SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

Town of Windham
Preliminary Major Subdivision Application

For

120 Land of Nod Road Subdivision

Prepared for

Grondin Corporation
39 Belanger Road
Windham, ME 04062

Prepared by

Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

February 2019

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February 4, 2019
16236

Ms. Amanda Lessard, Town Planner
Town of Windham
8 School Road
Windham, ME 04063

Proposed Major Cluster Subdivision Preliminary Application
Land of Nod Road Subdivision
Tax Map 7, Lot 29

Dear Ms. Lessard:

On behalf of Grondin Corporation we are pleased to submit (5) full copies of the attached Preliminary Major Subdivision Application for the proposed Cluster Subdivision located at 120 Land of Nod Road, in Windham. We are requesting that the project be scheduled for Preliminary Subdivision Review by the Planning Board at their next available scheduled meeting.

The proposed subdivision development will consist of a cluster subdivision for 30 lots. Since the last Sketch Plan Application, the density bonus for lots where public land access for open space was to be offered has been eliminated by the Town Council and consequently so has the proposed public access. Total area of the parcel is shown as 65.67 acres on property currently owned by the Heirs of Leonard Sanborn, Jr., Leonard Sanborn/and Chris Wilson. The site is identified as Lots 29 on the Town of Windham Tax Map 7 accessing of Land of Nod Road nearly opposite of Morgan Drive and zoned Farm (F) District. The proposed site will consist of a dead end cul-de-sac road, and a short hammerhead terminus ROW showing opportunity for a future connection to the proposed Highland Woods Subdivision that is off of Highland Cliff Road. At this time the applicant will not pursue an actual physical connection between the developments.

The site lots will be served by private wells and subsurface wastewater systems, as there is no public water supply in proximity of the property. We anticipate that the lots could be required to provide sprinkler systems, but we intend to work with the fire department to finalize NFPA requirements. Electric and communication services will be provided underground, and no other services will be required.

A Traffic Impact Study addressing routing, crash history and impacts to traffic is included in this application submittal. The 10/22/18 study concludes that the surrounding area roadways are able to accommodate the expected increase in traffic due to this proposed Land of Nod Road residential subdivision development. The development driveway is projected to operate with little delay and is to be at a location with adequate site distance.

A Stormwater Management Report is included in this submittal in **Section 12**. The estimated runoff from the proposed project appears to break into two direction heading to the rear of the site and to the front of the site but eventually all the project discharges into the Colley Wright Brook which is a tributary of the Presumpscot River. Colley Wright Brook is not defined as a river, stream or brook “most at risk” from new

development or a sensitive or threatened region or watershed as defined by the Maine Department of Environmental Protection (MDEP).

Due to the size and scope of the project it will require a Site Location of Development Application Permit from the Maine DEP. That process will take up to six months from time of permit submittals, which we intend to file concurrently with the Windham Subdivision Review process likely looking to submit both in February 2019. In addition, the site will also require an updated Wetland Fill/Alteration Permit for the filling proposed by the road coming off of Land of Nod Road.

At this time we believe we have provided the Town with the requirements for the Preliminary Major Subdivision Application. We are also seeking one waiver of the submission requirements. Going forward, the applicant Ken Grondin, of the Grondin Corporation has requested that a Subdivision Street Performance Requirement for the Road Monuments to be set with granite monuments at each point of curvature be reduced to allow for only one side of the proposed road be provided with such monuments, thereby reducing the substantial cost, and installation.

We have provided for the Board review a general layout following our last lot configuration using the cluster subdivision lot sizing for the (F) Farm Zone, when we were land swapping and connecting into Highland Woods and this preferred revised cluster subdivision layout showing 30 lots still meets the requirements for the standard cluster subdivision ordinance requirements. The open space as shown is for the benefit of the subdivision lot owners and does not include public use. We have also provided updated soils information for each individual septic system design on each proposed lot, see **Section 15**.

We look forward to meeting with the Planning Board to discuss the project in greater detail. We request that the project be placed on the Board's next available agenda for Preliminary Subdivision review, assumed to be February 25, 2019.

In the interim, please give me a call if you have any questions or if you need any additional information.

Sincerely,

SEBAGO TECHNICS, INC.

James R. Seymour, P.E.
Senior Project Manager

JRS:sn

enc.

cc: K. Grondin, Grondin Corporation

TOWN OF WINDHAM
MAJOR SUBDIVISION APPLICATION

Preliminary Plan

(Section 910 – Subdivision Review, Submission Requirements)

The original signed copy of this application must be accompanied by:

- The required application and review escrow fees,
- Five (5) collated submission packets, which must include
  - Full size paper copies of each plan, map, or drawing, and
  - A bound copy of the required information found in Section 910 of the Land Use Ordinance.
    - The checklist below offers a brief description of these requirements for the purpose of determining the completeness of a submission. Please use the Ordinance for assembling the submission packets.
    - Only two (2) full copies of Stormwater Management Plan and Traffic Impact Study are required. Summaries and conclusions of the Stormwater Management Plan and Traffic Impact Study are adequate for the remaining three (3) submission packets.
- Electronic submission in PDF format of:
  - All plans, maps, and drawings.
    - These may be submitted as a single PDF file or a PDF for each sheet in the plan set.
  - A PDF of the required information found in Section 910 of the Land Use Ordinance

The submission deadline for Preliminary plans is three (3) weeks before the Planning Board meeting for which it will be scheduled.

Applicants are strongly encouraged to schedule a brief submission meeting with Planning Staff, to walk through the application checklist at the time a Planning Board submission is made. This will allow applicants to receive a determination of completeness, or a punch list of outstanding items, at the time a submission is made.

If you have questions about the submission requirements, please contact:

Windham Planning Department	(207) 894-5960, ext. 2
Amanda Lessard, Planner	allessard@windhammaine.us
Ben Smith, Planning Director	bwsmith@windhammaine.us

Project Name: Land of Nod Road Subdivision

Tax Map: 7 **Lot:** 29

Number of lots/dwelling units: 30 **Estimated road length:** 2,034 LF + 371 LF = 2,405 LF

Is the total disturbance proposed > 1 acre? ☒ **Yes** ☐ **No**

Contact Information

1. Applicant

Name: Grondin Corporation, c/o Ken Grondin

Mailing Address: 39 Belanger Road, Windham, ME 04062

Telephone: (207) 749-6691 Fax: _____ E-mail: k.grondin@grondincorporation.com

2. Record owner of property

_____ (Check here if same as applicant)

Name: Heirs of Leonard Sanborn, Jr.

Mailing Address: 169 Highland Road, Standish, ME 04084

Telephone: (207) 892-9285 Fax: _____ Email: _____

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

Name: James Seymour, P.E.

Company Name: Sebago Technics, Inc.

Mailing Address: 75 John Roberts Road, Suite 4A, South Portland, ME 04106

Telephone: (207) 200-2083 Fax: (207) 856-2206 E-mail: jseymour@sebagotechnics.com

I certify all the information in this application form and accompanying materials is true and accurate to the best of my knowledge.

James R. Seymour 2/4/2019

Signature Date

Preliminary Plan - Major Subdivision: Submission Requirements

A.	Mandatory Written Information	Applicant	Staff
1	A fully executed and signed application form	**X**	
2	Evidence of payment of the application and escrow fees	**X**	
3	Proposed name of the subdivision	**X**	
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.	**X**	
5	Copy of the most recently recorded deed for the parcel, along with a copy of all existing deed restrictions, easements, rights-of-way, or some other proof of interest	**X**	
6	Copy of any existing or proposed covenants or deed restrictions intended to cover all or part of the lots or dwellings in the subdivision	**X**	
7	Copy of any existing or proposed easements on the property		
8	Name, registration number and seal of the Maine Licensed Professional Land Surveyor who conducted the survey	**X**	
9	Name, registration number and seal of any other licensed professional of the state who prepared the plan (if applicable)	**X**	
10	An indication of the type of sewage disposal to be used in the subdivision	**X**	
	i. If connecting to public sewer, provide a letter from Portland Water District stating the District has the capacity to collect and treat the waste water		
	ii. If using subsurface waste water 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.	**X**	
11	Indicate type of water supply system(s) to be used in the subdivision.	**X**	
12	If connecting to public water, submit a written statement from the Portland Water District indicating there is adequate supply and pressure for the subdivision.	**n/a**	
13	Names and addresses of the record owner, applicant, and adjoining property owners	**X**	
14	An acceptable title opinion proving right of access to the proposed subdivision or site for any property proposed for development on or off of a private way or private road.	**n/a**	
15	The name and contact information for the road association who's private way or road is used to access the subdivision.	**n/a**	

Applicant Staff

16	Financial Capacity.	X	
	i. Estimated costs of development, and itemization of major costs	X	
	ii. Financing - provide one of the following:		
	a. Letter of commitment to fund from financial institution, governmental agency, or other funding agency	X	
	b. Annual corporate report with explanatory material showing availability of liquid assets to finance development		
	c. Bank statement showing availability of funds if personally financing development		
	d. Cash equity commitment		
	e. Financial plan for remaining financing		
	f. Letter from financial institution indicating an intention to finance		
	iii. If a corporation, Certificate of Good Standing from the Secretary of State	X	
17	Technical Capacity	X	
	i. A statement of the applicant's experience and training related to the nature of the development, including developments receiving permits from the Town.	X	
	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.	X	

B.	**Mandatory Plan Information**		
1	Name of subdivision, date and scale	X	
2	Stamp of the Maine License Professional Land Surveyor that conducted the survey, including at least one copy of original stamped seal that is embossed and signed	X	
3	Stamp with date and signature of the Maine Licensed Professional Engineer that prepared the plans.	X	
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	X	
5	Location map showing the subdivision within the municipality	X	
6	Vicinity plan showing the area within 250 feet, to include:		
	i. approximate location of all property lines and acreage of parcels		
	ii. locations, widths, and names of existing, filed, or proposed streets, easements or building footprints		
	iii. location and designations of any public spaces		
	iv. outline of proposed subdivision, together with its street system and indication of future probably street system, if the proposed subdivision encompasses only part of the applicants entire property.		
7	Standard boundary survey of parcel, including all contiguous land in common ownership within the last 5 years	X	
8	Proposed lot lines with approximate dimensions and area of each lot.	X	
9	Contour lines at 2-foot intervals, or at intervals required by the Board, showing elevations in relation to the required datum.	X	

		Applicant	Staff
10	Typical cross sections of the proposed grading for roadways, sidewalks, etc., including width, type of pavement, elevations, and grades.	X	
11	Wetland areas shall be delineated on the survey. If none, please note.	X	
12	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.	X	
13	Rivers, streams, and brooks within or adjacent to the proposed subdivision. If any portion of the proposed subdivision is located in the direct watershed of a great pond, note which great pond.	X	
14	Zoning district in which the proposed subdivision is located, and the location of any zoning boundaries affecting the subdivision.	X	
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.	X	
16	Location, names, and present width of existing streets, highways, easements, building lines, parks, and other open spaces on or adjacent to the subdivision	X	
17	Location and widths of any streets, public improvements, or open space within the subdivision (if any) shown on the official map and the comprehensive plan	X	
18	All parcels of land proposed to be dedicated to public use and the conditions of such dedication.	X	
19	Location of any open space to be preserved or common areas to be created, and general description of proposed ownership, improvement, and management	X	
20	Approximate location of treeline after development	X	
21	Delineate boundaries of any flood hazard areas and the 100-year flood elevation as depicted on the Town's Flood Insurance Rate Map	X	
22	Show any areas within or adjacent to the proposed subdivision which have been identified by the Maine Department of Inland Fisheries and Wildlife "Beginning with Habitat project maps or within the Comprehensive Plan..	n/a	
23	Show areas within or adjacent to the proposed subdivision which are 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	X	
24	Erosion & Sedimentation control plan, prepared in accordance with MDEP Stormwater Law Chapter 500 Basic Standards, and the MDEP Maine Erosion and Sediment Control Best Management Practices, published March 2003.	X	
25	Stormwater management plan, prepared by a Maine Licensed Professional Engineer in accordance with the most recent edition of Stormwater Management for Maine: BMPS Technical Design Manual, published by the MDEP 2006.	X	

C.	Submission information for which a waiver may be granted.	Applicant	Staff
1	High-intensity soil survey by a Certified Soil Scientist	**X**	
2	Landscape Plan	**n/a**	
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 greater potential of adverse impacts on groundwater quality.	**X**	
	a) map showing basic soil types	**X**	
	b) depth to the water table at representative points	**X**	
	c) Drainage conditions throughout the subdivision		
	d) data on existing ground water quality		
	e) analysis and evaluation of the effect of the subdivision on groundwater		
	f) map showing location of any subsurface wastewater disposal systems and drinking water wells within the subdivision & within 200 feet of the subdivision boundaries.		
4	Estimate of the amount and type of vehicular traffic to be generated on a daily basis and at peak hours	**X**	
5	Traffic Impact Analysis for subdivisions involving 28 or more parking spaces or projected to generate more than 140 vehicle trips per day.	**X**	
6	If any portion of the subdivision is in the direct watershed of a great pond,	**n/a**	
	i) phosphorous impact analysis and control plan		
	ii) long term maintenance plan for all phosphorous control measures		
	iii) contour lines at an interval of 2 feet		
	iv) delineate areas with sustained slopes greater than 25% covering more than one acre		

Electronic Submission		

#16236-Land of Nod

Subdivision Review

Item		Fee	Review Escrow	Effective Date
Development Team			$100	10/22/09
Minor or Major Subdivision Sketch Plan		$200	$300	7/28/11
Minor Subdivision				7/28/11
Final Plan	1-4 lots	$900	$1,500	
Major Subdivision				7/28/11
Preliminary Plan	1-10 lots	$1,300	Up to 10 lots = $2,500	Total $1,300.00
	PLUS		11-15 lots = $3,000	$6,000.00
	Each lot over 10	$300	16-30 lots = $4,000	$4,000.00
	20 x $300. = $6,000.00		30+ lots = $5,000	$11,300.00
Major Subdivision				
Final Plan		$350	$250	
Amended Sudivsion				7/28/11
Each Lot/Revision		$350	$250	

Site Plan Review

Item		Fee	Review Escrow	Effective Date
Development Team			$100	10/22/09
Minor or Major Site Plan Sketch Plan		$200	$300	7/28/11
Minor Site Plan				7/28/11
Final Plan		$850	$2,000	
Major Site Plan				7/28/11
Final Plan	$1,300		2K to 5K s.f. GFA = $2,000	
	PLUS		5K to 15K s.f. GFA = $3,000	
	$25 each 1K s.f. over 5K s.f. GFA		15K to 35K s.f. GFA = $4,000	
			over 35K s.f. GFA = $5,000	
Amended Site Plan				7/28/11
Each Revision		$350	$250	

Zone Change & Other Review Fees

Item	Fee	Review Escrow	Effective Date
Zone Change Request	$600	n/a	7/28/11
Contract Zone Request	$800	$500	7/28/11
Conditional Use	$400	$250	7/28/11
Board of Appeals			7/28/11
Incl. Variances and Appeals	$400	n/a	
Mineral Extraction			7/28/11
New Operation	$100 + $100/acre	$500	
Expansion over 5 acres	$100 + $100/acre	$500	
Renewal	$50	n/a	
Renewal, Late Fee	$50	n/a	

Zone Change & Other Review Fees (Cont.)			
Item	**Fee**	**Review Escrow**	**Effective Date**
Shoreland Zoning			
Planning Board Review	$100 PLUS $50 for Public Hearing	n/a	10/24/02
Code Enforcement Review			11/26/02
Minor	$50	n/a	
Major	$100	n/a	
Wireless Telecommunications Facility			7/28/11
Planning Board Review	$400	n/a	
Co-Location Application	$250	n/a	
Water Protection Ordinance	$30	n/a	11/26/02
Postage. Applicants are responsible for postage costs of all notification requirements.			

Impact Fees*			
Item	**Fee**	**Review Escrow**	**Effective Date**
Sidewalk Impact Fee	5 feet of sidewalk x (GFA/100) x $35 per foot	n/a	6/7/13
Recreation Impact Fee (per dwelling unit)			4/10/14
Single Family Detached	$1,080	n/a	
Single Family Attached (duplex/condos)	$800	n/a	
Manufactured Housing	$800	n/a	
Multifamily (3+ Unit) apartment structure	$600	n/a	
Accessory Apartment	$400	n/a	
North Route 302 Road Improvement Impact Fee	$382.65 per primary peak hour trip through Route 302 intersection with Anglers Rd/Whites Bridge Rd	required if not covered by site plan or subdivision review	8/26/14

Notes:
- "K" = 1,000;
- "s.f." = Square Feet;
- "GFA" = Gross Floor Area (*See Section 300 Definitions*)
- Postage - Notification cost requirement applies to all applications
- Performance Bonds & Post Approval Inspection Fee must be established with the Town prior to the commencement of construction.
- Building Permits - Contact the Code Enforcement Department or download from www.windhammaine.us
- NPDES Post Construction Inspection Fee - See Post Construction Ordinance.

* - See Section 1200 of the Windham Land Use Ordinance for more details and applicability. A project's impact fee shall be paid prior to the issuance of any building permits.

AGENT AUTHORIZATION

APPLICANT/ OWNER	**Name**	Kenneth Grondin, Grondin Corporation		
PROPERTY DESCRIPTION	**Physical Address**	39 Belanger Road Windham, ME 04062	**Map**	7
			Lot	29
APPLICANT'S AGENT INFORMATION	**Name**	James Seymour, P.E.		
	Phone	(207) 200-2083	**Business Name & Mailing Address**	Sebago Technics, Inc. 75 John Roberts Road, Suite 4A South Portland, Maine 04106

APPLICANT SIGNATURE DATE FEB. 2, 2019

Kenneth Grondin, Grondin Corporation

PLEASE TYPE OR PRINT NAME HERE

KENNETH GRONDIN

APPLICANT'S AGENT SIGNATURE DATE

James Seymour, P.E., Sebago Technics, Inc.

PLEASE TYPE OR PRINT NAME HERE

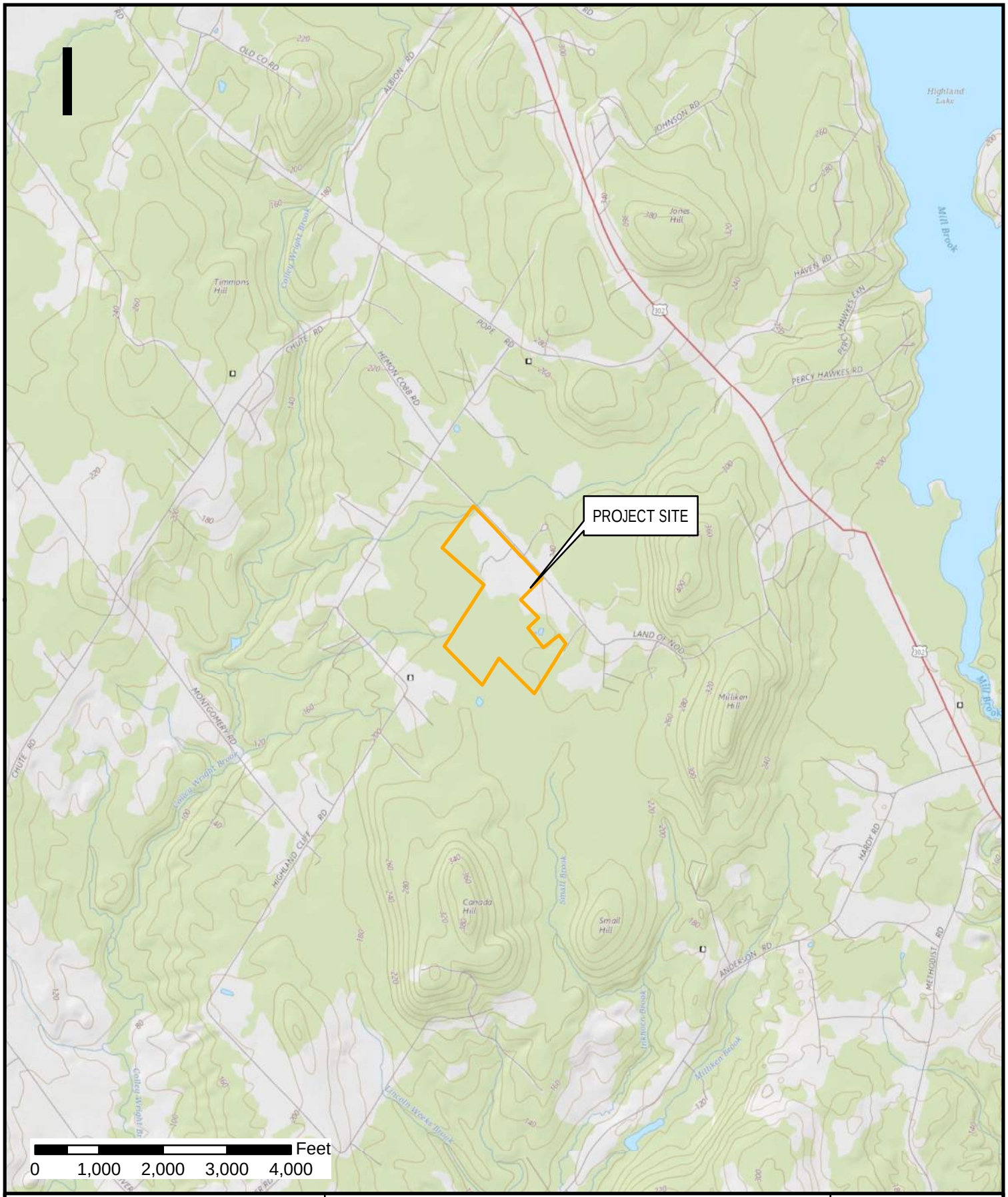
Exhibit 1

Vicinity Maps

Exhibit 1: Vicinity Maps

Enclosed please find the following vicinity maps associated with the site:

- Figure 1 – USGS Location Map
- Figure 2 – Tax Map



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100

TITLE FOR:	SITE LOCATION MAP LEONARD SANBORN	SCALE:	1 " = 2,000 '
		DATE:	08\06/2018
LOCATION:	120 Land of Nod Road Windham, ME 04062	INFORMATION:	USGS Quadrangles: North Windham/ Gorham/ Cumberland Center/ Portland West

16236_LocationMap.mxd

PROJECT NUMBER: 16236

THESE MAPS ARE FOR ASSESSMENT PURPOSES ONLY AND ARE NOT FOR CONVEYANCE.

These Tax Maps are based on original maps compiled by James W. Sewall Co.

TOWN OF WINDHAM
CUMBERLAND COUNTY, MAINE
2017 PROPERTY MAPS

SOURCES:
Windham Tax Assessor's Office
Completion Date: April 1, 2017
UTM NAD83 Z19N
Prepared by: Gregory Hanscom
Windham GIS Dept.
Scale is based on printing at 24" x 36".

Legend
- Abutting Town Parcel
- Building Footprint
- Cemetery
- Condominium
- Vacated Subdivision
- Farmstead
- Hook
- Old Property Lines
- ROW Easement
- PWD ROW Easement
- Streams
- Subdivision Number
- Tie Line
- Utility
- Subject Area

Map 7

1 Inch = 400 feet
0 500 1,000 2,000 Feet

Falmouth

Westbrook

SITE

Exhibit 2

Right, Title or Interest

Exhibit 2: Right, Title, or Interest

The record owner of the subject property is Heirs of Leonard Sanborn, Jr. and the property is shown on the Town of Windham Tax Map 7, Lot 29. A copy of the Purchase and Sale Agreement (PSA) between the record owner and Grondin Corporation and the deed (Cumberland County Registry of Deeds Book 4617, Page 205) are enclosed in this section.

Ken's Copy

PURCHASE AND SALE AGREEMENT:

1) **Parties:** Grondin Corporation of Windham, Maine (the "Purchaser"), agrees to purchase from Timothy and Leonard Sanborn of Windham, Maine (the "Seller"), a certain piece of real estate under the terms and conditions provided herein.

2) **Real Estate:** The piece of real estate to be purchased is 65.67 Acres/Land as shown on Exhibit A, part of Lot 29 Map 7 in Windham, Maine.

3) **Purchase Price:** The total price to be paid by Purchaser for the above named real estate is [redacted]

4) **Payment Terms:** Purchaser shall give to Seller a non-refundable down payment in the amount of Ten Thousand Dollars ($10,000) unless due to seller default. The remaining purchase price of [redacted] shall be paid in cash at closing, which shall occur no later than two weeks after final approval by Windham Planning Board. OR OCT 6 2018 DEADLine.

5) **Closing Adjustments:** Real estate property taxes shall be prorated as of the closing date. The Seller and Purchaser shall pay real estate transfer taxes equally in accordance with Maine law.

6) **Acceptance/Closing:** Seller shall have two (2) business days from date of Purchaser's signing for acceptance hereof. Closing to take place after satisfaction of all contingencies.

7) **Contingencies:** Seller will have obtained clear title to subject Property, which is currently owned by Seller.

8) **Conveyance at Closing:** The property shall be conveyed to Purchaser at closing by Quitclaim Deed conveying good, clear and marketable record title.

9) **Title:** Purchaser will cause to be conducted, at Purchaser's expense, any title search, title examination, or purchase of any title insurance policies. Purchaser shall give written notice to Seller of any title defects, and Seller shall have thirty (30) days thereafter to remedy the title, after which time, if such defects are not corrected, Purchaser may, at its option, withdraw its offer and be relieved from all obligations hereunder relative to the purchase of the Property.

10) Miscellaneous:

A. This Agreement shall be binding upon and inure to the benefit of the parties and the heirs, personal representatives, successors and assigns of each of them.

1. RETAIN CONTENTS OF OLD HOUSE 122 LAND OF NOD RD
2. TO PUT OLD BARN SHELL & GAS HOUSE INTO OLD PIT TO BE BURIED.

B. This Agreement is the entire understanding of the parties with respect to the transactions contemplated herein and may be amended only by a written instrument signed by both parties.

C. This Agreement and the documents relating thereto are to be construed in accordance with the laws of the State of Maine.

D. All communications required or permitted to be given hereunder shall be in writing and shall be deemed to have been duly given to either the Seller or Purchaser if delivered personally or by certified mail, return receipt requested.

E. Provisions herein regarding specific dates, time and deadlines are an essential part of this Agreement and shall be strictly observed and construed.

Timothy Sanborn (Seller)

Kenneth Grondin (Purchaser)
Grondin Corporation

Date: 4-5-18

Date: APRIL 4, 2018

Leonard Sanborn (Seller)

Date: 4-5-18

Know all Men by these Presents

12874 295

That I, Charles W. Sanborn, of Windham, in the County of Cumberland and State of Maine

in consideration of One Dollar ($1.00) and other valuable considerations

paid by the said Charles W. Sanborn and Leonard R. Sanborn, Sr., and Pauline F. Sanborn, both of RFD #3, South Windham, ME 04082

the receipt whereof I *do hereby acknowledge, do hereby* **give, grant,**

bargain, sell and convey *unto the said* Charles W. Sanborn, Leonard R. Sanborn, Sr., and Pauline F. Sanborn,

as joint tenants and not as tenants in common, and their heirs and assigns, and the survivor of them, and the heirs and assigns of the survivor of them, forever,

A certain lot or parcel of land situated in said Windham, containing Fifty-one acres, more or less, it being a part of lot numbered 55 and 56, in the first range of Hundred acre lots in said Windham, and being the same deeded to Charles W. Hawkes by Peter Hawkes, dated February 9, 1898, and recorded in the Cumberland County Registry of Deeds, in Book 714, Page 255, together with the buildings thereon.

Also another parcel of land, in said Windham, containing Fifteen acres, more or less, situated and lying in said Town of Windham, in the second division of One Hundred acre lots in said Windham, and being the same premises conveyed to Charles W. Hawkes and Smith Hawkes by Bradbury S. Hawkes, by his deed dated September 28, 1906, and recorded in the Cumberland County Registry of Deeds, in Book 791, Page 381, and by said Smith Hawkes conveyed to Charles W. Hawkes by his deed dated December 12, 1907, and recorded in said Registry of Deeds, in Book 853, Page 134; excepting and reserving from this parcel of land a lot of land that Charles W. Hawkes conveyed to Christine E. Hawkes by deed dated November 17, 1934.

Also another lot or parcel of land situated in said Windham, and being in the second division of Hundred acre lots in said Town and bounded as follows, to wit:

> Beginning at the most Southerly corner of land formerly of Israel Morrill; thence Northwesterly on the line now or formerly of Robinson Pratt's land Fifty-two (52) rods and Eighteen links (18) to Charles W. Hawkes land; thence of the line of said Hawkes land Thirty (30) rods and Nine (9) links; thence across the said lot parallel with the first line to Alwilda Shaw's land, now or formerly; thence Thirty (30) rods and Nine (9) links to the first mentioned bounds, containing Ten acres, more or less.

Being the same premises conveyed to Charles W. Hawkes by Albion Berry by deed dated November 14, 1914, and recorded in said Registry of Deeds, in Book 961, page 296.

Being the same premises conveyed to Clifford A. Hawkes by the said Charles W. Hawkes, by deed dated November 17, 1934, and recorded in the said Registry of Deeds, in Book 1459, Page 263. The said Clifford A. Hawkes died testate and devised the subject premises to his wife Helen M. Hawkes, later Sanborn. The said Helen M. Sanborn died testate on August 25, 1978, and devise the subject premises to the said Grantor herein, cf., Cumberland County Probate Court, Docket No. 78657.

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To Have and to Hold *the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said* Charles W. Sanborn, Leonard R. Sanborn, Sr., and Pauline E. Sanborn,

as joint tenants and not as tenants in common, and their heirs and assigns, and the survivor of them, and the heirs and assigns of the survivor of them, to them and their use and behoof forever.

And I *do COVENANT with the said Grantees, as aforesaid, that* I am *lawfully seized in fee of the premises, that they are free of all incumbrances,*

that I *have good right to sell and convey the same to the said Grantees to hold as aforesaid, and that* I *and* my *heirs shall and will* **Warrant and Defend** *the same to the said Grantees, their heirs and assigns, and the survivor of them, and the heirs and assigns of the survivor of them, forever, against the lawful claims and demands of all persons.*

In Witness Whereof, I, *the said* Charles W. Sanborn, being unmarried,

~~*joining in this deed as Grantor*~~ , *and relinquishing and conveying* my *right by descent and all other rights in the above described premises, have hereunto set* my *hand and seal this* 19th *day of* June *in the year of our Lord one thousand nine hundred and* eighty.

Signed, Sealed and Delivered in presence of

Frederick T. McGonagle — Charles W. Sanborn

State of Maine, Cumberland } ss. June 19, 1980

Personally appeared the above named

Charles W. Sanborn

and acknowledged the foregoing instrument to be his *free act and deed.*

Before me,

Frederick T. McGonagle

~~*Justice of the Peace*~~ ~~*Notary Public*~~ Attorney-at-Law

JUN 19 1980

REGISTRY OF DEEDS CUMBERLAND COUNTY, MAINE
Received at 1 H55 M. P.M., and recorded in
BOOK 4617 PAGE 205 Edward L. Bernstein Register

Exhibit 3

Covenants / Deed Restrictions
Easements

Exhibit 3: Existing or Proposed Covenants or Deed Restrictions and Existing or Proposed Easements on the Property

A. Covenants and Deed Restrictions

None

B. Existing or Proposed Easements on the Property

- Homeowners Open Space
- Street Right-of-Ways
- Grading Drainage Easement

Exhibit 4

Abutter List

Exhibit 4: Abutting Property Owners

Map 7/Lot 29 - LOCUS
Heirs of Leonard Sanborn, Jr.
169 Highland Road
Standish, ME 04084

Map 7/Lot 28
Steven Valente
92 Land of Nod Road
Windham, ME 04062

Map 7/Lot 36
MTR Development LLC
PO Box 1028
Westbrook, ME 04092

Map 7/Lot 38
Heirs of Joyce F. Fullerton
86 Highland Cliff Road
Windham, ME 04062

Map 7/Lot 29A
Timothy & Kathleen Sanborn
100 Land of Nod Road
Windham, ME 04062

Map 7/Lot 32A
Richard & Judith Butts,
Richard E., Jr. & Eleanor Butts
40 Highland Cliff Road
Windham, ME 04062

Map 7/Lot 13
Jane Flahive
113 Land of Nod Road
Windham, ME 04062

Map 7/Lot 29B
Janice Tetrault
96 Land of Nod Road
Windham, ME 04062

Map 7/Lot 41
Francis L. & Dorothy Riley
8 Riley Drive
Windham, ME 04062

Map 7/Lot 13B-1
Richard Hawkes Living Trust &
Lynn Hawkes Living Trust
123 Land of Nod Road
Windham, ME 04062

Map 7/Lot 32B
Scott & Denise Dyer
128 Land of Nod Road
Windham, ME 04062

Map 7/Lot 27B
Riding To The Top
14 Lilac Drive
Windham, ME 04062

Map 7/Lot 13C-6
Leclerc Properties LLC
89 Summit Spring Road
Poland, ME 04274

Map 7/Lot 13C-2
Eric & Ellen Hjelm
6 Morgan Lane
Windham, ME 04062

Map 7/Lot 27A-2
Craig Newton
8 Cobb Farm Road
Windham, ME 04062

Map 7/Lot 13C-1
Kathleen Barnhart
2 Morgan Lane
Windham, ME 04062

Map 7/Lot 27A-1
Gerald Campbell
Karen Lugee
12 Cobb Farm Road
Windham, ME 04062

Map 7/Lot 13C-5
Mary McSweeney
1 Morgan Lane
Windham, ME 04062

Direct Abutters

Exhibit 5

Technical Capacity

Exhibit 5: Technical Capacity

Sebago Technics, Inc. (STI) is a multi-disciplinary engineering firm with over 35 years of experience, which offers a wide range of services specializing in land development, planning, permitting and engineering design services. STI maintains a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, geotechnical services, land surveying, and environmental engineering.

A firm biography and resumes of the STI Project Manager, Mr. James Seymour, P.E. and other pertinent staff are included in this section.

Introduction to Sebago Technics, Inc.

Year Established: 1981 (36 years in business)

About Us: Sebago Technics, Inc. (STI) is a consulting firm of more than 65 design professionals and technical staff providing services throughout New England. From the start, our business plan was simple: "to provide quality, cost-effective civil engineering services that are responsive to a customer's goals, schedule and budget." Our One Company capabilities and resources provide clients with experience and solutions to respond to their planning, permitting and design needs.

Structure: Employee-owned since 1998

Services: Civil, environmental, transportation & traffic engineering; municipal engineering; local/state/federal permitting and planning; land surveying & laser scanning; GIS; landscape architecture; environmental services; and natural resources.

Employee Disciplines:
Professional Engineers, Civil Engineers, Transportation Engineers, Landscape Architects, Professional Land Surveyors, Survey Technicians, CADD Designers, Wetland Scientist, Soil Scientist, Construction Inspectors, Environmental Scientists, GIS Professionals, Marketing, Administrative & Financial

Professional Focus: Sebago Technics provides engineering and planning services to both public and private sector clients. In the municipal and government sectors we have provided multiple discipline services through General Services Contracts (GSC) and project specific contracts. A few examples include the Portland Jetport, City of Portland Public Services, City of South Portland, City of Lewiston, City of Westbrook and several smaller communities. Our municipal sector work includes street and utility infrastructure design, municipal facility planning and specialty work such as Island marine and solid waste planning & engineering.

Location: South Portland, ME

Geographic Service Area: Maine, New Hampshire, Vermont, Massachusetts

Web Site: www.sebagotechnics.com

JAMES R. SEYMOUR, PE

Senior Project Manager

Mr. Seymour has been with Sebago Technics, Inc. since 1993. His role encompasses management of projects relating to civil engineering designs for private residential and commercial developments, and providing planning and development review services for municipal clients. His specific engineering design experience includes roadways, sewer/utilities, stormwater management plans and permitting, sediment and erosion control plans, State and Federal wetland/environmental permits for residential and commercial developments.

Mr. Seymour has strong experience in providing municipal planning and permitting review services. He has consulted with planning, code enforcement, and public services departments to assist Planning Boards in various roles.

EXPERIENCE

Municipal Planning/Engineering Review Experience:

1998 - 2004: Consulted with the City of Portland, as Acting Development Review Coordinator providing engineering peer review services and onsite construction observations to assure compliance with approved plans.

1998 - 2008: Provided construction monitoring for the Town of Windham with responsibilities of reviewing bonding, stormwater management review, and provided and onsite construction observations/reports.

2008 - Present: Provided the Town of Casco planning services to assist the Planning Board with processing various site/subdivision applications, and prepared ordinance revisions, to the Shoreland Zoning per State requirements, and assisted in instituting a contract zone for Camp Sunshine.

2012 - Present: Mr. Seymour has been the consulting Planner for the Town of Raymond in charge of directing the Planning Board with processing various site/subdivision applications, coordinating new ordinance revisions, and maintains weekly hours at the Town for general planner assistance.

2011 - Present: Mr. Seymour has been the consulting engineer for the Town of Brunswick assisting the Town with peer reviews of site/subdivision applications, and has drafted new ordinance revisions.

2012 - Present: Mr. Seymour has been providing planning and engineering consultation to the Town of Poland on an as-needed basis to assist the Planning Board with plan reviews and drafting ordinances.

The variety of projects that Mr. Seymour has been involved with provides him with a well-balanced technical knowledge of planning and land use development issues and engineering experience. Additionally, his involvement with a variety of clientele gives him a unique and positive insight to successfully communicate and coordinate projects from design to construction stages.

EDUCATION

University of Maine, Orono, ME
Bachelor of Science, Civil Engineering

REGISTRATIONS

Professional Engineering:
Maine #9984

Certified Training for
Hazardous Waste Operations
40 hr. Training Compliance with OSHA
29CFR 1910.120

Certified Professional in Maintenance and Inspection for Best Management Practices by Maine DEP and Inclusion on the Qualified Third Party Inspector List for the Long Creek Watershed Management District (May 2011)

MEMBERSHIPS

Former Town of Windham Planning Board member

New England Sports Turf Manager's Association (NESTMA)

Scarborough Little League Board of Directors
League - President
2015 to Present

SEBAGO TECHNICS

207.200.2083 JSEYMOUR@SEBAGOTECHNICS.COM

BRYAN A. WALSH

Civil Engineer

Mr. Walsh joined the Sebago Technics team in the summer of 2018 and is a graduate of the University of Massachusetts - Amherst. Bryan has worked in Massachusetts, Colorado and Maine on a variety of site civil projects including commercial, residential, utilities and roadways. He is experienced in stormwater analysis, environmental permitting and Civil 3D.

EXPERIENCE

Project Engineer at ProTerra Design Group - Hadley, MA
Completed the Plans and Bid Documents for MassDOT and municipal construction projects. Worked with City of Northampton to design ADA/AAB accessible routes, ramps, ROW and sidewalk improvements in the downtown district. Designed telecommunication facilities in New England for major national carriers and tower development companies. Managed scope and deliverables for over 70 cellular antenna installations throughout Boston for Verizon. Designed residential and commercial sites; roadways, drainage and utilities using Civil 3D modeling.

Contract Project Engineer at Tidewater Engineering - Kittery, ME
Engineered various utility and roadway designs for municipalities in MA, NH and ME. Provided the design of major water and sanitary sewer systems in Maine between August and October 2017. Designed several large storage facilities with special consideration to earthwork volumes and stormwater requirements. Projects were modeled and optimized using Civil 3D which streamlined the design process. Performed surveying and stake outs with robotic total station.

Project Manager at Phelps Engineering - Denver, CO
Recruited to manage the submittals of several private mountain communities. Managed the design of an 900+ acre 1200+ unit multi-phase residential community between August 2016 and April 2017. This project was particularly challenging due to steep terrain with high-volume stormwater requirements in environmentally sensitive areas. The roadways and utility systems were modeled with Civil 3d and designed to function throughout construction phases. Conducted meetings with municipality officials and developers. Duties included pump station and reservoir design, stormwater planning, traffic flow planning; roadway design and lot grading; federal and local permitting.

Project Engineer at Civil Design Group North Andover, MA
Designed construction plans and drainage reports for various commercial and residential developments. Performed stormwater and ADA inspections throughout New England. Engineered construction plans and drainage reports for more than 30 Cumberland Farms gas stations using Civil 3D and HydroCAD. Completed site and utility plans for 300+ unit residential subdivisions in MA, NH, and CT.

Project Engineer at Lynnfield Engineering Danvers, MA
Designed Photovoltaic power stations on post-closure landfills throughout New England using Civil 3D. Submitted various environmental permits and inspection reports. Performed monthly landfill gas-monitoring and stormwater inspections. Performed topographic land survey of 100+ acre conservation land using robotic total station.

EDUCATION

B.S., Civil Engineering
University of Massachusetts, Amherst, MA
2012

SEBAGO TECHNICS

207.200.2090 BWALSH@SEBAGOTECHNICS.COM

CHARLES D. MARCHESE, PLS

Director of Survey Operations

Mr. Marchese has over 40 years of experience in the land surveying field with an emphasis on boundary and engineering related projects. He joined Sebago Technics in November of 2009 after eighteen years with Civil Consultants as a survey project manager. Since joining Sebago Technics, Mr. Marchese has assisted with field and office duties relating to private, residential and public works projects. In his role as a Director, he continues to manage his survey team and provide the experience and knowledge necessary to provide quality and timely survey work to a wide variety of clients.

EXPERIENCE

During 1991 to 2009 while employed at Civil Consultants, Charlie worked on an assortment of boundary retracement surveys for various government agencies. This work included thirty-three miles of United States Forest Service boundary retracement in Lovell, Stoneham, Gilead and Bethel, Maine. Boundary work for the United States Fish and Wildlife Service comprised surveys for the acquisition of tracts for addition to the many refuges located throughout Maine and New Hampshire. The bulk of this work involved the establishment of the Lake Umbagog National Wildlife Refuge located in Errol, New Hampshire and localities along the shores of Lake Umbagog and its many waterways. This project ultimately surveyed in excess of 30,000 acres for inclusion within the National Wildlife Refuge System.

During the summers of 1994 through 1996 Charlie was the party chief for survey crews working on approximately 30 miles of boundary corridor survey along the Appalachian Trail for the National Park Service. This work involved surveying and monumenting the actual ownership lines of the lands surrounding the trail and other scenic areas owned by the National Park Service.

Charlie was the project surveyor, subcontracted through Sebago Technics, for the boundary and topographic survey associated with the Sanford, Maine site for the new Wal-Mart and Lowe's stores. He was responsible for the layout of the Wal-Mart site for Cleveland Construction throughout the building phase of the project. He has an extensive background in construction layout ranging from residential development to large scale retail and public works projects.

EDUCATION

The University of Maine, Orono, ME

Established 60 credit hours towards Bachelor of Science in Civil Engineering, 1976

Attended Business Administration classes University of Maine, Portland

Annual seminars and meetings pertaining to survey topics current to continuing practice

CERTIFICATIONS

OSHA 10-hour Construction Safety and Health

MEMBERSHIPS

Maine Society of Land Surveyors

National Society of Professional Land Surveyors

REGISTRATIONS

Professional Land Surveyor: Maine #2009

SEBAGO TECHNICS

207.200.2069 CMARCHESE@SEBAGOTECHNICS.COM

DEREK H. CALDWELL, PE, PTOE

Transportation/Traffic Engineer

Mr. Caldwell joined Sebago Technics in 2016 as a Transportation/Traffic Engineer. He was previously employed by the Massachusetts Department of Transportation as a Traffic Engineer in the District Four office. Derek is a graduate of Worcester Polytechnic Institute with a B.S. in Civil Engineering and also has a M.S. in Transportation Engineering from the University of Massachusetts – Lowell.

He is proficient in the use of AutoCad, ArcGIS, Microstation, Synchro/SimTraffic and Vissim. Since joining the firm he has been actively involved in a variety of projects including traffic impact studies, traffic signal design, traffic signal operations, intersection design, and planning studies.

EXPERIENCE

Broadway at Evans Street and Lincoln Street – South Portland, ME: Design engineer for signal reconstruction project. Project involves two signalized intersections being modified from isolated to coordinated operation. Improvements are to address traffic operational efficiency as well as vehicle and pedestrian safety. Project completed under the MaineDOT Local Project Administration (LPA) program.

Route 108 Corridor Study – Dover, NH: Developed a VISSIM traffic simulation model to compare alternatives along an existing signalized corridor. The model contained multiple scenarios to include both signalized and roundabout traffic control.

Dirigo Plaza Off-Site Improvements – Portland/Westbrook, ME: Design of new traffic signals at five locations as part of mitigation for a major commercial development.

State of Maine Office Building – Augusta, ME: Traffic Impact Study for 125,000 square feet of new office space. Study including the analysis of an existing coordinated signal system.

383 Commercial Street – Portland, ME: Traffic Impact Study for hotel, residential and commercial mixed use development in Portland's Waterfront District. Study included alternatives analysis of proposed traffic signal configurations.

Municipal Peer Review Services– Portsmouth, Dover, Newington, and Somersworth, NH: Provide peer review of roadway plans and traffic studies for various municipalities.

CERTIFICATIONS

IMSA Work Zone Temporary Traffic Control Technician

ACI Concrete Field Testing Technician – Grade I

NETTCP Concrete Inspector

IMSA Traffic Signal Design/Engineering Technician Level II

IMSA Traffic Signal Construction Technician Level II

IMSA Traffic Signal Field Technician Level II

EDUCATION

Worcester Polytechnic Institute
Worcester, MA
B.S.,Civil Engineering, 2008

University of Massachusetts - Lowell
Lowell, MA
M.S., Civil Engineering - Transportation, 2013

MEMBERSHIPS

Institute of Transportation Engineers

REGISTRATIONS

Professional Engineer:
Maine #14400
Massachusetts #52626
New Hampshire #15272
Vermont #127175

Professional Traffic Operations Engineer #4273

SEBAGO TECHNICS

207.200.2053 DCALDWELL@SEBAGOTECHNICS.COM

GARY M. FULLERTON, CSS, LSE

Director, Natural Resources

Mr. Fullerton joined Sebago Technics in 2000 as a Soil Scientist. Gary is a Maine Licensed Site Evaluator and Certified Subsurface Wastewater Disposal Systems Inspector. He has experience with septic system design, field delineation of coastal and freshwater wetlands, and site evaluations and inspections for septic system designs. He is responsible for preparing designs for residential and commercial septic systems and management and support for natural resource issues on both residential and commercial properties. He is responsible for conducting field assessments of natural resource issues which involve performing soil evaluations for septic system designs, performing wetland delineations, and preparing high intensity soil surveys. Mr. Fullerton is also responsible for providing appropriate permitting applications and supporting documentation for wetland impacts of projects.

Prior to joining Sebago Technics, Inc., Mr. Fullerton was a Soil Evaluator for a Rhode Island based environmental consulting and engineering firm for two years, where he worked in conjunction with the University of Rhode Island to research and design alternative and innovative septic systems for environmentally sensitive areas. While in school, he delineated freshwater wetlands in both Rhode Island and Massachusetts. Mr. Fullerton has over 18 years of experience in Maine as a natural resource specialist.

EXPERIENCE

- **Maine Turnpike Authority**: Seven mile stretch of vernal pools and wetlands
- **Sanford High School & Regional Technical Center - Sanford, Maine** Wetlands and vernal pools mapping on a 69-acre site
- **Brewer Business Park - Brewer, Maine**: Natural resource mapping, surveying, preliminary planning and design
- **Bigelow Laboratory - East Boothbay, Maine**: Soils and subsurface conditions investigation
- **Thornton Heights and Pleasantdale Sewer Separation, City of South Portland, ME:** Residential sewer inspections for illicit connections as part of the Thornton Heights Sewer Separation project

EDUCATION

University of Rhode Island
Kingston, RI
Bachelor of Science
Soil and Water Resources, 1998

REGISTRATIONS

Licensed Site Evaluator:
Maine #355

Certified Soil Scientist:
Maine #462

Certified Subsurface Wastewater Disposal System Inspector:
Maine #291

Certified Wetland Scientist:
New Hampshire #246

Certified Designer of Subsurface Disposal Systems:
New Hampshire #1796

MEMBERSHIPS

Public Service Leadership Award, 2004, Maine Association of Professional Soils Scientists

Maine Association of Site Evaluators

Maine Association of Wetland Scientists

Maine Historic Preservation Association

National Main Street Foundation

TRAINING

U.S.A.C.O.E. Wetlands Delineations Training Course

SEBAGO TECHNICS

207.200.2063 GFULLERTON@SEBAGOTECHNICS.COM

Exhibit 6

Financial Capacity

Cost Estimate,
Funding Letter,
Corporate Status

Exhibit 6: Financial Capacity

A. Anticipated Project Costs

A preliminary estimate of probable cost associated with the proposed site development is approximately $361,212.00

General Conditions		$ 5,420.00
Site Preparation		$ 9,220.00
Earthwork		$ 15,764.00
Electrical		$ 47,090.00
Erosion Control		$ 14,135.00
Pavement		$ 206,820.25
Stormdrainage/Fire Tank		$ 44,000.00
Loam & Seed		$ 18,762.75
	TOTAL	**$361,212.00**

B. Financing

A letter of financial capacity written on behalf of Grondin Corporation will be delivered directly to the Town Planner when it is available.

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Fri Jan 18 2019 14:22:42. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
GRONDIN CORPORATION	20160133 D	BUSINESS CORPORATION	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
08/14/2015	N/A	MAINE

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

NONE

Clerk/Registered Agent

ANTHONY M. CALCAGNI
P.O. BOX 586
PORTLAND, ME 04112 0586

Exhibit 7

Public Utilities

Exhibit 7: Adequacy and Availability of Public Utilities

Public utility required for development of the site is limited to electric/communications that will be coordinated directly with the respective companies. Public water and sewer service is not available. Lots will be serviced by individual subsurface wastewater disposal systems and wells.

Exhibit 8

Solid Waste

Exhibit 9

Lighting

Exhibit 9: Lighting Information

Per Section 500 – Performance Standards, 544 Streets 8.-Standards (b) proposed lighting will include a street light at the development entrance at Land of Nod Road. Additional street lights are not proposed in an effort to avoid excessive light pollution. The proposed light fixture cut sheet will be submitted as part of the Final Subdivision review.

Exhibit 10

Traffic

Exhibit 10: Traffic

A Traffic Impact Study dated October 22, 2018 prepared by Sebago Technics Transportation Division is included in this application. The study concludes that the roadway can accommodate the expected increase in traffic and provides adequate sight distance in each direction.

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

Traffic Impact Study

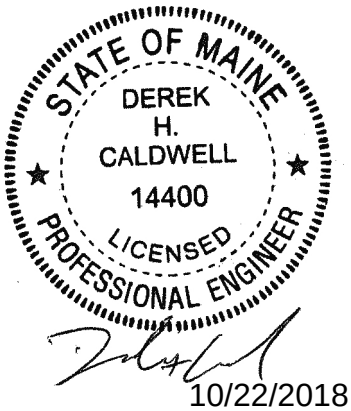
Land of Nod Property
Windham, Maine

Prepared For:
Grondin Corporation
39 Belanger Road
Windham, Maine 04062

Prepared By:
Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

Project No. 16236

October 22, 2018



10/22/2018

Table of Contents

Contents

Appendix

Introduction

The purpose of this Traffic Impact Study (TIS) is to identify the impacts the proposed Land of Nod residential subdivision. on the surrounding area roadways. The project proposes to develop 32 single family homes. The development area also contains two existing homes which are to be retained, resulting in the subdivision containing a total of 34 single family homes.

Site Access

The project is to include one new roadway to serve the subdivision intersecting with Land of Nod Road opposite Morgan Lane. The roadway is proposed to be 24 feet wide and operate under stop control.

Trip Generation

The *ITE Trip Generation Manual, 10th Edition was used* to estimate the trip generation for the proposed development combined with the two existing homes for a total of 34 single family homes. Table 1 shows the calculated trip generation.

Table 1 –Trip Generation
Land Use Code 210– Single Family Detached Housing
(34 Dwelling Units)

Time Period	Equation	Total	Entering	Exiting
Weekday	Ln(T) = 0.92 Ln(X) + 2.71	385	192	193
AM Adjacent Street	T = 0.71(X) + 4.80	29	7	22
PM Adjacent Street	Ln(T) = 0.96 Ln(X) + 0.20	36	23	13
AM Generator	Ln(T) = 0.91 Ln(X) + 0.20	30	8	22
PM Generator	Ln(T) = 0.94 Ln(X) + 0.34	39	25	14
Saturday	Ln(T) = 0.94 Ln(X) + 2.56	356	178	178
Saturday Peak Hour	T = 0.84(X) + 17.99	47	25	22
Sunday	T = 8.87(X) - 65.12	236	118	118
Sunday Peak Hour	T = 0.79(X) + 11.02	38	20	18

*T=Trip Ends, X=Dwelling Unit

Existing Traffic Volumes

Turning movement counts were obtained for the following four intersections on Tuesday September 18, 2018 for the hours of 7 AM-9 AM and 4 PM-6 PM:

- Route 302 at Land of Nod Road
- Route 302 at Pope Road
- Highland Cliff Road at Pope Road
- Highland Cliff Road at Land of Nod Road/Verrill Lane

Using the MaineDOT weekly group mean factors, the turning movement counts were adjusted to represent a 30th highest design hour. The counts were then grown to a three-year future design year of 2021. This annual growth factor was determined from a MaineDOT count station on Route 302 shown in Table 2 below, which resulted in a 2.5% increase per year. The 2021 No-Build volumes for the study area intersections are shown in Figure 1.

Table 2: MaineDOT Count Data

		AADT		
STA	**Location**	**2013**	**2016**	**Growth/yr**
07500	US 302 (BRIDGTON RD) @ WINDHAM TL	13,600	14,650	2.5%

Trip Distribution and Assignment

Trip distribution and assignment was based upon the previously referenced turning movement counts. It is assumed that the trips destined for Route 302 to the south will be split evenly between travelling by way of Land of Nod Road to the south and Highland Cliff Road/Pope Road. The following trip distribution is assumed:

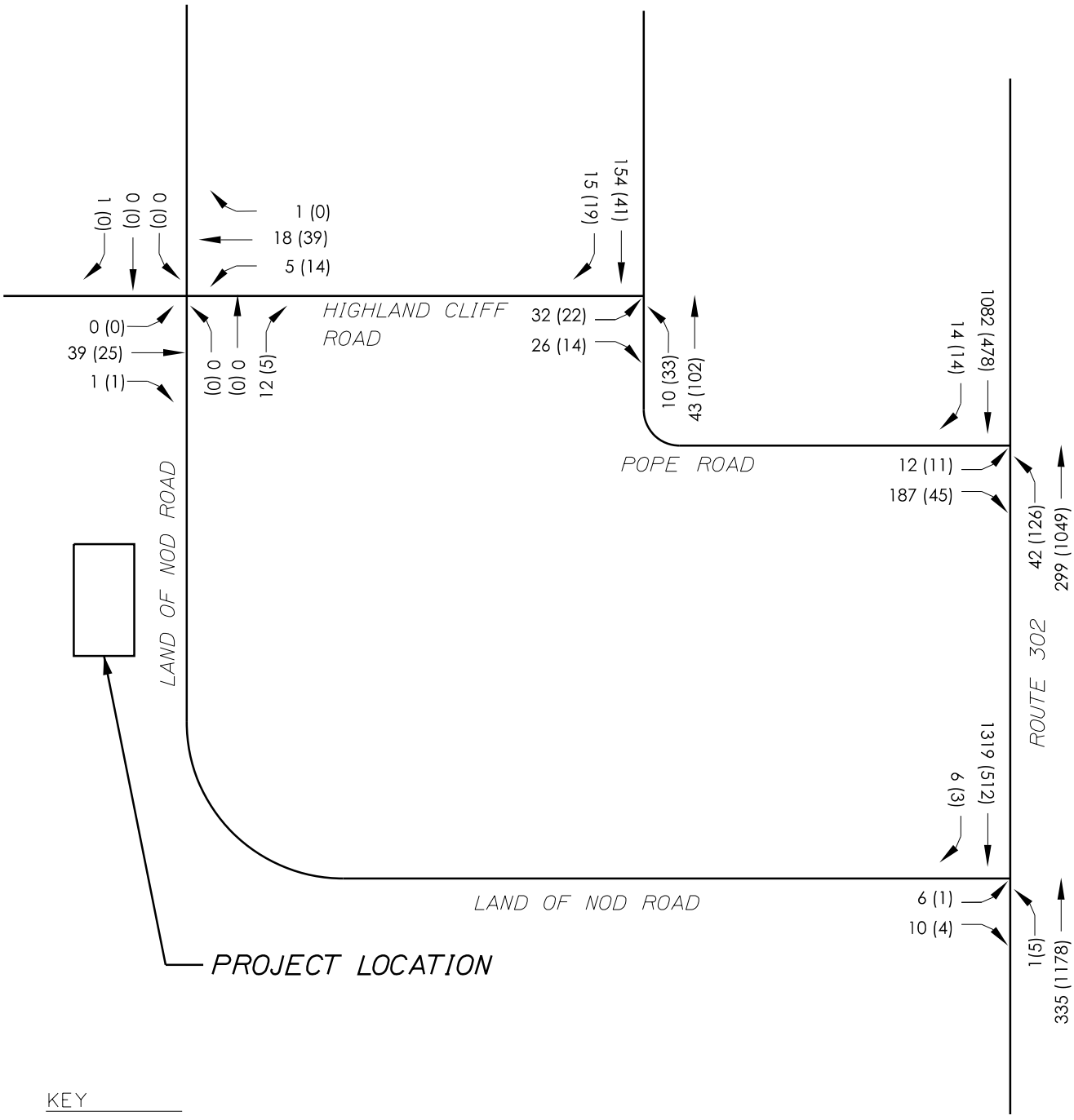
- 80% of trips to/from Route 302 to the South
  - 50% to travel by Land of Nod Road
  - 50% to travel by Highland Cliff Road/Pope Road
- 10% of trips to/from Route 302 to the north
- 10% of trips to/from Pope Road to the north

The proposed trip distribution and assignment is shown in Figure 2. 2021 Full Build volumes are shown in Figure 3.

NOTE:

VOLUMES BASED ON TURNING MOVEMENT COUNTS COLLECTED ON SEPTEMBER 18, 2018.

2021 DESIGN HOUR VOLUMES SHOWN ARE BASED ON THE 2018 EXISTING VOLUMES ADJUSTED TO 2021 BY 2.5% PER YEAR AND TO THE 30TH HIGHEST HOUR UTILIZING MAINE DOT'S WEEKLY GROUP MEAN FACTORS (.89/.83*1.07).



