.206612	100	0	0
2.5	1	2.942273	100	0	0
1.9	3/4	2.121418	100	0	0
1.25	1/2	1.480055	100	0	0
0.95	3/8	1.061444	100	0	0
0.63	1/4	0.74406	100	0	0
0.475	#4	0.532803	99.9	0.1	0.187687
0.2	#10	0.284117	99.6	0.3	1.055903
0.085	#20	0.120398	98	1.6	13.28922
0.0425	#40	0.056413	93.4	4.6	81.54196
0.018	#80	0.025572	82.8	10.6	414.5239
0.0106	#140	0.013188	71	11.8	894.736
0.0075	#200	0.008667	66.6	4.4	507.6538
0.00325	hyd #1	0.004582		0	0
0.00207	Hyd#2	0.002499		0	0
0.0012	Hyd#3	0.001506		0	0
0.00085	hyd#4	0.000984		0	0
0.0006	hyd#5	0.000696		0	0
0.0003	hyd#6	0.0004		0	0
0.00012	hyd#7	0.000175	0	66.6	33466.55

D_o est (cm)
0.0008

Sum= 35379.54
porosity, n= 0.38
void ratio, e= 0.612903

Shape Factor	
Shape	SF
Spherical	6
Rounded	6.1
Worn	6.4
Sharp	7.4
Angular	7.7

k=	0.000629 cm/sec	k=	1.783358	feet/day
k=	0.000609 cm/sec	k=	1.725367	feet/day
k=	0.000553 cm/sec	k=	1.567405	feet/day
k=	0.000414 cm/sec	k=	1.172405	feet/day
k=	0.000382 cm/sec	k=	1.082828	feet/day

about 1.5 ft/d

Spreadsheet for Nitrate attenuation after Baetsle and Chang: Eventide Subd. 10 mg/l extent at Lot 1

Proposed Eventide Subd., 100 River Rd., Windham, ME

$$C(x,y,z,t) = [CoVo/8(\pi t)^{1.5}((DxDyDz)^{.5}] \, e[-((x-vt)^2/4Dxt)-(y^2/4Dyt)-(z^2/4Dzt)]$$

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 0.39
D = av
ax = dispersivity in x direction = $(0.83)[(\log_{10}(Lp)]^{2.414}$
Lp = vt

k=hydr. Cond	1	ft/day				
i=gradient	0.04	ft/ft	from site plan			
Variables:						
g.w. velocity	0.10	ft/day				
time	4380	days				
x, from source	132	feet		10.05388 mg/l	AFTER	12.0 years
y, from source cl	0	feet				
z, from source cl	2	feet				
Volume	360	gal/day	48.1283422 cubic feet			
Lp, plume length						
to center of mass	449.2307692	feet				
ax	17.01773141					
ay	5.672577138					
az	0.850886571					
Dx	1.74540835					
Dy	0.581802783					
Dz	0.087270418					
Initial concen	40					

