

February 6, 2017

Amanda Lessard, Town Planner
Town of Windham
8 School Road
Windham, ME 04062

**Re: Site Plan Application – The Plaza, Phase 2
JAMAR, INC. – Applicant**

Dear Amanda:

On behalf of JAMAR, Inc. we have prepared the enclosed Major Site Plan application for the second phase of development at The Plaza located at 881-885 Roosevelt Trail in North Windham. The project includes the construction of a new 4,960 square foot Children's Daycare facility that will accommodate up to 100 children, as well as minor modifications to the Phase 1 retail use project that was approved by the Town as a minor site plan, but has not yet been constructed.

To facilitate utility connection to the public water main, the properties for Phase 1 and Phase 2 will be combined into a single parcel. The building setbacks shown in the plan set reflect the parcels being merged, but the deed transaction has not been completed at the time of this application.

Minor changes to the approved Phase 1 project have been proposed to better align the driveway entrance to the rear land, and also relocate the sidewalk to accommodate the on-street parking proposed in front of the daycare building.

The project requires a Traffic Movement Permit from the Maine Department of Transportation and a Stormwater Permit from the Maine Department of Environmental Protection. Both permits are currently under review.

Upon your review of the enclosed information please contact me if you have any questions or if you require any additional information.

Sincerely,

DM ROMA CONSULTING ENGINEERS

Dustin M. Roma

Dustin M. Roma, P.E.
President

Project Name: THE PLAZA

Tax Map: 18 **Lot:** 19-A & 20

Estimated square footage of building(s): 4,960 SF CHILDREN'S DAYCARE

If no buildings proposed, estimated square footage of total development/disturbance:

Contact Information

1. Applicant

Name: JAMAR, INC

Mailing Address: 71 STUART SHORES ROAD, STANDISH, ME 04084

Telephone:

Fax:

E-mail:

2. Record owner of property

 X (Check here if same as applicant)

Name:

Mailing Address:

Telephone:

Fax:

E-mail:

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

Name: DUSTIN ROMA

Company Name: DM ROMA CONSULTING ENGINEERS

Mailing Address: 59 HARVEST HILL RD, WINDHAM, ME 04062

Telephone: 310 - 0506

Fax:

E-mail: DUSTIN@DMROMA.COM

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

Dustin M Roma 2-6-2017
Signature Date

Sketch Plan - Minor & Major Site Plan: Submission Requirements		Applicant	Staff
a.	Complete Sketch Plan Application form	X	
b.	Project Narrative	X	
	conditions of the site	X	
	proposed use	X	
	constraints/opportunities of site	X	
	identify if any of the following will be completed as part of the Final Plan	X	
	traffic study	X	
	utility study	X	
	market study	N/A	
c.	Name, address, phone for record owner and applicant	X	
d.	Names and addresses of all consultants working on the project	X	
e.	Evidence of right, title, or interest in the property	X	
f.	Evidence of payment of Sketch Plan fees and escrow deposit	X	
g.	Any anticipated waiver requests (Section 808)		
	Waivers from Submission Criteria in Section 811 of the Land Use Ordinance.		
	If yes, submit letter with the waivers being requested, along with reasons for each waiver request.		
	Waivers from Subdivision Performance Standards in Section 812 of the Land Use Ordinance.		
	If yes, submit letter with the waivers being requested, along with a completed "Performance and Design Standards Waiver Request" form.		
	Submit initialed form regarding additional fees, from applicant intro packet		
h.	Plan Requirements		
	Please note: the Sketch Plan does not need to be surveyed. However, if it is surveyed, please refer to the GIS requirements for Final Plan review. It may be in the applicants interest to obtain the required GIS data while the surveyor is on site.	X	
1	Name of subdivision, north arrow, date and scale (not more than 100 ft: 1in)	X	
2	Boundary of the parcel	X	
3	Relationship of the site to the surrounding area	X	
4	Topography of the site at an appropriate contour interval (10' contours generally adequate)	X	
5	Approximate size and location of natural features of the site, including wetlands, streams, ponds, floodplains, groundwater aquifers, significant wildlife habitats and fisheries, or other important natural features. If none, so state.		
6	Existing buildings, structures, or other improvements on the site	X	
7	Existing restrictions or easements on the site. If none, so state.	X	
8	Approximate location and size of existing utilities or improvements servicing the site. If none, so state.	X	
9	Class D medium intensity soil survey	X	
10	Location and size of proposed building, structures, access drives, parking areas, and other development features.		

