Preliminary Major Subdivision Application

To the Town of Windham

421 Falmouth Road Subdivision

421 Falmouth Road
Windham, Maine

Applicant:
Robie Holdings LLC
PO Box 1508
Windham, ME 04062

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

DM ROMA
CONSULTING ENGINEERS

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MAJOR SUBDIVISION PRELIMINARY APPLICATION TO TOWN OF WINDHAM

421 FALMOUTH ROAD SUBDIVISION

SECTION 1

APPLICATION FORM & SUBMISSION CHECKLIST

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

MAJOR SUBDIVISION - PRELIMINARY PLAN - REVIEW APPLICATION

FEES FOR MAJOR SUBDIVISION PRELIMINARY PLAN REVIEW		**APPLICATION FEE:** + EACH LOT > 10 = $300/LOT	☒ $1,300.00 ☒ $ 900.00	**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	☐ $ 3,000				
PROPERTY DESCRIPTION	Parcel ID	Map(s) # 19	Lot(s) # 104	Zoning District(s)	VR & F	Total Land Area SF:	991,297 SF
	# Lots/dwelling units:		Total Distr. >1Ac. ☐ Y ☐ N			Est. Road Length(ft):	
	Physical Address	421 FALMOUTH ROAD		Watershed:			
PROPERTY OWNER'S INFORMATION	Name			Name of Business	ROBIE HOLDINGS, LLC		
	Phone	(207) 892 - 0650		Mailing Address:	PO BOX 1508		
	Fax or Cell				WINDHAM, ME 04062		
	Email	JARODROBIE@HOTMAIL.COM					
APPLICANT'S INFORMATION (*IF DIFFERENT FROM OWNER*)	Name	SAME AS OWNER		Name of Business:			
	Phone			Mailing Address			
	Fax or Cell						
	Email						
APPLICANT'S AGENT INFORMATION	Name	DUSTIN ROMA		Name of Business	DM ROMA CONSULTING ENGINEERS		
	Phone	(207) 591 - 5055		Mailing Address	PO BOX 1116		
	Fax or Cell	(207) 310 - 0506			WINDHAM, ME 04062		
	Email	DUSTIN@DMROMA.COM					

PROJECT INFORMATION

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

SINGLE FAMILY RESIDENTIAL

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

DEMOLISH THE EXISING HOME AND CONSTRUCT 13 UNITS OF SINGLE-FAMILY DETACHED CONDOMINIUM DWELLINGS ON A PRIVATE DRIVEWAY.

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

THE SITE CONTAINS A STREAM AND WETLANDS.

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	PENDING ☐	☐	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			
			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.	☒	☐
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.	☒	☐	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.	☒	☐
11. Indicate the type of water supply system(s) to be used in the subdivision.	☒	☐	15. Location & size of existing and proposed sewers, water mains, culverts, bridges, and drainage ways on or adjacent to the property to be subdivided. The Board may require this information to be depicted via cross-section, plan, or profile views.	☒	☐
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.	☒	☐	16. Location, names, and present width of existing streets, highways, easements, building lines, parks, and other open spaces on or adjacent to the subdivision.	☒	☐
13. Names and addresses of the record owner, applicant, and adjoining property owners.	☒	☐	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.	☒	☐
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.	☐	☐	18. All parcels of land proposed to be dedicated to public use and the conditions of such dedication.	☒	☐
15. The name and contact information for the road association whose private way or road is used to access the subdivision.	☐	☐	19. Location of any open space to be preserved or common areas to be created, and general description of proposed ownership, improvement, and management	☒	☐
16. Financial Capacity. Estimated costs of development, and an itemization of major costs.			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.	☒	☐
f. Letter from financial institution indicating an intention to finance.	☒	☐	**C. Submission information for which a waiver may be granted.**	**Applicant**	**Staff**
iii. If a corporation, Certificate of Good Standing from the Secretary of State	☒	☐	1. High-intensity soil survey by a Certified Soil Scientist	☐	☐
			2. Landscape Plan	☒	☐
2. Technical Capacity:			3. Hydrogeologic assessment - required if i) subdivision is not served by public sewer and either any part of the subdivision is over a sand and gravel aquifer or has an average density of more than one dwelling unit per 100,000 square feet, or ii) where site considerations or development design indicate the greater potential of adverse impacts on groundwater quality.	☐	☐

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

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

Dustin Roma	5-19-25	DUSTIN ROMA - AUTHORIZED AGENT
APPLICANT OR AGENT'S SIGNATURE	DATE	PLEASE TYPE OR PRINT THE NAME

SECTION 2

AGENT AUTHORIZATION

October 7, 2024

Re: Agent Authorization

Robie Holdings, LLC intends to develop the property located at 421 Falmouth Road in Windham, Maine. Robie Holdings, 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,

Jarod Robie
Robie Holdings, LLC

SECTION 3

WAIVER REQUESTS

Section 3 – Waiver Requests

A waiver was granted for the requirement to submit a High Intensity Soil Survey at the Sketch Plan stage of the project. No additional waivers are requested at this time.

SECTION 4

CERTIFICATE OF CORPORATE GOOD STANDING

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

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Oct 07 2024 11:49:05. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
ROBIE HOLDINGS LLC	20152384DC	LIMITED LIABILITY COMPANY	GOOD STANDING

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

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

NONE

Principal Home Office Address

Physical	Mailing
630 ROOSEVELT TRAIL	P.O. BOX 1508
WINDHAM, ME 04062	WINDHAM, ME 04062

Clerk/Registered Agent

Physical	Mailing
JAROD ROBIE ONE DIAMOND POINT ROAD	JAROD ROBIE PO BOX 1508
WINDHAM, ME 04062	WINDHAM, ME 04062

New Search

Click on a link to obtain additional information.

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

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

Download

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

SECTION 5

PROJECT NARRATIVE

Section 5 – Project Narrative

Zoning:	Village Residenital (VR) and Farm (F)
Acreage:	22.75 Acres
Tax Map/Lot:	Map 19 Lot 104
Existing Use:	Single Family Residential
Proposed Use:	Single Family Residential, Multifamily Development

The proposed project includes the construction of 13 single-family detached residential dwellings and approximately 480 feet of new private driveway construction that will be built to the Major Private Road standards. All residential units will be served by public water, underground electrical service and on-site subsurface wastewater disposal systems. Each dwelling is intended to be sold as a Condominium Unit.

SECTION 6

NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS

Section 6 – Names and Addresses of Abutting Property Owners

The following is a list of direct abutters to the 421 Falmouth Road property

Map/Lot	Owner Name	Mailing Address
19/104-C	Phillip Webster Lisa Marie Webster	PO Box 1867 Windham, ME 04062
19/90-B	Timothy Lamb Donna Lamb	413 Falmouth Rd Windham, ME 04062

SECTION 7

RIGHT, TITLE OR INTEREST DOCUMENTS

MAINE REAL ESTATE TAX-Paid

SHORT FORM DEED OF SALE BY
PERSONAL REPRESENTATIVE (TESTATE)

DLN: 2079467

ELIZABETH T. HIGH, of Cumberland Foreside, Cumberland County, Maine, duly appointed and acting Personal Representative of the Estate of Claire Marx, deceased (testate), as shown by the probate records of Cumberland County, Maine (Docket #2024-0940) and not having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, such notice not being required under the terms of the decedent's Will, by the power conferred by the Probate Code, and every other power, FOR CONSIDERATION PAID, grants to **ROBIE HOLDINGS, LLC**, a Maine limited liability company duly authorized and existing under the laws of the State of Maine, whose mailing address is P.O. Box 1508, Windham, Maine 04062, certain real property, together with any improvements thereon, located in Windham, Cumberland County, Maine, being more particularly described in Exhibit A attached hereto and incorporated by specific reference herein.

WITNESS my hand and seal this 30 day of October 2024.

WITNESS:

Charles R. Weller
Name:

ELIZABETH T. HIGH
Personal Representative of the
Estate of Claire Marx

State of Maine
County of Cumberland, ss.

October 30, 2024

PERSONALLY APPEARED the above-named ELIZABETH T. HIGH, Personal Representative as aforesaid, and acknowledged the foregoing instrument to be her free act and deed in her said capacity.

Before me,

Kerry E. Kimball
State of Maine
Attorney At Law
Bar #8577

Notary Public / Attorney-at-Law

DOC :41310 BK:41093 PG:244
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
10/31/2024, 09:50:56A
Register of Deeds Jessica M. Spaulding E-RECORDED

EXHIBIT A

Grantor:	Elizabeth T. High, Personal Representative of the Estate of Claire Marx
Grantee:	Robie Holdings, LLC
Date:	October 30, 2024
Instrument:	Short Form Deed of Sale by Personal Representative

A certain lot or parcel of land with all buildings thereon located on the Northerly side of the Falmouth Road in the Town of Windham, County of Cumberland, and State of Maine, fully described as follows:

"Beginning at the southwest corner of land now or formerly of William H. Varney on the northerly side of the Falmouth Road, so called, and running northwesterly along the line of said road a distance of three hundred and fifty (350) feet to a point; thence making a right angle to said road in a northeasterly direction a distance of six hundred (600) feet to a point and other land of Emery; thence making a right angle in a southeasterly direction along a line parallel with the said Falmouth Road a distance of three hundred fifty (350) feet to a point and land now or formerly of William H. Varney; thence making a right angle and along the line of said Varney's land a distance of six hundred (600) feet in a southwesterly direction to the point of beginning."

Being a portion of the premises conveyed by Ida I. McMillan to Shepard M. Emery and Barbara S. Emery by Warranty Deed dated September 18, 1959 and recorded in the Cumberland County Registry of Deeds, Book 2502, Page 412. Shepard M. Emery released his interest in the above premises by Warranty Deed dated February 27, 1969, as recorded in Cumberland County Registry of Deeds, Book 3076, Page 617, and died in 1974. Barbara S. Emery died Testate in August of 1976, and the Northeast Bank of Westbrook was appointed Executor of her Estate by the Cumberland County Probate Court on October 22, 1976.

Reference is also hereby made to the Warranty Deed of Marjorie E. Lamb to Northeast Bank of Westbrook dated April 26, 1977 recorded at the Cumberland County Registry of Deeds in Book 4003, Page 150.

This conveyance is made subject to real estate taxes not yet due and payable for the year commencing April 1, 2024, which the Grantee herein named assumes and agrees to pay when due to the Town of Windham.

For source of title, reference may be had to a deed from Northeast Bank of Westbrook, Executor of the Will of Barbara S. Emery, to Claire Marx, dated April 26, 1977, and recorded in the Cumberland County Registry of Deeds in Book 4003, Page 154.

Claire Marx died Testate, May 20, 2024, and Elizabeth T. High was appointed Personal Representative of her Estate by the Cumberland County Probate Court on July 3, 2024.

WARRANTY DEED
Statutory Short Form

DLN: 2782458

KNOW ALL BY THESE PRESENTS, That I, **Jarod Robie**, whose mailing address is **PO Box 1508, Windham, Maine 04062**, for no consideration paid, grant to **Robie Holdings, LLC**, a Maine Limited Liability Company, whose mailing address is **PO Box 1508, Windham, ME 04062**, a with Warranty Covenants, the real property in the Town of **Windham**, County of **Cumberland** and State of **Maine**, more particularly described as follows:

A certain parcel of land situated northeasterly of, but not adjacent to, Motorcycle Drive in the Town of Windham, County of Cumberland, State of Maine being bounded and described as follows;

Beginning at the easterly corner of land now or formerly of Robie Holdings, LLC as described in a deed recorded in Book 41093 Page 243 in the Cumberland County Registry of Deeds (CCRD) at land now or formerly of Philip Webster and Lisa Marie Webster as described in a deed recorded in Book 13925 Page 85 CCRD;

Thence N 35° 22' 09" E, by and along land of Philip Webster and Lisa Marie Webster, a distance of 1474.46 feet to land now or formerly of Strawberry Lane Development, LLC as described in a deed recorded in Book 39406 Page 274 CCRD;

Thence S 53° 02' 42" E, by and along land of Strawberry Lane Development, LLC, a distance of 299.97 feet to land now or formerly of John S. Skvorak, Jr. and Laurie Skvorak as described in a deed recorded in Book 39543 Page 206 CCRD;

Thence S 60° 09' 49" W, by and along land of John S. Skvorak, Jr. and Laurie Skvorak, a distance of 389.51 feet;

Thence S 54° 29' 16" E, by and along land of John S. Skvorak, Jr. and Laurie Skvorak, a distance of 684.62 feet to land now or formerly of John S. Skvorak, II and Laurie A. Skvorak as described in a deed recorded in Book 19952 Page 166 CCRD;

Thence S 36° 12' 52" W, by and along land of John S. Skvorak, II and Laurie A. Skvorak and land now or formerly of Joseph Paolino, Jr. 2024 Trust as described in a deed recorded in Book 41110 Page 92 CCRD, a distance of 1000.00 feet to a point;

Thence continuing S 36° 12' 52" W, by and along land of Joseph Paolino, Jr., a distance of 10 feet, more or less, to the centerline of a stream and land now or formerly of Adam W. Hogan as described in a deed recorded in Book 35887 Page 313 CCRD;

Thence in a generally northeasterly direction, following the centerline of the stream and by land of Adam W. Hogan and land now or formerly of Matthew L. Susbury as described in a deed recorded in Book 30380 Page 324 CCRD, a distance of 715 feet, more or less;

DOC :17549 BK:41455 PG:51
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
05/20/2025, 08:55:45A
Register of Deeds Jessica M. Spaulding E-RECORDED

Thence N 61° 38' 50" E a distance of 32 feet, more or less, to a point, said point being N 23° 32' 21" W and a distance of 477.60 feet from the previous mentioned point;

Thence N 30° 52' 12" W a distance of 211.62 feet;

Thence S 55° 52' 24" W a distance of 581.41 feet to land of Robie Holdings, LLC;

Thence N 35° 20' 48" E, by and along land of Robie Holdings, LLC, a distance of 101.72 feet to the Point of Beginning.

The parcel contains approximately 17.9 acres. Bearings are Grid North. Reference is made to a plan entitled "Plan of 421 Falmouth Road for: Robie Holdings, LLC" dated 2-11-2025 by DM Roma Consulting Engineers.

Meaning and intending to convey and conveying a portion the real property described in a deed to **Jarod Robie** dated December 18, 2024 and recorded with the Cumberland County Registry of Deeds in Book 41195, Page 333. This is a conveyance to an abutter.

Witness my hand and seal this 19 day of ~~April~~ May, 2025.

Witness:

Marie Jacobs

Jarod Robie

STATE OF **MAINE**
COUNTY OF **CUMBERLAND**, ss.

~~April~~ May 19, 2025

Personally appeared on the above date, the above-named **Jarod Robie** and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Marie Jacobs

Notary Public/Attorney at Law
Print name:
Exp: _____

MARIE JACOBS
NOTARY PUBLIC - State of Maine
My Commission Expires
February 5, 2029

MAINE REAL ESTATE TAX-Paid

WARRANTY DEED
Statutory Short Form

DLN: 2216249

KNOW ALL BY THESE PRESENTS, That **We, Philip R. Webster and Lisa M. Webster,** whose mailing address is **PO Box 867, Windham, ME 04062**, for consideration paid, grant to **Jarod Robie**, whose mailing address is **PO Box 1508, Windham, ME 04062,** with Warranty Covenants, the real property in the Town of **Windham**, County of **Cumberland** and State of **Maine**, more particularly described as follows:

A certain lot or parcel of land situated off the Northeasterly side of the Falmouth Road in the Town of Windham, in the County of Cumberland and State of Maine being more particularly bounded and described as follows:

Beginning at a red painted metal fence post found set in the ground on the southeasterly sideline of land now or formerly of Clara Martin (4003/154) and at the Northerly corner of land now or formerly of Timothy P. and Donna L. Lamb (6598/145). Said point being located N 51° 36' 09" E a distance of 446.91 feet from the assumed Northeasterly sideline of the Falmouth Road; thence N 51° 36' 09" E along land of the said Martin and land of the Grantor herein 1619.85 feet to a 5/8" capped rebar to be set in the ground at the most easterly corner of land now or formerly of the Grantor herein; thence S 36° 37' 40" E across land now or formerly of F. Wayne Lamb and Kilton L. Lamb on an extension of the Northeasterly sideline of land now or formerly of the Grantor herein 300.10 feet to a 5/8" capped rebar to be set in the ground on the northerly sideline of land now or formerly of Francis D. Fearon (3156/52); thence S 76° 34' 54" W along land of the said Fearon, in part by a stone wall, 389.51 feet to a 5/8" capped rebar to be set in the ground; thence S 38° 04' 11" E continuing along land of the said Fearon following a wire fence 684.98 feet to a 5/8" capped rebar to be set in the ground at the northerly corner of land now or formerly of Lloyd M. and Louise A. Gilman (6753/311) said point being also the westerly corner of land now or formerly of Philip H. Grondin (3713/50); thence S 52° 22' 01" W along a wire fence and land of the said Gilman 971 feet more or less to the center of a small brook; thence Northwesterly across land now or formerly of F. Wayne Lamb and Kilton L. Lamb following the center of the said brook 500 feet more or less to a point; thence S 40° 00' 00" W continuing across said land now or formerly F. Wayne Lamb and Kilton L. Lamb 334 feet more or less to a 5/8" capped rebar to be set in the ground on the northeasterly sideline of a 50 foot wide private right of way leading to the house of the Gilmans; thence N 37° 21' 39" W along the said sideline of the said right of way 51.11 feet to a 5/8" capped rebar to be set in the ground; thence N 53° 30' 47" W across said land now or formerly of F. Wayne Lamb and Kilton L. Lamb 159.70 feet to a red painted metal fence post found set in the ground at the most Easterly corner of said land now or formerly of F. Wayne Lamb and Kilton L. Lamb; thence N 23° 47' 52" W along said land now or formerly of F. Wayne Lamb and Kilton L. Lamb 204.05 feet to the point of beginning. Containing 21.8 acres more or less.

This conveyance is made together with and benefited by the rights in common with others in and to the above mentioned 50 foot wide private right of way as described in the deed to said Gilmans recorded in the Cumberland County Registry of Deeds in Book 6753, Page 311. This right of way or

DOC :48424 BK:41195 PG:334
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
12/19/2024, 02:43:19P
Register of Deeds Jessica M. Spaulding E-RECORDED

easement can be used for any and all purposes for which a Town Road can be used. Said right of way shall run with the above property.

Meaning and intending to convey and conveying the real property described in a deed to **Philip R. Webster and Lisa M. Webster** dated April 2, 1999 and recorded with the Cumberland County Registry of Deeds in Book 14672, Page 9.

Witness our hands and seals this 18th day of December, 2024.

Witness:

_____

_____
Philip R. Webster

_____
Lisa M. Webster

STATE OF **MAINE**
COUNTY OF **CUMBERLAND**, ss. December 18, 2024

Personally appeared on the above date, the above-named **Philip R. Webster and Lisa M. Webster** and acknowledged the foregoing instrument to be their free act and deed.

Before me,

_____
Notary Public/Attorney at Law
Print name:
Exp: _____

Christopher J. McLain
Notary Public, Maine
My Commission Expires
November 10, 2026

SECTION 8

EXISTING OR PROPOSED EASEMENTS OR COVENANTS

Section 8 – Existing or Proposed Easements or Covenants

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

We are not aware of any existing easements on the property. A snowmobile trail runs through the property that is by permission of the property owner, which is not a permanent easement.

SECTION 9

TECHNICAL CAPACITY OF THE APPLICANT

Section 9 – Technical Capacity of the Applicant

Robie Holdings LLC is the developer of the project. Jarod Robie is the principal owner of Robie Holdings LLC, and he has developed many single-family subdivisions and multi-family residential developments in Windham and the surrounding communities that included road construction, utility installation, lot development and building construction. Significant recent projects in Windham include Belvedere Commons, Kettle Estates, Dartmouth Place, Chamberlain Estates, Badger Run, Voyager Lane and others.

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

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

Harris Septic Solutions has been retained to perform subsurface soil evaluations and to assist in the preparation of the subsurface wastewater disposal system design. Bud Harris is a Licensed Site Evaluator experienced in septic system design, soils analysis and environmental permitting.

Mainely Soils has been retained to perform wetlands delineation. Alex Finamore is experienced in septic system design, wetland delineation, soils analysis and environmental permitting.

SECTION 10

CAPACITY OF EXISTING UTILITIES TO SERVE THE PROJECT

Section 10 – Capacity of Existing Utilities to Serve the Project

Potable Water – The existing 12-inch water main located in Falmouth Road ends directly in front of our project site, and we will tap the main with a new common water service to serve the project. The Portland Water District will review our project plans, and has provided the infrastructure map that is attached to this section showing the location of existing water main.

Fire Protection Water – A new hydrant will be installed at the project entrance. The existing 12-inch main is located several feet outside of the pavement, close to the right-way line, so we are coordinating with PWD regarding the appropriate way to install the fire hydrant given the unconventional main location. We are not proposing to install sprinkler systems in the homes unless requested by the unit purchaser.