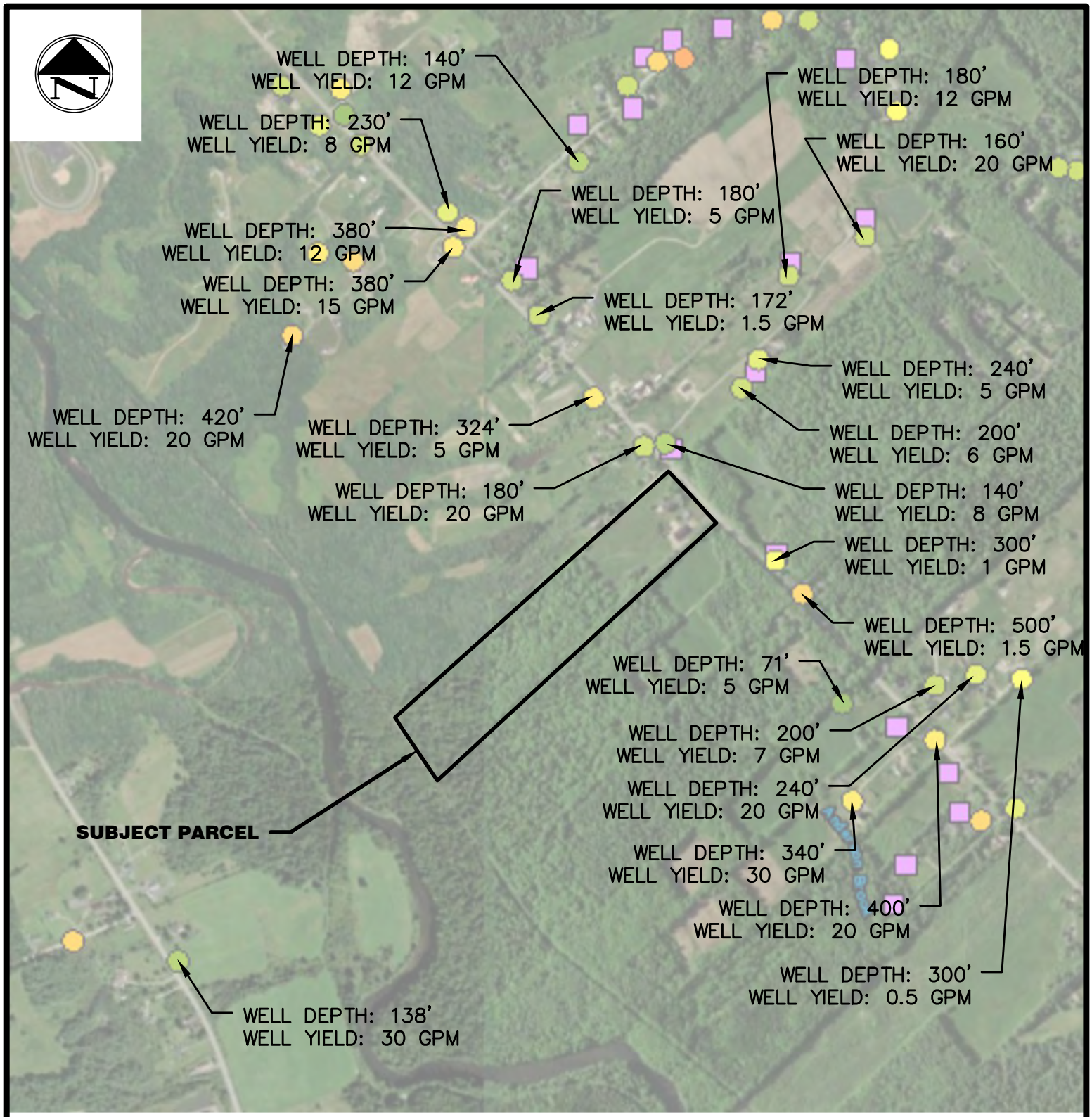
Spreadsheet for Nitrate attenuation after Baetsle and Chang: Eventide Subd., Nitrate at nearest exist. well below Lot 2

Proposed Eventide Subd., 100 River Rd., Windham, ME

$$C(x,y,z,t) = [CoVo/8(\pi t)^{1.5}((DxDyDz)^{.5}] \, e[-((x-vt)^2/4Dxt)-(y^2/4Dyt)-(z^2/4Dzt)]$$

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 0.39
D = av
ax = dispersivity in x direction = $(0.83)[(\log_{10}(Lp)]^{2.414}$
Lp = vt

k=hydr. Cond	1	ft/day				
i=gradient	0.04	ft/ft	from site plan			
Variables:						
g.w. velocity	0.10	ft/day				
time	4380	days				
x, from source	220	feet		4.40895 mg/l	AFTER	12.0 years
y, from source cl	0	feet				
z, from source cl	2	feet				
Volume	360	gal/day	48.1283422 cubic feet			
Lp, plume length						
to center of mass	449.2307692	feet				
ax	17.01773141					
ay	5.672577138					
az	0.850886571					
Dx	1.74540835					
Dy	0.581802783					
Dz	0.087270418					
Initial concen	40					