KEY

XX = AM PEAK HOUR (7:00 AM-8:00 AM)
(XX) = PM PEAK HOUR (4:30 PM-5:30 PM)

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

2021 NO-BUILD VOLUMES
OF LAND OF NOD PROPERTY

SCALE: N.T.S

DATE: 09/28/18

LOCATION:
LAND OF NOD ROAD
WINDHAM, ME

FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, ME 04062

SHEET: 1 OF 3

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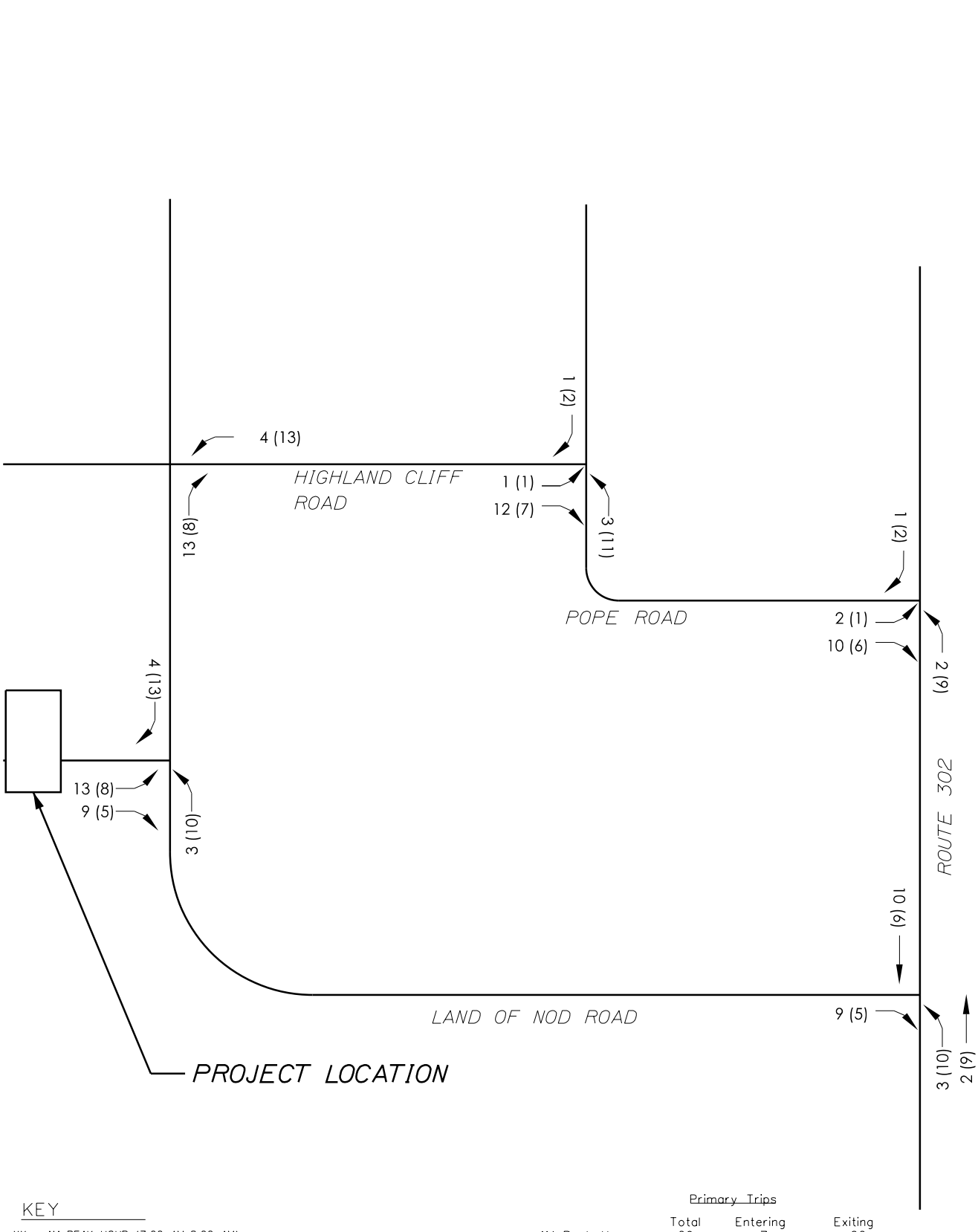


KEY

XX - AM PEAK HOUR (7:00 AM-8:00 AM)
(XX) - PM PEAK HOUR (4:30 PM-5:30 PM)

Primary Trips

	Total	Entering	Exiting
AM Peak Hour	29	7	22
PM Peak Hour	36	23	13

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

PROJECT GENERATED TRIPS
OF LAND OF NOD PROPERTY

SCALE: N.T.S
DATE: 09/28/18

LOCATION:
LAND OF NOD ROAD
WINDHAM, ME

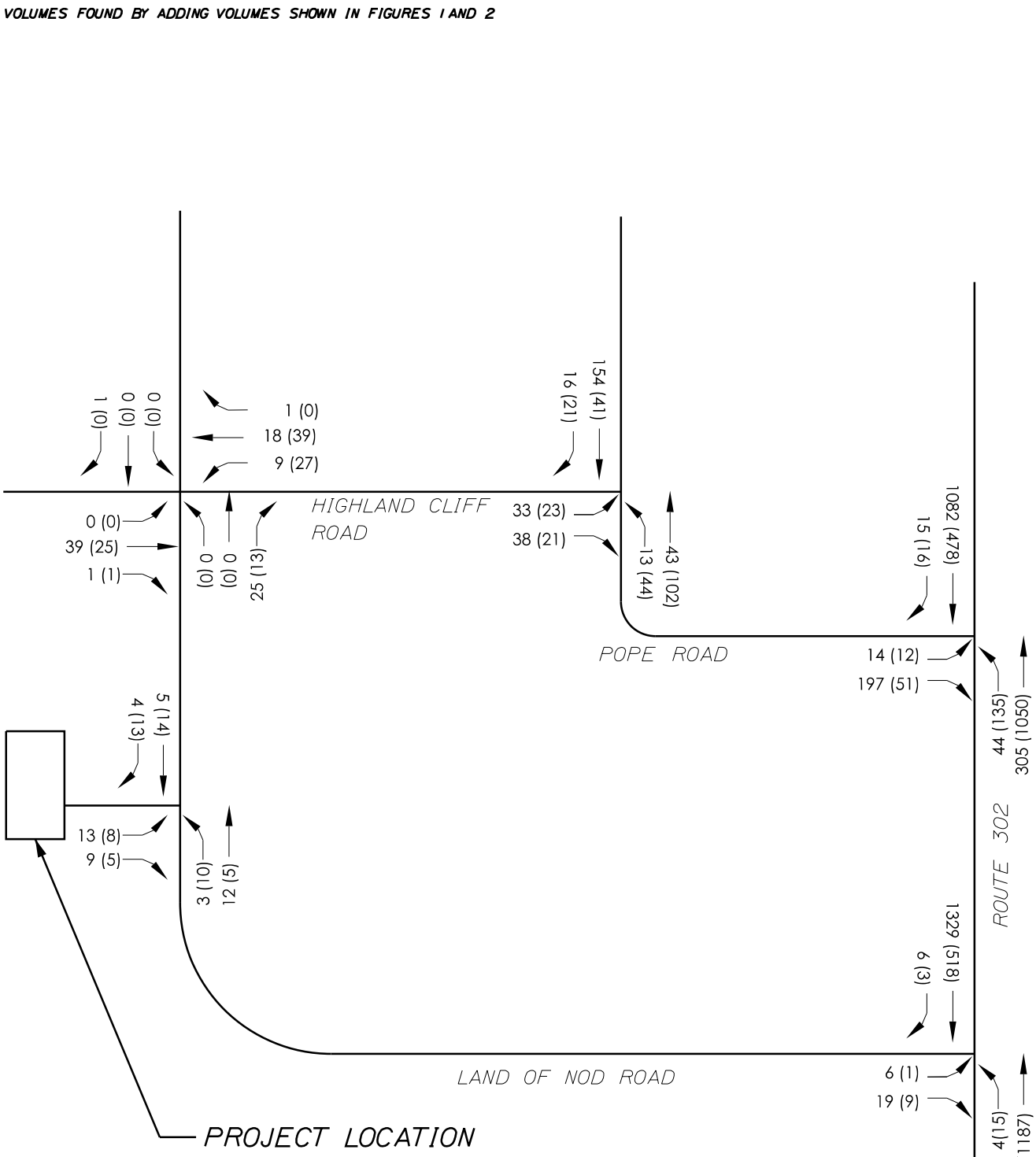
FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, ME 04062

SHEET: 2 OF 3

...\DGN\16236_Traffic_Diagrams.dgn

NOTE:

VOLUMES FOUND BY ADDING VOLUMES SHOWN IN FIGURES 1 AND 2



KEY

XX = AM PEAK HOUR (7:00 AM-8:00 AM)
(XX) = PM PEAK HOUR (4:30 PM-5:30 PM)

Primary Trips

	Total	Entering	Exiting
AM Peak Hour	29	7	22
PM Peak Hour	36	23	13

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

2021 FULL BUILD VOLUMES
OF LAND OF NOD PROPERTY

SCALE: N.T.S

DATE: 09/28/18

LOCATION:
LAND OF NOD ROAD
WINDHAM, ME

FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, ME 04062

SHEET: 3 OF 3

...\DGN\16236_Traffic_Diagrams.dgn

Capacity Analysis

An intersection capacity analysis was performed for the 2021 No-Build and 2021 Build Volumes. Synchro/SimTraffic Version 10 was used for this analysis. The focus of our analysis was on the control delay (or the average amount of delay that a vehicle experiences as it travels through an intersection or section of roadway). This is defined by Level of Service (LOS), in terms of A through F, with A being optimal and E/F being unacceptable.

Table 3: LOS from Control Delay

Level of Service (LOS)	Unsignalized Control Delay (Sec./Vehicle)	Signalized Control Delay (Sec./Vehicle)
A	≤10	≤10
B	>10-≤15	>10-≤20
C	>15-≤25	>20-≤35
D	>25-≤35	>35-≤55
E	>35-≤50	>55-≤80
F	>50	>80

Source: Highway Capacity Manual 6

The following five intersections were included in this analysis:

- Highland Cliff Road at Pope Road
- Highland Cliff Road at Land of Nod Road
- Route 302 at Pope Road
- Route 302 at Land of Nod Road
- Land of Nod at the Site Driveway

All study intersections are unsignalized. The following tables summarize the results of the capacity analysis.

Table 4: Capacity Analysis
(1 of 2)

	2021 AM No-Build		2021 AM Build		2021 PM No-Build		2021PM Build	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Highland Cliff Road and Pope Road								
Highland Cliff Rd NB LT	5	A	6	A	4	A	5	A
Highland Cliff Rd NB RT	3	A	3	A	2	A	2	A
Pope Rd SE TH	1	A	1	A	0	A	1	A
Pope Rd SE RT	0	A	0	A	0	A	0	A
Pope Rd NW LT	3	A	3	A	3	A	3	A
Pope Rd NW TH	1	A	2	A	1	A	1	A
INTERSECTION	1	A	2	A	2	A	2	A
Highland Cliff Road and Land of Nod Road								
Highland Cliff Rd NB LT	0	A	0	A	0	A	0	A
Highland Cliff Rd NB TH	0	A	0	A	0	A	0	A
Highland Cliff Rd NB RT	0	A	0	A	0	A	0	A
Highland Cliff Rd SB LT	1	A	2	A	2	A	2	A
Highland Cliff Rd SB TH	0	A	0	A	1	A	1	A
Highland Cliff Rd SB RT	0	A	1	A	1	A	2	A
Land of Nod Rd WB LT	0	A	0	A	0	A	0	A
Land of Nod Rd WB RT	2	A	2	A	2	A	2	A
INTERSECTION	1	A	1	A	1	A	1	A
Route 302 and Pope Road								
Route 302 SB TH	3	A	3	A	1	A	1	A
Route 302 SB RT	1	A	2	A	0	A	0	A
Route 302 NB LT	16	C	22	C	10	B	11	B
Route 302 NB TH	3	A	3	A	7	A	7	A
Pope Rd EB LT	285	F	433	F	50	D	38	D
Pope Rd EB RT	231	F	360	F	13	B	10	B
INTERSECTION	32	D	49	D	6	A	6	A

Table 4: Capacity Analysis
(2 of 2)

	2021 AM No-Build		2021 AM Build		2021 PM No-Build		2021PM Build	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Route 302 and Land of Nod Road								
Route 302 SB TH	7	A	8	A	3	A	3	A
Route 302 SB RT	6	A	8	A	1	A	2	A
Route 302 NB LT	14	B	14	B	5	A	5	A
Route 302 NB TH	1	A	1	A	2	A	3	A
Land of Nod Rd EB LT	25	C	43	D	20	B	20	B
Land of Nod Rd EB RT	14	B	25	C	4	A	4	A
INTERSECTION	6	A	7	A	2	A	3	A
Highland Cliff Road and Land of Nod Road								
Land of Nod Rd SB TH			0	A			1	A
Land of Nod Rd SB RT			0	A			0	A
Land of Nod Rd NB LT			1	A			2	A
Land of Nod Rd NB TH			0	A			1	A
Site EB LT			4	A			4	A
Site EB RT			3	A			3	A
INTERSECTION			2	A			1	A

As shown in the above tables, all study area intersections are shown to operate with LOS D or better under both build and no-build conditions. The Pope Road eastbound movements at Route 302 are shown to operate with LOS F during the AM Peak Hour under both no-build and build conditions. This is a function of heavy southbound traffic volumes on Route 302.

Crash Analysis

The most recent 3-year crash history (2015-2017) was obtained from MaineDOT for the intersections and roadway links in the vicinity of the project site. Intersections and roadway links are considered to be High Crash Locations (HCL's) if they have a Critical Rate Factor (CRF) greater than 1.0 and have a minimum of 8 accidents in a three-year period. A summary of this information is presented below and the MaineDOT Summary Report is contained in the Appendix.

Intersections

Node	Description	# of Crashes	CRF	HCL
11027	Highland Cliff Road & Land of Nod Road	0	0.00	No
59475	Land of Nod Road & Morgan Lane	0	0.00	No
11029	Land of Nod Road & Vance Drive	0	0.00	No
16902	Land of Nod Road & Route 302	1	0.17	No
11030	Highland Cliff Road & Pope Road	1	1.11	No
64857	Pope Road & Route 302	3	0.52	No

Roadway Segments

Link	Description	# of Crashes	CRF	HCL
11027-59475	Land of Nod Road – Highland Cliff Road to Morgan Lane	1	0.57	No
59475-12486	Land of Nod Road – Morgan Lane to Lowell Road	0	0.00	No
11029-12486	Land of Nod Road – Lowell Road to Vance Drive	0	0.00	No
11029-16902	Land of Nod Road – Vance Drive to Route 302	2	3.00	No
11027-11030	Highland Cliff Road – Land of Nod Road to Pope Road	0	0.00	No
11030-16905	Pope Road – Highland Cliff Road to Route 302	3	0.53	No

As can be seen in the preceding tables, no intersections or roadway segments in the study area are identified as a high crash location.

Sight Distance Analysis

Sight distance was measured on October 1, 2018 at the proposed site driveway on Land of Nod Road. This measurement was taken using a height of eye of 3.5 feet located 10 feet behind the traveled way with a height of object of 4.25 feet located in the center of the opposing travel lane. Sight distance was found to be in excess of 500 feet when looking both left and right from the proposed driveway location. This exceeds the minimum MaineDOT required sight distance of 305 feet for a 35 mile per hour roadway.

Conclusion

The surrounding area roadways are shown to be able to accommodate the expected increase in traffic due to the proposed Land of Nod residential subdivision development. The development driveway is projected to operate with little delay and is to be at a location with adequate sight distance.

Appendix

Synchro/SimTraffic Reports

2: Highland Cliff Road & Pope Road Performance by movement

Movement	NBL	NBT	NBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1
Total Del/Veh (s)	5.7	0.2	3.1	0.6	0.3	3.1	1.6	1.6

3: Highland Cliff Road & Land of Nod Road Performance by movement

Movement	NBT	NBR	SBL	SBT	SBR	SER	NWT	NWR	All
Denied Del/Veh (s)	0.1		0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	0.1		1.7	0.4	0.6	1.5	0.3	2.0	0.8

4: Pope Road & Route 302 Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Denied Del/Veh (s)	1.3	1.6	0.1	0.0	0.1	0.0	0.8
Total Del/Veh (s)	3.1	1.7	21.7	2.8	433.3	359.7	48.8

8: Route 302 & Land of Nod Road Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.2	0.3	0.1
Total Del/Veh (s)	42.9	25.2	7.6	7.8	14.4	1.1	6.7

10: Site Roadway & Land of Nod Road Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.1	0.1	1.4	0.4	4.0	2.6	1.8

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	52.7

Intersection: 2: Highland Cliff Road & Pope Road

Movement	NB	NW
Directions Served	LR	LT
Maximum Queue (ft)	56	31
Average Queue (ft)	24	3
95th Queue (ft)	49	17
Link Distance (ft)	2188	2795
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Highland Cliff Road & Land of Nod Road

Movement	SB	SE	NW
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	11	20	27
Average Queue (ft)	0	1	9
95th Queue (ft)	6	9	26
Link Distance (ft)	2188	553	2009
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Pope Road & Route 302

Movement	SE	NW	NE
Directions Served	TR	L	LR
Maximum Queue (ft)	4	81	1066
Average Queue (ft)	0	27	561
95th Queue (ft)	3	62	1118
Link Distance (ft)	682		2795
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		145	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Route 302 & Land of Nod Road

Movement	EB	NW
Directions Served	LR	LT
Maximum Queue (ft)	68	130
Average Queue (ft)	17	7
95th Queue (ft)	49	57
Link Distance (ft)	4989	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Site Roadway & Land of Nod Road

Movement	NE
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	16
95th Queue (ft)	42
Link Distance (ft)	910
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

2: Highland Cliff Road & Pope Road Performance by movement

Movement	NBL	NBT	NBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	5.2	0.1	2.7	0.6	0.4	2.6	1.0	1.3

3: Highland Cliff Road & Land of Nod Road Performance by movement

Movement	NBT	NBR	SBL	SBT	SBR	SER	NWR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.1	0.0	1.4	0.2	0.1	2.0	1.9	0.5

4: Pope Road & Route 302 Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Denied Del/Veh (s)	1.2	1.0	0.1	0.0	0.0	0.0	0.8
Total Del/Veh (s)	2.7	0.9	16.4	2.6	284.7	231.3	32.0

8: Route 302 & Land of Nod Road Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.3	0.1
Total Del/Veh (s)	25.0	14.2	7.1	6.4	13.8	0.6	5.9

10: Site Roadway & Land of Nod Road Performance by movement

Movement	SET	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.2	0.2

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	36.9

Intersection: 2: Highland Cliff Road & Pope Road

Movement	NB	NW
Directions Served	LR	LT
Maximum Queue (ft)	51	24
Average Queue (ft)	24	1
95th Queue (ft)	48	11
Link Distance (ft)	2188	2795
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Highland Cliff Road & Land of Nod Road

Movement	SE	NW
Directions Served	LTR	LTR
Maximum Queue (ft)	19	22
Average Queue (ft)	1	6
95th Queue (ft)	8	20
Link Distance (ft)	553	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Pope Road & Route 302

Movement	SE	NW	NE
Directions Served	TR	L	LR
Maximum Queue (ft)	4	66	812
Average Queue (ft)	0	24	384
95th Queue (ft)	3	54	838
Link Distance (ft)	682		2795
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		145	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Route 302 & Land of Nod Road

Movement	EB	NW
Directions Served	LR	LT
Maximum Queue (ft)	45	45
Average Queue (ft)	9	2
95th Queue (ft)	30	22
Link Distance (ft)		1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Site Roadway & Land of Nod Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

2: Highland Cliff Road & Pope Road Performance by movement

Movement	NBL	NBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.4	2.1	0.6	0.1	2.8	1.3	1.8

3: Highland Cliff Road & Land of Nod Road Performance by movement

Movement	NBT	SBL	SBT	SER	NWT	NWR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	0.1	1.7	0.7	1.6	0.4	1.8	1.0

4: Pope Road & Route 302 Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NET	NER	All
Denied Del/Veh (s)	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	1.0	0.3	10.8	7.4	37.5	0.8	10.3	6.1

8: Route 302 & Land of Nod Road Performance by movement

Movement	EBL	EBT	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)		0.0	0.0	0.0	0.0	1.3	1.4	1.0
Total Del/Veh (s)		0.3	4.1	3.4	2.4	5.2	2.6	2.9

10: Site Roadway & Land of Nod Road Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	0.5	0.4	2.0	0.5	4.2	3.2	1.3

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	10.0

Intersection: 2: Highland Cliff Road & Pope Road

Movement	NB	NW
Directions Served	LR	LT
Maximum Queue (ft)	62	35
Average Queue (ft)	23	3
95th Queue (ft)	48	20
Link Distance (ft)	2188	2795
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Highland Cliff Road & Land of Nod Road

Movement	SB	SE	NW
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	12	15	35
Average Queue (ft)	1	1	7
95th Queue (ft)	7	6	23
Link Distance (ft)	2188	553	2009
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Pope Road & Route 302

Movement	SE	NW	NE
Directions Served	TR	L	LR
Maximum Queue (ft)	4	71	112
Average Queue (ft)	0	33	33
95th Queue (ft)	3	58	82
Link Distance (ft)	682		2795
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		145	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Route 302 & Land of Nod Road

Movement	EB	NW
Directions Served	LR	LT
Maximum Queue (ft)	31	135
Average Queue (ft)	5	12
95th Queue (ft)	21	64
Link Distance (ft)	4989	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Site Roadway & Land of Nod Road

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	12	30
Average Queue (ft)	0	10
95th Queue (ft)	5	33
Link Distance (ft)	4989	910
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

2: Highland Cliff Road & Pope Road Performance by movement

Movement	NBL	NBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.4	2.4	0.3	0.2	3.0	1.4	1.7

3: Highland Cliff Road & Land of Nod Road Performance by movement

Movement	NBT	NBR	SBL	SBT	SER	NWR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.0	0.0	1.7	0.5	1.2	1.5	0.6

4: Pope Road & Route 302 Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NET	NER	All
Denied Del/Veh (s)	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.8	0.3	10.2	7.1	50.0	0.7	13.1	6.0

8: Route 302 & Land of Nod Road Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	1.3	1.4	1.0
Total Del/Veh (s)	19.5	3.7	3.3	1.2	4.9	2.0	2.4

10: Site Roadway & Land of Nod Road Performance by movement

Movement	SET	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.3	0.2

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	9.4

Intersection: 2: Highland Cliff Road & Pope Road

Movement	NB	NW
Directions Served	LR	LT
Maximum Queue (ft)	59	29
Average Queue (ft)	19	2
95th Queue (ft)	46	14
Link Distance (ft)	2188	2795
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Highland Cliff Road & Land of Nod Road

Movement	SE	NW
Directions Served	LTR	LTR
Maximum Queue (ft)	15	21
Average Queue (ft)	1	3
95th Queue (ft)	10	15
Link Distance (ft)	553	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Pope Road & Route 302

Movement	SE	NW	NE
Directions Served	TR	L	LR
Maximum Queue (ft)	4	98	90
Average Queue (ft)	0	31	33
95th Queue (ft)	3	65	74
Link Distance (ft)	682		2795
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		145	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 8: Route 302 & Land of Nod Road

Movement	EB	NW
Directions Served	LR	LT
Maximum Queue (ft)	22	60
Average Queue (ft)	4	3
95th Queue (ft)	17	25
Link Distance (ft)		1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Site Roadway & Land of Nod Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Appendix

Crash Data

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

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

REPORT DESCRIPTION

Windham
Land of Nod Rd., Highland Cliff Rd., Pope Rd.

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

Route: **0500694**	Start Node: **11027**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **16902**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0500712**	Start Node: **11030**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **11027**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0500692**	Start Node: **11030**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **16905**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
11027	0500694 - 0	Int of HIGHLAND CLIFF RD, LAND OF NOD RD	1	0	0	0	0	0	0	0.0	0.466	0.00	0.56	0.00
												Statewide Crash Rate:	0.13	
59475	0500694 - 0.41	Int of LAND OF NOD RD, MORGAN LN	1	0	0	0	0	0	0	0.0	0.134	0.00	0.35	0.00
												Statewide Crash Rate:	0.13	
12486	0500694 - 1.31	Non-Int LAND OF NOD RD	1	0	0	0	0	0	0	0.0	0.087	0.00	0.03	0.00
												Statewide Crash Rate:	0.13	
11029	0500694 - 1.40	Int of LAND OF NOD RD, VANCE DR	1	0	0	0	0	0	0	0.0	0.130	0.00	0.34	0.00
												Statewide Crash Rate:	0.13	
16902	0500694 - 1.74	Int of LAND OF NOD RD, ROOSEVELT TRL	2	1	0	0	0	0	1	0.0	5.406	0.06	0.35	0.00
												Statewide Crash Rate:	0.14	
11030	0500712 - 0	Int of HIGHLAND CLIFF RD, POPE RD	1	1	0	0	0	0	1	0.0	0.545	0.61	0.55	1.11
												Statewide Crash Rate:	0.13	
11028	0500712 - 0.37	Int of HERMAN COBB RD, HIGHLAND CLIFF RD	1	0	0	0	0	0	0	0.0	0.507	0.00	0.55	0.00
												Statewide Crash Rate:	0.13	
16905	0500692 - 2.78	Int of POPE RD ROOSEVELT TRL	2	3	0	0	0	2	1	66.7	5.453	0.18	0.35	0.00
												Statewide Crash Rate:	0.14	
NODE TOTALS:				5	0	0	0	2	3	40.0	12.728	0.13	0.28	0.47

Study Years: 3.00

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
11027	59475	2029753	0 - 0.41	0500694 - 0	0.41	1	1	0	0	0	0	1	0.0	0.00069	482.13	852.24	0.00
Int of HIGHLAND CLIFF RD, LAND OF NOD RD				RD INV 05 00694											Statewide Crash Rate: 231.92		
59475	12486	2029754	0 - 0.90	0500694 - 0.41	0.90	1	0	0	0	0	0	0	0.0	0.00072	0.00	845.55	0.00
Int of LAND OF NOD RD, MORGAN LN				RD INV 05 00694											Statewide Crash Rate: 231.92		
11029	12486	184840	0 - 0.09	0500694 - 1.31	0.09	1	0	0	0	0	0	0	0.0	0.00008	0.00	722.79	0.00
Int of LAND OF NOD RD, VANCE DR				RD INV 05 00694											Statewide Crash Rate: 231.92		
11029	16902	184841	0 - 0.34	0500694 - 1.40	0.34	1	2	0	0	0	0	2	0.0	0.00022	3001.12	1001.28	3.00
Int of LAND OF NOD RD, VANCE DR				RD INV 05 00694											Statewide Crash Rate: 231.92		
11028	11030	184838	0 - 0.37	0500712 - 0	0.37	1	0	0	0	0	0	0	0.0	0.00192	0.00	662.46	0.00
Int of HERMAN COBB RD, HIGHLAND CLIFF RD				RD INV 05 00712											Statewide Crash Rate: 231.92		
11027	11028	184835	0 - 0.06	0500712 - 0.37	0.06	1	0	0	0	0	0	0	0.0	0.00026	0.00	995.19	0.00
Int of HIGHLAND CLIFF RD, LAND OF NOD RD				RD INV 05 00712											Statewide Crash Rate: 231.92		
11030	16905	184844	0 - 0.57	0500692 - 2.21	0.57	1	3	0	0	0	1	2	33.3	0.00326	306.93	577.57	0.00
Int of HIGHLAND CLIFF RD, POPE RD				RD INV 05 00692											Statewide Crash Rate: 231.92		
Study Years: 3.00				**Section Totals:**	2.74		6	0	0	0	1	5	16.7	0.00715	279.77	476.49	0.59
				Grand Totals:	2.74		11	0	0	0	3	8	27.3	0.00715	512.92	514.63	1.00

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
11027	59475	2029753	0 - 0.41	0500694 - 0	1	0	0	0	0	1	2016-1165	01/14/2016	0.05	PD
59475	12486	2029754	0 - 0.90	0500694 - 0.41	0	0	0	0	0	0				
11029	12486	184840	0 - 0.09	0500694 - 1.31	0	0	0	0	0	0				
11029	16902	184841	0 - 0.34	0500694 - 1.40	2	0	0	0	0	2	2017-36206	11/29/2017	1.54	PD
											2016-26299	09/18/2016	1.69	PD
11028	11030	184838	0 - 0.37	0500712 - 0	0	0	0	0	0	0				
11027	11028	184835	0 - 0.06	0500712 - 0.37	0	0	0	0	0	0				
11030	16905	184844	0 - 0.57	0500692 - 2.21	3	0	0	0	1	2	2017-37873	12/09/2017	2.51	PD
											2016-9873	03/31/2016	2.52	PD
											2017-1407	01/13/2017	2.70	C
				Totals:	6	0	0	0	1	5				

Crash Summary II - Characteristics

Crashes by Day and Hour

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

Vehicle Counts by Type

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

Crash Summary II - Characteristics

Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	5	2	0	0	0	0	7
Ran Off Roadway	3	0	0	0	0	0	3
Failed to Yield Right-of-Way	1	1	0	0	0	0	2
Ran Red Light	0	0	0	0	0	0	0
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	2	0	0	0	0	0	2
Improper Turn	0	0	0	0	0	0	0
Improper Backing	0	0	0	0	0	0	0
Improper Passing	0	0	0	0	0	0	0
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	0	1	0	0	0	0	1
Failed to Keep in Proper Lane	0	0	0	0	0	0	0
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	0	0	0	0	0	0	0
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	0	0	0	0	0	0	0
Other Contributing Action	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0
Total	**11**	**4**	**0**	**0**	**0**	**0**	**15**

Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	9	3	0	0	0	0	12
Physically Impaired or Handicapped	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	2	0	0	0	0	0	2
Other	0	1	0	0	0	0	1
Total	**11**	**4**	**0**	**0**	**0**	**0**	**15**

Driver Age by Unit Type

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

Crash Summary II - Characteristics

Most Harmful Event

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

Traffic Control Devices

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

Injury Data

Severity Code	Injury Crashes	Number Of Injuries
K	0	0
A	0	0
B	0	0
C	3	5
PD	8	0
Total	**11**	**5**

Road Character

Road Grade	Total
1-Level	7
2-On Grade	4
3-Top of Hill	0
4-Bottom of Hill	0
5-Other	0
Total	**11**

Light

Light Condition	Total
1-Daylight	6
2-Dawn	0
3-Dusk	0
4-Dark - Lighted	1
5-Dark - Not Lighted	4
6-Dark - Unknown Lighting	0
7-Unknown	0
Total	**11**

Crash Summary II - Characteristics

Crashes by Year and Month

Month	2015	2016	2017	Total
JANUARY	0	1	1	2
FEBRUARY	0	0	0	0
MARCH	0	1	0	1
APRIL	0	1	0	1
MAY	0	0	0	0
JUNE	0	0	1	1
JULY	0	1	0	1
AUGUST	0	0	0	0
SEPTEMBER	0	1	0	1
OCTOBER	0	0	0	0
NOVEMBER	0	0	2	2
DECEMBER	0	1	1	2
Total	**0**	**6**	**5**	**11**

Report is limited to the last 10 years of data.

Crash Summary II - Characteristics

Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Traffic Circle-Roundabout	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End - Sideswipe	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Head-on - Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intersection Movement	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	1	3	1	0	0	1	0	0	0	0	0	0	0	0	6
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**2**	**3**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Blowing Sand, Soil, Dirt												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Blowing Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Clear												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	2	0	0	0	0	0	0	0	0	0	0	2
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	2	1	0	0	0	0	0	0	0	0	0	3
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

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

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Sleet, Hail (Freezing Rain or Drizzle)												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	1	1
Dark - Not Lighted	0	0	0	0	0	0	0	1	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	2	0	0	0	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**11**

Appendix

Traffic Count Data

Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 1

Groups Printed- Cars - Trucks

	Route 302 From North		Route 302 From South		Land of Nod Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	302	1	0	67	1	2	373
07:15 AM	310	3	0	65	1	2	381
07:30 AM	283	1	0	76	1	1	362
07:45 AM	247	1	1	82	3	3	337
Total	1142	6	1	290	6	8	1453
08:00 AM	171	2	0	86	1	1	261
08:15 AM	219	0	0	64	0	1	284
08:30 AM	212	2	0	76	0	2	292
08:45 AM	140	1	1	90	1	0	233
Total	742	5	1	316	2	4	1070
Grand Total	1884	11	2	606	8	12	2523
Apprch %	99.4	0.6	0.3	99.7	40	60	
Total %	74.7	0.4	0.1	24	0.3	0.5	
Cars	1870	10	2	588	7	12	2489
% Cars	99.3	90.9	100	97	87.5	100	98.7
Trucks	14	1	0	18	1	0	34
% Trucks	0.7	9.1	0	3	12.5	0	1.3

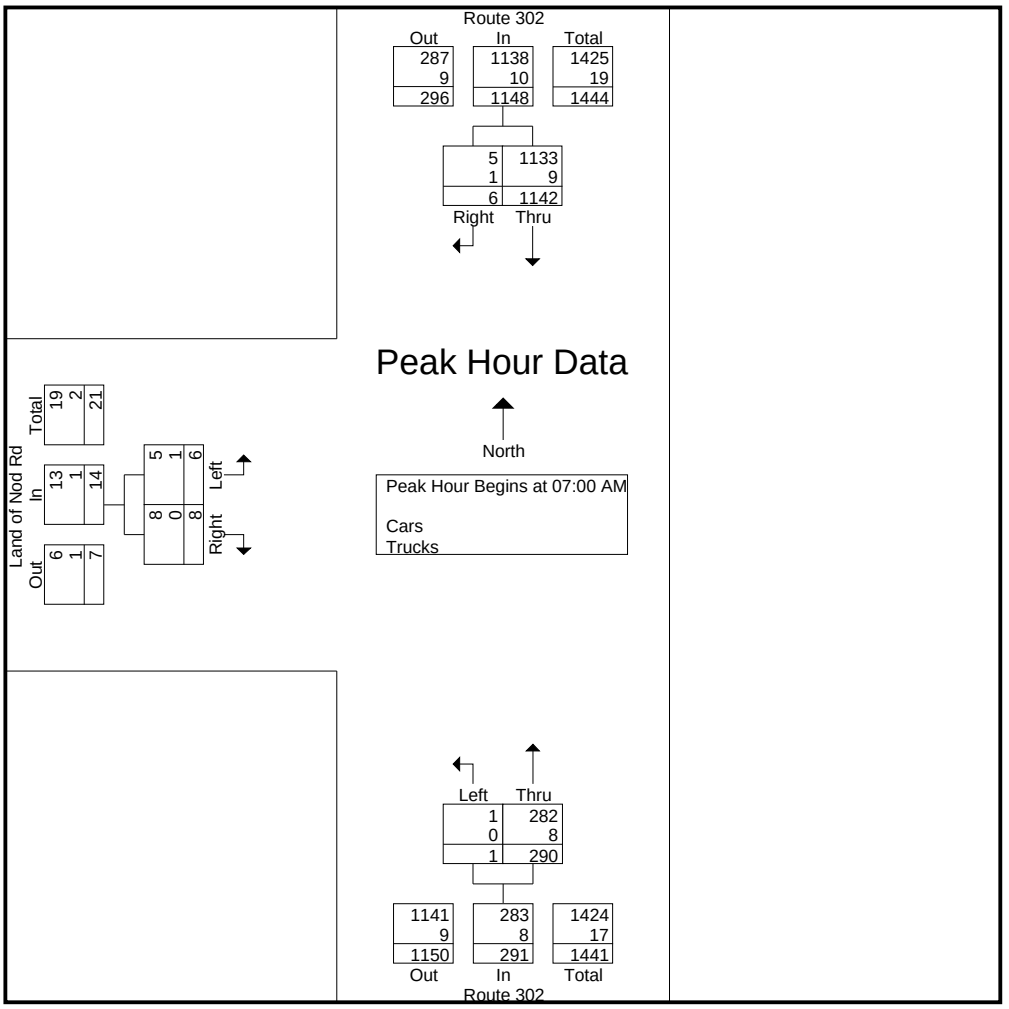
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 2

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	302	1	303	0	67	67	1	2	3	373
07:15 AM	**310**	**3**	**313**	0	65	65	1	2	3	**381**
07:30 AM	283	1	284	0	76	76	1	1	2	362
07:45 AM	247	1	248	**1**	**82**	**83**	**3**	**3**	**6**	337
Total Volume	1142	6	1148	1	290	291	6	8	14	1453
% App. Total	99.5	0.5		0.3	99.7		42.9	57.1		
PHF	.921	.500	.917	.250	.884	.877	.500	.667	.583	.953
Cars	1133	5	1138	1	282	283	5	8	13	1434
% Cars	99.2	83.3	99.1	100	97.2	97.3	83.3	100	92.9	98.7
Trucks	9	1	10	0	8	8	1	0	1	19
% Trucks	0.8	16.7	0.9	0	2.8	2.7	16.7	0	7.1	1.3



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

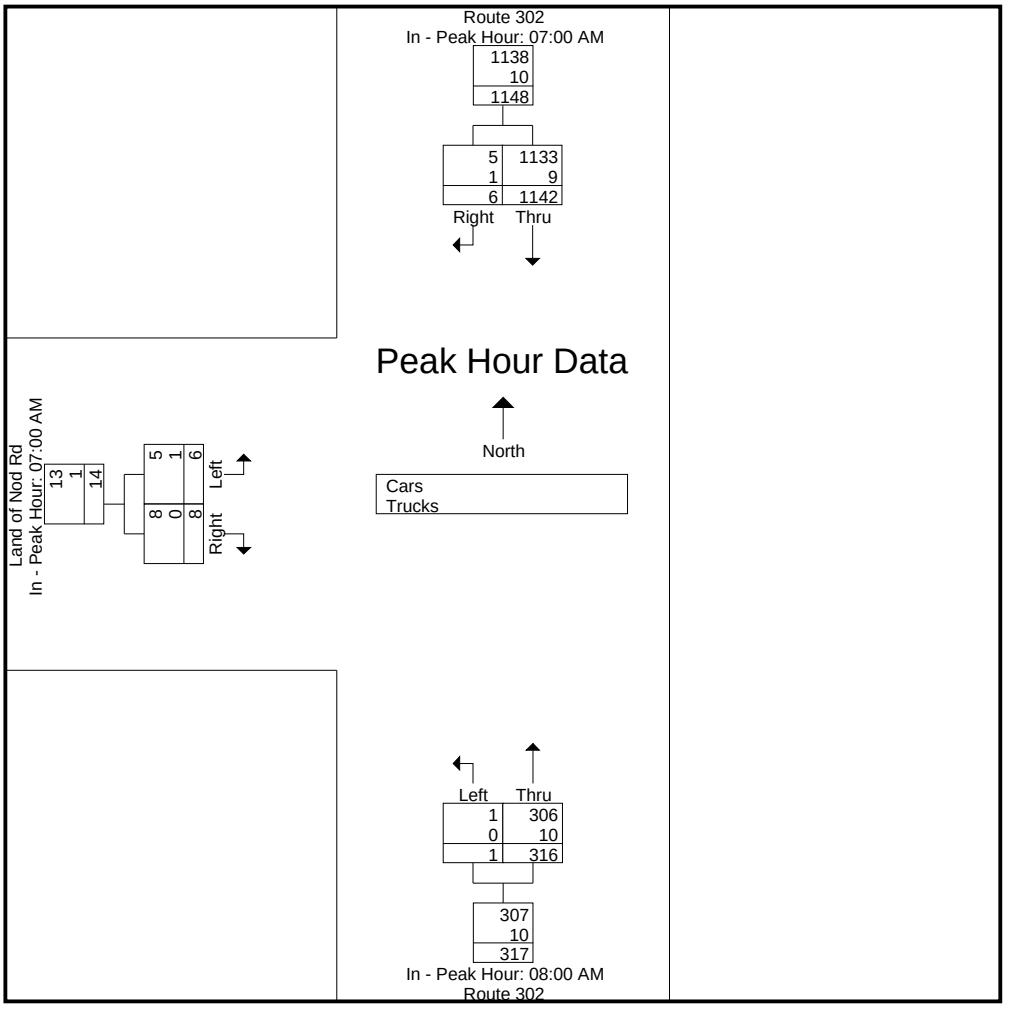
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 3

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:00 AM		
+0 mins.	302	1	303	0	86	86	1	2	3
+15 mins.	**310**	**3**	**313**	0	64	64	1	2	3
+30 mins.	283	1	284	0	76	76	1	1	2
+45 mins.	247	1	248	**1**	**90**	**91**	**3**	**3**	**6**
Total Volume	1142	6	1148	1	316	317	6	8	14
% App. Total	99.5	0.5		0.3	99.7		42.9	57.1	
PHF	.921	.500	.917	.250	.878	.871	.500	.667	.583
Cars	1133	5	1138	1	306	307	5	8	13
% Cars	99.2	83.3	99.1	100	96.8	96.8	83.3	100	92.9
Trucks	9	1	10	0	10	10	1	0	1
% Trucks	0.8	16.7	0.9	0	3.2	3.2	16.7	0	7.1



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 4

Groups Printed- Cars

	Route 302 From North		Route 302 From South		Land of Nod Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	301	1	0	65	1	2	370
07:15 AM	309	3	0	65	1	2	380
07:30 AM	279	0	0	71	0	1	351
07:45 AM	244	1	1	81	3	3	333
Total	1133	5	1	282	5	8	1434
08:00 AM	170	2	0	82	1	1	256
08:15 AM	217	0	0	62	0	1	280
08:30 AM	210	2	0	73	0	2	287
08:45 AM	140	1	1	89	1	0	232
Total	737	5	1	306	2	4	1055
Grand Total	1870	10	2	588	7	12	2489
Apprch %	99.5	0.5	0.3	99.7	36.8	63.2	
Total %	75.1	0.4	0.1	23.6	0.3	0.5	

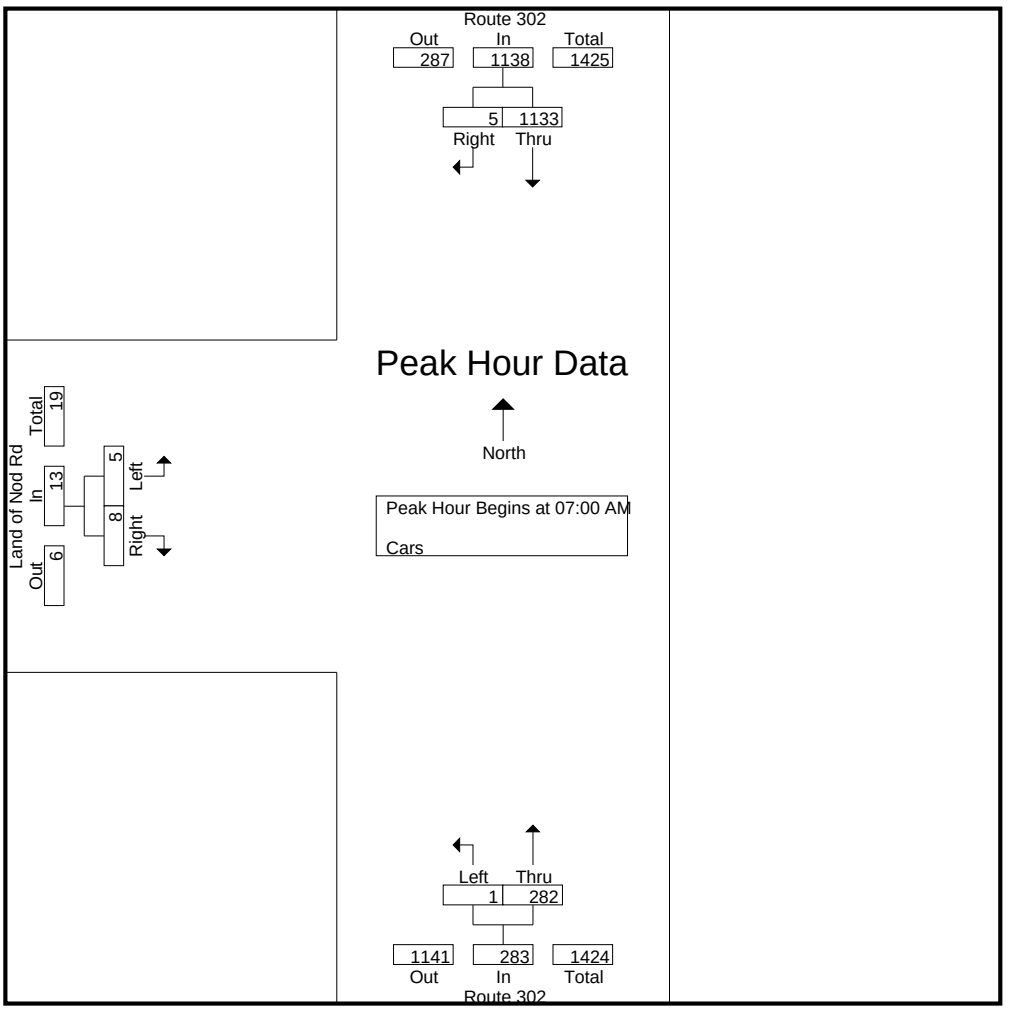
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 5

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	301	1	302	0	65	65	1	2	3	370
07:15 AM	**309**	**3**	**312**	0	65	65	1	2	3	**380**
07:30 AM	279	0	279	0	71	71	0	1	1	351
07:45 AM	244	1	245	**1**	**81**	**82**	**3**	**3**	**6**	333
Total Volume	1133	5	1138	1	282	283	5	8	13	1434
% App. Total	99.6	0.4		0.4	99.6		38.5	61.5		
PHF	.917	.417	.912	.250	.870	.863	.417	.667	.542	.943



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

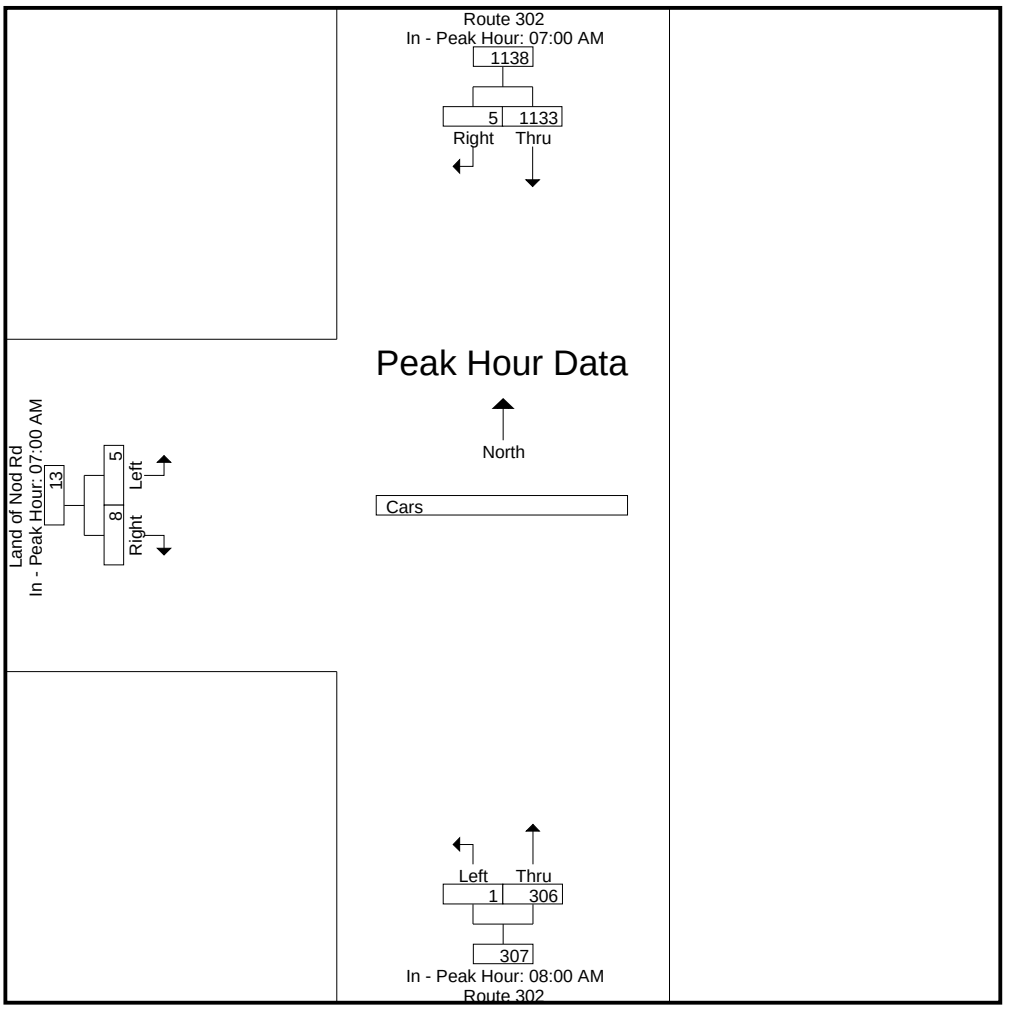
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 6

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:00 AM		
+0 mins.	301	1	302	0	82	82	1	2	3
+15 mins.	**309**	**3**	**312**	0	62	62	1	2	3
+30 mins.	279	0	279	0	73	73	0	1	1
+45 mins.	244	1	245	**1**	**89**	**90**	**3**	**3**	**6**
Total Volume	1133	5	1138	1	306	307	5	8	13
% App. Total	99.6	0.4		0.3	99.7		38.5	61.5	
PHF	.917	.417	.912	.250	.860	.853	.417	.667	.542



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018

Groups Printed- Trucks

	Route 302 From North		Route 302 From South		Land of Nod Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	1	0	0	2	0	0	3
07:15 AM	1	0	0	0	0	0	1
07:30 AM	4	1	0	5	1	0	11
07:45 AM	3	0	0	1	0	0	4
Total	9	1	0	8	1	0	19
08:00 AM	1	0	0	4	0	0	5
08:15 AM	2	0	0	2	0	0	4
08:30 AM	2	0	0	3	0	0	5
08:45 AM	0	0	0	1	0	0	1
Total	5	0	0	10	0	0	15
Grand Total	14	1	0	18	1	0	34
Apprch %	93.3	6.7	0	100	100	0	
Total %	41.2	2.9	0	52.9	2.9	0	

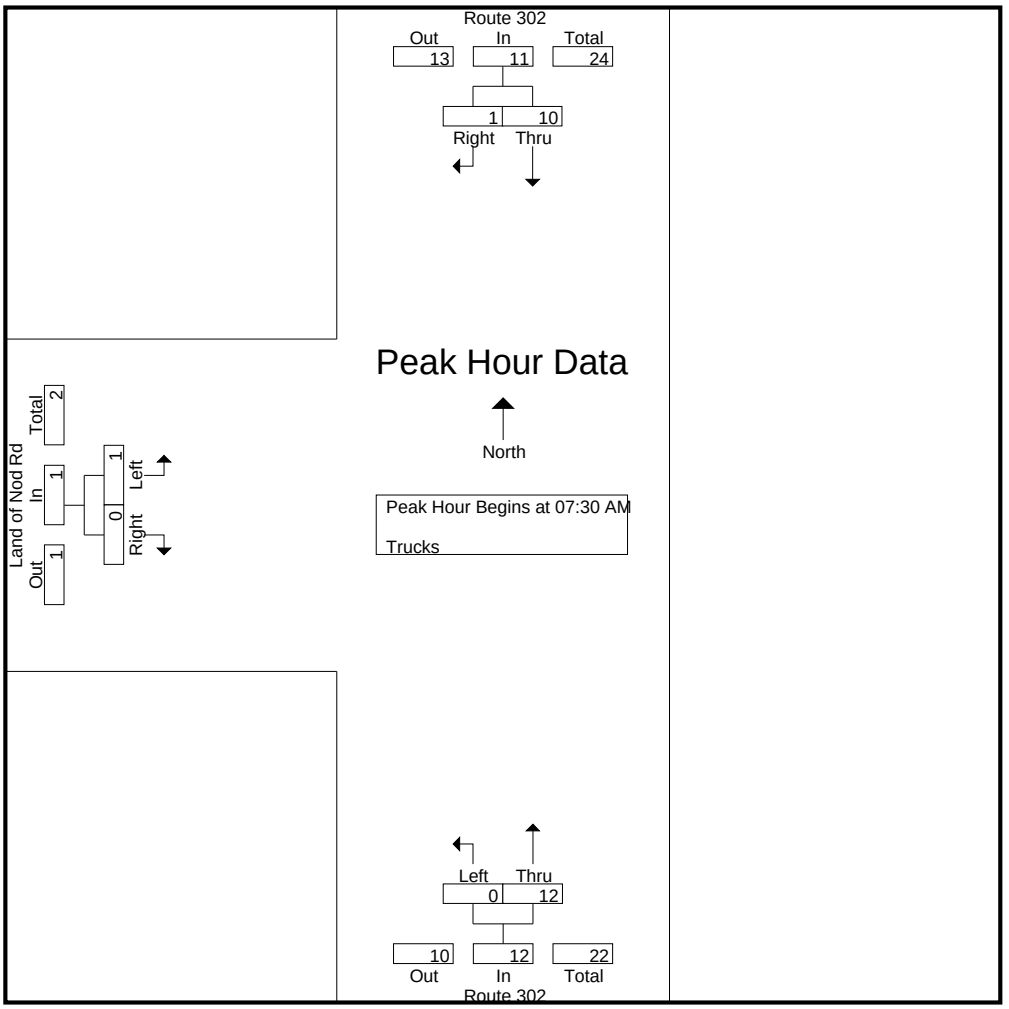
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 8

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**4**	**1**	**5**	0	**5**	**5**	**1**	0	**1**	**11**
07:45 AM	3	0	3	0	1	1	0	0	0	4
08:00 AM	1	0	1	0	4	4	0	0	0	5
08:15 AM	2	0	2	0	2	2	0	0	0	4
Total Volume	10	1	11	0	12	12	1	0	1	24
% App. Total	90.9	9.1		0	100		100	0		
PHF	.625	.250	.550	.000	.600	.600	.250	.000	.250	.545



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

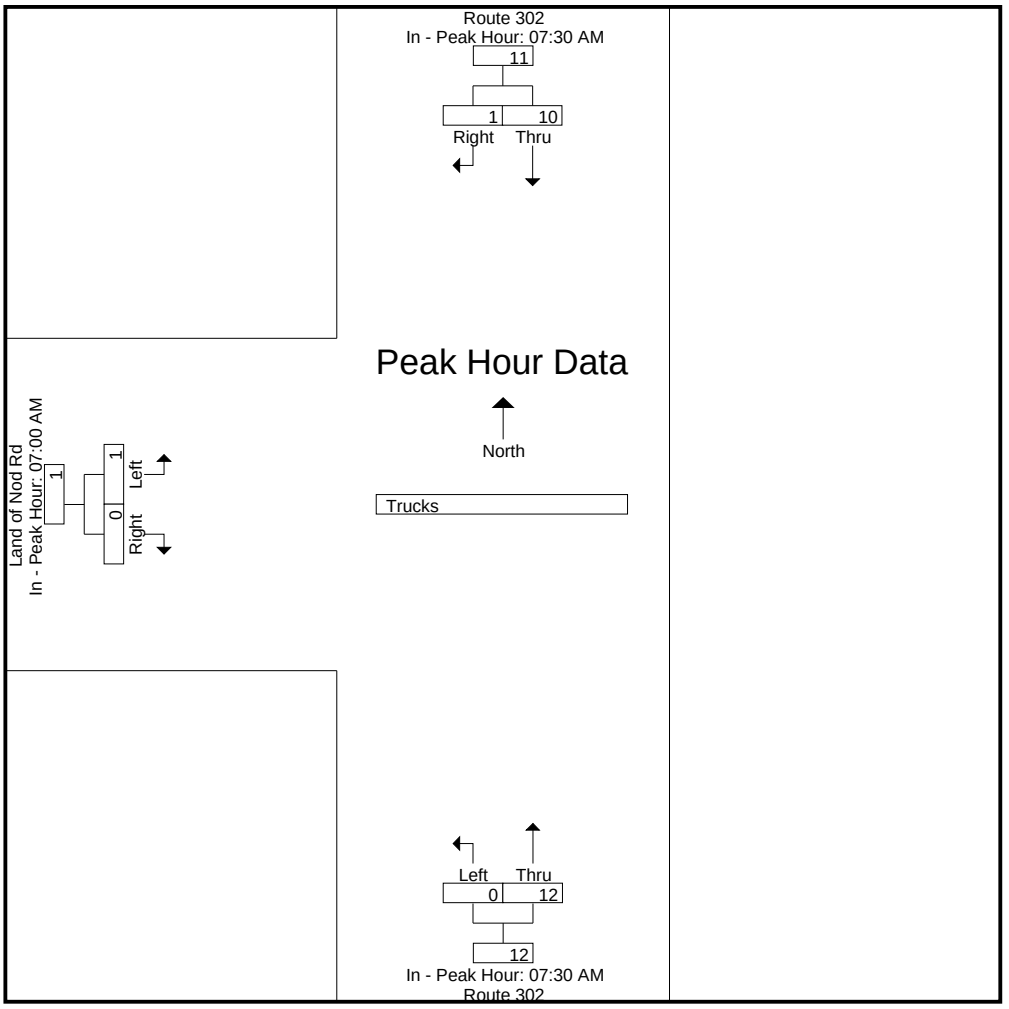
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 9

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:00 AM		
+0 mins.	**4**	**1**	**5**	0	**5**	**5**	0	0	0
+15 mins.	3	0	3	0	1	1	0	0	0
+30 mins.	1	0	1	0	4	4	**1**	0	**1**
+45 mins.	2	0	2	0	2	2	0	0	0
Total Volume	10	1	11	0	12	12	1	0	1
% App. Total	90.9	9.1		0	100		100	0	
PHF	.625	.250	.550	.000	.600	.600	.250	.000	.250



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 10

Groups Printed- Bikes Peds

	Route 302 From North			Route 302 From South			Land of Nod Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	0	0	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	0	0	0	0	0	0	0	1	1
Apprch %	100	0		0	0		0	0				
Total %	100	0		0	0		0	0		0	100	

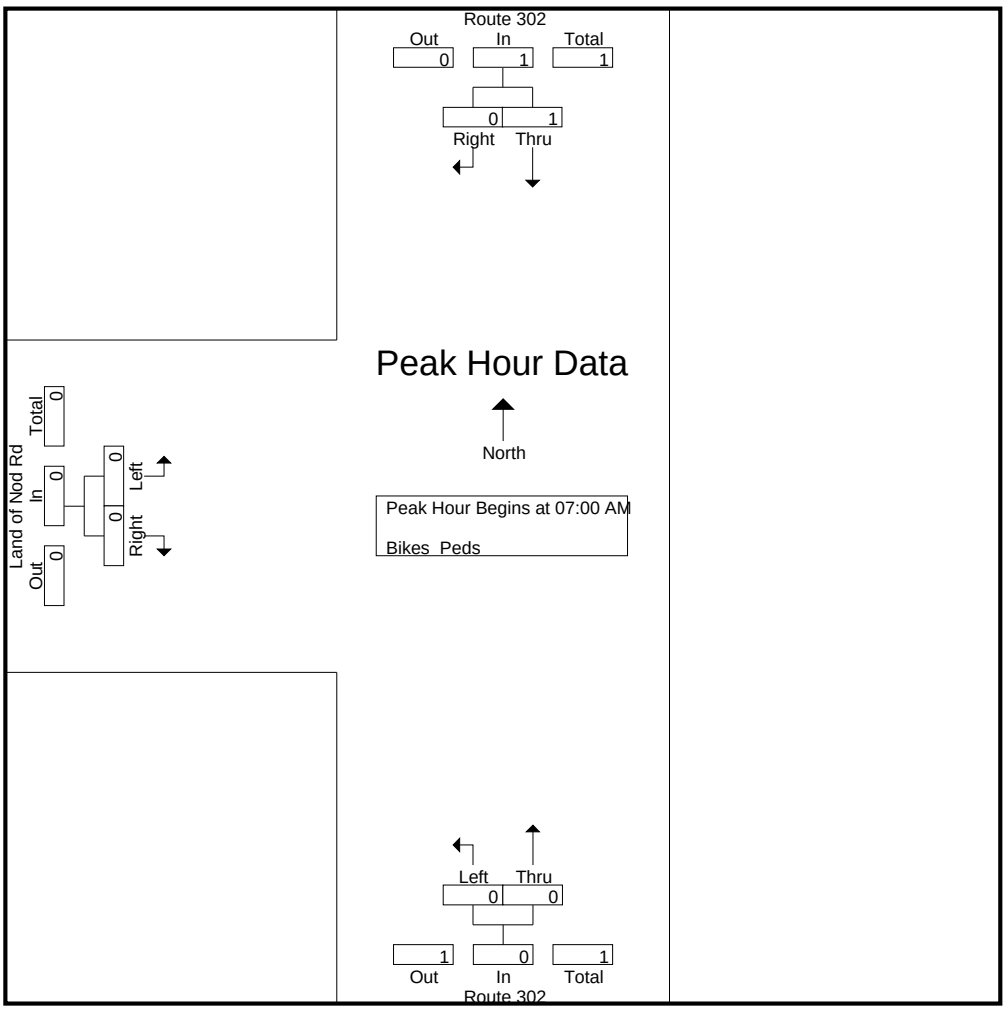
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 11

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	**1**	0	**1**	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Rain

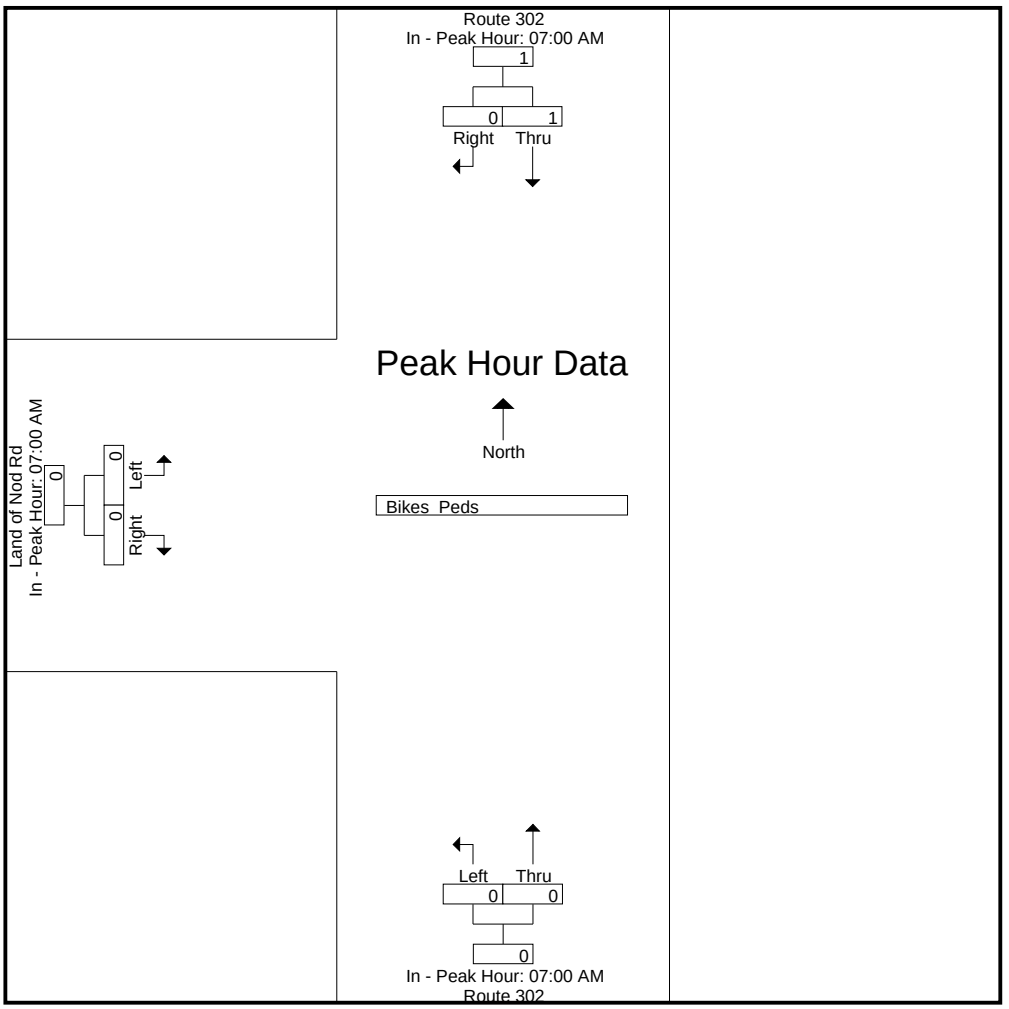
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 12

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	**1**	0	**1**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0
% App. Total	100	0		0	0		0	0	
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 1

Groups Printed- Cars - Trucks

	Route 302 From North		Route 302 From South		Land of Nod Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	101	3	1	188	2	1	296
04:15 PM	91	1	3	238	3	2	338
04:30 PM	117	0	1	232	0	0	350
04:45 PM	96	0	2	247	0	2	347
Total	405	4	7	905	5	5	1331
05:00 PM	102	2	1	280	1	1	387
05:15 PM	128	1	1	261	0	1	392
05:30 PM	88	2	4	238	1	1	334
05:45 PM	74	1	4	236	0	1	316
Total	392	6	10	1015	2	4	1429
Grand Total	797	10	17	1920	7	9	2760
Apprch %	98.8	1.2	0.9	99.1	43.8	56.2	
Total %	28.9	0.4	0.6	69.6	0.3	0.3	
Cars	792	10	17	1916	7	9	2751
% Cars	99.4	100	100	99.8	100	100	99.7
Trucks	5	0	0	4	0	0	9
% Trucks	0.6	0	0	0.2	0	0	0.3

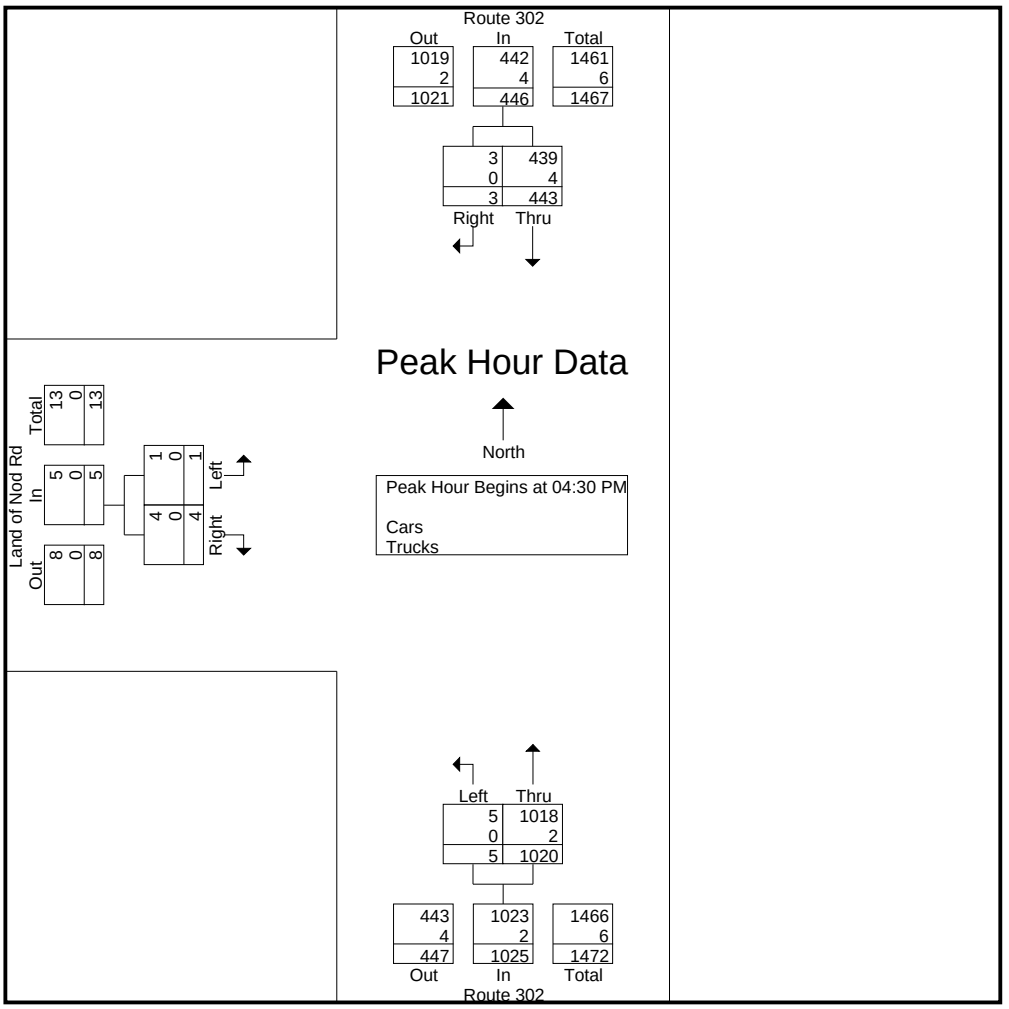
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 2