February 2, 2017

Re: Agent Authorization

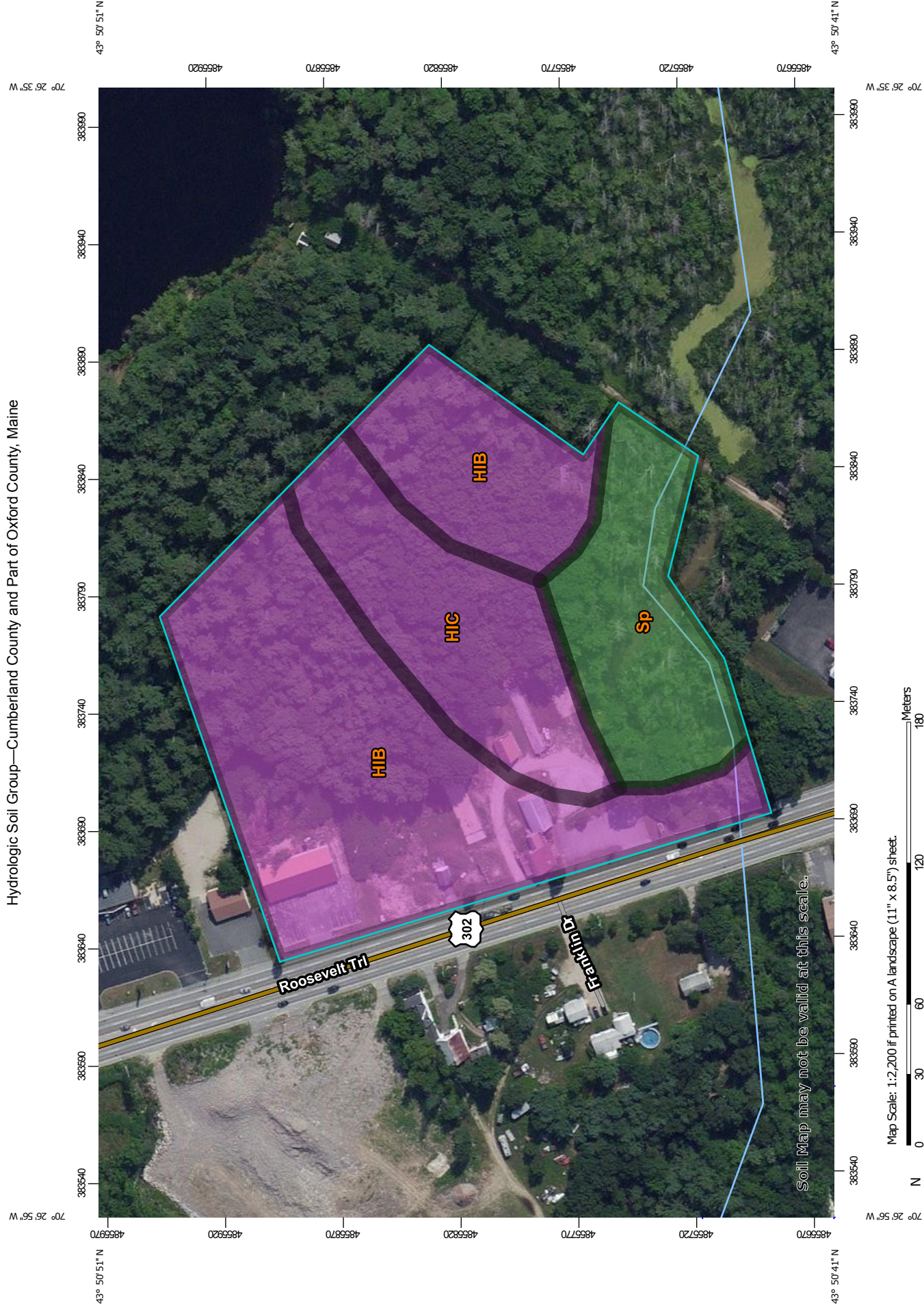
I authorize Dustin Roma, DM Roma Consulting Engineers to act as my agent to apply for land use permits associated with the development of my property located at 875 Roosevelt Trail, 881 Roosevelt Trail and 885 Roosevelt Trail in Windham, Maine.

Sincerely,

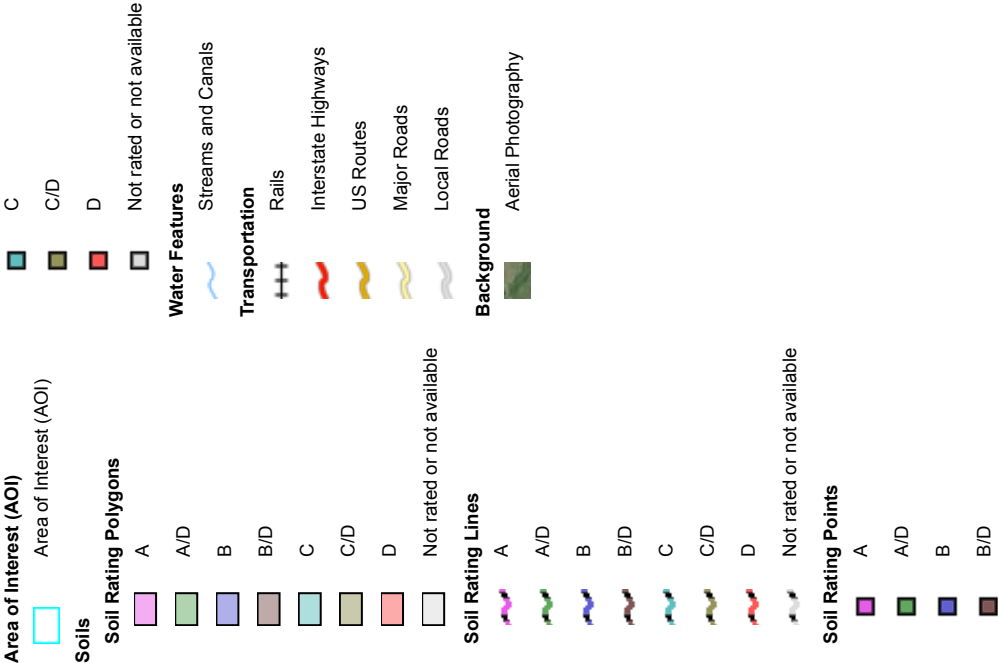
A handwritten signature in cursive script, reading "Martin A. Lippman". The signature is written in dark ink and is positioned above the printed name.

Martin A Lippman

JAMAR, INC



MAP LEGEND



MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 12, Sep 15, 2016

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

Date(s) aerial images were photographed: Jun 20, 2010—Jul 18, 2010

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Cumberland County and Part of Oxford County, Maine (ME005)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
HIB	Hinckley loamy sand, 3 to 8 percent slopes	A	6.4	60.4%
HIC	Hinckley loamy sand, 8 to 15 percent slopes	A	2.2	20.9%
Sp	Sebago mucky peat	A/D	2.0	18.7%
Totals for Area of Interest			10.6	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



November 15, 2016

Martin Lippman
71 Stuart Shores Rd
Standish, ME 04084

Re: 881-885 Roosevelt Trail, WI
Ability to Serve with PWD Water

Dear Mr. Lippman:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on October 25, 2016. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter does not constitute approval of this project from the District. Review and approval of final plans is required.**

Conditions of Service

The following conditions of service apply:

- The existing 8-inch service to the site can be used in the following two configurations:
 - A domestic service tapped off from the 8-inch fire line with separate control valves located in the public right of way. Domestic meter located in a meter vault located on private property within 10-20 feet of the property line on Roosevelt Trail.
 - An 8" combined fireline service in a fireline meter vault located on private property within 10-20 feet of the property line on Roosevelt Trail.
- The existing 1" service to the site must be terminated by shutting the corporation valve and cutting the pipe from the main.
- Further engineering review will need to take place to ensure proper development of the site.
- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.
- Following final plan approval the owner or contractor will need to make an appointment to come in and complete a service application form and pay the necessary fees prior to construction.