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

Wastewater Disposal – There is no public sewer available to the property, so on-site wastewater disposal systems will be installed. We have included the design of three (3) wastewater disposal fields in Section 19.

Natural Gas – We anticipate each unit will require on-site bottled gas.

Storm Drainage – The project site generally drains away from Falmouth Road and we are not proposing to alter the public drainage collection system within the public Right Of Way.

421 Falmouth Road

Windham

Portland Water District
From Sebago Lake to Casco Bay
225 Douglass Street
PO Box 3553
Portland, Maine 04104

Scale 0 25 50 100 150 Feet

1 IN = 100 FT

Legend

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

N E S W

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

Drawn By: KAR

Infrastructure Map

Scale: As Noted

Date: October 8, 2024

SECTION 11

SOLID WASTE DISPOSAL

Section 11 – Solid Waste Disposal

Tree clearing and stumping will be required. Tree stumps will be hauled off site by the site contractor and disposed in accordance with all applicable regulations, or ground on-site to create erosion control mix. Brush will be burned or chipped.

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

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

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

SECTION 12

SITE LIGHTING

Section 12 – Site Lighting

Each dwelling will include the installation of exterior lighting that is mounted to the building to provide illumination of the sidewalks and driveways so that on-street lighting will not be required.

SECTION 13

SITE LANDSCAPING

Section 13 – Site Landscaping

The individual buildings will be landscaped with ornamental grasses, shrubs and perennials between the front entry porches adjacent to the foundations. Landscaping preference will be left to the individual unit owners to determine the amount of landscaping that is desired. Street trees are proposed to be installed on both sides of the street as indicated on the Site and Landscaping Plan.

SECTION 14

VEHICLE TRAFFIC

Section 14 – Vehicle Traffic

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 13 single-family homes can be expected to generate a total of 123 trips during a typical weekday, 10 trips in the morning peak hour and 13 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 8 trips during the evening peak hour will enter the site. Accordingly, 7 trips during the morning peak hour and 5 trips during the evening peak hour will exit the site.

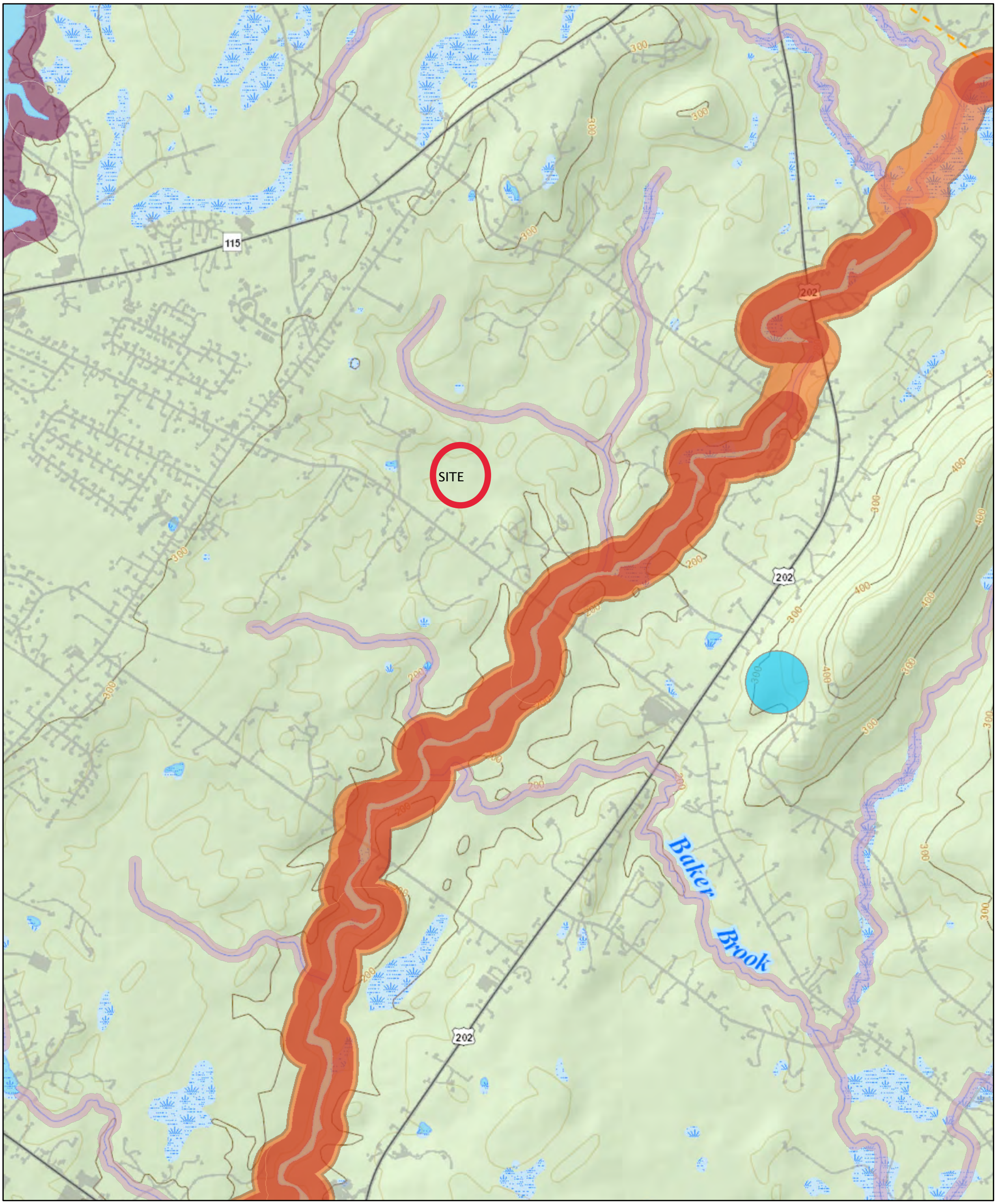
SECTION 15

IMPACT TO IMPORTANT OR UNIQUE NATURAL AREAS

Section 15 – Impact to Important or Unique Natural Areas

The attached "Beginning with Habitat" map provided from the Maine Department of Inland Fisheries and Wildlife indicates that there are no significant wildlife habitats located within the vicinity of the proposed development. We have sent a letter to the Maine Natural Areas Program to confirm that there are no rare or threatened botanical species documented in the project area, and will provide a copy of the response once it is received.

Beginning With Habitat



May 19, 2025

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

1:18,056

0 0.15 0.3 0.6 mi

0 0.23 0.45 0.9 km

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

SECTION 16

STORMWATER MANAGEMENT

DM ROMA
CONSULTING ENGINEERS

STORMWATER MANAGEMENT REPORT

421 FALMOUTH ROAD RESIDENTIAL SUBDIVISION
WINDHAM, MAINE

A. Narrative

Robie Holdings, LLC, the applicant, is proposing to develop a 22.75-acre parcel located at 421 Falmouth Road in Windham, Maine. The development parcel consists of the 4.87-acre property identified as Lot 104 on Tax Map 19 and a 17.93-acre portion of an adjacent parcel identified as lot 90-G on Tax Map 19. The 17.93-acre property is owned by Jarod Robie and will be conveyed to the 4.87-acre parcel owned by Robie Holdings, LLC.

The applicant is proposing a residential development with a total of thirteen (13) residential single-family dwelling units. The development will also include the construction of an access driveway designed to meet the Town's Major Private Road Standard with a total length of approximately 482 linear feet. The units will be served by public water, shared subsurface wastewater disposal fields and underground electric, telephone and cable.

B. Existing Conditions

The project site consists of a single-family home, with an existing gravel driveway with access from Falmouth Road and undeveloped woodland. There is an existing snowmobile trail with bridges over the two streams that run through the property within the Farm Zone portion, and at this time we are not proposing any modification to the land in this area. The existing snowmobile trails are intended to be used as walking trails for the condominium association to access the back land.

In the location of the project site, the land is moderately sloped (3%-8%) with steeper slopes (8%-20%) bordering the existing home and slopes as steep as 3H:1V adjacent to the stream. Stormwater generally flows overland to the north, and ultimately is intercepted and conveyed by the un-named stream crossing the property which is tributary to Pleasant River. A portion of the property discharges directly to the un-named stream, and the southeasterly portion of the site drains to a wetland before discharging from the project site along the southeasterly property limit and onto the neighboring property, before being conveyed overland to the north and into the un-named stream.

The onsite soils, as identified on the Medium Intensity Soil Maps for Cumberland County, Maine published by the Natural Resources Conservation Service, consist of Hinckley loamy sand, Windsor loamy sand, and Scantic silt loam. The soils within the proposed development are in the hydrologic soils group "A", and hydrologic soils group "D". The soils map has been included as Attachment 1 of this report, and the soils boundaries are identified on the Watershed Maps.

C. Alterations to Land Cover

Based on the proposed building layout, access drive, and driveways the project will generate approximately 36,958 square feet (0.85± acres) of impervious surfaces. The project will also generate approximately 75,774

square feet (1.74 acres) of lawn, landscaping, and best management practices, resulting in a total project developed area of 112,733 square feet (2.59± acres). The project includes an additional 14,457 square feet of disturbance that will be allowed to revert to natural meadow.

Since the project will result in the construction of less than one (1) acre of impervious surface but will disturb more than one acre, the project will be required to obtain a Stormwater Permit By Rule from the MDEP. As part of the requirements of the Stormwater Permit, the project will need to meet the Basic Standards of the MDEP Chapter 500 Stormwater Management regulations. The development is also subject to review by the Town of Windham Planning Board. The current land use ordinance requires that new developments meet the Basic, General and Flooding Standards of the MDEP Chapter 500 Stormwater Management regulations.

D. Methodology and Modeling Assumptions

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

E. Basic Standards

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

F. General Standard

The proposed project is required to meet the General Standard outlined in the MDEP Chapter 500 to provide water quality treatment for portions of the site development. Based on the calculation provided in Section 4C(2)(a) related to the amount of the property being developed and its corresponding treatment standards in Table 1 in Chapter 500, the project will require the treatment of more than 90% of the site's impervious area and more than 75% of the total developed area. This calculation is included as Attachment 2 of this report.

The General Standard will be met by incorporating the construction of two (2) underdrained filter basins 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 91% of the project's impervious surface and over 79% of the site's developed area. Calculations are enclosed as Attachment 2 in this report.

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

- Storage Volume and Basin Floor surface area meeting *Chapter 7.1 Grassed Underdrained Soil Filter BMP* sizing criteria included in Volume III. BMP Technical Design Manual prepared by the MDEP.
- Spillway sizing calculations demonstrating one foot of freeboard to the top of berm during the 25-year storm event assuming failure of the other discharge devices.
- Hydrograph tables demonstrating the outlet controls to release the stormwater from the basin between 24 and 48 hours.
- Sizing calculations for the level spreaders located at the outfall of the discharge pipe from the basins meeting the sizing standards identified in *Section G(4) Level Spreaders* in Maine Erosion and Sediment Control Best Management Practices Manual for Designers and Engineers prepared by the MDEP.

The locations and construction detail of the proposed roofline dripedges have been included one the construction details sheets and the sizing calculations to meet *Chapter 7.5 Roof Dripline Filters* sizing criteria included in Volume III. BMP Technical Design Manual prepared by the MDEP have been included as Attachment 4 of this report.

G. Flooding Standard

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

The study points utilized in the stormwater analysis are located where runoff generated by the site is collected and discharged across the property limits. Study Point SP-1 evaluates the northerly portion of the project site that drains to the un-named stream flowing across the site along the northerly project limits. Study Point SP-2 evaluates the southwesterly portion of the project site that discharges onto the abutting property to the southeast, which then drains overland in a northeasterly direction to the same un-named stream that SP-1 discharges to. 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	2.31	1.79	4.39	4.31	6.15	6.12
SP-2	0.73	0.38	1.36	0.72	1.91	1.82

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

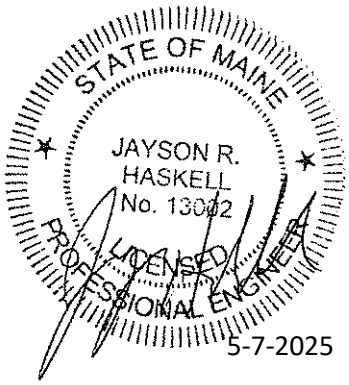
The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 5 of this report.

H. Maintenance of common facilities or property

The applicant will be responsible for the maintenance of the stormwater facilities until a condominium association is created. The responsibility will then be conveyed to the association. An Inspection, Maintenance and Housekeeping Plan for the project has been created and has been included as Attachment 6 of this report.

Prepared by:

DM ROMA CONSULTING ENGINEERS



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

5-7-2025

ATTACHMENT 1

MEDIUM INTENSITY SOIL MAP

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

Date(s) aerial images were photographed: Jul 22, 2021—Oct 7, 2021

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BuC2	Buxton silt loam, 8 to 15 percent slopes	C/D	0.3	2.3%
HlB	Hinckley loamy sand, 3 to 8 percent slopes	A	3.5	27.8%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	8.9	69.9%
Totals for Area of Interest			**12.7**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

ATTACHMENT 2

GENERAL STANDARDS CALCULATIONS

Stormwater Treatment Requirements

Pecentage of Developed Area to Land Available for Development

Total Land Area=	991,297	sf
Deductions		
Area Slopes Steeper than 25%	12,002	sf
Area Protected Natural Resources	239,245	sf
Total Available Land for Development	**740,050**	**sf**
Total Developed Area	**364,015**	**sf**

% of Developed Area to Land Available for Development=	**49%**

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

???Falmouth Road???Residential Subdivision
Calculated by: JPC
Printed 5/6/2025
Job #24057

Stormwater Treatment Table

	Total Watershed Area (SF)	New Paved/Gravel Area (SF)	New Building Area (SF)	New Landscaped Area (SF)	Existing/Offsite Impervious Area (SF)*	Existing/Offsite Landscaping Area (SF)*	Existing Undeveloped Area (SF)	Treatment Provided	New Impervious Area Treated (SF)	New Landscaped Area Treated (SF)	Treatment Device
WS-1**	62,945	0	2,086	14,845	1,975	1,734	42,305	dripedge	2,086	0	dripedge only
WS-11**	47,889	7,179	8,229	32,481	0	0	0	Yes	15,408	32,481	FB-1
WS-2**	39,338	3,090	544	5,210	1,505	2,156	26,833	dripedge	544	0	dripedge only
WS-21**	12,895	4,495	2,066	5,745	247	342	0	Yes	6,561	5,745	FB-2
WS-22**	13,179	3,778	1,452	6,492	747	710	0	Yes	5,230	6,492	FB-2
WS-23**	15,041	2,331	1,708	11,001	0	0	0	yes	4,039	11,001	FB-1
Total	**191,287**	**20,874**	**16,085**	**75,774**					**33,868**	**55,719**	

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

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

Impervious Area =	36,958	sf
New Impervious Area Requiring Treatment (90%)	33,262	sf
Provided Impervious Treatment=	33,868	sf
	91.64%	Impervious Area Treated
Developed Area =	112,733	sf
Developed Area Requiring Treatment (75%)=	84,549	sf
Developed Area Treated=	89,587	sf
	79.47%	Developed Area Treated

ATTACHMENT 3

UNDERDRAINED FILTER BASIN SIZING CALCULATIONS

Underdrained Filter Basin Sizing Calculations

Filter Basin 1

Tributary Impervious Area=	9,511	sf	(WS-11 & W-23 Impervious Area)
Tributary Landscaped Area=	43,482	sf	(WS-11 & W-23 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 2,242 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
214	1,549	0
215.15	2,599	2,359

Outlet Elevation =	215.15	
Storage Volume Provided=	2,359	cf > Required

Filter Bottom Calculation

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

Filter Area Required = 1,345 sf

Filter Area Provided = 1,549 sf > Required

Level Spreader Sizing Calculations

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

10-year discharge flow =	3.28	cfs
Required Length of Level Spreader =	**13.12**	**ft**
Provided Length of Level Spreader =	**15**	**ft > Required**

Hydrograph for Pond FB1:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	214.00	0.00	0.00	**0.00**
1.80	0.00	0	214.00	0.00	0.00	0.00
3.60	0.00	0	214.00	0.00	0.00	0.00
5.40	0.01	0	214.00	0.01	0.01	0.00
7.20	0.02	0	214.00	0.02	0.02	0.00
9.00	0.03	0	214.00	0.03	0.03	0.00
10.80	**0.06**	38	214.02	0.04	0.04	0.00
12.60	**0.26**	2,339	215.14	0.05	0.05	0.00
14.40	0.09	**2,905**	**215.35**	**0.06**	**0.06**	0.00
16.20	0.05	**2,903**	**215.35**	**0.06**	**0.06**	0.00
18.00	0.03	2,866	215.34	0.05	0.05	0.00
19.80	0.03	2,753	215.30	0.05	0.05	0.00
21.60	0.02	2,611	215.24	0.05	0.05	0.00
23.40	0.02	2,443	215.18	0.05	0.05	0.00
25.20	0.00	2,185	215.08	0.05	0.05	0.00
27.00	0.00	1,883	214.96	0.05	0.05	0.00
28.80	0.00	1,587	214.83	0.05	0.05	0.00
30.60	0.00	1,297	214.70	0.04	0.04	0.00
32.40	0.00	1,015	214.57	0.04	0.04	0.00
34.20	0.00	739	214.43	0.04	0.04	0.00
36.00	0.00	471	214.28	0.04	0.04	0.00
37.80	0.00	210	214.13	0.04	0.04	0.00
39.60	0.00	0	214.00	0.00	0.00	0.00
41.40	0.00	0	214.00	0.00	0.00	0.00
43.20	0.00	0	214.00	0.00	0.00	0.00
45.00	0.00	0	214.00	0.00	0.00	0.00
46.80	0.00	0	214.00	0.00	0.00	0.00
48.60	0.00	0	214.00	0.00	0.00	0.00
50.40	0.00	0	214.00	0.00	0.00	0.00
52.20	0.00	0	214.00	0.00	0.00	0.00
54.00	0.00	0	214.00	0.00	0.00	0.00
55.80	0.00	0	214.00	0.00	0.00	0.00
57.60	0.00	0	214.00	0.00	0.00	0.00
59.40	0.00	0	214.00	0.00	0.00	0.00
61.20	0.00	0	214.00	0.00	0.00	0.00
63.00	0.00	0	214.00	0.00	0.00	0.00
64.80	0.00	0	214.00	0.00	0.00	0.00
66.60	0.00	0	214.00	0.00	0.00	0.00
68.40	0.00	0	214.00	0.00	0.00	0.00
70.20	0.00	0	214.00	0.00	0.00	0.00
72.00	0.00	0	214.00	0.00	0.00	0.00

Summary for Pond FB1:

[61] Hint: Exceeded Reach R2 outlet invert by 0.03' @ 12.15 hrs

Inflow Area = 62,929 sf, 30.90% Impervious, Inflow Depth = 3.74" for 25-Year event
Inflow = 5.32 cfs @ 12.09 hrs, Volume= 19,630 cf
Outflow = 4.92 cfs @ 12.15 hrs, Volume= 15,679 cf, Atten= 8%, Lag= 3.6 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 4.92 cfs @ 12.15 hrs, Volume= 15,679 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.09 hrs
Peak Elev= 216.03' @ 12.15 hrs Surf.Area= 3,591 sf Storage= 5,066 cf

Plug-Flow detention time= 138.9 min calculated for 15,660 cf (80% of inflow)
Center-of-Mass det. time= 60.9 min (847.1 - 786.3)

Volume	Invert	Avail.Storage	Storage Description
#1	214.00'	9,281 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)
214.00	1,549	185.6	0	0	1,549
216.00	3,549	367.1	4,962	4,962	9,551
217.00	5,139	606.7	4,320	9,281	28,125

Device	Routing	Invert	Outlet Devices
#1	Secondary	215.70'	**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	Primary	211.73'	**12.0" Round Culvert X 0.00** L= 33.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 211.73' / 211.56' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	211.83'	**1.0" Vert. 1" DRILL HOLE IN 4" END CAP** C= 0.600
#4	Device 3	211.83'	**4.0" Vert. 4" UNDERDRAIN** C= 0.600
#5	Device 4	214.00'	**2.140 in/hr Exfiltration over Surface area**
#6	Device 2	215.35'	**Aris Foundry 6x26 Beehive Grate** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 0.66 Disch. (cfs) 0.000 0.500 1.466 2.614 3.320 3.744 4.086 4.694

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=214.00' TW=0.00' (Dynamic Tailwater)
- **2=Culvert** (Controls 0.00 cfs)
  - **3=1" DRILL HOLE IN 4" END CAP** (Passes 0.00 cfs of 0.04 cfs potential flow)
    - **4=4" UNDERDRAIN** (Passes 0.00 cfs of 0.59 cfs potential flow)
      - **5=Exfiltration** (Passes 0.00 cfs of 0.08 cfs potential flow)
  - **6=Aris Foundry 6x26 Beehive Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=4.88 cfs @ 12.15 hrs HW=216.03' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 4.88 cfs @ 1.49 fps)

Underdrained Filter Basin Sizing Calculations

Filter Basin 2

Tributary Impervious Area=	9,266	sf	(WS-21 & WS-22 Impervious Area)
Tributary Landscaped Area=	13,290	sf	(WS-21 & WS-22 Landscaped Area)