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	117	0	117	1	232	233	0	0	0	350
04:45 PM	96	0	96	**2**	247	249	0	**2**	**2**	347
05:00 PM	102	**2**	104	1	**280**	**281**	**1**	1	2	387
05:15 PM	**128**	1	**129**	1	261	262	0	1	1	**392**
Total Volume	443	3	446	5	1020	1025	1	4	5	1476
% App. Total	99.3	0.7		0.5	99.5		20	80		
PHF	.865	.375	.864	.625	.911	.912	.250	.500	.625	.941
Cars	439	3	442	5	1018	1023	1	4	5	1470
% Cars	99.1	100	99.1	100	99.8	99.8	100	100	100	99.6
Trucks	4	0	4	0	2	2	0	0	0	6
% Trucks	0.9	0	0.9	0	0.2	0.2	0	0	0	0.4



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

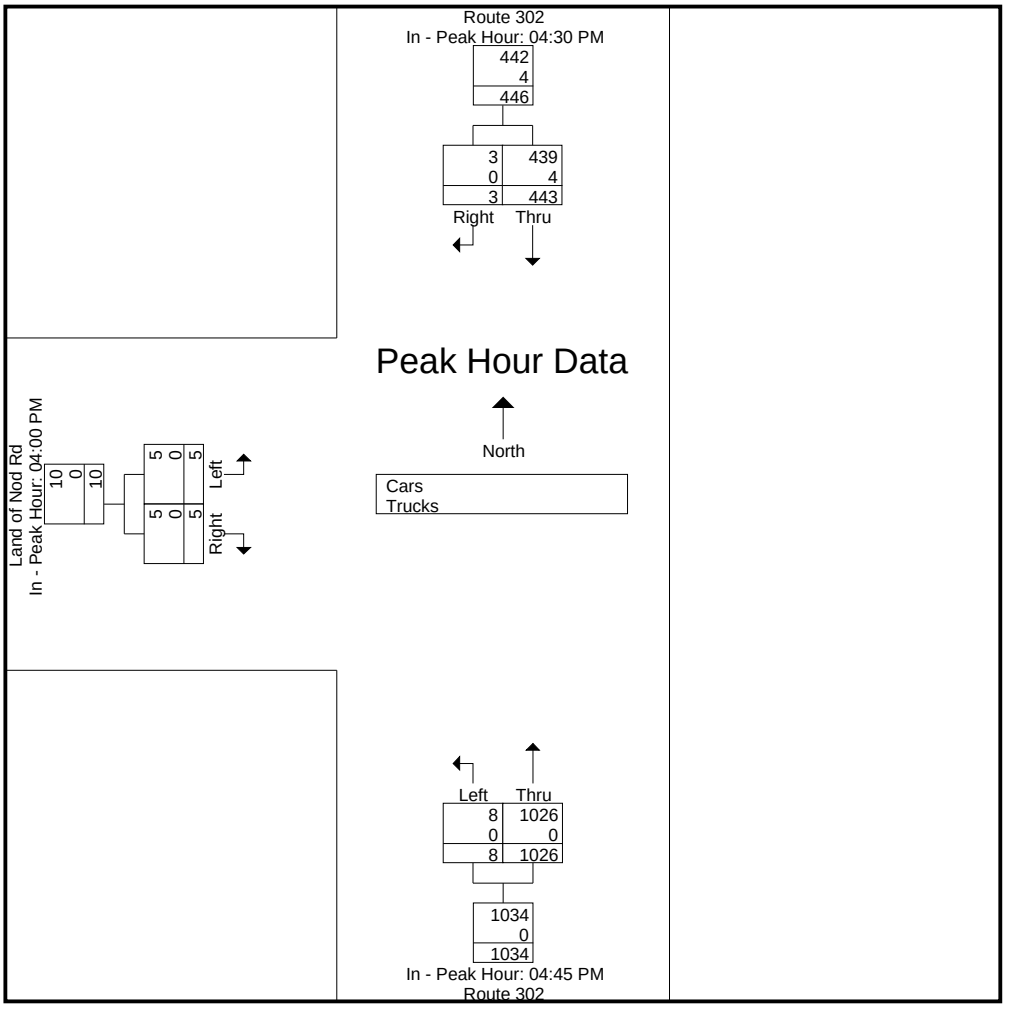
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 3

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:00 PM		
+0 mins.	117	0	117	2	247	249	2	1	3
+15 mins.	96	0	96	1	**280**	**281**	**3**	**2**	**5**
+30 mins.	102	**2**	104	1	261	262	0	0	0
+45 mins.	**128**	1	**129**	**4**	238	242	0	2	2
Total Volume	443	3	446	8	1026	1034	5	5	10
% App. Total	99.3	0.7		0.8	99.2		50	50	
PHF	.865	.375	.864	.500	.916	.920	.417	.625	.500
Cars	439	3	442	8	1026	1034	5	5	10
% Cars	99.1	100	99.1	100	100	100	100	100	100
Trucks	4	0	4	0	0	0	0	0	0
% Trucks	0.9	0	0.9	0	0	0	0	0	0



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 4

Groups Printed- Cars

	Route 302 From North		Route 302 From South		Land of Nod Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	101	3	1	188	2	1	296
04:15 PM	90	1	3	236	3	2	335
04:30 PM	115	0	1	230	0	0	346
04:45 PM	96	0	2	247	0	2	347
Total	402	4	7	901	5	5	1324
05:00 PM	101	2	1	280	1	1	386
05:15 PM	127	1	1	261	0	1	391
05:30 PM	88	2	4	238	1	1	334
05:45 PM	74	1	4	236	0	1	316
Total	390	6	10	1015	2	4	1427
Grand Total	792	10	17	1916	7	9	2751
Apprch %	98.8	1.2	0.9	99.1	43.8	56.2	
Total %	28.8	0.4	0.6	69.6	0.3	0.3	

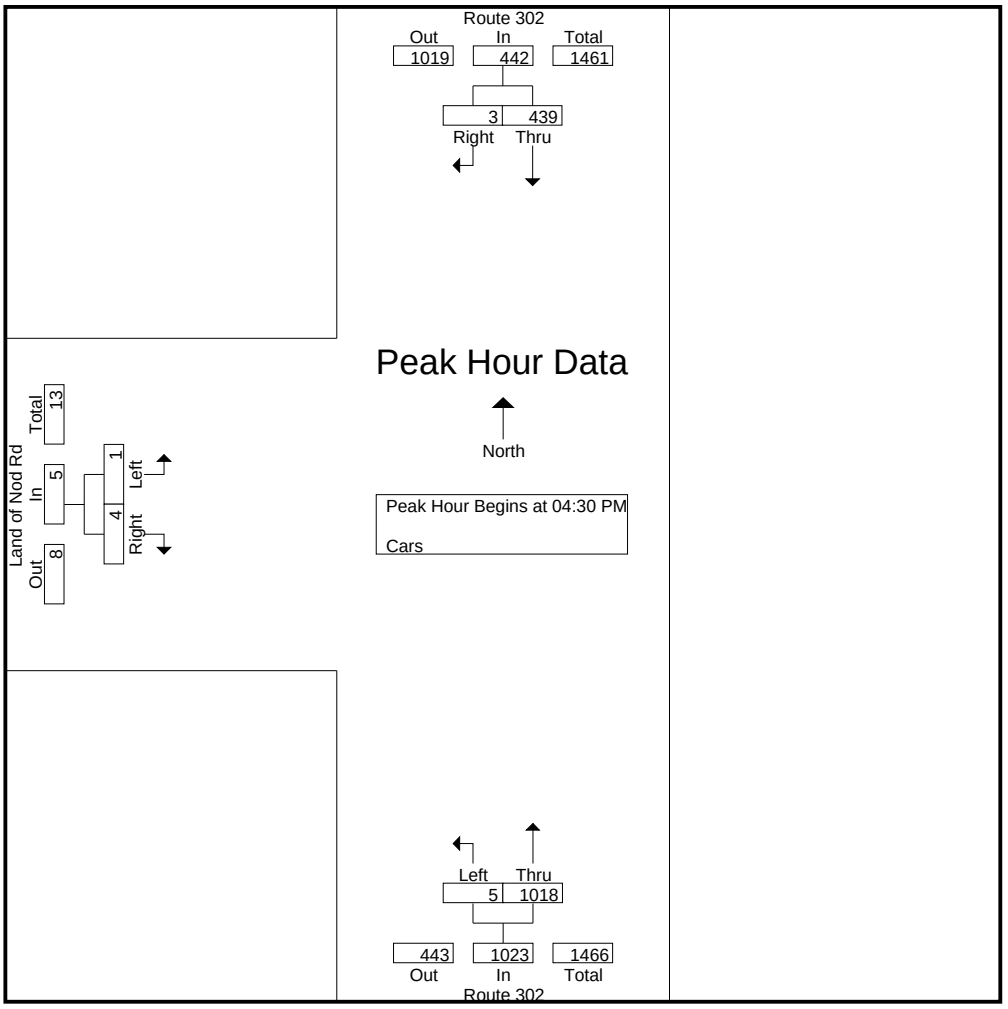
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 5

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	115	0	115	1	230	231	0	0	0	346
04:45 PM	96	0	96	**2**	247	249	0	**2**	**2**	347
05:00 PM	101	**2**	103	1	**280**	**281**	**1**	1	2	386
05:15 PM	**127**	1	**128**	1	261	262	0	1	1	**391**
Total Volume	439	3	442	5	1018	1023	1	4	5	1470
% App. Total	99.3	0.7		0.5	99.5		20	80		
PHF	.864	.375	.863	.625	.909	.910	.250	.500	.625	.940



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

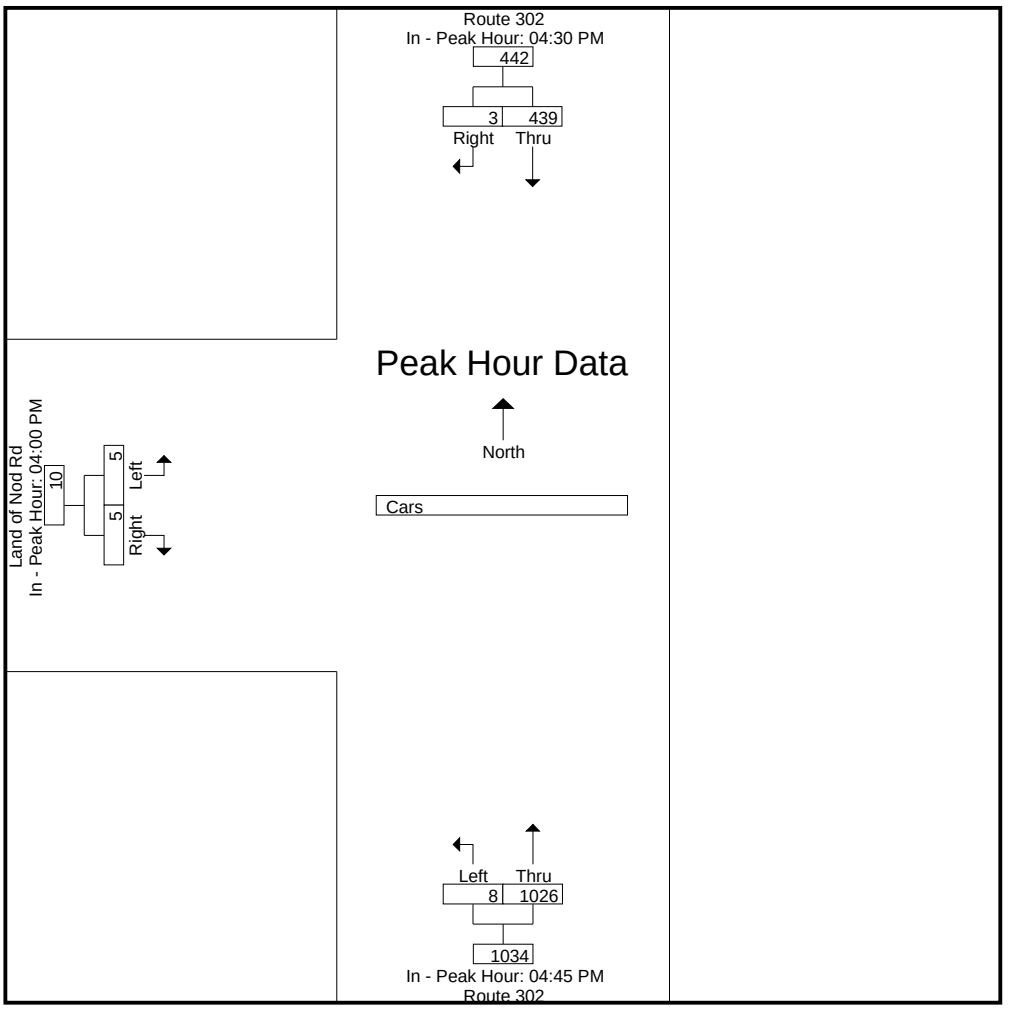
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 6

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:00 PM		
+0 mins.	115	0	115	2	247	249	2	1	3
+15 mins.	96	0	96	1	**280**	**281**	**3**	**2**	**5**
+30 mins.	101	**2**	103	1	261	262	0	0	0
+45 mins.	**127**	1	**128**	**4**	238	242	0	2	2
Total Volume	439	3	442	8	1026	1034	5	5	10
% App. Total	99.3	0.7		0.8	99.2		50	50	
PHF	.864	.375	.863	.500	.916	.920	.417	.625	.500



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018

Groups Printed- Trucks

	Route 302 From North		Route 302 From South		Land of Nod Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0
04:15 PM	1	0	0	2	0	0	3
04:30 PM	2	0	0	2	0	0	4
04:45 PM	0	0	0	0	0	0	0
Total	3	0	0	4	0	0	7
05:00 PM	1	0	0	0	0	0	1
05:15 PM	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	2	0	0	0	0	0	2
Grand Total	5	0	0	4	0	0	9
Apprch %	100	0	0	100	0	0	
Total %	55.6	0	0	44.4	0	0	

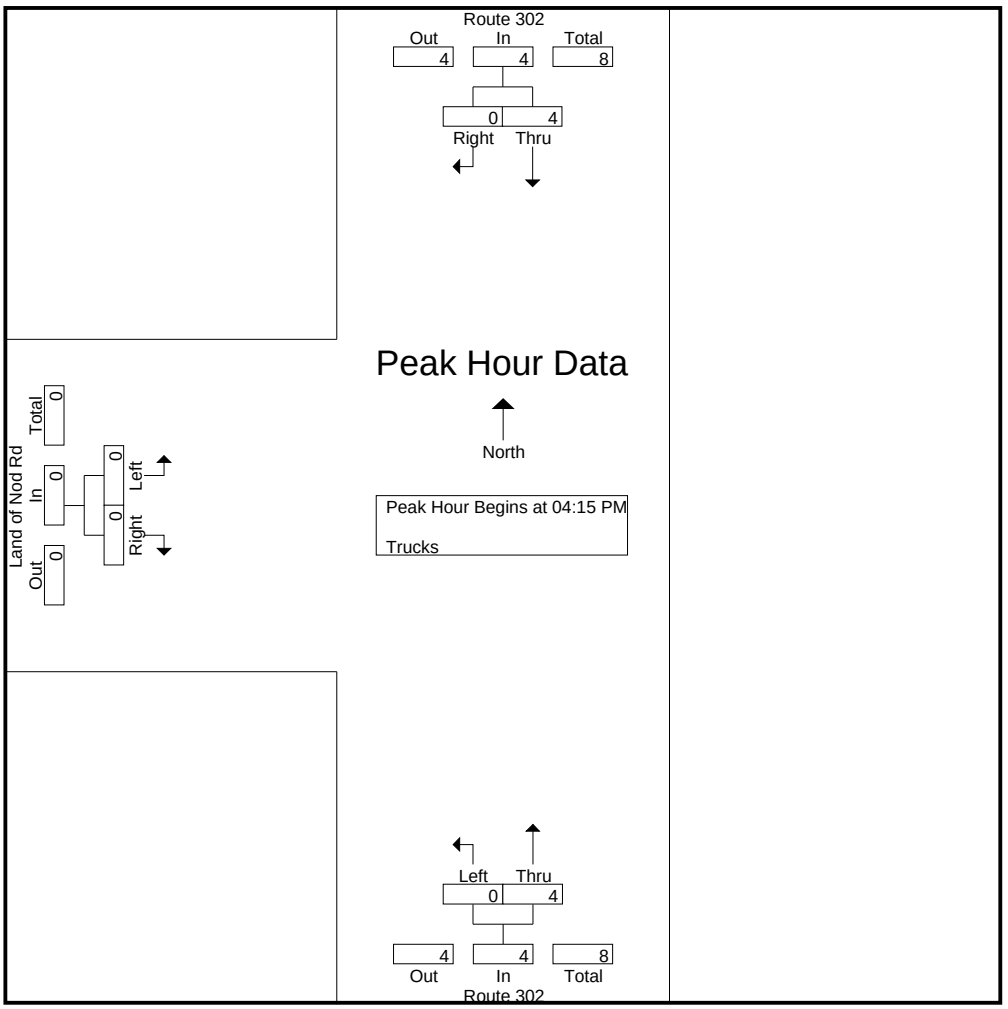
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 8

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	1	0	1	0	**2**	**2**	0	0	0	3
04:30 PM	**2**	0	**2**	0	2	2	0	0	0	**4**
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	4	0	4	0	4	4	0	0	0	8
% App. Total	100	0		0	100		0	0		
PHF	.500	.000	.500	.000	.500	.500	.000	.000	.000	.500



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

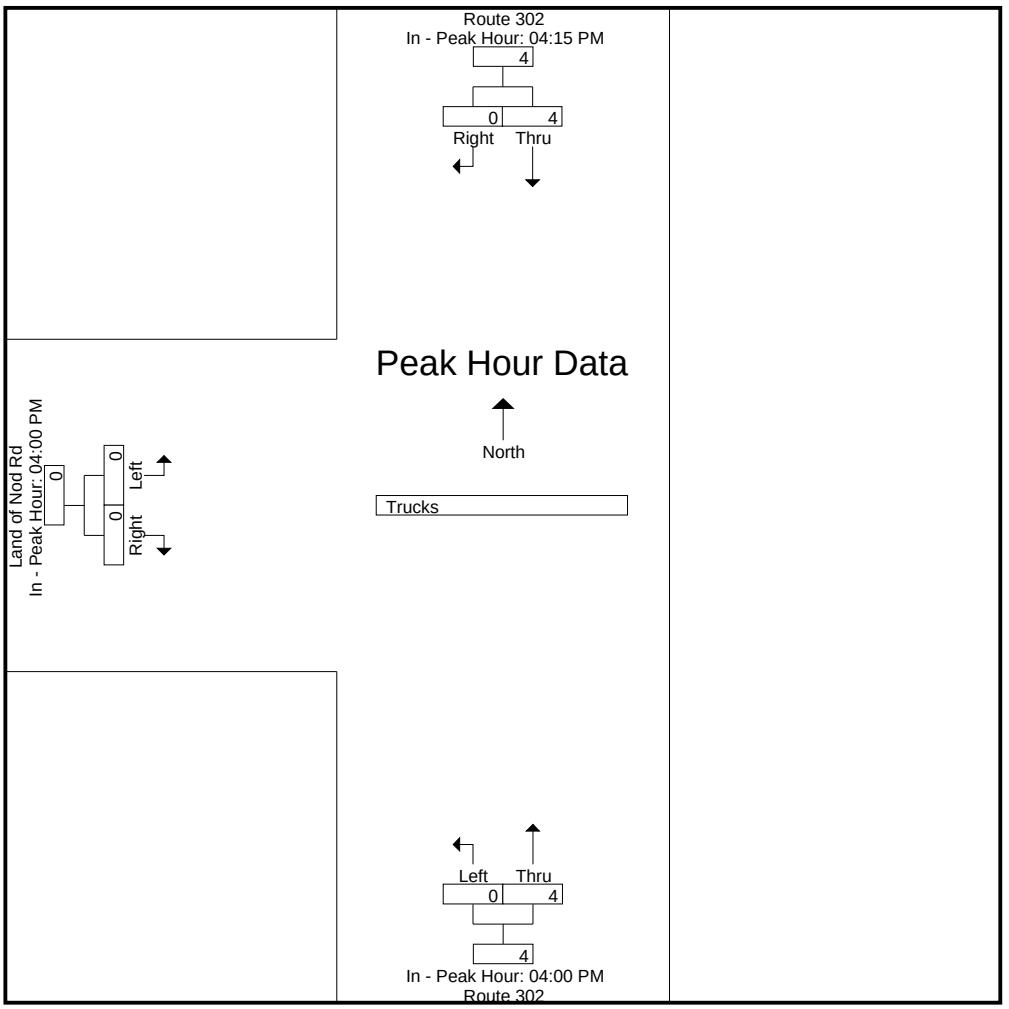
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 9

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			04:00 PM			04:00 PM		
+0 mins.	1	0	1	0	0	0	0	0	0
+15 mins.	**2**	0	**2**	0	**2**	**2**	0	0	0
+30 mins.	0	0	0	0	2	2	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	4	0	4	0	4	4	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.500	.000	.500	.000	.500	.500	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018

Groups Printed- Bikes Peds

	Route 302 From North			Route 302 From South			Land of Nod Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	0	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	0	0	0	0	1	1
Grand Total	1	0	0	0	1	0	0	0	0	0	2	2
Apprch %	100	0		0	100		0	0				
Total %	50	0		0	50		0	0		0	100	

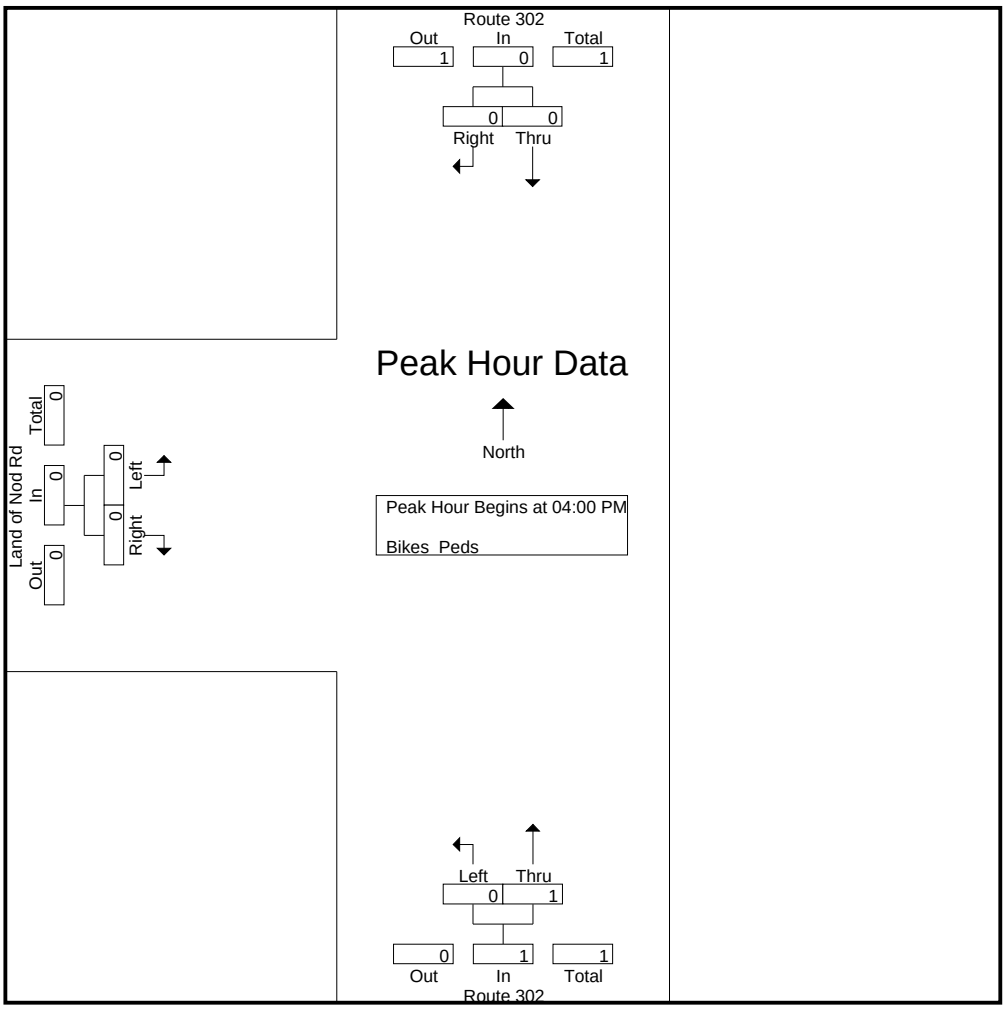
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 11

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	**1**	**1**	0	0	0	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Land of Nod Road
City/State : Windham, ME
Weather : Clear

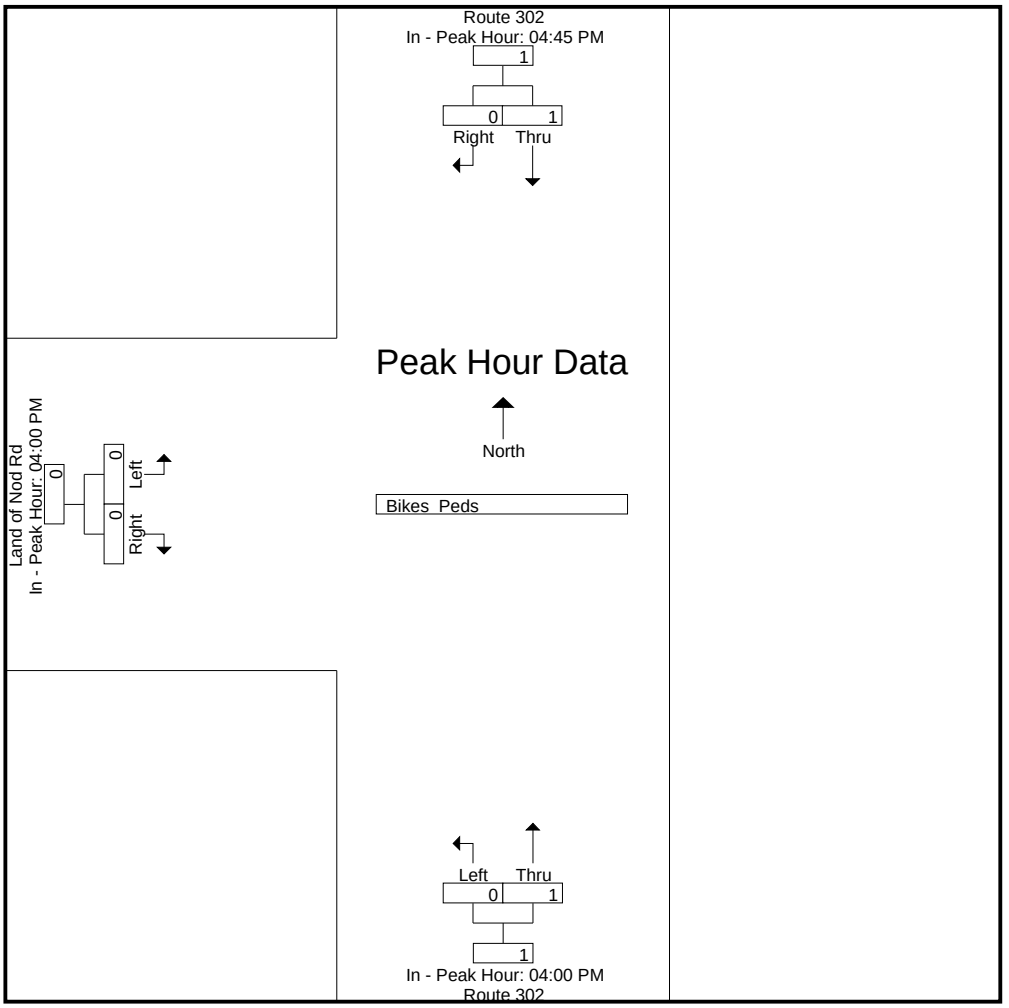
File Name : 16236001
Site Code : 16236001
Start Date : 9/18/2018
Page No : 12

	Route 302 From North			Route 302 From South			Land of Nod Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	**1**	**1**	0	0	0
+45 mins.	**1**	0	**1**	0	0	0	0	0	0
Total Volume	1	0	1	0	1	1	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 1

Groups Printed- Cars - Trucks

	Route 302 From North		Route 302 From South		Pope Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	237	2	14	50	3	50	356
07:15 AM	273	4	9	56	3	44	389
07:30 AM	225	3	5	72	0	37	342
07:45 AM	202	3	8	81	4	31	329
Total	937	12	36	259	10	162	1416
08:00 AM	147	3	4	78	1	18	251
08:15 AM	197	3	3	70	3	26	302
08:30 AM	176	1	6	72	1	16	272
08:45 AM	141	2	6	78	1	11	239
Total	661	9	19	298	6	71	1064
Grand Total	1598	21	55	557	16	233	2480
Apprch %	98.7	1.3	9	91	6.4	93.6	
Total %	64.4	0.8	2.2	22.5	0.6	9.4	
Cars	1585	20	55	538	16	232	2446
% Cars	99.2	95.2	100	96.6	100	99.6	98.6
Trucks	13	1	0	19	0	1	34
% Trucks	0.8	4.8	0	3.4	0	0.4	1.4

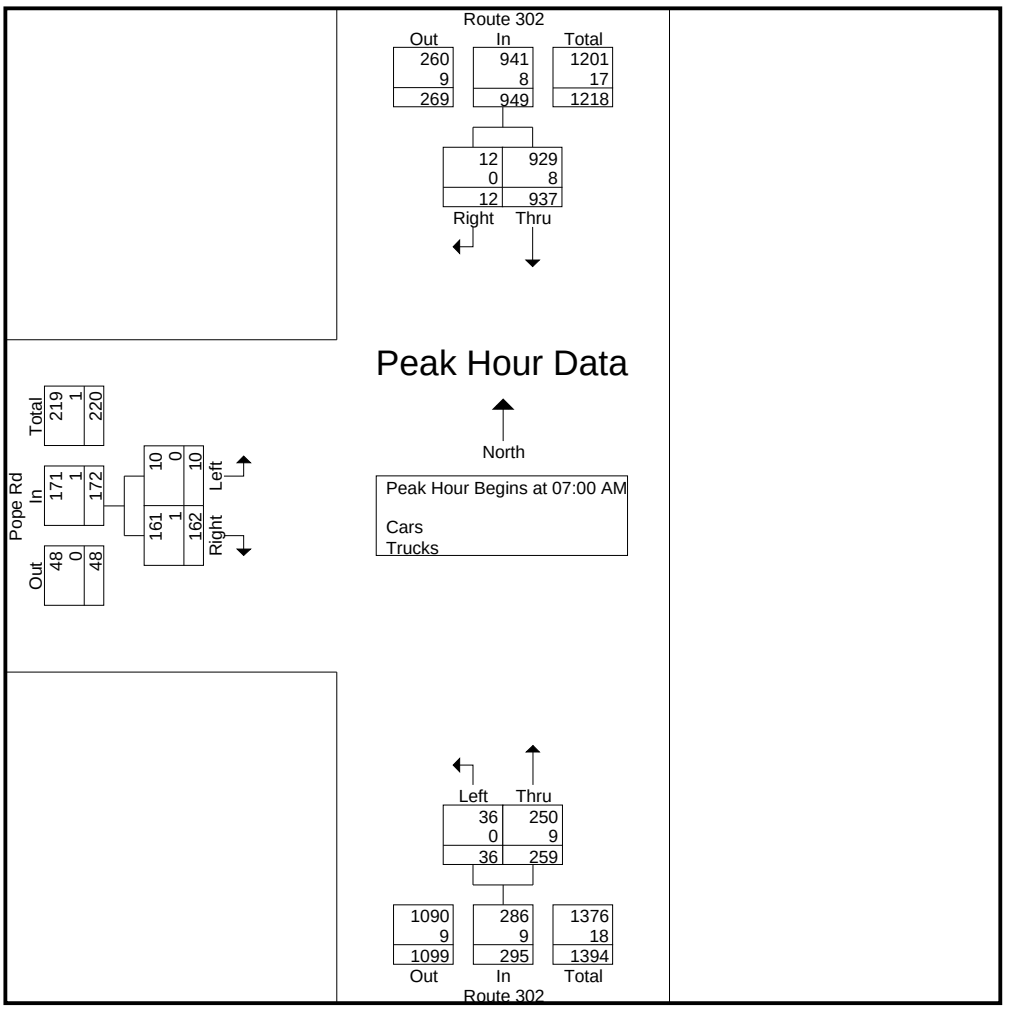
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 2

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	237	2	239	**14**	50	64	3	**50**	**53**	356
07:15 AM	**273**	**4**	**277**	9	56	65	3	44	47	**389**
07:30 AM	225	3	228	5	72	77	0	37	37	342
07:45 AM	202	3	205	8	**81**	**89**	**4**	31	35	329
Total Volume	937	12	949	36	259	295	10	162	172	1416
% App. Total	98.7	1.3		12.2	87.8		5.8	94.2		
PHF	.858	.750	.856	.643	.799	.829	.625	.810	.811	.910
Cars	929	12	941	36	250	286	10	161	171	1398
% Cars	99.1	100	99.2	100	96.5	96.9	100	99.4	99.4	98.7
Trucks	8	0	8	0	9	9	0	1	1	18
% Trucks	0.9	0	0.8	0	3.5	3.1	0	0.6	0.6	1.3



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

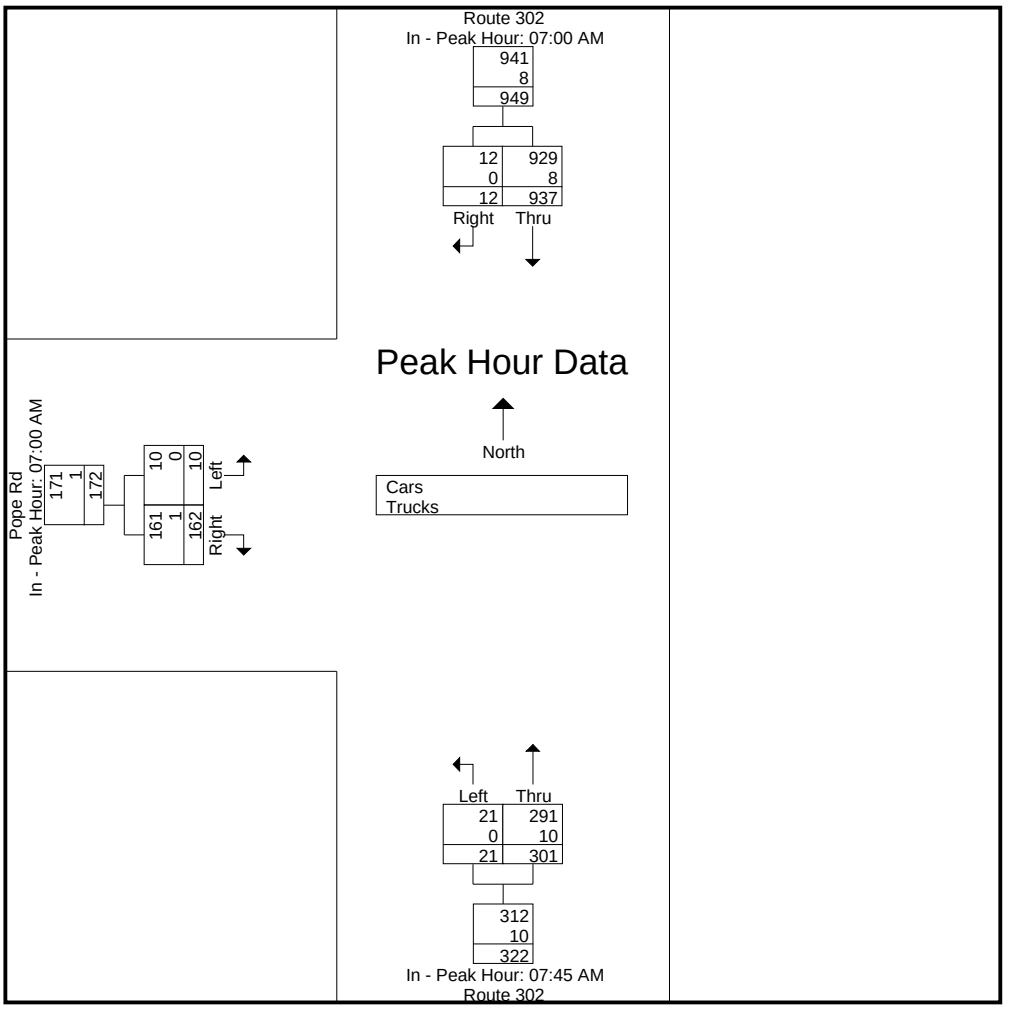
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 3

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:45 AM			07:00 AM		
+0 mins.	237	2	239	**8**	**81**	**89**	3	**50**	**53**
+15 mins.	**273**	**4**	**277**	4	78	82	3	44	47
+30 mins.	225	3	228	3	70	73	0	37	37
+45 mins.	202	3	205	6	72	78	**4**	31	35
Total Volume	937	12	949	21	301	322	10	162	172
% App. Total	98.7	1.3		6.5	93.5		5.8	94.2	
PHF	.858	.750	.856	.656	.929	.904	.625	.810	.811
Cars	929	12	941	21	291	312	10	161	171
% Cars	99.1	100	99.2	100	96.7	96.9	100	99.4	99.4
Trucks	8	0	8	0	10	10	0	1	1
% Trucks	0.9	0	0.8	0	3.3	3.1	0	0.6	0.6



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Cars

	Route 302 From North		Route 302 From South		Pope Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	236	2	14	48	3	50	353
07:15 AM	271	4	9	56	3	43	386
07:30 AM	222	3	5	66	0	37	333
07:45 AM	200	3	8	80	4	31	326
Total	929	12	36	250	10	161	1398
08:00 AM	146	3	4	75	1	18	247
08:15 AM	195	2	3	67	3	26	296
08:30 AM	174	1	6	69	1	16	267
08:45 AM	141	2	6	77	1	11	238
Total	656	8	19	288	6	71	1048
Grand Total	1585	20	55	538	16	232	2446
Apprch %	98.8	1.2	9.3	90.7	6.5	93.5	
Total %	64.8	0.8	2.2	22	0.7	9.5	

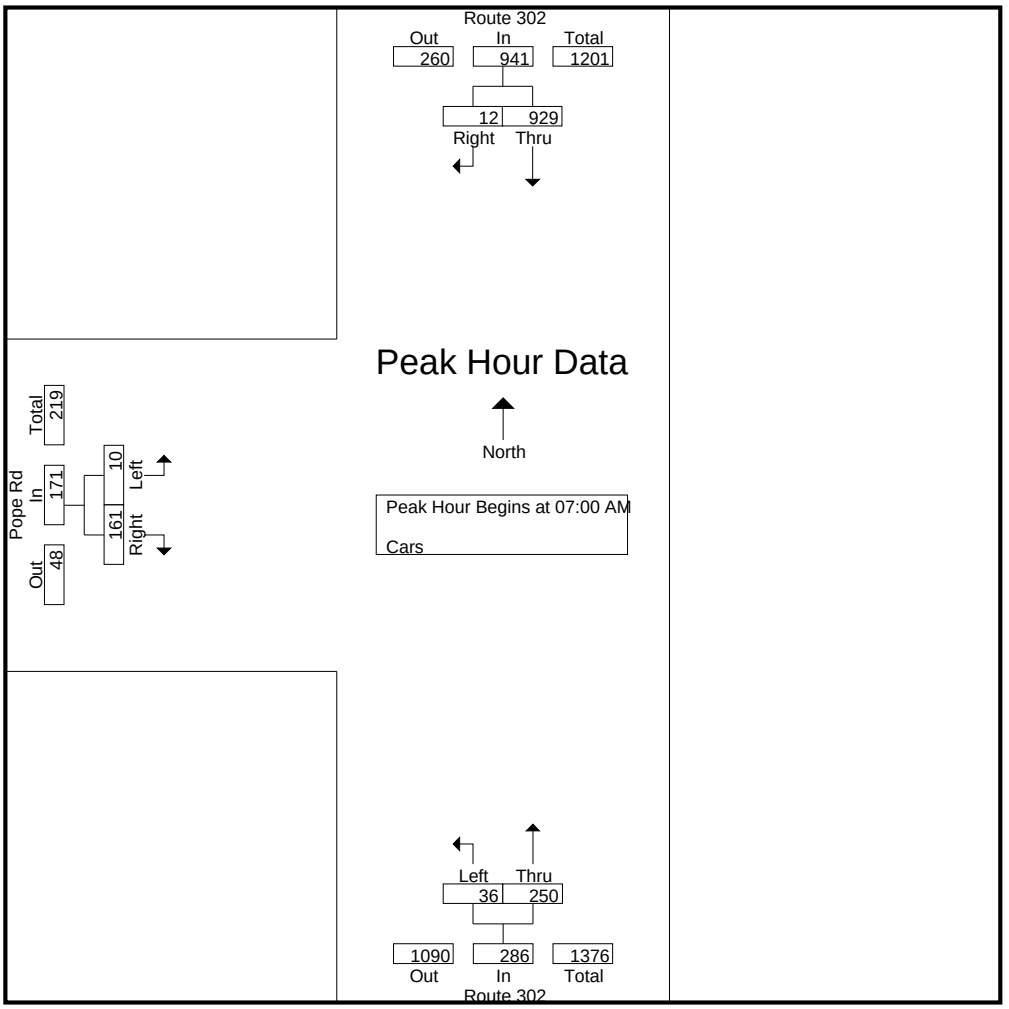
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 5

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	236	2	238	**14**	48	62	3	**50**	**53**	353
07:15 AM	**271**	**4**	**275**	9	56	65	3	43	46	**386**
07:30 AM	222	3	225	5	66	71	0	37	37	333
07:45 AM	200	3	203	8	**80**	**88**	**4**	31	35	326
Total Volume	929	12	941	36	250	286	10	161	171	1398
% App. Total	98.7	1.3		12.6	87.4		5.8	94.2		
PHF	.857	.750	.855	.643	.781	.813	.625	.805	.807	.905



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

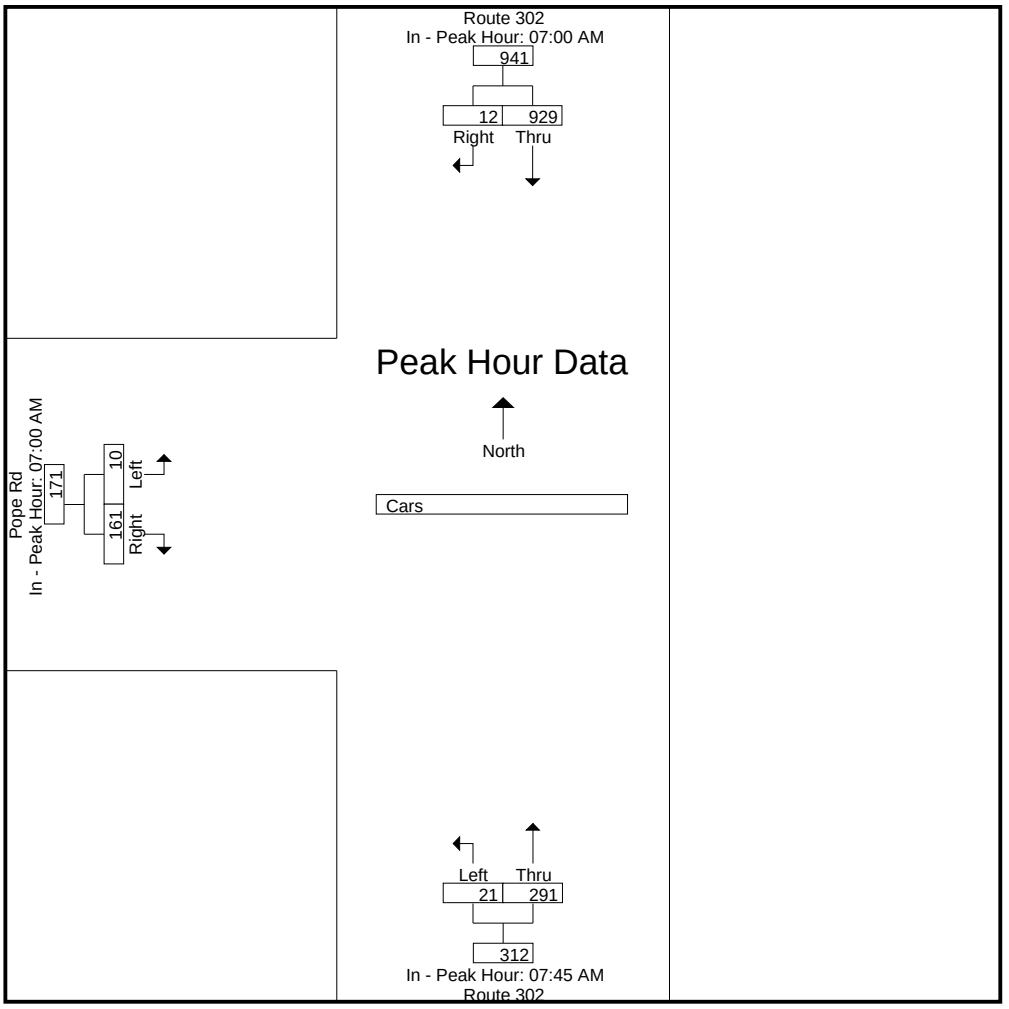
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 6

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:45 AM			07:00 AM		
+0 mins.	236	2	238	**8**	**80**	**88**	3	**50**	**53**
+15 mins.	**271**	**4**	**275**	4	75	79	3	43	46
+30 mins.	222	3	225	3	67	70	0	37	37
+45 mins.	200	3	203	6	69	75	**4**	31	35
Total Volume	929	12	941	21	291	312	10	161	171
% App. Total	98.7	1.3		6.7	93.3		5.8	94.2	
PHF	.857	.750	.855	.656	.909	.886	.625	.805	.807



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Trucks

	Route 302 From North		Route 302 From South		Pope Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	1	0	0	2	0	0	3
07:15 AM	2	0	0	0	0	1	3
07:30 AM	3	0	0	6	0	0	9
07:45 AM	2	0	0	1	0	0	3
Total	8	0	0	9	0	1	18
08:00 AM	1	0	0	3	0	0	4
08:15 AM	2	1	0	3	0	0	6
08:30 AM	2	0	0	3	0	0	5
08:45 AM	0	0	0	1	0	0	1
Total	5	1	0	10	0	0	16
Grand Total	13	1	0	19	0	1	34
Apprch %	92.9	7.1	0	100	0	100	
Total %	38.2	2.9	0	55.9	0	2.9	

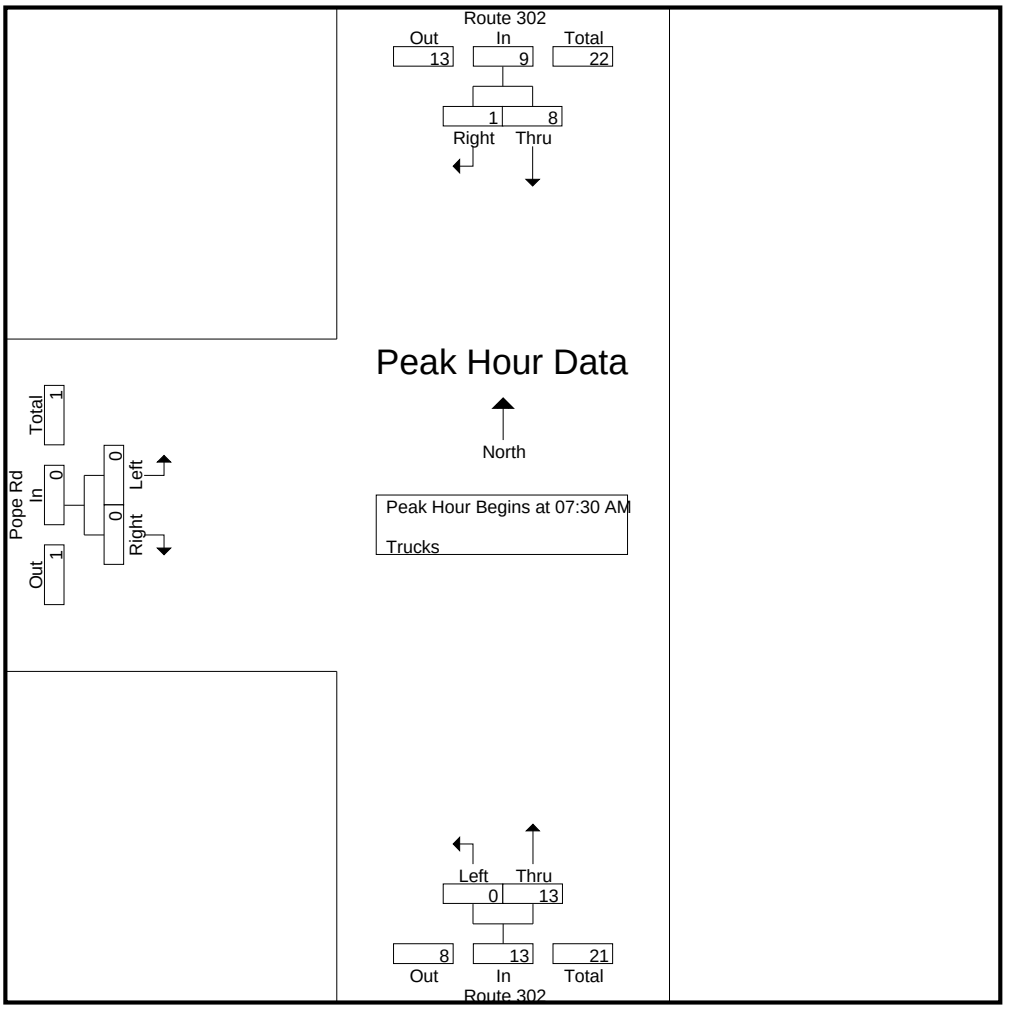
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 8

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**3**	0	**3**	0	**6**	**6**	0	0	0	**9**
07:45 AM	2	0	2	0	1	1	0	0	0	3
08:00 AM	1	0	1	0	3	3	0	0	0	4
08:15 AM	2	**1**	3	0	3	3	0	0	0	6
Total Volume	8	1	9	0	13	13	0	0	0	22
% App. Total	88.9	11.1		0	100		0	0		
PHF	.667	.250	.750	.000	.542	.542	.000	.000	.000	.611



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

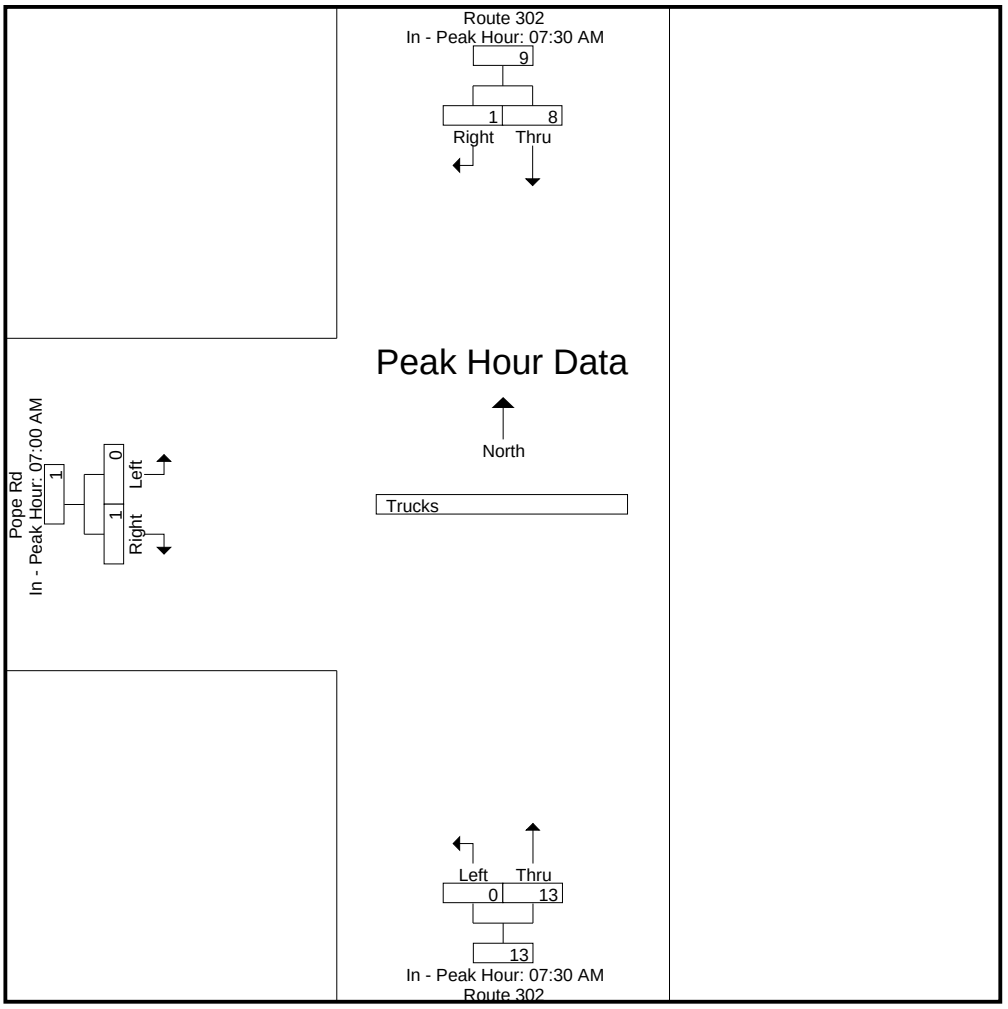
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 9

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:00 AM		
+0 mins.	**3**	0	**3**	0	**6**	**6**	0	0	0
+15 mins.	2	0	2	0	1	1	0	**1**	**1**
+30 mins.	1	0	1	0	3	3	0	0	0
+45 mins.	2	**1**	3	0	3	3	0	0	0
Total Volume	8	1	9	0	13	13	0	1	1
% App. Total	88.9	11.1		0	100		0	100	
PHF	.667	.250	.750	.000	.542	.542	.000	.250	.250



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Bikes Peds

	Route 302 From North			Route 302 From South			Pope Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

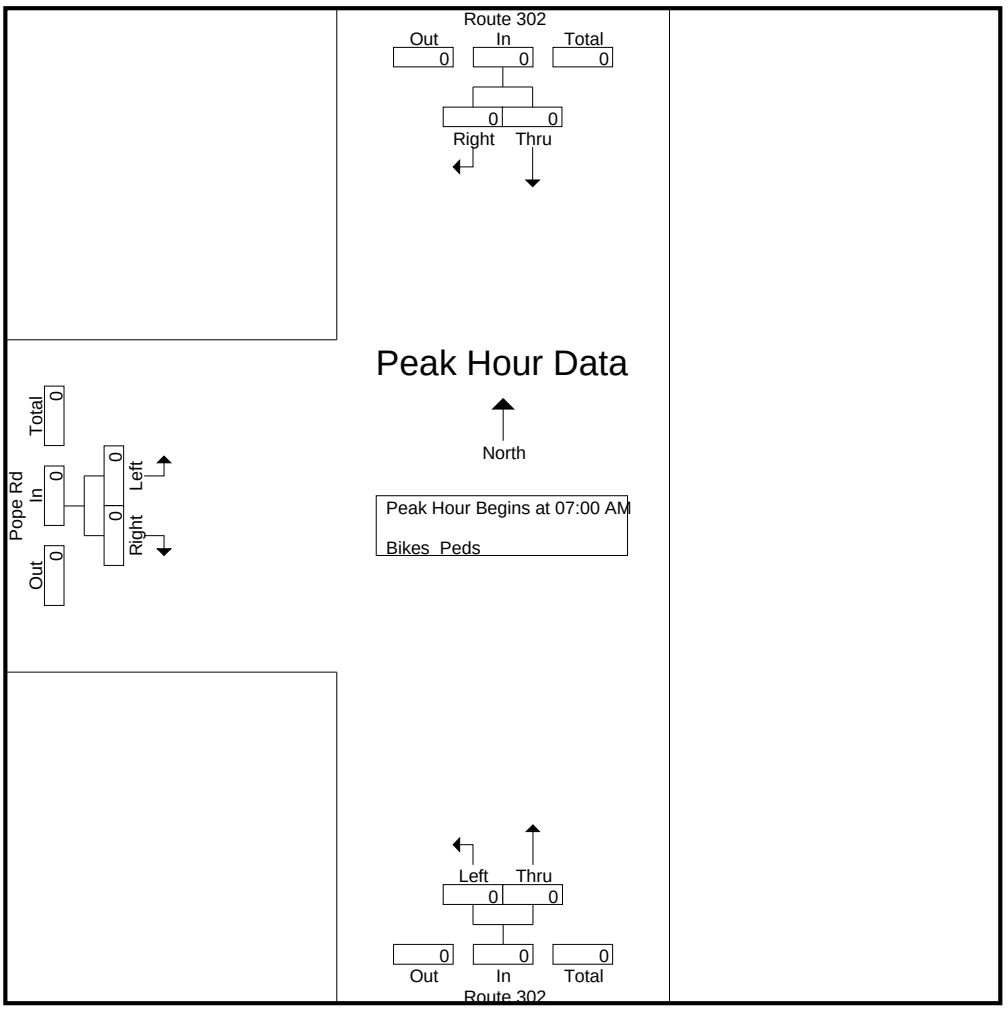
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 11

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

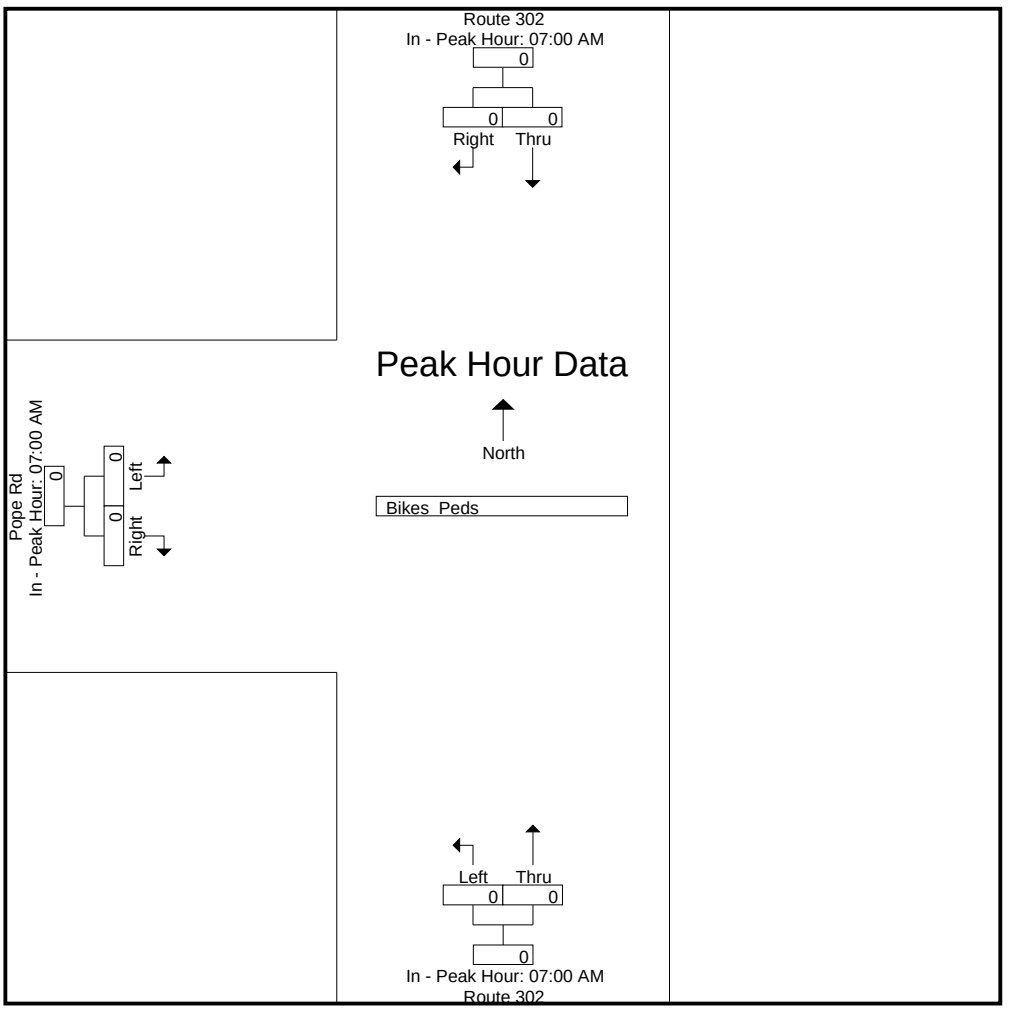
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 12

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Cars - Trucks

	Route 302 From North		Route 302 From South		Pope Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	92	2	20	168	2	15	299
04:15 PM	89	1	15	212	2	13	332
04:30 PM	105	3	25	194	0	13	340
04:45 PM	88	2	24	229	2	4	349
Total	374	8	84	803	6	45	1320
05:00 PM	100	4	36	247	4	10	401
05:15 PM	121	3	24	238	3	12	401
05:30 PM	89	4	18	215	1	9	336
05:45 PM	69	3	34	196	1	4	307
Total	379	14	112	896	9	35	1445
Grand Total	753	22	196	1699	15	80	2765
Apprch %	97.2	2.8	10.3	89.7	15.8	84.2	
Total %	27.2	0.8	7.1	61.4	0.5	2.9	
Cars	749	22	196	1695	15	80	2757
% Cars	99.5	100	100	99.8	100	100	99.7
Trucks	4	0	0	4	0	0	8
% Trucks	0.5	0	0	0.2	0	0	0.3