Existing Site Service

According to District records, the project site does currently have existing water service. An 8-inch diameter ductile iron water service line provides water service to this site. Please refer to the “Conditions of Service” section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 12-inch diameter ductile iron water main in Roosevelt Trail and a public fire hydrant located 175 feet from the site. The most recent static pressure reading was 84 psi on February 4, 2016.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Windham Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District’s Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

A handwritten signature in black ink, appearing to read "Gordon S. Johnson", with a long, sweeping horizontal line extending to the right.

Gordon S. Johnson, P.E.
Engineering Services Manager

Trip Generation – Plaza Project Phase II – Windham, Maine

The Plaza Project Phase II is the second phase of an expansion of an existing business on the easterly side of US Route 302 approximately 850 feet south of White’s Bridge Road in North Windham. The existing building has 4,000 square feet of floor area and houses a hearing aid sales/service business. Phase I, a 4,800 square foot building located adjacent to and just south of the existing building, was recently approved by local officials and will be either offices or some type of retail. Phase II will be a day care center serving 100 students located behind (east of) the existing building on the site. Both Phase I and Phase II will use the driveway to the existing building as their access as well.

Because Phase I is not yet built and operational, and is in effect part of a common scheme of development, trip generation for the purposes of an MDOT Traffic Movement Permit must include both land uses in calculating net new traffic generated. For Phase I office space and Phase II day care students the data contained in the publication Trip Generation (Institute of Transportation Engineers, 2008) was utilized for land uses 710 “General Office” and land use 565 “Day Care Center. For retail land uses the publication contains many specific land uses ranging from shopping centers to specialty retail which have varying rates. In this case a “generic” retail rate, which has generally been accepted by MDOT in the past, of 5.0 trips per 1000 square feet of floor area for the weekday PM peak hour (generally the AM peak hour for most retail land uses is negligible), and 6.0 trips per 1000 square feet for the Saturday peak hour (typically occurring between 11:00 AM and 1:00 PM). Because the day care facility is not expected to be significant on Saturday, only the weekday peak hours were considered. A summary of the peak hour trip generation estimates is presented in the table below:

Time Period	Day Care (100 students)	Office (4,800 sf)	Day Care + Office	Retail (4,800 sf)	Day Care + Retail
AM Peak Hour	80	7	87	-	-
PM Peak Hour	82	7	89	24	106

The highest peak hour is the weekday PM peak hour with Retail land use in Phase I at 106 vehicle trips, thus triggering the need for a Traffic Movement Permit. For the traffic impact analysis, the weekday PM peak hour will be used.

There is no data in ITE data on the level of pass-by trips (i.e. trips drawn from traffic already passing the site on Route 302) since “generic” retail is not a category in that data. For most retail land uses the level of pass-by traffic is generally around 50 percent and this will be used in distributing and assigning trips to/from the site. Likewise there is no pass-by trip data for day care centers, however it seems likely that much traffic would involve parents picking up/ dropping off children on the way to/from work. No credit will be taken for pass-by trips due to the lack of any support data, but the likelihood of the phenomenon regarding trips to/from work will be factored in directional distribution of new trips.

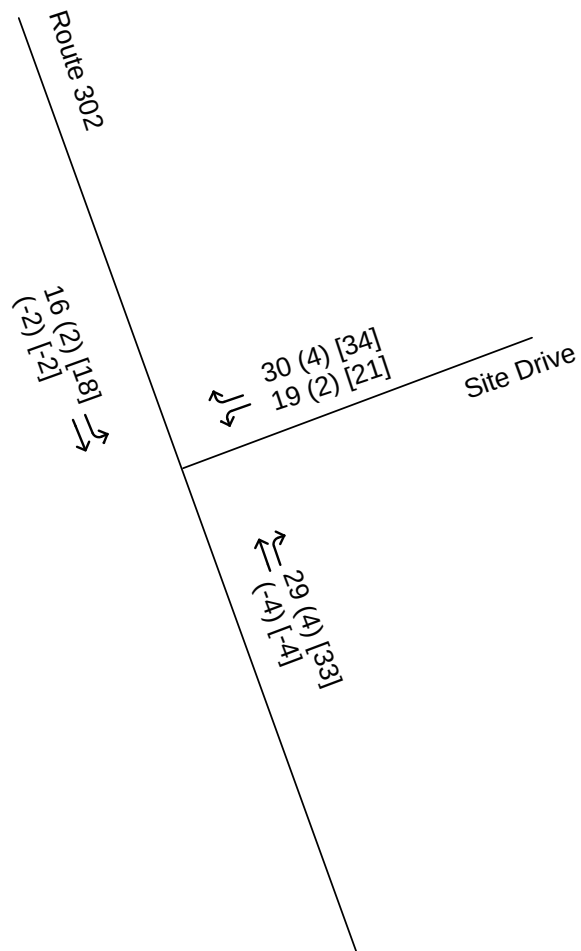
Accordingly, the net trip generation associated with Phases I and II is summarized as follows:

	All Trips	Enter	Exit
Total	106	51	55
Primary	94	45	49
Pass-By	12	6	6

Directional distribution of PM peak hour trips entering the site was estimated based upon the distribution of traffic on Route 302 determined from the manual traffic count conducted at the site drive on November 10, 2016. For trips exiting the site the factors noted previously regarding likely trip patterns was utilized. Figure 2 on the following page presents trip generation for the weekday PM peak hour.



[Total Trips - 106 - 51 enter/ 55 exit]
Primary Trips - 94 - 45 enter/ 49 exit
(Pass-By Trips - 12 - 6 enter/6 exit)



Not to Scale



EATON
TRAFFIC
ENGINEERING

67 Winter Street Ste. 1 - Topsham, Maine

Figure 2
SITE GENERATED WEEKDAY PM PEAK HOUR TRAFFIC

Plaza Project Phase II / North Windham, Maine

Safety Assessment – Plaza Project Phase II – Windham, Maine

2013-15 Accident History in Site Vicinity

LOCATION	2013-15 ACCIDENTS	ANNUAL AVERAGE	CRITICAL RATE FACTOR ¹
Route 302 / White's Bridge Rd. to Chaffin Pond Rd.	14	4.67	0.56

MDOT guidelines for identification of a High Crash Location (HCL - indicating a potential safety deficiency) is that a location must experience both 8 or more accidents in a 3 year period and have a Critical Rate Factor of 1.00 or greater. The location does not satisfy the criteria.

¹ The Critical Rate Factor is a statistical measure which compares the accident frequency at a location to similar locations throughout the State. A Critical Rate Factor of 1.00 or greater indicates that the location has a higher frequency of accidents than would be expected due to random occurrence, with a 99 percent level of confidence.