Water Quality Volume (WQV) Calculation

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

WQV (Required) = 1,215 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
223.4	850	0
224.9	1,561	1,794

Outlet Elevation = 305.80

Storage Volume Provided= 1,794 cf > Required

Filter Bottom Calculation

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

Filter Area Required = 729 sf

Filter Area Provided = 850 sf > Required

Hydrograph for Pond FB2:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	223.40	0.00	0.00	0.00
1.80	0.00	0	223.40	0.00	0.00	0.00
3.60	0.01	0	223.40	0.01	0.01	0.00
5.40	0.01	0	223.40	0.01	0.01	0.00
7.20	0.02	0	223.40	0.02	0.02	0.00
9.00	0.04	12	223.41	0.03	0.03	0.00
10.80	**0.07**	155	223.57	0.03	0.03	0.00
12.60	**0.20**	**1,792**	**224.90**	**0.03**	**0.03**	**0.00**
14.40	0.05	**1,807**	**224.91**	**0.05**	**0.03**	**0.02**
16.20	0.03	1,793	224.90	0.03	0.03	0.00
18.00	0.02	1,731	224.86	0.03	0.03	0.00
19.80	0.02	1,626	224.79	0.03	0.03	0.00
21.60	0.01	1,504	224.71	0.03	0.03	0.00
23.40	0.01	1,370	224.61	0.03	0.03	0.00
25.20	0.00	1,188	224.48	0.03	0.03	0.00
27.00	0.00	982	224.33	0.03	0.03	0.00
28.80	0.00	779	224.16	0.03	0.03	0.00
30.60	0.00	582	223.99	0.03	0.03	0.00
32.40	0.00	390	223.81	0.03	0.03	0.00
34.20	0.00	204	223.63	0.03	0.03	0.00
36.00	0.00	23	223.43	0.03	0.03	0.00
37.80	0.00	0	223.40	0.00	0.00	0.00
39.60	0.00	0	223.40	0.00	0.00	0.00
41.40	0.00	0	223.40	0.00	0.00	0.00
43.20	0.00	0	223.40	0.00	0.00	0.00
45.00	0.00	0	223.40	0.00	0.00	0.00
46.80	0.00	0	223.40	0.00	0.00	0.00
48.60	0.00	0	223.40	0.00	0.00	0.00
50.40	0.00	0	223.40	0.00	0.00	0.00
52.20	0.00	0	223.40	0.00	0.00	0.00
54.00	0.00	0	223.40	0.00	0.00	0.00
55.80	0.00	0	223.40	0.00	0.00	0.00
57.60	0.00	0	223.40	0.00	0.00	0.00
59.40	0.00	0	223.40	0.00	0.00	0.00
61.20	0.00	0	223.40	0.00	0.00	0.00
63.00	0.00	0	223.40	0.00	0.00	0.00
64.80	0.00	0	223.40	0.00	0.00	0.00
66.60	0.00	0	223.40	0.00	0.00	0.00
68.40	0.00	0	223.40	0.00	0.00	0.00
70.20	0.00	0	223.40	0.00	0.00	0.00
72.00	0.00	0	223.40	0.00	0.00	0.00

Summary for Pond FB2:

[63] Warning: Exceeded Reach R1 INLET depth by 1.15' @ 24.48 hrs

Inflow Area = 26,074 sf, 49.03% Impervious, Inflow Depth = 2.93" for 25-Year event
Inflow = 1.40 cfs @ 12.15 hrs, Volume= 6,358 cf
Outflow = 1.37 cfs @ 12.19 hrs, Volume= 4,157 cf, Atten= 2%, Lag= 2.4 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 1.37 cfs @ 12.19 hrs, Volume= 4,157 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 225.29' @ 12.19 hrs Surf.Area= 1,773 sf Storage= 2,447 cf

Plug-Flow detention time= 214.2 min calculated for 4,157 cf (65% of inflow)
Center-of-Mass det. time= 103.3 min (868.2 - 765.0)

Volume	Invert	Avail.Storage	Storage Description
#1	223.40'	6,340 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)
223.40	850	147.4	0	0	850
224.00	1,125	158.7	591	591	1,140
226.00	2,190	196.4	3,256	3,847	2,263
227.00	2,808	215.2	2,493	6,340	2,912

Device	Routing	Invert	Outlet Devices
#1	Secondary	225.15'	**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	Primary	220.82'	**0.7" Vert. Orifice/Grate X 0.00** C= 0.600
#3	Device 2	221.23'	**4.0" Round Culvert** L= 81.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 221.23' / 220.82' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 3	221.23'	**4.0" Vert. 4" UNDERDRAIN** C= 0.600
#5	Device 4	223.40'	**2.410 in/hr Exfiltration over Surface area**
#6	Device 2	224.90'	**12 inch ADS Dome Grate** Head (feet) 0.00 0.14 0.25 0.40 0.55 0.80 Disch. (cfs) 0.000 0.500 1.230 1.450 1.750 2.200

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=223.40' TW=220.72' (Dynamic Tailwater)
- **2=Orifice/Grate** (Controls 0.00 cfs)
  - **3=Culvert** (Passes 0.00 cfs of 0.29 cfs potential flow)
    - **4=4" UNDERDRAIN** (Passes 0.00 cfs of 0.59 cfs potential flow)
      - **5=Exfiltration** (Passes 0.00 cfs of 0.05 cfs potential flow)
  - **6=12 inch ADS Dome Grate** (Controls 0.00 cfs)

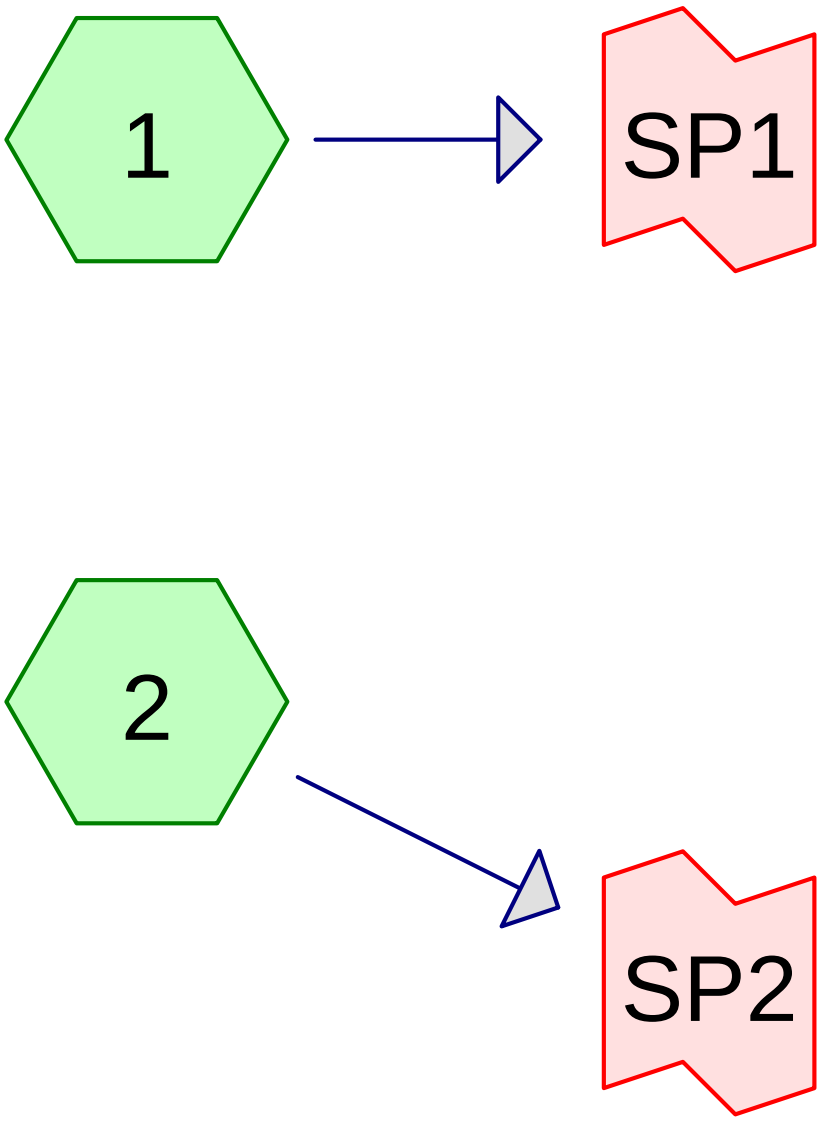
Secondary OutFlow Max=1.30 cfs @ 12.19 hrs HW=225.29' TW=221.22' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 1.30 cfs @ 0.95 fps)

ATTACHMENT 4

ROOFLINE DRIPEDGE SIZING CALCULATIONS

ATTACHMENT 5

STORMWATER MODEL OUTPUT



Subcat Reach Pond Link

Routing Diagram for 24057 - PRE
Prepared by DM ROMA CONSULTING ENGINEERS, Printed 5/7/2025

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=104,307 sf 3.00% Impervious Runoff Depth=1.04"
Flow Length=253' Tc=11.5 min CN=WQ Runoff=2.31 cfs 9,014 cf

Subcatchment 2: Runoff Area=86,976 sf 4.40% Impervious Runoff Depth=0.48"
Flow Length=278' Tc=19.5 min CN=WQ Runoff=0.73 cfs 3,485 cf

Link SP1: Inflow=2.31 cfs 9,014 cf
Primary=2.31 cfs 9,014 cf

Link SP2: Inflow=0.73 cfs 3,485 cf
Primary=0.73 cfs 3,485 cf

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=104,307 sf 3.00% Impervious Runoff Depth=1.96"
Flow Length=253' Tc=11.5 min CN=WQ Runoff=4.39 cfs 16,997 cf

Subcatchment 2: Runoff Area=86,976 sf 4.40% Impervious Runoff Depth=0.91"
Flow Length=278' Tc=19.5 min CN=WQ Runoff=1.36 cfs 6,572 cf

Link SP1: Inflow=4.39 cfs 16,997 cf
Primary=4.39 cfs 16,997 cf

Link SP2: Inflow=1.36 cfs 6,572 cf
Primary=1.36 cfs 6,572 cf

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=104,307 sf 3.00% Impervious Runoff Depth=2.78"
Flow Length=253' Tc=11.5 min CN=WQ Runoff=6.15 cfs 24,138 cf

Subcatchment 2: Runoff Area=86,976 sf 4.40% Impervious Runoff Depth=1.35"
Flow Length=278' Tc=19.5 min CN=WQ Runoff=1.91 cfs 9,756 cf

Link SP1: Inflow=6.15 cfs 24,138 cf
Primary=6.15 cfs 24,138 cf

Link SP2: Inflow=1.91 cfs 9,756 cf
Primary=1.91 cfs 9,756 cf

Summary for Subcatchment 1:

Runoff = 6.15 cfs @ 12.17 hrs, Volume= 24,138 cf, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,751	98	Existing pavement
*	4,035	96	Existing gravel surface
*	11,304	39	Existing >75% Grass cover, Good, HSG A
*	11,868	80	Existing >75% Grass cover, Good, HSG D
*	1,383	98	Existing roofs
	16,317	32	Woods/grass comb., Good, HSG A
	57,649	79	Woods/grass comb., Good, HSG D
	104,307		Weighted Average
	101,173		97.00% Pervious Area
	3,134		3.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	127	0.0830	0.21		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
1.6	126	0.0673	1.30		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
11.5	253	Total			

Summary for Subcatchment 2:

Runoff = 1.91 cfs @ 12.27 hrs, Volume= 9,756 cf, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,723	98	Existing pavement
*	0	96	Existing gravel surface
*	14,861	39	Existing >75% Grass cover, Good, HSG A
*	2,912	80	Existing >75% Grass cover, Good, HSG D
*	1,107	98	Existing roofs
	43,997	32	Woods/grass comb., Good, HSG A
	21,376	79	Woods/grass comb., Good, HSG D
	86,976		Weighted Average
	83,146		95.60% Pervious Area
	3,830		4.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	35	0.0642	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
12.5	89	0.0642	0.12		**Sheet Flow, Seg B to C** Woods: Light underbrush n= 0.400 P2= 3.10"
3.1	154	0.0275	0.83		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
19.5	278	Total			

Summary for Link SP1:

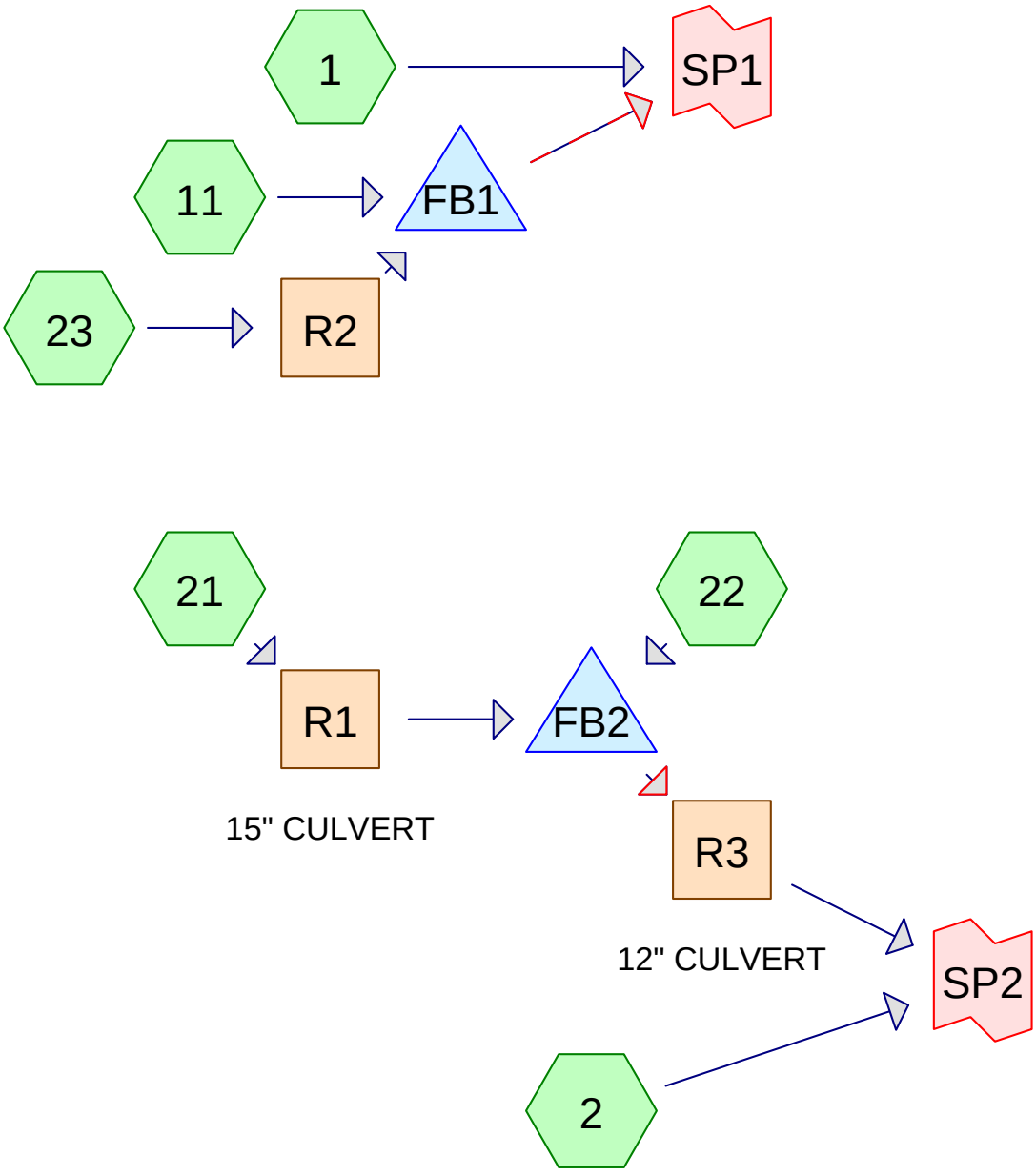
Inflow Area = 104,307 sf, 3.00% Impervious, Inflow Depth = 2.78" for 25-Year event
Inflow = 6.15 cfs @ 12.17 hrs, Volume= 24,138 cf
Primary = 6.15 cfs @ 12.17 hrs, Volume= 24,138 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs

Summary for Link SP2:

Inflow Area = 86,976 sf, 4.40% Impervious, Inflow Depth = 1.35" for 25-Year event
Inflow = 1.91 cfs @ 12.27 hrs, Volume= 9,756 cf
Primary = 1.91 cfs @ 12.27 hrs, Volume= 9,756 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs



Subcat Reach Pond Link

Routing Diagram for 24057 - POST

Prepared by DM ROMA CONSULTING ENGINEERS, Printed 5/7/2025

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,945 sf 6.45% Impervious Runoff Depth=0.90"
Flow Length=332' Tc=28.6 min CN=WQ Runoff=0.85 cfs 4,741 cf

Subcatchment 2: Runoff Area=39,338 sf 13.06% Impervious Runoff Depth=0.55"
Flow Length=197' Tc=20.4 min CN=WQ Runoff=0.35 cfs 1,788 cf

Subcatchment 11: Runoff Area=47,889 sf 32.17% Impervious Runoff Depth=1.79"
Flow Length=332' Tc=6.0 min CN=WQ Runoff=2.07 cfs 7,125 cf

Subcatchment 21: Runoff Area=12,895 sf 52.80% Impervious Runoff Depth=1.51"
Flow Length=174' Tc=9.2 min CN=WQ Runoff=0.40 cfs 1,627 cf

Subcatchment 22: Runoff Area=13,179 sf 45.35% Impervious Runoff Depth=1.30"
Flow Length=132' Tc=11.4 min CN=WQ Runoff=0.34 cfs 1,428 cf

Subcatchment 23: Runoff Area=15,040 sf 26.86% Impervious Runoff Depth=1.05"
Flow Length=150' Tc=7.2 min CN=WQ Runoff=0.36 cfs 1,321 cf

Reach R1: 15" CULVERT Avg. Flow Depth=0.25' Max Vel=2.30 fps Inflow=0.40 cfs 1,627 cf
15.0" Round Pipe n=0.013 L=49.1' S=0.0051 '/' Capacity=4.61 cfs Outflow=0.40 cfs 1,627 cf

Reach R2: Avg. Flow Depth=0.25' Max Vel=2.25 fps Inflow=0.36 cfs 1,321 cf
12.0" Round Pipe n=0.013 L=196.4' S=0.0051 '/' Capacity=2.54 cfs Outflow=0.34 cfs 1,321 cf

Reach R3: 12" CULVERT Avg. Flow Depth=0.07' Max Vel=1.07 fps Inflow=0.03 cfs 3,055 cf
12.0" Round Pipe n=0.013 L=131.1' S=0.0055 '/' Capacity=2.64 cfs Outflow=0.03 cfs 3,055 cf

Pond FB1: Peak Elev=215.47' Storage=3,235 cf Inflow=2.40 cfs 8,446 cf
Primary=0.94 cfs 8,450 cf Secondary=0.00 cfs 0 cf Outflow=0.94 cfs 8,450 cf

Pond FB2: Peak Elev=224.91' Storage=1,806 cf Inflow=0.74 cfs 3,055 cf
Primary=0.03 cfs 3,055 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 3,055 cf

Link SP1: Inflow=1.79 cfs 13,191 cf
Primary=1.79 cfs 13,191 cf

Link SP2: Inflow=0.38 cfs 4,843 cf
Primary=0.38 cfs 4,843 cf

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,945 sf 6.45% Impervious Runoff Depth=1.71"
Flow Length=332' Tc=28.6 min CN=WQ Runoff=1.61 cfs 8,995 cf

Subcatchment 2: Runoff Area=39,338 sf 13.06% Impervious Runoff Depth=0.93"
Flow Length=197' Tc=20.4 min CN=WQ Runoff=0.59 cfs 3,054 cf

Subcatchment 11: Runoff Area=47,889 sf 32.17% Impervious Runoff Depth=3.07"
Flow Length=332' Tc=6.0 min CN=WQ Runoff=3.58 cfs 12,232 cf

Subcatchment 21: Runoff Area=12,895 sf 52.80% Impervious Runoff Depth=2.36"
Flow Length=174' Tc=9.2 min CN=WQ Runoff=0.60 cfs 2,540 cf

Subcatchment 22: Runoff Area=13,179 sf 45.35% Impervious Runoff Depth=2.05"
Flow Length=132' Tc=11.4 min CN=WQ Runoff=0.51 cfs 2,250 cf

Subcatchment 23: Runoff Area=15,040 sf 26.86% Impervious Runoff Depth=1.78"
Flow Length=150' Tc=7.2 min CN=WQ Runoff=0.58 cfs 2,235 cf

Reach R1: 15" CULVERT Avg. Flow Depth=0.31' Max Vel=2.58 fps Inflow=0.60 cfs 2,540 cf
15.0" Round Pipe n=0.013 L=49.1' S=0.0051 '/' Capacity=4.61 cfs Outflow=0.60 cfs 2,540 cf