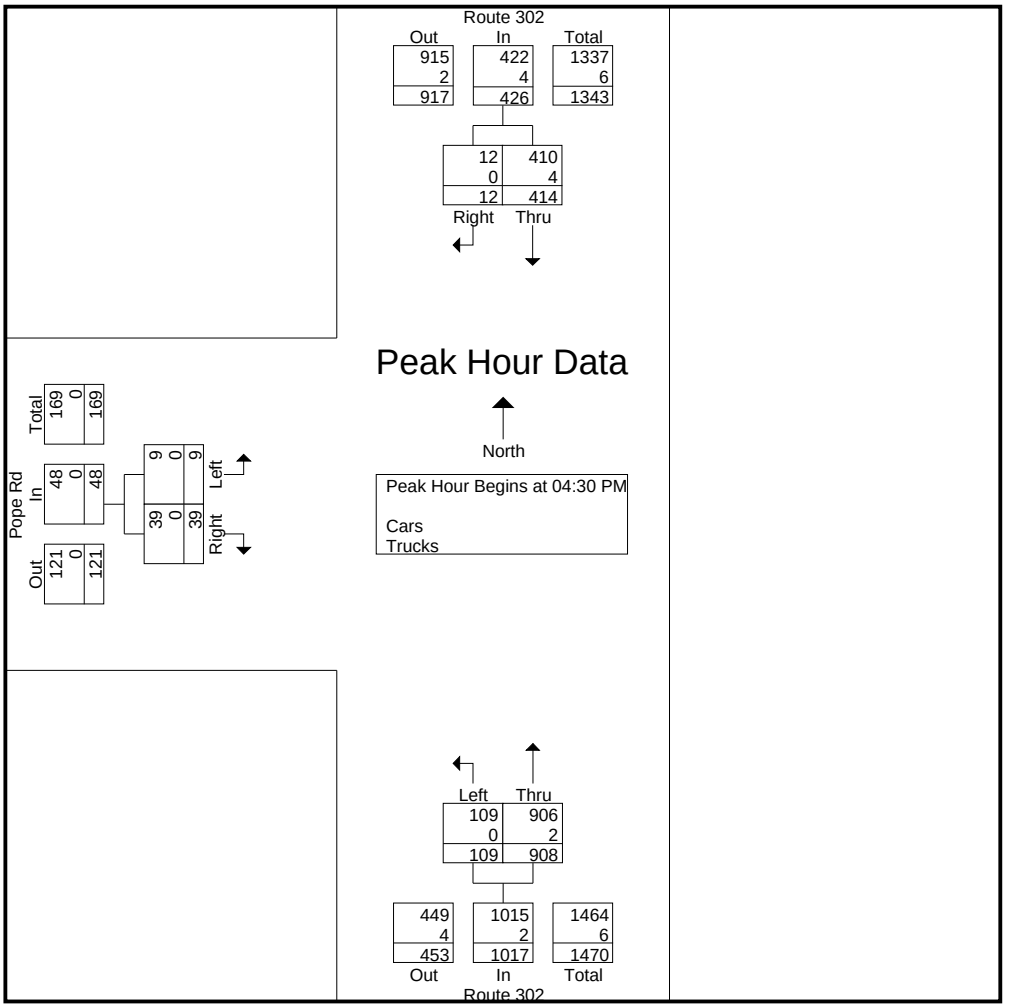
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 2

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	105	3	108	25	194	219	0	**13**	13	340
04:45 PM	88	2	90	24	229	253	2	4	6	349
05:00 PM	100	**4**	104	**36**	**247**	**283**	**4**	10	14	**401**
05:15 PM	**121**	3	**124**	24	238	262	3	12	**15**	401
Total Volume	414	12	426	109	908	1017	9	39	48	1491
% App. Total	97.2	2.8		10.7	89.3		18.8	81.2		
PHF	.855	.750	.859	.757	.919	.898	.563	.750	.800	.930
Cars	410	12	422	109	906	1015	9	39	48	1485
% Cars	99.0	100	99.1	100	99.8	99.8	100	100	100	99.6
Trucks	4	0	4	0	2	2	0	0	0	6
% Trucks	1.0	0	0.9	0	0.2	0.2	0	0	0	0.4



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

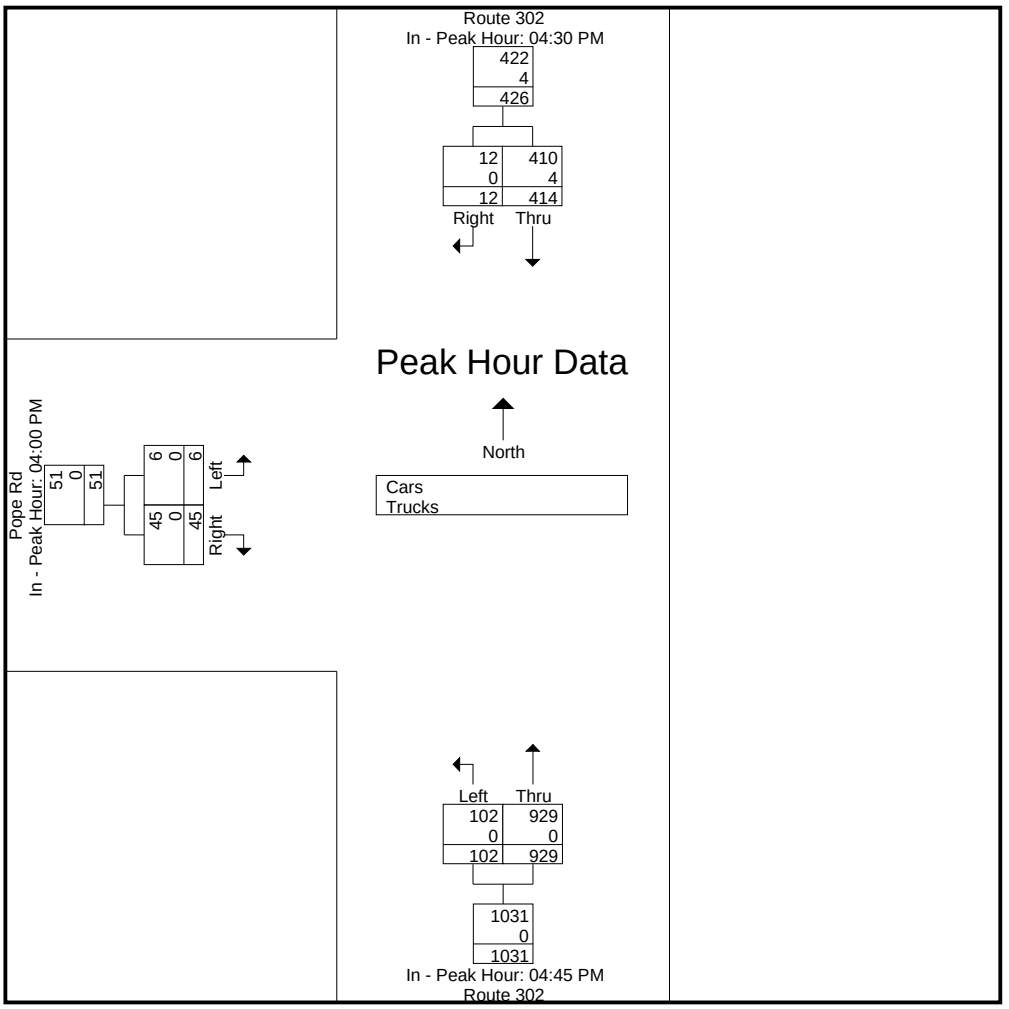
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 3

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:00 PM		
+0 mins.	105	3	108	24	229	253	**2**	**15**	**17**
+15 mins.	88	2	90	**36**	**247**	**283**	2	13	15
+30 mins.	100	**4**	104	24	238	262	0	13	13
+45 mins.	**121**	3	**124**	18	215	233	2	4	6
Total Volume	414	12	426	102	929	1031	6	45	51
% App. Total	97.2	2.8		9.9	90.1		11.8	88.2	
PHF	.855	.750	.859	.708	.940	.911	.750	.750	.750
Cars	410	12	422	102	929	1031	6	45	51
% Cars	99	100	99.1	100	100	100	100	100	100
Trucks	4	0	4	0	0	0	0	0	0
% Trucks	1	0	0.9	0	0	0	0	0	0



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Cars

	Route 302 From North		Route 302 From South		Pope Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	92	2	20	168	2	15	299
04:15 PM	89	1	15	210	2	13	330
04:30 PM	103	3	25	192	0	13	336
04:45 PM	88	2	24	229	2	4	349
Total	372	8	84	799	6	45	1314
05:00 PM	99	4	36	247	4	10	400
05:15 PM	120	3	24	238	3	12	400
05:30 PM	89	4	18	215	1	9	336
05:45 PM	69	3	34	196	1	4	307
Total	377	14	112	896	9	35	1443
Grand Total	749	22	196	1695	15	80	2757
Apprch %	97.1	2.9	10.4	89.6	15.8	84.2	
Total %	27.2	0.8	7.1	61.5	0.5	2.9	

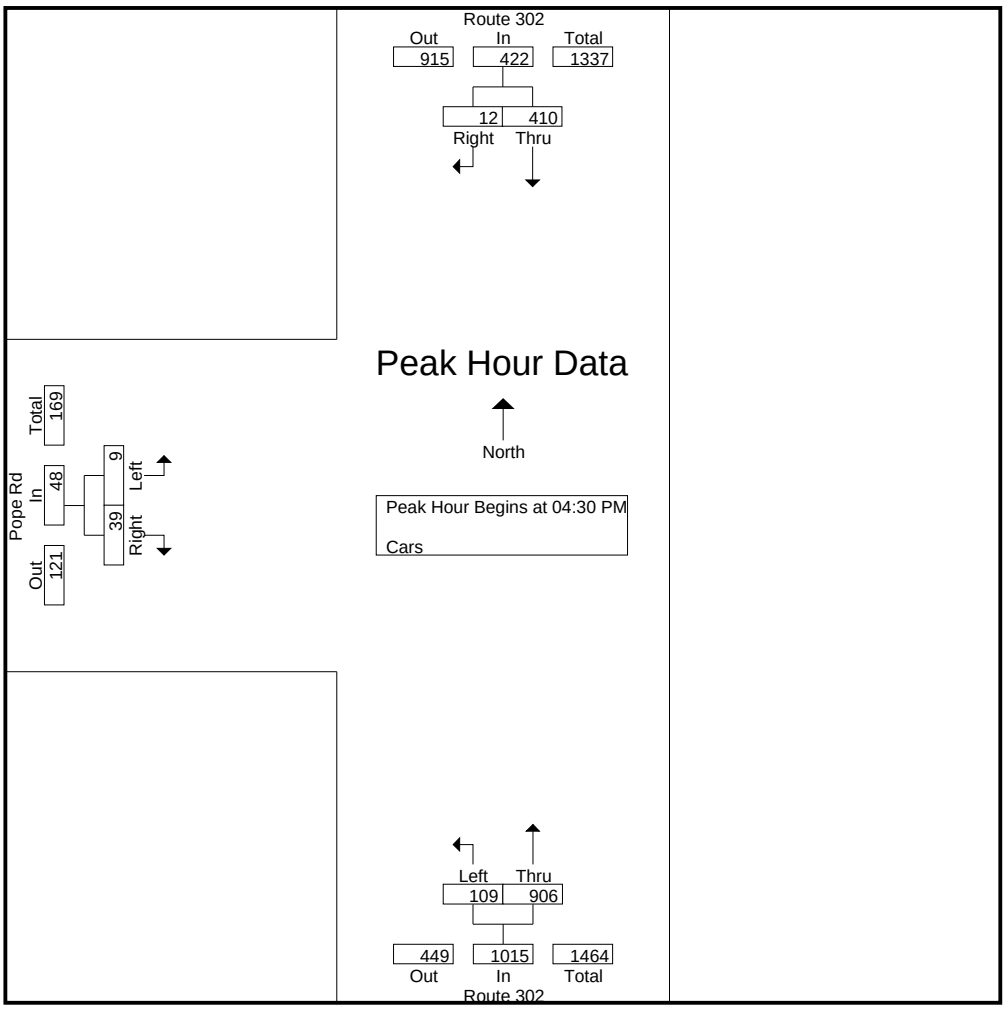
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 5

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	103	3	106	25	192	217	0	**13**	13	336
04:45 PM	88	2	90	24	229	253	2	4	6	349
05:00 PM	99	**4**	103	**36**	**247**	**283**	**4**	10	14	**400**
05:15 PM	**120**	3	**123**	24	238	262	3	12	**15**	400
Total Volume	410	12	422	109	906	1015	9	39	48	1485
% App. Total	97.2	2.8		10.7	89.3		18.8	81.2		
PHF	.854	.750	.858	.757	.917	.897	.563	.750	.800	.928



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

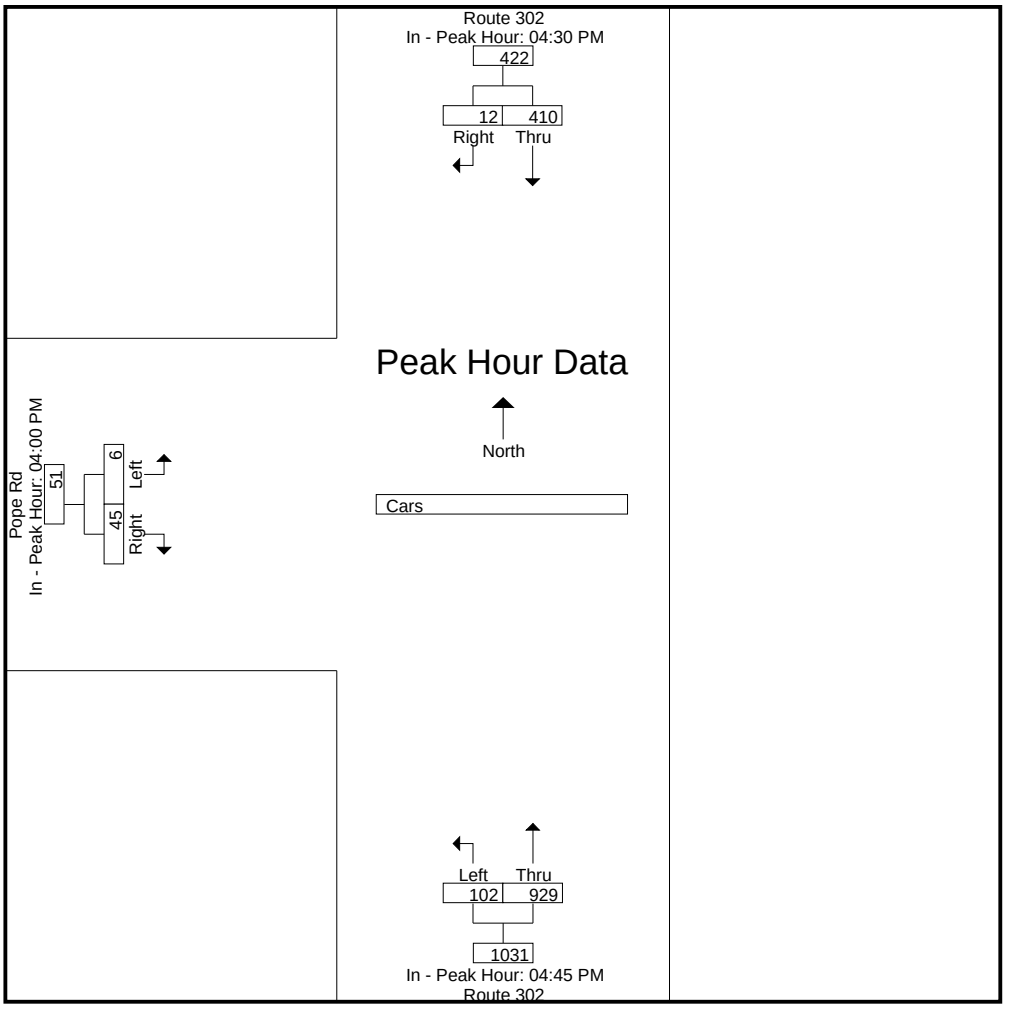
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 6

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:00 PM		
+0 mins.	103	3	106	24	229	253	**2**	**15**	**17**
+15 mins.	88	2	90	**36**	**247**	**283**	2	13	15
+30 mins.	99	**4**	103	24	238	262	0	13	13
+45 mins.	**120**	3	**123**	18	215	233	2	4	6
Total Volume	410	12	422	102	929	1031	6	45	51
% App. Total	97.2	2.8		9.9	90.1		11.8	88.2	
PHF	.854	.750	.858	.708	.940	.911	.750	.750	.750



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Trucks

	Route 302 From North		Route 302 From South		Pope Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	2	0	0	2
04:30 PM	2	0	0	2	0	0	4
04:45 PM	0	0	0	0	0	0	0
Total	2	0	0	4	0	0	6
05:00 PM	1	0	0	0	0	0	1
05:15 PM	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	2	0	0	0	0	0	2
Grand Total	4	0	0	4	0	0	8
Apprch %	100	0	0	100	0	0	
Total %	50	0	0	50	0	0	

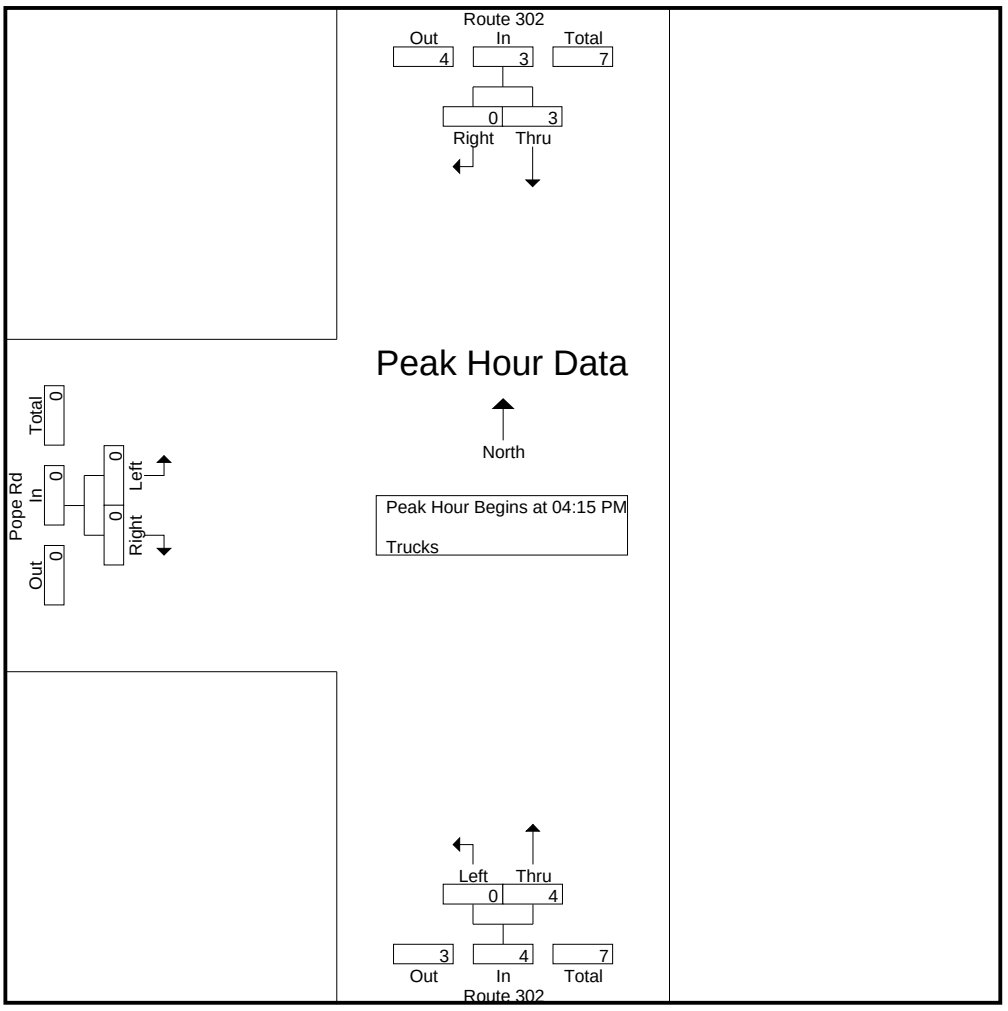
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 8

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	0	0	0	**2**	**2**	0	0	0	2
04:30 PM	**2**	0	**2**	0	2	2	0	0	0	**4**
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	3	0	3	0	4	4	0	0	0	7
% App. Total	100	0		0	100		0	0		
PHF	.375	.000	.375	.000	.500	.500	.000	.000	.000	.438



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

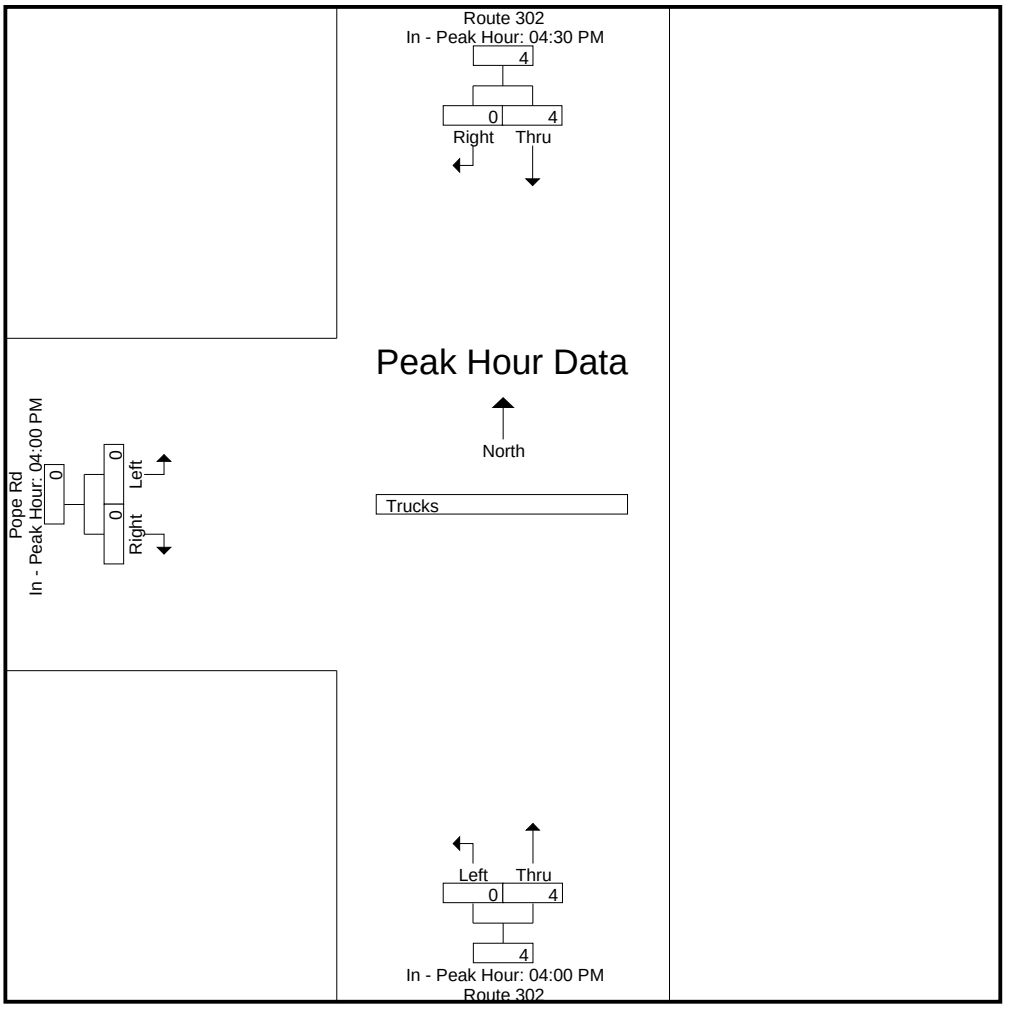
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 9

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:00 PM			04:00 PM		
+0 mins.	**2**	0	**2**	0	0	0	0	0	0
+15 mins.	0	0	0	0	**2**	**2**	0	0	0
+30 mins.	1	0	1	0	2	2	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	4	0	4	0	4	4	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.500	.000	.500	.000	.500	.500	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018

Groups Printed- Bikes Peds

	Route 302 From North			Route 302 From South			Pope Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	0	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	1	1
Grand Total	0	1	0	0	1	0	0	0	0	0	2	2
Apprch %	0	100		0	100		0	0				
Total %	0	50		0	50		0	0		0	100	

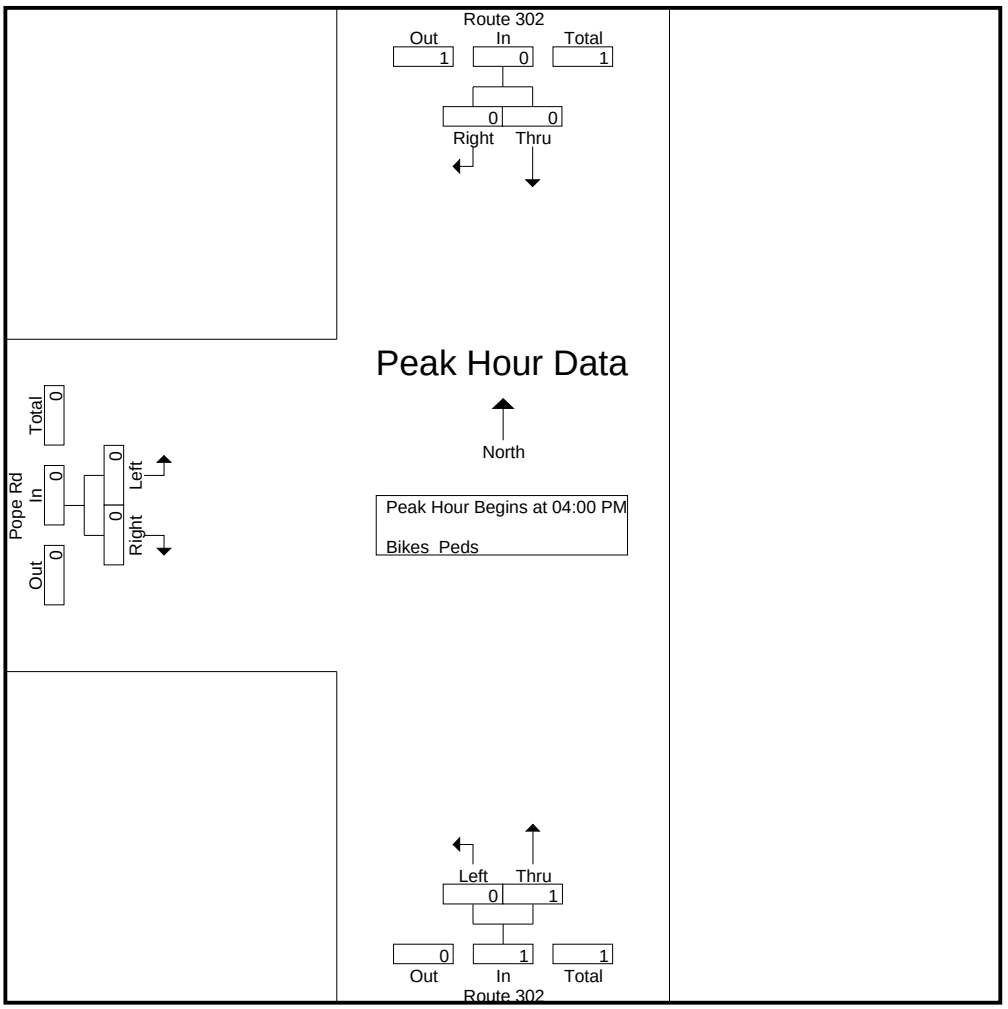
Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 11

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	**1**	**1**	0	0	0	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250



Accurate Counts

978-664-2565

N/S Street : Route 302
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

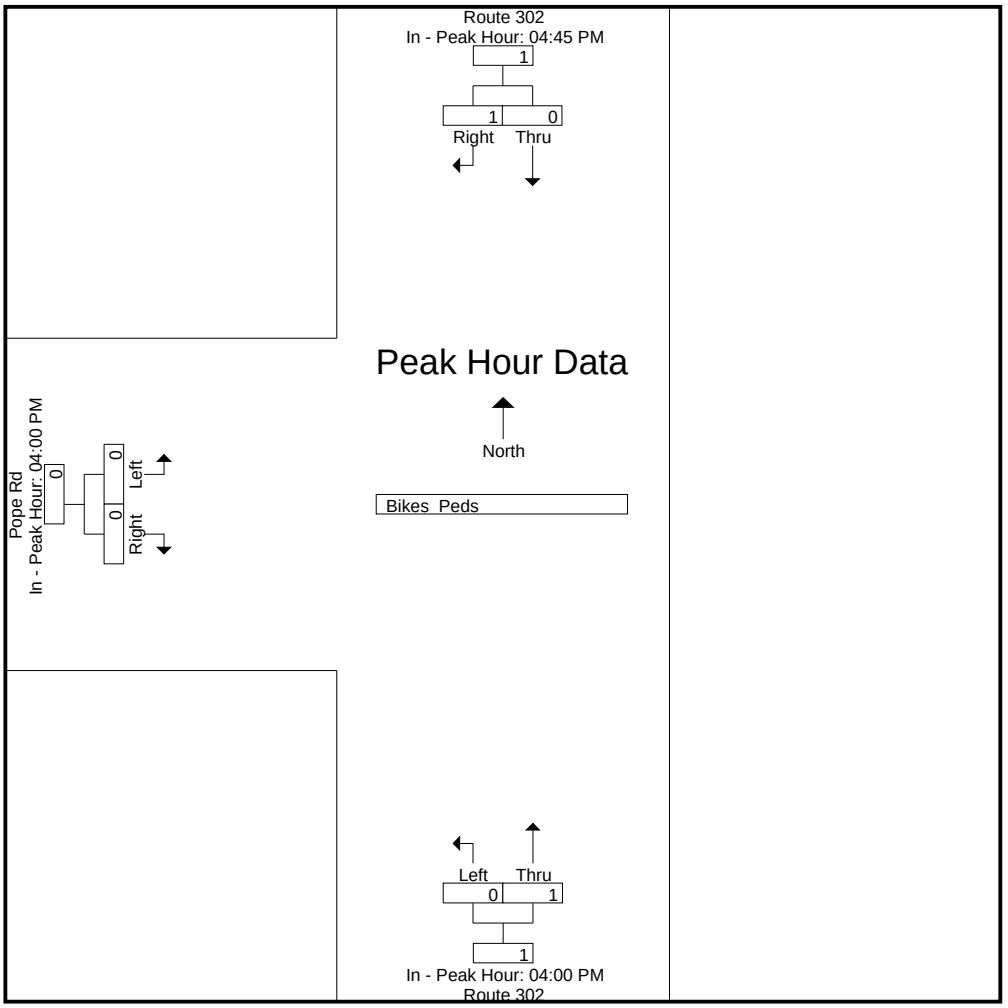
File Name : 16236002
Site Code : 16236002
Start Date : 9/18/2018
Page No : 12

	Route 302 From North			Route 302 From South			Pope Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	**1**	**1**	0	0	0
+45 mins.	0	**1**	**1**	0	0	0	0	0	0
Total Volume	0	1	1	0	1	1	0	0	0
% App. Total	0	100		0	100		0	0	
PHF	.000	.250	.250	.000	.250	.250	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018

Groups Printed- Cars - Trucks

	Pope Rd From East		Highland Cliff Rd From South		Pope Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	13	15	3	41	0	72
07:15 AM	3	10	3	6	38	7	67
07:30 AM	3	6	5	8	27	1	50
07:45 AM	2	8	5	5	27	5	52
Total	8	37	28	22	133	13	241
08:00 AM	2	5	3	4	14	1	29
08:15 AM	3	5	1	4	26	4	43
08:30 AM	1	8	1	2	14	3	29
08:45 AM	2	6	2	3	8	0	21
Total	8	24	7	13	62	8	122
Grand Total	16	61	35	35	195	21	363
Apprch %	20.8	79.2	50	50	90.3	9.7	
Total %	4.4	16.8	9.6	9.6	53.7	5.8	
Cars	16	60	35	35	194	20	360
% Cars	100	98.4	100	100	99.5	95.2	99.2
Trucks	0	1	0	0	1	1	3
% Trucks	0	1.6	0	0	0.5	4.8	0.8

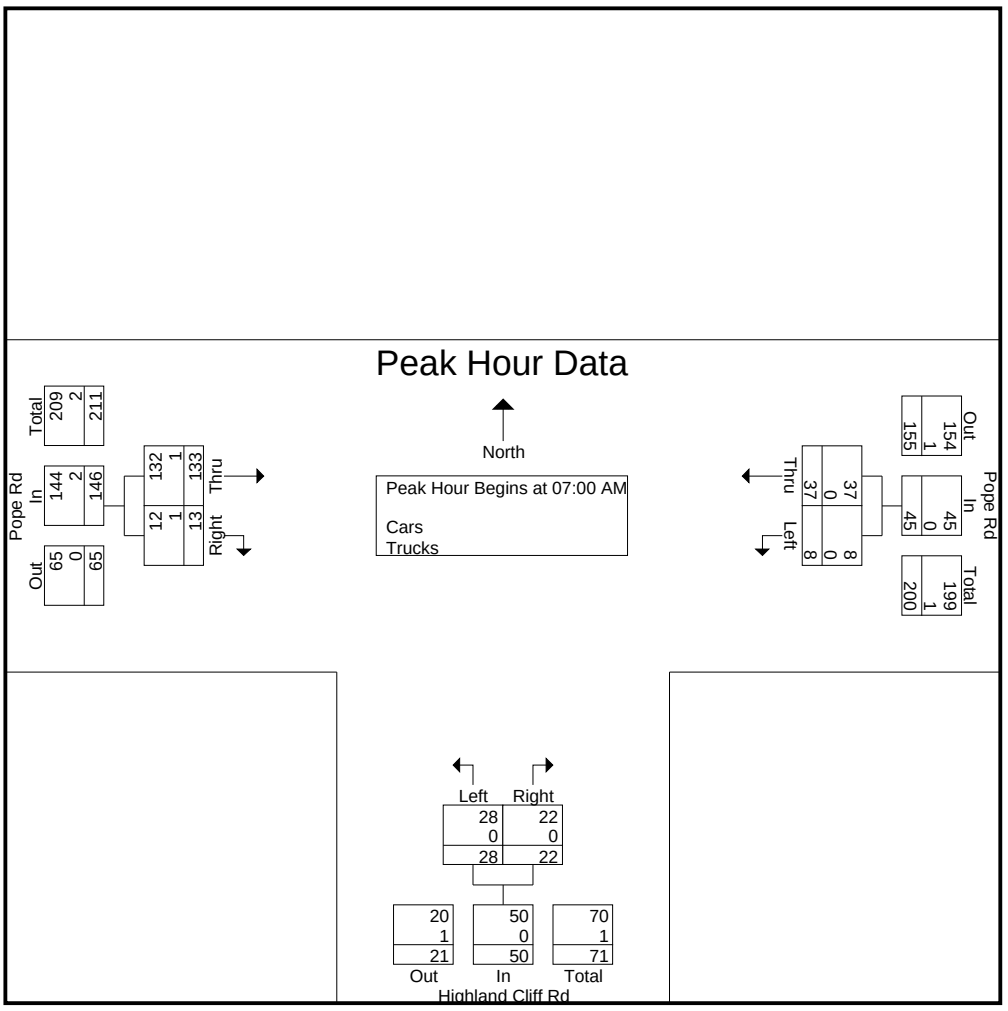
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 2

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**13**	**13**	**15**	3	**18**	**41**	0	41	**72**
07:15 AM	**3**	10	13	3	6	9	38	**7**	**45**	67
07:30 AM	3	6	9	5	**8**	13	27	1	28	50
07:45 AM	2	8	10	5	5	10	27	5	32	52
Total Volume	8	37	45	28	22	50	133	13	146	241
% App. Total	17.8	82.2		56	44		91.1	8.9		
PHF	.667	.712	.865	.467	.688	.694	.811	.464	.811	.837
Cars	8	37	45	28	22	50	132	12	144	239
% Cars	100	100	100	100	100	100	99.2	92.3	98.6	99.2
Trucks	0	0	0	0	0	0	1	1	2	2
% Trucks	0	0	0	0	0	0	0.8	7.7	1.4	0.8



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

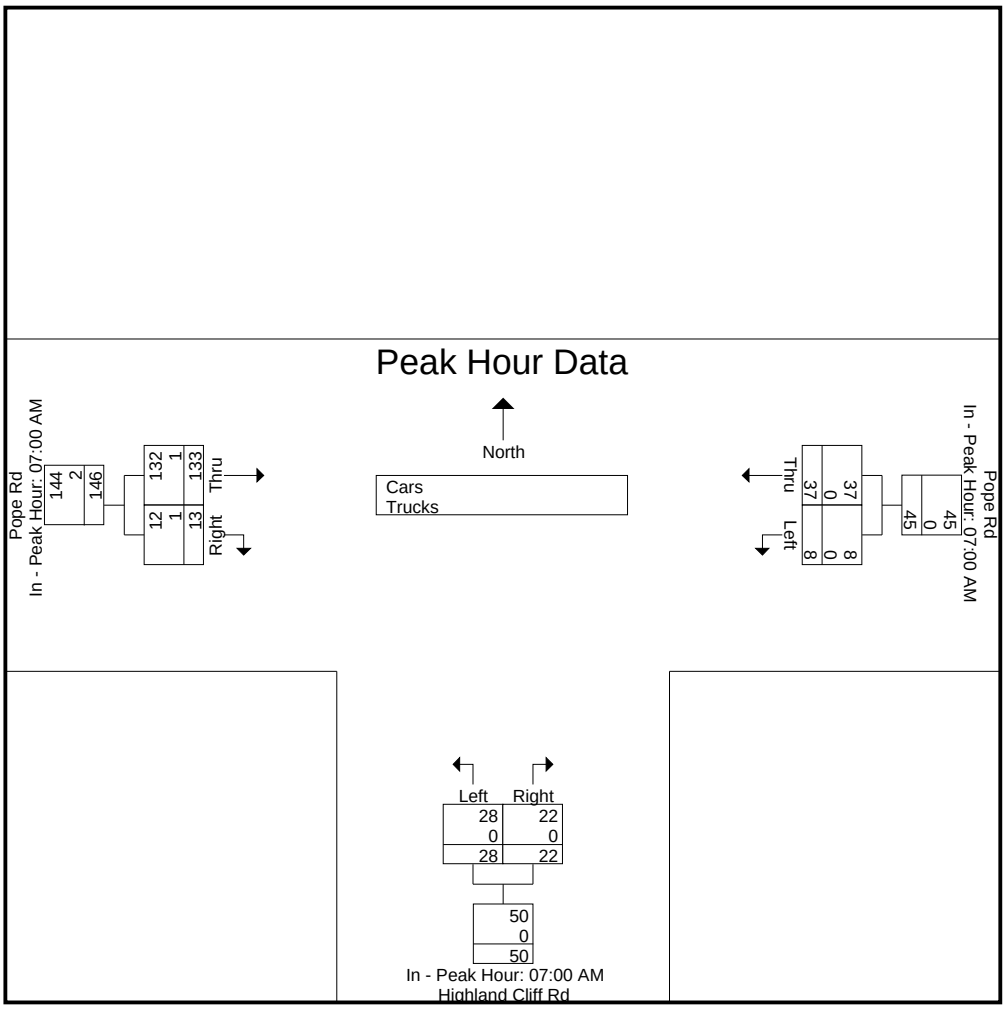
File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 3

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	**13**	**13**	**15**	3	**18**	**41**	0	41
+15 mins.	**3**	10	13	3	6	9	38	**7**	**45**
+30 mins.	3	6	9	5	**8**	13	27	1	28
+45 mins.	2	8	10	5	5	10	27	5	32
Total Volume	8	37	45	28	22	50	133	13	146
% App. Total	17.8	82.2		56	44		91.1	8.9	
PHF	.667	.712	.865	.467	.688	.694	.811	.464	.811
Cars	8	37	45	28	22	50	132	12	144
% Cars	100	100	100	100	100	100	99.2	92.3	98.6
Trucks	0	0	0	0	0	0	1	1	2
% Trucks	0	0	0	0	0	0	0.8	7.7	1.4



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018

Groups Printed- Cars

	Pope Rd From East		Highland Cliff Rd From South		Pope Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	13	15	3	41	0	72
07:15 AM	3	10	3	6	37	7	66
07:30 AM	3	6	5	8	27	0	49
07:45 AM	2	8	5	5	27	5	52
Total	8	37	28	22	132	12	239
08:00 AM	2	5	3	4	14	1	29
08:15 AM	3	4	1	4	26	4	42
08:30 AM	1	8	1	2	14	3	29
08:45 AM	2	6	2	3	8	0	21
Total	8	23	7	13	62	8	121
Grand Total	16	60	35	35	194	20	360
Apprch %	21.1	78.9	50	50	90.7	9.3	
Total %	4.4	16.7	9.7	9.7	53.9	5.6	

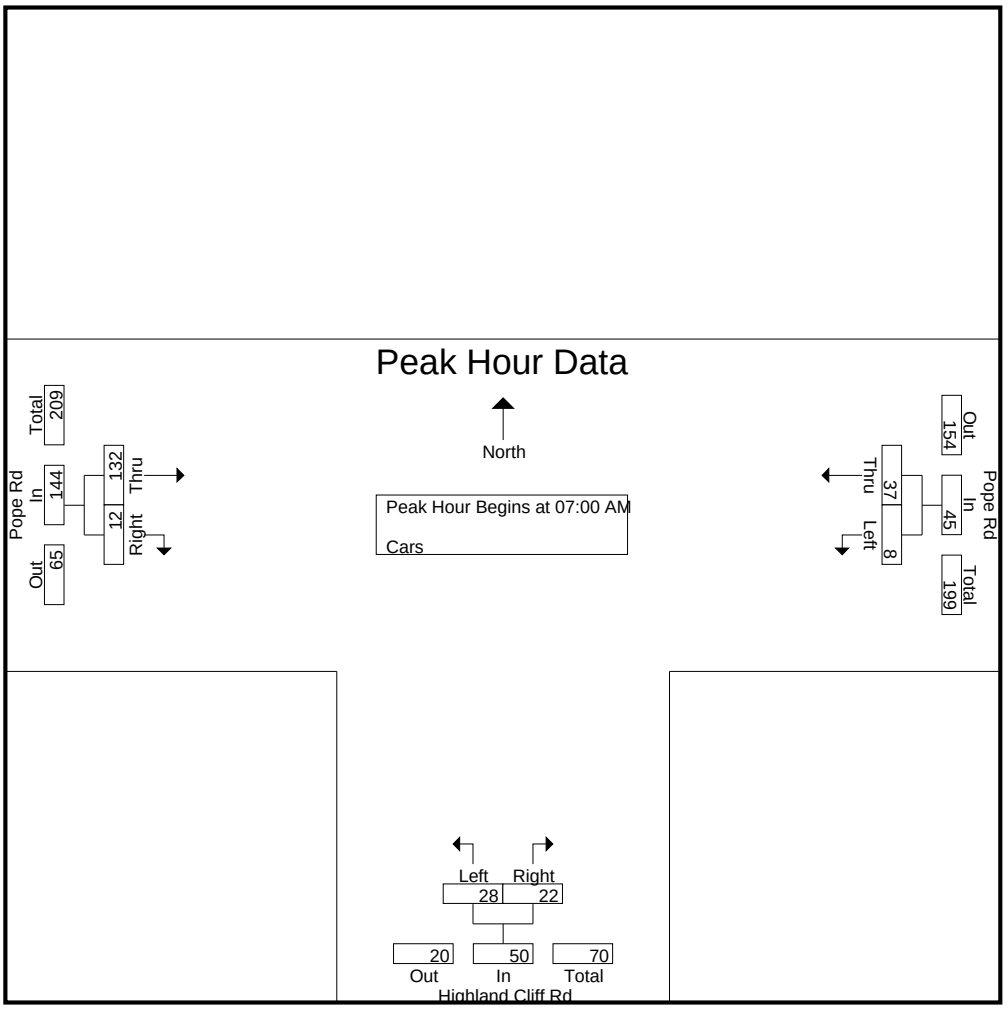
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 5

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**13**	**13**	**15**	3	**18**	**41**	0	41	**72**
07:15 AM	**3**	10	13	3	6	9	37	**7**	**44**	66
07:30 AM	3	6	9	5	**8**	13	27	0	27	49
07:45 AM	2	8	10	5	5	10	27	5	32	52
Total Volume	8	37	45	28	22	50	132	12	144	239
% App. Total	17.8	82.2		56	44		91.7	8.3		
PHF	.667	.712	.865	.467	.688	.694	.805	.429	.818	.830



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

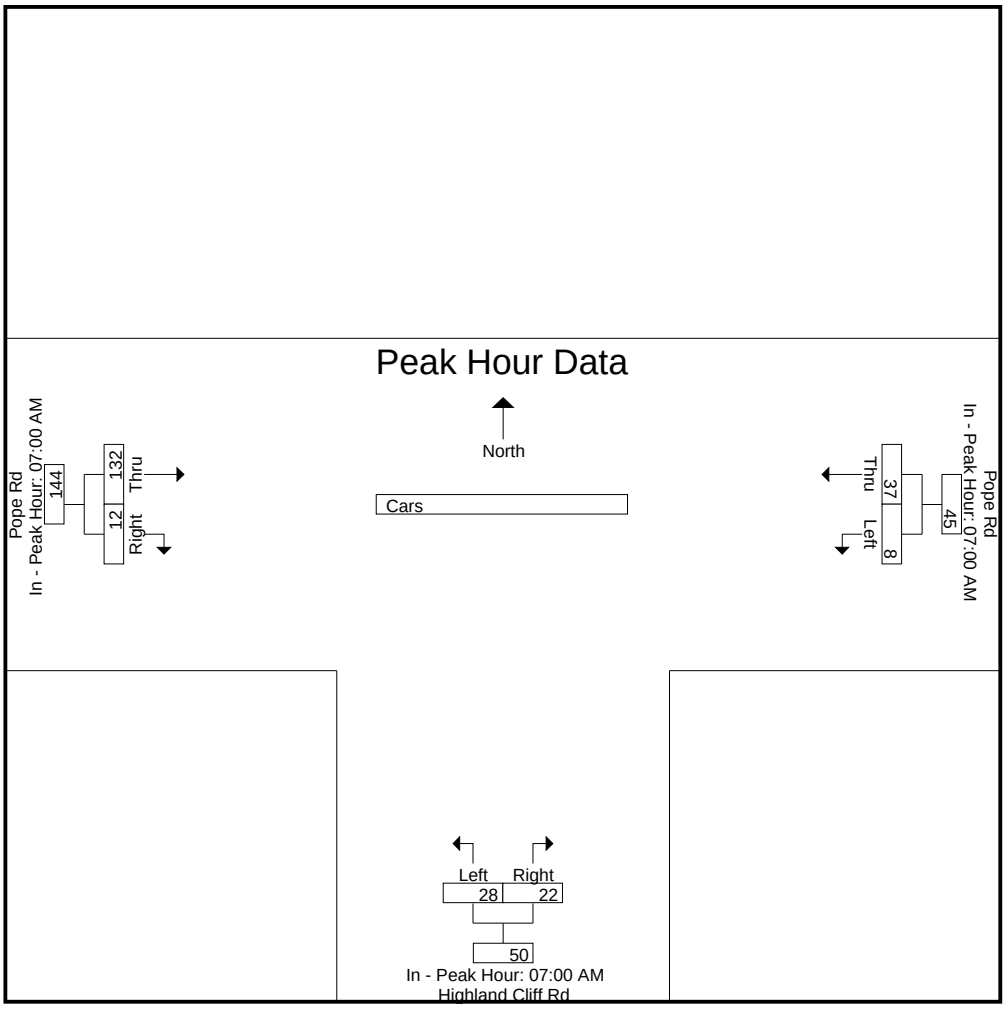
File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 6

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	**13**	**13**	**15**	3	**18**	**41**	0	41
+15 mins.	**3**	10	13	3	6	9	37	**7**	**44**
+30 mins.	3	6	9	5	**8**	13	27	0	27
+45 mins.	2	8	10	5	5	10	27	5	32
Total Volume	8	37	45	28	22	50	132	12	144
% App. Total	17.8	82.2		56	44		91.7	8.3	
PHF	.667	.712	.865	.467	.688	.694	.805	.429	.818



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018

Groups Printed- Trucks

	Pope Rd From East		Highland Cliff Rd From South		Pope Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	1
07:30 AM	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	2
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1
Grand Total	0	1	0	0	1	1	3
Apprch %	0	100	0	0	50	50	
Total %	0	33.3	0	0	33.3	33.3	

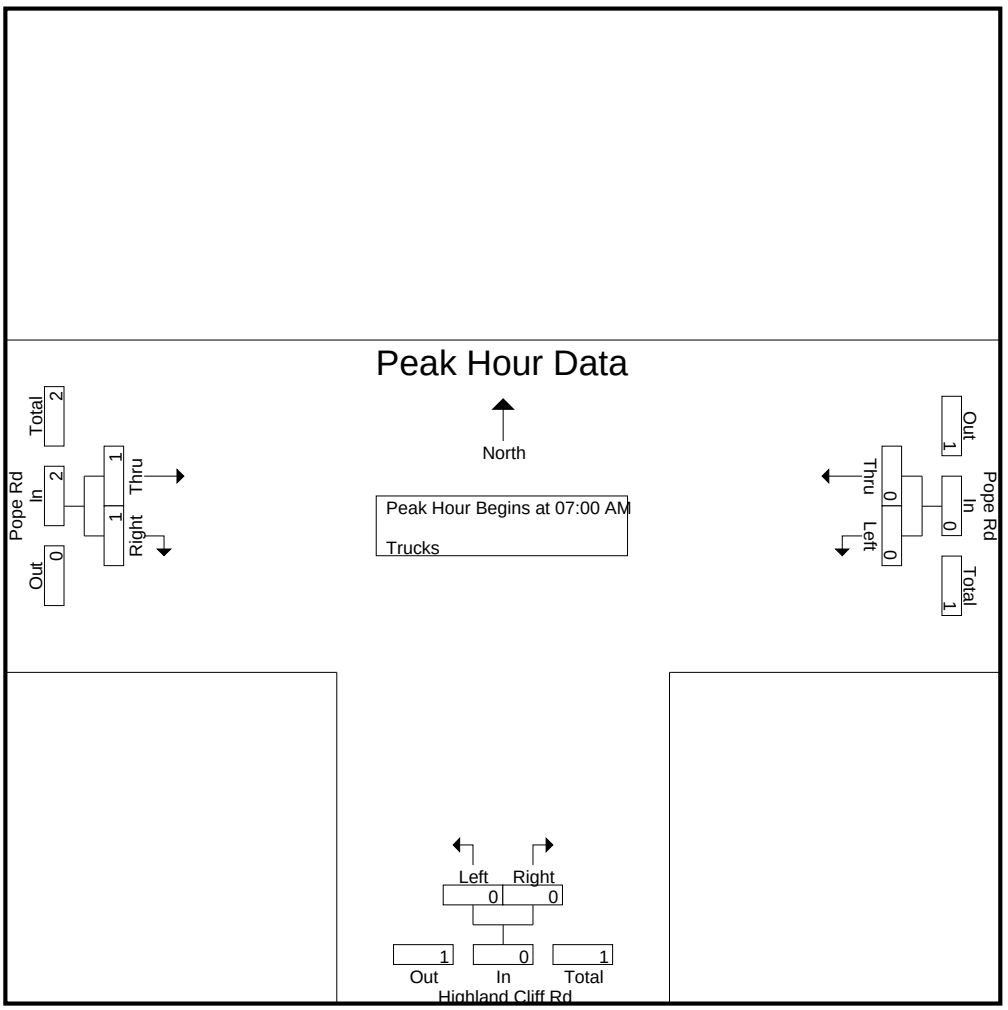
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 8

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	**1**	0	**1**	**1**
07:30 AM	0	0	0	0	0	0	0	**1**	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	2	2
% App. Total	0	0		0	0		50	50		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.500	.500



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

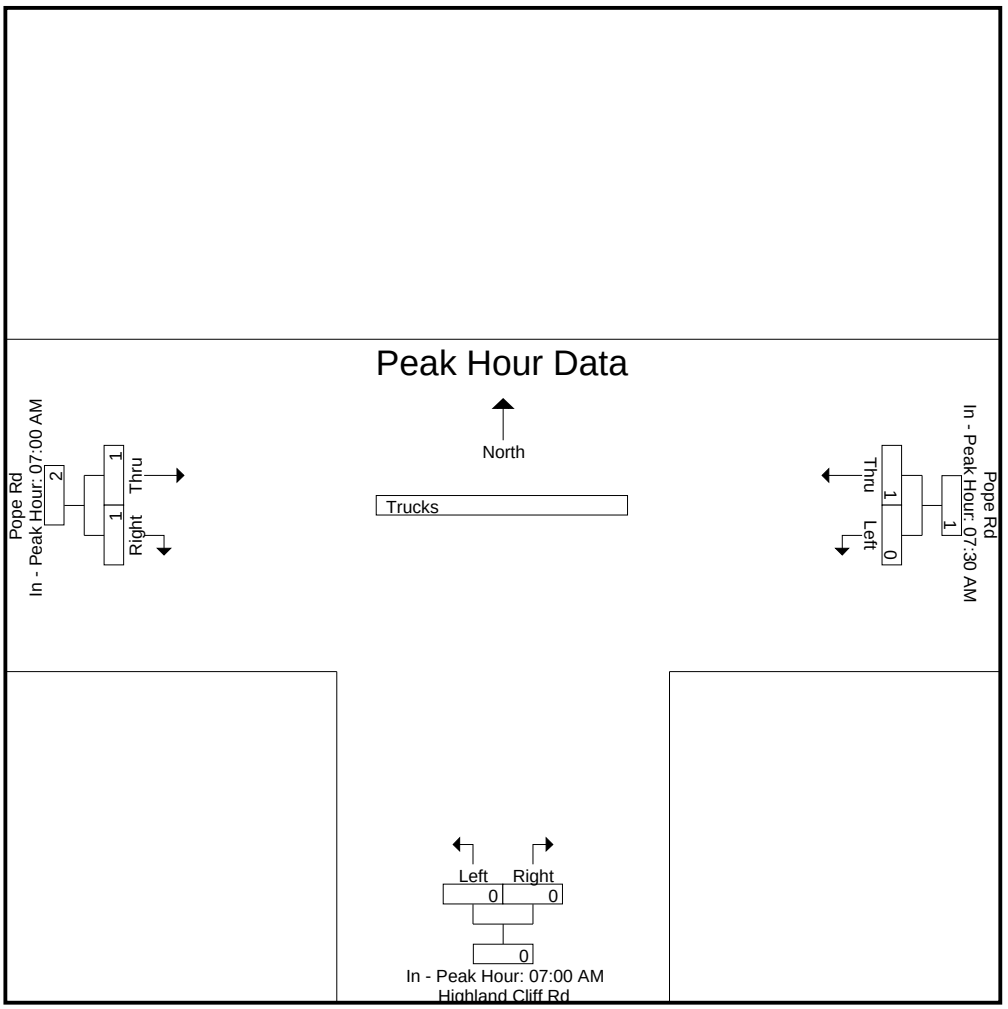
File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 9

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	**1**	0	**1**
+30 mins.	0	0	0	0	0	0	0	**1**	1
+45 mins.	0	**1**	**1**	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	1	1	2
% App. Total	0	100		0	0		50	50	
PHF	.000	.250	.250	.000	.000	.000	.250	.250	.500



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018

Groups Printed- Bikes Peds

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0		0	0		100	0				
Total %	0	0		0	0		100	0		0	100	

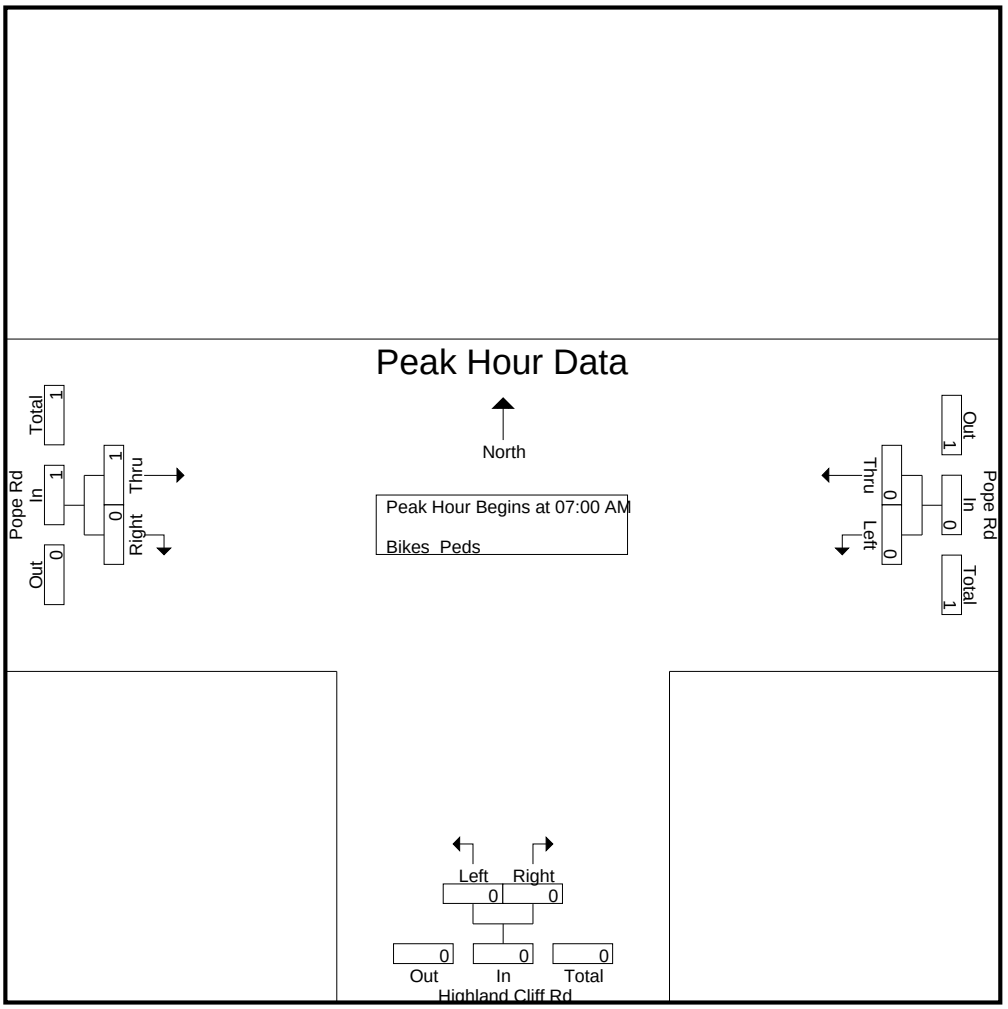
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 11

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	**1**	0	**1**	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Rain

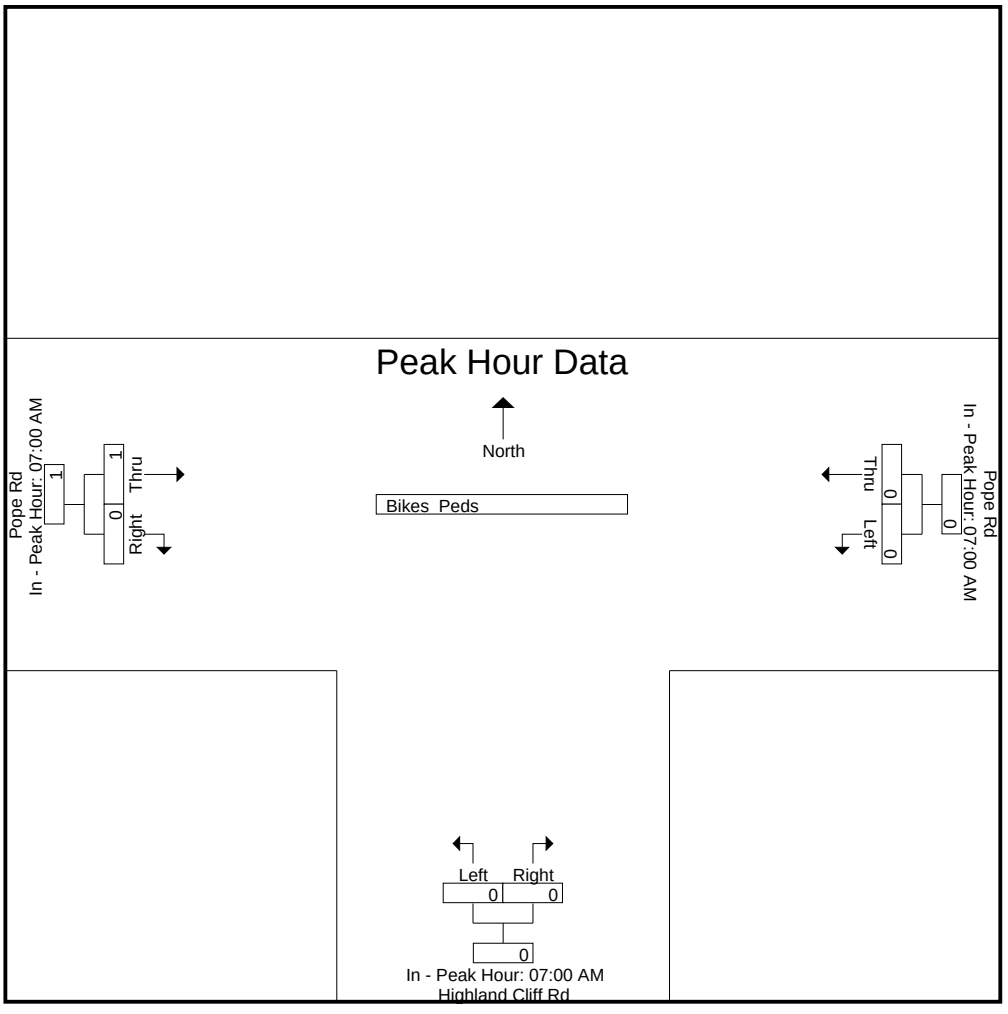
File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 12

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018

Groups Printed- Cars - Trucks - Bikes Peds

	Pope Rd From East		Highland Cliff Rd From South		Pope Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	2	18	2	2	13	3	40
04:15 PM	5	10	3	2	9	7	36
04:30 PM	8	20	4	0	13	4	49
04:45 PM	6	19	4	2	4	5	40
Total	21	67	13	6	39	19	165
05:00 PM	9	25	7	4	11	4	60
05:15 PM	6	25	4	6	7	4	52
05:30 PM	2	19	5	0	10	3	39
05:45 PM	5	32	5	0	8	2	52
Total	22	101	21	10	36	13	203
Grand Total	43	168	34	16	75	32	368
Apprch %	20.4	79.6	68	32	70.1	29.9	
Total %	11.7	45.7	9.2	4.3	20.4	8.7	
Cars	43	168	33	16	75	32	367
% Cars	100	100	97.1	100	100	100	99.7
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0
Bikes Peds	0	0	1	0	0	0	1
% Bikes Peds	0	0	2.9	0	0	0	0.3