NOTES

1. WELL DATA SHOWN DOWNLOADED FROM MAINE.MAPS.ARCGIS.COM

NOT FOR CONSTRUCTION

PROJECT:
PROPOSED EVENTIDE SUBD.
100 RIVER ROAD, WINDHAM, ME

DRAWING:
WELL DATA MAP
SCALE: 1" =1000'

MLDC NO.	26-099
PROJ. MGR:	SRD
DRAWN BY:	HRD
CHECKED BY:	SRD
REVISION NO.	N/A
ISSUE DATE:	2026-03-19
ISSUED FOR:	REVIEW

MAIN-LAND
DEVELOPMENT
CONSULTANTS, INC.
69 MAIN ST. LIVERMORE FALLS, MAINE
367 US ROUTE 1 FALMOUTH, MAINE
PH: (207) 897-6752 FAX: (207) 897-5404
WWW.MAIN-LANDDCI.COM

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	$30,000
2.	Aggregates for Roads	$160,000
3.	Bituminous Pavement	$150,000
4.	Curbing	$20,000
5.	Electrical Conduit and Risers	$55,000
6.	Stormwater BMPs	$100,000
7.	Storm Drain Collection	$55,000
8.	Other Road Improvements	$45,000
9.	Loam and Seed	$35,000
	Total Sitework Estimate:	$650,000

Enclosed is a letter indicating that the applicant has the financial capacity to complete the project.

InnoVestus, LLC

March 31, 2026

Northeast Building and Development LLC
Ronald Goddard
17 Bucket Ln Yarmouth, ME 04096

RE: Loan Proposal – River Road

Dear Mr. Goddard:

This loan proposal letter is merely an indication of interest in the proposed financing of 17 lot subdivision located at 100 River Road in Windham Maine. This in no way represents a commitment for financing. A formal loan commitment would require ratification via our lender credit approval process, following additional due diligence, which has yet to be completely identified. However, our review indicates that you have creditworthiness and financial capacity to complete this project.

Borrower	Entity TBD
Co-Borrower	None
Guarantor (s)	Ron Goddard
Funding Amount	Up to $5 million (capped at 75% LTV)
Loan Terms	Interest only with construction revolver
Interest Rate	Market
Prepayment	None
Broker Fee:	1% of loan amount
Third Party Reports	As required
Other Closing Costs	The borrower will be responsible for all out of pocket expenses incurred by the lender in connection with the documentation, closing, and servicing of this transaction. These expenses may include, but are not limited to, filing fees, title insurance or other legal fees.

Borrower is responsible for all legal, recording, and out of pocket expenses incurred by the lender relative to this loan proposal whether or not this transaction is consummated.

The borrower must agree to deliver any documents that may be required by the lender to properly underwrite this transaction. Such documentation may include, but is not limited to the following:

CREDIT APPROVAL CONDITIONS

All conditions satisfied at this time.

LOAN COMMITMENT CONDITIONS

1. Confirmation of Town approval of the project
2. Acceptable MAI certified appraisal
3. Acceptable environmental phase 1 report (if necessary)
4. Acceptable survey report
5. Preliminary Title Commitment
6. Current insurance policy or premium quote on subject property.
7. Entity Documentation if title to be held in a name other than individual name.