Reach R2: Avg. Flow Depth=0.32' Max Vel=2.58 fps Inflow=0.58 cfs 2,235 cf
12.0" Round Pipe n=0.013 L=196.4' S=0.0051 '/' Capacity=2.54 cfs Outflow=0.56 cfs 2,235 cf

Reach R3: 12" CULVERT Avg. Flow Depth=0.25' Max Vel=2.36 fps Inflow=0.33 cfs 4,792 cf
12.0" Round Pipe n=0.013 L=131.1' S=0.0055 '/' Capacity=2.64 cfs Outflow=0.37 cfs 4,792 cf

Pond FB1: Peak Elev=215.67' Storage=3,852 cf Inflow=4.12 cfs 14,467 cf
Primary=3.28 cfs 14,472 cf Secondary=0.00 cfs 0 cf Outflow=3.28 cfs 14,472 cf

Pond FB2: Peak Elev=225.20' Storage=2,290 cf Inflow=1.11 cfs 4,789 cf
Primary=0.03 cfs 3,829 cf Secondary=0.31 cfs 962 cf Outflow=0.33 cfs 4,792 cf

Link SP1: Inflow=4.31 cfs 23,466 cf
Primary=4.31 cfs 23,466 cf

Link SP2: Inflow=0.72 cfs 7,845 cf
Primary=0.72 cfs 7,845 cf

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,945 sf 6.45% Impervious Runoff Depth=2.46"
Flow Length=332' Tc=28.6 min CN=WQ Runoff=2.27 cfs 12,898 cf

Subcatchment 2: Runoff Area=39,338 sf 13.06% Impervious Runoff Depth=1.33"
Flow Length=197' Tc=20.4 min CN=WQ Runoff=0.79 cfs 4,366 cf

Subcatchment 11: Runoff Area=47,889 sf 32.17% Impervious Runoff Depth=4.14"
Flow Length=332' Tc=6.0 min CN=WQ Runoff=4.83 cfs 16,538 cf

Subcatchment 21: Runoff Area=12,895 sf 52.80% Impervious Runoff Depth=3.12"
Flow Length=174' Tc=9.2 min CN=WQ Runoff=0.76 cfs 3,353 cf

Subcatchment 22: Runoff Area=13,179 sf 45.35% Impervious Runoff Depth=2.74"
Flow Length=132' Tc=11.4 min CN=WQ Runoff=0.65 cfs 3,004 cf

Subcatchment 23: Runoff Area=15,040 sf 26.86% Impervious Runoff Depth=2.47"
Flow Length=150' Tc=7.2 min CN=WQ Runoff=0.77 cfs 3,091 cf

Reach R1: 15" CULVERT Avg. Flow Depth=0.34' Max Vel=2.77 fps Inflow=0.76 cfs 3,353 cf
15.0" Round Pipe n=0.013 L=49.1' S=0.0051 '/' Capacity=4.61 cfs Outflow=0.76 cfs 3,353 cf

Reach R2: Avg. Flow Depth=0.37' Max Vel=2.79 fps Inflow=0.77 cfs 3,091 cf
12.0" Round Pipe n=0.013 L=196.4' S=0.0051 '/' Capacity=2.54 cfs Outflow=0.74 cfs 3,091 cf

Reach R3: 12" CULVERT Avg. Flow Depth=0.44' Max Vel=3.17 fps Inflow=0.96 cfs 6,359 cf
12.0" Round Pipe n=0.013 L=131.1' S=0.0055 '/' Capacity=2.64 cfs Outflow=1.05 cfs 6,359 cf

Pond FB1: Peak Elev=215.80' Storage=4,259 cf Inflow=5.54 cfs 19,630 cf
Primary=3.90 cfs 19,321 cf Secondary=0.75 cfs 312 cf Outflow=4.65 cfs 19,633 cf

Pond FB2: Peak Elev=225.26' Storage=2,390 cf Inflow=1.40 cfs 6,358 cf
Primary=0.03 cfs 4,034 cf Secondary=0.93 cfs 2,326 cf Outflow=0.96 cfs 6,359 cf

Link SP1: Inflow=6.12 cfs 32,530 cf
Primary=6.12 cfs 32,530 cf

Link SP2: Inflow=1.82 cfs 10,725 cf
Primary=1.82 cfs 10,725 cf

Summary for Subcatchment 1:

Runoff = 2.27 cfs @ 12.40 hrs, Volume= 12,898 cf, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,975	98	Existing pavement
*	0	98	Proposed pavement
*	1,734	39	Existing >75% Grass cover, Good, HSG A
*	12,640	39	Proposed >75% Grass cover, Good, HSG A
*	2,205	80	Proposed >75% Grass cover, Good, HSG D
	2,762	30	Meadow, non-grazed, HSG A
	6,580	78	Meadow, non-grazed, HSG D
*	2,086	98	Proposed roofs
	5,688	32	Woods/grass comb., Good, HSG A
	27,275	79	Woods/grass comb., Good, HSG D
	62,945		Weighted Average
	58,884		93.55% Pervious Area
	4,061		6.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.7	150	0.0300	0.10		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.10"
2.9	182	0.0439	1.05		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
28.6	332	Total			

Summary for Subcatchment 2:

Runoff = 0.79 cfs @ 12.28 hrs, Volume= 4,366 cf, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,505	98	Existing pavement
*	3,090	98	Proposed pavement
*	2,156	39	Existing >75% Grass cover, Good, HSG A
*	5,210	39	Proposed >75% Grass cover, Good, HSG A
*	0	80	Proposed >75% Grass cover, Good, HSG D
	2,520	30	Meadow, non-grazed, HSG A
	2,595	78	Meadow, non-grazed, HSG D
*	544	98	Proposed roofs
	18,867	32	Woods/grass comb., Good, HSG A
	2,851	79	Woods/grass comb., Good, HSG D
	39,338		Weighted Average
	34,199		86.94% Pervious Area
	5,139		13.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	33	0.0679	0.15		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
16.0	117	0.0599	0.12		**Sheet Flow, Seg B to C** Woods: Light underbrush n= 0.400 P2= 3.10"
0.7	47	0.0533	1.15		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
20.4	197	Total			

Summary for Subcatchment 11:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.83 cfs @ 12.09 hrs, Volume= 16,538 cf, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Existing pavement
*	7,179	98	Proposed pavement
*	0	39	Existing >75% Grass cover, Good, HSG A
*	1,313	39	Proposed >75% Grass cover, Good, HSG A
*	31,168	80	Proposed >75% Grass cover, Good, HSG D
	0	30	Meadow, non-grazed, HSG A
	0	78	Meadow, non-grazed, HSG D
*	8,229	98	Proposed roofs
	0	32	Woods/grass comb., Good, HSG A
	0	79	Woods/grass comb., Good, HSG D
	47,889		Weighted Average
	32,481		67.83% Pervious Area
	15,408		32.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	63	0.1576	0.24		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
1.2	269	0.0131	3.79	13.27	**Trap/Vee/Rect Channel Flow, Seg B to C** Bot.W=1.00' D=1.00' Z= 3.0 & 2.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
5.6	332	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.76 cfs @ 12.13 hrs, Volume= 3,353 cf, Depth= 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	247	98	Existing pavement
*	4,495	98	Proposed pavement
*	342	39	Existing >75% Grass cover, Good, HSG A
*	5,745	39	Proposed >75% Grass cover, Good, HSG A
*	0	80	Proposed >75% Grass cover, Good, HSG D
	0	30	Meadow, non-grazed, HSG A
	0	78	Meadow, non-grazed, HSG D
*	2,066	98	Proposed roofs
	0	32	Woods/grass comb., Good, HSG A
	0	79	Woods/grass comb., Good, HSG D
	12,895		Weighted Average
	6,087		47.20% Pervious Area
	6,808		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	61	0.0324	0.13		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
1.1	89	0.0210	1.35		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
0.1	24	0.1614	5.78	23.12	**Trap/Vee/Rect Channel Flow, Seg C to D** Bot.W=1.00' D=1.00' Z= 3.0 '/' Top.W=7.00' n= 0.069 Riprap, 6-inch
9.2	174	Total			

Summary for Subcatchment 22:

Runoff = 0.65 cfs @ 12.16 hrs, Volume= 3,004 cf, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	747	98	Existing pavement
*	3,778	98	Proposed pavement
*	710	39	Existing >75% Grass cover, Good, HSG A
*	6,492	39	Proposed >75% Grass cover, Good, HSG A
*	0	80	Proposed >75% Grass cover, Good, HSG D
	0	30	Meadow, non-grazed, HSG A
	0	78	Meadow, non-grazed, HSG D
*	1,452	98	Proposed roofs
	0	32	Woods/grass comb., Good, HSG A
	0	79	Woods/grass comb., Good, HSG D
	13,179		Weighted Average
	7,202		54.65% Pervious Area
	5,977		45.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	46	0.0165	0.09		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.8	56	0.0196	1.20		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
2.2	30	0.1913	0.22		**Sheet Flow, Seg C to D** Grass: Dense n= 0.240 P2= 3.10"
11.4	132	Total			

Summary for Subcatchment 23:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.77 cfs @ 12.10 hrs, Volume= 3,091 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	0	98	Existing pavement
*	2,331	98	Proposed pavement
*	0	39	Existing >75% Grass cover, Good, HSG A
*	7,780	39	Proposed >75% Grass cover, Good, HSG A
*	3,221	80	Proposed >75% Grass cover, Good, HSG D
	0	30	Meadow, non-grazed, HSG A
	0	78	Meadow, non-grazed, HSG D
*	1,708	98	Proposed roofs
	0	32	Woods/grass comb., Good, HSG A
	0	79	Woods/grass comb., Good, HSG D
	15,040		Weighted Average
	11,001		73.14% Pervious Area
	4,039		26.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	41	0.0287	0.11		**Sheet Flow, Seg A to B** Grass: Dense n= 0.240 P2= 3.10"
0.4	26	0.0276	1.18		**Sheet Flow, Seg B to C** Smooth surfaces n= 0.011 P2= 3.10"
0.7	83	0.0673	2.12		**Sheet Flow, Seg C to D** Smooth surfaces n= 0.011 P2= 3.10"
7.2	150	Total			

Summary for Reach R1: 15" CULVERT

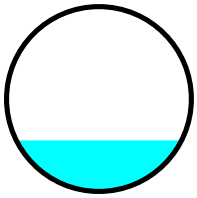
[52] Hint: Inlet/Outlet conditions not evaluated
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 12,895 sf, 52.80% Impervious, Inflow Depth = 3.12" for 25-Year event
Inflow = 0.76 cfs @ 12.13 hrs, Volume= 3,353 cf
Outflow = 0.76 cfs @ 12.14 hrs, Volume= 3,353 cf, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 2.77 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 0.8 min

Peak Storage= 13 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.34'
Defined Flood Depth= 227.25' Flow Area= 38.8 sf, Capacity= -3,492.41 cfs
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.61 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 49.1' Slope= 0.0051 '/'
Inlet Invert= 224.00', Outlet Invert= 223.75'



Summary for Reach R2:

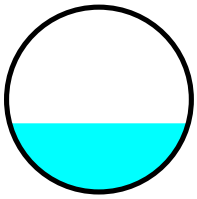
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 15,040 sf, 26.86% Impervious, Inflow Depth = 2.47" for 25-Year event
Inflow = 0.77 cfs @ 12.10 hrs, Volume= 3,091 cf
Outflow = 0.74 cfs @ 12.13 hrs, Volume= 3,091 cf, Atten= 4%, Lag= 1.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 2.79 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 3.4 min

Peak Storage= 52 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.54 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 196.4' Slope= 0.0051 '/'
Inlet Invert= 217.00', Outlet Invert= 216.00'



Summary for Reach R3: 12" CULVERT

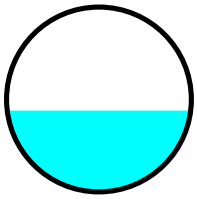
[52] Hint: Inlet/Outlet conditions not evaluated
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 26,074 sf, 49.03% Impervious, Inflow Depth = 2.93" for 25-Year event
Inflow = 0.96 cfs @ 12.31 hrs, Volume= 6,359 cf
Outflow = 1.05 cfs @ 12.32 hrs, Volume= 6,359 cf, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 3.17 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.09 fps, Avg. Travel Time= 2.0 min

Peak Storage= 43 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.44'
Defined Flood Depth= 227.25' Flow Area= 30.9 sf, Capacity= -2,504.03 cfs
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.64 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 131.1' Slope= 0.0055 '/'
Inlet Invert= 220.72', Outlet Invert= 220.00'



Summary for Pond FB1:

Inflow Area = 62,929 sf, 30.90% Impervious, Inflow Depth = 3.74" for 25-Year event
Inflow = 5.54 cfs @ 12.09 hrs, Volume= 19,630 cf
Outflow = 4.65 cfs @ 12.17 hrs, Volume= 19,633 cf, Atten= 16%, Lag= 4.4 min
Primary = 3.90 cfs @ 12.17 hrs, Volume= 19,321 cf
Secondary = 0.75 cfs @ 12.16 hrs, Volume= 312 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 215.80' @ 12.17 hrs Surf.Area= 3,306 sf Storage= 4,259 cf

Plug-Flow detention time= 201.1 min calculated for 19,611 cf (100% of inflow)
Center-of-Mass det. time= 202.2 min (988.5 - 786.3)

Volume	Invert	Avail.Storage	Storage Description
#1	214.00'	9,281 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)
214.00	1,549	185.6	0	0	1,549
216.00	3,549	367.1	4,962	4,962	9,551
217.00	5,139	606.7	4,320	9,281	28,125

Device	Routing	Invert	Outlet Devices
#1	Secondary	215.70'	**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	Primary	211.73'	**12.0" Round Culvert** L= 33.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 211.73' / 211.56' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	211.83'	**1.0" Vert. 1" DRILL HOLE IN 4" END CAP** C= 0.600
#4	Device 3	211.83'	**4.0" Vert. 4" UNDERDRAIN** C= 0.600
#5	Device 4	214.00'	**2.140 in/hr Exfiltration over Surface area**
#6	Device 2	215.35'	**Aris Foundry 6x26 Beehive Grate** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 0.66 Disch. (cfs) 0.000 0.500 1.466 2.614 3.320 3.744 4.086 4.694

Primary OutFlow Max=3.88 cfs @ 12.17 hrs HW=215.79' TW=0.00' (Dynamic Tailwater)
- **2=Culvert** (Passes 3.88 cfs of 5.63 cfs potential flow)
  - **3=1" DRILL HOLE IN 4" END CAP** (Orifice Controls 0.05 cfs @ 9.53 fps)
    - **4=4" UNDERDRAIN** (Passes 0.05 cfs of 0.82 cfs potential flow)
      - **5=Exfiltration** (Passes 0.05 cfs of 0.16 cfs potential flow)
  - **6=Aris Foundry 6x26 Beehive Grate** (Custom Controls 3.83 cfs)

Secondary OutFlow Max=0.71 cfs @ 12.16 hrs HW=215.79' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 0.71 cfs @ 0.78 fps)

Summary for Pond FB2:

[63] Warning: Exceeded Reach R1 INLET depth by 1.11' @ 24.40 hrs

Inflow Area = 26,074 sf, 49.03% Impervious, Inflow Depth = 2.93" for 25-Year event
Inflow = 1.40 cfs @ 12.15 hrs, Volume= 6,358 cf
Outflow = 0.96 cfs @ 12.31 hrs, Volume= 6,359 cf, Atten= 32%, Lag= 9.8 min
Primary = 0.03 cfs @ 12.23 hrs, Volume= 4,034 cf
Secondary = 0.93 cfs @ 12.31 hrs, Volume= 2,326 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 225.26' @ 12.31 hrs Surf.Area= 1,755 sf Storage= 2,390 cf

Plug-Flow detention time= 513.8 min calculated for 6,352 cf (100% of inflow)
Center-of-Mass det. time= 515.1 min (1,280.0 - 765.0)

Volume	Invert	Avail.Storage	Storage Description
#1	223.40'	6,340 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)
223.40	850	147.4	0	0	850
224.00	1,125	158.7	591	591	1,140
226.00	2,190	196.4	3,256	3,847	2,263
227.00	2,808	215.2	2,493	6,340	2,912

Device	Routing	Invert	Outlet Devices
#1	Secondary	225.15'	**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	Primary	220.82'	**0.7" Vert. 3/4" DRILL HOLE IN END CAP** C= 0.600
#3	Device 2	221.23'	**4.0" Round Culvert** L= 81.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 221.23' / 220.82' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 3	221.23'	**4.0" Vert. 4" UNDERDRAIN** C= 0.600
#5	Device 4	223.40'	**2.410 in/hr Exfiltration over Surface area**
#6	Device 2	224.90'	**12 inch ADS Dome Grate** Head (feet) 0.00 0.14 0.25 0.40 0.55 0.80 Disch. (cfs) 0.000 0.500 1.230 1.450 1.750 2.200

Primary OutFlow Max=0.03 cfs @ 12.23 hrs HW=225.24' TW=221.03' (Dynamic Tailwater)
- **2=3/4" DRILL HOLE IN END CAP** (Orifice Controls 0.03 cfs @ 9.87 fps)
  - **3=Culvert** (Passes < 0.39 cfs potential flow)
    - **4=4" UNDERDRAIN** (Passes < 0.82 cfs potential flow)
      - **5=Exfiltration** (Passes < 0.10 cfs potential flow)
  - **6=12 inch ADS Dome Grate** (Passes < 1.36 cfs potential flow)

Secondary OutFlow Max=0.91 cfs @ 12.31 hrs HW=225.26' TW=221.15' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 0.91 cfs @ 0.85 fps)

Summary for Link SP1:

Inflow Area = 125,874 sf, 18.68% Impervious, Inflow Depth = 3.10" for 25-Year event
Inflow = 6.12 cfs @ 12.19 hrs, Volume= 32,530 cf
Primary = 6.12 cfs @ 12.19 hrs, Volume= 32,530 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs

Summary for Link SP2:

Inflow Area = 65,412 sf, 27.40% Impervious, Inflow Depth = 1.97" for 25-Year event
Inflow = 1.82 cfs @ 12.32 hrs, Volume= 10,725 cf
Primary = 1.82 cfs @ 12.32 hrs, Volume= 10,725 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs

ATTACHMENT 6

INSPECTION, MAINTENANCE AND HOUSEKEEPING PLAN

DM ROMA
CONSULTING ENGINEERS

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

(Prepared by Jayson Haskell, PE #13002)

421 FALMOUTH ROAD RESIDENTIAL DEVELOPMENT
WINDHAM, MAINE

Responsible Party

Owner: Robie Holdings, LLC
P.O. Box 1508
Windham, ME 04062

The owner/applicant is responsible for the maintenance of all stormwater management structures and related site components and the keeping of a maintenance log book with service records until such time that a condominium association is created. Once the association is established, maintenance will be the responsibility of the association. A permit transfer will be required to be issued to the Maine Department of Environmental Protection (MDEP) upon conveyance of the maintenance responsibility to the condominium association.

Records of all inspections and maintenance work performed must be kept on file with the owner and retained for a minimum of five years. The maintenance log will be made available to the Town and MDEP upon request. At a minimum, the maintenance of stormwater management systems will be performed on the prescribed schedule.

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

During Construction

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

2. **Maintenance:** Erosion controls shall be maintained in effective operating condition until areas are permanently stabilized. If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any rainfall event.

3. **Construction vehicles and equipment:** Construction vehicles and equipment shall not be driven or stored within any proposed stormwater treatment pond or buffer. To ensure the buffer's natural condition and filtration capacity is maintained, prohibiting vehicles and equipment from these areas will limit the risk of inhibiting the function of the buffer due to compaction or vegetation impact.

4. **Documentation:** A report summarizing the inspections and any corrective action taken must be maintained on site. The log must include the name(s) and qualifications of the person making the inspections; the date(s) of the inspections; and the major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to Town staff, and a copy must be provided upon request. The owner shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

Housekeeping

1. **Spill prevention:** Controls must be used to prevent pollutants from construction and waste materials on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

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

treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

3. **Fugitive sediment and dust:** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.

4. **Debris and other materials:** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

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

6. **Authorized Non-stormwater discharges:** It is the contractor's responsibility to identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
   (a) Discharges from firefighting activity;
   (b) Fire hydrant flushings;
   (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
   (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
   (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
   (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
   (g) Uncontaminated air conditioning or compressor condensate;

(h) Uncontaminated groundwater or spring water;
(i) Foundation or footer drain-water where flows are not contaminated;
(j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));
(k) Potable water sources including waterline flushings; and
(l) Landscape irrigation.

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

Post construction

1. **Inspection and Corrective Action:** All measures must be maintained by the owner in effective operating condition. A Qualified Post-Construction Stormwater Inspector hired by the owner shall at least annually inspect the stormwater management facilities. This person should have knowledge of erosion and stormwater control, including the standards and conditions of the site's approvals. The following areas, facilities, and measures must be inspected, and identified deficiencies must be corrected. Areas, facilities, and measures other than those listed below may also require inspection on a specific site.