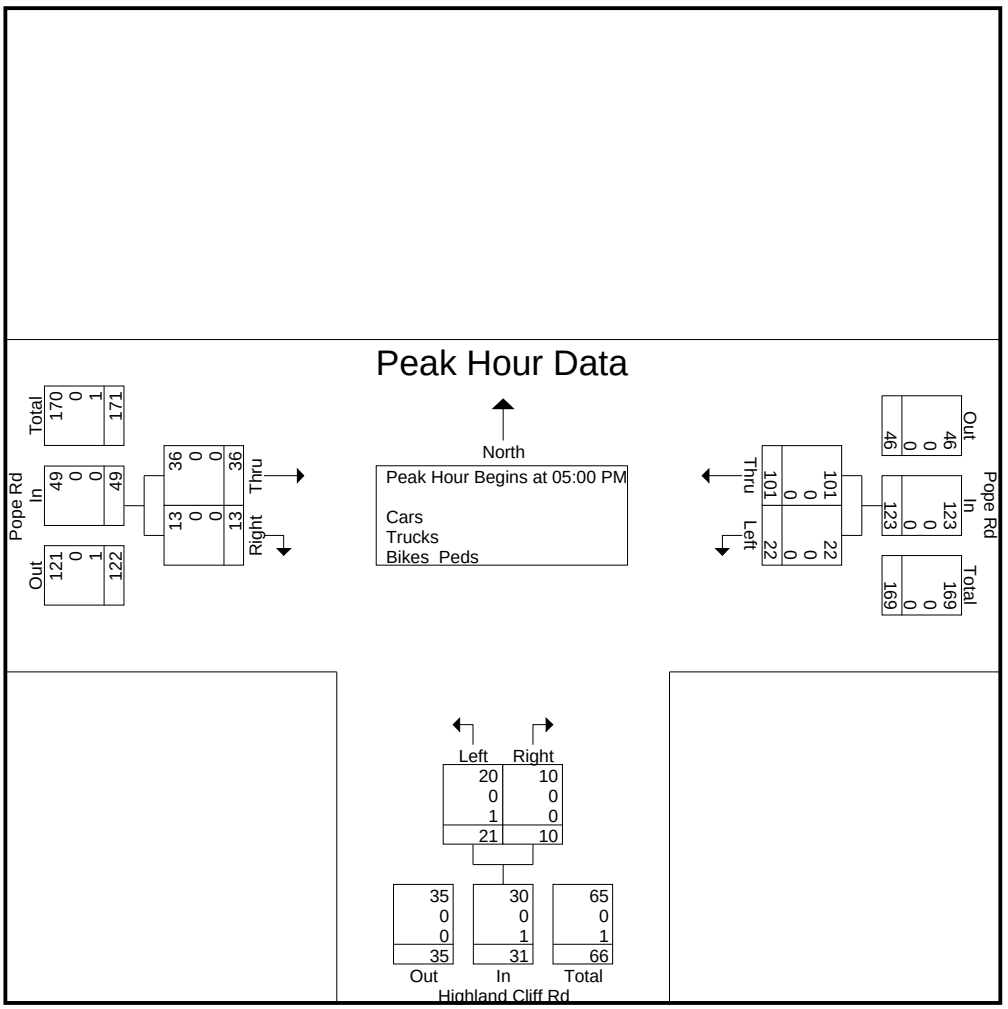
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 2

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**9**	25	34	**7**	4	**11**	**11**	**4**	**15**	**60**
05:15 PM	6	25	31	4	**6**	10	7	4	11	52
05:30 PM	2	19	21	5	0	5	10	3	13	39
05:45 PM	5	**32**	**37**	5	0	5	8	2	10	52
Total Volume	22	101	123	21	10	31	36	13	49	203
% App. Total	17.9	82.1		67.7	32.3		73.5	26.5		
PHF	.611	.789	.831	.750	.417	.705	.818	.813	.817	.846
Cars	22	101	123	20	10	30	36	13	49	202
% Cars	100	100	100	95.2	100	96.8	100	100	100	99.5
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0
Bikes Peds	0	0	0	1	0	1	0	0	0	1
% Bikes Peds	0	0	0	4.8	0	3.2	0	0	0	0.5



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Pope Road
City/State : Windham, ME
Weather : Clear

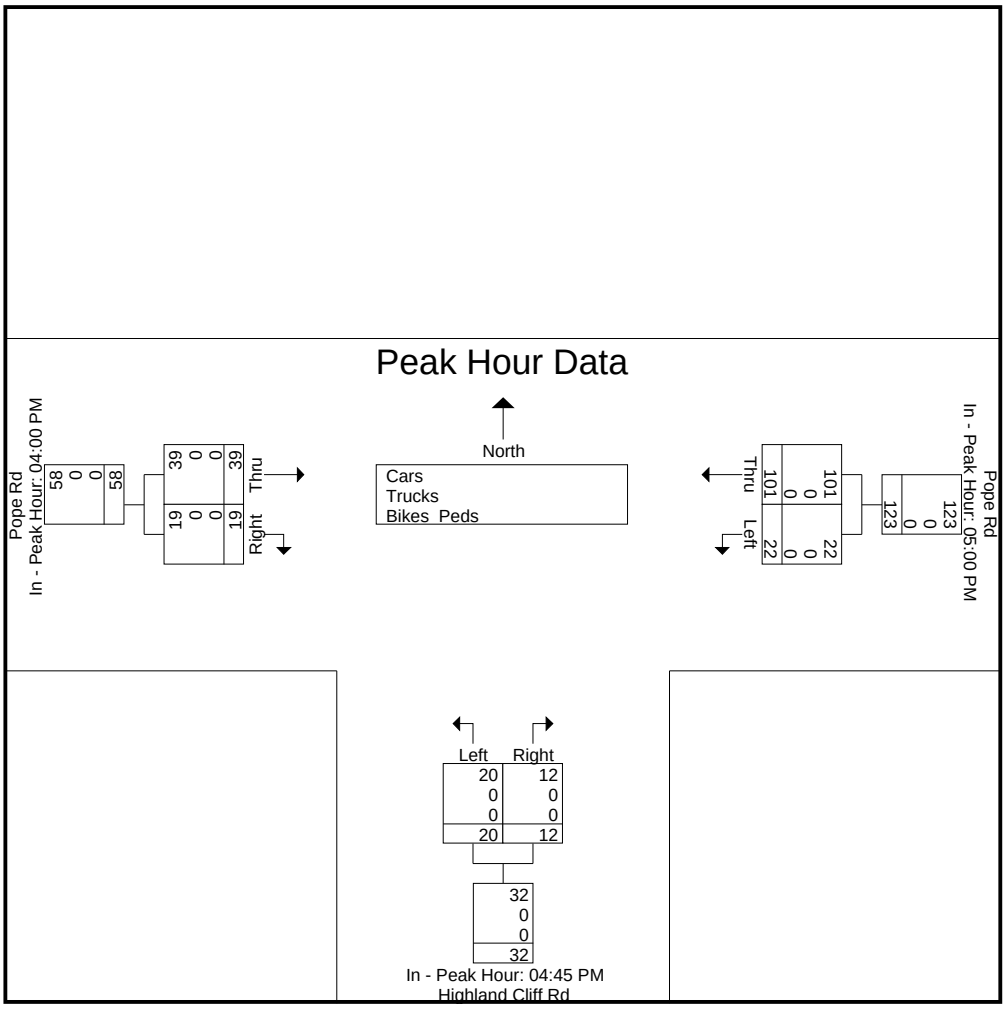
File Name : 16236003
Site Code : 16236003
Start Date : 9/18/2018
Page No : 3

	Pope Rd From East			Highland Cliff Rd From South			Pope Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			04:00 PM		
+0 mins.	**9**	25	34	4	2	6	**13**	3	16
+15 mins.	6	25	31	**7**	4	**11**	9	**7**	16
+30 mins.	2	19	21	4	**6**	10	13	4	**17**
+45 mins.	5	**32**	**37**	5	0	5	4	5	9
Total Volume	22	101	123	20	12	32	39	19	58
% App. Total	17.9	82.1		62.5	37.5		67.2	32.8	
PHF	.611	.789	.831	.714	.500	.727	.750	.679	.853
Cars	22	101	123	20	12	32	39	19	58
% Cars	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0
Bikes Peds	0	0	0	0	0	0	0	0	0
% Bikes Peds	0	0	0	0	0	0	0	0	0



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 1

Groups Printed- Cars - Trucks

	Highland Cliff Rd From North			Land of Nod Rd From East			Highland Cliff Rd From South			Verrill Ln From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	1	0	0	0	5	0	11	0	0	0	0	18
07:15 AM	2	6	1	0	0	0	0	6	0	0	0	1	16
07:30 AM	0	5	0	0	0	2	0	11	1	0	0	0	19
07:45 AM	2	4	0	0	0	3	0	6	0	0	0	0	15
Total	5	16	1	0	0	10	0	34	1	0	0	1	68
08:00 AM	0	3	0	1	0	2	0	3	0	0	0	0	9
08:15 AM	1	5	0	0	0	0	0	3	0	0	0	0	9
08:30 AM	1	1	0	2	0	0	0	2	2	0	0	0	8
08:45 AM	0	1	0	1	0	1	0	1	1	0	0	0	5
Total	2	10	0	4	0	3	0	9	3	0	0	0	31
Grand Total	7	26	1	4	0	13	0	43	4	0	0	1	99
Apprch %	20.6	76.5	2.9	23.5	0	76.5	0	91.5	8.5	0	0	100	
Total %	7.1	26.3	1	4	0	13.1	0	43.4	4	0	0	1	
Cars	7	25	1	4	0	12	0	43	4	0	0	1	97
% Cars	100	96.2	100	100	0	92.3	0	100	100	0	0	100	98
Trucks	0	1	0	0	0	1	0	0	0	0	0	0	2
% Trucks	0	3.8	0	0	0	7.7	0	0	0	0	0	0	2

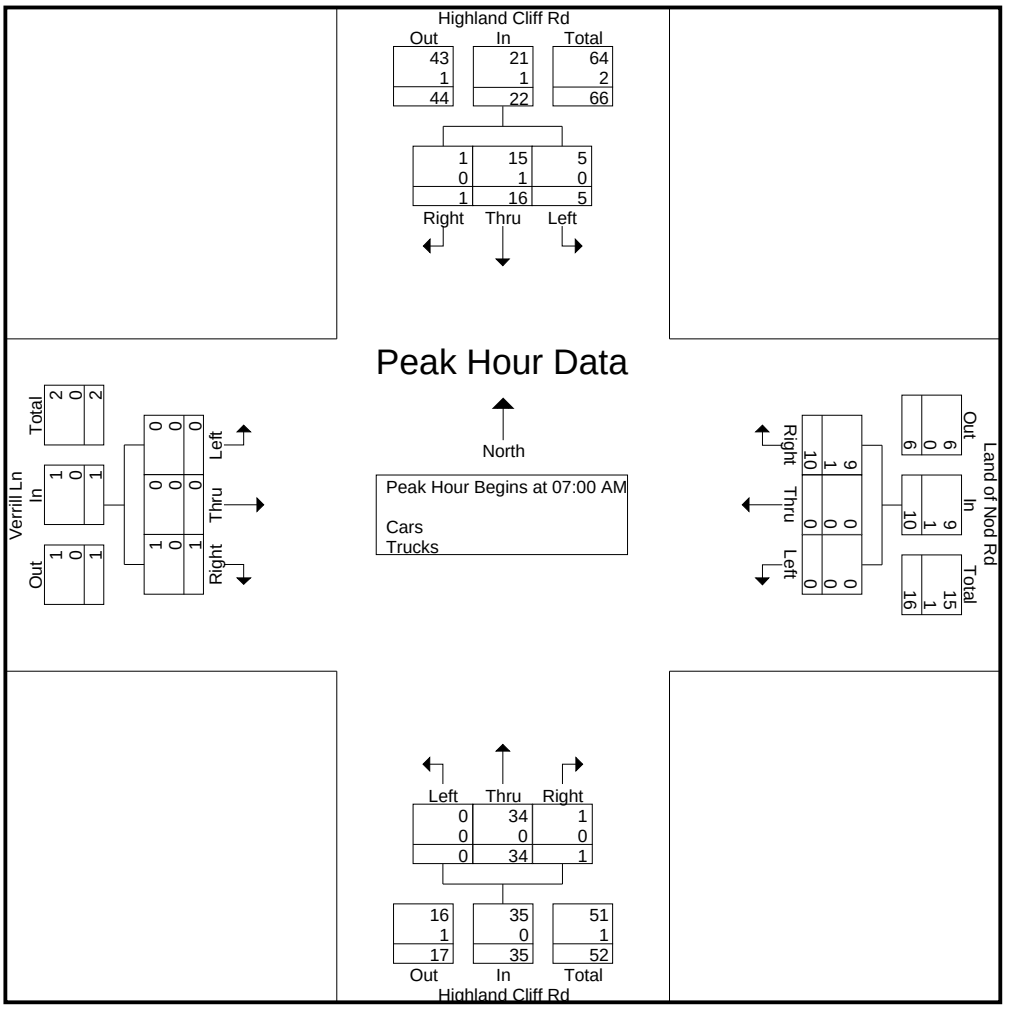
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 2

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	1	0	2	0	0	**5**	**5**	0	**11**	0	11	0	0	0	0	18
07:15 AM	**2**	**6**	**1**	**9**	0	0	0	0	0	6	0	6	0	0	**1**	**1**	16
07:30 AM	0	5	0	5	0	0	2	2	0	11	**1**	**12**	0	0	0	0	**19**
07:45 AM	2	4	0	6	0	0	3	3	0	6	0	6	0	0	0	0	15
Total Volume	5	16	1	22	0	0	10	10	0	34	1	35	0	0	1	1	68
% App. Total	22.7	72.7	4.5		0	0	100		0	97.1	2.9		0	0	100		
PHF	.625	.667	.250	.611	.000	.000	.500	.500	.000	.773	.250	.729	.000	.000	.250	.250	.895
Cars	5	15	1	21	0	0	9	9	0	34	1	35	0	0	1	1	66
% Cars	100	93.8	100	95.5	0	0	90.0	90.0	0	100	100	100	0	0	100	100	97.1
Trucks	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
% Trucks	0	6.3	0	4.5	0	0	10.0	10.0	0	0	0	0	0	0	0	0	2.9



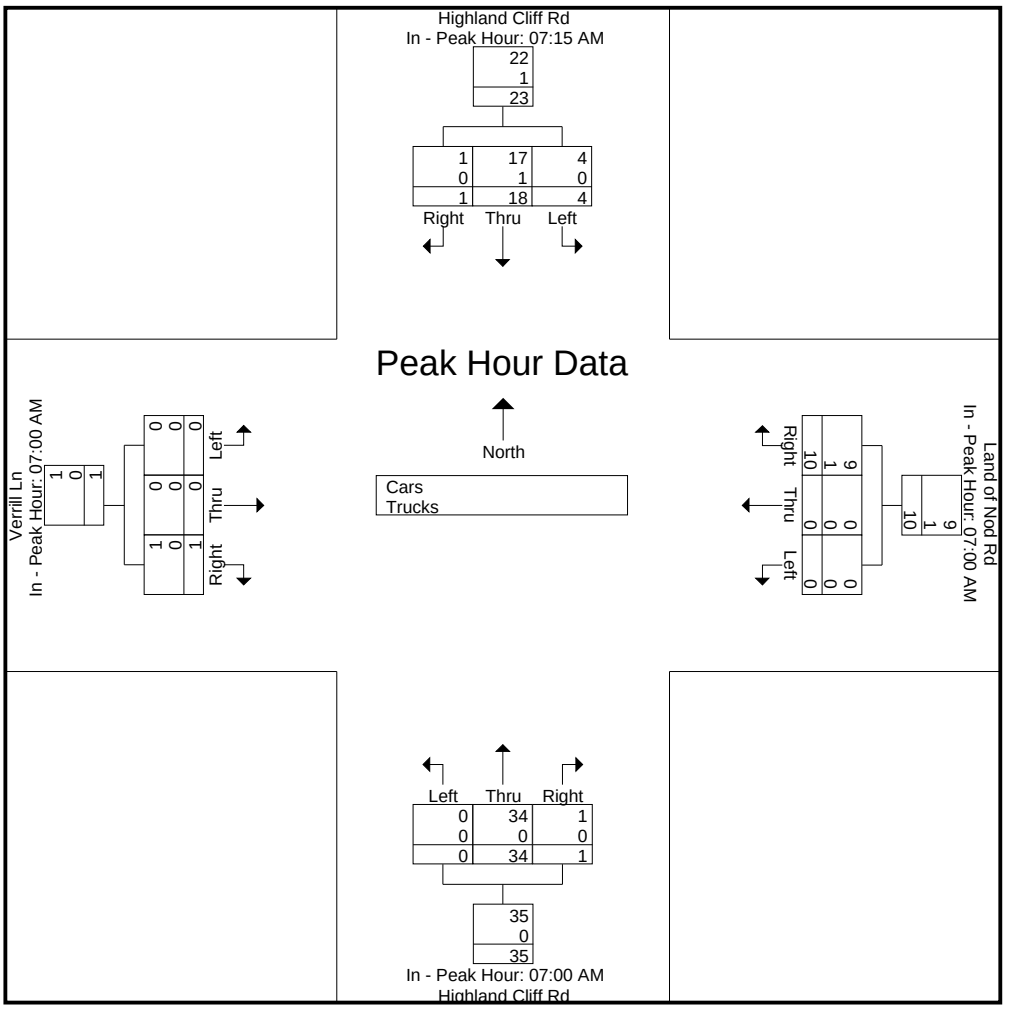
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 3

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	**2**	**6**	**1**	**9**	0	0	**5**	**5**	0	**11**	0	11	0	0	0	0	
+15 mins.	0	5	0	5	0	0	0	0	0	6	0	6	0	0	**1**	**1**	
+30 mins.	2	4	0	6	0	0	2	2	0	11	**1**	**12**	0	0	0	0	
+45 mins.	0	3	0	3	0	0	3	3	0	6	0	6	0	0	0	0	
Total Volume	4	18	1	23	0	0	10	10	0	34	1	35	0	0	1	1	
% App. Total	17.4	78.3	4.3		0	0	100		0	97.1	2.9		0	0	100		
PHF	.500	.750	.250	.639	.000	.000	.500	.500	.000	.773	.250	.729	.000	.000	.250	.250	
Cars	4	17	1	22	0	0	9	9	0	34	1	35	0	0	1	1	
% Cars	100	94.4	100	95.7	0	0	90	90	0	100	100	100	0	0	100	100	
Trucks	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
% Trucks	0	5.6	0	4.3	0	0	10	10	0	0	0	0	0	0	0	0	



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 4

Groups Printed- Cars

	Highland Cliff Rd From North			Land of Nod Rd From East			Highland Cliff Rd From South			Verrill Ln From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	1	0	0	0	5	0	11	0	0	0	0	18
07:15 AM	2	6	1	0	0	0	0	6	0	0	0	1	16
07:30 AM	0	4	0	0	0	2	0	11	1	0	0	0	18
07:45 AM	2	4	0	0	0	2	0	6	0	0	0	0	14
Total	5	15	1	0	0	9	0	34	1	0	0	1	66
08:00 AM	0	3	0	1	0	2	0	3	0	0	0	0	9
08:15 AM	1	5	0	0	0	0	0	3	0	0	0	0	9
08:30 AM	1	1	0	2	0	0	0	2	2	0	0	0	8
08:45 AM	0	1	0	1	0	1	0	1	1	0	0	0	5
Total	2	10	0	4	0	3	0	9	3	0	0	0	31
Grand Total	7	25	1	4	0	12	0	43	4	0	0	1	97
Apprch %	21.2	75.8	3	25	0	75	0	91.5	8.5	0	0	100	
Total %	7.2	25.8	1	4.1	0	12.4	0	44.3	4.1	0	0	1	

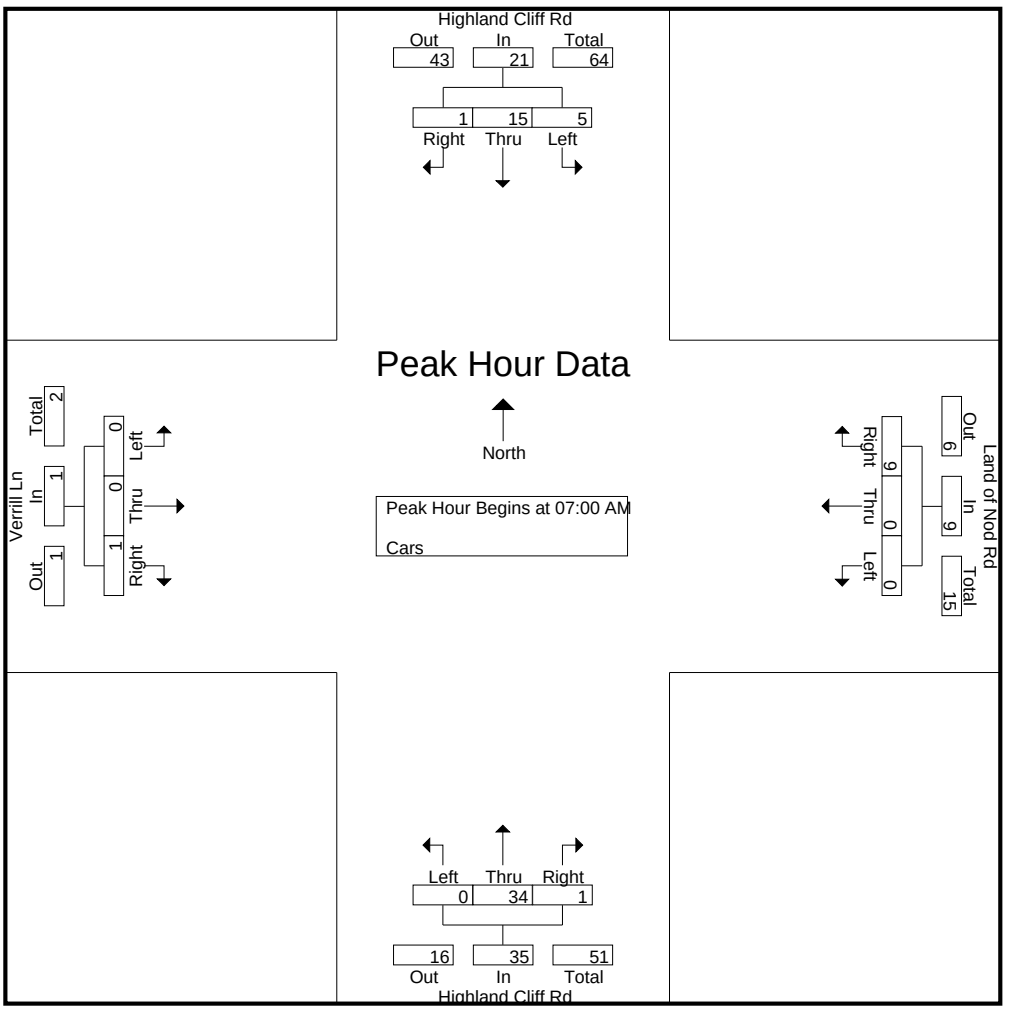
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 5

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	1	0	2	0	0	**5**	**5**	0	**11**	0	11	0	0	0	0	**18**
07:15 AM	**2**	**6**	**1**	**9**	0	0	0	0	0	6	0	6	0	0	**1**	**1**	16
07:30 AM	0	4	0	4	0	0	2	2	0	11	**1**	**12**	0	0	0	0	18
07:45 AM	2	4	0	6	0	0	2	2	0	6	0	6	0	0	0	0	14
Total Volume	5	15	1	21	0	0	9	9	0	34	1	35	0	0	1	1	66
% App. Total	23.8	71.4	4.8		0	0	100		0	97.1	2.9		0	0	100		
PHF	.625	.625	.250	.583	.000	.000	.450	.450	.000	.773	.250	.729	.000	.000	.250	.250	.917



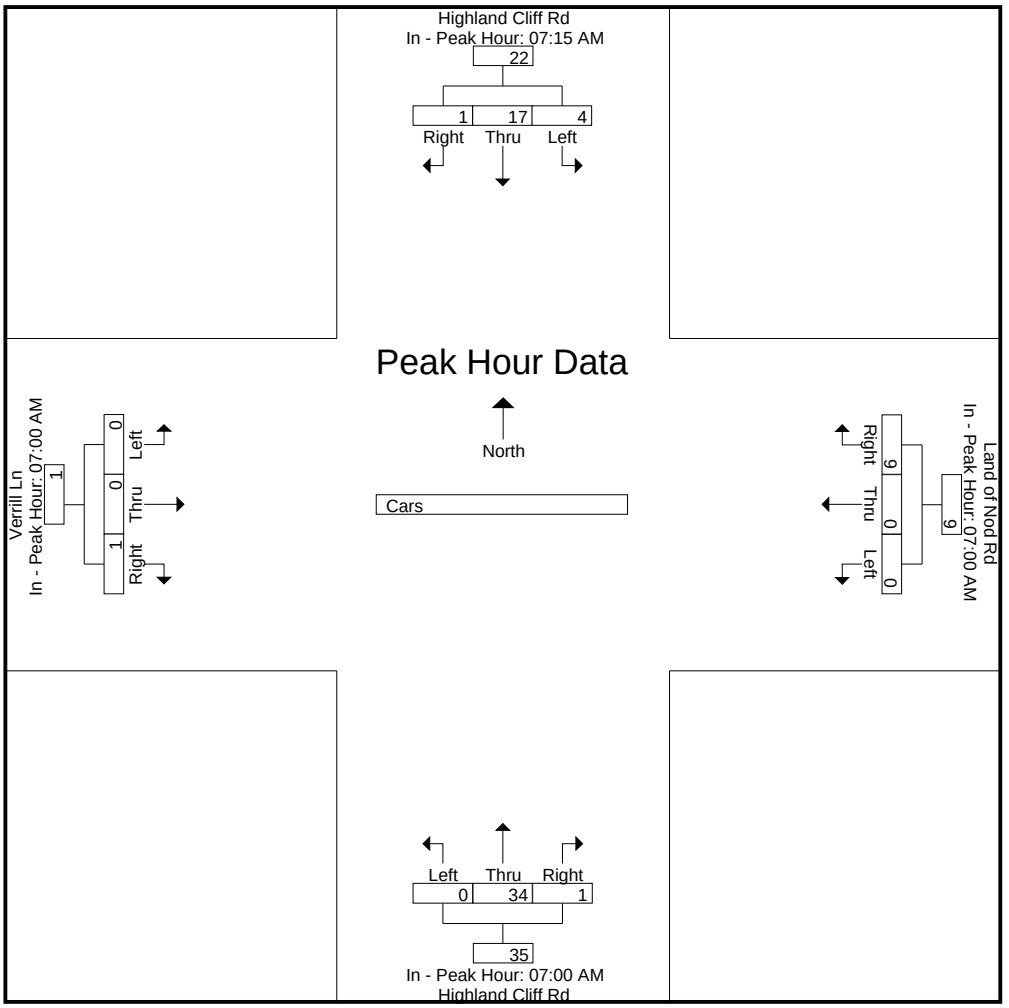
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 6

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	**2**	**6**	**1**	**9**	0	0	**5**	**5**	0	**11**	0	11	0	0	0	0	
+15 mins.	0	4	0	4	0	0	0	0	0	6	0	6	0	0	**1**	**1**	
+30 mins.	2	4	0	6	0	0	2	2	0	11	**1**	**12**	0	0	0	0	
+45 mins.	0	3	0	3	0	0	2	2	0	6	0	6	0	0	0	0	
Total Volume	4	17	1	22	0	0	9	9	0	34	1	35	0	0	1	1	
% App. Total	18.2	77.3	4.5		0	0	100		0	97.1	2.9		0	0	100		
PHF	.500	.708	.250	.611	.000	.000	.450	.450	.000	.773	.250	.729	.000	.000	.250	.250	



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 7

Groups Printed- Trucks

	Highland Cliff Rd From North			Land of Nod Rd From East			Highland Cliff Rd From South			Verrill Ln From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	1	0	0	0	1	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	0	1	0	0	0	0	0	0	2
Apprch %	0	100	0	0	0	100	0	0	0	0	0	0	
Total %	0	50	0	0	0	50	0	0	0	0	0	0	

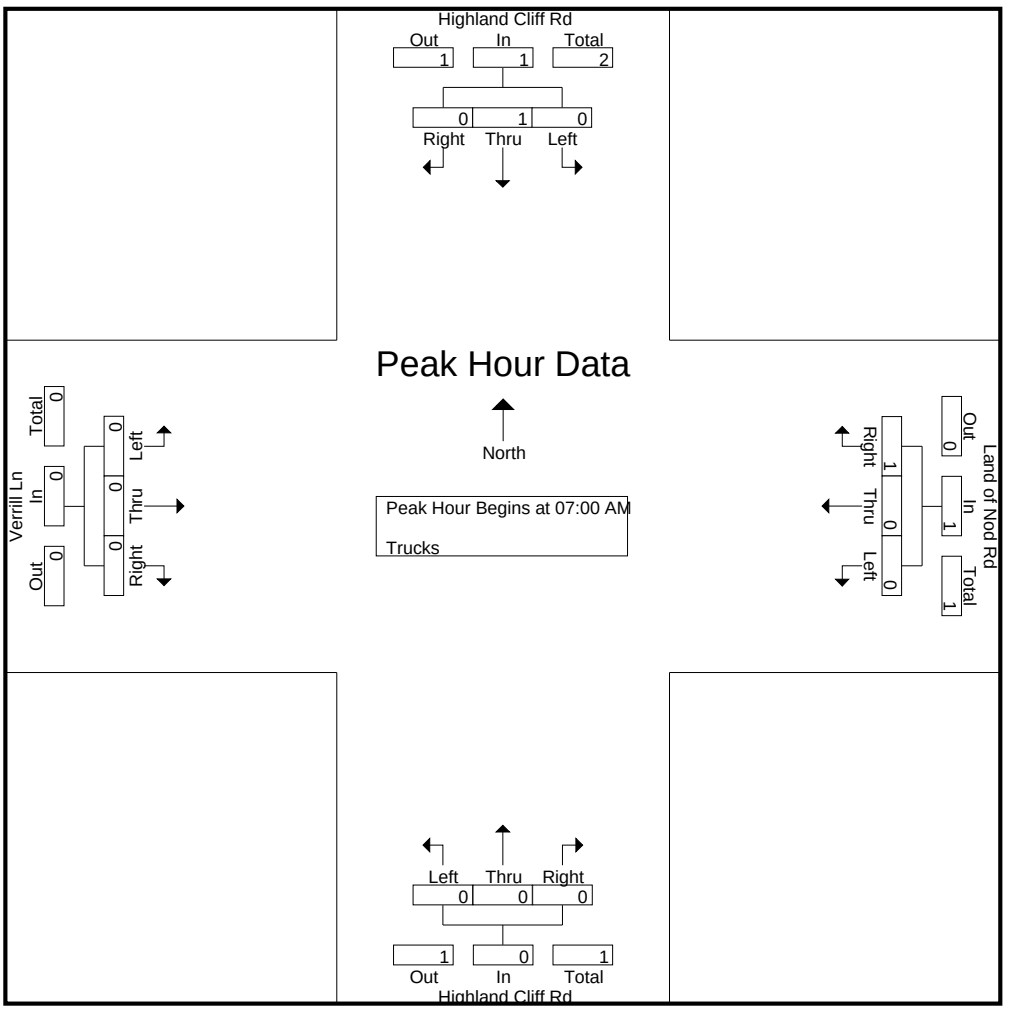
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 8

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

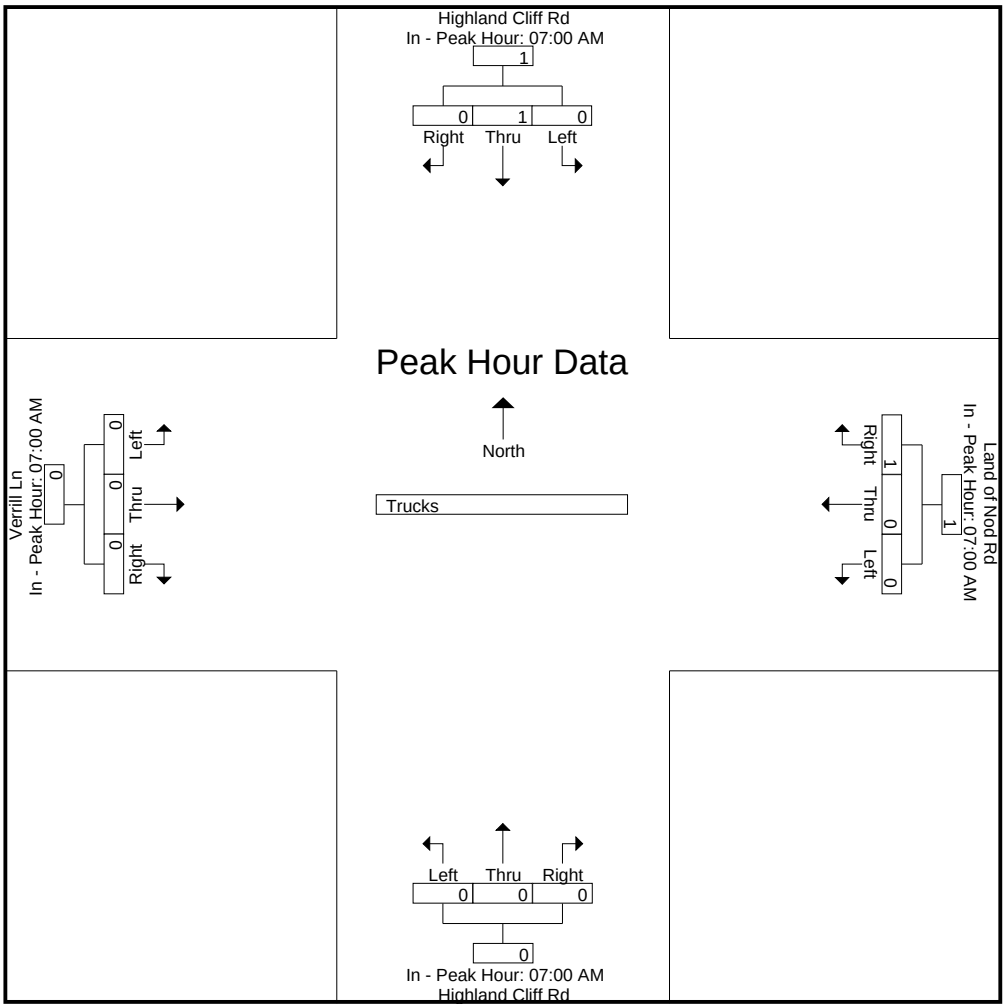
File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 9

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	
Total Volume	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
% App. Total	0	100	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 10

Groups Printed- Bikes Peds

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

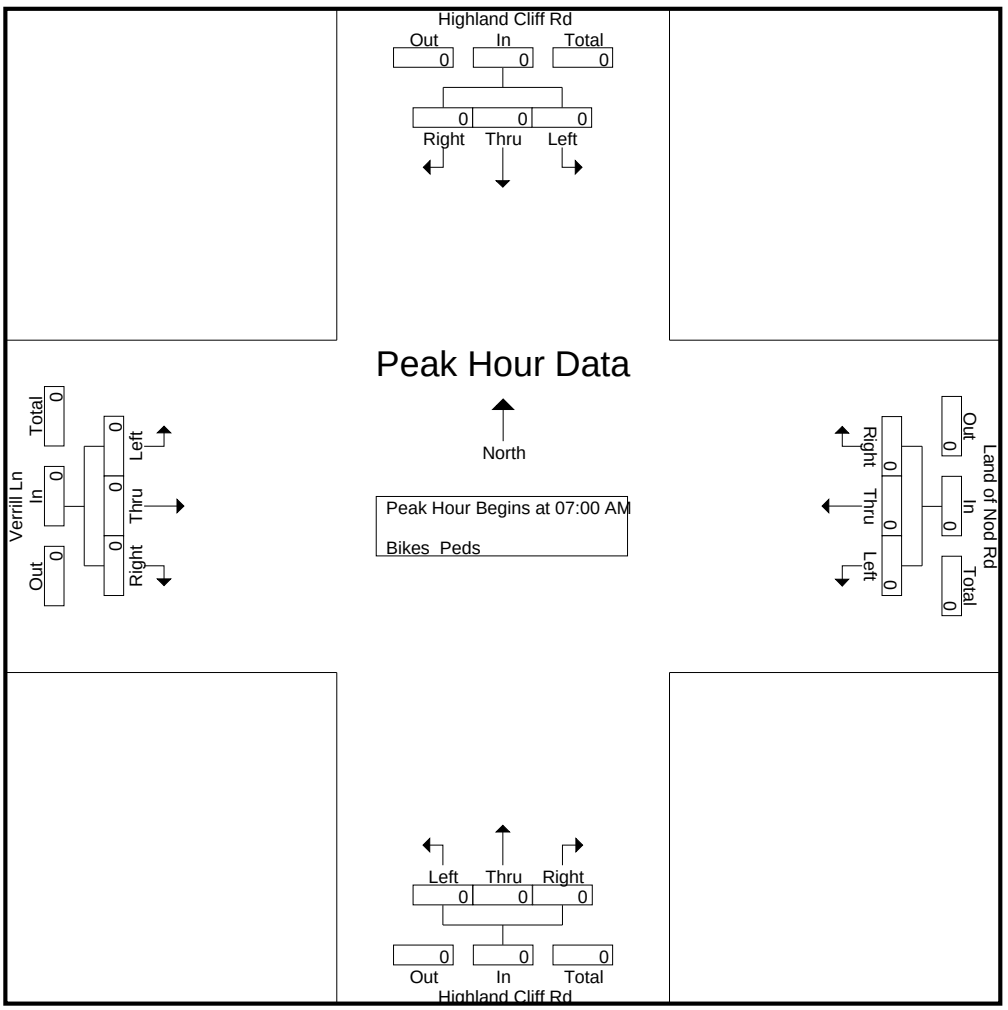
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 11

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Rain

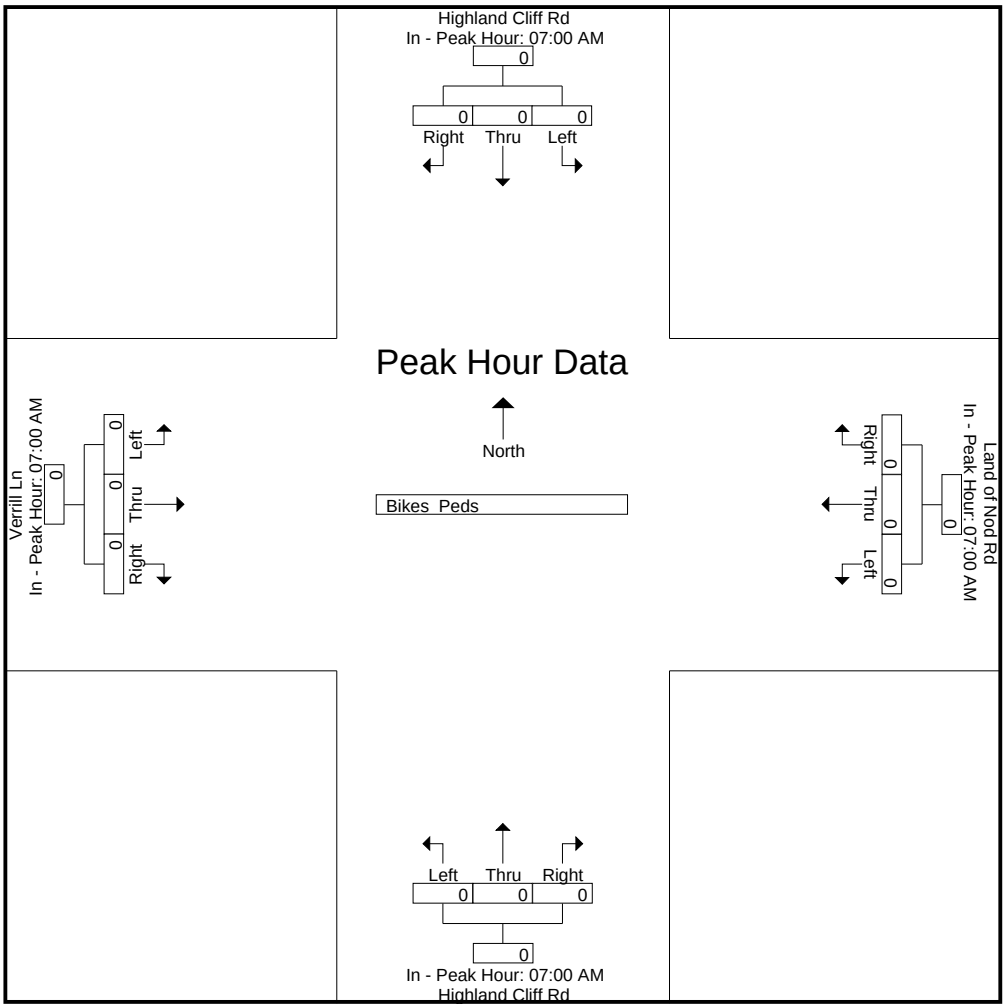
File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 12

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 1

Groups Printed- Cars - Trucks

	Highland Cliff Rd From North			Land of Nod Rd From East			Highland Cliff Rd From South			Verrill Ln From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	1	4	0	0	0	1	0	3	1	0	0	0	10
04:15 PM	2	8	0	1	0	1	0	8	1	0	0	0	21
04:30 PM	4	10	0	0	0	0	0	2	0	0	0	0	16
04:45 PM	1	8	0	0	0	2	0	3	0	0	0	0	14
Total	8	30	0	1	0	4	0	16	2	0	0	0	61
05:00 PM	4	11	0	0	0	3	0	6	0	0	0	0	24
05:15 PM	3	5	0	0	0	0	0	10	1	0	0	0	19
05:30 PM	0	9	0	0	0	2	0	4	1	0	0	0	16
05:45 PM	1	4	0	2	0	1	0	2	0	0	0	0	10
Total	8	29	0	2	0	6	0	22	2	0	0	0	69
Grand Total	16	59	0	3	0	10	0	38	4	0	0	0	130
Apprch %	21.3	78.7	0	23.1	0	76.9	0	90.5	9.5	0	0	0	
Total %	12.3	45.4	0	2.3	0	7.7	0	29.2	3.1	0	0	0	
Cars	16	59	0	3	0	10	0	38	4	0	0	0	130
% Cars	100	100	0	100	0	100	0	100	100	0	0	0	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0

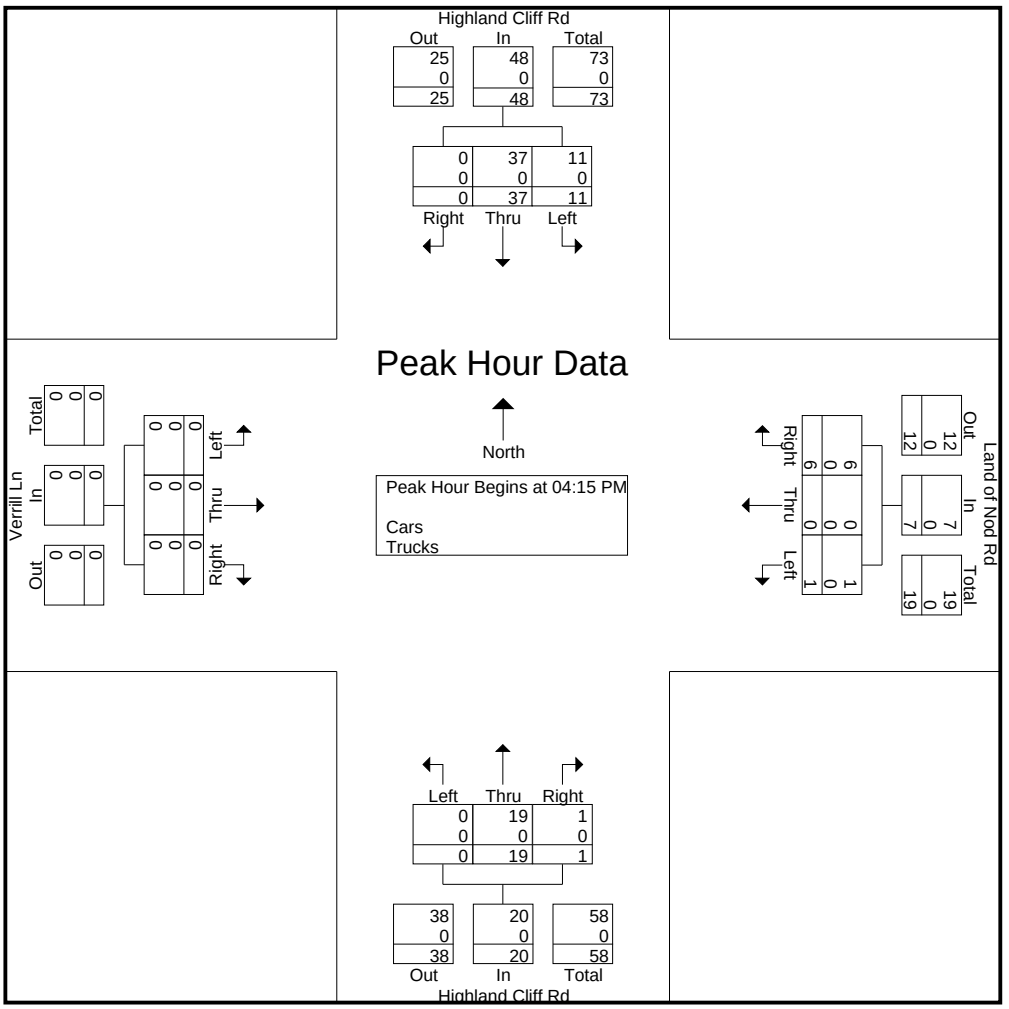
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 2

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	2	8	0	10	**1**	0	1	2	0	**8**	**1**	**9**	0	0	0	0	21
04:30 PM	**4**	10	0	14	0	0	0	0	0	2	0	2	0	0	0	0	16
04:45 PM	1	8	0	9	0	0	2	2	0	3	0	3	0	0	0	0	14
05:00 PM	4	**11**	0	**15**	0	0	**3**	**3**	0	6	0	6	0	0	0	0	**24**
Total Volume	11	37	0	48	1	0	6	7	0	19	1	20	0	0	0	0	75
% App. Total	22.9	77.1	0		14.3	0	85.7		0	95	5		0	0	0		
PHF	.688	.841	.000	.800	.250	.000	.500	.583	.000	.594	.250	.556	.000	.000	.000	.000	.781
Cars	11	37	0	48	1	0	6	7	0	19	1	20	0	0	0	0	75
% Cars	100	100	0	100	100	0	100	100	0	100	100	100	0	0	0	0	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



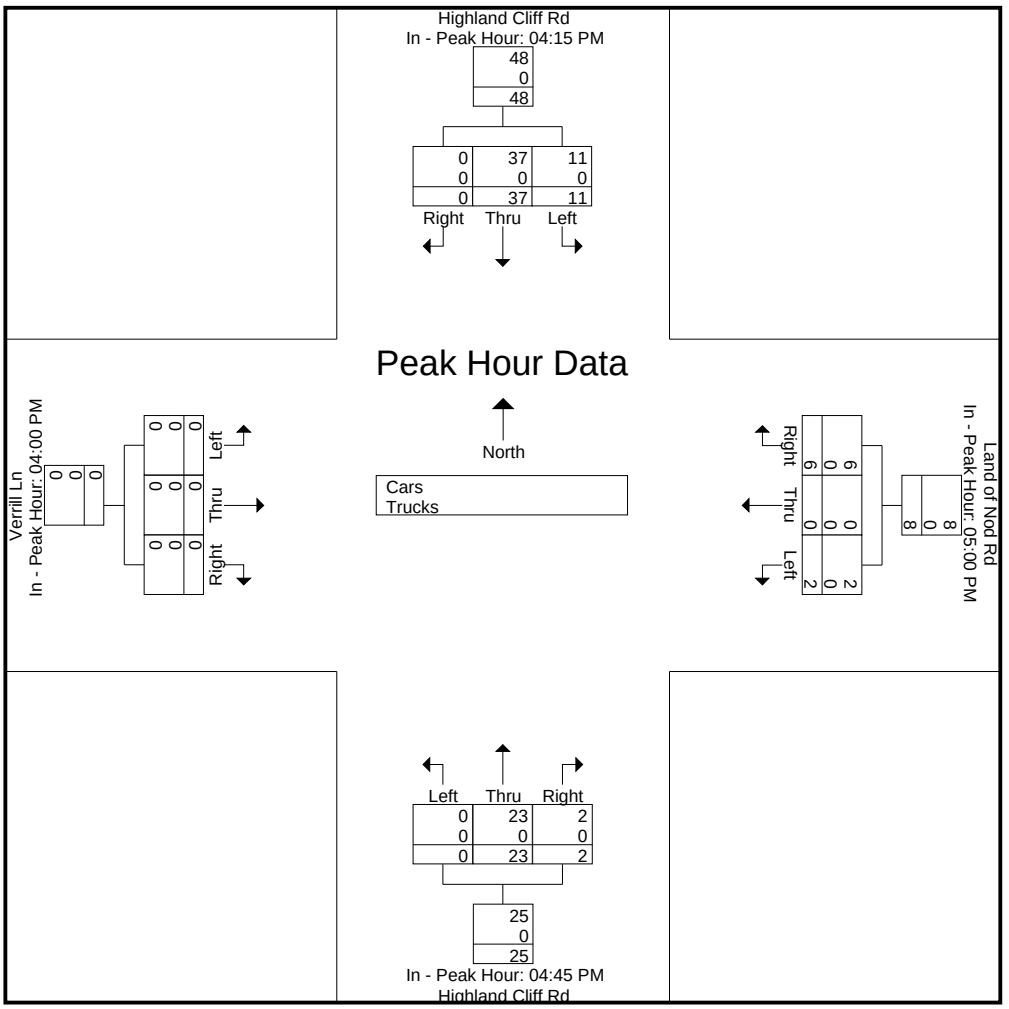
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 3

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:15 PM				05:00 PM				04:45 PM				04:00 PM				
+0 mins.	2	8	0	10	0	0	**3**	**3**	0	3	0	3	0	0	0	0	
+15 mins.	**4**	10	0	14	0	0	0	0	0	6	0	6	0	0	0	0	
+30 mins.	1	8	0	9	0	0	2	2	0	**10**	**1**	**11**	0	0	0	0	
+45 mins.	4	**11**	0	**15**	**2**	0	1	3	0	4	1	5	0	0	0	0	
Total Volume	11	37	0	48	2	0	6	8	0	23	2	25	0	0	0	0	
% App. Total	22.9	77.1	0		25	0	75		0	92	8		0	0	0		
PHF	.688	.841	.000	.800	.250	.000	.500	.667	.000	.575	.500	.568	.000	.000	.000	.000	
Cars	11	37	0	48	2	0	6	8	0	23	2	25	0	0	0	0	
% Cars	100	100	0	100	100	0	100	100	0	100	100	100	0	0	0	0	
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 4

Groups Printed- Cars

	Highland Cliff Rd From North			Land of Nod Rd From East			Highland Cliff Rd From South			Verrill Ln From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	1	4	0	0	0	1	0	3	1	0	0	0	10
04:15 PM	2	8	0	1	0	1	0	8	1	0	0	0	21
04:30 PM	4	10	0	0	0	0	0	2	0	0	0	0	16
04:45 PM	1	8	0	0	0	2	0	3	0	0	0	0	14
Total	8	30	0	1	0	4	0	16	2	0	0	0	61
05:00 PM	4	11	0	0	0	3	0	6	0	0	0	0	24
05:15 PM	3	5	0	0	0	0	0	10	1	0	0	0	19
05:30 PM	0	9	0	0	0	2	0	4	1	0	0	0	16
05:45 PM	1	4	0	2	0	1	0	2	0	0	0	0	10
Total	8	29	0	2	0	6	0	22	2	0	0	0	69
Grand Total	16	59	0	3	0	10	0	38	4	0	0	0	130
Apprch %	21.3	78.7	0	23.1	0	76.9	0	90.5	9.5	0	0	0	
Total %	12.3	45.4	0	2.3	0	7.7	0	29.2	3.1	0	0	0	

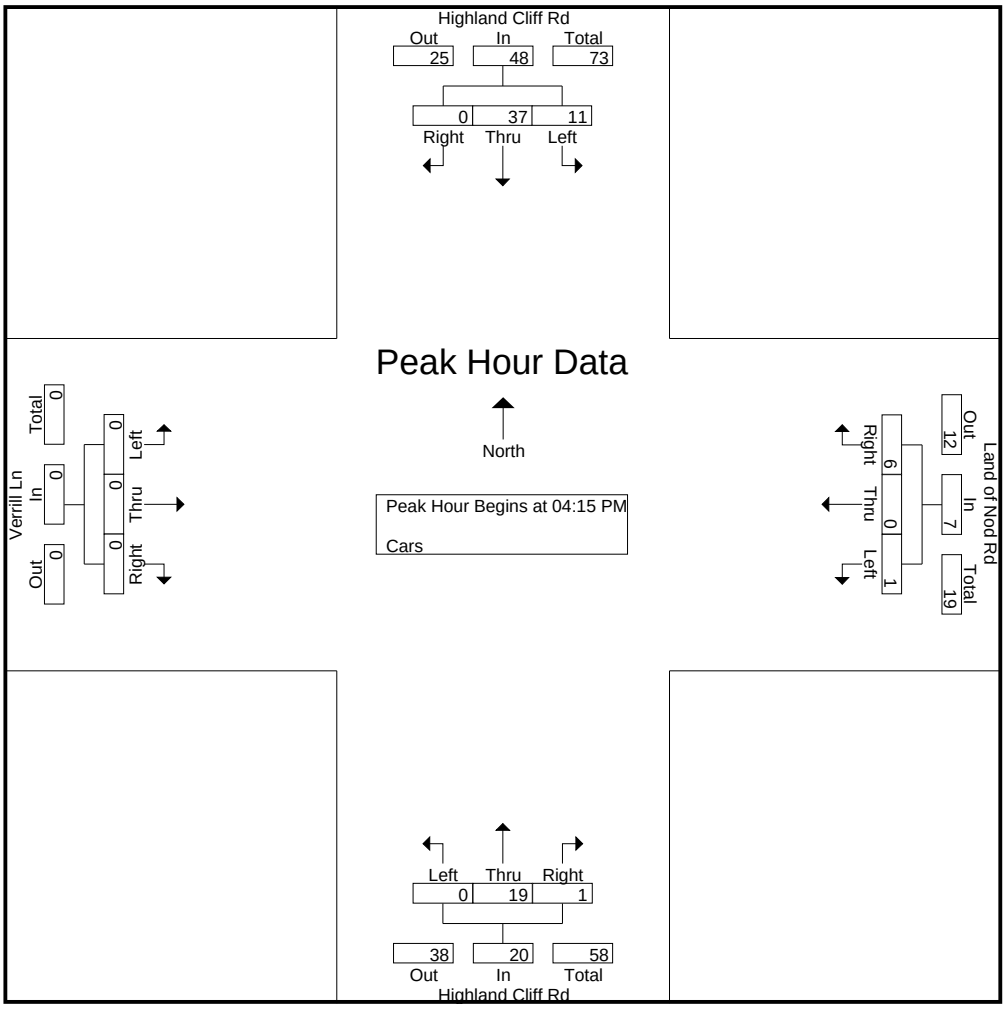
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 5

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	2	8	0	10	**1**	0	1	2	0	**8**	**1**	**9**	0	0	0	0	21
04:30 PM	**4**	10	0	14	0	0	0	0	0	2	0	2	0	0	0	0	16
04:45 PM	1	8	0	9	0	0	2	2	0	3	0	3	0	0	0	0	14
05:00 PM	4	**11**	0	**15**	0	0	**3**	**3**	0	6	0	6	0	0	0	0	**24**
Total Volume	11	37	0	48	1	0	6	7	0	19	1	20	0	0	0	0	75
% App. Total	22.9	77.1	0		14.3	0	85.7		0	95	5		0	0	0		
PHF	.688	.841	.000	.800	.250	.000	.500	.583	.000	.594	.250	.556	.000	.000	.000	.000	.781



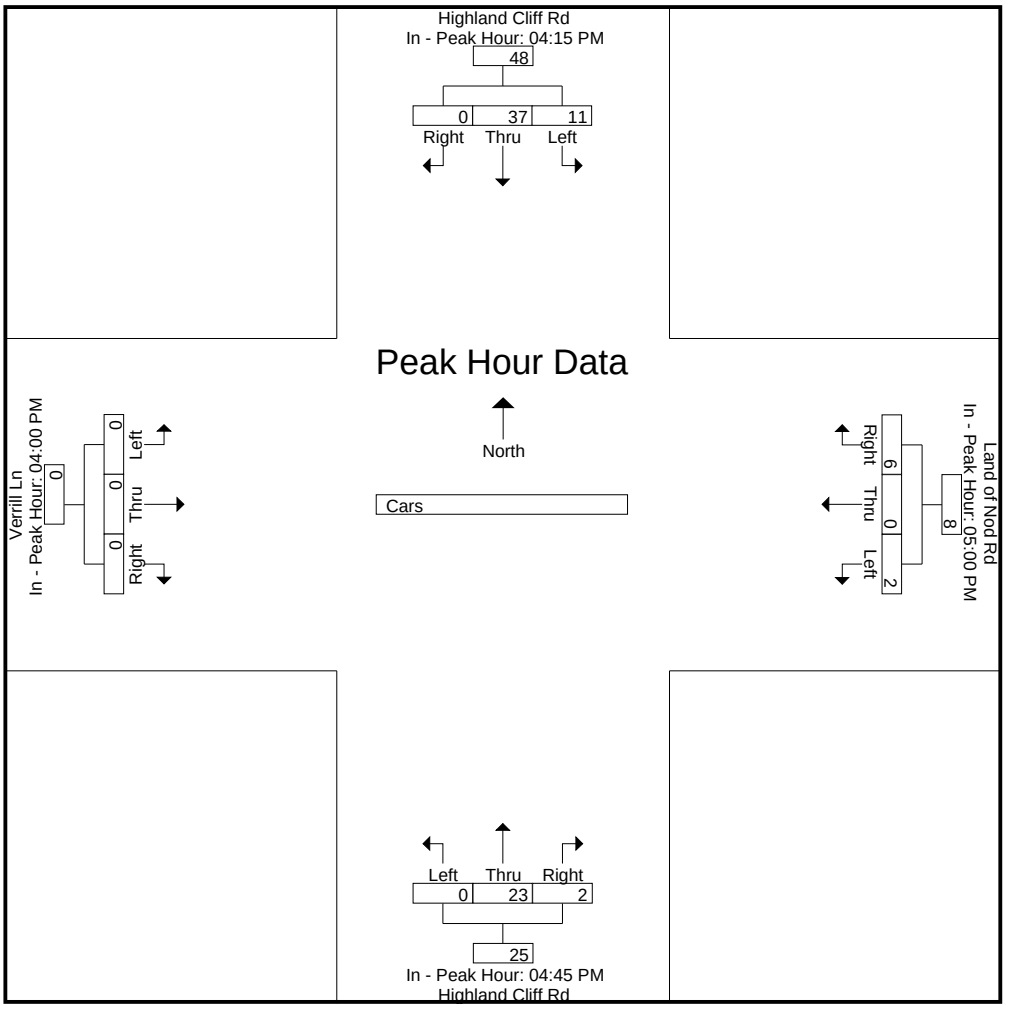
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 6

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:15 PM				05:00 PM				04:45 PM				04:00 PM				
+0 mins.	2	8	0	10	0	0	**3**	**3**	0	3	0	3	0	0	0	0	
+15 mins.	**4**	10	0	14	0	0	0	0	0	6	0	6	0	0	0	0	
+30 mins.	1	8	0	9	0	0	2	2	0	**10**	**1**	**11**	0	0	0	0	
+45 mins.	4	**11**	0	**15**	**2**	0	1	3	0	4	1	5	0	0	0	0	
Total Volume	11	37	0	48	2	0	6	8	0	23	2	25	0	0	0	0	
% App. Total	22.9	77.1	0		25	0	75		0	92	8		0	0	0		
PHF	.688	.841	.000	.800	.250	.000	.500	.667	.000	.575	.500	.568	.000	.000	.000	.000	



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 7

Groups Printed- Trucks

	Highland Cliff Rd From North			Land of Nod Rd From East			Highland Cliff Rd From South			Verrill Ln From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	
Total %													

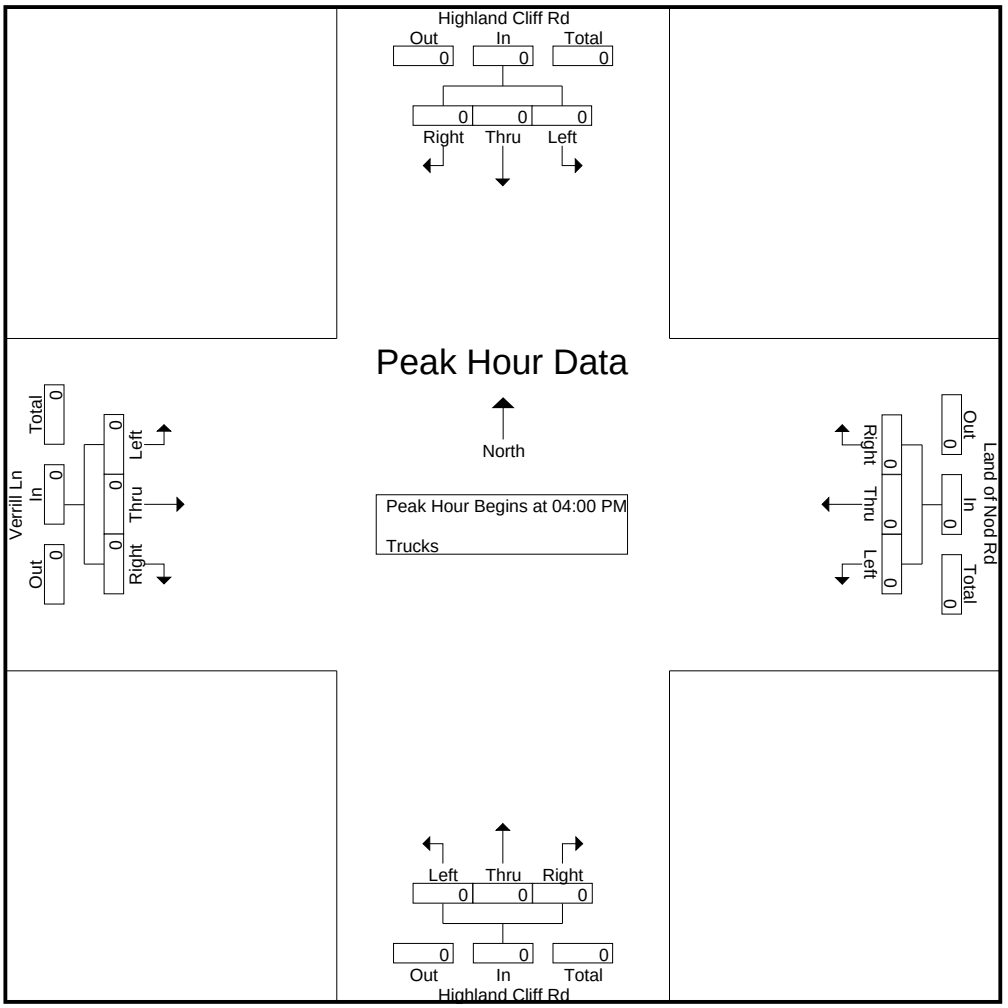
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 8