Section 7
Plaza Project Phase II
Pre- and Post-Development LOS Analysis

Pre-Development PM Peak Hour Traffic

Traffic impact analysis is typically performed for traffic conditions that occur during a weekday peak hour, as this is usually the time of heaviest traffic flow that occurs on a roadway. As part of the process of estimating weekday PM peak hour traffic volumes in the vicinity of the site, a manual turning movement count was conducted at the intersection of Route 302 @ Site Access Drive on Thursday, November 10, 2016 (copy of raw count data attached). The counted volumes were adjusted using MDOT traffic count data to reflect peak seasonal flows. This adjustment amounted to an increase of 15 percent over the November 10th count, and an additional 1 percent to account for regional background growth from 2016 to 2017 (when the project is expected to be completed and operational). Figure 3 presents the projected pre-development PM peak hour volumes in the vicinity of the site.

Post-Development 2017 PM Peak Hour Traffic Volumes

Post-development 2017 weekday PM peak hour volumes are the combination of pre-development volumes presented in Figure 3, and site generated traffic presented in Figure 2 (Section 1). Figure 4 (attached) presents projected 2017 weekday PM peak hour post-development traffic volumes.

Operational Assessment Pre/ Post-Development Traffic Volumes

Capacity analysis was performed for the pre- and post-development PM peak hour traffic projections for the intersection of Route 3002 @ Site Drive using the procedures outlined in the Highway Capacity Manual¹. Capacity analysis provides a quantitative assessment of the quality of traffic flow at an intersection, and "rates" this quality in terms of its Level of Service (LOS). LOS ratings range from A to F, and much like a school rank card, A indicates very good conditions, and F indicates extremely congested conditions with long delays.

LOS for unsignalized intersections such as the intersection of Route 302 @ Site Drive is based upon average control delay, which takes into account the delay involved in entering a vehicle queue, waiting in a vehicle queue and start-up delay. The relationship between LOS and average total delay is shown below:

Level of Service Measurement for Unsignalized Intersections

Level of Service	Average Total Delay Per Vehicle
A	≤ 10 Seconds
B	>10 - 15 Seconds
C	>15 - 25 Seconds
D	>25 - 35 Seconds
E	>35 - 50 Seconds
F	> 50 Seconds

¹ , Highway Capacity Manual, HCM2010, Transportation Research Board, 2010

Capacity analysis was conducted using the computer program Synchro/SimTraffic, which replicates the procedures contained in the Highway Capacity Manual. Consistent with MDOT procedures, LOS was also based upon the average total vehicle delay recorded on 5 iterations of the SimTraffic Model. The results of the analysis are as follows (output summaries of the HCM and SimTraffic summaries attached):

Street - Movement	Pre-Development PM HCS		Post-Development PM HCS		Post-Dev PM SimTraffic	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
Route 302 @ Site Drive						
WBL (Site Drive)	0	A	196.5	F	59.3	F
WBR	13.6	B	17.9	C	7.7	A
NBT (Rt. 302)	0	A	0	A	0.9	A
NBR	0	A	0	A	0.7	A
SBL (Rt. 302)	0	A	13.8	C	13.2	C
SBT	0	A	0	A	0.4	A
ALL	-	-	-	-	1.4	A

As can be seen in the tables above, the overall Level of Service based upon the SimTraffic is very good (LOS A), with all major (Route 302) movements operating with very low average delays during the PM peak hour. As would be expected, side street left turn movements from the Site Driveway operate with long delays and low levels of service. The high delays on the side street(s) involve relatively low volumes, so when total intersection delay for all vehicles passing through the intersection are averaged, overall average delays are not significant. The SimTraffic program is a microscopic model which models individual vehicles and records data for each vehicle (including delay) passing through the intersection for the one hour modeling period. Typical Highway Capacity Manual analyses procedures are more macroscopic in nature and evaluate the entire one hour of vehicle flow from an overall rather than individual vehicle basis. As can be seen, the Unsignalized Intersection analyses using the Highway Capacity Manual procedures (which are generated by the Synchro software) indicate higher delays for the Route 302 @Site Drive intersection.

Neither the HCS nor the SimTraffic procedures can reflect the presence of a two-way left turn lane, which is present on Route 302 at the site driveway. With this design, vehicles turning left from the site drive can perform this left turn when there is no traffic approaching from the left and simply occupy the center two-way left turn lane until traffic from the right reduces to the point that a merge into the southbound lane can be made safely. To try and mimic this, the HCS analysis was repeated first for scenario with only northbound traffic (which would model the left turn from the site drive into the center two-way left turn lane), then with only southbound traffic (to model the merge into the southbound lane). This resulted in a delay of 60.5 seconds for the left turn from the site, and a delay of 13.5 seconds for the merge into the southbound lane, for a total of 71 seconds of delay, still LOS F, but clearly indicating the benefit of the two-way left turn lane.

STORMWATER MANAGEMENT REPORT

THE PLAZA – PHASE 2 DAYCARE CENTER 881 ROOSEVELT TRAIL, WINDHAM

A. Narrative

Martin Lippman is proposing to further develop property located at 881 Roosevelt Trail in Windham with a new daycare facility. This will be the second phase of his project named “The Plaza”. Phase 1, which was approved by the Town in November of 2016, included the construction of a 4,800 square foot retail/office building with associated parking, utilities and stormwater infrastructure. Phase 2 of the development consists of the construction of a 4,960 square foot daycare facility with associated parking, utilities and stormwater infrastructure. Phase 2 also includes a 163-foot paved extension of the access road included in the Phase 1 design. As part of the overall project, the access road will eventually be extended to Roosevelt Trail to provide a second access location for the development and a future phase will be proposed to the south of the proposed daycare center. This roadway has been roughly installed to subgrade to provide access for earth movement activities associated with providing level building pads for Phase 2 and for a future phase. This road will not be finish graded and paved until the property is fully developed.

The properties associated with the overall project are identified as Lots 19A, 20 and 21 on the Town of Windham Assessors Map 18, have a total area of approximately 7.65 acres, and are located in the Commercial District 1 zoning district. The property currently contains a hearing aid business building with associated paved parking to north and a former garden center to the south. The project will be served by public water, two new on-site private septic tanks connecting into a septic field that will be constructed as part of Phase 1 and underground electrical, telephone, data and natural gas service. In general, the site drains either to the northeast onto the abutting property, to the south to Outlet Brook and a small portion of the site draining to Roosevelt Trail. Outlet Brook drains westerly across Roosevelt Trail eventually discharging into Sebago Lake Basin. The Sebago Lake watershed has been defined by the Maine Department of Environmental Protection as a lake watershed most-at-risk.