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

   B. **Vegetated Swales:** Inspect swales in the spring, late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, control vegetative growth that could obstruct flow, and repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Grass to be mowed to a minimum height of six inches. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.

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

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

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

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

F. **Level Spreader:** Level spreader should be inspected semi-annually and following major storm events for the first year and every six months thereafter to remove any obstructions to flow. Stormwater runoff should discharge from the level spreader as sheet flow, and any observed channelization of flows or erosion should be corrected immediately. Any woody vegetation growing through riprap must be removed. Replace riprap on areas where any underlying soil or sediment buildup is showing through the stone or where stones have been dislodged.

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.

Duration of Maintenance

Perform maintenance as described.

MAINTENANCE LOG

421 FALMOUTH ROAD RESIDENTIAL DEVELOPMENT
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

421 FALMOUTH ROAD RESIDENTIAL DEVELOPMENT
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

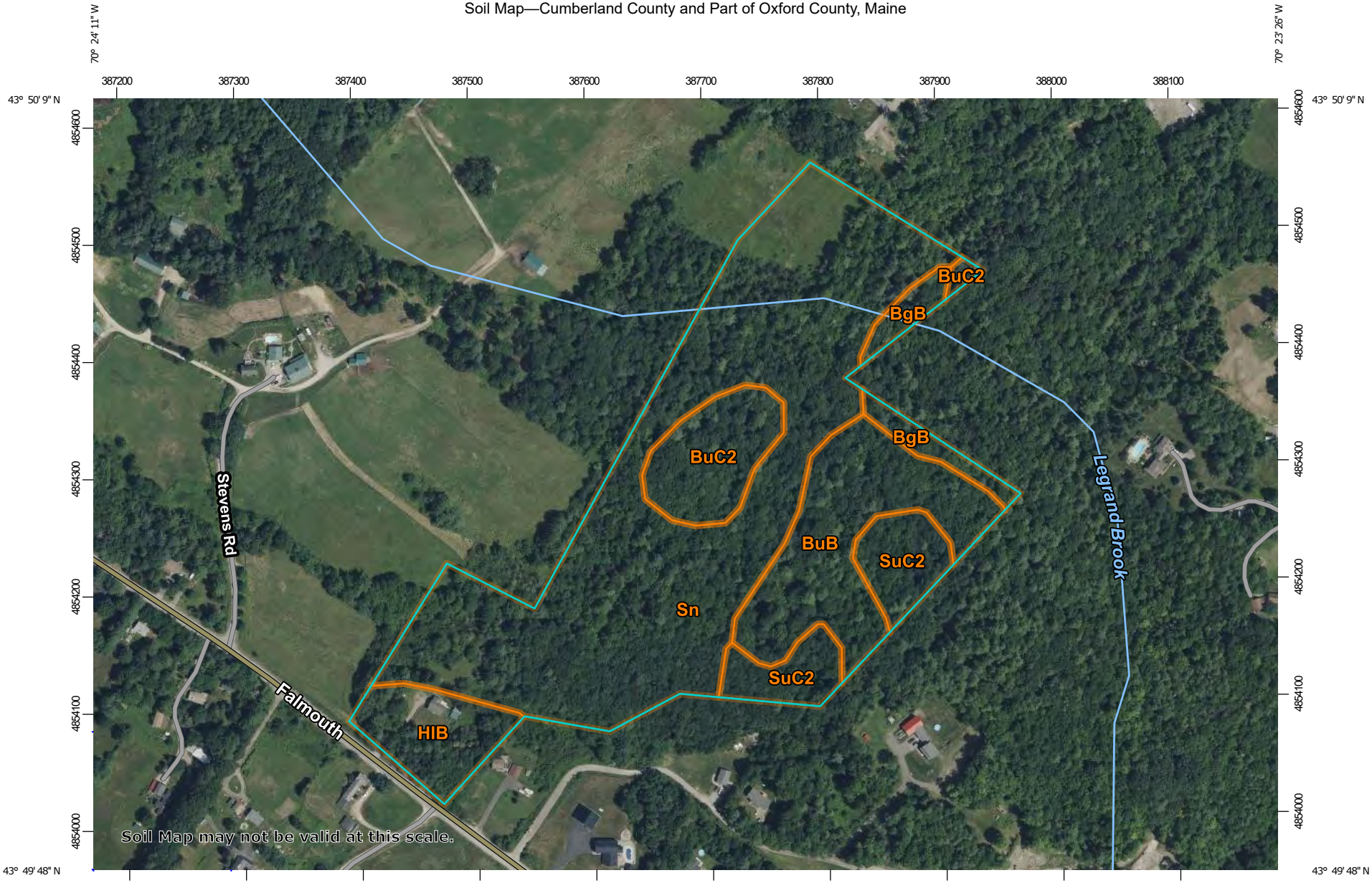
421 FALMOUTH ROAD RESIDENTIAL DEVELOPMENT
WINDHAM, MAINE

(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



Map Scale: 1:4,640 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

Date(s) aerial images were photographed: Jul 22, 2021—Oct 7, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	1.2	3.7%
BuB	Lamoine silt loam, 3 to 8 percent slopes	5.3	16.1%
BuC2	Buxton silt loam, 8 to 15 percent slopes	2.5	7.6%
HlB	Hinckley loamy sand, 3 to 8 percent slopes	2.1	6.4%
Sn	Scantic silt loam, 0 to 3 percent slopes	19.0	58.5%
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	2.5	7.7%
Totals for Area of Interest		**32.6**	**100.0%**

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-2070 FAX (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	WINDHAM
Street or Road	421 FALMOUTH ROAD
Subdivision, Lot •	

OWNER/APPLICANT INFORMATION

Name (last, first, MI): ROBIE HOLDINGS, LLC — ■ Owner ☐ Applicant

Mailing Address of Owner/Applicant: PO BOX 1508, WINDHAM, ME 04062

Daytime Tel. • 207-892-0650

>> Caution: LPI APPROVAL REQUIRED <<

Town/City _____ Permit • _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged ( )

_____ L.P.I • _____
Local Plumbing Inspector Signature

☐ Owner ☐ Applicant ☐ State

The Subsurface Wastewater Disposal System *shall not* be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map • 19 Lot • 104

Owner or Applicant Statement

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.

_____ _____
Signature of Owner or Applicant — Date

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

_____ (1st) Date Approved

_____ _____
Local Plumbing Inspector Signature — (2nd) Date Approved

PERMIT INFORMATION

TYPE OF APPLICATION

■ 1. First Time System
☐ 2. Replacement System
Type Replaced: _____
Year Installed: _____
☐ 3. Expanded System
☐ a. <25% Expansion
☐ b. ≥25% Expansion
☐ 4. Experimental System
☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

■ 1. No Rule Variance
☐ 2. First Time System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 3. Replacement System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 4. Minimum Lot Size Variance
☐ 5. Seasonal Conversion Approval

DISPOSAL SYSTEM COMPONENTS

1. ■ Complete Non-engineered System
2. ☐ Primitive System (graywater & alt toilet)
3. ☐ Alternative Toilet, specify: _____
4. ☐ Non-engineered Treatment Tank (only
5. ☐ Holding Tank, _____ Gallons
6. ☐ Non-engineered Disposal Field (only)
7. ☐ Separated Laundry System
8. ☐ Complete Engineered System (2000gpd+)
9. ☐ Engineered Treatment Tank (only)
10. ☐ Engineered Disposal field (only)
11. ☐ Pre-treatment, specify: _____
12. ☐ Miscellaneous Components

SIZE OF PROPERTY

4.8 ☐ sq. ft. ■ acres

SHORELAND ZONING

☐ Yes ■ No

DISPOSAL SYSTEM TO SERVE

1. ☐ Single Family Dwelling Unit, No. of Bedrooms: ____
2. ■ Multiple Family Dwelling, No of Units: _____
3. ☐ Other: _____ (SPECIFY)

Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

TYPE OF WATER SUPPLY

1. ☐ Drilled Well 2. ☐ Dug Well 3. ☐ Private
4. ■ Public 5. ☐ Other:

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

1. ■ Concrete
   a. ■ Regular
   b. ☐ Low Profile
2. ☐ Plastic
3. ☐ Other: _____

CAPACITY _____ gallons

DISPOSAL FIELD TYPE & SIZE

1. ☐ Stone Bed 2. Stone Trench
3. ■ Proprietary Device
   a. ☐ cluster array c. ☐ Linear
   b. ☐ regular load d. ☐ H-20 loaded
4. ☐ Other: _____

SIZE: _____ ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

1. ■ No 3. ☐ Maybe
2. ☐ Yes >> Specify one below:
   a. ☐ multi-compartment tank
   b. ☐ _____ tanks in series
   c. ☐ increase in tank capacity
   d. ☐ Filter on tank outlet

DESIGN FLOW

_____ gallons per day

BASED ON:
1. ■ Table 4A (dwelling unit(s))
2. ☐ Table 4C (other facilities)
SHOW CALCULATIONS for other facilities -

3. ☐ Section 4G (meter readings) ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION

5,7,9 / C,D,E

at Observation Hole • TP-1 to 7
Depth 9"-28"
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

1. ■ Medium - 2.6 sq.ft./gpd
2. ■ Medium-Large - 3.3 sq.ft./gpd
3. ☐ Large - 4.1 sq.ft./gpd
4. ■ Extra-Large - 5.0 sq.ft./gpd

EFFLUENT/EJECTOR PUMP

1. ☐ Not required
2. ■ May be required
3. ☐ Required

Specify only for engineered systems:
DOSE: _____ Gallons

NORMAN P. HARRIS #348 LICENSED SITE EVALUATOR

LATITUDE AND LONGITUDE

at center of disposal area
Lat. ___ d ___ m ___ s
Lon. ___ d ___ m ___ s
if g.p.s, state margin of error ___

SITE EVALUATOR STATEMENT

I Certify that on 3/18/25 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed sytem is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Norman Harris — #348 — 3/19/25
Site Evaluator Signature — SE • — Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
WINDHAM	421 FALMOUTH ROAD	ROBIE HOLDINGS, LLC

SITE PLAN Scale 1" = _____ ft. or as shown

SITE LOCATION PLAN

SEE ENGINEERING PLANS
FOR PIT LOCATIONS

STATE OF MAINE
NORMAN P. HARRIS #348
LICENSED SITE EVALUATOR

N

NORTH ORIENTATION APPROXIMATE

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-1 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK BROWN	
10	LOAMY FINE SAND	FRIABLE	PALE BROWN	RESTRICTIVE
	CLAY LOAM	FIRM	OLIVE GRAY	COMMON & DISTINCT
20				
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
9 Profile / D Condition	0-2 %	10 "	☐ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-2 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	LOAMY FINE SAND	FRIABLE	DARK BROWN	
10	SILTY FINE SAND	SOMEWHAT FIRM TO FIRM	PALE OLIVE BROWN	COMMON & DISTINCT RESTRICTIVE
	CLAY LOAM	FIRM	OLIVE GRAY	
20				
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
9 Profile / E Condition	2-4 %	9 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Site Evaluator Signature — #348 SE • — 3/19/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering

Town, City, Plantation	Street, Road Subdivision	Owner's Name
WINDHAM	421 FALMOUTH ROAD	ROBIE HOLDINGS, LLC

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-3 ■ Test Pit ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN	
10–20	LOAMY FINE SAND	FRIABLE	PALE BROWN	FEW & FAINT
20–30	CLAY	VERY FIRM	GRAY	RESTRICTIVE
30–50				

Soil Classification		Slope	Limiting Factor	
9 Profile	D Condition	2-3 %	13 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-4 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	PALE BROWN	
10–30	GRAVELLY COARSE SAND	FRIABLE	DARK YELLOW BROWN	FEW & FAINT
30–50				

Soil Classification		Slope	Limiting Factor	
5 Profile	C Condition	2-4 %	28 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-5 ■ Test Pit ☐ Boring
0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN	
	LOAMY SAND	FRIABLE	PALE BROWN	
10–20	SILTY CLAY LOAM	FIRM	OLIVE GRAY	RESTRICTIVE COMMON & DISTINCT
20–50				

Soil Classification		Slope	Limiting Factor	
9 Profile	C Condition	3-5 %	15 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-6 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN	
10–20	FINE SAND	FRIABLE	LIGHT YELLOW BROWN	COMMON & DISTINCT RESTRICTIVE
	SILT LOAM	FIRM	LIGHT OLIVE BROWN	
20–50				

Soil Classification		Slope	Limiting Factor	
7 Profile	C Condition	0-2 %	15 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

STATE OF MAINE NORMAN P. HARRIS #348 LICENSED SOIL SCIENTIST

Norman Harris
Site Evaluator Signature

#348
SE •

3/19/25
Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering

Town, City, Plantation	Street, Road Subdivision	Owner's Name
WINDHAM	421 FALMOUTH ROAD	ROBIE HOLDINGS, LLC

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-7 ■ Test Pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN	
10–20	FINE SAND	FRIABLE	PALE YELLOW BROWN	COMMON & DISTINCT
20–50	SILTY FINE SAND	SOMEWHAT FIRM TO FIRM	DARK YELLOW BROWN	RESTRICTIVE

Soil Classification	Slope	Limiting Factor	
Profile: 7 / Condition: D	0-2 %	12 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling

STATE OF MAINE — NORMAN P. HARRIS #348 — LICENSED SITE EVALUATOR

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

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling

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

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling

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

Norman Harris — Site Evaluator Signature

#348 — SE •

3/19/25 — Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435

SECTION 18

WATER SUPPLY FOR DOMESTIC AND FIRE PROTECTION USE

Section 18 – Water Supply for Domestic and Fire Protection Use

The project plans will be reviewed by the Portland Water District for approval. Once an Ability to Serve Approval Letter has been issued by the PWD, we will provide a copy of the letter to the Town.

SECTION 19

PROVISIONS FOR WASTEWATER DISPOSAL

Section 19 – Provisions for Wastewater Disposal

The project has a total wastewater design flow of 3,510 gallons per day based on 13 dwelling units each having 3 bedrooms. The wastewater disposal has been divided into 3 individual wastewater disposal fields. The HHE-200 designs are included in this section.

Each of the disposal fields will include the installation of Fuji Clean CEN Advanced Treatment Units that are designed to reduce Nitrate-Nitrogen concentration to below 10 mg/l before the wastewater enters the disposal field.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-2070 FAX (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	WINDHAM
Street or Road	421 FALMOUTH ROAD
Subdivision, Lot #	UNITS 1,2 & 3

OWNER/APPLICANT INFORMATION

Name (last, first, MI): ROBIE HOLDINGS, LLC — ■ Owner ☐ Applicant

Mailing Address of Owner/Applicant: PO BOX 1508, WINDHAM, ME 04062

Daytime Tel. #: 207-892-0650

>> Caution: LPI APPROVAL REQUIRED <<

Town/City _____ Permit # _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged ( )

_____ L.P.I # _____
Local Plumbing Inspector Signature

☐ Owner ☐ Applicant ☐ State

The Subsurface Wastewater Disposal System *shall not* be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # 19 Lot # 104

Owner or Applicant Statement

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.

_____ _____
Signature of Owner or Applicant — Date

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

_____ (1st) Date Approved

_____ _____
Local Plumbing Inspector Signature — (2nd) Date Approved

PERMIT INFORMATION

TYPE OF APPLICATION

■ 1. First Time System
☐ 2. Replacement System
Type Replaced: _____
Year Installed: _____
☐ 3. Expanded System
☐ a. <25% Expansion
☐ b. ≥25% Expansion
☐ 4. Experimental System
☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

MULTI DWELLING

☐ 1. No Rule Variance
■ 2. First Time System Variance
☐ a. Local Plumbing Inspector Approval
■ b. State & Local Plumbing Inspector Approval
☐ 3. Replacement System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 4. Minimum Lot Size Variance
☐ 5. Seasonal Conversion Approval

DISPOSAL SYSTEM COMPONENTS

1. ■ Complete Non-engineered System
2. ☐ Primitive System(graywater & alt toilet)
3. ☐ Alternative Toilet, specify: _____
4. ☐ Non-engineered Treatment Tank (only
5. ☐ Holding Tank, _____ Gallons
6. ☐ Non-engineered Disposal Field (only)
7. ☐ Separated Laundry System
8. ☐ Complete Engineered System(2000gpd+)
9. ☐ Engineered Treatment Tank (only)
10. ☐ Engineered Disposal field (only)
11. ■ Pre-treatment, specify: FUJICLEAN NO REDUCTION
12. ☐ Miscellaneous Components

SIZE OF PROPERTY

4.8 ☐ sq. ft. ■ acres

DISPOSAL SYSTEM TO SERVE

1. ☐ Single Family Dwelling Unit, No. of Bedrooms: ___
2. ■ Multiple Family Dwelling, No of Units: 3
3. ☐ Other: _____ (SPECIFY)

Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

SHORELAND ZONING

☐ Yes ■ No

TYPE OF WATER SUPPLY

1. ☐ Drilled Well 2. ☐ Dug Well 3. ☐ Private
4. ■ Public 5. ☐ Other:

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

1. ■ Concrete
a. ■ Regular
b. ☐ Low Profile
2. ☐ Plastic
3. ☐ Other: _____
CAPACITY (3) 1000 gallons

DISPOSAL FIELD TYPE & SIZE

1. ☐ Stone Bed 2. Stone Trench
3. ■ Proprietary Device
a. ■ cluster array c. ☐ Linear
b. ☐ regular load d. ■ H-20 loaded
4. ☐ Other: _____
SIZE: 4,080 ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

1. ■ No 3. ☐ Maybe
2. ☐ Yes >> Specify one below:
a. ☐ multi-compartment tank
b. ☐ _____ tanks in series
c. ☐ increase in tank capacity
d. ■ Filter on tank outlet

DESIGN FLOW

810 gallons per day
BASED ON:
1. ■ Table 4A (dwelling unit(s))
2. ☐ Table 4C (other facilities)
SHOW CALCULATIONS
- for other facilities -
(3) 3 BEDROOM DWELLINGS AT 270 GPD EACH
3. ☐ Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
7/9 / D
at Observation Hole # TP-10/TP-12
Depth 21"/12"
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

1. ■ Medium - 2.6 sq.ft./gpd
2. ■ Medium-Large - 3.3 sq.ft./gpd
3. ☐ Large - 4.1 sq.ft./gpd
4. ☐ Extra-Large - 5.0 sq.ft./gpd

EFFLUENT/EJECTOR PUMP

1. ☐ Not required
2. ■ May be required
3. ☐ Required
Specify only for engineered systems:
DOSE: _____ Gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lat. 43 d 49 m 53 s
Lon. 70 d 24 m 01 s
if g.p.s, state margin of error 17'

SITE EVALUATOR STATEMENT

I Certify that on 5/7/25 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Norman Harris — #348 — 5/10/25
Site Evaluator Signature — SE # — Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435
harrisseptic@gmail.com

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

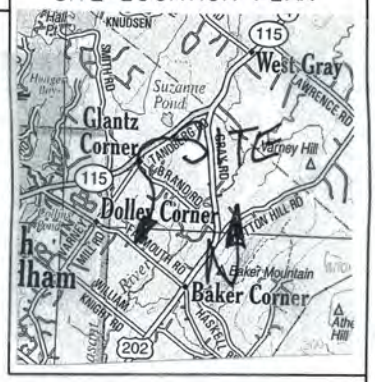
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

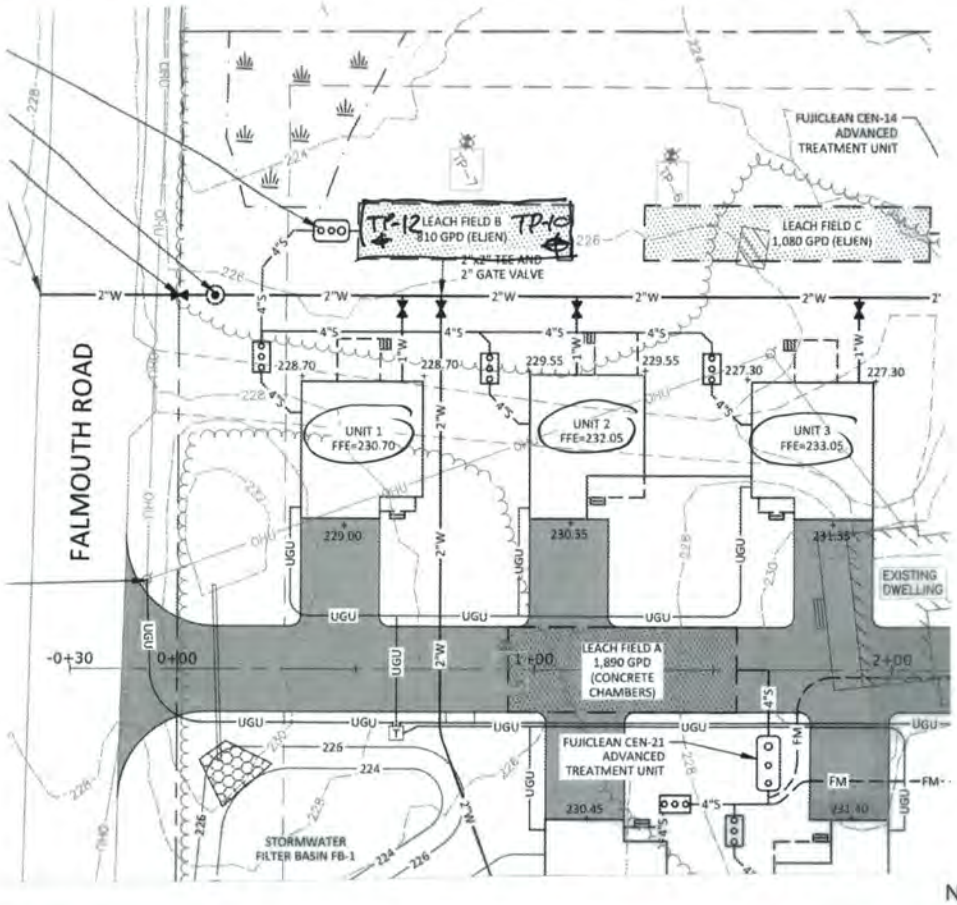
Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
WINDHAM	421 FALMOUTH ROAD, UNITS 1,2 & 3	ROBIE HOLDINGS, LLC