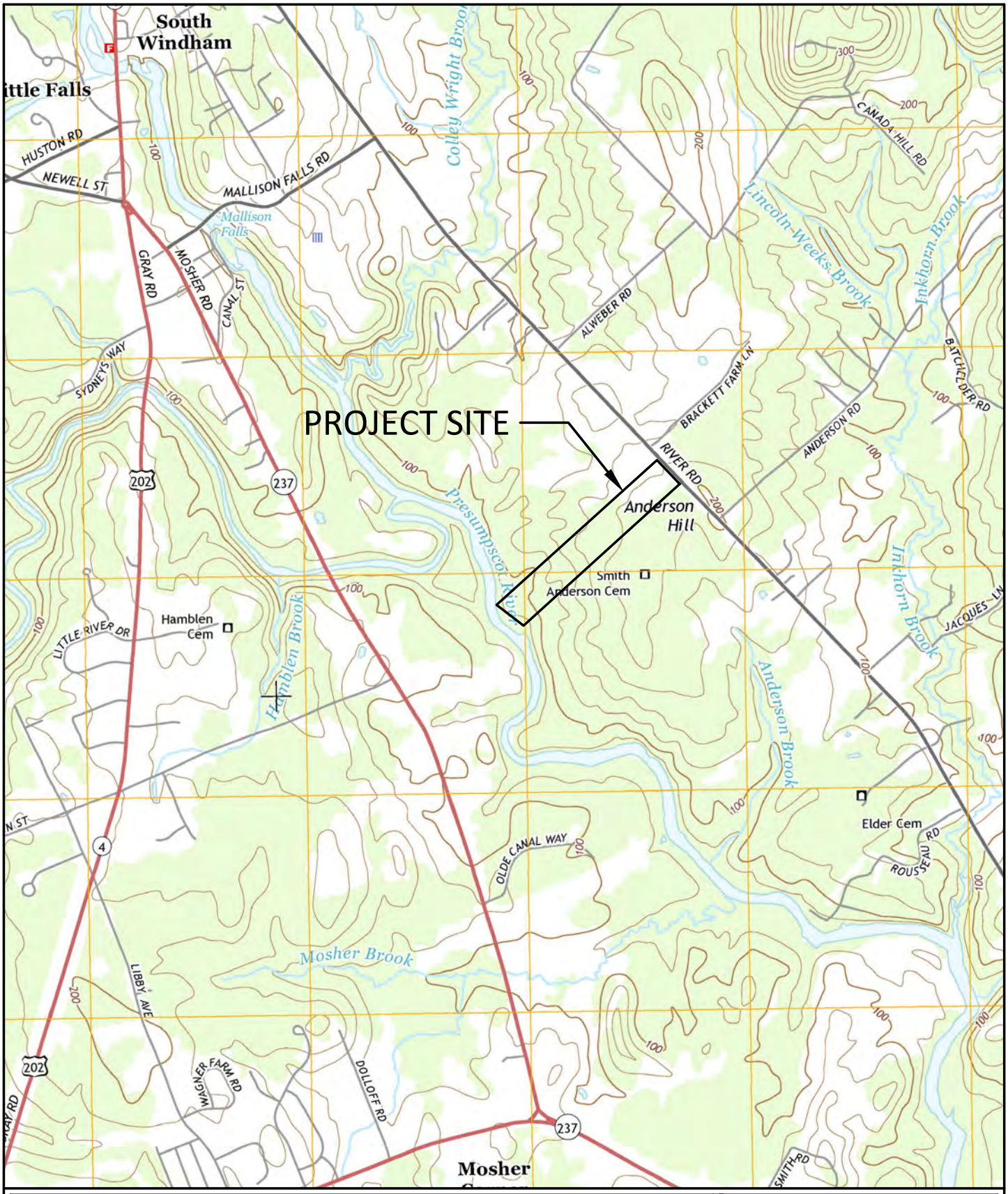
If you have any questions on this conditional pre-approval or at any time during the loan process, please contact your Representative listed above.

Sincerely,

David A. Richards
Managing Member

SECTION 21

SITE VICINITY MAP – USGS QUADRANGLE



SITE LOCATION MAP

100 RIVER ROAD
WINDHAM, MAINE

SCALE: 1"=2000'
DATE: 09-30-2025
JOB NUMBER: 23056

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

SECTION 22

FLOOD HAZARD AREAS

Section 22 – Flood Hazard Areas

Lot 9, not part of the subdivision, is located partially within the 100-year floodplain boundary. FEMA FIRMETTE is included as part of this application, and the limits of the 100-year floodplain boundary are shown on the project plans.