B. Alterations to Land Cover

Prior to construction activities associated with the project, the site consisted of approximately 35,465 square feet of impervious surfaces including the hearing aid business, the garden center with associated greenhouses, a garage and an old foundation. The proposed development including both Phase 1 and Phase 2 will remove approximately 2,385 square feet of that impervious area while the remaining 33,080 square feet will remain or will be rebuilt as impervious surface. The project in the post development condition will consist of approximately 82,400 square feet of total impervious surface resulting in a net increase of 46,935 square feet. The project will also consist of an additional 81,505 square feet of new landscaped areas resulting in a total new developed area of 128,440 square feet. The site had varying slopes

through the property. Prior to earth movement operations on the property, there were areas of flat slopes and other areas at the center of the site and along Outlet Brook that exceeded a 20% slope. Soils on the property are primarily Hinckley loamy sand with an area of Sebago mucky peat located in the vicinity of Outlet Brook as identified on the Medium Intensity Soil Maps for Cumberland County, Maine published by the Natural Resources Conservation Service. The two soils within the proposed development are in the hydrologic soil groups "A" and "A/D" respectively, as indicated on the attached watershed maps. For stormwater modeling purposes the "A/D" soil was modeled as a "D" soil since its natural condition is group "D".

C. Methodology and Modeling Assumptions

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

D. Basic Standards

The project is required by the Town and the Maine Department of Environmental Protection (MDEP) to provide permanent and temporary Erosion Control Best Management Practices. These methods are outlined in detail in the plan set.

E. General Standard

The Windham Land Use Ordinance requires that projects requiring Major Site Plan Review shall comply with Section 4B(2) and Section 4B(3) of the General Standards of the MDEP Chapter 500 Stormwater Management. This document outlines the requirement of the project to provide stormwater quality treatment for no less than 95% of the new impervious surface and 80% of the total new developed area associated with the project.

The approved stormwater infrastructure for Phase 1 of this development consisted of an underdrained soil filter basin located between the parking lot and Roosevelt Trail. To provide the additional required stormwater treatment and quantity control, another larger filter basin is proposed to the south of the development. This basin has been designed to provide treatment

for the daycare facility parking, its associated landscaped area, the disturbed area associated with the leveling of the future phases site south of the proposed daycare center and a portion of the access road. The basin has been oversized to provide stormwater treatment for an assumed impervious footprint that may be created as part of the future phase. The treatment calculations included with this report only reflect this portion of the site as vegetated landscaped area. Once the applicant decides to move forward with the third phase, additional treatment calculations will be provided.

As indicated in the treatment calculations, the proposed water quality treatment will exceed the treatment requirements for the new impervious and developed areas in order to provide quantity control for the project. Calculations can be found on the Watershed Maps and enclosed in this report.

F. Flooding Standard

The Windham Land Use Ordinance requires that projects requiring Site Plan Review shall detain, retain or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project. To maintain these rates, two underdrained filter basins have been proposed as part of the stormwater infrastructure.

The first study point (SP-1) is the location where stormwater is collected and discharges the property to the northeast. The second study point (SP-2) is where Outlet Brook leaves the property westerly through an existing 48" culvert beneath Roosevelt Trail. This flow eventually discharges into the Sebago Lake Basin. The third study point (SP-3) is where a small watershed drains onto Roosevelt Trail. The following tables summarize the analysis:

Table 1 – Peak Rates of Stormwater Runoff						
Study Point	2-Year (cfs)		10-Year (cfs)		25-Year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP-1	0.32	0.00	1.69	0.01	3.28	0.08
SP-2	2.50	1.90	4.92	4.60	7.10	6.92
SP-3	0.08	0.06	0.20	0.10	0.30	0.13

The removal of existing impervious surface and the installation of the two filter basins reduces the peak rates of runoff at all study points. The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as an attachment to this report.

G. Phosphorous Standard

Outlet Brook which is located along the southern property boundary drains westerly across Roosevelt Trail eventually discharging to Sebago Lake Basin. Since the Sebago Lake watershed has been defined by the Maine Department of Environmental Protection as a lake watershed most-at-risk and there is more than 20,000 square feet of new impervious surface, the Phosphorous Standard must be met. According to Section 4D(1) Phosphorous Standard of the MDEP Chapter 500 Stormwater Management document, if the watershed is not severely

blooming and the total impervious surface for the site is less than 3 acres or 5 acres of developed area, the General Standards can be met as an alternative to producing the phosphorous export calculations. We have decided to use the alternative standard for this project.

H. Maintenance of common facilities or property

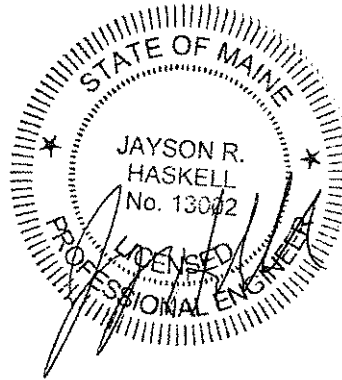
The owner of the facility will be responsible for the maintenance of the stormwater facilities. Enclosed is an Inspection, Maintenance and Housekeeping Plan for the project.

Prepared by:

DM ROMA CONSULTING ENGINEERS



Jayson R. Haskell, P.E.
Project Manager



INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

THE PLAZA-PHASE 2 DAYCARE FACILITY 881 ROOSEVELT TRAIL, WINDHAM, MAINE

Responsible Party

Owner: Martin Lippman
71 Stuart Shores Road
Standish, Maine 04084

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

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

During Construction

- 1. Inspection and Corrective Action:** It is the contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. Inspection shall occur on all disturbed and impervious areas, erosion control measures, material storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as 24 hours before and after a storm event and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.
- 2. Maintenance:** Erosion controls shall be maintained in effective operating condition until areas are permanently stabilized. If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any rainfall event.