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

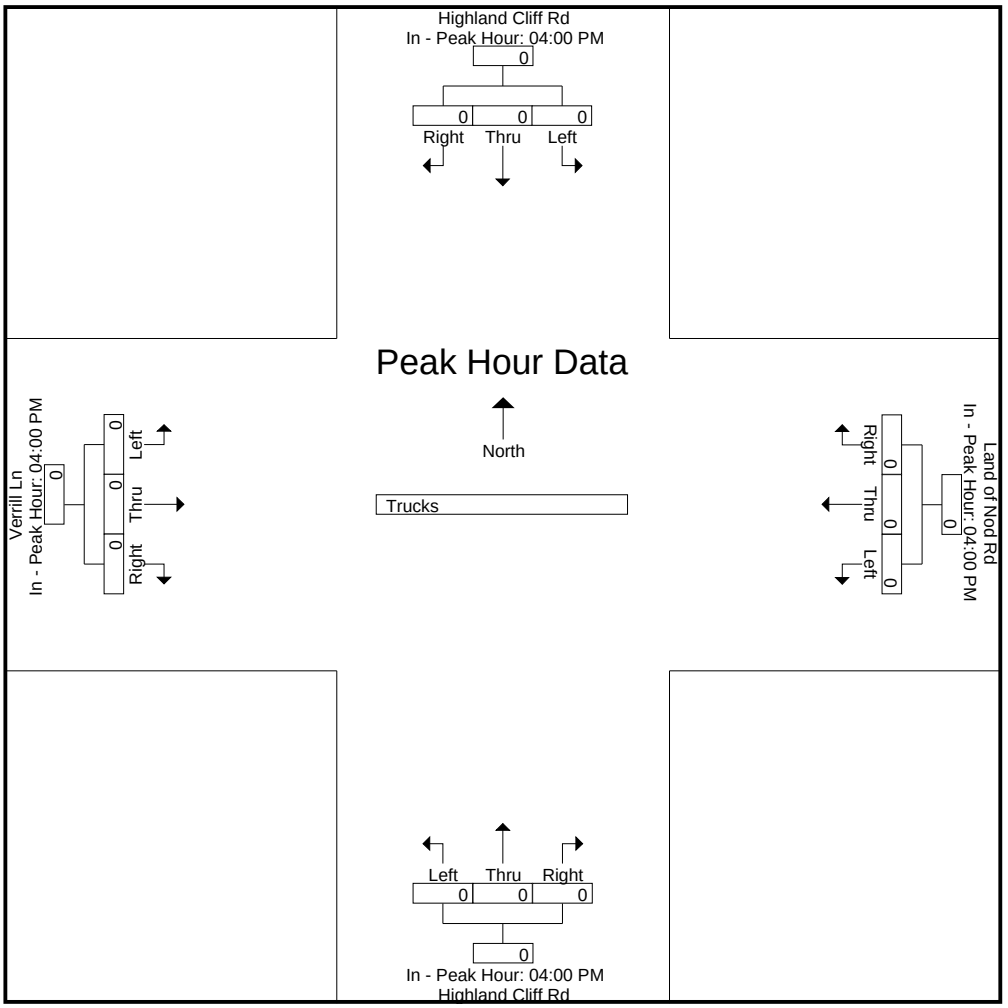
File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 9

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 10

Groups Printed- Bikes Peds

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Grand Total	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	2
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0				
Total %	0	0	0		0	0	0		0	100	0		0	0	0		50	50	

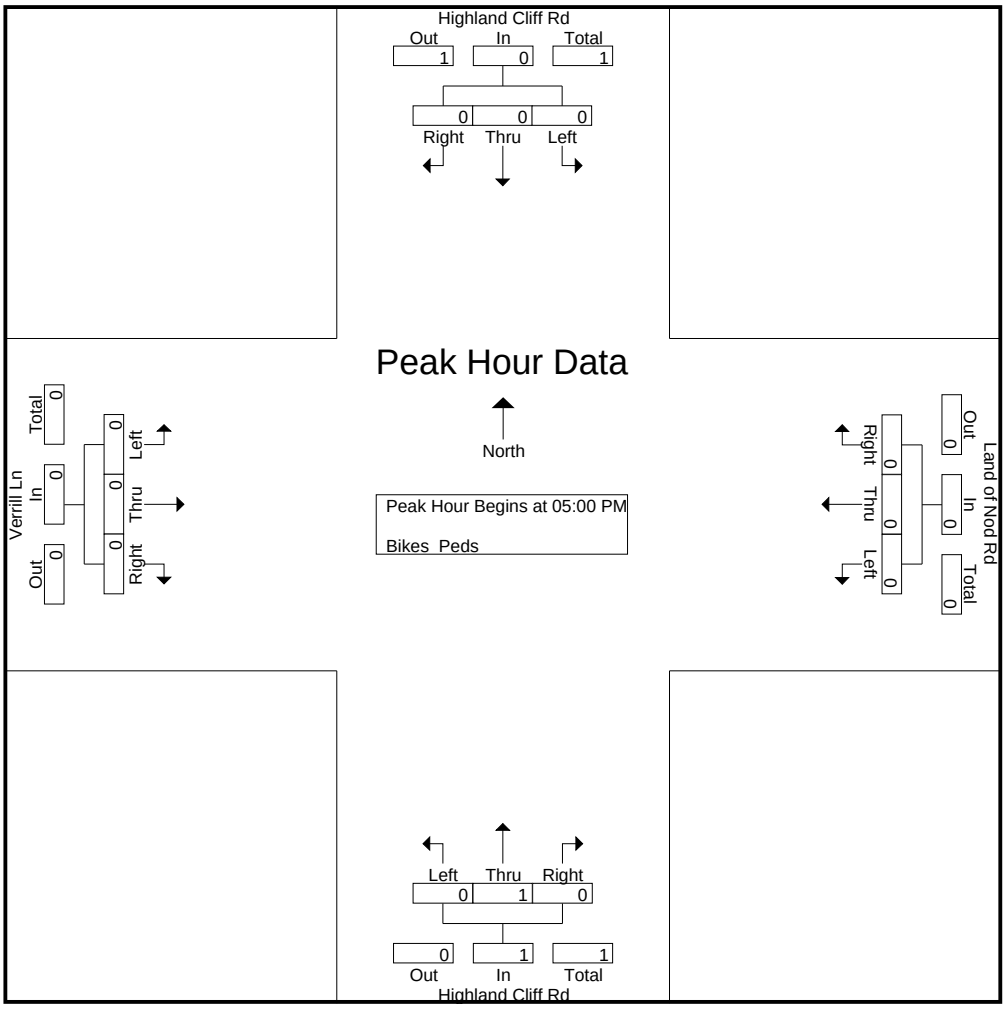
Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 11

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250



Accurate Counts

978-664-2565

N/S Street : Highland Cliff Road
E/W Street : Land of Nod Rd / Verrill Ln
City/State : Windham, ME
Weather : Clear

File Name : 16236004
Site Code : 16236004
Start Date : 9/18/2018
Page No : 12

	Highland Cliff Rd From North				Land of Nod Rd From East				Highland Cliff Rd From South				Verrill Ln From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				05:00 PM				04:00 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	

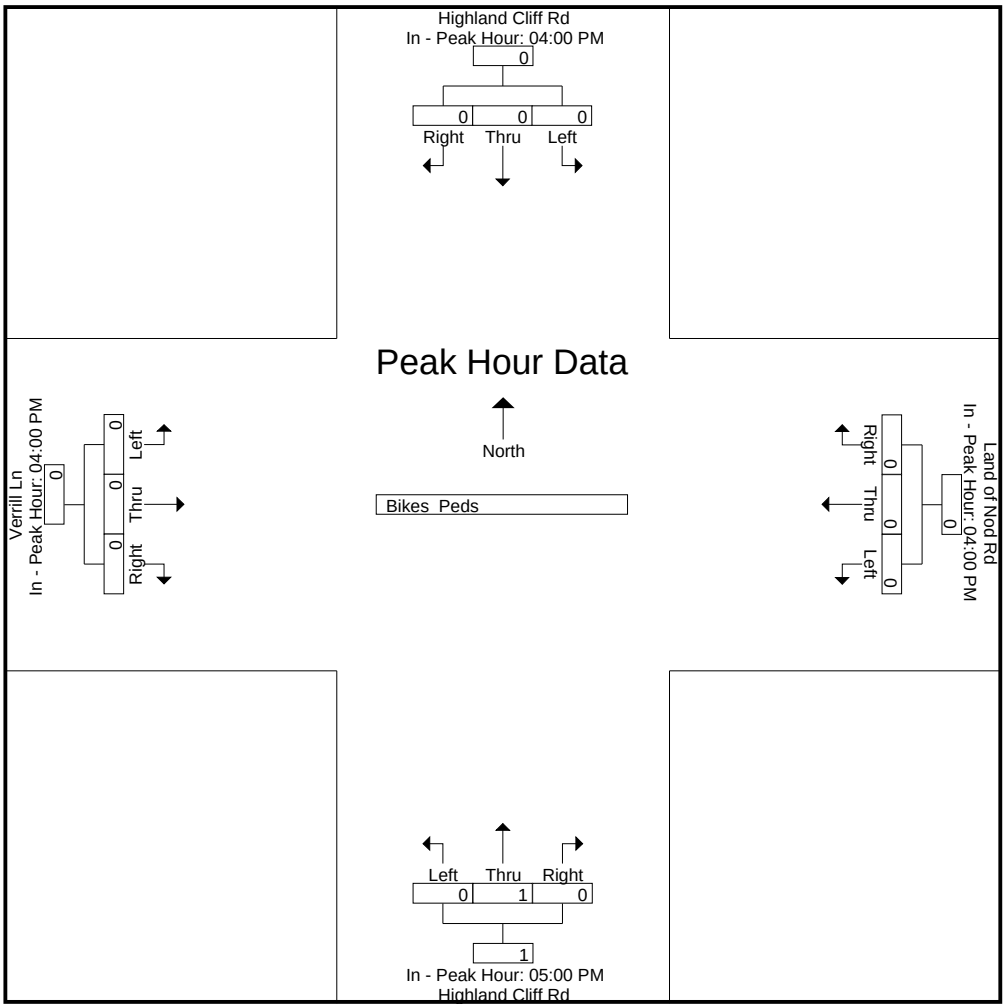


Exhibit 11

Unique Natural Areas

A - Maine Department of Inland Fisheries & Wildlife

B - Maine Natural Areas Program

C - Maine Historic Preservation Commission

D - FEMA FIRM Map

E - Wetland Memorandum

F - Sand & Gravel Aquifer Map

Exhibit 11: Unique Natural Areas

We have solicited a review or reviewed the available maps and information regarding natural resources/unique natural areas as follows:

A. A letter of inquiry for site review has been sent to the Maine Department of Inland Fisheries and Wildlife (MDIFW). A copy of the letter is enclosed in this section and the response will be included in the Final Subdivision Application. The project site does not include identified high value plant or animal habitat per the Town of Windham *MDIFW Beginning with Habitats-High Value Plant & Animal Habitats, Primary Map 2.*

B. A letter of inquiry has been submitted to the Maine Natural Areas Program (MNAP) for review unique botanical communities, natural areas, and threatened, endangered or rare plant species. A copy of the 01/18/19 response from MNAP indicates that they do not have record of rare botanical features specifically within the project area.

C. Per the Town Comprehensive Plan Historic Resources Map, the proposed site is not located in an identified historic or archaeological resources. A copy of the Comprehensive Plan Historic Map with the Land of Nod Road Subdivision site superimposed is located in this section. STI has also requested a site review for the presence of historic or archaeologic resources from the Maine Historic Preservation Commission (MHPC). A copy of the letter to MHPC is enclosed in this section. The MHPC reply will be included in the Final Subdivision application.

D. A copy of FEMA Flood Insurance Rate Map Community Panel 230189 0030 B, 9/2/81, Panel 30 of 35 with the project area is enclosed. The map indicates that there is one small area of flooding (Zone A) located at the northerly property line. We note that the area of flooding as shown is not located within an area of proposed disturbance or development.

E. A wetland delineation and vernal pool survey was performed by Gary Fullerton, CSS, LSE of Sebago Technics in June and May 2018 respectively. Wetland and vernal pool locations are shown on the enclosed Existing Conditions and Site Plans. A copy of the delineation/survey memorandum dated July 17, 2018 is enclosed in this section.

F. An excerpt from the Significant Sand and Gravel Aquifers Map from Maine Geological Survey is enclosed in this section. No portion of the site is located over a significant sand and gravel aquifer.

January 16, 2019
16236

Mr. John Perry
Environmental Coordinator
Maine Department of Inland Fisheries
41 State House Station
Augusta, Maine 04333
john.perry@maine.gov

Proposed Cluster Subdivision – 120 Land of Nod Road, Windham
Applicant: Grondin Corporation

Dear John:

On behalf of the applicant, Grondin Corporation, we respectfully request a project review for a 65.67-acre± property located at 120 Land of Nod Road in the Town of Windham shown on Tax Map 7, Lot 29. The applicant proposes the construction of a residential subdivision consisting of approximately 35 lots. We are currently preparing an application for the Town of Windham Planning Board review. The project design will also require Maine Department of Environmental Protection and U.S. Army Corps of Engineers review.

For your reference, I have enclosed a USGS Site Location Map and a reduced-size copy of Tax Map 7. If you have any questions please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist/Project Coordinator

enc.

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

JANET T. MILLS
GOVERNOR

January 18, 2019

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Via email: snichols@sebagotechnics.com

Re: Rare and exemplary botanical features in proximity to: #16236, Land of Nod Road Subdivision, Windham, Maine

Dear Ms. Nichols:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received January 17, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Windham, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

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

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

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

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

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

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

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

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

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #16236, Land of Nod Road Subdivision, Windham, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
	SC	S2	G5	2001-08-28	28	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G5	2000-06-06	5	Dry barrens (partly forested, upland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Enriched Northern Hardwoods Forest						
	<null>	S3	GNR	2001-08-28	34	Hardwood to mixed forest (forest, upland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
Marsh Milkwort						

Rare and Exemplary Botanical Features within 4 miles of
Project: #16236, Land of Nod Road Subdivision, Windham, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress						
	T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Mountain Honeysuckle						
	E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Pitch Pine Woodland						
	<null>	S3	G2	2005-12-08	28	Rocky summits and outcrops (non-forested, upland)
Small Reed Grass						
	SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Spotted Pondweed						
	T	S1	G5	1995-10-01	3	Open water (non-forested, wetland)
Vasey's Pondweed						
	SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNR Not yet ranked.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

ELEMENT OCCURRENCE RANKS - EO RANKS

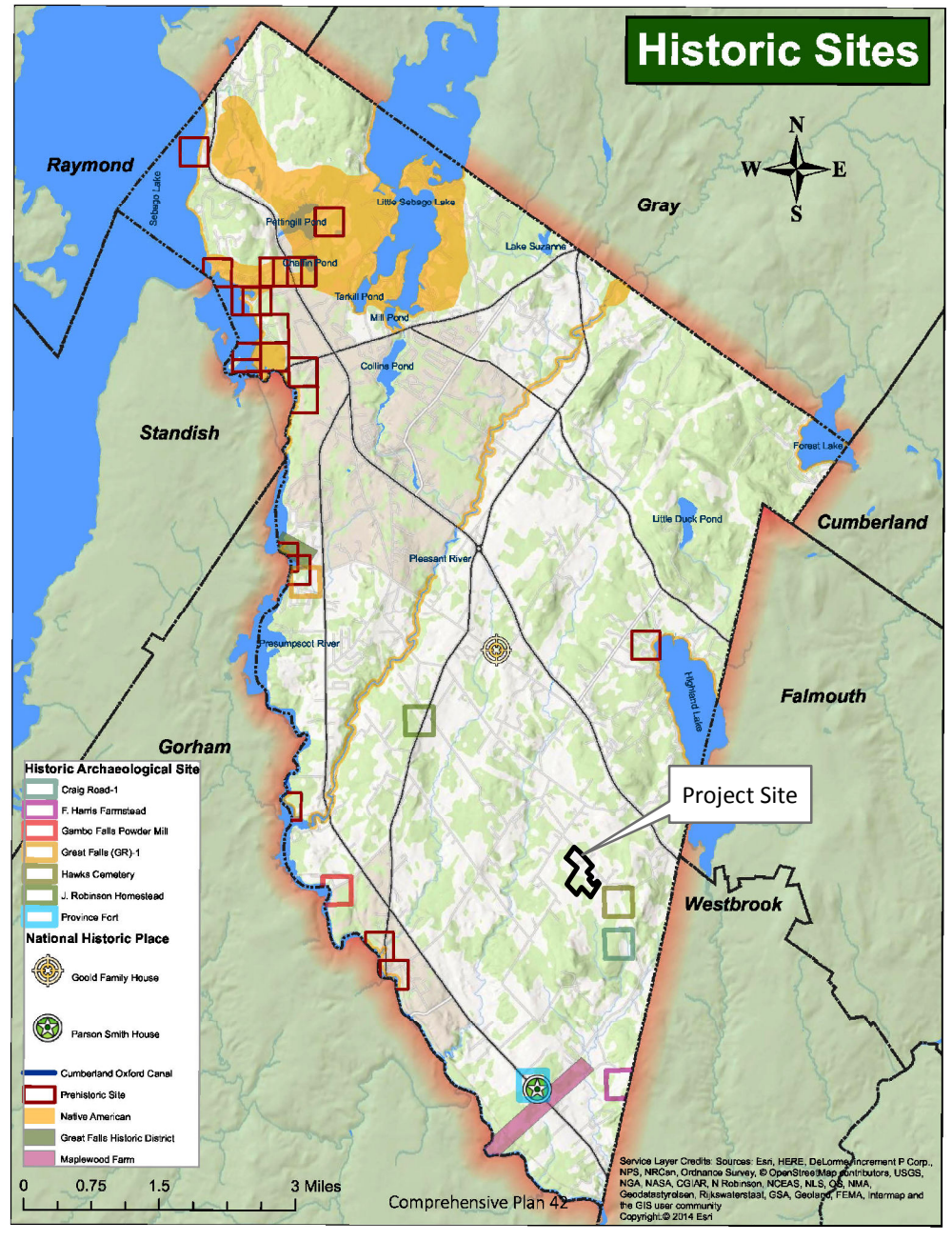
Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap


Historic Sites
N
W
E
S
Raymond
Gray
Standish
Cumberland
Falmouth
Gorham
Westbrook
Sebago Lake
Little Sebago Lake
Pettingill Pond
Lake Suzanne
Chaplin Pond
Tarkill Pond
Mill Pond
Collins Pond
Forest Lake
Little Duck Pond
Pleasant River
Presumpscot River
Highland Lake
Project Site
Historic Archaeological Site
Craig Road-1
F. Harris Farmstead
Gambo Falls Powder Mill
Great Falls (GR)-1
Hawks Cemetery
J. Robinson Homestead
Province Fort
National Historic Place
Goold Family House
Parson Smith House
Cumberland Oxford Canal
Prehistoric Site
Native American
Great Falls Historic District
Maplewood Farm
0
0.75
1.5
3 Miles
Service Layer Credits: Sources: Esri, HERE, DeLorme, increment P Corp., NPS, NRCan, Ordnance Survey, © OpenStreetMap contributors, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Copyright © 2014 Esri

January 17, 2019
16236

Mr. Kirk Mohney, State Historic Preservation Officer
Maine Historic Preservation Commission
65 State House Station
Augusta, ME 04039-0065

Re: Proposed New Residential Subdivision
120 Land of Nod Road, Windham
Tax Map 7, Lot 29

Dear Mr. Mohney

On behalf of the project applicant, Grondin Corporation, Sebago Technics respectfully requests site review for a proposed new ± 35-lot residential subdivision on a 66± acre parcel located at 120 Land of Nod Road in the Town of Windham. This project includes the construction of a new road to access the lots, utilities, stormwater management features and other associated site improvements. The site is located in a rural area of Windham in the Farm (F) zoning district allowing for clustered subdivision development as proposed.

There are currently two homes on the site that are accessed by a single drive extending from Land of Nod Road. Per available assessor records, the homes were built in 1900 and 1982. The homes will remain and be incorporated into the subdivision. We have enclosed photographs of the two homes that were retrieved from the Town Assessor information. We have also reviewed Town resources and determined that the site is not located within a designated Historic District. We enclose keyed photos of neighboring structures built in 1969 or earlier (50 years) for your reference and record. We respectfully request a review by the Maine Historic Preservation Commission for any Archaeological or Historic Sites within or adjacent to the redevelopment area in accordance with the provisions of 36 CFR, Part 800, Section 106.

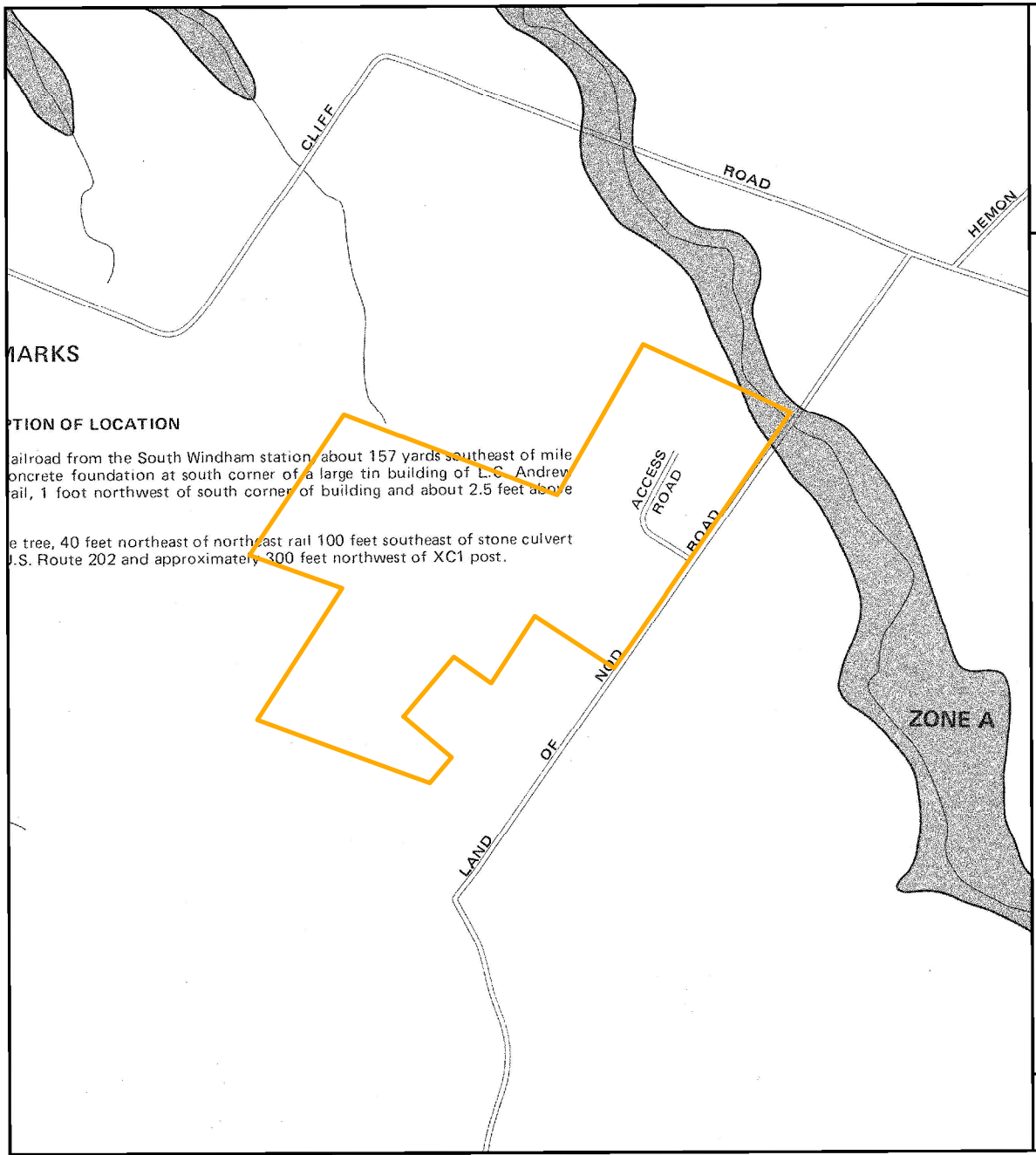
At your earliest convenience, please review and forward your findings. If you have any questions or need further information please do not hesitate to contact me at snichols@sebagotechnics.com or by telephone at (2070 200-2120.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist/Project Coordinator

enc.



MARKS

TION OF LOCATION

ailroad from the South Windham station about 157 yards southeast of mile
oncrete foundation at south corner of a large tin building of L.C. Andrew
ail, 1 foot northwest of south corner of building and about 2.5 feet above

e tree, 40 feet northeast of northeast rail 100 feet southeast of stone culvert
U.S. Route 202 and approximately 300 feet northwest of XC1 post.

APPROXIMATE SCALE

800 0 800 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
WINDHAM, MAINE
CUMBERLAND COUNTY

PANEL 30 OF 35
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230189 0030 B

EFFECTIVE DATE:
SEPTEMBER 2, 1981

federal emergency management agency
federal insurance administration

SEBAGO TECHNICS

Memorandum

To: Matthew Ek, PLS

From: Gary Fullerton, CSS, LSE

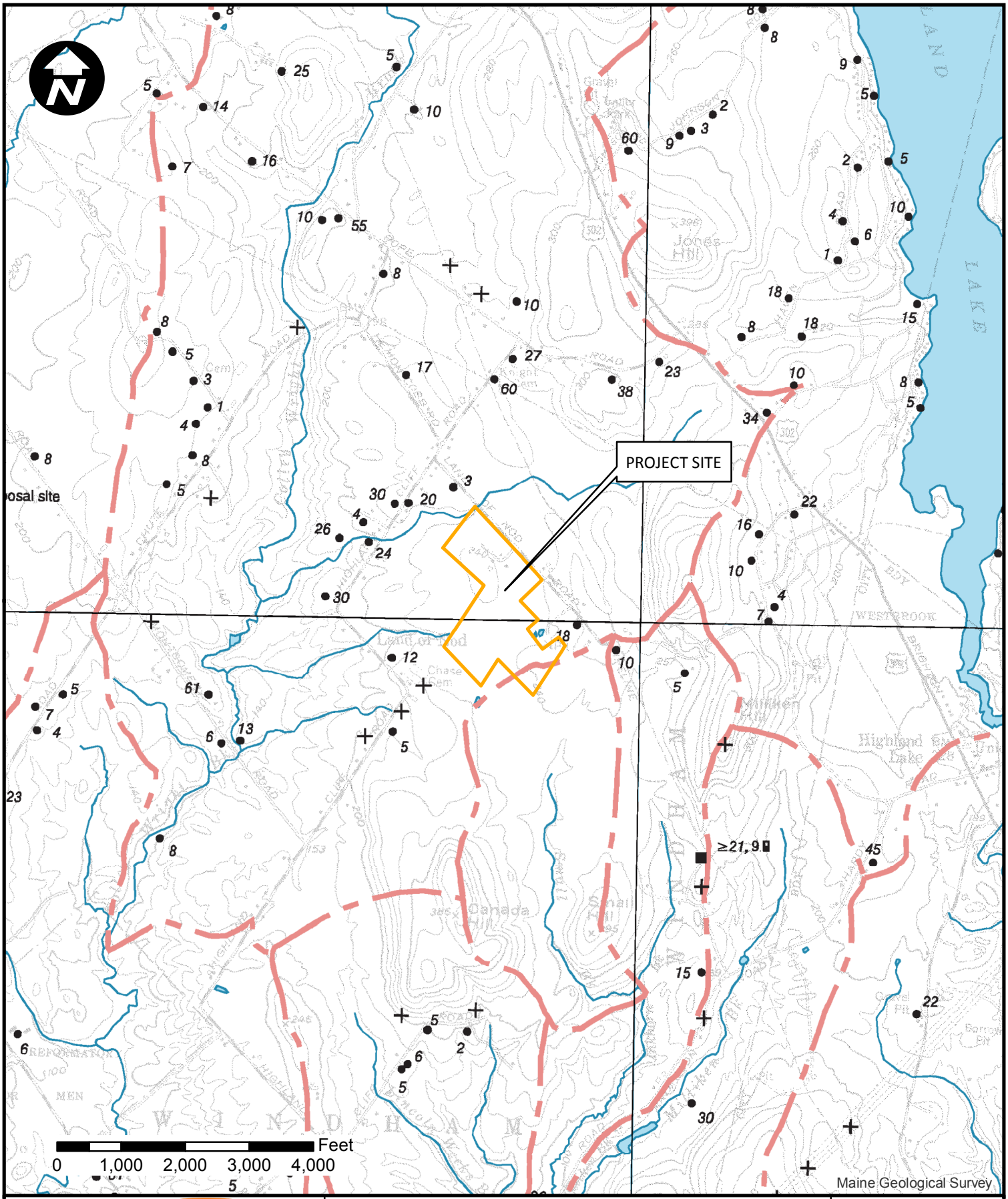
Date: July 17, 2017

Subject: #16236 – 120 Land of Nod Road

The wetlands on this site were delineated by Gary M. Fullerton of Sebago Technics, Inc. in June, 2017. This delineation conforms to the standards and methods outlined in the 1987 Wetlands Delineation Manual and Regional Supplement authored and published by the U.S. Army Corps of Engineers. The wetlands were marked in the field with alpha numeric pink "wetland delineation" flagging. The flags were then located using a Trimble gps backpack unit capable of decimeter accuracy.

Wetlands found are classified as forested wetlands (PFO), scrub-shrub wetlands (PSS), wet meadow wetlands (PEM) and man-made open water borrow pits (POW). PFO vegetation primarily consists of birch (*Betula spp.*), maple (*Acer spp.*), speckled alder (*Alnus incana*), cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern (*Onoclea sensibilis*), and sphagnum moss (*Sphagnum spp.*). PSS vegetation primarily consists of speckled alder, willow (*Salix spp.*), highbush blueberry (*Vaccinium corymbosum*), meadowsweet (*Spiraea alba*), cranberry (*Vaccinium oxycoccos*), cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern PEM vegetation is primarily soft rush (*Juncus effuses*), various carex species (*Carex spp.*), swamp candles (*Lysimachia terrestris*), and broadleaf cattail (*Typha latifolia*). POW vegetation primarily consists of lily species (*Nymphaea odorata* or *Nuphar variegate*). Upland vegetation primarily consists of white pine (*Pinus strobus*), red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), sheep laurel (*Kalmia angustifolia*), bracken fern (*Pteridium aquilinum*), and lowbush blueberry (*Vaccinium angustifolium*).

A vernal pool survey was conducted in May, 2017 following the standards and methods outlined in Chapter 335, Section 9, of the Natural Resources Protection Act. This survey yielded three vernal pools present on the site. Two vernal pools are located in the excavated borrow pit found in the northwest portion of the site and one is located in the southern portion of the field.



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SIGNIFICANT SAND AND GRAVEL AQUIFERS MAP

FOR: LEONARD SANBORN

SCALE: 1 " = 2,000 '

DATE: 01/21/2019

LOCATION:
120 Land of Nod Road
Windham, ME 04062

INFORMATION:
Maine Geological Survey_
Significant Sand and Gravel Aquifer Maps:
North Windham, Gorham, Cumberland Center, Portland West

16236_Bedrock Geology Map.mxd

PROJECT NUMBER: 16236

Exhibit 12

Stormwater Management

Exhibit 12: Stormwater Management Report

Please refer to the Stormwater Management Report included in this section. The enclosed plan set shows stormwater management features, construction details, erosion and sedimentation controls and the written erosion and sedimentation control plan.

Exhibit 13

Landscaping

Exhibit 13: Landscaping

Proposed landscaping is limited to areas near the entrance of the proposed Sanborn Lane near Land of Nod Road. The concept is to provide a line of trees and shrubs with the subdivision sign, such that it will be placed on upland areas, out of the wetland limits, so that it will screen those homes to be located in the meadow from Land of Nod Road view. Additionally, Mr. Grondin intends to save specimen trees along the road frontage where possible where lots are to be located in woodland areas.

Exhibit 14

Waiver Requests

Exhibit 14: Waiver Requests

The applicant respectfully requests that the subdivision street performance requirement for road monumentation be set with granite monuments at each point of curvature be reduced to allow for only one side of the proposed road right-of-way be provided with such monuments. The reduction in monumentation will provide a substantial cost savings while providing the permanent street location identification as required by the Town.

Exhibit 15

Hydrogeological Assessment

Groundwater Impact Study
Land of Nod Road Property
120 Land of Nod Road, Windham

INTRODUCTION:

The purpose of this study is to make an assessment of the hydrogeologic conditions of the above-mentioned site and estimate the groundwater quality impact caused by the proposed on-site subsurface wastewater disposal systems for 30 four-bedroom houses.

The proposed development is located along the southwest side of Land of Nod Road at the position indicated on the attached Site Locus Map (Appendix A, Figure 1). Data used for this project includes a site plan titled *Subdivision Plan Land of Nod Road Property* prepared by Sebago Technics, Inc. and dated January 18, 2019 along with a High-Intensity Soil Survey Report generated by Sebago Technics and published regional maps and literature.

DISPOSAL FIELDS AND WATER SUPPLY:

The proposed disposal fields will be 30 individual subsurface wastewater disposal systems (SSWD) each designed to serve a four-bedroom home. The development will be served by individual on-site wells. One existing drilled well, on Lot 3, will be incorporated into the new development. The location of test pits, wastewater disposal systems, and simulated nitrate-nitrogen (NO_3-N) plumes are shown on the Groundwater Impact Study Map (Appendix A, Figure 2).

SURFICIAL GEOLOGY AND TOPOGRAPHY:

The site is located on the *U.S.G.S. North Windham and Gorham, Maine 7.5-Minute Quadrangles, 7.5 Minute Series* (Appendix A, Figure 1). Site area topography slopes generally downward from a generally northwest to southeast-trending surface water flow divide which is located roughly from Lot 6 to the cul-de-sac.

The *Significant Sand and Gravel Aquifer Map of the Maine Geological Survey (MGS) Web-Based Digital Significant Sand and Gravel Aquifer Map, Maine Quadrangle* (Appendix A, Figure 3) shows that the site does not fall within a Significant Sand and Gravel Aquifer.

The *Surficial Geology Map of the MGS Web-Based Digital Surficial Geology Map, Maine Quadrangle* (Appendix A, Figure 5) shows that northern portion of the site was mapped as an end moraine complex (see Figure 4). Three individual end moraines are depicted as red lines on the MGS map. End moraines were deposited at the glacial margin (the southern end of the glacier where it bordered the ocean) during the melting phase of most recent glaciation event.

The southern portion of the site was mapped as marine regressive sand deposits, massive to stratified and cross-stratified, well-sorted sand. These were deposited under the ocean as the glacier melted back towards the northwest.

STI complete a Class 'B' High Intensity Soil Survey Report (submitted separately). Test pit logs from that report are included in Appendix B. Attached to the report is a summary table of soil types encountered (Form E) and a map depicting the distribution of soils at the site. Ten types of soil are described. In general, sandy soils were encountered in the central portion of the site. Fine sandy loam was mapped in the areas of lots 1, 2, and 30.

HYDROGEOLOGY:

Precipitation falling on this site enters the open pore spaces on the upper soil horizon, and percolates vertically downward until the water table is encountered. Thereupon, flow is both horizontal and downhill. Two factors of importance in determining the amount of recharge of precipitation into the soil on this site are the groundwater slope or gradient and soil texture. The groundwater seepage velocity is used to calculate the extent of groundwater impact downgradient of the disposal field sites and has been calculated utilizing the following equation:

$$v = Ki/n$$

where,

v = groundwater seepage velocity (ft/day)
K = hydraulic conductivity (ft/day)
i = hydraulic gradient (ft/ft)
n = effective porosity (dimensionless)

The hydraulic conductivity of the soil in the disposal area is estimated at 10 feet per day for outwash areas and 2 for areas with mixed-origin soils. The average hydraulic gradient under the areas downgradient of the disposal fields varied from 4% to 5% in mixed-origin soil areas and 1% to 8% under sandy areas. A groundwater surface gradient of 1% was used as the slope parameter in the model.

CONTAMINATION POTENTIAL:

It is assumed that the worst potential for contamination is the nitrate-nitrogen (NO_3-N) released from wastewater disposal fields. NO_3-N is known to cause methemoglobinemia in infants and is a suspected cause of stomach cancer. The average NO_3-N concentration value of untreated septic tank effluent entering a disposal field is assumed to be 40 milligrams per liter (mg/L). A level of 1 mg/L was used as a background nitrate concentration in the aquifer. The Federal and State Drinking Water Limit for NO_3-N in public water supplies is 10 mg/L.

The primary mechanism of NO_3-N concentration reduction is through dilution in groundwater and surface water. Since groundwater is always slowly flowing beneath a disposal field, the NO_3-N intercepting the water table below a disposal field mixes and dilutes in the groundwater and moves in the direction of groundwater flow in the form of a plume. NO_3-N is more concentrated in the center than near the edges of a plume. A source that emanates a constant quantity of potential contaminants

into groundwater will eventually reach a "steady state." The plume can then be characterized with regard to size, shape, and distribution of concentration.

The method of analysis used to assess the impact of the septic systems on groundwater is an analytical model used to simulate individual plumes. Analysis of the results of this model is instructive in assessing the possible shape and size of wastewater plumes. The model was developed by Baetsle (1969) to depict the migration of radionuclides in porous media, which is adapted here to represent the subsurface migration of NO_3-N. It is a three-dimensional transport model of plumes generated by continuous, point sources in a uniform groundwater flow field. Variables employed include seepage velocity (hydraulic conductivity multiplied by hydraulic gradient, divided by effective porosity), nitrate mass, time, and dispersivity. The concentration of NO_3-N is calculated at a downgradient point at a specified time by use of the following equation:

$$C(x,y,z,t) = \left[\frac{CoVo}{8(\pi t)^{1.5}\sqrt{DxDyDz}}\right]\exp\left[-\frac{(x-vt)^2}{4Dxt} - \frac{y^2}{4Dyt} - \frac{z^2}{4Dzt}\right] \quad ;$$

where,

C(x,y,z,t)	=	NO_3-N concentration at specified location and time (mg/L)
x	=	specified distance from source parallel to the direction of groundwater flow (ft)
y	=	specified distance from source perpendicular to the direction of groundwater flow (ft)
z	=	specified vertical distance from source (ft)
Co	=	initial concentration at the source (mg/L)
Vo	=	volume of source (ft^3)
t	=	time elapsed (day)
Dx,Dy,Dz	=	dispersion coefficient along the x,y,z axes (ft^2/day)
v	=	average linear velocity (ft/day).

Assuming that groundwater flow is horizontal, the dispersion coefficient can be calculated as follows:

$D_{x,y,z}$ = $v_{x,y,z}$;

where $_{x,y,z}$ is dispersivity (ft).

The contaminant velocity of a solute subject to sorption/adsorption is calculated as follows:

V_p = v/R_d;

where V_p is the contaminant velocity (ft/day) and R_d is the retardation factor (unitless). The retardation factor for NO_3-N is equal to one, however, so the contaminant velocity is equal to the average linear velocity (V_p = v). Dispersivity is estimated by an equation based on a weighted least-squares statistical analysis of collected longitudinal dispersivity data versus scale (Xu, Eckstein, 1995). Longitudinal dispersivity can be estimated based on the following calculation:

$_x$ = $(0.83)[\log_{10}(L_p)]^{2.414}$;

where $_x$ is longitudinal dispersivity (ft), and L_p is the plume length (ft). The plume length is a function of the elapsed time and is calculated by the following equation:

$$L_p = V_p t.$$

It has already been established that for NO_3-N, the contaminant velocity (V_p) is equal to the average linear velocity (v). Thus, L_p = vt. The transverse and vertical dispersivities are related to the longitudinal dispersivity, as shown below:

$$_y = {}_x/3$$
$$_z = {}_x/20.$$

This method is used to calculate a downgradient NO_3-N concentration at a specified elapsed time for a single release of NO_3-N. However, by applying the superposition technique, the estimated concentration of NO_3-N downgradient at a specified time can be calculated for reoccurring daily NO_3-N releases to simulate the NO_3-N plume of a septic system (Chang, *et al*. 1998).

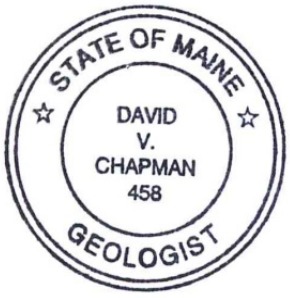
In the main equation, CoVo is represented as a daily mass of nitrate-nitrogen loaded into the subsurface wastewater disposal systems. This is estimated by multiplying the design flow volume of effluent by the assumed NO_3-N concentration in the effluent. The simulations were run based on average annual precipitation during drought conditions (60% of average annual precipitation). The NO_3-N concentration of the wastewater is diluted by the rainfall infiltrating the disposal fields during drought conditions. The rainfall is assumed to have a NO_3-N concentration of 0.5 mg/L. The percent of rainfall infiltrating the soils above the disposal fields is estimated based on the soil type and ground surface slope (Maine Department of Environmental Protection, 1991).

Parameters and results for the disposal field are displayed in Appendix C. The resulting 10 mg/L NO_3-N concentration plume lengths for the disposal fields are shown on the site plan. The 10 mg/L plumes do not cross the boundaries of the subdivision.

CONCLUSION:

According to the assumptions made for this simulation, the wastewater disposal system will not result in an increase of NO_3-N concentrations above 10 mg/L in groundwater at the subdivision perimeter property line.

Dave Chapman
Maine Certified Geologist #458



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APPENDIX A

FIGURES

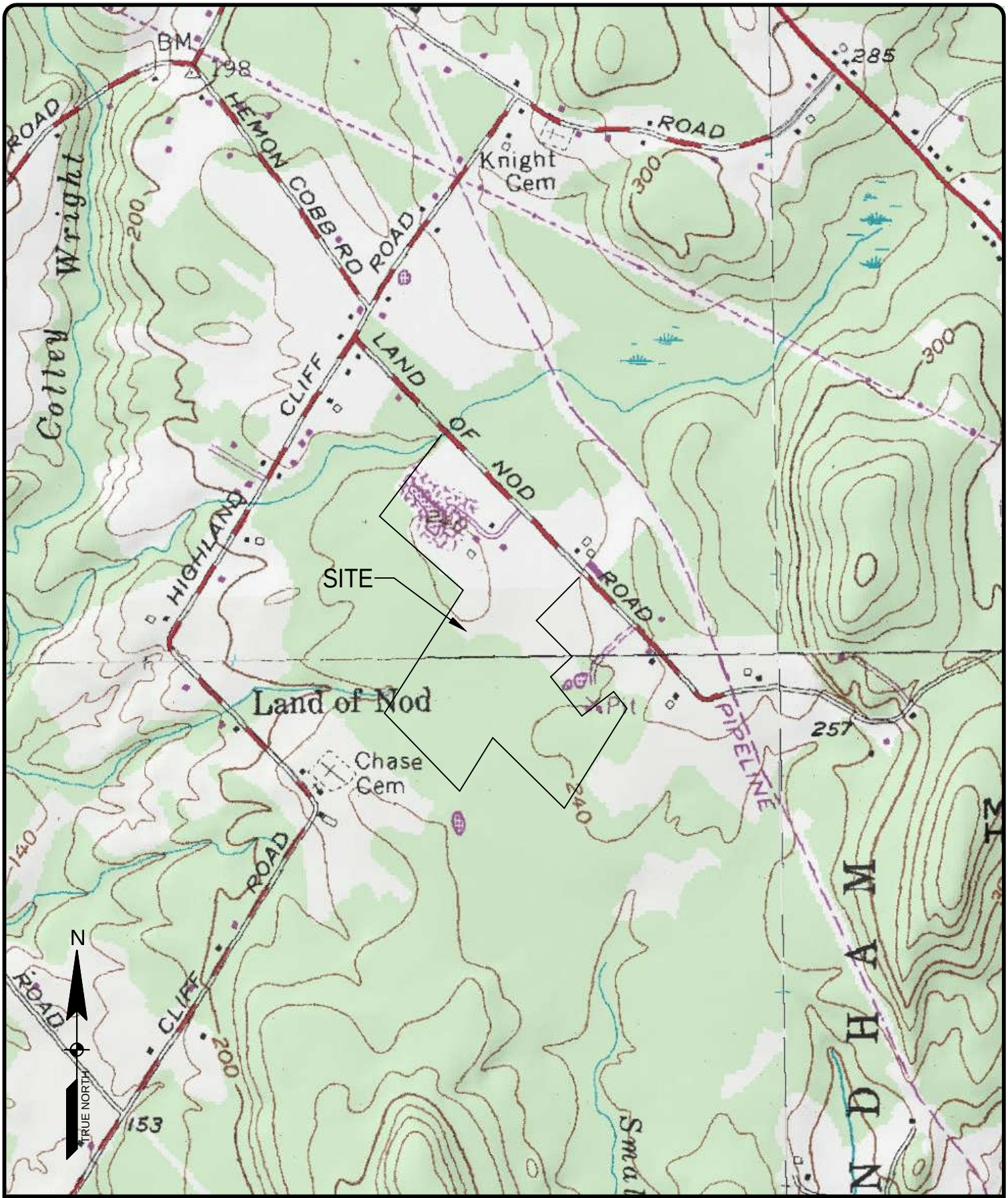

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FIGURE 1: SITE LOCUS MAP

SCALE: 1" = 1000'

DATE: 2-4-19

SHEET: 1 OF 1

LOCATION:
120 LAND OF NOD ROAD
WINDHAM, MAINE

FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, MAINE 04062

Figures 190123.dwg, TAB: F1

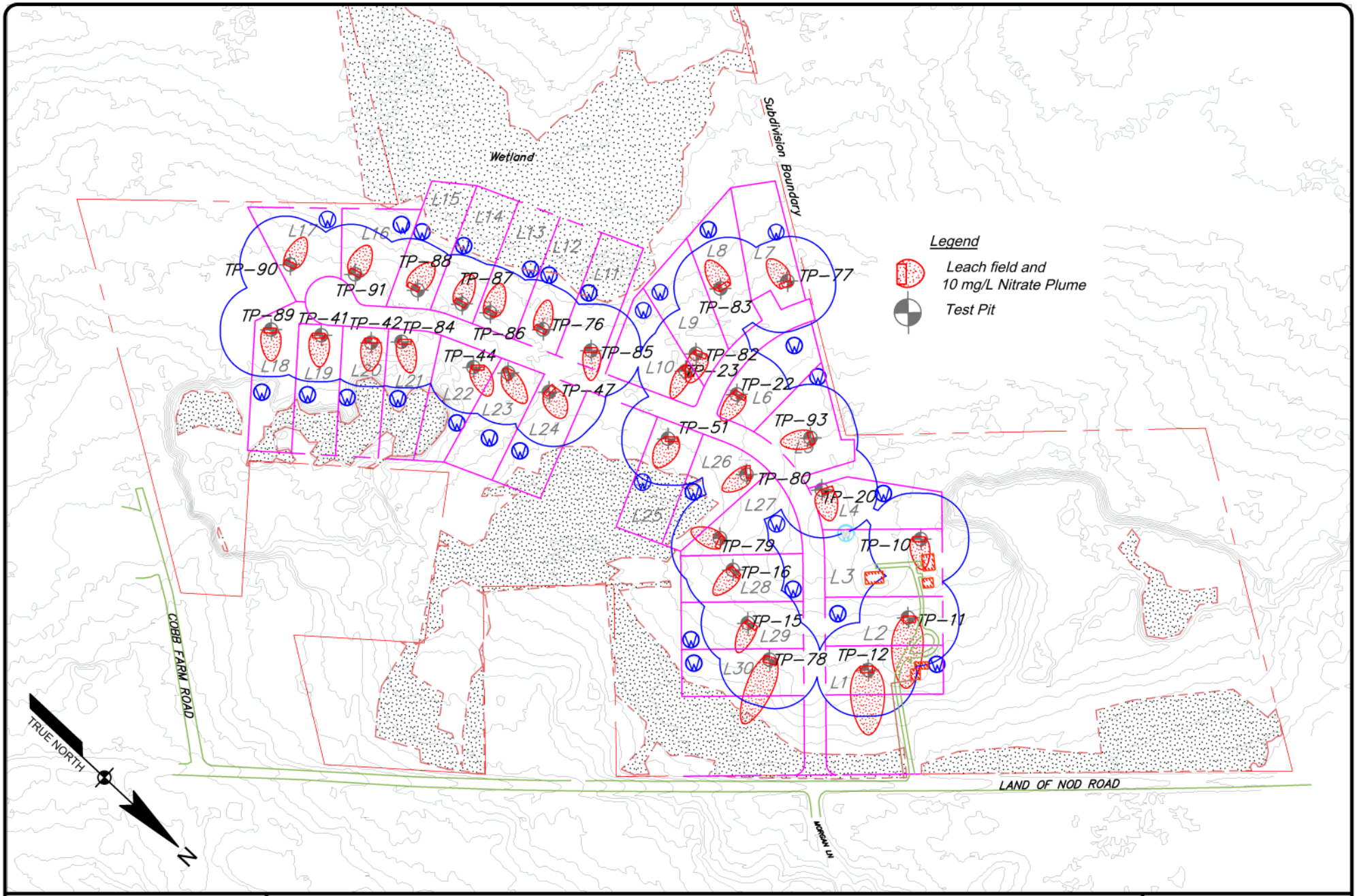

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FIGURE 2. GROUNDWATER IMPACT STUDY MAP

SCALE:	1" = 300'
DATE:	2-4-19
SHEET:	1 OF 1

LOCATION: LAND OF NOD ROAD PROPERTY
120 LAND OF NOD ROAD
WINDHAM, MAINE

FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, MAINE 04062

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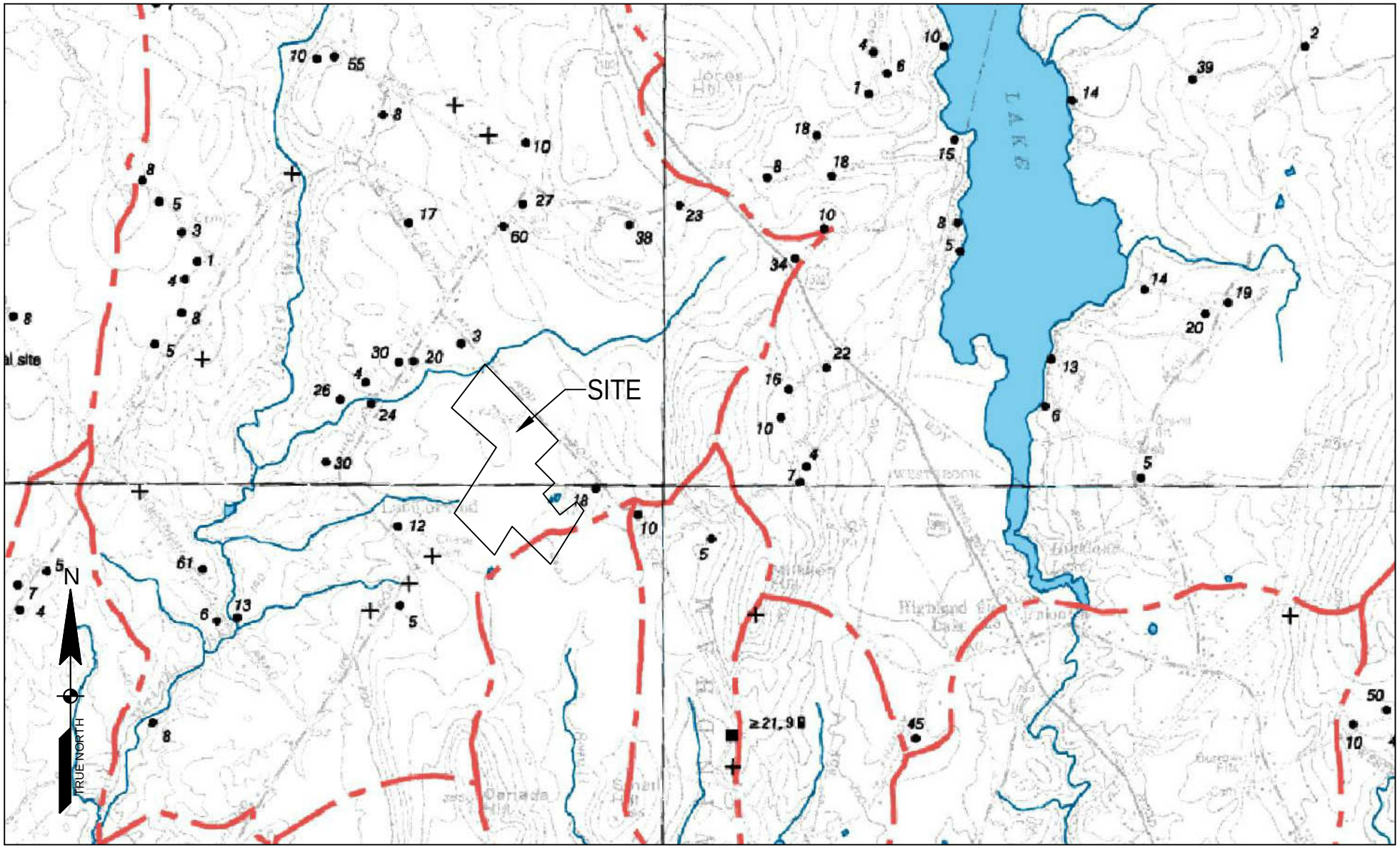

FIGURE 3: SAND & GRAVEL AQUIFER MAP

SCALE: 1" = 2000'

DATE: 3-2-18

SHEET: 1 OF 1

LOCATION: 120 LAND OF NOD ROAD
WINDHAM, MAINE

FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, MAINE 04062

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Figures 190123.dwg, TAB: F3

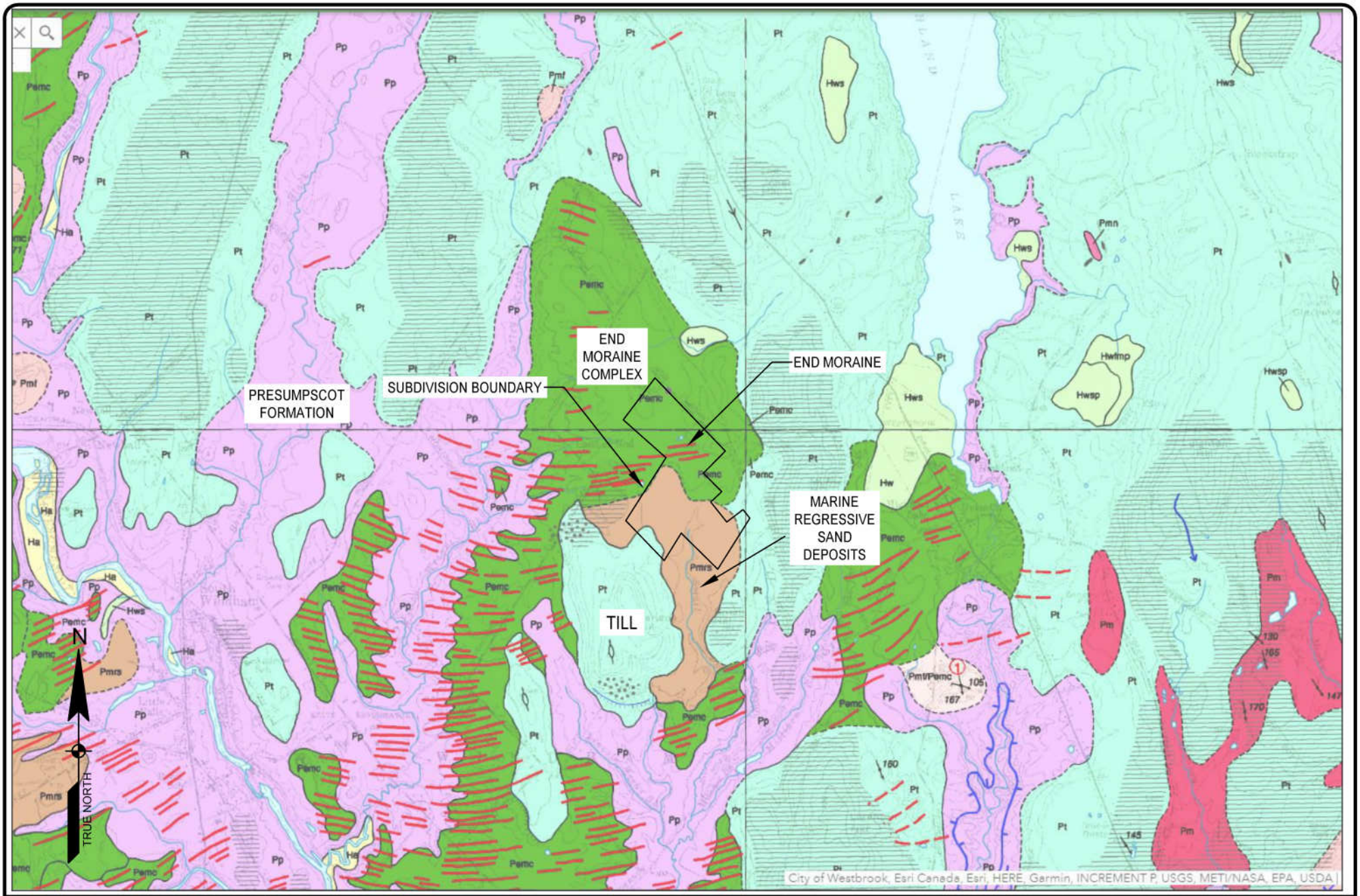

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FIGURE 4: SURFICIAL GEOLOGY MAP

SCALE: 1" = 2000'

DATE: 3-2-18

LOCATION: 120 LAND OF NOD ROAD
WINDHAM, MAINE

FOR: GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, MAINE 04062

SHEET: 1 OF 1

16236 GEOLOGICAL FIGURES.dwg, TAB: F4

APPENDIX B

TEST PIT LOGS

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	LEONARD SANBORN	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-1** ■ Test Pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		2.5Y 6/6	
		OLIVE YELLOW	
MEDIUM SAND	FRIABLE		NONE OBSERVED
		2.5Y 6/4	
		LIGHT	
		YELLOWISH BROWN	
LIMIT OF EXCAVATION = 23"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ☐ restrictive layer ☐ bedrock
	3-8	23"	

C.S.S. Soil Series / phase name: **ADAMS** | **SWED** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-2** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND		10YR 3/2	
		VERY DARK	
		GRAYISH BROWN	
	FRIABLE		
MEDIUM SAND		2.5Y 5/4	
		LIGHT	COMMON, MEDIUM,
		OLIVE BROWN	& DISTINCT
LIMIT OF EXCAVATION = 22"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	18"	

C.S.S. Soil Series / phase name: **CROGHAN** | **MWD** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-3** ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/4	
LOAMY SAND		DARK	
		YELLOWISH BROWN	
			NONE
	FRIABLE		OBSERVED
		10YR 5/6	
MEDIUM SAND		YELLOWISH BROWN	
LIMIT OF EXCAVATION = 26"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ☐ restrictive layer ☐ bedrock
	0-3	>26"	

C.S.S. Soil Series / phase name: **ADAMS** | **SWED** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **6** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **B-4** ☐ Test Pit ■ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND		10YR 4/4	
		DARK	
		YELLOWISH BROWN	
	FRIABLE		
MEDIUM SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
COARSE SAND		10YR 5/6	COMMON, MEDIUM
		YELLOWISH BROWN	& DISTINCT
LIMIT OF EXCAVATION = 24"			

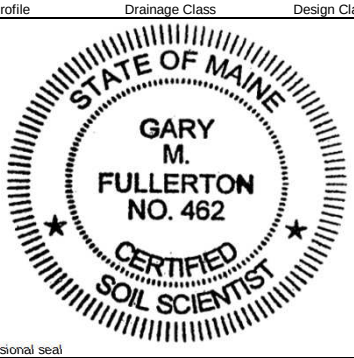
☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	0-3	18"	

C.S.S. Soil Series / phase name: **CROGHAN** | **MWD** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **6** Profile | **C** Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	7/5/17
	name printed/typed: **Gary M. Fullerton**	Lic.#:	462
L.S.E.	signature:	Date:	7/5/17
	name printed/typed: **Gary M. Fullerton**	Lic.#:	355



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SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	LEONARD SANBORN	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-5 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (Inches)	Texture	Consistency	Color	Mottling
0–6	SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
6–15	LOAMY SAND	FRIABLE	10YR 4/6 DARK YELLOWISH BROWN	
15–20	FINE SAND		10YR 5/6 YELLOWISH BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 20"

☐ hydric ■ non-hydric | Slope %: 0-3 | Limiting factor: 15" | ■ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN | Drainage Class: MWD | Hydrologic Group: A

L.S.E. Soil Classification: Profile: 5 | Drainage Class: C | Design Class: ______

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature: [signature]	Date: 7/5/17
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature: [signature]	Date: 7/5/17
	name printed/typed: Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-10** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND		10YR 4/6	
		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE	10YR 5/6	NONE
		YELLOWISH	OBSERVED
		BROWN	
MEDIUM SAND		2.5Y 6/3	
		LIGHT	
		YELLOWISH	
		BROWN	
COARSE SAND			

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>55"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **ADAMS** | **SWED** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **B** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-11** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/3	
LOAM		BROWN	
	FRIABLE		
SILT		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
FINE		2.5Y 5/6	
SAND		LIGHT OLIVE	
		BROWN	
SILT	FIRM	2.5Y 5/3	
LOAM		LIGHT	
		OLIVE	
		BROWN	
		2.5Y 6/3	
VERY FINE	FRIABLE	LIGHT YELLOWSIH	FEW, FINE
SAND		BROWN	FAINT

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	28"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **MELROSE** | **WD** Drainage Class | **C** Hydrologic Group

L.S.E. Soil Classification: **7** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-12** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/3	
LOAM		BROWN	
		2.5Y 5/4	
		LIGHT OLIVE	COMMON,
		BROWN	MEDIUM,
			DISTINCT
SILT	FIRM	2.5Y 5/3	
LOAM		LIGHT	
		OLIVE	
		BROWN	
FINE	FRIABLE	2.5Y 7/3	
SAND		PALE BROWN	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	12"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **SWANTON** | **SWPD** Drainage Class | **B/D** Hydrologic Group

L.S.E. Soil Classification: **7** Profile | **D** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-13** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM		10YR 3/2	
		VERY	
		DARK	
		GRAYISH	
	FRIABLE	BROWN	COMMON,
			MEDIUM,
			DISTINCT
		2.5Y 5/3	
SANDY		LIGHT	
LOAM		OLIVE	
		BROWN	
SILTY		5Y 5/1	MANY,
CLAY		GRAY	COARSE,
LOAM			PROMINENT
	FIRM		
SILTY			
CLAY			

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	4"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **SWANTON** | **PD** Drainage Class | **B/D** Hydrologic Group