SITE PLAN Scale 1" = NTS ft. or as shown

SITE LOCATION PLAN





NORTH ORIENTATION APPROXIMATE

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-12 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN	FEW & FAINT
10–50	CLAY LOAM	SOMEWHAT FIRM TO FIRM	OLIVE GRAY	

Soil Classification	Slope	Limiting Factor	
9 Profile / D Condition	2-4 %	10 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-10 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	MEDIUM BROWN	
10–20	LOAMY SAND	FRIABLE	PALE BROWN	
20–50	FINE SAND TO SILTY FINE SAND	SOMEWHAT FIRM TO FIRM	PALE YELLOW BROWN	FEW & FAINT

Soil Classification	Slope	Limiting Factor	
7 Profile / C Condition	2-4 %	21 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Norman Harris
Site Evaluator Signature

#348 SE •

5/10/25
Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

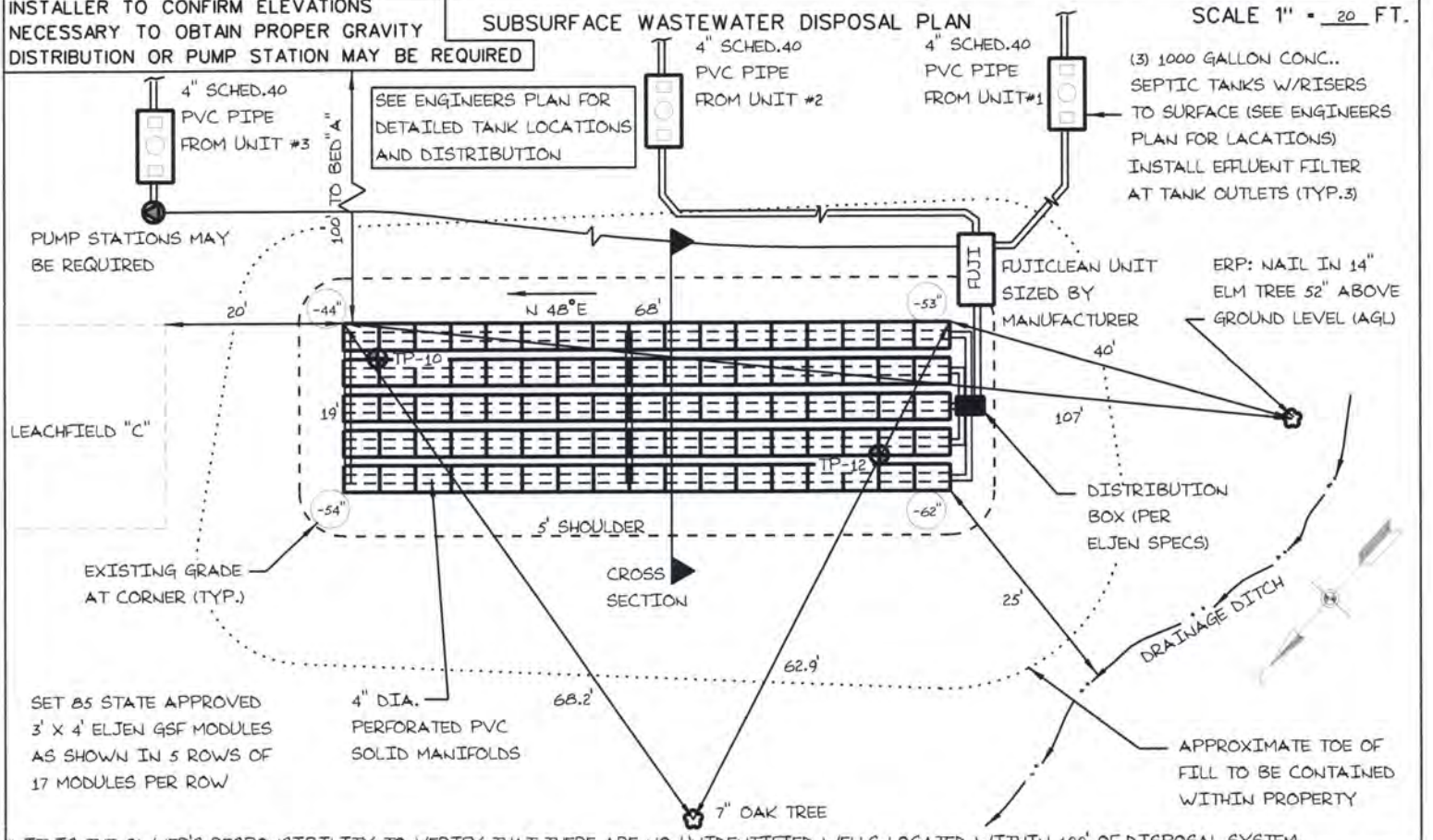
Maine Department of Human Services
Division of Health Engineering, Station 10
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation	Street, Road, Subdivision	Owner or Applicant Name
WINDHAM	421 FALMOUTH ROAD, UNITS 1,2 & 3	ROBIE HOLDINGS, LLC

INSTALLER TO CONFIRM ELEVATIONS NECESSARY TO OBTAIN PROPER GRAVITY DISTRIBUTION OR PUMP STATION MAY BE REQUIRED

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20 FT.



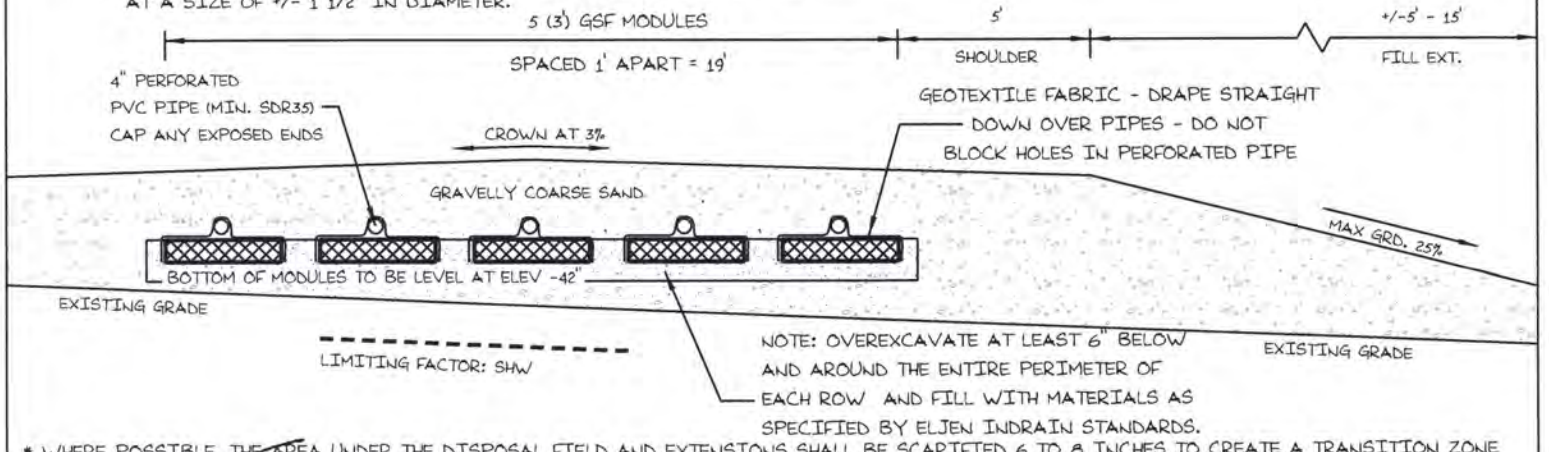
* IT IS THE OWNER'S RESPONSIBILITY TO VERIFY THAT THERE ARE NO UNIDENTIFIED WELLS LOCATED WITHIN 100' OF DISPOSAL SYSTEM.
* ALL INFORMATION CONTAINED WITHIN THIS APPLICATION IS AS REPRESENTED BY OWNER, APPLICANT OR OWNER'S/APPLICANT'S REPRESENTATIVE. THE SITE EVALUATOR WILL NOT BE HELD RESPONSIBLE FOR ANY PERTINENT FACTORS NOT IDENTIFIED, DISCLOSED OR INACCURATELY DISCLOSED.

FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT	
Depth of Fill (Upslope)	: 25" - 34"	Finished Grade Elevation	-19"	Location & Description	NAIL IN 14"
Depth of Fill (Downslope)	: 35" - 43"	Top of Distribution Pipe or Proprietary Device	-31"		ELM TREE 52" AGL
		Bottom of Disposal Area	-42"	Reference Elevation	-0"

DISPOSAL FIELD CROSS-SECTION

SCALES:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 5 FT

NOTES:
* GSF MODULES TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
* BACKFILL TO BE GRAVELLY COARSE SAND FREE OF FINES AND ORGANIC DEBRIS
* FINAL GRADES SHALL BE LOAMED, SEEDED AND OR MULCHED TO PREVENT EROSION
* ANY STONE REQUIRED TO BE FREE OF FINES AND ORGANIC DEBRIS AT A SIZE OF +/- 1 1/2" IN DIAMETER.



* WHERE POSSIBLE, THE AREA UNDER THE DISPOSAL FIELD AND EXTENSIONS SHALL BE SCARIFIED 6 TO 8 INCHES TO CREATE A TRANSITION ZONE

Site Evaluator Signature — #348 SE • — 5/10/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-2070 FAX (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	WINDHAM
Street or Road	421 FALMOUTH ROAD
Subdivision, Lot •	UNITS 8,9,10,11,13,14 & 15

OWNER/APPLICANT INFORMATION

Name (last, first, MI): ROBIE HOLDINGS, LLC — ■ Owner ☐ Applicant

Mailing Address of Owner/Applicant: PO BOX 1508, WINDHAM, ME 04062

Daytime Tel. • 207-892-0650

>> Caution: LPI APPROVAL REQUIRED <<

Town/City _____ Permit • _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged ( )

_____ L.P.I • _____
Local Plumbing Inspector Signature

☐ Owner ☐ Applicant ☐ State

The Subsurface Wastewater Disposal System *shall not* be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map • 19 Lot • 104

Owner or Applicant Statement

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.

_____ _____
Signature of Owner or Applicant — Date

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

_____ (1st) Date Approved

_____ _____
Local Plumbing Inspector Signature — (2nd) Date Approved

PERMIT INFORMATION

TYPE OF APPLICATION

■ 1. First Time System
☐ 2. Replacement System
Type Replaced: _____
Year Installed: _____
☐ 3. Expanded System
☐ a. <25% Expansion
☐ b. ≥25% Expansion
☐ 4. Experimental System
☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

MULTI DWELLING
☐ 1. No Rule Variance
■ 2. First Time System Variance
☐ a. Local Plumbing Inspector Approval
■ b. State & Local Plumbing Inspector Approval
☐ 3. Replacement System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 4. Minimum Lot Size Variance
☐ 5. Seasonal Conversion Approval

DISPOSAL SYSTEM COMPONENTS

1. ■ Complete Non-engineered System
2. ☐ Primitive System (graywater & alt toilet)
3. ☐ Alternative Toilet, specify: _____
4. ☐ Non-engineered Treatment Tank (only)
5. ☐ Holding Tank, _____ Gallons
6. ☐ Non-engineered Disposal Field (only)
7. ☐ Separated Laundry System
8. ☐ Complete Engineered System (2000gpd+)
9. ☐ Engineered Treatment Tank (only)
10. ☐ Engineered Disposal field (only)
11. ☐ Pre-treatment, specify: _____
12. ☐ Miscellaneous Components

SIZE OF PROPERTY

4.8 ☐ sq. ft. ■ acres

SHORELAND ZONING

☐ Yes ■ No

DISPOSAL SYSTEM TO SERVE

1. ☐ Single Family Dwelling Unit, No. of Bedrooms: ___
2. ■ Multiple Family Dwelling, No of Units: 7
3. ☐ Other: _____ (SPECIFY)

Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

TYPE OF WATER SUPPLY

1. ☐ Drilled Well 2. ☐ Dug Well 3. ☐ Private
4. ■ Public 5. ☐ Other:

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

1. ■ Concrete
a. ■ Regular
b. ☐ Low Profile
2. ☐ Plastic
3. ☐ Other: _____
CAPACITY (7) 1000 gallons

DISPOSAL FIELD TYPE & SIZE

1. ☐ Stone Bed 2. Stone Trench
3. ■ Proprietary Device
a. ■ cluster array c. ☐ Linear
b. ☐ regular load d. ■ H-20 loaded
4. ☐ Other: _____
SIZE: 1,632 ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

1. ■ No 3. ☐ Maybe
2. ☐ Yes >> Specify one below:
a. ☐ multi-compartment tank
b. ☐ _____ tanks in series
c. ☐ increase in tank capacity
d. ☐ Filter on tank outlet

DESIGN FLOW

1,890 gallons per day
BASED ON:
1. ■ Table 4A (dwelling unit(s))
2. ☐ Table 4C (other facilities)
SHOW CALCULATIONS
- for other facilities -
(7) 3 BEDROOM DWELLINGS AT 270 GPD EACH
3. ☐ Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
5 - 12/7 / C

at Observation Hole • TP-4/TP-8
Depth 28"/36"
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

1. ■ Medium - 2.6 sq.ft./gpd
2. ■ Medium-Large - 3.3 sq.ft./gpd
3. ☐ Large - 4.1 sq.ft./gpd
4. ☐ Extra-Large - 5.0 sq.ft./gpd

EFFLUENT/EJECTOR PUMP

1. ☐ Not required
2. ■ May be required
3. ☐ Required

Specify only for engineered systems:
DOSE: _____ Gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lat. ___ d ___ m ___ s
Lon. ___ d ___ m ___ s
if g.p.s, state margin of error ___

SITE EVALUATOR STATEMENT

I Certify that on 3/18/25 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed sytem is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Norman Harris — #348 — 3/19/25
Site Evaluator Signature — SE • — Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435
harrisseptic@gmail.com

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

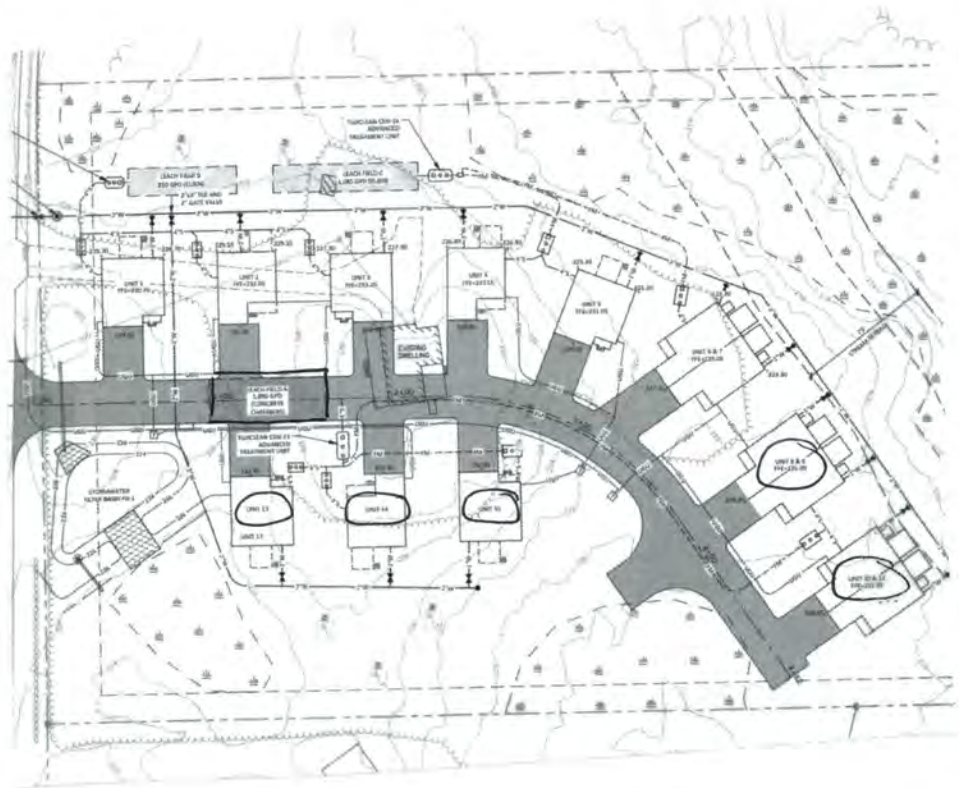
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

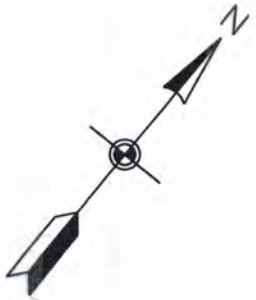
Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-5672 FAX (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
WINDHAM	421 FALMOUTH ROAD, 8,9,10,11,13,14 & 15	ROBIE HOLDINGS, LLC

SITE PLAN Scale 1" = NTS ft. or as shown

SITE LOCATION PLAN





NORTH ORIENTATION APPROXIMATE

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-4 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	PALE BROWN	
10–30	GRAVELLY COARSE SAND	FRIABLE	DARK YELLOW BROWN	FEW & FAINT
30–50				

Soil Classification	Slope	Limiting Factor	
5 Profile / C Condition	2-4 %	28"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-8 ■ Test Pit ☐ Boring
1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN	
10–20	FINE SAND	FRIABLE	LIGHT YELLOW BROWN	COMMON & DISTINCT RESTRICTIVE
20–30	SILT LOAM	FIRM	LIGHT OLIVE BROWN	
30–50				

PROPOSED DISPOSAL FIELD TO BE LOCATED WITHIN SAME FOOTPRINT OF EXISTING. SOIL CLASSIFICATION ASSUMED BASED ON OBSERVED SURROUNDING SOILS

Soil Classification	Slope	Limiting Factor	
7 Profile / C Condition	0-2 %	15"	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Site Evaluator Signature — #348 SE • — 5/9/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, Station 10
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation	Street, Road, Subdivision	Owner or Applicant Name
WINDHAM	421 FALMOUTH ROAD, UNITS 8,9,10,11,13,14 & 15	ROBIE HOLDINGS, LLC

INSTALLER TO CONFIRM ELEVATIONS NECESSARY TO OBTAIN PROPER GRAVITY DISTRIBUTION OR PUMP STATION MAY BE REQUIRED

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20 FT.

SEE ATTACHMENT FOR
DISPOSAL FIELD PLAN

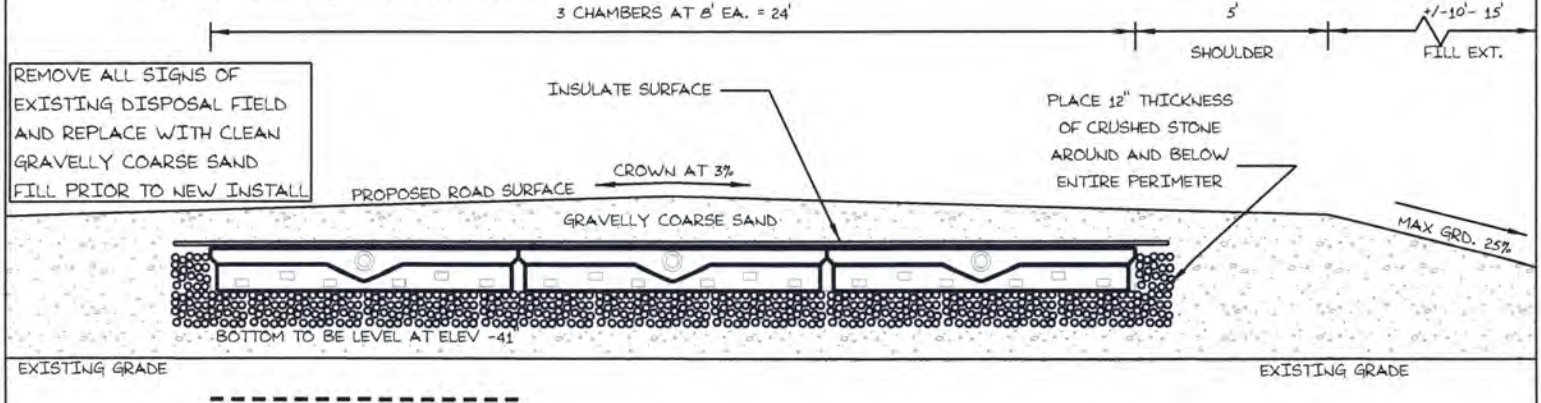
* IT IS THE OWNER'S RESPONSIBILITY TO VERIFY THAT THERE ARE NO UNIDENTIFIED WELLS LOCATED WITHIN 100' OF DISPOSAL SYSTEM.
* ALL INFORMATION CONTAINED WITHIN THIS APPLICATION IS AS REPRESENTED BY OWNER, APPLICANT OR OWNER'S/APPLICANT'S REPRESENTATIVE. THE SITE EVALUATOR WILL NOT BE HELD RESPONSIBLE FOR ANY PERTINENT FACTORS NOT IDENTIFIED, DISCLOSED OR INACCURATELY DISCLOSED.

FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT	
Depth of Fill (Upslope)	± 20"- 51"	Finished Grade Elevation	-17"	Location & Description	NAIL IN CMP
Depth of Fill (Downslope)	± 20"- 52"	Top of Distribution Pipe or Proprietary Device	-28"		POLE #140 56" AGL
		Bottom of Disposal Area	-41"	Reference Elevation	-0"

DISPOSAL FIELD CROSS-SECTION

SCALES:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 5 FT

NOTES:
* CHAMBERS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
* BACKFILL TO BE GRAVELLY COARSE SAND FREE OF FINES AND ORGANIC DEBRIS
* FINAL GRADES SHALL BE LOAMED, SEEDED AND OR MULCHED TO PREVENT EROSION
* ANY STONE REQUIRED TO BE FREE OF FINES AND ORGANIC DEBRIS AT A SIZE OF +/- 1 1/2" IN DIAMETER.



* WHERE POSSIBLE, THE AREA UNDER THE DISPOSAL FIELD AND EXTENSIONS SHALL BE SCARIFIED 6 TO 8 INCHES TO CREATE A TRANSITION ZONE

Site Evaluator Signature — #348 SE • — 5/10/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

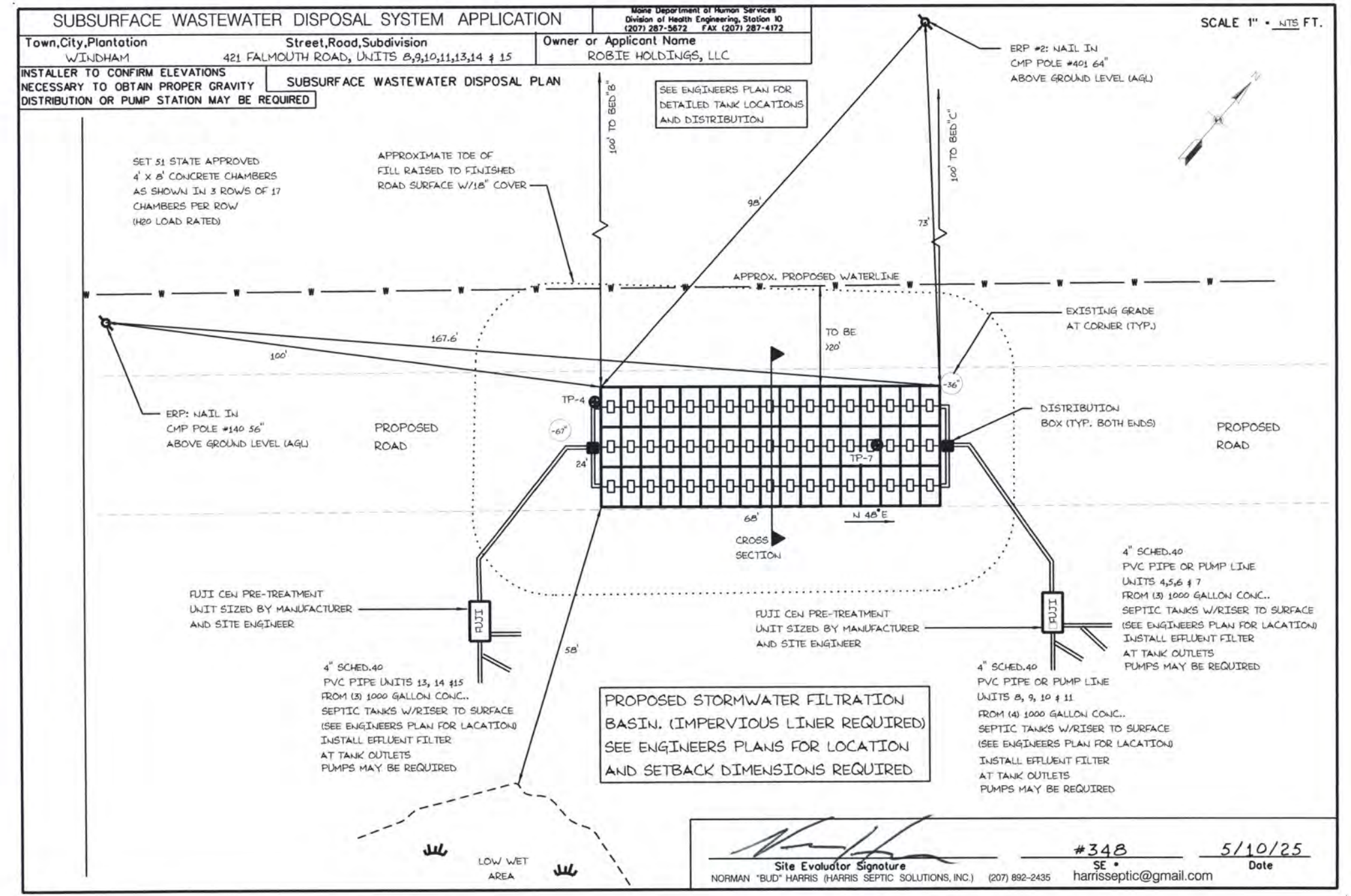
Maine Department of Human Services
Division of Health Engineering, Station 10
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation	Street, Road, Subdivision	Owner or Applicant Name
WINDHAM	421 FALMOUTH ROAD, UNITS 8,9,10,11,13,14 & 15	ROBIE HOLDINGS, LLC

INSTALLER TO CONFIRM ELEVATIONS NECESSARY TO OBTAIN PROPER GRAVITY DISTRIBUTION OR PUMP STATION MAY BE REQUIRED

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = NTS FT.



Site Evaluator Signature

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435

#348 SE •

harrisseptic@gmail.com

5/10/25 Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-2070 FAX (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	WINDHAM
Street or Road	421 FALMOUTH ROAD
Subdivision, Lot •	UNITS 4,5,6 & 7

OWNER/APPLICANT INFORMATION

Name (last, first, MI): ROBIE HOLDINGS, LLC — ■ Owner ☐ Applicant

Mailing Address of Owner/Applicant: PO BOX 1508, WINDHAM, ME 04062

Daytime Tel. •: 207-892-0650

Owner or Applicant Statement

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.

Signature of Owner or Applicant _____ Date _____

>> Caution: LPI APPROVAL REQUIRED <<

Town/City _____ Permit • _____

Date Permit Issued ___/___/___ Fee: $ _____ Double Fee Charged ( )

_____ L.P.I • _____

Local Plumbing Inspector Signature

☐ Owner ☐ Applicant ☐ State

The Subsurface Wastewater Disposal System *shall not* be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map • 19 Lot • 104

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

(1st) Date Approved _____

Local Plumbing Inspector Signature _____ (2nd) Date Approved _____

PERMIT INFORMATION

TYPE OF APPLICATION

■ 1. First Time System
☐ 2. Replacement System
Type Replaced: _____
Year Installed: _____
☐ 3. Expanded System
☐ a. <25% Expansion
☐ b. ≥25% Expansion
☐ 4. Experimental System
☐ 5. Seasonal Conversion

THIS APPLICATION REQUIRES

MULTI DWELLING
☐ 1. No Rule Variance
■ 2. First Time System Variance
☐ a. Local Plumbing Inspector Approval
■ b. State & Local Plumbing Inspector Approval
☐ 3. Replacement System Variance
☐ a. Local Plumbing Inspector Approval
☐ b. State & Local Plumbing Inspector Approval
☐ 4. Minimum Lot Size Variance
☐ 5. Seasonal Conversion Approval

DISPOSAL SYSTEM COMPONENTS

1. ■ Complete Non-engineered System
2. ☐ Primitive System(graywater & alt toilet)
3. ☐ Alternative Toilet, specify: _____
4. ☐ Non-engineered Treatment Tank (only
5. ☐ Holding Tank, _____ Gallons
6. ☐ Non-engineered Disposal Field (only)
7. ☐ Separated Laundry System
8. ☐ Complete Engineered System(2000gpd+)
9. ☐ Engineered Treatment Tank (only)
10. ☐ Engineered Disposal field (only)
11. ■ Pre-treatment, specify: FUJICLEAN NO REDUCTION
12. ☐ Miscellaneous Components

SIZE OF PROPERTY

4.8 ☐ sq. ft. ■ acres

DISPOSAL SYSTEM TO SERVE

1. ☐ Single Family Dwelling Unit, No. of Bedrooms: ___
2. ■ Multiple Family Dwelling, No of Units: 4
3. ☐ Other: _____ (SPECIFY)

Current Use ☐ Seasonal ☐ Year Round ■ Undeveloped

SHORELAND ZONING

☐ Yes ■ No

TYPE OF WATER SUPPLY

1. ☐ Drilled Well 2. ☐ Dug Well 3. ☐ Private
4. ■ Public 5. ☐ Other:

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

1. ■ Concrete
a. ■ Regular
b. ☐ Low Profile
2. ☐ Plastic
3. ☐ Other: _____
CAPACITY (4) 1000 gallons

DISPOSAL FIELD TYPE & SIZE

1. ☐ Stone Bed 2. Stone Trench
3. ■ Proprietary Device
a. ■ cluster array c. ☐ Linear
b. ☐ regular load d. ■ H-20 loaded
4. ☐ Other: _____
SIZE: 5,184 ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

1. ■ No 3. ☐ Maybe
2. ☐ Yes >> Specify one below:
a. ☐ multi-compartment tank
b. ☐ _____ tanks in series
c. ☐ increase in tank capacity
d. ■ Filter on tank outlet

DESIGN FLOW

1080 gallons per day
BASED ON:
1. ■ Table 4A (dwelling unit(s))
2. ☐ Table 4C (other facilities)
SHOW CALCULATIONS
- for other facilities -
(4) 3 BEDROOM DWELLINGS AT 270 GPD EACH
3. ☐ Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE CONDITION
7/9 / C/D
at Observation Hole • TP-10/TP-11
Depth 21"/12"
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

1. ☐ Medium - 2.6 sq.ft./gpd
2. ☐ Medium-Large - 3.3 sq.ft./gpd
3. ☐ Large - 4.1 sq.ft./gpd
4. ■ Extra-Large - 5.0 sq.ft./gpd

EFFLUENT/EJECTOR PUMP

1. ☐ Not required
2. ■ May be required
3. ☐ Required
Specify only for engineered systems:
DOSE: _____ Gallons

LATITUDE AND LONGITUDE

at center of disposal area
Lot. 43 d 49 m 53 s
Lon. 70 d 24 m 00 s
if g.p.s, state margin of error 17'

SITE EVALUATOR STATEMENT

I Certify that on 5/9/25 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Site Evaluator Signature _____ #348 SE • 5/10/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435
harrisseptic@gmail.com

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-5672 FAX (207) 287-3165

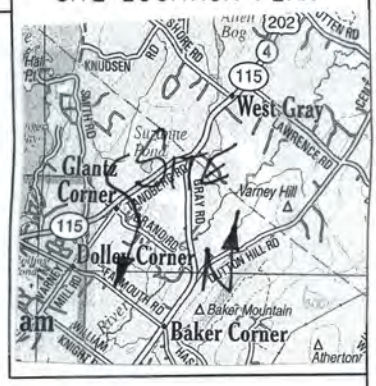
Town, City, Plantation: WINDHAM

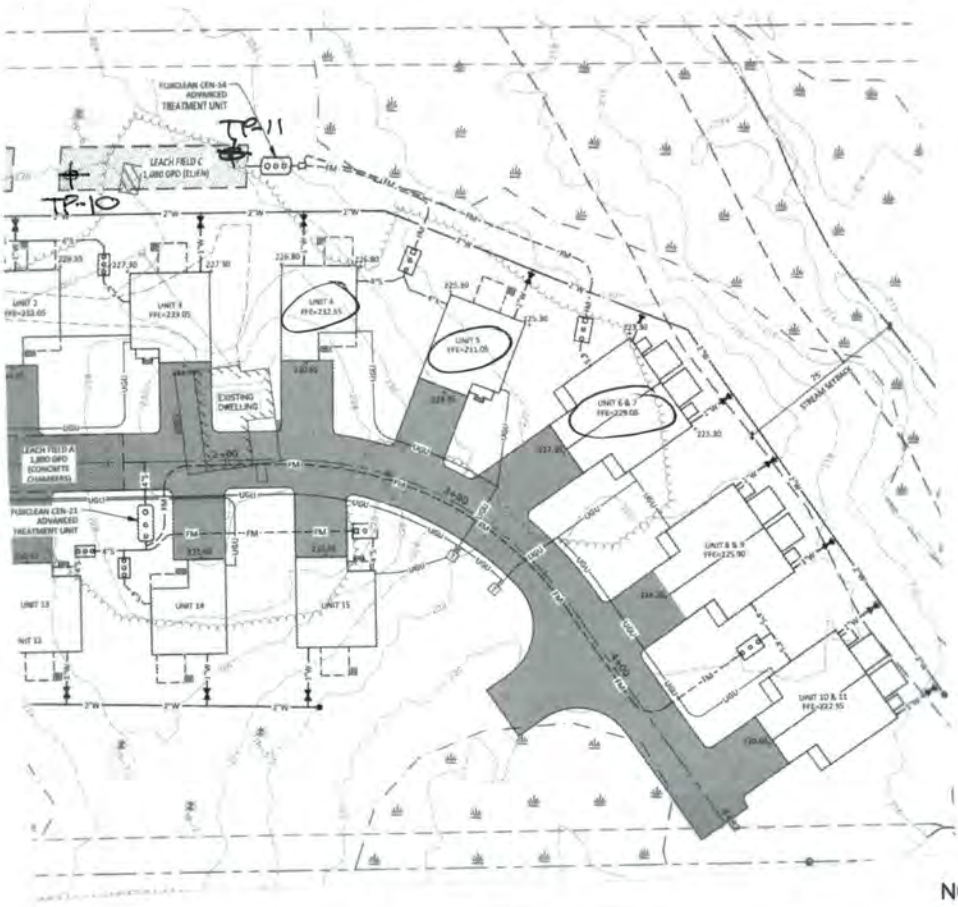
Street, Road, Subdivision: 421 FALMOUTH ROAD, UNITS 4,5,6 & 7

Owner's Name: ROBIE HOLDINGS, LLC

SITE PLAN Scale 1" = NTS ft. or as shown

SITE LOCATION PLAN





NORTH ORIENTATION APPROXIMATE

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-10 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	MEDIUM BROWN	
10–20	LOAMY SAND	FRIABLE	PALE BROWN	
20–50	FINE SAND TO SILTY FINE SAND	TO FIRM	PALE YELLOW BROWN	FEW & FAINT

Soil Classification	Slope	Limiting Factor	
7 Profile / C Condition	2-4 %	21 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-11 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	VERY DARK BROWN	
10–20	SILTY FINE SAND	SOMEWHAT FIRM	PALE BROWN	COMMON & DISTINCT
10–20	CLAY LOAM	FIRM		

Soil Classification	Slope	Limiting Factor	
9 Profile / D Condition	3-5 %	12 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Site Evaluator Signature

#348 SE •

5/10/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

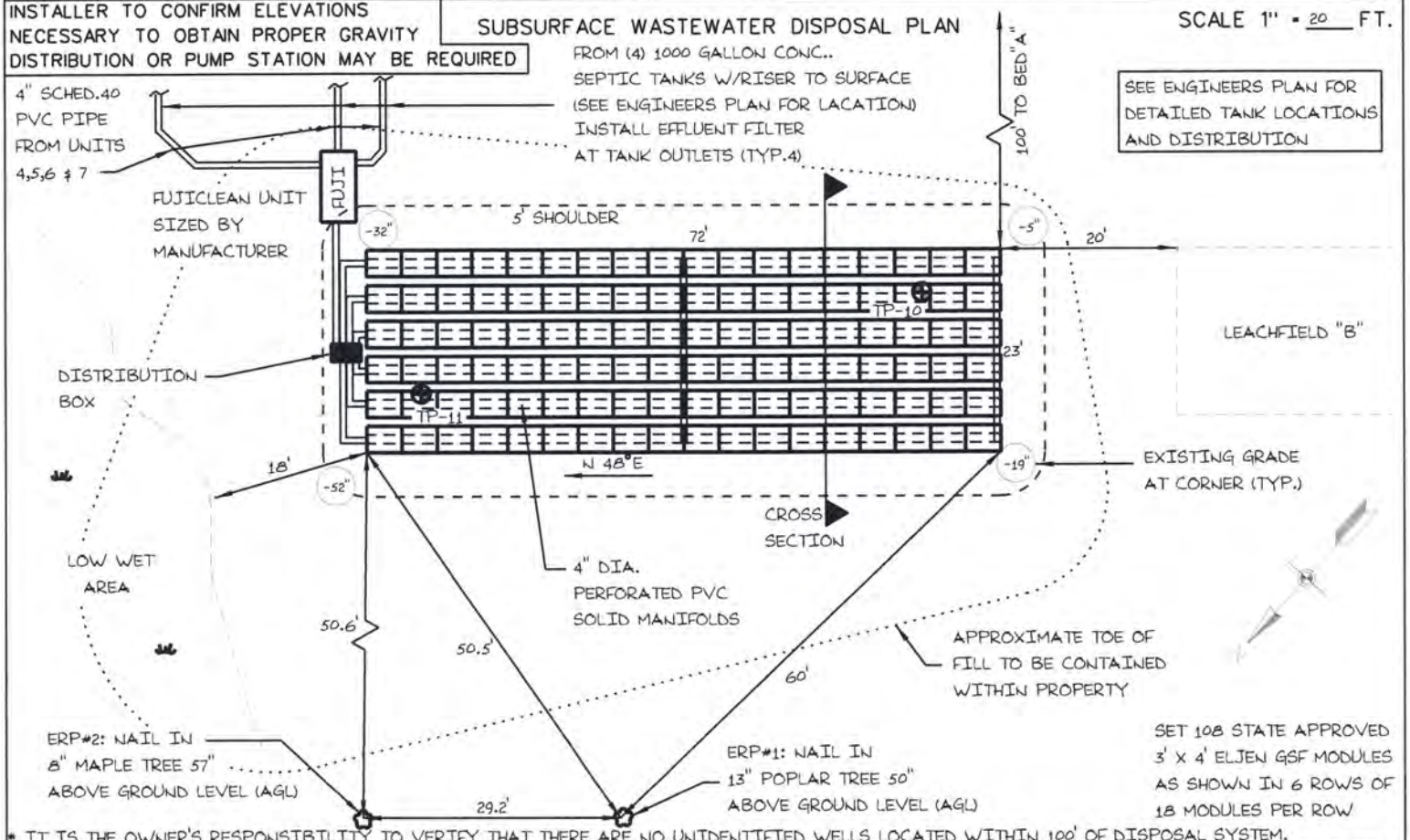
Maine Department of Human Services
Division of Health Engineering, Station 10
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation	Street, Road, Subdivision	Owner or Applicant Name
WINDHAM	421 FALMOUTH ROAD, UNITS 4,5,6 & 7	ROBIE HOLDINGS, LLC

INSTALLER TO CONFIRM ELEVATIONS NECESSARY TO OBTAIN PROPER GRAVITY DISTRIBUTION OR PUMP STATION MAY BE REQUIRED

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20 FT.



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* ALL INFORMATION CONTAINED WITHIN THIS APPLICATION IS AS REPRESENTED BY OWNER, APPLICANT OR OWNER'S/APPLICANT'S REPRESENTATIVE. THE SITE EVALUATOR WILL NOT BE HELD RESPONSIBLE FOR ANY PERTINENT FACTORS NOT IDENTIFIED, DISCLOSED OR INACCURATELY DISCLOSED.