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

Houskeeping

1. **Spill prevention:** Controls must be used to prevent pollutants from construction and waste materials on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.
2. **Groundwater protection:** During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.
3. **Fugitive sediment and dust:** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.
4. **Debris and other materials:** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste

and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

5. **Excavation de-watering:** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.
6. **Authorized Non-stormwater discharges:** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
 - (a) Discharges from firefighting activity;
 - (b) Fire hydrant flushings;
 - (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
 - (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
 - (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
 - (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
 - (g) Uncontaminated air conditioning or compressor condensate;
 - (h) Uncontaminated groundwater or spring water;
 - (i) Foundation or footer drain-water where flows are not contaminated;
 - (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));
 - (k) Potable water sources including waterline flushings; and
 - (l) Landscape irrigation.
7. **Unauthorized non-stormwater discharges:** Approval from the MDEP does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Section 6 above. Specifically, the MDEP's approval does not authorize discharges of the following:
 - (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
 - (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
 - (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
 - (d) Toxic or hazardous substances from a spill or other release.

Post construction

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

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

B. Ditches, Swales, and Open Channels: Inspect ditches, swales, and other open channels in the spring, late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, control vegetative growth that could obstruct flow, and repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.

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

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

E. Underdrained Filter Basin: Basin should be inspected semi-annually and following major storm events for the first year and every six months thereafter. The basin should drain within 48 hours following a one-inch storm and if a larger storm fills the

system to overflow, it shall drain within 36 to 60 hours. If ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity. If water ponds on the surface of the bed for more than 72 hours, the top several inches of the filter shall be replaced with fresh material. Inspect for debris and sediment build up in the forebay and basin and remove as needed. Mowing of the basin can only occur semi-annually to a height of no less than 6 inches utilizing a hand-held string trimmer or push-mower. Any bare areas or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. The basin should also be inspected annually for destabilization of side slopes, embankment settling and other signs of structural failure.

F. Regular Maintenance: Clear accumulations of winter sand along parking areas at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along pavement shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.

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

Re-certification

As a requirement of the Town, the stormwater infrastructure shall be inspected yearly by a qualified third party inspector. The third party inspector shall perform an initial inspection to determine the status of the stormwater management facilities. If the initial inspection identifies any deficiencies with the facilities, the same third party inspector shall re-inspect the facilities after they have been maintained or repaired to determine if they are performing as intended. Once the site is satisfactory, the third party inspector shall submit the Annual Stormwater Management Facilities Certification form and report to the Office of Code Enforcement. The certification form shall be submitted to the Town prior to May 1 of each year. A copy of the approval form has been included at the end of this document.

As a requirement of the MDEP, a certification of the following items must be submitted within three months of the expiration of each five-year interval from the date of issuance of the permit.

- (a) **Identification and repair of erosion problems.** All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
- (b) **Inspection and repair of stormwater control system.** All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
- (c) **Maintenance.** The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Duration of Maintenance

Perform maintenance as described.

MAINTENANCE LOG

THE PLAZA-PHASE 2 DAYCARE FACILITY 881 ROOSEVELT TRAIL, WINDHAM, MAINE

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

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Ditches, swales, and other open channels	Inspect after major rainfall event producing 1" of rain in two hours.			
	Inspect for erosion or slumping & repair			
	Mowed at least annually.			
Culverts	Inspect semiannually and after major rainfall.			
	Repair erosion at inlet or outlet of pipe.			
	Repair displaced riprap.			
	Clean accumulated sediment in culverts when >20% full.			
Catch Basins and Outlet Structures	Inspect to ensure that structure is properly draining.			
	Remove accumulated sediment semiannually.			
	Inspect grates/inlets and remove debris as needed.			
Underdrained Filter Basins	Check after each rainfall event to ensure that pond drains within 24-48 hours.			
	Replace top several inches of filter if pond does not drain within 72 hours.			
	Mow grass no more than twice a year to no less than 6 inches in height.			
	Inspect semi-annually for erosion or sediment accumulation and repair as necessary.			

APPENDIX 1

**Annual Stormwater Management Facilities Certification
(to be sent to Municipal Enforcement Authority)**

I, _____ (print or type name), certify the following:

1. I am making this annual stormwater management facilities certification for the following property: _____ (print or type name of subdivision, condominium or other development) located at _____ (print or type address), (the "property");

2. The owner, operator, tenant, lessee or homeowners' association of the property is: _____ (name(s) of owner, operator, tenant, lessee, homeowners' association or other party having control over the property);

3. I am the owner, operator, tenant, lessee or president of the homeowners' association, or am a qualified third party inspector hired by the same (circle one);

4. I have knowledge of erosion and stormwater control and have reviewed the approved post-construction stormwater management plan for the property;

5. On _____, 20__, I inspected or had inspected by _____, a qualified third-party inspector, the stormwater management facilities, including but not limited to parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures required by the approved post-construction stormwater management plan for the property;

6. At the time of my inspection of the stormwater management facilities on the property, I or the qualified third-party inspector identified the following need(s) for routine maintenance or deficiencies in the stormwater management facilities:

7. On _____, 20__, I took or had taken the following routine maintenance or the following corrective action(s) to address the deficiencies in the stormwater management facilities stated in 6 above:

8. As of the date of this certification, the stormwater management facilities are functioning as intended by the approved post-construction stormwater management plan for the property

Date: _____, 20__

By: _____
Signature

Print Name

STATE OF MAINE

_____, ss

_____, 20__

Personally appeared the above-named _____, the
_____ of _____, and acknowledged the foregoing annual
certification to be said person's free act and deed in said capacity.