National Flood Hazard Layer FIRMette

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 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 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 8/26/2025 at 1:15 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 23

IMPACT TO SITES OF HISTORICAL SIGNIFICANCE

Section 23 – Impacts to Sites of Historical Significance

The attached review letter from the Maine Historic Preservation Commission indicates that there will be no historic properties affected by the proposed project.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

October 8, 2025

Mr. J.P. Connolly
DM Roma
PO Box 1116
Windham, ME 04062

Project: MHPC #1713-25 100 Rivers Road
Family Subdivision

Town: Windham, ME

Dear Mr. Connolly:

In response to your recent request, I have reviewed the information received September 30, 2025 to initiate consultation on the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Based on the information submitted, I have concluded that there will be no historic properties (architectural or archaeological) affected by this proposed undertaking, as defined by Section 106.

Please contact Megan Rideout at (207) 287-2992 or megan.m.rideout@maine.gov if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132 FAX: (207) 287-2335

SECTION 24

MDEP STORMWATER PERMIT SUPPLEMENTAL MATERIALS

PUBLIC NOTICE INSTRUCTIONS AND CERTIFICATION

The Department's Chapter 2 rules, *Processing of Applications and Other Administrative Matters*, require an applicant to provide public notice within 30 days prior to filing a license application for most projects or activities requiring a permit from the Department (see Chapter 2, §13). In the notice, the applicant must provide the information included in the Department's Notice of Intent to File form. "Abutter" for the purposes of public notice means any person who owns property that is contiguous with the property on which the project requiring a license from the Department is proposed.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication.

2. **Abutters and Others Owning Land Within 1,000 Feet:** You must mail a copy of the Notice of Intent to File to abutters and all persons owning land within 1,000 feet of the proposed project. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office or County Commissioner(s):** You must mail a copy of the Notice of Intent to File and a duplicate of the entire application to the Municipal Office or, if the proposed project is located in an unorganized or deorganized area of the State, to the county commissioner(s). The Municipal Office or county commissioner(s) must receive notice within 30 days prior to the filing of the application with the Department.

ATTACH a copy of the published notice and a list of persons to whom notice was provided.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;

2. A mailing of the Notice of Intent to File was sent to all abutters and all other persons owning land within 1,000 feet of the proposed project within 30 days prior to filing of the application;

3. A mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located or, if applicable, to the county commissioner(s); and

4. Provided notice of and held a public informational meeting, if required, in accordance with the Department's Chapter 2 rules, §12, prior to filing the application. Notice of the meeting was sent to abutters and all other persons owning land within 1,000 feet of the proposed project and to the town office of the municipality in which the project is located or to the county commissioner(s), as applicable, at least at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on NA (*Date*).

Approximately NA members of the public attended the Public Informational Meeting.

Signature of Applicant or Authorized Agent

4-6-2026
Date

PUBLIC NOTICE:
NOTICE OF INTENT TO FILE

Please take notice that Row Even LLC, with a mailing address of 17 Bucket Lane, Yarmouth, Maine 04096, is intending to file a Stormwater Law permit application pursuant to the provisions of 38 M.R.S.A. §§ 420-D with the Maine Department of Environmental Protection on or about February 23, 2026. The application is for the construction of a 17-lot residential subdivision with approximately 1,800 feet of new paved roads located adjacent to 100 River Road in Windham, Maine. A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the application processing period. The application will be filed for public inspection on the DEP's website at: https://www.maine.gov/mels/hub.html. Written public comments may be sent through the website. A copy of the application may also be seen at the municipal offices in Windham, Maine. For more information on how to submit public comment with the DEP, please go to the DEP's website: Public Participation in the Licensing Process (information sheet) Maine DEP.