FILL REQUIREMENTS

Depth of Fill (Upslope)	: 13" - 40"
Depth of Fill (Downslope)	: 27" - 60"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation	+8"
Top of Distribution Pipe or Proprietary Device	-4"
Bottom of Disposal Area	-15"

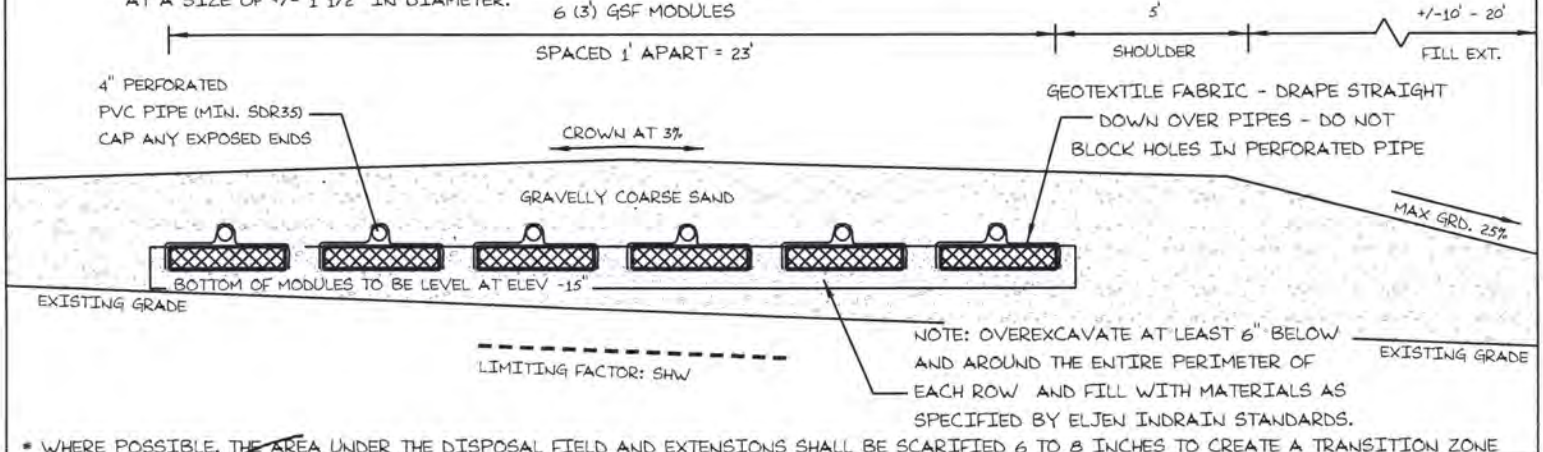
ELEVATION REFERENCE POINT

Location & Description NAIL IN 13" POPLAR TREE 50" AGL
Reference Elevation -0"

DISPOSAL FIELD CROSS-SECTION

SCALES:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 5 FT

NOTES:
* GSF MODULES TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
* BACKFILL TO BE GRAVELLY COARSE SAND FREE OF FINES AND ORGANIC DEBRIS
* FINAL GRADES SHALL BE LOAMED, SEEDED AND OR MULCHED TO PREVENT EROSION
* ANY STONE REQUIRED TO BE FREE OF FINES AND ORGANIC DEBRIS AT A SIZE OF +/- 1 1/2" IN DIAMETER.



* WHERE POSSIBLE, THE AREA UNDER THE DISPOSAL FIELD AND EXTENSIONS SHALL BE SCARIFIED 6 TO 8 INCHES TO CREATE A TRANSITION ZONE

Site Evaluator Signature — #348 SE • — 5/10/25 Date

NORMAN "BUD" HARRIS (HARRIS SEPTIC SOLUTIONS, INC.) (207) 892-2435 harrisseptic@gmail.com

Benefits of a Fuji Clean System

Fuji Clean is the world leader in advanced onsite treatment with 3 million systems installed and operating worldwide. Fuji Clean USA headquarters is based in Brunswick, Maine which means you can expect **LOCAL** service. In fact, some units are being **ASSEMBLED IN MAINE!**

Installing a **NEW SYSTEM?** Fuji Clean units are single tank systems. **NO SEPTIC TANK IS REQUIRED.** That translates to less impact on the property and lower excavation costs. Fuji Clean systems also boast up to **75% REDUCTION IN DRAINFIELD SIZE** as well as **DRAMATIC REDUCTION IN THE PROFILE OF A SEPTIC MOUND!**

EXPANDING AN EXISTING SYSTEM? You could simply install a Fuji Clean unit and in most cases **DOUBLE THE CAPACITY OF AN EXISTING SYSTEM!**

Our systems can assist in **SEASONAL CONVERSIONS**, and are the perfect solution for **OBD REPLACEMENT,** and have been granted **SUBSTANTIAL VARIANCE APPROVAL.**

Fuji Clean systems are compact in size, lightweight, and easy to maneuver, making them the perfect solution for **ISLAND INSTALLS!** There are no moving parts inside the tank, which makes for **EASY, NO-MESS MAINTENANCE** by our local operations and maintenance specialists.

Our units are readily available and can typically be delivered to the site within 48 hours.

Maine Septic Solution is the Fuji Clean distributor for the State of Maine. With over 15 years of experience, hundreds of Fuji Clean units installed in Maine, plus a licensed site evaluator on staff, we can handle all of your wastewater needs! We are happy to consult on designs and engineering. Whether it's a 2-bedroom seasonal cottage or a 20,000 gallon per day condominium project, residential or commercial **WE HAVE THE SOLUTION!**

MaineSepticSolution

FujiClean TowardCleanWater

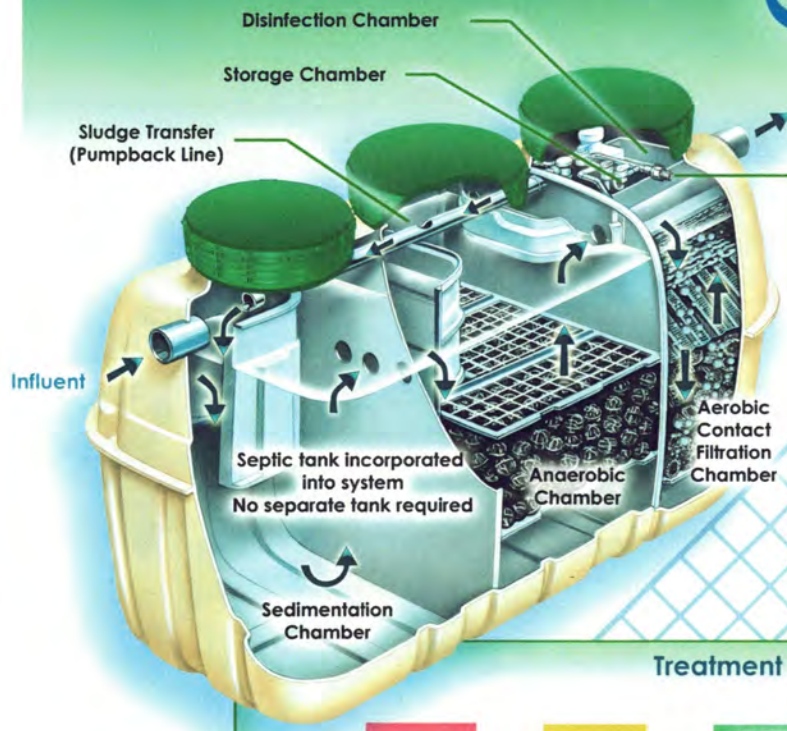
Damariscotta, Maine
mainesepticsolution.com

Lacey Fuller
207-295-5171
lacey@mainesepticsolution.com

Matt Page
207-380-4662
matt@mainesepticsolution.com

MODEL CE & CEN SERIES *Technical Specification Sheet*

MaineSepticSolution
FujiClean TowardCleanWater



FujiMac RII Linear Diaphragm Blower
- 40-300L/min Blower Options
- US & CAN UL Listed

Fuji Clean Advantages

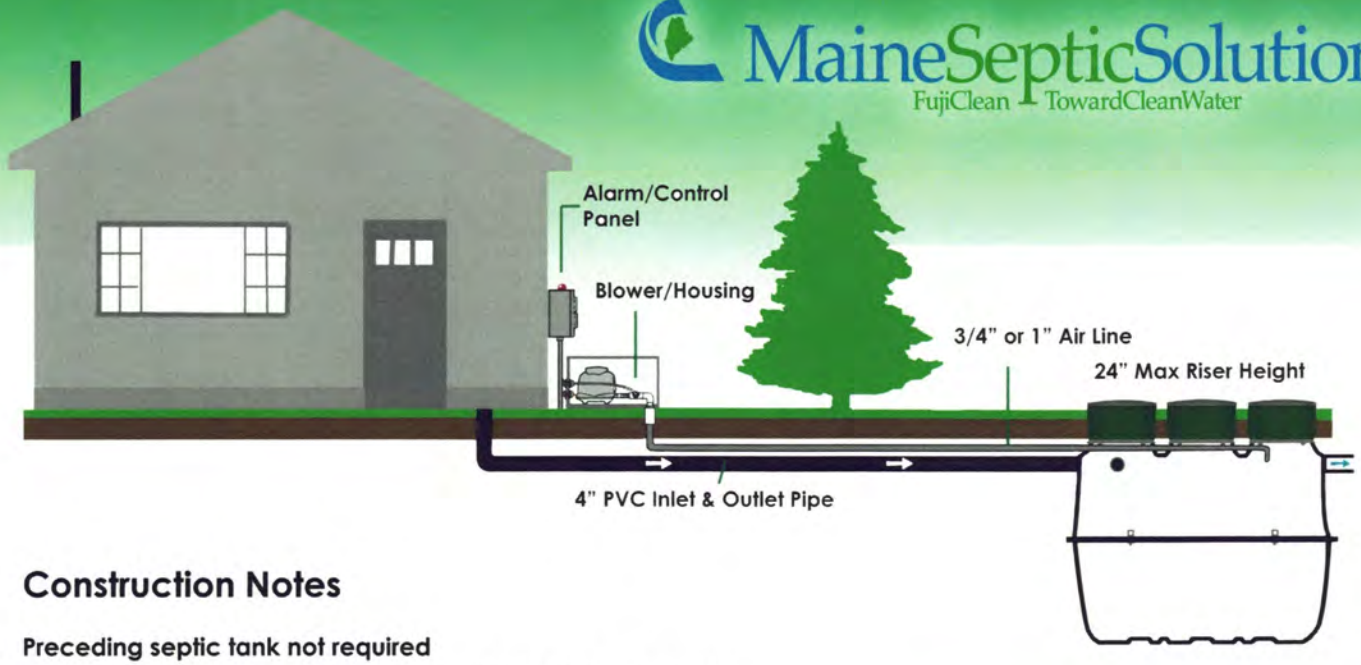
- Over 2 million installed systems worldwide
- 1-tank system – no septic tank necessary
- No moving parts in tank
- Built-in equalization - levels variable inflow
- NSF 40 and 40/245 certified
- TN removal to 70+% with CEN models
- Phosphorous reduction technology
- Smallest footprint vs. competitors
- Lowest power use vs. competitors
- Lightweight tank - easy installation
- Quick and easy O&M - no mess
- Rapid startup and restart for seasonal homes

Treatment Process

Design Specification Table	CE Series BOD, TSS, TN							CEN Series BOD, TSS, Enhanced TN			
MODEL:	CE5	CE7	CE10	CE14	CE21	CE30	CE6KG	CEN5	CEN7	CEN10	CEN21
Load Hydraulic (GPD)	360	540	720	1,000	1,900	2,700	6,000	360	540	720	1,900
EFFLUENT (assumes domestic strength influent):											
BOD – Effluent (mg/L)	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10	10	10	10
BOD (removal pounds/day)	.52	.73	1.04	1.46	2.08	3.12	6.93	.69	.97	1.38	2.9
TSS (mg/L)	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10	10	10	10
TN (mg/L)	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10	10	10	10
BLOWER DETAIL:											
Blower Model	MAC80R	MAC80R	MAC100R	MAC100R	MAC150R	MAC200R	MAC200R (3)	MAC80R	MAC100R	MAC100R	MAC200R
Normal Pressure (kPa)	15	15	18	18	20	20	20	15	18	18	20
Airflow Volume (CFM; L/Min.)	2.8 CFM 80 L/MIN	2.8 CFM 80 L/MIN	3.5 CFM 100 L/MIN	3.5 CFM 100 L/MINJ	5.3 CFM 150 L/MIN	7.0 CFM 200 L/MIN	21.0 CFM 600 L/MIN	2.8 CFM 80 L/MIN	3.5 CFM 100 L/MIN	3.5 CFM 100 L/MIN	7.0 CFM 200 L/MIN
Power Use (kWh/day)	1.1	1.1	1.6	1.6	2.4	3.4	10.2	1.1	1.6	1.6	3.4
Weight (lbs.)	11	11	11	11	13	13	13 x 3	11	11	11	13
Outlet Diameter (OD, inches)	0.70	0.70	0.70	0.70	1.0	1.0	1.0 x 3	.070	0.70	0.70	1.0
TANK DETAIL:											
Material	Fibre-Reinforced Plastic							Fibre-Reinforced Plastic			
Height (inches)	61.8	65.7	73.6	77.4	81.3	87.2	87.2	65.7	73.6	77.4	87.2
Length (inches)	85	95.7	98.8	118.9	152.8	183.7	434.7	95.7	98.8	118.9	183.7
Width (inches)	43.7	49.2	56.7	68.9	72.4	78.3	115.3	49.2	56.7	68.9	78.3
Weight (lbs.)	397	463	705	926	1,168	1,543	2,900	463	705	926	1,543
Inlet Invert (inches)	49	53	61	62	65	71	67	53	61	62	71
Outlet Invert (inches)	47	51	59	59.5	63	69	64	51	59	59.5	69
Access Ports Quantity & Diameter (inches)	3@20"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	4@24"x24" 3@24"x48"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"
Tank Volume Total (gallons)	545	749	1,069	1,498	2,252	3,199	7,267	749	1,069	1,498	3,199

FUJI CLEAN INSTALLATION OVERVIEW

MaineSepticSolution
FujiClean ~ TowardCleanWater



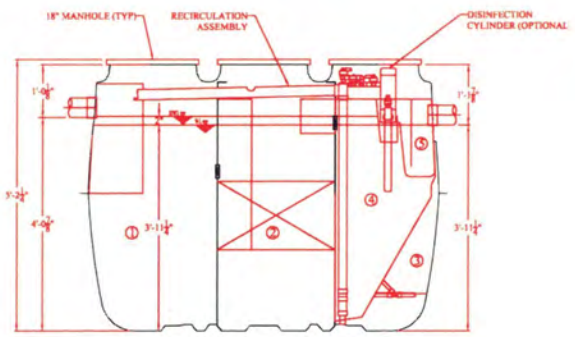
Construction Notes

- Preceding septic tank not required
- At-grade access ports - covers can withstand body weight
- Excessive loads require H-20 engineering
- Maximum riser height: 24 in.
- Power supply required: 120 V, 60 Hz.
- Air line distance: up to 100 ft. and (5) 90-degree turns
- Soil bearing power should be equal or more than 1200 lb/ft²
- Backfill with suitable material such as sand
- Effluent quality will vary depending on hydraulic and constituent loading
- Installer responsibilities include:
  - Excavation and related work
  - Inflow, effluent and airline pipes and connection work
  - Electrical connections to panel and blower
  - (As needed) air vent and connection work
  - Fresh water to required level in tank

Additional Technical Materials

- H-20 Specifications
- Uplift Restraint Specifications
- Process Science Details
- Commercial Project Engineering Support
- Structural Tank Strength
- Effluent Flow Rate Reports

Coming soon off grid solar packages!



Structural drawings with all views & tank details available for all models

Fuji Clean Panel Features	Controller A*	Controller C
NEMA 4X Weather Proof Enclosure	x	x
Three 120 Volt AC Breakers (Compressor, Alarm, Aux Pump)	x	x
Alarm/Test/ Normal/Silence Switch	x	x
Compressor Low Pressure Alarm Switch	x	x
Communication Contacts (Alarm Aux)		x
Elapsed Time Meter		x
Timed Dosing, Data Logging	Available Upon Request	

* Standard with each system.

Tel: 207-295-5171 • www.mainesepticsolution.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 & Demolition	$40,000
2.	Aggregates for Driveways	$40,000
3.	Bituminous Pavement	$30,000
4.	Electrical Conduit and Risers	$20,000
5.	Stormwater BMPs	$40,000
6.	Storm Drain Collection	$15,000
7.	Water tap & services	$35,000
8.	Wastewater collection & disposal	$50,000
9.	Landscaping & Lawns	$30,000
	Total Sitework Estimate:	$300,000

The 13-units of building cost is estimated at $3,900,000 based on an estimate of $300,000 per unit.

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

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

May 19, 2025

Town of Windham
Planning Department, et al

RE: , Jarod Robie, et al.

To Whom It May Concern,

I work with Jarod Robie and his related companies as his Commercial Banker. He has the financial capacity to complete a 14 unit subdivision at 421 Falmouth Road in Windham.

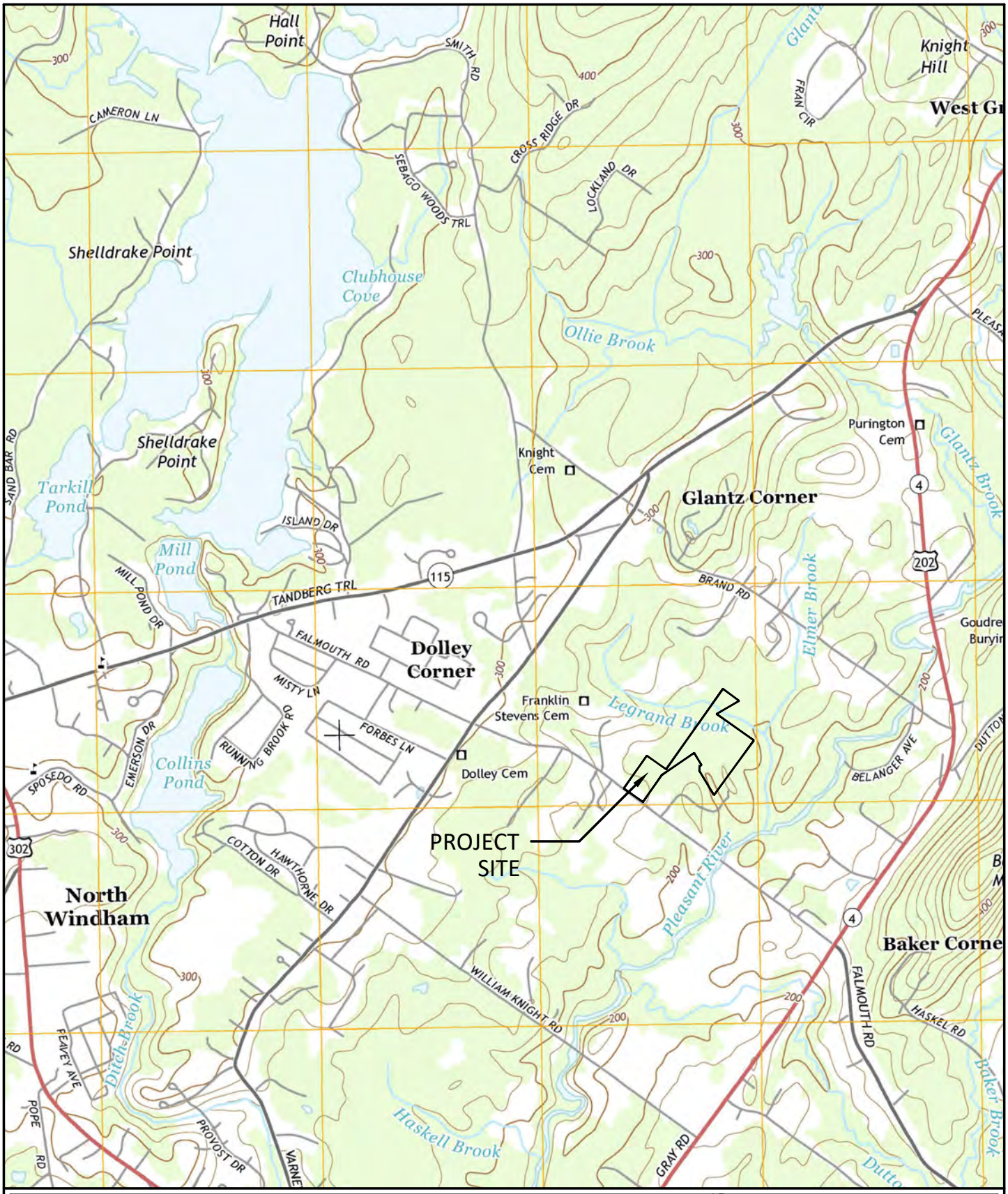
If you have any further questions, I can be reached at (207) 749-1903

Sincerely,

Jason Straetz
Vice President

SECTION 21

SITE VICINITY MAP – USGS QUADRANGLE



SITE LOCATION MAP

421 FALMOUTH ROAD
WINDHAM, MAINE

FOR:
ROBIE HOLDINGS LLC
PO BOX 1508
WINDHAM, ME 04062

SCALE: 1"=2,000'
DATE: FEB 2025
JOB NUMBER: 24057

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

SECTION 22

FLOOD ZONES

National Flood Hazard Layer FIRMette

FEMA

70°24'11"W 43°50'13"N

70°23'34"W 43°49'47"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/26/2024 at 9:11 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 – Impact to Sites of Historical Significance

We have sent a letter request to The Maine Historic Preservation Commission to request their assessment of the project site, and will provide copies of any correspondence we receive to the Town.