Before me,

Notary Public/Attorney at Law

Print Name:

Mail this certification to the Town of Windham at the following address:

**Office of Code Enforcement
Town of Windham
8 School Road
Windham, ME 04062**

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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

PROPERTY LOCATION		>>CAUTION: LPI APPROVAL REQUIRED<<	
City, Town, or Plantation	WINDHAM	Town/City _____	Permit # _____
Street or Road	885 & 887 ROOSEVELT TRAIL	Date Permit Issued ____/____/____	Fee \$ _____ Double Fee Charged []
Subdivision, Lot #			LPI # _____
OWNER/APPLICANT INFORMATION		The Subsurface Wastewater Disposal System <i>shall not</i> be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.	
Name (last, first, MI)	☒ Owner LIPPMAN MARTIN ☐ Applicant		
Mailing Address of	71 STUART SHORES ROAD		
Owner	STANDISH, ME 04084		
Daytime Tel. #		Municipal Tax Map # <u>18</u> Lot # <u>19A & 19B</u>	
OWNER OR APPLICANT STATEMENT		CAUTION: INSPECTION REQUIRED	
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.	
Signature of Owner/Applicant _____		Local Plumbing Inspector Signature _____	
Date _____		(1st) Date Approved _____	
		(2nd) Date Approved _____	

PERMIT INFORMATION

TYPE OF APPLICATION ☐ 1. First Time System ☒ 2. Replacement System Type Replaced: _____ Year Installed: _____ ☒ 3. Expanded System ☐ a. <25% Expansion ☒ b. >25% Expansion ☐ 4. Experimental System ☐ 5. Seasonal Conversion	THIS APPLICATION REQUIRES ☒ 1. No Rule Variance ☐ 2. First Time System Variance ☐ a. Local Plumbing Inspector Approval ☐ b. State & Local Plumbing Inspector Approval ☐ 3. Replacement System Variance ☐ a. Local Plumbing Inspector Approval ☐ b. State & Local Plumbing Inspector Approval ☐ 4. Minimum Lot Size Variance ☐ 5. Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS ☒ 1. Complete Non-Engineered System ☐ 2. Primitive System (graywater & alt toilet) ☐ 3. Alternative Toilet, specify: _____ ☐ 4. Non-Engineered Treatment Tank (only) ☐ 5. Holding Tank, _____ gallons ☐ 6. Non-Engineered Disposal Field (only) ☐ 7. Separated Laundry System ☐ 8. Complete Engineered System (2000gpd+) ☐ 9. Engineered Treatment Tank (only) ☐ 10. Engineered Disposal Field (only) ☐ 11. Pre-treatment, specify: _____ ☐ 12. Miscellaneous components
SIZE OF PROPERTY 15 +/- ☐ SQ. FT. ☒ ACRES	DISPOSAL SYSTEM TO SERVE ☐ 1. Single Family Dwelling Unit, No. of Bedrooms: _____ ☐ 2. Multiple Family Dwelling, No of Units: _____ ☒ 3. Other: <u>COMMERCIAL BUILDINGS</u> (specify) Current Use ☐ Seasonal ☒ Year Round ☐ Undeveloped	
SHORELAND ZONING ☐ Yes ☒ No	TYPE OF WATER SUPPLY ☐ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private ☒ 4. Public ☐ 5. Other: _____	

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

5 TREATMENT TANKS H-20 RATED IF IN PARKING AREA ☒ 1. Concrete ☐ a. Regular <u>SEE NOTE</u> ☐ b. Low Profile <u>ON PAGE 3</u> ☐ 2. Plastic ☐ 3. Other: _____ CAPACITY: <u>4-1000's</u> GAL. <u>& 1-1500</u>	DISPOSAL FIELD TYPE & SIZE ☐ 1. Stone Bed ☐ 2. Stone Trench ☒ 3. Proprietary Device ☐ a. Cluster array ☐ c. Linear ☐ b. Regular ☒ d. H-20 loaded ☐ 4. Other: _____ SIZE: <u>3840</u> sq. ft. ☐ lin. ft. 60 H-20 RATED CONCRETE CHAMBER UNITS	GARBAGE DISPOSAL UNIT ☒ 1. No ☐ 2. Yes ☐ 3. Maybe If Yes or Maybe, specify one below: ☐ a. Multi-compartment tank ☐ b. _____ tanks in series ☐ c. Increase in tank capacity ☐ d. Filter on tank outlet	DESIGN FLOW <u>1130</u> gallons per day BASED ON: ☐ 1. Table 4A (dwelling unit(s)) ☒ 2. Table 4C (other facilities) SHOW CALCULATIONS for other facilities PROPOSED RETAIL STORE AT 100 GALLONS PER DAY & SEE ATTACHED WATER USE RECORDS ☒ 3. Section 4G (meter readings) ATTACH WATER-METER DATA LATITUDE AND LONGITUDE at center of disposal area Lat. <u>N43</u> d <u>50</u> m <u>48.13</u> s Lon. <u>W70</u> d <u>26</u> m <u>47.79</u> s if g.p.s., state margin of error
SOIL DATA & DESIGN CLASS PROFILE <u>3</u> / <u>C</u> at Observation Hole # <u>TP 5</u> Depth <u>33</u> " of Most Limiting Soil Factor	DISPOSAL FIELD SIZING ☐ 1. Medium - 2.6 sq.ft./gpd ☒ 2. Medium-Large - 3.3 sq.ft./gpd ☐ 3. Large - 4.1 sq.ft./gpd ☐ 4. Extra-Large - 5.0 sq.ft./gpd	EFFLUENT/EJECTOR PUMP ☐ 1. Not required ☒ 2. May be required ☐ 3. Required Specify only for engineered systems: SEE NOTE ON PAGE 3 DOSE: _____ gallons	

SITE EVALUATOR STATEMENT

I Certify that on 9/29/16 (date) I completed a site evaluation on this property and state that the data reported is accurate and that the proposed system is in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Site Evaluator Signature 	163 SE #	Date <u>9/30/2016</u>
Site Evaluator Name Printed ALBERT FRICK	Telephone Number (207) 839-5563	E-mail Address ALBERT@ALBERTFRICK.COM

ALBERT FRICK ASSOCIATES - 95A COUNTY ROAD ROAD GORHAM, MAINE 04038 - (207) 839-5563

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

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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

Town, City, Plantation
WINDHAM

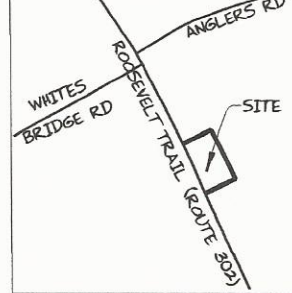
Street, Road Subdivision
885 & 887 ROOSEVELT TRAIL

Owner's Name
MARTIN LIPPMAN

SITE PLAN

Scale 1" = _____ Ft.
or as shown

SITE LOCATION PLAN
(Attach Map from Maine
Atlas Recommended)



SEE SITE PLAN ATTACHED

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

Observation Hole **TP 5** ☒ Test Pit ☐ Boring
_____ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
LOAMY SAND		DARK BROWN	
GRAVELLY SAND		LIGHT YELLOW BROWN	
	FRIABLE		
COBBLES WITH GRAVEL			
COBBLY GRAVELLY SAND	FIRM		