L.S.E. Soil Classification: **7** Profile | **E** Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	462
L.S.E.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	355

STATE OF MAINE
GARY M. FULLERTON
NO. 462
CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-14** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/3	
LOAM		DARK	
	FRIABLE	BROWN	
LOAMY		2.5Y 5/6	
FINE		LIGHT	
SAND		OLIVE	
		BROWN	
SILTY	FIRM	5Y 5/2	COMMON,
CLAY		OLIVE	MEDIUM,
LOAM		GRAY	DISTINCT
SILTY	VERY		
CLAY	FIRM		

LIMIT OF EXCAVATION = 53"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	16"	

C.S.S. Soil Series / phase name: **ELMWOOD** — **MWD** Drainage Class — **B/D** Hydrologic Group

L.S.E. Soil Classification: **7** Profile — **C** Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-15** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM			
		2.5Y 4/3	
		OLIVE BROWN	
	FRIABLE		
VERY FINE		2.5Y 6/4	COMMON,
SANDY LOAM		LIGHT	MEDIUM,
		YELLOWISH	DISTINCT
		BROWN	
FINE		2.5Y 6/3	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	9"	

C.S.S. Soil Series / phase name: **NAUMBURG** — **SWPD** Drainage Class — **A/D** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **D** Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-16** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 3/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
		10YR 6/4	
		LIGHT	
		YELLOWISH	
		BROWN	
			COMMON, MEDIUM
			DISTINCT

LIMIT OF EXCAVATION = 60"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	55"	

C.S.S. Soil Series / phase name: **ADAMS** — **SWED** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **B** Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-17** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/3	
LOAM		DARK	
		BROWN	
	FRIABLE		
		2.5Y 5/6	
LOAMY		LIGHT OLIVE	
SAND		BROWN	
MEDIUM		2.5Y 5/4	
SAND		LIGHT OLIVE	COMMON,
		BROWN	MEDIUM,
			DISTINCT

LIMIT OF EXCAVATION = 60"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	0-3	20"	

C.S.S. Soil Series / phase name: **CROGHAN** — **MWD** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **C** Drainage Class — _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	462
L.S.E.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-18** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		2.5Y 4/3	
LOAM		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
			DISTINCT
		2.5Y 5/4	
	FRIABLE	LIGHT	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	
		2.5Y 6/2	
		LIGHT	
		BROWNISH	
		GRAY	

LIMIT OF EXCAVATION = 55"

	Slope %	Limiting factor	
■ hydric ▫ non-hydric	3-8	3"	■ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **NAUMBURG** | **PD** Drainage Class | **A/D** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **E** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-19** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/3	
LOAM		DARK	
		BROWN	
	FRIABLE		
LOAMY		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 5/6	COMMON,
SAND		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 60"

	Slope %	Limiting factor	
▫ hydric ■ non-hydric	0-3	23"	■ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | **MWD** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-20** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/4	
LOAM		DARK	
		YELLOWISH	
	FRIABLE	BROWN	NONE
			OBSERVED
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 55"

	Slope %	Limiting factor	
▫ hydric ■ non-hydric	0-3	>55"	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **ADAMS** | **SWED** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **B** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-21** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		NONE
			OBSERVED
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 55"

	Slope %	Limiting factor	
▫ hydric ■ non-hydric	3-8	>55"	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **ADAMS** | **SWED** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **B** Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	462
L.S.E.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-22 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2	SANDY		10YR 3/4	
3	LOAM		DARK	
4			YELLOWISH	
5			BROWN	
6				
7				
8		FRIABLE		
9				
10				
12				
14				
16	FINE		2.5Y 7/4	
18	SAND		PALE	
20			BROWN	
30				
36				
			2.5Y 7/2	COMMON,
40			LIGHT	MEDIUM,
			GRAY	DISTINCT
55				
60				

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	0-3	36"	

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-23 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2	SANDY		10YR 4/3	
3	LOAM		BROWN	
4				
5				
6				
7				
8				
9		FRIABLE		
10				
12				
14				
16	FINE		10YR 5/6	
18	SAND		YELLOWISH	
20			BROWN	
			2.5Y 5/6	
			LIGHT	
28			OLIVE	
30			BROWN	
				COMMON,
				MEDIUM,
40				DISTINCT
54				
	VERY FINE	FIRM	5Y 4/3	
60	SANDY LOAM		OLIVE	

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	0-3	29"	

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-24 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2	LOAMY		10YR 4/4	
3	SAND		DARK	
4			YELLOWISH	
5			BROWN	
6				
7				
8				
9		FRIABLE		
10				
12				
14			10YR 4/6	
16			DARK	
18			YELLOWISH	
20			BROWN	
22				
	MEDIUM		10YR 5/6	
	SAND		YELLOWISH	
30			BROWN	
34				
			2.5Y 5/6	COMMON,
40			LIGHT	MEDIUM,
			OLIVE	DISTINCT
50			BROWN	
60				

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	34"	

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-25 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2	SANDY		10YR 4/3	
3	LOAM		BROWN	
4				
5				
6				
7				
8		FRIABLE		
9				
10				
12				
14	LOAMY		10YR 5/6	
16	SAND		YELLOWISH	
18			BROWN	
20				
22				
			2.5Y 5/6	
	FINE		LIGHT OLIVE	
25	SAND		BROWN	
30				
			2.5Y 6/4	COMMON,
			LIGHT	MEDIUM,
			YELLOWISH	DISTINCT
			BROWN	
40				
50				
60				

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	25"	

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature: Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-26** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		10YR 3/4	
SAND		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
MEDIUM		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
		7.5Y 4/4	COMMON,
			MEDIUM,
	CEMENTED		DISTINCT
		7.5Y 4/6	
		2.5Y 6/4	
FINE		LIGHT YELLOWISH	
SAND		BROWN	

LIMIT OF EXCAVATION = 50"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
■ non-hydric	3-8	20"	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | **MWD** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-27** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
		2.5Y 5/6	COMMON,
		LIGHT	MEDIUM,
		OLIVE	DISTINCT
LOAMY	CEMENTED	BROWN	
SAND			
FINE	FRIABLE		
SAND			
		2.5Y 5/3	
		LIGHT	
		OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 60"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
■ non-hydric	0-3	8"	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **NAUMBURG** | **SWPD** Drainage Class | **A/D** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **E** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-28** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/3	
LOAM		BROWN	
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM	CEMENTED	2.5Y 5/6	COMMON,
SAND		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	
GRAVELLY		2.5Y 6/3	
COARSE		LIGHT	
SAND		YELLOWISH	
		BROWN	
FINE			
SAND			

LIMIT OF EXCAVATION = 55"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
■ non-hydric	3-8	18"	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | **MWD** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **C** Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-29** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
		10YR 5/6	
		YELLOWISH	
		BROWN	
GRAVELLY		2.5Y 5/6	
COARSE		LIGHT	
SAND		OLIVE	
		BROWN	
FINE		2.5Y 6/6	COMMON,
SAND	FIRM	OLIVE	MEDIUM,
		YELLOW	DISTINCT
GRAVELLY			
COARSE			
SAND			

LIMIT OF EXCAVATION = 55"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
■ non-hydric	3-8	27"	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | **MWD** Drainage Class | **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile | **C** Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/20/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/20/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F

16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-30** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
	FRIABLE		
GRAVELLY SAND		10YR 5/6 YELLOWISH BROWN	
		2.5Y 6/3 LIGHT YELLOWISH BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	26"	■	☐	☐

C.S.S. Soil Series / phase name: **DUANE** — Drainage Class: **MWD** — Hydrologic Group: **A**

L.S.E. Soil Classification: **6** Profile — **C** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-31** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/2 VERY DARK GRAYISH BROWN	
		2.5Y 5/6 LIGHT OLIVE BROWN	
VERY FINE SANDY LOAM	FIRM	5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM		5Y 4/2 OLIVE GRAY	
FINE SAND	FRIABLE	2.5Y 5/6 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	12"	☐	☐	☐

C.S.S. Soil Series / phase name: **SWANTON** — Drainage Class: **SWPD** — Hydrologic Group: **B/D**

L.S.E. Soil Classification: **8** Profile — **D** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-32** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY FINE SAND		10YR 4/4 DARK YELLOWISH BROWN	
		2.5Y 6/1	
FINE SAND	FRIABLE	GRAY	NONE OBSERVED
LOAMY FINE SAND		10YR 4/6 DARK YELLOWISH BROWN	
FINE SAND		2.5Y 5/6 LIGHT OLIVE	
	FIRM	BROWN	
	FRIABLE	2.5Y 6/3 LIGHT YELLOWISH BROWN	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	26"	☐	■	☐

C.S.S. Soil Series / phase name: **ADAMS** — Drainage Class: **SWED** — Hydrologic Group: **A**

L.S.E. Soil Classification: **5** Profile — **C** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-33** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND	FRIABLE	10YR 5/6 YELLOWISH BROWN	
MEDIUM SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
			FEW, FINE, FAINT
SILT LOAM	FIRM	5Y 6/2 LIGHT OLIVE GRAY	

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	29"	☐	■	☐

C.S.S. Soil Series / phase name: **MELROSE** — Drainage Class: **WD** — Hydrologic Group: **C**

L.S.E. Soil Classification: **7** Profile — **C** Drainage Class — Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	462
L.S.E.	signature:	Date:	9/20/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-34 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		2.5Y 4/4	
LOAM		OLIVE	
		BROWN	
MEDIUM	FRIABLE	2.5Y 5/6	NONE
SAND		LIGHT	OBSERVED
		OLIVE	
		BROWN	
GRAVELLY		2.5Y 5/4	
COARSE		LIGHT OLIVE	
SAND		BROWN	
		2.5Y 6/4	
FINE		LIGHT YELLOWISH	
SAND		BROWN	
		2.5Y 5/3	
SILT	FIRM	LIGHT OLIVE	
LOAM		BROWN	

LIMIT OF EXCAVATION = 52"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	0-3	41"	☐ ground water ■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: MELROSE | WD (Drainage Class) | C (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) | C (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-35 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
	FRIABLE	BROWN	
LOAMY		2.5Y 4/1	NONE
SAND		DARK	OBSERVED
		GRAY	
SILT		2.5Y 5/3	
LOAM	FIRM	LIGHT	
		OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 48"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	0-3	23"	☐ ground water ■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: MELROSE | WD (Drainage Class) | C (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) | C (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-36 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	NONE
SAND		DARK	OBSERVED
		YELLOWISH	
		BROWN	
COARSE		2.5Y 4/6	
SAND		OLIVE	
		BROWN	
FINE			
SAND			
		5Y 6/3	
		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 49"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	0-3	>49"	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ADAMS | SWED (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | B (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-37 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		10YR 4/4	
SAND		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		NONE
			OBSERVED
		2.5Y 5/6	
		LIGHT	
		OLIVE	
		BROWN	
GRAVELLY		2.5Y 6/6	
COARSE		OLIVE	
SAND		YELLOW	
SILT	FIRM	2.5Y 5/3	
LOAM		LIGHT	
		OLIVE	
		BROWN	
FINE	FRIABLE		
SAND			

LIMIT OF EXCAVATION = 48"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	0-3	23"	☐ ground water ■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: MELROSE | WD (Drainage Class) | C (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) | C (Drainage Class) | _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	9/20/18
	name printed/typed: Gary M. Fullerton	Lic.#:	462
L.S.E.	signature:	Date:	9/20/18
	name printed/typed: Gary M. Fullerton	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-38 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE	10YR 4/6 DARK YELLOWISH BROWN	NONE OBSERVED
GRAVELLY SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
FINE SAND		2.5Y 6/4 LIGHT YELLOWISH BROWN	

LIMIT OF EXCAVATION = 48"

▫ hydric ■ non-hydric	Slope %	Limiting factor	▫ ground water ▫ restrictive layer ▫ bedrock
	0-3	>48"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-39 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE	10YR 4/6 DARK YELLOWISH BROWN	
		2.5Y 6/6 OLIVE	
FINE SAND		YELLOW	
		2.5Y 5/4 LIGHT OLIVE BROWN	
		2.5Y 7/3 PALE BROWN	COMMON, MEDIUM, DISTINCT (RELIC MOTTLES)
MEDIUM SAND			

LIMIT OF EXCAVATION = 60"

▫ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	0-3	>60"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-40 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 5/6 YELLOWISH BROWN	
LOAMY SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
	FRIABLE		NONE OBSERVED
FINE SAND		2.5Y 6/4 LIGHT YELLOWISH BROWN	
COARSE SAND			
FINE SAND			
COARSE SAND			

LIMIT OF EXCAVATION = 58"

▫ hydric ■ non-hydric	Slope %	Limiting factor	▫ ground water ▫ restrictive layer ▫ bedrock
	0-3	>58"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-41 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE	10YR 4/6 DARK YELLOWISH BROWN	NONE OBSERVED
VERY FINE SAND		5Y 7/2 LIGHT GRAY	

LIMIT OF EXCAVATION = 52"

▫ hydric ■ non-hydric	Slope %	Limiting factor	▫ ground water ▫ restrictive layer ▫ bedrock
	0-3	>52"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/20/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/20/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-42** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE	10YR 4/6 DARK YELLOWISH BROWN	NONE OBSERVED
FINE SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
COARSE SAND		2.5Y 6/3 LIGHT YELLOWISH BROWN	
MEDIUM SAND			

LIMIT OF EXCAVATION = 60"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	>60"	☐	■	☐

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-43** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/6 DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE		
		10YR 5/6 YELLOWISH BROWN	NONE OBSERVED
		2.5Y 5/6 LIGHT	
	CEMENTED	OLIVE BROWN	
FINE SAND		5Y 6/3 PALE OLIVE	
	FRIABLE	5Y 7/2 LIGHT GRAY	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	18"	■	■	☐

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-44** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
	FRIABLE		NONE OBSERVED
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
FINE SAND	CEMENTED	5Y 6/3 PALE OLIVE	

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	24"	■	■	☐

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-45** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE	10YR 4/6 DARK YELLOWISH BROWN	
GRAVELLY SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
SILTY CLAY LOAM	FIRM	5Y 4/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 52"

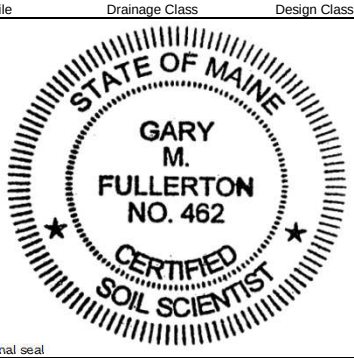
hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	32"	■	■	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 7 Profile | C Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355



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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-46** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE	FRIABLE	2.5Y 5/4	
SANDY		LIGHT	
LOAM		OLIVE	
		BROWN	
SILT	FIRM	2.5Y 6/3	COMMON,
LOAM		LIGHT	MEDIUM,
		YELLOWISH	DISTINCT
		BROWN	
FINE		2.5Y 5/4	
SANDY		LIGHT	
LOAM		OLIVE	
		BROWN	
SILTY		2.5Y 5/2	
CLAY		GRAYISH	
LOAM		BROWN	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	7"	■	☐	☐

C.S.S. Soil Series / phase name: **SWANTON** — **SWPD** Drainage Class — **B/D** Hydrologic Group

L.S.E. Soil Classification: **8** Profile — **E** Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-47** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
GRAVELLY		2.5Y 5/6	
COARSE		LIGHT	
SAND		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
			DISTINCT

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	42"	■	☐	☐

C.S.S. Soil Series / phase name: **ADAMS** — **SWED** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **6** Profile — **C** Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-48** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE		2.5Y 4/3	
SANDY		OLIVE	
LOAM		BROWN	
			COMMON,
	FRIABLE		MEDIUM,
SILT		2.5Y 6/3	DISTINCT
LOAM		LIGHT	
		YELLOWISH	
		BROWN	
		2.5Y 6/2	
		LIGHT BROWNISH	
		GRAY	
MEDIUM		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
FINE		2.5Y 6/2	
SAND		LIGHT	
		BROWNISH	
		GRAY	

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
■	☐	3-8	4"	☐	☐	☐

C.S.S. Soil Series / phase name: **NAUMBURG** — **PD** Drainage Class — **B/D** Hydrologic Group

L.S.E. Soil Classification: **7** Profile — **E** Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-49** ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE		2.5Y 4/2	
SANDY		DARK	
LOAM		GRAYISH	
		BROWN	COMMON,
	FRIABLE		MEDIUM,
			DISTINCT
FINE		7.5YR 4/6	
SAND		STRONG	
		BROWN	
		5YR 5/6	
		YELLOWISH	
		RED	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
■	☐	3-8	4"	☐	☐	☐

C.S.S. Soil Series / phase name: **NAUMBURG** — **PD** Drainage Class — **A/D** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **E** Drainage Class — _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-50 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE	FRIABLE	10YR 4/4	
SANDY		DARK	
LOAM		YELLOWISH	
		BROWN	
		2.5Y 5/3	COMMON,
		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	
		5Y 6/3	
		PALE	
		OLIVE	
FINE	CEMENTED	2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
		5Y 5/4	
		OLIVE	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
☐ non-hydric	3-8	5"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: NAUMBURG | PD (Drainage Class) | A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | E (Drainage Class) | (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-51 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		2.5Y 4/4	
		OLIVE	
		BROWN	
SANDY	FRIABLE		
LOAM			
		2.5Y 5/6	
		LIGHT	
		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
FINE			DISTINCT
SAND			
		5Y 5/4	
		OLIVE	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	24"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-52 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SILT		2.5Y 4/1	
LOAM		DARK	
		GRAY	
	FRIABLE		COMMON,
			MEDIUM,
			DISTINCT
LOAMY		5Y 5/2	
SAND		OLIVE	
		GRAY	
		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
SILT LOAM		5Y 4/2	
SILTY	FIRM		
CLAY			
LOAM			

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	0"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: SWANTON | PD (Drainage Class) | B/D (Hydrologic Group)

L.S.E. Soil Classification: 8 (Profile) | E (Drainage Class) | (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-53 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	2.5Y 5/4	
		LIGHT	
		OLIVE	
		BROWN	
FINE	FIRM	2.5Y 6/4	
SANDY		LIGHT	
LOAM		YELLOWISH	
		BROWN	
SILTY		5Y 4/2	FEW,
CLAY		OLIVE	FINE,
LOAM		GRAY	FAINT

LIMIT OF EXCAVATION = 38"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	15"	■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: MELROSE | WD (Drainage Class) | C (Hydrologic Group)

L.S.E. Soil Classification: 8 (Profile) | C (Drainage Class) | (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: B-54 ☐ Test Pit ■ Boring

3 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	2.5Y 3/1 VERY DARK GRAY	COMMON, MEDIUM, DISTINCT
	FIRM	5Y 4/1 DARK GRAY	MANY, COARSE, PROMINENT
FINE SAND		5Y 5/3 OLIVE	
		5Y 5/6 OLIVE	

LIMIT OF EXCAVATION = 42"

■ hydric ▫ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	0-3	0"	

C.S.S. Soil Series / phase name: NAUMBURG | PD Drainage Class | A/D Hydrologic Group

L.S.E. Soil Classification: 5 Profile | E Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: B-55 ☐ Test Pit ■ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SILT LOAM	FRIABLE	5Y 3/1 VERY DARK GRAY	COMMON, MEDIUM, DISTINCT
LOAMY FINE SAND		5Y 5/1 GRAY	MANY, COARSE, PROMINENT
SILTY CLAY LOAM	FIRM		

LIMIT OF EXCAVATION = 36"

■ hydric ▫ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	0-3	0"	

C.S.S. Soil Series / phase name: SWANTON | PD Drainage Class | B/D Hydrologic Group

L.S.E. Soil Classification: 8 Profile | E Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

LIMIT OF EXCAVATION = X"

▫ hydric ▫ non-hydric	Slope %	Limiting factor	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

LIMIT OF EXCAVATION = X"

▫ hydric ▫ non-hydric	Slope %	Limiting factor	▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	9/21/18
	name printed/typed: Gary M. Fullerton	Lic.#:	462
L.S.E.	signature:	Date:	9/21/18
	name printed/typed: Gary M. Fullerton	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-56 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SILT LOAM	FRIABLE	5Y 4/2	
		OLIVE GRAY	
		5Y 5/2	COMMON,
		OLIVE GRAY	MEDIUM,
			DISTINCT
SILTY CLAY LOAM	FIRM	5Y 5/3	
		OLIVE	

LIMIT OF EXCAVATION = 90"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	10"	■	☐	☐

C.S.S. Soil Series / phase name: LAMOINE | SWPD Drainage Class | C/D Hydrologic Group

L.S.E. Soil Classification: 9 Profile | D Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-57 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	10YR 3/4	
		DARK YELLOWISH BROWN	
SANDY LOAM		10YR 5/6	
		YELLOWISH BROWN	
FINE SANDY LOAM		5Y 5/4 OLIVE	COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM	5Y 5/2	
		OLIVE GRAY	
SILTY CLAY LOAM		5Y 4/2	
		OLIVE GRAY	

LIMIT OF EXCAVATION = 90"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	16"	■	☐	☐

C.S.S. Soil Series / phase name: NICHOLVILLE | MWD Drainage Class | B Hydrologic Group

L.S.E. Soil Classification: 8 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-58 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4	
		DARK YELLOWISH BROWN	
		2.5Y 5/6	
		LIGHT OLIVE BROWN	
MEDIUM SAND			
COARSE SAND	LOOSE	2.5Y 5/4 LT. OLIVE BROWN	
COARSE LOAMY SAND	FRIABLE	2.5Y 5/3 LIGHT OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	30"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-59 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4	
		DARK YELLOWISH BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH BROWN	
MEDIUM SAND	LOOSE	2.5Y 5/6	
		LIGHT OLIVE BROWN	
COARSE SAND	FRIABLE	2.5Y 5/3 LT. OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 60"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	44"	■	☐	☐

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	12/11/18
	name printed/typed: Gary M. Fullerton	Lic.#:	462
L.S.E.	signature:	Date:	12/11/18
	name printed/typed: Gary M. Fullerton	Lic.#:	355

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STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-60** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4	NONE
		DARK YELLOWISH	OBSERVED
		BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
	FRIABLE	BROWN	
MEDIUM SAND		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
COARSE SAND		2.5Y 5/2	
		GRAYISH BROWN	

LIMIT OF EXCAVATION = 54"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	>54"	☐	☐	☐

C.S.S. Soil Series / phase name: **ADAMS** — **SWED** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **B** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-61** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/3	
		DARK BROWN	
SANDY LOAM			
	FRIABLE	10YR 4/6	
		DARK YELLOWISH	
		BROWN	
MEDIUM SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
			COMMON,
COARSE SAND		2.5Y 5/4	MEDIUM,
		LT. OLIVE BROWN	DISTINCT
FINE SAND		5Y 5/3	MANY,
		OLIVE	COARSE,
			PROMINENT

LIMIT OF EXCAVATION = 60"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	30"	■	☐	☐

C.S.S. Soil Series / phase name: **CROGHAN** — **MWD** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **C** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-62** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM		2.5Y 4/3	
		OLIVE BROWN	
	FRIABLE		
SANDY LOAM		2.5Y 5/3	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT
LOAMY SAND	CEMENTED	5Y 5/2	MANY,
		OLIVE GRAY	COARSE,
			PROMINENT
FINE SAND	FRIABLE	5Y 4/4	
		OLIVE	

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	8"	☐	☐	☐

C.S.S. Soil Series / phase name: **NAUMBURG** — **SWPD** Drainage Class — **A/D** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **E** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-63** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM		2.5Y 4/3	
		OLIVE BROWN	
		2.5Y 5/3	MANY,
		LIGHT OLIVE	COARSE,
		BROWN	PROMINENT
	FRIABLE		
FINE SAND		5Y 5/2	
		OLIVE GRAY	
			COMMON,
SILTY CLAY	FIRM	5Y 4/2	MEDIUM,
		OLIVE GRAY	DISTINCT

LIMIT OF EXCAVATION = 9.5'

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
■	☐	0-3	5"	■	☐	☐

C.S.S. Soil Series / phase name: **SWANTON** — **PD** Drainage Class — **B/D** Hydrologic Group

L.S.E. Soil Classification: **7** Profile — **E** Drainage Class — Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	12/11/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	462
L.S.E.	signature:	Date:	12/11/18
	name printed/typed: **Gary M. Fullerton**	Lic.#:	355

STATE OF MAINE
GARY M. FULLERTON
NO. 462
CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-64 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	NONE OBSERVED
		10YR 4/6 DARK YELLOWISH BROWN	
		2.5Y 5/6 LIGHT OLIVE BROWN	
FINE SAND		10YR 5/6 YELLOWISH BROWN	
SILTY CLAY	FIRM	5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 60"

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ■ restrictive layer ☐ bedrock
	0-3	36"	

C.S.S. Soil Series / phase name: ELMWOOD | MWD Drainage Class | B/D Hydrologic Group

L.S.E. Soil Classification: 7 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-65 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/3 BROWN	
		10YR 4/6 DARK YELLOWISH BROWN	
COARSE SAND	LOOSE	2.5Y 5/4 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ☐ restrictive layer ☐ bedrock
	0-3	>55"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 6 Profile | B Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-66 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	NONE OBSERVED
		10YR 4/6 DARK YELLOWISH BROWN	
SILTY CLAY LOAM	FIRM	2.5Y 5/4 LIGHT OLIVE BROWN	
SILTY CLAY	VERY FIRM	5Y 5/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 50"

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ■ restrictive layer ☐ bedrock
	0-3	18"	

C.S.S. Soil Series / phase name: ELMWOOD | MWD Drainage Class | B/D Hydrologic Group

L.S.E. Soil Classification: 8 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-67 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
FINE SAND		2.5Y 5/4 LIGHT OLIVE BROWN	
COARSE SAND		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT

LEDGE @ 90"

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ■ restrictive layer ☐ bedrock
	0-3	50"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: 12/11/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: [signature] Date: 12/11/18

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-68 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	2.5Y 5/6	NONE
		LIGHT OLIVE	OBSERVED
		BROWN	
FINE SAND		2.5Y 6/4	
		LIGHT YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>52"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-69 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4	
		DARK YELLOWISH	
		BROWN	
LOAMY SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
FINE SAND		2.5Y 5/3	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/2	
		OLIVE GRAY	

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	30"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ELMWOOD | MWD Drainage Class | B/D Hydrologic Group

L.S.E. Soil Classification: 7 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-70 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/6	
		DARK YELLOWISH	
		BROWN	
LOAMY SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
FINE SAND		2.5Y 5/3	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	26"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-71 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4	NONE
		DARK YELLOWISH	OBSERVED
		BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
FINE SAND		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
MEDIUM SAND		2.5Y 5/3	
		LIGHT OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 54"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	>54"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 12/11/18
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature:	Date: 12/11/18
	name printed/typed: Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-72 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/3	
		DARK	
		BROWN	
GRAVELLY	FRIABLE		
SAND			
		10YR 5/6	
		YELLOWISH	NONE
		BROWN	OBSERVED
COARSE	LOOSE	2.5Y 5/4	
SAND		LIGHT OLIVE	
		BROWN	
GRAVELLY COARSE		10YR 5/4	
SAND		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 11'

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	>11'	☐	☐	☐

C.S.S. Soil Series / phase name: ADAMS | SWED (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 6 (Profile) | B (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-73 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		2.5Y 5/6	
SAND			
WITH		LIGHT OLIVE	
STONES		BROWN	
	FRIABLE		
LOAMY		2.5Y 5/3	
FINE			
SAND		LIGHT OLIVE	
		BROWN	
SILTY	FIRM	5Y 5/2	
CLAY		GRAYISH BROWN	
LOAM			
LOAMY FINE SAND		2.5Y 5/3	FINE, FEW, FAINT
WITH SILT LOAM	FRIABLE	LIGHT OLIVE	IN VARVES
VARVES		BROWN	

LIMIT OF EXCAVATION = 11'

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	48"	☐	☐	☐

C.S.S. Soil Series / phase name: ADAMS | SWED (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | B (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-74 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 4/4	
		DARK	
SANDY		YELLOWISH	
LOAM	FRIABLE	BROWN	
FINE		2.5Y 5/6	
SAND			
		LIGHT OLIVE	
		BROWN	
		2.5Y 5/3	COMMON,
			MEDIUM,
		LIGHT OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 60'

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	34"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-75 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM			
		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
MEDIUM		2.5Y 5/6	
SAND			
		LIGHT OLIVE	
		BROWN	
FINE		2.5Y 5/3	COMMON,
SAND			MEDIUM,
		LIGHT OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 48'

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	32"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	1/25/19
	name printed/typed: Gary M. Fullerton	Lic.#:	462
L.S.E.	signature:	Date:	1/25/19
	name printed/typed: Gary M. Fullerton	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-76 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 4/4	
SANDY			
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
LOAMY		2.5Y 5/6	
FINE		LIGHT OLIVE	
SAND		BROWN	
MEDIUM		2.5Y 5/4	
SAND			
		LIGHT OLIVE	
		BROWN	
COARSE			
SAND			
			COMMON,
			MEDIUM,
			DISTINCT

LIMIT OF EXCAVATION = 48"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	40"	bedrock

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-77 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM			
		DARK YELLOWISH	
		BROWN	
FINE	FRIABLE	10YR 5/6	
SAND			
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 5/4	COMMON,
SAND			MEDIUM,
		LIGHT OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 48"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	28"	bedrock

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: 1/25/19

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: [signature] Date: 1/25/19

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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Sebago Technics, Inc.

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-78 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2			10YR 3/3	
3				
4	FINE		DARK	
5	SANDY LOAM	FRIABLE	BROWN	
6				
7				
8				
9				
10				
12				
14			2.5Y 5/3	
16				
17			LIGHT OLIVE	
20			BROWN	
	LOAMY VERY			COMMON,
	FINE SAND			MEDIUM,
				DISTINCT
30				
42				
	SILTY CLAY LOAM	FIRM	5Y 4/3	
			OLIVE	
50				
60				
X	LIMIT OF EXCAVATION = 56"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	17"	

C.S.S. Soil Series / phase name: ELMWOOD | MWD Drainage Class | B/D Hydrologic Group

L.S.E. Soil Classification: 7 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-79 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2			10YR 4/3	
3				
4			BROWN	
5	SANDY LOAM	FRIABLE		
6				
7				
8				
9				
10				
12				
14				
15			10YR 4/6	
16	LOAMY SAND		DARK YELLOWISH	
17			BROWN	
20				
23			2.5Y 4/4	COMMON,
				MEDIUM,
	MEDIUM SAND		OLIVE	DISTINCT
30			BROWN	
40				
50				
60				
X	LIMIT OF EXCAVATION = 52"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	3-8	17"	

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-80 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2			10YR 3/3	
3				
4			DARK	
5	SANDY LOAM		BROWN	
6				
7				
8				
9		FRIABLE		
10				
12				
14				
16	LOAMY SAND		10YR 5/6	
17			YELLOWISH	
18			BROWN	
20			2.5Y 5/4	
	MEDIUM SAND		LIGHT OLIVE	
24			BROWN	
30	FINE SAND		2.5Y 5/3	COMMON,
				MEDIUM,
			LIGHT OLIVE	DISTINCT
			BROWN	
40				
50				MANY,
				COARSE,
60				PROMINENT
X	LIMIT OF EXCAVATION = 54"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ☐ restrictive layer ☐ bedrock
	0-3	24"	

C.S.S. Soil Series / phase name: CROGHAN | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-81 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0				
1				
2				
3				
4	SANDY		10YR 3/4	
5	LOAM		DARK	
6			YELLOWISH	
7		FRIABLE	BROWN	NONE
8				OBSERVED
9				
10	LOAMY		10YR 4/6	
12	SAND		DARK	
14			YELLOWISH	
16			BROWN	
18				
20				
	MEDIUM		2.5Y 6/4	
	SAND		LIGHT	
			YELLOWISH	
30			BROWN	
40				
50				
60				
X	LIMIT OF EXCAVATION = 24"			

☐ hydric ■ non-hydric	Slope %	Limiting factor	☐ ground water ☐ restrictive layer ☐ bedrock
	0-3	>24"	

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | B Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:	1/31/19
	name printed/typed: Gary M. Fullerton	Lic.#:	462
L.S.E.	signature:	Date:	1/31/19
	name printed/typed: Gary M. Fullerton	Lic.#:	355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-82 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (Inches)	Texture	Consistency	Color	Mottling
2	SANDY		10YR 4/3	
3	LOAM		BROWN	
9		FRIABLE		
16	FINE		10YR 5/6	
18	SAND		YELLOWISH	
20			BROWN	
			2.5Y 5/6	
			LIGHT	
29			OLIVE	
30			BROWN	
				COMMON,
				MEDIUM,
40				DISTINCT

LIMIT OF EXCAVATION = 30"

☐ hydric ■ non-hydric	Slope %: 0-3	Limiting factor: 29"	■ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name:	CROGHAN	MWD (Drainage Class)	A (Hydrologic Group)
L.S.E. Soil Classification:	5 (Profile)	C (Drainage Class)	___ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-83 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (Inches)	Texture	Consistency	Color	Mottling
2			10YR 3/3	
3			DARK BROWN	
6	SANDY LOAM			
14		FRIABLE	10YR 4/6	
16			DARK YELLOWISH	
18			BROWN	
	MEDIUM SAND		2.5Y 5/6	
			LIGHT OLIVE	
30			BROWN	
				COMMON,
	COARSE SAND		2.5Y 5/4	MEDIUM,
36			LT. OLIVE BROWN	DISTINCT

LIMIT OF EXCAVATION = 31"

☐ hydric ■ non-hydric	Slope %: 3-8	Limiting factor: 30"	■ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name:	CROGHAN	MWD (Drainage Class)	A (Hydrologic Group)
L.S.E. Soil Classification:	5 (Profile)	C (Drainage Class)	___ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-84 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (Inches)	Texture	Consistency	Color	Mottling
3			10YR 3/6	
4			DARK	
5			YELLOWISH	
6	LOAMY		BROWN	
7	SAND	FRIABLE		
14			10YR 5/6	NONE
16			YELLOWISH	OBSERVED
18			BROWN	
			2.5Y 5/6	
			LIGHT	
26		CEMENTED	OLIVE	
27			BROWN	

LIMIT OF EXCAVATION = 24"

☐ hydric ■ non-hydric	Slope %: 0-3	Limiting factor: 18"	☐ ground water ■ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name:	ADAMS	SWED (Drainage Class)	A (Hydrologic Group)
L.S.E. Soil Classification:	5 (Profile)	C (Drainage Class)	___ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ____ ☐ Test Pit ☐ Boring

____ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric — Slope %: ____ — Limiting factor: ____ — ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ____ Drainage Class ____ Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 1/31/19
	name printed/typed: **Gary M. Fullerton**	Lic.#: 462
L.S.E.	signature:	Date: 1/31/19
	name printed/typed: **Gary M. Fullerton**	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-85** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	
		DARK BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
		10YR 5/6	
		YELLOWISH BROWN	
MEDIUM SAND		2.5Y 5/4	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	24"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-86** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	
		DARK BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
GRAVELLY SAND		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
FINE SAND		2.5Y 6/3	COMMON,
		LIGHT YELLOWISH	MEDIUM,
		BROWN	DISTINCT

LIMIT OF EXCAVATION = 45"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	32"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: Profile | Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-87** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	
		DARK BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
GRAVELLY SAND		10YR 5/6	
		YELLOWISH BROWN	
FINE SAND		2.5Y 6/4	COMMON,
		LIGHT YELLOWISH	MEDIUM,
		BROWN	DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	32"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** | MWD Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-88** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	
		DARK BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
FINE SAND		2.5Y 6/4	
		LIGHT YELLOWISH	
		BROWN	
			COMMON,
			MEDIUM,
			DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	42"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **ADAMS** | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 2/1/19
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 2/1/19
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-89 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
LOAMY SAND			
MEDIUM SAND		2.5Y 6/4	
		LIGHT YELLOWISH	
		BROWN	
GRAVELLY SAND			

LIMIT OF EXCAVATION = 50"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>50"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-90 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
COARSE SAND		10YR 5/6	
		YELLOWISH BROWN	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>48"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-91 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
GRAVELLY LOAMY		10YR 4/6	
SAND		DARK YELLOWISH	
		BROWN	
		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
GRAVELLY SAND		2.5Y 5/4	
(WITH FINE SAND		LIGHT OLIVE	
LENSES @ 40")		BROWN	

LIMIT OF EXCAVATION = 50"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>50"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-92 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
COARSE SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>48"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 6 (Profile) — B (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: 2/1/19

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: [signature] Date: 2/1/19

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-93 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Depth	Texture	Consistency	Color	Mottling
0–12	SANDY LOAM	FRIABLE	10YR 3/4 DARK YELLOWISH BROWN	NONE OBSERVED
12–22	LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
22–	FINE SAND		2.5Y 5/4 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 24"

☐ hydric ■ non-hydric | Slope %: 3-8 | Limiting factor: >24" | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ADAMS | SWED Drainage Class | A Hydrologic Group

L.S.E. Soil Classification: 5 Profile | C Drainage Class | ___ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

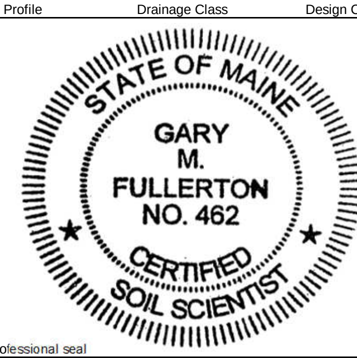
☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature: [signature]	Date: 2/1/19
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature: [signature]	Date: 2/1/19
	name printed/typed: Gary M. Fullerton	Lic.#: 355



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APPENDIX C

PARAMETERS AND RESULTS

Groundwater Impact Study, Nitrates
Model Input Parameters and Solution
Land of Nod Subdivision
120 Land of Nod Road, Windham
Lots 1, 2, and 30

Annual rainfall (inches):	44
Hydrologic soil group* (above disposal field):	C/D
% Slope (above disposal field):	1-7%
% Infiltration* (into disposal field):	21
Assumed rainfall flow into disposal field (gal/day):	6.63
Assumed rainfall flow into disposal field during drought conditions^(gal/day):	3.98
Background NO3-N concentration (mg/L):	1
Assumed effluent NO3-N concentration (mg/L):	41
Assumed effuent flow into disposal field (gal/day):	360
Assumed NO3-N concentration in rainfall (mg/L):	0.5
Hydraulic conductivity of aquifer (ft/day):	2
Hydraulic gradient of aquifer (ft/ft):	0.010
Effective porosity of aquifer:	0.21
Seepage velocity of aquifer (ft/day):	0.10
Retardation factor	1
Half-Life (0 for no decay)	0
Simulation duration to reach NO3-N concentration equilibrium (days)	4,364
Longitudinal dispersivity at end of simulation duration (ft)	1.56
Lateral dispersivity at end of simulation duration (ft)	0.52
Vertical dispersivity at end of simulation duration (ft)	0.78
Disposal bed length (ft)	15
Disposal bed width (ft)	28
Length of 10 mg/L plume during drought conditions (ft)	**150**

Notes:
* - from The State of Maine Department of Environmental Protection, 1991, The guidelines for expediating the processing of applications under the site location of development act.
^ - drought conditions equals 60% of average annual rainfall
% - percent
gal/day - gallons per day
ft - feet
mg/L - milligrams per liter
NO3-N - Nitrate-Nitrogen

Groundwater Impact Study, Nitrates
Model Input Parameters and Solution
Land of Nod Subdivision
120 Land of Nod Road, Windham
Lots 3 to 29

Annual rainfall (inches):	44
Hydrologic soil group* (above disposal field):	A
% Slope (above disposal field):	1-5%
% Infiltration* (into disposal field):	21
Assumed rainfall flow into disposal field (gal/day):	4.86
Assumed rainfall flow into disposal field during drought conditions^(gal/day):	2.92
Background NO3-N concentration (mg/L):	1
Assumed effluent NO3-N concentration (mg/L):	41
Assumed effuent flow into disposal field (gal/day):	360
Assumed NO3-N concentration in rainfall (mg/L):	0.5
Hydraulic conductivity of aquifer (ft/day):	10
Hydraulic gradient of aquifer (ft/ft):	0.010
Effective porosity of aquifer:	0.21
Seepage velocity of aquifer (ft/day):	0.48
Retardation factor	1
Half-Life (0 for no decay)	0
Simulation duration to reach NO3-N concentration equilibrium (days)	651
Longitudinal dispersivity at end of simulation duration (ft)	6.71
Lateral dispersivity at end of simulation duration (ft)	2.24
Vertical dispersivity at end of simulation duration (ft)	0.34
Disposal bed length (ft)	11
Disposal bed width (ft)	28
Length of 10 mg/L plume during drought conditions (ft)	**65**

Notes:

* - from The State of Maine Department of Environmental Protection, 1991, The guidelines for expediating the processing of applications under the site location of development act.

^ - drought conditions equals 60% of average annual rainfall

% - percent

gal/day - gallons per day

ft - feet

mg/L - milligrams per liter

NO3-N - Nitrate-Nitrogen

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

CLASS 'B' HIGH INTENSITY SOIL SURVEY REPORT

Prepared for:

Land of Nod Property

Grondin Corporation

39 Belanger Road
Windham, ME 04062

Prepared by:

Sebago Technics, Inc.
75 John Roberts Road Suite 4A
South Portland, Maine 04106

February 4, 2019

CLASS 'B' HIGH INTENSITY SOIL SURVEY

Land of Nod Property

TABLE OF CONTENTS

Section 1

Introduction

Sebago Technics has completed a Class 'B' High Intensity Soil Survey for the proposed subdivision, located at Land of Nod Property in Windham, Maine for Grondin Corporation. The soils found on the above referenced site have been observed in the field using test pits and/or borings dug either by an excavator or by hand (see Soil Map for Survey Limits in Appendix G). The test pits were located by Global Positioning Systems (GPS) technology and incorporated into the soil map. The soil map has been merged into the existing base plan prepared by Sebago Technics, Inc. Topography is based on two-foot contour intervals prepared by Sebago Technics, Inc.

The soil map units and soil boundaries have been drawn, reviewed, and forwarded to the Project Manager, James R. Seymour, P.E., for consideration during engineering design and layout of the proposed facility. Soils found at the site are described below and were examined and classified to identify potential soil limitations relating to the development of the property. This report has been prepared as part of the project requirements for the Maine Department of Environmental Protection, and may be used to support permitting procedures as required under the Site Location of Development Act, Natural Resources Protection Act (NRPA), Stormwater Management Law, or other pertinent regulation.

Section 2

Purpose of Soil Survey

The purpose of this Class 'B' High Intensity Soil Survey was to investigate, identify, describe, and map the soils on the above referenced site for the proposed residential subdivision. The accompanying soil survey map depicts the location and types of soil found on the project site. The soil information may be used to obtain hydrologic soil group ratings to assist in the calculations for stormwater runoff curve values required by the Maine Department of Environmental Protection (MDEP). This soil information may also be used to evaluate soil suitability relating to development as a residential subdivision.

Section 3

Site Location and Description

The site is located at Land of Nod Property in Windham, Maine. The abutting properties include residential dwellings and undeveloped forested areas with a mix of wetlands and uplands. The proposed development area includes approximately 55 acres of land. The property consists of a mix of wetlands, uplands, and inactive gravel pits in a forested and field setting. The wetlands on the property were delineated by Sebago Technics, Inc. in June and July of 2017.

Section 4

Site Investigation

Site-specific soil information was collected at various locations across the site by Gary M. Fullerton, CSS of Sebago Technics, Inc. in July, 2017, September and December, 2018, and January, 2019. The areas examined were marked in the field with pink flagging and designated with letters such as "TP-1" or "B-2". Test pits were observed using an excavator and borings were observed with a hand auger. The sequence of test pitting/ boring numbers include 10 through 93, excluding test pits 65 through 70 which were excavated on an adjacent parcel to determine septic system suitability.

Test pit locations were selected based on topographic relief, landforms and vegetation stands, which typically are indicative of soil type variations. Excavated test pits were examined for soil colors, rock content, texture, consistence, root depths, redoximorphic features, and depth to bedrock. From this information, soil logs were completed and are included in Appendix E. In addition to these test pits and borings, several additional hand-augured borings were reviewed to verify consistency within map units for which detailed information was not gathered.

The test pits observed in the field were then located using a GPS unit capable of submeter accuracy on the respective dates that they were excavated. These points were then incorporated into the topographic survey to aid in the preparation of a soil map of the project area. The provided base map has a scale of 1 inch = 100 feet, with two-foot contour intervals on the site.

Drainage classifications of the soils on the site were determined by parameters found in the *Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping*, published by the Maine Association of Professional Soil Scientists in April 1989 and revised in March 2009.

Section 5

Soil Characteristics

The soils found on the site are predominantly developed from glaciofluvial and glaciolacustrine/ glaciomarine deposits. The landforms typically associated with glaciofluvial deposits are low sand plains and terraces. The landforms typically associated with glaciolacustrine and glaciomarine deposits are depressional areas on marine and lake plains, outwash plains, or deltas.

The most dominant soil series in the project area is the somewhat excessively well drained Adams loamy fine sand found throughout the northern, eastern, and southern extents of the site. This map unit does not contain wetland areas. Adams soils are sandy glaciofluvial materials. The test pit information revealed seasonal high watertable and restrictive layers were well below 40 inches of the ground surface. These map units include level to gentle slopes of 0 to 8 percent.

The southern portion of the project area contains the poorly to somewhat poorly drained Naumburg loamy fine sand, the well-drained Melrose fine sandy loam, and the moderately well-drained Croghan fine sand. The Naumburg soils are glaciofluvial deposits and generally have

seasonal high watertables less than 16 inches and sometimes had a cemented horizon. This map unit was typically found on level to gently sloping land in depressional areas and contained wetlands. Melrose soils are loamy outwash over marine/lacustrine deposits and generally have seasonal high watertables greater than 40 inches below the ground surface. This map unit was found on level land in upland areas. Croghan soils are glaciofluvial deposits and generally have seasonal high watertables between 16 and 40 inches below the ground surface and some cemented horizons were found. Croghan soils include level to gentle slopes of 0 to 8 percent. No bedrock was observed in either of these map units.

The western portion of the site contained the somewhat excessively well drained Adams loamy fine sand and the moderately well-drained Croghan fine sand. These areas are generally level upland areas.

The northern and eastern portions of the site contained the somewhat excessively well drained Adams loamy fine sand, the poorly to somewhat poorly drained Swanton fine sandy loam, and gravel pits. The Adams areas are generally level uplands adjacent to the gravel pits. Swanton soils are loamy outwash over marine/lacustrine deposits with water tables and restrictive layers at or near the ground surface, impeding infiltration and percolation of water. The Swanton soils contain wetlands. Swanton soils include level to gentle slopes of 0 to 8 percent. The gravel pits have heavily altered characteristics and cannot be generalized. Wetlands and vernal pools have formed in the gravel pits

These soils should respond to use and management as determined and described in the Soil Series of Maine Soil Interpretations published by the Maine Association of Professional Soil Scientists in cooperation with the USDA Natural Resources Conservation Service, dated January 1987 and revised January 1988 and 1989. Soil survey interpretations are enclosed in Appendix C of this report.

This site may contain inclusions of soil types that differ from the soil map units. The areas where these soils were found are too small to be mapped and, for the purpose of this soil survey, there appears to be less than 1 contiguous acre of this soil in any part of the site. It also appears that the total area of this soil type in any given map unit is less than 25 percent, therefore classifying these soil types as inclusions.

Section 6

Soil Map and Map Unit Descriptions

The attached soil survey map depicts the size and location of the soil map units relative to each other and existing site features. Each soil map unit typically consists of three letters (e.g., AdB), with the first two letters representing a phase of the established soil series found within soil map unit areas as shown on the soil map. This soil map unit phase name is a representation of the soil characteristics, such as texture, stoniness, drainage, and depth to bedrock, all of which may

affect the use and management of the soil. The third capitalized letter represents the surface slope gradient of the area within the soil map unit (e.g., B represents 3 to 8 percent slopes). Therefore in this example "AdB" is interpreted as Adams loamy sand on a 3 to 8 percent slope. There may be small areas of different soils within a soil map unit, known as inclusions. Inclusions may exist within a delineated soil map unit, although the size of the inclusion may be too small to stand as a soil map unit alone (<1 acre). The soil map units found at the site are listed and described in Appendix C of this report.

Section 7

Conclusions

The soils found consist of glaciofluvial and glaciolacustrine/ glaciomarine deposits. The glaciofluvial soils generally contained loamy sand overlying fine sand with lenses of fine-textured soil. The glaciolacustrine/ glaciomarine deposits generally contained sandy textured soils overlying fine-textured soils.

Site investigations suggest some limitations inherent to some of the soils identified at the site, mainly high water tables and fine-textured soils. Most may be overcome by appropriate planning, engineering and site preparation of these areas. Such site features as the depth to bedrock, runoff volumes, seasonal soil saturation depths, potential for frost and erosion activity, rock outcrops, and jurisdictional wetland areas were examined. The following is a summary of areas and on-site features identified in the field with potential negative effects relating to the development of this parcel for a residential subdivision:

1. Jurisdictional wetland areas, vernal pools, and streams were identified on the property. Alteration to wetland areas will require regulatory permitting together with appropriate engineering practices to support structures and parking areas. These hydric soils are not suitable for commercial development in their current state and would require filling if developed. Wetlands were found in the Swanton and Naumburg soil map units as well as the gravel pits.

2. The wetland soils are not stable and would require deep footings for buildings. These soils generally require larger stormwater management areas, have higher erosion potential, and have high frost potential for paved areas. Best management practices are highly recommended to prevent erosion and sedimentation.

3. Seasonal high water tables are somewhat common throughout the property. These areas make construction difficult during wet season conditions. Structures need to have proper drainage to avoid water around foundations.

4. There are fine-textured silt loam to silty clay subsoils which may require specific engineering practice for foundations. In addition, these soils are not suitable for road base material and may need to be removed prior to road construction.

Section 8

Limitations

The scope of this investigation has been limited to this Class 'B' High Intensity Soil Survey in general accordance with standards and guidelines established by the Maine Association of Professional Soil Scientists. The soil survey report and soil map have been prepared for the exclusive use of Grondin Corporation and Sebago Technics, Inc. for specific application for the proposed Land of Nod Property on this site off Land of Nod Road in Windham, Maine.

No other warranty, expressed or implied, is made. The conclusions and recommendations presented in this soil report are based on data obtained at the referenced site and our interpretations of this information. This report and soil map may not reflect soil variations that may occur between our observation test pits. Data from this soil report and soil map should not be used for any other purpose. Soils which are considered non-limiting for one use may be considered limiting for another use. The soil mapping units used in the soil report and on the soil map are at least in part influenced by the intended use of the soil survey and information provided may not always be adequate for uses other than that which the soil survey was originally developed.

APPENDICES

APPENDIX A

SOIL NARRATIVE REPORT

SOIL NARRATIVE REPORT

Land of Nod Property

Date: Soil profiles observed July, 2017, September and December, 2018, and January, 2019 by Sebago Technics, Inc.

Base Map: Topographic Survey Map by Sebago Technics, Inc.

2 (two) foot contour intervals on-site

Map Scale 1 inch = 100 feet

Ground Control: Test pits located by GPS with sub-meter accuracy

The Maine Association of Professional Soil Scientists has adopted standards for soil surveys. Soil surveys are divided into four classes of survey, which are dependent upon the amount of information required for the project. The following is a summary of requirements for this High Intensity Soil Survey.

Class 'B' High Intensity Soil Survey Standards

1. Map units will not contain dissimilar limiting inclusions larger than one acre.
2. Scale of 1 inch = 200 feet or larger.
3. Dissimilar limiting inclusions may total more than one acre per map unit delineation, in the aggregate, if not continuous.
4. Ground control - test pits for which detailed data is recorded are located by means of a compass by chaining, pacing, or taping from known survey points; or other methods of equal or greater accuracy.
5. Base map with 5-foot contour lines with ground survey.

The accompanying soil profile descriptions, soil survey map and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, March 2009.

This Soil Survey was prepared in relation to a proposed subdivision.

Gary M. Fullerton, C.S.S. #462

February 4, 2019
Date

APPENDIX B

SOIL LEGEND/MDEP FORM E

CLASS 'B' HIGH INTENSITY SOIL SURVEY

Land of Nod Property

February 4, 2019

SOIL LEGEND

SOIL TYPES:

Symbol	Soil Series	Phase	Slope	HSG	Drainage Class
AdA	Adams	Loamy Fine Sand	0-3%	A	SWED
AdB	Adams	Loamy Fine Sand	3-8%	A	SWED
CrA	Croghan	Fine Sand	0-3%	A	MWD
CrB	Croghan	Fine Sand	3-8%	A	MWD
GP	N/A	Gravel Pit	Varies	N/A	N/A
MeA	Melrose	Fine Sandy Loam	0-3%	C	WD
NaA	Naumburg	Loamy Fine Sand	0-3%	A/D	PD/SWPD
NaB	Naumburg	Loamy Fine Sand	3-8%	A/D	PD/SWPD
SzA	Swanton	Fine Sandy Loam	0-3%	B/D	PD/SWPD
SzB	Swanton	Fine Sandy Loam	3-8%	B/D	PD/SWPD

FORM E

SOIL CONDITIONS SUMMARY TABLE

for SUBSURFACE INVESTIGATIONS at DEP SITE LOCATION PROJECTS

Project Name: **Land of Nod Property**	DEP Project #:
Applicant Name: **Grondin Corporation**	Consultant Name: **Sebago Technics, Inc.**
Project Location *(municipality)*: **Windham**	Type of Investigation: **Class 'B' High Intensity Soil Survey**

Lot No.	Exploration Symbol *(alph/num)*	✓ or ✘ if at SSWD field	● soil profile/condition *(L.S.E.)* ● soil series name *(C.S.S.)* ● geologic unit *(C.G.)* *(as appropriate to the investigation)*	Depths to *(check one)*: ☒ inches ☐ cm			Ground Surface Slope *(%)*
				Mottling	Bedrock	Restrictive Layer	
	TP-10		ADAMS	-	-	-	0-3
	TP-11		MELROSE	-	-	28	3-8
	TP-12		SWANTON	12	-	20	3-8
	TP-13		SWANTON	4	-	17	3-8
	TP-14		ELMWOOD	16	-	16	3-8
	TP-15		NAUMBURG	9	-	-	3-8
	TP-16		ADAMS	55	-	-	3-8
	TP-17		CROGHAN	20	-	-	0-3
	TP-18		NAUMBURG	3	-	-	3-8
	TP-19		CROGHAN	23	-	-	0-3
	TP-20		ADAMS	-	-	-	0-3
	TP-21		ADAMS	-	-	-	3-8
	TP-22		CROGHAN	36	-	-	0-3
	TP-23		CROGHAN	29	-	54	0-3
	TP-24		CROGHAN	34	-	-	3-8
	TP-25		CROGHAN	25	-	-	3-8
	TP-26		CROGHAN	20	-	24	3-8
	TP-27		NAUMBURG	8	-	11	0-3
	TP-28		CROGHAN	18	-	18	3-8
	TP-29		CROGHAN	27	-	30	3-8
	TP-30		DUANE	26	-	-	3-8
	TP-31		SWANTON	12	-	12	3-8
	TP-32		ADAMS	-	-	26	0-3
	TP-33		MELROSE	25	-	29	0-3
	TP-34		MELROSE	-	-	41	0-3
	TP-35		MELROSE	-	-	22	0-3
	TP-36		ADAMS	-	-	-	0-3
	TP-37		MELROSE	-	-	23	0-3
	TP-38		ADAMS	-	-	-	0-3
	TP-39		ADAMS	34	-	-	0-3
	TP-40		ADAMS	-	-	-	0-3
	TP-41		ADAMS	-	-	-	0-3
	TP-42		ADAMS	-	-	-	0-3
	TP-43		ADAMS	-	-	18	0-3
	TP-44		ADAMS	-	-	24	0-3
	TP-45		CROGHAN	32	-	32	0-3
	TP-46		SWANTON	7	-	7	0-3
	TP-47		ADAMS	42	-	-	0-3
	TP-48		NAUMBURG	4	-	-	3-8
	TP-49		NAUMBURG	4	-	-	3-8

	TP-50		NAUMBURG	5	-	24	3-8
	TP-51		CROGHAN	24	-	-	0-3
	TP-52		SWANTON	0	-	38	0-3
	TP-53		MELROSE	26	-	15	0-3
	B-54		NAUMBURG	0	-	10	0-3
	B-55		SWANTON	0	-	26	0-3
	TP-56		LAMOINE	10	-	18	3-8
	TP-57		NICHOLVILLE	16	-	30	3-8
	TP-58		CROGHAN	30	-	-	3-8
	TP-59		ADAMS	44	-	-	0-3
	TP-60		ADAMS	-	-	-	3-8
	TP-61		CROGHAN	30	-	-	3-8
	TP-62		NAMBURG	8	-	26	0-3
	TP-63		SWANTON	5	-	42	0-3
	TP-64		ELMWOOD	-	-	-	-
	TP-65		NOT USED IN SOIL SURVEY	-	-	-	-
	TP-66		NOT USED IN SOIL SURVEY	-	-	-	-
	TP-67		NOT USED IN SOIL SURVEY	-	-	-	-
	TP-68		NOT USED IN SOIL SURVEY	-	-	-	-
	TP-69		NOT USED IN SOIL SURVEY	-	-	-	-
	TP-70		NOT USED IN SOIL SURVEY	-	-	-	-
	TP-71		ADAMS	-	-	-	3-8
	TP-72		ADAMS	-	-	-	0-3
	TP-73		ADAMS	-	-	48	0-3
	TP-74		CROGHAN	34	-	-	3-8
	TP-75		CROGHAN	32	-	-	3-8
	TP-76		ADAMS	40	-	-	0-3
	TP-77		CROGHAN	28	-	-	0-3
	TP-78		ELMWOOD	17	-	42	3-8
	TP-79		CROGHAN	17	-	-	3-8
	TP-80		CROGHAN	24	-	-	0-3
	TP-81		ADAMS	-	-	-	0-3
	TP-82		CROGHAN	29	-	-	0-3
	TP-83		CROGHAN	30	-	-	3-8
	TP-84		ADAMS	-	-	18	0-3
	TP-85		CROGHAN	24	-	-	0-3
	TP-86		CROGHAN	32	-	-	3-8
	TP-87		CROGHAN	32	-	-	3-8
	TP-88		ADAMS	42	-	-	0-3
	TP-89		ADAMS	-	-	-	0-3
	TP-91		ADAMS	-	-	-	3-8
	TP-92		ADAMS	-	-	-	0-3
	TP-93		ADAMS	-	-	-	0-3

Professional Endorsements *(as applicable)*

L.S.E.	signature:	Date: **2-4-19**
	name printed/typed: **Gary M. Fullerton**	Lic. #: **355**
C.S.S.	signature:	Date: **2-4-19**
	name printed/typed: **Gary M. Fullerton**	Cert. #: **462**
C.G.	signature:	Date:
	name printed/typed:	Cert. #:

STATE OF MAINE
GARY M. FULLERTON NO. 462
CERTIFIED SOIL SCIENTIST

affix professional seal

APPENDIX C

SOIL SURVEY INTERPRETATIONS

SOIL SURVEY INTERPRETATIONS

Soil survey interpretations are derived from the inherent soil characteristics found within the soil profile. The interpretations are predictions (numeric and descriptive) of soil suitability for a specific use, based on the soil's characteristics. These interpretations have many practical applications, such as estimating costs for land development, calculating storm water runoff, determining structural bearing strengths, estimating erodibility, etc. Soil potential ratings have been developed using soil survey interpretations to compare soil series, based on limitations or potentials, for a given use.

Limitations of Soil Interpretations

Soil interpretations are very useful for many purposes and projects, although they do have limitations, including:

1. An interpretation for a specific purpose is rarely adaptable for another use without management considerations.
2. Use of interpretations for specific areas has an inherent limitation relating to variability of the soil map unit. As the size of the soil survey area and the soil map units increase, soil interpretations provide a less reliable prediction of actual soil conditions.
3. Interpretations are also limited by the natural variability within a soil profile, which directly affects the precision of the soil interpretation.
4. Soil interpretations are predictions of potentials or limitations based on soil properties. A soil may possess several limiting factors and therefore all site specific soil properties must be known for accurate interpretations.
5. Soil interpretations are used to predict the costs of development and to ultimately determine feasibility of a project. It should be noted that most soil limitations can be overcome with engineering solutions to make a soil suitable for a proposed use.

Soil Potential Rating Factors

Soil potential ratings have been developed as a useful form of soil interpretations. These ratings are based on local conditions, local experience and expertise, and laws, codes and rules governing the use of soils for various purposes. Potential ratings include the feasibility of a soil for a particular use relative to other soils within a given area. Factors considered in preparing soil potential ratings are the feasibility of using certain technology and practices to overcome limiting factors and the relative cost of implementing these practices. Some examples of unfavorable soil qualities inherent in Maine soils are listed below:

1. **Depth to Water Table** – The depth to water table affects the natural drainage of the soil in which in turn affects the soils potential for development. A soil with a shallow depth to seasonal high water table requires construction methods such as added fill and artificial drainage to overcome this limitation. A soil with a seasonal high water table deeper than 6 feet below the soil surface would have higher potential than a soil with a seasonal high water table at 18 inches.
2. **Flooding** – Soils are rated on the basis of whether they are subject to flooding or not. Flooding is separated into three categories: none, occasional (floods at least once in ten years), and frequent (floods at least once every two years). Soils subject to flooding have less potential for development than those that do not flood.

3. **Slope** – Soils are rated on the basis of slope. The less sloping areas require less corrective measures than the steeper areas and thus have a greater potential for development.

4. **Depth to Bedrock** – The presence of bedrock affects the use of soils for development. Soils with shallow depth over bedrock have less potential for development than deep soils.

5. **Surface Stones** – The presence of stones and boulders on the soil surface affect the use of the soil for development. In preparing a site for a dwelling or septic sewage disposal area, surface stones have to be removed.

6. **Depth to Restrictive Layer** – Some soils have a restrictive layer that begins at a shallow depth. This layer can impede natural drainage and permeability. This soil factor is important when designing a septic sewage disposal system.

7. **Soil Profile and Condition** – The Maine Subsurface Wastewater Disposal Rules provides a table by which each soil can be categorized by profile group and soil condition. The profile group is based on parent material or origin of the soil, texture of the soil, and the presence of any restricting layer within the soil profile. The soil condition refers to the depth to bedrock or drainage class.

Low density development includes single family unit residences with basements and comparable buildings and septic tank absorption fields, with or without on-site sources of water. Development may be as a single unit or as a cluster of units in a development. Paved roads in a development are also included in the rating. Soil potentials have been developed by selecting the best soil in a county for low density development. This "reference soil" is the best because it has all the best characteristics for all rated uses with regards to development. For low density urban development, a reference soil has the following properties:

- A water table level greater than 6 feet
- The soil does not flood
- Slope is 0-3 percent
- The soil lacks a restrictive layer
- The depth to bedrock is more than 5 feet
- Surface stone cover is 0.1 to 15 percent
- The soil requires a medium sized rating for a septic sewage disposal field
- There is low potential for groundwater contamination from septic field effluent

This reference soil is assigned a value of 100 index points. Costs are also developed for all other soils in the county for overcoming the various soil limitations. These costs are converted to index points and subtracted from the reference soil. The result is a method of comparing development costs for the soils in a county. Environmental constraints as well as long term maintenance costs are also a factor in developing soil potentials.