Soil Classification **3** Profile **C** Condition
Slope **0-3%** Limiting Factor **33"**
☐ Ground Water ☒ Restrictive Layer
☐ Bedrock ☐ Pit Depth

Site Evaluator Signature

Observation Hole **TP 6** ☒ Test Pit ☐ Boring
_____ " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
LOAMY SAND		DARK BROWN	
COBBLES WITH GRAVEL	FRIABLE	YELLOW BROWN	
		PALE BROWN	
	FIRM		

Soil Classification **3** Profile **C** Condition
Slope **0-3%** Limiting Factor **33"**
☐ Ground Water ☒ Restrictive Layer
☐ Bedrock ☐ Pit Depth

Date

163
SE #

9/30/2016

Page 2 of 3
HHE-200 Rev. 10/02

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

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

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

WINDHAM

885 & 887 ROOSEVELT TRAIL

MARTIN LIPPMAN

NOTE: THOROUGHLY SCARIFY UNDER ENTIRE DISPOSAL FIELD, SHOULDER AREA, & FILL EXTENSION AREA PRIOR TO FILL PLACEMENT, THEN BLEND FIRST 6" LIFT OF FILL INTO EXISTING SOIL SURFACE TO PROMOTE MIXING

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 30' FT.
0 15 30
GRAPHIC SCALE

PROPOSED DAY CARE CENTER

11-20 RATED DISTRIBUTION BOX (BOTTOM FEED IF PUMPING) INSULATE PER CODE

PROPOSED DISPOSAL AREA (4 ROWS OF 15 11-20 RATED CONCRETE CHAMBER UNITS)

CROSS SECTION

EXISTING GRADE AT CORNER

NEW 1500 GALLON CONCRETE SEPTIC TANK LOCATE WHERE FEASIBLE, 8' MIN. FROM BUILDING STRUCTURE 11-20 RATED IF IN PARKING AREA

(4) NEW 1000 GALLON CONCRETE SEPTIC TANK LOCATE WHERE FEASIBLE, 8' MIN. FROM BUILDING STRUCTURE SET AT HIGH ENOUGH ELEVATION TO PROVIDE GRAVITY FLOW OR PROVIDE PUMP STATION 11-20 RATED IF IN PARKING AREA

PROPOSED PUMP STATION (IF NEEDED)

FROM EXISTING MAINE REAL ESTATE BUILDING

PROPOSED PUMP STATION (IF NEEDED)

EXISTING COMMERCIAL BUILDING (HEARING AID CENTER)

UTILITY POLE

PROPOSED COMMERCIAL BUILDING

APPROXIMATE TOE OF FILL

IF PUMPING USE 1 1/2" TO 2" DIA. EFFLUENT LINE BURIED BELOW FROST OR INSULATE TO PROTECT FROM FREEZING OR IF GRAVITY FLOW USE 4" DIA. SCHED 40 SOLID PVC (ASSURE WATERTIGHTNESS)

NOTE: IF PUMPING, SLEEVE WITH 4" DIA SCHED 40 UNDER TRAVELED WAYS

FILL REQUIREMENTS

Depth of Fill (Upslope) : 6" - 30"
Depth of Fill (Downslope) : 30"
DEPTHS AT CROSS-SECTION (shown below)

CONSTRUCTION ELEVATIONS

Finished Grade Elevation
Top of Distribution Pipe or Proprietary Device
Bottom of Disposal Area

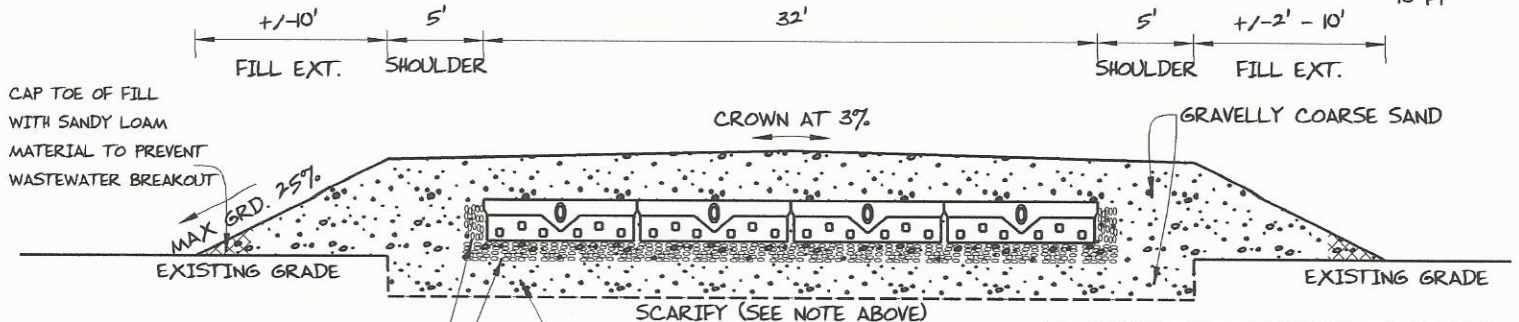
SEE
DETAIL
BELOW

ELEVATION REFERENCE POINT

Location & Description
SEE SURVEY PLAN ATTACHED
Reference Elevation is: 0.0' or -----

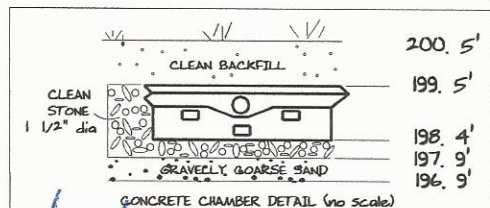
DISPOSAL AREA CROSS SECTION

SCALE:
VERTICAL: 1" = 5' FT
HORIZONTAL: 1" = 10' FT



1 1/2 INCH CLEAN CRUSHED STONE PLACE 12" THICKNESS OF CRUSHED STONE AROUND ENTIRE PERIMETER AND 6" BENEATH CHAMBERS

REMOVE ALL PORTIONS OF EXISTING SOIL MATERIAL ENCOUNTERED TO A MINIMUM DEPTH OF 18" UNDERNEATH AND 5' ALONGSIDE DISPOSAL AREA AND REPLACE WITH CLEAN GRAVELLY COARSE SAND FILL



Site Evaluator Signature

163
SE #

Date

Page 3 of 3
HHE-200 Rev. 10/02