The Soil Potential index is a mathematical expression of a soil's position in the overall range of potentials which is 100 to 0. Since the entire range is large, these numerical ratings are separated into Soil Potential Rating Classes of very low to very high.

The composite rating for development was determined by a weighted average of individual soil potential indices as follows: septic tank absorption fields, 45 percent; dwellings with basements, 20 percent; and local roads and streets, 35 percent.

Soil Potential Rating Classes

Soil Potential Rating Classes are based on the expected performance of a soil if feasible measures are taken to overcome its limitations, the cost of such measures, and the magnitude of the limitations that remain after measures have been applied. The development rating (fourth column in the rating tables) is a weighted sum of the septic, dwelling, and road indices. The septic system has the most restrictive site requirements and the dwelling has the least restrictive site requirements.

Very High Potential – Site conditions and soil properties are favorable. Installation costs are lowest for that use and there are no soil limitations. Soils in the group have soil properties similar to the reference soil. The Soil Potential Index for this rating class is 100 for each soil use.

High Potential – Site conditions and soil properties are not as favorable as the reference soil condition. The cost of measures for overcoming soil limitations is slight. The index for this rating class ranges from 83 to 99 for each soil use.

Medium Potential – Site conditions and soil properties are below soils with high potential. Costs of the measures for overcoming soil limitations are significant. The index for this rating class ranges from 60 to 82.

Low Potential – Site conditions and soil properties are significantly below soils with medium potential. Costs of measures required to overcome soil limitations are very high. The index for this rating class ranges from 40 to 59 for each soil use.

Very Low Potential – There are severe soil limitations for which economical corrective measures are prohibitive or unavailable and costs of these measures are extremely high. Also, soil limitations which detract from environmental quality may continue even after installation of corrective measures. The index for this rating class is less than 40. They may also be prohibited for use by local or state laws.

Drainage Classes

Drainage classes are the relative wetness that a soil under normal conditions has relating to the soil water table. The following seven drainage classes are used for the soils found in Maine:

1. **Excessively Drained (ED)** soils with water that is removed very rapidly. The occurrence of internal free water is very rare or very deep.
2. **Somewhat Excessively Drained (SWED)** soils with water that is removed rapidly through the soil. Internal free water occurrence is very rare or very deep.
3. **Well Drained (WD)** soils with water that is removed from the soil readily but not rapidly. Internal free water occurrence commonly is deep or very deep.
4. **Moderately Well Drained (MWD)** soils with water that is moved somewhat slowly during some periods of the year. Internal free water is moderately deep and transitory to permanent throughout the soil profile.
5. **Somewhat Poorly Drained (SWPD)** soils with water that is removed from the soil slowly and remains wet from significant periods of time during the growing season. The depth to internal free water is shallow to moderately deep, transitory to permanent.
6. **Poorly Drained (PD)** soils with water that is removed so slowly that the soil is wet at shallow depths during the growing season or remains in a wet state for long periods.

7. **Very Poorly Drained (VPD)** soils with water that is removed from the soil so slowly that the free water remains at or near the ground surface during the growing season. Internal free water is very shallow and persistent or permanent.

Slope Class

A	**Level and nearly level**	0-3 percent
B	**Gently sloping (undulating)**	3-8 percent
C	**Strongly sloping (rolling)**	8-15 percent
D	**Moderately steep (hilly)**	15-25 percent
E	**Steep**	25-45 percent
F	**Very Steep**	45+ percent

Depth to Bedrock

1.	**Very Shallow**	Less than 10-inches to bedrock
2.	**Shallow**	10-inches to less than 20-inches to bedrock
3.	**Moderately Deep**	20-inches to less than 40-inches to bedrock
4.	**Deep**	40-inches to less than 60-inches to bedrock
5.	**Very Deep**	Greater than 60-inches to bedrock

Classes of Surface Stones

1.	**Stony or bouldery**	0.01 to 0.1 percent surface coverage
2.	**Very stony/ boulder**	0.1 to 3.0 percent surface coverage
3.	**Extremely stony/ bouldery**	3.0 to 15 percent surface coverage
4.	**Rubbly**	15 to 50 percent surface coverage
5.	**Very Rubbly**	More than 50 percent surface coverage

CLASS 'B' HIGH INTENSITY SOIL SURVEY

Land of Nod Property

February 4, 2019

SOIL POTENTIAL RATING CLASSES

MAP UNIT	SEPTICS	BUILDINGS	ROADS	DEVELOPMENT
AdA Adams, 0 to 3 percent	LOW	VERY HIGH	HIGH	MEDIUM
AdB Adams, 3 to 8 percent	LOW	VERY HIGH	VERY HIGH	MEDIUM
CrA Croghan, 0 to 3 percent	VERY LOW	HIGH	MEDIUM	MEDIUM
CrB Croghan, 3 to 8 percent	VERY LOW	HIGH	HIGH	MEDIUM
GP Gravel pit, varies	N/A	N/A	N/A	N/A
MeA Melrose, 0 to 3 percent	HIGH	HIGH	VERY HIGH	HIGH
NaA Naumburg, 0 to 3 percent	VERY LOW	MEDIUM	MEDIUM	VERY LOW
NaB Naumburg, 3 to 8 percent	VERY LOW	MEDIUM	MEDIUM	VERY LOW
SzA Swanton, 0 to 3 percent	VERY LOW	VERY LOW	VERY LOW	VERY LOW
SzB Swanton, 3 to 8 percent	VERY LOW	VERY LOW	VERY LOW	VERY LOW

ADAMS (AdA, AdB)

(Frigid Sandy Typic Haplorthods)

SETTING

Parent Material:	Glacial-fluvial or glacial-lacustrine sand.
Landform:	Outwash plains, deltas, lake plains, moraines, terraces, and eskers.
Position in Landscape:	Nearly level to uppermost elevations.
Slope Gradient Ranges:	(A) 0-3% (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class:	Somewhat excessively drained	
Typical Profile Description:	**Surface layer:**	Pinkish gray sand, 0 to 4 inches;
	Subsurface layer:	Dark reddish brown loamy sand, 4 to 10 inches;
	Subsoil layer:	Brown loamy sand, 10 to 26 inches;
	Substratum:	Grayish brown loose sand, 26 to 70 inches.
Hydrologic Group:	A	
Surface Run Off:	Very slow to medium, depending upon slope	
Permeability:	Rapid to very rapid in subsurface and upper part of the subsoil soil, very rapid in the lower part of the subsoil and substratum	
Depth to Bedrock:	Very deep, greater than 60 inches	
Hazard to Flooding:	None	

INCLUSIONS

(Within Mapping Unit)

Similar:	Melrose
Contrasting:	None within mapping unit

USE AND MANAGEMENT

Development with subsurface wastewater disposal is rated “low” due to poor filtering capabilities. The limiting factor for building site development is compaction of soil. This soil consists primarily of medium to coarse sand with little or no fines. The soil potential is rated “high” for buildings and roads.

CROGHAN (CrA, CrB)

(Frigid Aquic Haplaquods)

SETTING

Parent Material:	Glaciofluvial or sandy deltaic outwash deposits
Landform:	Nearly level to strongly sloping areas on low plains and terraces
Position in Landscape:	Lower to intermediate positions with flat gentle slopes
Slope Gradient Ranges:	(A) 0-3% (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class:	Moderately well drained	
Typical Profile Description:	**Surface layer:**	Dark brown sand 0 to 5 inches;
	Subsurface layer:	Dark reddish brown fine sand 5 to 8 inches;
	Subsoil layer:	Strong brown, yellowish brown, brown and pale brown sand 8 to 53 inches, mottled below 13 inches;
	Substratum:	Grayish brown loose sand 53 to 60 inches.
Hydrologic Group:	A	
Surface Runoff:	Slow to medium	
Permeability:	Rapid (A horizon), very rapid in the B and C horizons	
Depth to Bedrock:	Very deep, greater than 60 inches	
Hazard to Flooding:	None	

INCLUSIONS
(Within Mapping Unit)

Similar:	Adams, Duane
Contrasting:	Swanton

USE AND MANAGEMENT

Development with subsurface wastewater disposal is “very low” due to wetness and a poor filtering capability. A limiting factor for building site development is that the soil is prone to cutbanks caving in. Croghan soils are rated “medium” for road fill materials. Proper foundation drainage or site modification is recommended for construction. Underground piping has “severe” limitations due to a seasonal high water table within 40 inches. Overall development potential is rated “medium”.

MELROSE (MeA)

(Frigid Oxyaquic Dystrudepts)

SETTING

Parent Material: Formed in a thin mantle of loamy materials over finer textured marine or lacustrine sediments

Landform: Glaciolacustrine, marine or outwash plains, deltas

Position in Landscape: Intermediate to high positions

Slope Gradient Ranges: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Well drained

Typical Profile:

Surface layer:	Very dark grayish brown fine sandy loam, 7”
Subsoil layer:	Yellowish brown fine sandy loam and light yellowish brown sandy loam, 23”
Substratum:	Olive silty clay, 65”

Hydrologic Group: C

Surface Run-off: Moderate

Permeability: Moderately rapid in the loamy mantle, slow or very slow in the clayey substratum

Depth to Bedrock: Deep, >60”

Hazard to Flooding: None

INCLUSIONS WITHIN MAPPING UNIT

Similar: None within mapping unit

Contrasting: None within mapping unit

USE AND MANAGEMENT

Development with subsurface wastewater disposal is rated “fair” due to slow permeability in the substratum. Proper foundation drainage or site modification is recommended for construction. Use of this soil for roadways is “fair”.

NAUMBURG (NaA, NaB)

(Frigid Sandy Typic Endoaquods)

SETTING

Parent Material:	Glaciofluvial or sandy deltaic outwash deposits
Landform:	Nearly level to strongly sloping areas on low plains and terraces
Position in Landscape:	Lower to intermediate positions with flat gentle slopes
Slope Gradient Ranges:	(A) 0-3% (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class:	Somewhat poorly and poorly drained	
Typical Profile	**Surface layer:**	Black organic, 6”
Description:	**Subsurface layer:**	Reddish gray loamy fine sand, 6”
	Subsoil layer:	Dark reddish brown loamy fine sand, 30”
	Substratum:	Light brownish gray sand, 60”
Hydrologic Group:	A/D	
Surface Runoff:	Slow	
Permeability:	Rapid	
Depth to Bedrock:	Very deep, >60”	
Hazard to Flooding:	Medium	

INCLUSIONS
(Within Mapping Unit)

Similar:	Croghan
Contrasting:	Swanton

USE AND MANAGEMENT

A limiting factor for building site development is the soil is prone to cutbanks caving in. Naumburg soils are rated “poor” for road fill materials. Proper foundation drainage or site modification is recommended for construction. Use of this soil for roadways is “poor” due to wetness. Underground piping has “severe” limitations due to wetness.

SWANTON (SzA, SzB)

(Frigid Aeric Haplaquepts)

SETTING

Parent Material:	Loamy outwash over clayey marine or lacustrine sediments
Landform:	Level or gently sloping marine or lake plains
Position in Landscape:	Lower to intermediate positions
Slope Gradient Ranges:	(A) 0-3% (b) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class:	Somewhat poorly drained, poorly drained	
Typical Profile:	**Surface layer:**	Very dark gray sandy loam, 7”
	Subsoil layer:	Grayish brown fine sandy loam, mottled, 22”; light brownish gray sandy loam, 40”
	Substratum:	Olive silt clay, mottled, 60”
Hydrologic Group:	B/D	
Surface Runoff:	Slow to medium	
Permeability:	Moderately rapid in the coarse-loamy mantle, slow or very slow in the underlying materials	
Depth to Bedrock:	Very deep, >60”	
Hazard to Flooding:	None	

INCLUSIONS
(Within Mapping Unit)

Similar:	Elmwood
Contrasting:	Naumburg, Nicholville, Lamoine

USE AND MANAGEMENT

A limiting factor for building site development is wetness due to the presence of shallow water table from November through May. Proper foundation drainage or site modification is recommended for construction. Use of this soil for roadways is “poor” due to wetness. Underground piping has “severe” limitations due to wetness.

APPENDIX D

SOIL TEST PITS

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-10** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND		10YR 4/6	
		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE	10YR 5/6	NONE
		YELLOWISH	OBSERVED
		BROWN	
MEDIUM SAND		2.5Y 6/3	
		LIGHT	
		YELLOWISH	
		BROWN	
COARSE SAND			

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope % 0-3	Limiting factor >55"	☐ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name: ADAMS	SWED Drainage Class	A Hydrologic Group	
L.S.E. Soil Classification: 5 Profile	B Drainage Class	Design Class	

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-11** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/3	
LOAM		BROWN	
	FRIABLE		
SILT		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
FINE		2.5Y 5/6	
SAND		LIGHT OLIVE	
		BROWN	
SILT	FIRM	2.5Y 5/3	
LOAM		LIGHT	
		OLIVE	
		BROWN	
		2.5Y 6/3	
VERY FINE	FRIABLE	LIGHT YELLOWSIH	FEW, FINE
SAND		BROWN	FAINT

LIMIT OF EXCAVATION = 48"

☐ hydric ■ non-hydric	Slope % 3-8	Limiting factor 28"	☐ ground water ■ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name: MELROSE	WD Drainage Class	C Hydrologic Group	
L.S.E. Soil Classification: 7 Profile	C Drainage Class	Design Class	

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-12** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/3	
LOAM		BROWN	
		2.5Y 5/4	
		LIGHT OLIVE	COMMON,
		BROWN	MEDIUM,
			DISTINCT
SILT	FIRM	2.5Y 5/3	
LOAM		LIGHT	
		OLIVE	
		BROWN	
FINE	FRIABLE	2.5Y 7/3	
SAND		PALE BROWN	

LIMIT OF EXCAVATION = 55"

☐ hydric ■ non-hydric	Slope % 3-8	Limiting factor 12"	■ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name: SWANTON	SWPD Drainage Class	B/D Hydrologic Group	
L.S.E. Soil Classification: 7 Profile	D Drainage Class	Design Class	

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-13** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM		10YR 3/2	
		VERY	
		DARK	
		GRAYISH	
	FRIABLE	BROWN	COMMON,
			MEDIUM,
			DISTINCT
		2.5Y 5/3	
SANDY		LIGHT	
LOAM		OLIVE	
		BROWN	
SILTY		5Y 5/1	MANY,
CLAY		GRAY	COARSE,
LOAM			PROMINENT
	FIRM		
SILTY			
CLAY			

LIMIT OF EXCAVATION = 48"

■ hydric ☐ non-hydric	Slope % 3-8	Limiting factor 4"	■ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name: SWANTON	PD Drainage Class	B/D Hydrologic Group	
L.S.E. Soil Classification: 7 Profile	E Drainage Class	Design Class	

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/20/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/20/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-14 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/3	
LOAM		DARK	
	FRIABLE	BROWN	
LOAMY		2.5Y 5/6	
FINE		LIGHT	
SAND		OLIVE	
		BROWN	
SILTY	FIRM	5Y 5/2	COMMON,
CLAY		OLIVE	MEDIUM,
LOAM		GRAY	DISTINCT
SILTY	VERY		
CLAY	FIRM		

LIMIT OF EXCAVATION = 53"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	16"	■ restrictive layer
			▫ bedrock

C.S.S. Soil Series / phase name: ELMWOOD — MWD (Drainage Class) — B/D (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-15 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM			
		2.5Y 4/3	
		OLIVE BROWN	
	FRIABLE		
VERY FINE		2.5Y 6/4	COMMON,
SANDY LOAM		LIGHT	MEDIUM,
		YELLOWISH	DISTINCT
		BROWN	
FINE		2.5Y 6/3	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	9"	▫ restrictive layer
			▫ bedrock

C.S.S. Soil Series / phase name: NAUMBURG — SWPD (Drainage Class) — A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — D (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-16 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 3/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
		10YR 6/4	
		LIGHT	
		YELLOWISH	
		BROWN	
			COMMON, MEDIUM
			DISTINCT

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	55"	▫ restrictive layer
			▫ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-17 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/3	
LOAM		DARK	
		BROWN	
	FRIABLE		
		2.5Y 5/6	
LOAMY		LIGHT OLIVE	
SAND		BROWN	
MEDIUM		2.5Y 5/4	
SAND		LIGHT OLIVE	COMMON,
		BROWN	MEDIUM,
			DISTINCT

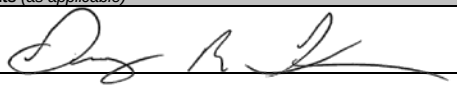
LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	20"	▫ restrictive layer
			▫ bedrock

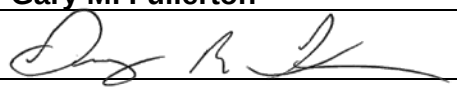
C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-18 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		2.5Y 4/3	
LOAM		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
			DISTINCT
		2.5Y 5/4	
	FRIABLE	LIGHT	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	
		2.5Y 6/2	
		LIGHT	
		BROWNISH	
		GRAY	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	3"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: NAUMBURG — PD (Drainage Class) — A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — E (Drainage Class) — ____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-19 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/3	
LOAM		DARK	
		BROWN	
	FRIABLE		
LOAMY		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 5/6	COMMON,
SAND		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	ground water
☐ non-hydric	0-3	23"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — ____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-20 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/4	
LOAM		DARK	
		YELLOWISH	
	FRIABLE	BROWN	NONE
			OBSERVED
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
☐ non-hydric	0-3	>55"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — ____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-21 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		NONE
			OBSERVED
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

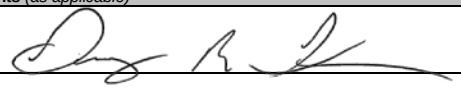
LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
☐ non-hydric	3-8	>55"	☐ restrictive layer
			☐ bedrock

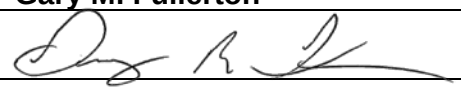
C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — ____ (Design Class)

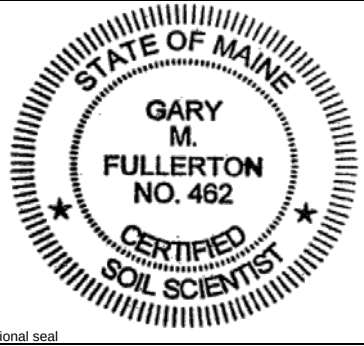
Professional Endorsements *(as applicable)*

C.S.S. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355



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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-22 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
FINE		2.5Y 7/4	
SAND		PALE	
		BROWN	
		2.5Y 7/2	COMMON,
		LIGHT	MEDIUM,
		GRAY	DISTINCT

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	36"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-23 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/3	
LOAM		BROWN	
	FRIABLE		
FINE		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
		2.5Y 5/6	
		LIGHT	
		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
			DISTINCT
VERY FINE	FIRM	5Y 4/3	
SANDY LOAM		OLIVE	

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	29"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-24 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		10YR 4/4	
SAND		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
		10YR 4/6	
		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
		2.5Y 5/6	COMMON,
		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	34"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-25 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/3	
LOAM		BROWN	
	FRIABLE		
LOAMY		10YR 5/6	
SAND		YELLOWISH	
		BROWN	
		2.5Y 5/6	
FINE		LIGHT OLIVE	
SAND		BROWN	
		2.5Y 6/4	COMMON,
		LIGHT	MEDIUM,
		YELLOWISH	DISTINCT
		BROWN	

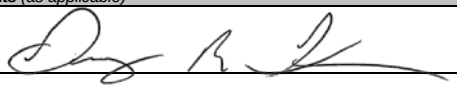
LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	25"	■	☐	☐

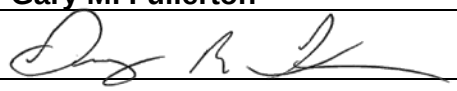
C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-26 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		10YR 3/4	
SAND		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
MEDIUM		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
		7.5Y 4/4	COMMON,
			MEDIUM,
	CEMENTED		DISTINCT
		7.5Y 4/6	
		2.5Y 6/4	
FINE		LIGHT YELLOWISH	
SAND		BROWN	

LIMIT OF EXCAVATION = 50"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	20"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-27 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
		2.5Y 5/6	COMMON,
		LIGHT	MEDIUM,
		OLIVE	DISTINCT
LOAMY	CEMENTED	BROWN	
SAND			
FINE	FRIABLE		
SAND			
		2.5Y 5/3	
		LIGHT	
		OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	8"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: NAUMBURG — SWPD (Drainage Class) — A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — E (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-28 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/3	
LOAM		BROWN	
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM	CEMENTED	2.5Y 5/6	COMMON,
SAND		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	
GRAVELLY		2.5Y 6/3	
COARSE		LIGHT	
SAND		YELLOWISH	
		BROWN	
FINE			
SAND			

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	18"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-29 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY	FRIABLE	10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
		10YR 5/6	
		YELLOWISH	
		BROWN	
GRAVELLY		2.5Y 5/6	
COARSE		LIGHT	
SAND		OLIVE	
		BROWN	
FINE		2.5Y 6/6	COMMON,
SAND	FIRM	OLIVE	MEDIUM,
		YELLOW	DISTINCT
GRAVELLY			
COARSE			
SAND			

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	27"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: [signature] Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-30 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4 DARK YELLOWISH BROWN	
	FRIABLE		
GRAVELLY SAND		10YR 5/6 YELLOWISH BROWN	
		2.5Y 6/3 LIGHT YELLOWISH BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	26"	■	☐	☐

C.S.S. Soil Series / phase name: DUANE — Drainage Class: MWD — Hydrologic Group: A

L.S.E. Soil Classification: Profile: 6 — Drainage Class: C — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-31 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/2 VERY DARK GRAYISH BROWN	
		2.5Y 5/6 LIGHT OLIVE BROWN	
VERY FINE SANDY LOAM	FIRM	5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM		5Y 4/2 OLIVE GRAY	
FINE SAND	FRIABLE	2.5Y 5/6 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	12"	☐	☐	☐

C.S.S. Soil Series / phase name: SWANTON — Drainage Class: SWPD — Hydrologic Group: B/D

L.S.E. Soil Classification: Profile: 8 — Drainage Class: D — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-32 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY FINE SAND		10YR 4/4 DARK YELLOWISH BROWN	
		2.5Y 6/1	
FINE SAND	FRIABLE	GRAY	NONE OBSERVED
LOAMY FINE SAND		10YR 4/6 DARK YELLOWISH BROWN	
FINE SAND		2.5Y 5/6 LIGHT OLIVE	
	FIRM	BROWN	
	FRIABLE	2.5Y 6/3 LIGHT YELLOWISH BROWN	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	26"	☐	■	☐

C.S.S. Soil Series / phase name: ADAMS — Drainage Class: SWED — Hydrologic Group: A

L.S.E. Soil Classification: Profile: 5 — Drainage Class: C — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-33 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND	FRIABLE	10YR 5/6 YELLOWISH BROWN	
MEDIUM SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
			FEW, FINE, FAINT
SILT LOAM	FIRM	5Y 6/2 LIGHT OLIVE GRAY	

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	29"	☐	■	☐

C.S.S. Soil Series / phase name: MELROSE — Drainage Class: WD — Hydrologic Group: C

L.S.E. Soil Classification: Profile: 7 — Drainage Class: C — Design Class:

Professional Endorsements *(as applicable)*

C.S.S. signature: Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-34 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		2.5Y 4/4	
LOAM		OLIVE	
		BROWN	
MEDIUM	FRIABLE	2.5Y 5/6	NONE
SAND		LIGHT	OBSERVED
		OLIVE	
		BROWN	
GRAVELLY		2.5Y 5/4	
COARSE		LIGHT OLIVE	
SAND		BROWN	
		2.5Y 6/4	
FINE		LIGHT YELLOWISH	
SAND		BROWN	
		2.5Y 5/3	
SILT	FIRM	LIGHT OLIVE	
LOAM		BROWN	

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	41"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: MELROSE — WD (Drainage Class) — C (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-35 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
	FRIABLE	BROWN	
LOAMY		2.5Y 4/1	NONE
SAND		DARK	OBSERVED
		GRAY	
SILT		2.5Y 5/3	
LOAM	FIRM	LIGHT	
		OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	23"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: MELROSE — WD (Drainage Class) — C (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-36 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	NONE
SAND		DARK	OBSERVED
		YELLOWISH	
		BROWN	
COARSE		2.5Y 4/6	
SAND		OLIVE	
		BROWN	
FINE			
SAND			
		5Y 6/3	
		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 49"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>49"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-37 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		10YR 4/4	
SAND		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		NONE
			OBSERVED
		2.5Y 5/6	
		LIGHT	
		OLIVE	
		BROWN	
GRAVELLY		2.5Y 6/6	
COARSE		OLIVE	
SAND		YELLOW	
SILT	FIRM	2.5Y 5/3	
LOAM		LIGHT	
		OLIVE	
		BROWN	
FINE	FRIABLE		
SAND			

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	23"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: MELROSE — WD (Drainage Class) — C (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — C (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: _____ Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: _____ Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-38 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	NONE
SAND		DARK	OBSERVED
		YELLOWISH	
		BROWN	
GRAVELLY		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
FINE		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>48"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-39 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
		2.5Y 6/6	
FINE		OLIVE	
SAND		YELLOW	
		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
		2.5Y 7/3	COMMON,
		PALE	MEDIUM,
		BROWN	DISTINCT
			(RELIC MOTTLES)
MEDIUM			
SAND			

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	■ ground water
■ non-hydric	0-3	>60"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-40 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 5/6	
LOAM		YELLOWISH	
		BROWN	
LOAMY		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
	FRIABLE		NONE
			OBSERVED
FINE		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
COARSE		BROWN	
SAND			
FINE			
SAND			
COARSE			
SAND			

LIMIT OF EXCAVATION = 58"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>58"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-41 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	NONE
SAND		DARK	OBSERVED
		YELLOWISH	
		BROWN	
VERY		5Y 7/2	
FINE		LIGHT	
SAND		GRAY	

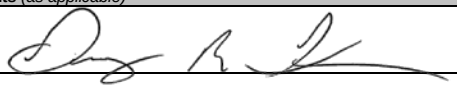
LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>52"	☐ restrictive layer
			☐ bedrock

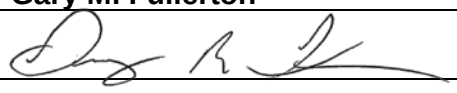
C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature:  Date: 9/20/18

name printed/typed: Gary M. Fullerton Lic.#: 355

affix professional seal

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-42 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	NONE
SAND		DARK	OBSERVED
		YELLOWISH	
		BROWN	
FINE		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
COARSE		2.5Y 6/3	
SAND		LIGHT	
		YELLOWISH	
		BROWN	
MEDIUM			
SAND			

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>60"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-43 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/6	
		DARK	
		YELLOWISH	
LOAMY		BROWN	
SAND	FRIABLE		
		10YR 5/6	NONE
		YELLOWISH	OBSERVED
		BROWN	
		2.5Y 5/6	
		LIGHT	
	CEMENTED	OLIVE	
		BROWN	
FINE			
SAND		5Y 6/3	
		PALE	
		OLIVE	
	FRIABLE		
		5Y 7/2	
		LIGHT	
		GRAY	

LIMIT OF EXCAVATION = 50"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	18"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-44 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		NONE
			OBSERVED
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
FINE	CEMENTED	5Y 6/3	
SAND		PALE	
		OLIVE	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	24"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-45 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
LOAMY	FRIABLE	10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
GRAVELLY		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
SILTY	FIRM	5Y 4/2	COMMON,
CLAY		OLIVE	MEDIUM,
LOAM		GRAY	DISTINCT

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	32"	■ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — C (Drainage Class) — (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: Date: 9/21/18

name printed/typed: **Gary M. Fullerton** Lic.#: 462

L.S.E. signature: Date: 9/21/18

name printed/typed: **Gary M. Fullerton** Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-46 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE	FRIABLE	2.5Y 5/4	
SANDY		LIGHT	
LOAM		OLIVE	
		BROWN	
SILT	FIRM	2.5Y 6/3	COMMON,
LOAM		LIGHT	MEDIUM,
		YELLOWISH	DISTINCT
		BROWN	
FINE		2.5Y 5/4	
SANDY		LIGHT	
LOAM		OLIVE	
		BROWN	
SILTY		2.5Y 5/2	
CLAY		GRAYISH	
LOAM		BROWN	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	7"	■	■	☐

C.S.S. Soil Series / phase name: SWANTON — SWPD (Drainage Class) — B/D (Hydrologic Group)

L.S.E. Soil Classification: 8 (Profile) — E (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-47 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
GRAVELLY		2.5Y 5/6	
COARSE		LIGHT	
SAND		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
			DISTINCT

LIMIT OF EXCAVATION = 55"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	42"	■	☐	☐

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 6 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-48 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE		2.5Y 4/3	
SANDY		OLIVE	
LOAM		BROWN	
			COMMON,
	FRIABLE		MEDIUM,
SILT		2.5Y 6/3	DISTINCT
LOAM		LIGHT	
		YELLOWISH	
		BROWN	
		2.5Y 6/2	
		LIGHT BROWNISH	
		GRAY	
MEDIUM		2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
FINE		2.5Y 6/2	
SAND		LIGHT	
		BROWNISH	
		GRAY	

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
■	☐	3-8	4"	☐	☐	☐

C.S.S. Soil Series / phase name: NAUMBURG — PD (Drainage Class) — B/D (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — E (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-49 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE		2.5Y 4/2	
SANDY		DARK	
LOAM		GRAYISH	
		BROWN	COMMON,
	FRIABLE		MEDIUM,
			DISTINCT
FINE		7.5YR 4/6	
SAND		STRONG	
		BROWN	
		5YR 5/6	
		YELLOWISH	
		RED	

LIMIT OF EXCAVATION = 50"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
■	☐	3-8	4"	☐	☐	☐

C.S.S. Soil Series / phase name: NAUMBURG — PD (Drainage Class) — A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — E (Drainage Class) — (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: 9/21/18

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: [signature] Date: 9/21/18

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-50 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE	FRIABLE	10YR 4/4	
SANDY		DARK	
LOAM		YELLOWISH	
		BROWN	
		2.5Y 5/3	COMMON,
		LIGHT	MEDIUM,
		OLIVE	DISTINCT
		BROWN	
		5Y 6/3	
		PALE	
		OLIVE	
FINE	CEMENTED	2.5Y 5/6	
SAND		LIGHT	
		OLIVE	
		BROWN	
		5Y 5/4	
		OLIVE	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
☐ non-hydric	3-8	5"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: NAUMBURG — PD (Drainage Class) — A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — E (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-51 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		2.5Y 4/4	
		OLIVE	
		BROWN	
SANDY	FRIABLE		
LOAM			
		2.5Y 5/6	
		LIGHT	
		OLIVE	
		BROWN	
			COMMON,
			MEDIUM,
FINE			DISTINCT
SAND			
		5Y 5/4	
		OLIVE	

LIMIT OF EXCAVATION = 55"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	24"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-52 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SILT		2.5Y 4/1	
LOAM		DARK	
		GRAY	
	FRIABLE		COMMON,
			MEDIUM,
			DISTINCT
LOAMY		5Y 5/2	
SAND		OLIVE	
		GRAY	
		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
SILT LOAM		5Y 4/2	
SILTY	FIRM		
CLAY			
LOAM			

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	0"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: SWANTON — PD (Drainage Class) — B/D (Hydrologic Group)

L.S.E. Soil Classification: 8 (Profile) — E (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-53 ■ Test Pit ☐ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	2.5Y 5/4	
		LIGHT	
		OLIVE	
		BROWN	
FINE	FIRM	2.5Y 6/4	
SANDY		LIGHT	
LOAM		YELLOWISH	
		BROWN	
SILTY		5Y 4/2	FEW,
CLAY		OLIVE	FINE,
LOAM		GRAY	FAINT

LIMIT OF EXCAVATION = 38"

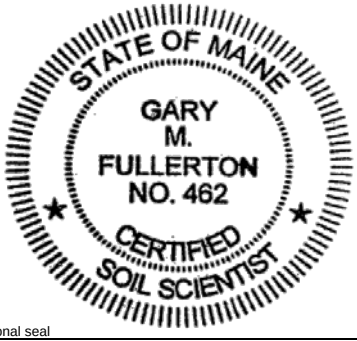
hydric	Slope %	Limiting factor	ground water
☐ non-hydric	0-3	15"	■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: MELROSE — WD (Drainage Class) — C (Hydrologic Group)

L.S.E. Soil Classification: 8 (Profile) — C (Drainage Class) — (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 9/21/18
name printed/typed:	Gary M. Fullerton	Lic.#: 355



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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: B-54 ☐ Test Pit ■ Boring

3 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE	FRIABLE	2.5Y 3/1	COMMON,
SANDY		VERY	MEDIUM,
LOAM		DARK	DISTINCT
		GRAY	
	FIRM	5Y 4/1	MANY,
		DARK GRAY	COARSE,
			PROMINENT
FINE		5Y 5/3	
SAND		OLIVE	
		5Y 5/6	
		OLIVE	

LIMIT OF EXCAVATION = 42"

■ hydric ▫ non-hydric | Slope %: 0-3 | Limiting factor: 0" | ■ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: NAUMBURG | PD (Drainage Class) | A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | E (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: B-55 ☐ Test Pit ■ Boring

2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SILT	FRIABLE	5Y 3/1	COMMON,
LOAM		VERY	MEDIUM,
		DARK	DISTINCT
		GRAY	
LOAMY		5Y 5/1	MANY,
FINE		GRAY	COARSE,
SAND			PROMINENT
SILTY	FIRM		
CLAY			
LOAM			

LIMIT OF EXCAVATION = 36"

■ hydric ▫ non-hydric | Slope %: 0-3 | Limiting factor: 0" | ■ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: SWANTON | PD (Drainage Class) | B/D (Hydrologic Group)

L.S.E. Soil Classification: 8 (Profile) | E (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

LIMIT OF EXCAVATION = X"

▫ hydric ▫ non-hydric | Slope %: _____ | Limiting factor: _____ | ▫ ground water ▫ restrictive layer ▫ bedrock

C.S.S. Soil Series / phase name: _____ | _____ (Drainage Class) | _____ (Hydrologic Group)

L.S.E. Soil Classification: _____ (Profile) | _____ (Drainage Class) | _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

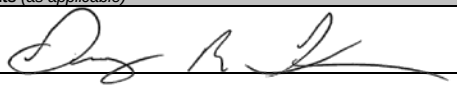
LIMIT OF EXCAVATION = X"

▫ hydric ▫ non-hydric | Slope %: _____ | Limiting factor: _____ | ▫ ground water ▫ restrictive layer ▫ bedrock

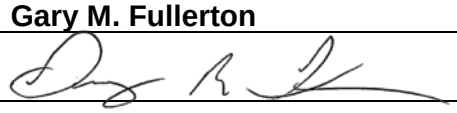
C.S.S. Soil Series / phase name: _____ | _____ (Drainage Class) | _____ (Hydrologic Group)

L.S.E. Soil Classification: _____ (Profile) | _____ (Drainage Class) | _____ (Design Class)

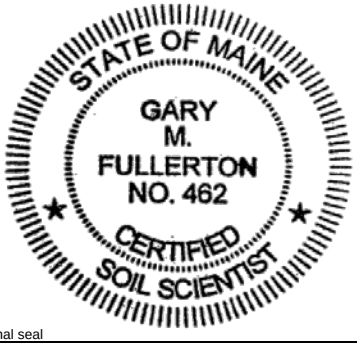
Professional Endorsements *(as applicable)*

C.S.S. signature:  Date: **9/21/18**

name printed/typed: **Gary M. Fullerton** Lic.#: **462**

L.S.E. signature:  Date: **9/21/18**

name printed/typed: **Gary M. Fullerton** Lic.#: **355**



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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-56 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SILT LOAM	FRIABLE	5Y 4/2 OLIVE GRAY	
		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM	FIRM	5Y 5/3 OLIVE	

LIMIT OF EXCAVATION = 90"

▫ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	3-8	10"	

C.S.S. Soil Series / phase name: LAMOINE — Drainage Class: SWPD — Hydrologic Group: C/D

L.S.E. Soil Classification: Profile: 9 — Drainage Class: D — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-57 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	10YR 3/4 DARK YELLOWISH BROWN	
SANDY LOAM		10YR 5/6 YELLOWISH BROWN	
FINE SANDY LOAM		5Y 5/4 OLIVE	COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM	5Y 5/2 OLIVE GRAY	
SILTY CLAY LOAM		5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 90"

▫ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	3-8	16"	

C.S.S. Soil Series / phase name: NICHOLVILLE — Drainage Class: MWD — Hydrologic Group: B

L.S.E. Soil Classification: Profile: 8 — Drainage Class: C — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-58 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
		2.5Y 5/6 LIGHT OLIVE BROWN	
MEDIUM SAND			
COARSE SAND	LOOSE	2.5Y 5/4 LT. OLIVE BROWN	
COARSE LOAMY SAND	FRIABLE	2.5Y 5/3 LIGHT OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 50"

▫ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	3-8	30"	

C.S.S. Soil Series / phase name: CROGHAN — Drainage Class: MWD — Hydrologic Group: A

L.S.E. Soil Classification: Profile: 5 — Drainage Class: C — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-59 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
MEDIUM SAND	LOOSE	2.5Y 5/6 LIGHT OLIVE BROWN	
COARSE SAND	FRIABLE	2.5Y 5/3 LT. OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 60"

▫ hydric ■ non-hydric	Slope %	Limiting factor	■ ground water ▫ restrictive layer ▫ bedrock
	0-3	44"	

C.S.S. Soil Series / phase name: ADAMS — Drainage Class: SWED — Hydrologic Group: A

L.S.E. Soil Classification: Profile: 5 — Drainage Class: C — Design Class:

Professional Endorsements *(as applicable)*

C.S.S. signature: — Date: 12/11/18

name printed/typed: **Gary M. Fullerton** — Lic.#: 462

L.S.E. signature: — Date: 12/11/18

name printed/typed: **Gary M. Fullerton** — Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-60 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM		10YR 4/4	NONE
		DARK YELLOWISH	OBSERVED
		BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
	FRIABLE	BROWN	
MEDIUM SAND		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
COARSE SAND		2.5Y 5/2	
		GRAYISH BROWN	

LIMIT OF EXCAVATION = 54"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	>54"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-61 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/3	
		DARK BROWN	
SANDY LOAM			
	FRIABLE	10YR 4/6	
		DARK YELLOWISH	
		BROWN	
MEDIUM SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
			COMMON,
COARSE SAND		2.5Y 5/4	MEDIUM,
		LT. OLIVE BROWN	DISTINCT
FINE SAND		5Y 5/3	MANY,
		OLIVE	COARSE,
			PROMINENT

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	■ ground water
■ non-hydric	3-8	30"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-62 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM		2.5Y 4/3	
		OLIVE BROWN	
	FRIABLE		
SANDY LOAM		2.5Y 5/3	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT
LOAMY SAND	CEMENTED	5Y 5/2	MANY,
		OLIVE GRAY	COARSE,
			PROMINENT
FINE SAND	FRIABLE	5Y 4/4	
		OLIVE	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	■ ground water
■ non-hydric	0-3	8"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: NAUMBURG — SWPD (Drainage Class) — A/D (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — E (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-63 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM		2.5Y 4/3	
		OLIVE BROWN	
		2.5Y 5/3	MANY,
		LIGHT OLIVE	COARSE,
		BROWN	PROMINENT
	FRIABLE		
FINE SAND		5Y 5/2	
		OLIVE GRAY	
			COMMON,
SILTY CLAY	FIRM	5Y 4/2	MEDIUM,
		OLIVE GRAY	DISTINCT

LIMIT OF EXCAVATION = 9.5'

■ hydric	Slope %	Limiting factor	■ ground water
☐ non-hydric	0-3	5"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: SWANTON — PD (Drainage Class) — B/D (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — E (Drainage Class) — (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: Gary M. Fullerton — Date: 12/11/18

name printed/typed: Gary M. Fullerton — Lic.#: 462

L.S.E. signature: Gary M. Fullerton — Date: 12/11/18

name printed/typed: Gary M. Fullerton — Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-64 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	NONE OBSERVED
		10YR 4/6 DARK YELLOWISH BROWN	
		2.5Y 5/6 LIGHT OLIVE BROWN	
FINE SAND		10YR 5/6 YELLOWISH BROWN	
SILTY CLAY	FIRM	5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 60"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	36"	restrictive layer

C.S.S. Soil Series / phase name: ELMWOOD — Drainage Class: MWD — Hydrologic Group: B/D

L.S.E. Soil Classification: Profile: 7 — Drainage Class: C — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-65 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/3 BROWN	
		10YR 4/6 DARK YELLOWISH BROWN	NONE OBSERVED
COARSE SAND	LOOSE	2.5Y 5/4 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 55"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	>55"	restrictive layer

C.S.S. Soil Series / phase name: ADAMS — Drainage Class: SWED — Hydrologic Group: A

L.S.E. Soil Classification: Profile: 6 — Drainage Class: B — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-66 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	NONE OBSERVED
		10YR 4/6 DARK YELLOWISH BROWN	
SILTY CLAY LOAM	FIRM	2.5Y 5/4 LIGHT OLIVE BROWN	
SILTY CLAY	VERY FIRM	5Y 5/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 50"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	18"	restrictive layer

C.S.S. Soil Series / phase name: ELMWOOD — Drainage Class: MWD — Hydrologic Group: B/D

L.S.E. Soil Classification: Profile: 8 — Drainage Class: C — Design Class:

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-67 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
FINE SAND		2.5Y 5/4 LIGHT OLIVE BROWN	
COARSE SAND		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT

LEDGE @ 90"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	50"	restrictive layer

C.S.S. Soil Series / phase name: ADAMS — Drainage Class: SWED — Hydrologic Group: A

L.S.E. Soil Classification: Profile: 5 — Drainage Class: B — Design Class:

Professional Endorsements *(as applicable)*

C.S.S. signature: — Date: 12/11/18

name printed/typed: Gary M. Fullerton — Lic.#: 462

L.S.E. signature: — Date: 12/11/18

name printed/typed: Gary M. Fullerton — Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-68** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	2.5Y 5/6	NONE
		LIGHT OLIVE	OBSERVED
		BROWN	
FINE SAND		2.5Y 6/4	
		LIGHT YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>52"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **ADAMS** — **SWED** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **B** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-69** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4	
		DARK YELLOWISH	
		BROWN	
LOAMY SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
FINE SAND		2.5Y 5/3	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/2	
		OLIVE GRAY	

LIMIT OF EXCAVATION = 60"

hydric	Slope %	Limiting factor	■ ground water
■ non-hydric	0-3	30"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **ELMWOOD** — **MWD** Drainage Class — **B/D** Hydrologic Group

L.S.E. Soil Classification: **7** Profile — **C** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-70** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/6	
		DARK YELLOWISH	
		BROWN	
LOAMY SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
FINE SAND		2.5Y 5/3	COMMON,
		LIGHT OLIVE	MEDIUM,
		BROWN	DISTINCT

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	■ ground water
■ non-hydric	0-3	26"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **CROGHAN** — **MWD** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **C** Drainage Class — Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-71** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/4	NONE
		DARK YELLOWISH	OBSERVED
		BROWN	
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
FINE SAND		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	
MEDIUM SAND		2.5Y 5/3	
		LIGHT OLIVE	
		BROWN	

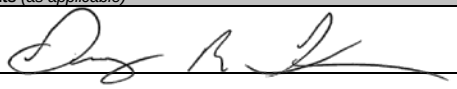
LIMIT OF EXCAVATION = 54"

hydric	Slope %	Limiting factor	☐ ground water
■ non-hydric	3-8	>54"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: **ADAMS** — **SWED** Drainage Class — **A** Hydrologic Group

L.S.E. Soil Classification: **5** Profile — **B** Drainage Class — Design Class

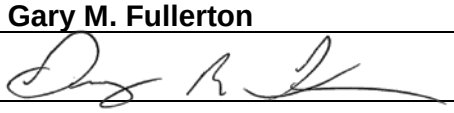
Professional Endorsements *(as applicable)*

C.S.S. signature: 

Date: **12/11/18**

name printed/typed: **Gary M. Fullerton**

Lic.#: **462**

L.S.E. signature: 

Date: **12/11/18**

name printed/typed: **Gary M. Fullerton**

Lic.#: **355**

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-72 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/3	
		DARK	
		BROWN	
GRAVELLY	FRIABLE		
SAND			
		10YR 5/6	
		YELLOWISH	NONE
		BROWN	OBSERVED
COARSE	LOOSE	2.5Y 5/4	
SAND		LIGHT OLIVE	
		BROWN	
GRAVELLY COARSE		10YR 5/4	
SAND		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 11'

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	0-3	>11'	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 6 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-73 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY		2.5Y 5/6	
SAND			
WITH		LIGHT OLIVE	
STONES		BROWN	
	FRIABLE		
LOAMY		2.5Y 5/3	
FINE			
SAND		LIGHT OLIVE	
		BROWN	
SILTY	FIRM	5Y 5/2	
CLAY		GRAYISH BROWN	
LOAM			
LOAMY FINE SAND		2.5Y 5/3	FINE, FEW, FAINT
WITH SILT LOAM	FRIABLE	LIGHT OLIVE	IN VARVES
VARVES		BROWN	

LIMIT OF EXCAVATION = 11'

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	0-3	48"	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-74 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 4/4	
		DARK	
SANDY		YELLOWISH	
LOAM	FRIABLE	BROWN	
FINE		2.5Y 5/6	
SAND			
		LIGHT OLIVE	
		BROWN	
		2.5Y 5/3	COMMON,
			MEDIUM,
		LIGHT OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 60"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	3-8	34"	■ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-75 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 4/4	
LOAM			
		DARK	
		YELLOWISH	
		BROWN	
	FRIABLE		
MEDIUM		2.5Y 5/6	
SAND			
		LIGHT OLIVE	
		BROWN	
FINE		2.5Y 5/3	COMMON,
SAND			MEDIUM,
		LIGHT OLIVE	DISTINCT
		BROWN	

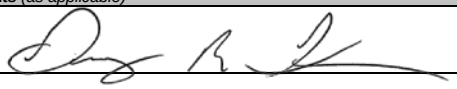
LIMIT OF EXCAVATION = 48"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	3-8	32"	■ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S.	signature: 	Date: 1/25/19
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature: 	Date: 1/25/19
	name printed/typed: Gary M. Fullerton	Lic.#: 355

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-76 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)	Texture	Consistency	Color	Mottling
0				
1				
2				
3				
4			10YR 4/4	
5	SANDY			
6	LOAM		DARK	
7			YELLOWISH	
8			BROWN	
9				
10		FRIABLE		
12				
14				
16				
18				
20	LOAMY		2.5Y 5/6	
	FINE		LIGHT OLIVE	
24	SAND		BROWN	
	MEDIUM		2.5Y 5/4	
30	SAND			
			LIGHT OLIVE	
			BROWN	
36				
40	COARSE			
	SAND			
50				COMMON,
				MEDIUM,
60				DISTINCT

LIMIT OF EXCAVATION = 48"

☐ hydric ■ non-hydric	Slope % 0-3	Limiting factor 40"	■ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name:	ADAMS	SWED (Drainage Class)	A (Hydrologic Group)
L.S.E. Soil Classification:	5 (Profile)	C (Drainage Class)	(Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-77 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)	Texture	Consistency	Color	Mottling
0				
1				
2	SANDY		10YR 4/4	
3	LOAM			
4			DARK YELLOWISH	
5			BROWN	
6				
7				
8				
9				
10	FINE	FRIABLE	10YR 5/6	
12	SAND			
14			YELLOWISH	
16			BROWN	
18				
20				
28				
30	MEDIUM		2.5Y 5/4	COMMON,
	SAND			MEDIUM,
			LIGHT OLIVE	DISTINCT
			BROWN	
40				
50				
60				

LIMIT OF EXCAVATION = 48"

☐ hydric ■ non-hydric	Slope % 0-3	Limiting factor 28"	■ ground water ☐ restrictive layer ☐ bedrock
C.S.S. Soil Series / phase name:	CROGHAN	MWD (Drainage Class)	A (Hydrologic Group)
L.S.E. Soil Classification:	5 (Profile)	C (Drainage Class)	(Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______" Depth of Organic Horizon Above Mineral Soil

Texture | Consistency | Color | Mottling (blank, crossed out)

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______" Depth of Organic Horizon Above Mineral Soil

Texture | Consistency | Color | Mottling (blank, crossed out)

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: | Profile | Drainage Class | Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 1/25/19
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature:	Date: 1/25/19
	name printed/typed: Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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Sebago Technics, Inc.

76-77

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-78 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/3	
FINE		DARK	
SANDY LOAM	FRIABLE	BROWN	
		2.5Y 5/3	
		LIGHT OLIVE	
		BROWN	
LOAMY VERY			COMMON,
FINE SAND			MEDIUM,
			DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/3	
		OLIVE	

LIMIT OF EXCAVATION = 56"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	17"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ELMWOOD — MWD (Drainage Class) — B/D (Hydrologic Group)

L.S.E. Soil Classification: 7 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-79 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 4/3	
		BROWN	
SANDY LOAM	FRIABLE		
		10YR 4/6	
LOAMY SAND		DARK YELLOWISH	
		BROWN	
		2.5Y 4/4	COMMON,
			MEDIUM,
MEDIUM SAND		OLIVE	DISTINCT
		BROWN	

LIMIT OF EXCAVATION = 52"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	17"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-80 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
		10YR 3/3	
		DARK	
SANDY LOAM		BROWN	
	FRIABLE		
LOAMY SAND		10YR 5/6	
		YELLOWISH	
		BROWN	
		2.5Y 5/4	
MEDIUM SAND		LIGHT OLIVE	
		BROWN	
FINE SAND		2.5Y 5/3	COMMON,
			MEDIUM,
		LIGHT OLIVE	DISTINCT
		BROWN	
			MANY,
			COARSE,
			PROMINENT

LIMIT OF EXCAVATION = 54"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	24"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-81 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY		10YR 3/4	
LOAM		DARK	
		YELLOWISH	
	FRIABLE	BROWN	NONE
			OBSERVED
LOAMY		10YR 4/6	
SAND		DARK	
		YELLOWISH	
		BROWN	
MEDIUM		2.5Y 6/4	
SAND		LIGHT	
		YELLOWISH	
		BROWN	

LIMIT OF EXCAVATION = 24"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>24"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: 1/31/19

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: [signature] Date: 1/31/19

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-82 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 4/3 BROWN	
FINE SAND		10YR 5/6 YELLOWISH BROWN	
		2.5Y 5/6 LIGHT OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 30"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	29"	☐	☐	☐

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-83 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3 DARK BROWN	
		10YR 4/6 DARK YELLOWISH BROWN	
MEDIUM SAND		2.5Y 5/6 LIGHT OLIVE BROWN	
COARSE SAND		2.5Y 5/4 LT. OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 31"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	30"	☐	☐	☐

C.S.S. Soil Series / phase name: CROGHAN — MWD (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-84 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAMY SAND	FRIABLE	10YR 3/6 DARK YELLOWISH BROWN	
		10YR 5/6 YELLOWISH BROWN	NONE OBSERVED
	CEMENTED	2.5Y 5/6 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 24"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	18"	☐	■	☐

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — C (Drainage Class) — (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ☐ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

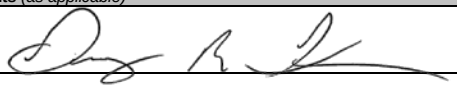
Texture	Consistency	Color	Mottling

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	☐			☐	☐	☐

C.S.S. Soil Series / phase name: — (Drainage Class) — (Hydrologic Group)

L.S.E. Soil Classification: (Profile) — (Drainage Class) — (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature:  Date: 1/31/19

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature:  Date: 1/31/19

name printed/typed: Gary M. Fullerton Lic.#: 355

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-85 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3 DARK BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
		10YR 5/6 YELLOWISH BROWN	
MEDIUM SAND		2.5Y 5/4 LIGHT OLIVE BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	24"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-86 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3 DARK BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
GRAVELLY SAND		2.5Y 5/4 LIGHT OLIVE BROWN	
FINE SAND		2.5Y 6/3 LIGHT YELLOWISH BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 45"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	32"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: (Profile) | (Drainage Class) | (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-87 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3 DARK BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
GRAVELLY SAND		10YR 5/6 YELLOWISH BROWN	
FINE SAND		2.5Y 6/4 LIGHT YELLOWISH BROWN	COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	32"	■	☐	☐

C.S.S. Soil Series / phase name: CROGHAN | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-88 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3 DARK BROWN	
LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
FINE SAND		2.5Y 6/4 LIGHT YELLOWISH BROWN	
			COMMON, MEDIUM, DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	42"	■	☐	☐

C.S.S. Soil Series / phase name: ADAMS | SWED (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: Date: 2/1/19

name printed/typed: Gary M. Fullerton Lic.#: 462

L.S.E. signature: Date: 2/1/19

name printed/typed: Gary M. Fullerton Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-89** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
LOAMY SAND			
MEDIUM SAND		2.5Y 6/4	
		LIGHT YELLOWISH	
		BROWN	
GRAVELLY SAND			

LIMIT OF EXCAVATION = 50"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>50"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-90** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
COARSE SAND		10YR 5/6	
		YELLOWISH BROWN	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>48"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-91** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
GRAVELLY LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	
GRAVELLY SAND (WITH FINE SAND LENSES @ 40")		2.5Y 5/4	
		LIGHT OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 50"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>50"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) — B (Drainage Class) — _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-92** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	10YR 3/3	NONE
		DARK BROWN	OBSERVED
LOAMY SAND		10YR 4/6	
		DARK YELLOWISH	
		BROWN	
COARSE SAND		2.5Y 5/6	
		LIGHT OLIVE	
		BROWN	

LIMIT OF EXCAVATION = 48"

hydric	Slope %	Limiting factor	ground water
■ non-hydric	0-3	>48"	☐ restrictive layer
			☐ bedrock

C.S.S. Soil Series / phase name: ADAMS — SWED (Drainage Class) — A (Hydrologic Group)

L.S.E. Soil Classification: 6 (Profile) — B (Drainage Class) — _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: **2/1/19**

name printed/typed: **Gary M. Fullerton** Lic.#: **462**

L.S.E. signature: [signature] Date: **2/1/19**

name printed/typed: **Gary M. Fullerton** Lic.#: **355**

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F 16236

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
120 LAND OF NOD ROAD	GRONDIN CORPORATION	WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-93 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Depth	Texture	Consistency	Color	Mottling
0–12	SANDY LOAM	FRIABLE	10YR 3/4 DARK YELLOWISH BROWN	NONE OBSERVED
12–22	LOAMY SAND		10YR 4/6 DARK YELLOWISH BROWN	
22–24	FINE SAND		2.5Y 5/4 LIGHT OLIVE BROWN	

LIMIT OF EXCAVATION = 24"

☐ hydric ■ non-hydric | Slope %: 3-8 | Limiting factor: >24" | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ADAMS | SWED (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Class) | ______ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: ______ ☐ Test Pit ☐ Boring

______ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

☐ hydric ☐ non-hydric | Slope % | Limiting factor | ☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ______ Drainage Class ______ Hydrologic Group

L.S.E. Soil Classification: ______ Profile ______ Drainage Class ______ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 2/1/19
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature:	Date: 2/1/19
	name printed/typed: Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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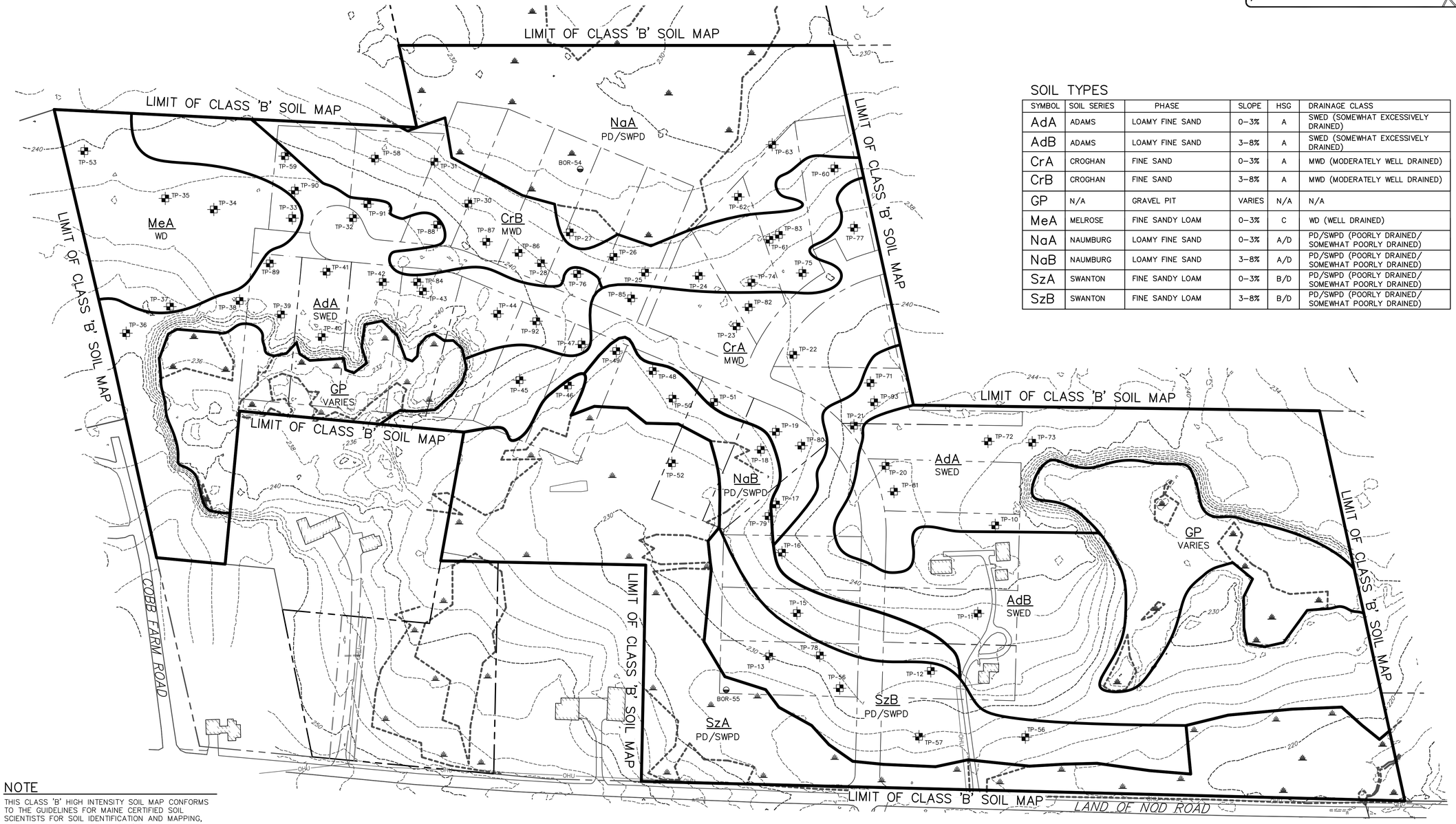
Sebago Technics, Inc.

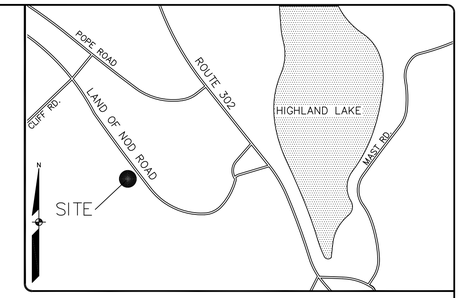
APPENDIX E

CLASS ‘B’ HIGH INTENSITY SOIL MAP

LEGEND

EXISTING	DESCRIPTION
	WETLAND EDGE
	WETLANDS
120 118	CONTOURS
TP-1	TEST PIT
	SOILS
	STREAM
B-1	BORING





GRID N

SOIL TYPES

SYMBOL	SOIL SERIES	PHASE	SLOPE	HSG	DRAINAGE CLASS
AdA	ADAMS	LOAMY FINE SAND	0–3%	A	SWED (SOMEWHAT EXCESSIVELY DRAINED)
AdB	ADAMS	LOAMY FINE SAND	3–8%	A	SWED (SOMEWHAT EXCESSIVELY DRAINED)
CrA	CROGHAN	FINE SAND	0–3%	A	MWD (MODERATELY WELL DRAINED)
CrB	CROGHAN	FINE SAND	3–8%	A	MWD (MODERATELY WELL DRAINED)
GP	N/A	GRAVEL PIT	VARIES	N/A	N/A
MeA	MELROSE	FINE SANDY LOAM	0–3%	C	WD (WELL DRAINED)
NaA	NAUMBURG	LOAMY FINE SAND	0–3%	A/D	PD/SWPD (POORLY DRAINED/ SOMEWHAT POORLY DRAINED)
NaB	NAUMBURG	LOAMY FINE SAND	3–8%	A/D	PD/SWPD (POORLY DRAINED/ SOMEWHAT POORLY DRAINED)
SzA	SWANTON	FINE SANDY LOAM	0–3%	B/D	PD/SWPD (POORLY DRAINED/ SOMEWHAT POORLY DRAINED)
SzB	SWANTON	FINE SANDY LOAM	3–8%	B/D	PD/SWPD (POORLY DRAINED/ SOMEWHAT POORLY DRAINED)

NOTE

THIS CLASS 'B' HIGH INTENSITY SOIL MAP CONFORMS TO THE GUIDELINES FOR MAINE CERTIFIED SOIL SCIENTISTS FOR SOIL IDENTIFICATION AND MAPPING, DATED MARCH 2009 FOR CLASS 'B' HIGH INTENSITY SOIL SURVEYS. THE SOIL MAP UNITS AS DEPICTED WERE IN PART INFLUENCED BY THE INTENDED USE FOR A PROPOSED RESIDENTIAL SUBDIVISION AND THE SOILS WHICH WERE NON–LIMITING FOR ONE USE MAY BE CONSIDERED LIMITING FOR ANOTHER USE. THEREFORE, THIS CLASS 'B' HIGH INTENSITY SOIL MAP MAY NOT BE ADEQUATE FOR ANOTHER USE. (REFER TO SOIL NARRATIVE REPORT DATED FEBRUARY 4, 2019 AND SOIL PROFILE DESCRIPTIONS.)

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 INCH = 100 FT.

STATE OF MAINE
GARY M. FULLERTON NO. 462
CERTIFIED SOIL SCIENTIST

GARY M. FULLERTON
CERTIFIED SOIL SCIENTIST #462

FEBRUARY 4, 2019
DATE

DESIGNED	CHECKED
MDJ	GMF

REV.:	BY:	DATE:	STATUS:
A	GMF	02-04-19	CLASS 'B' HIGH INTENSITY SOIL MAP

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

CLASS 'B' HIGH INTENSITY SOIL MAP

OF:
LAND OF NOD ROAD PROPERTY
120 LAND OF NOD ROAD
WINDHAM, MIANE

FOR:
GRONDIN CORPORATION
39 BELANGER ROAD
WINDHAM, MAINE 04062

PROJECT NO.	SCALE
16236	1"=100'

SHEET 2 OF 15

16236SL.dwg, TAB: SOIL