YORK RIDGE SUBDIVISION

TOWN OF NORTH YARMOUTH, MAINE
SUBDIVISION APPLICATION

Prepared For:

Construction Aggregates, Inc
PO BOX 307
Cumberland, Maine 04021

Prepared By:

Atlantic Resource Consultants
541 US Route One, Suite 21
Freeport, Maine 04032
207.869.9050

March 2021

Atlantic Resource Consultants
Engineering Strategies and Solutions

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TOWN OF NORTH YARMOUTH
PLANNING BOARD
REQUEST FOR HEARING

NAME OF APPLICANT: Construction Aggregate, INC PHONE #: 207-233-6463
EMAIL: ben@ahgrover.com ALT. PHONE#:
FULL ADDRESS: P.O. Box 307 Cumberland, Maine 04021
PROPERTY ADDRESS: 80 Gray Road
MAP: 10 LOT: 71 & 72 ZONE: Village Center

AGENT/REPRESENTATIVE (if other): Charlie Burnham PHONE #: 207-869-9050
EMAIL: charlie@arc-maine.com
FULL ADDRESS: 541 U.S. Route One, Suite 21 Freeport, Maine 04032

The undersigned requests the North Yarmouth Planning Board consider the following application for:

- ☐ Pre-application Sketch Plan Review
- ☐ Minor Subdivision
- ☐ Contract Zoning
- ☐ Other (Specify):
- ☑ Major Subdivision
- ☐ Site Plan Review

NOTE TO APPLICANT:

1. This form and appropriate materials must be filed at the Code Enforcement Office no later than (fourteen) 14 days prior to the regular meeting of the Board (2nd Tuesday monthly). Applications shall be accompanied by all applications fee and materials required by the applicable ordinance(s), checklists and fee schedule.
2. All applications shall include all materials and copies as specified on the submittal requirements form.
3. All materials in color shall be copied in color.

Application Authorization

I hereby make application to the Town of North Yarmouth for the above-referenced property(ies) and the development as described. To the best of my knowledge, the information provided herein is accurate and is in accordance with the Zoning and Subdivision Ordinances of the Town, except where waivers are requested. The Town of North Yarmouth Planning Board and/or town employees are authorized to enter the property(ies) for purposes of reviewing this proposal and for inspecting improvements as a result of an approval of this proposal. I understand that I am responsible for appearing, or having someone appear on my behalf, at all meetings before the Planning Board.

Signature: _____ Date: _____
Printed Name: Charlie Burnahm

Please identify yourself (check one): Agent*: ☑ Property Owner: ☑

TOWN OF NORTH YARMOUTH
PLANNING BOARD
MAJOR SUBDIVISION APPLICATION

(See Article 5 pages 38 through 59 of the North Yarmouth Land Use Ordinance)

NAME OF APPLICANT: Construction Aggregate Inc. PHONE #: 207-233-6463

EMAIL: ben@ahgrover.com ALT. PHONE#:

FULL ADDRESS: PO BOX 307, CUMBERLAND MAINE 04021

PROPERTY ADDRESS: 80 Gray Road

MAP: 10 LOT: 71 & 72

AGENT/REPRESENTATIVE (if other): Charlie Burnham PHONE #: 207-869-9050

EMAIL: charlie@arc-maine.com

FULL ADDRESS: 541 U.S Route 1, Suite 21, Freeport, Maine

1. Names and Addresses of ALL property owners within 500' of any and all property boundaries **(use a separate sheet).**

2. Plan preparer information if other than property owner:
   Name: Charlie Burnham, Atlantic Resource Consultants, LLC
   Address: 541 U.S, Route One, Suite 21, Freeport, Maine 04032
   Phone Number: 207-869-9050 Professional Lic. #
   Email: charlie@arc-maine.com

3. Zoning Classification of the Property
   - [x] Village Center
   - [ ] Village Residential
   - [ ] Farm and Forest
   - [ ] Shoreland Residential
   - [ ] Resource Protection
   - [ ] Royal River Overlay
   - [ ] Groundwater Protection Overlay

4. Provide a General Description of the proposed use or activity, including but not limited to the type of use, square footage involved, hours of operation, types and amount of traffic to be generated **(use separate sheet**).

5. Historic Structures: Are there any historic structures or areas of historical importance on the property? [ ] YES [x] NO

6. Complete List of all chemicals, pesticides, fuels, nutrients and other potentially toxic or hazardous materials to be used or stored on the premises, and the quantities of these materials **(use a separate sheet).**

7. List of Equipment to be used, parked or stored **(use a separate sheet).**

8. To the best of my knowledge, all the above-stated information, and all prepared submissions in this application are correct.

Charlie Burnham
Signature of Applicant/Owner

2/22/2021
Date

TOWN OF NORTH YARMOUTH

PLANNING BOARD

MAJOR SUBDIVISION REVIEW CHECKLIST

NAME OF APPLICANT: Construction Aggregate, INC DATE: 3/30/21

This checklist has been prepared to assist applicants in developing their applications. It should be used as a guide in assembling the information necessary for a complete application. However, the checklist does not substitute for the statutory criteria or the requirements of Article V. Subdivision Review Procedures & Criteria or Article X. Performance and Design Standards for Site Plan Review and Subdivision Review of the Land Use Ordinance. The Planning Board will use the checklist to make sure that your application is complete. The application need not contain separate plans as implied below. The perimeter survey, subdivision plan and engineering plans may be contained on the same drawing. However, detailed engineering drawings such as road profiles, drainage swales and erosion/sedimentation plans may best be presented on a separate sheet or sheets.

SUBDIVISION REGULATIONS		Received by Planning Board	Applicant Requests to be Waived	Waiver Approved by Planning Board	Not Applicable
GENERAL REQUIREMENTS					
1. Request for Hearing Form		☑	❑	❑	❑
2. Fee Calculation Sheet		☑	❑	❑	❑
3. Waiver or N/A Request Form, if required		❑	❑	❑	☑
4. Abutter List & Notification Statement		☑	❑	❑	❑
5. DEP Approval, if required (Article 3 - 3.9b)		❑	❑	❑	☑
6. Board of Zoning Appeal Approval, if required (Article 6 - 6.2)		❑	❑	❑	☑
7. MDOT Approval, if required (Article 8 – 4.J.2)		☑	❑	❑	❑
10-1 APPLICABILITY		☑	❑	❑	❑
10-2 GENERAL LAYOUT OF DEVELOPMENT					
A. Utilization of the Site		☑	❑	❑	❑
B. Lots					
B.1	Dimensional Requirements	☑	❑	❑	❑
B.2	Right of Way not included in Lot Area	☑	❑	❑	❑
B.3	Side Lot Lines perpendicular to Street	☑	❑	❑	❑
B.4	Lots Divided by Streams	❑	❑	❑	☑
B.5	Ratio of Lot Length to Lot Width	☑	❑	❑	❑
B.6	Provision or Preclusion of Future Subdivision	☑	❑	❑	❑

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MAJOR SUBDIVISION REVIEW CHECKLIST

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B.7	Interconnected Development	☑	❑	❑	❑
C. Blocks - Utility/Pedestrian Easement		☑	❑	❑	❑
D. Utilities - Underground		☑	❑	❑	❑
E. Monuments					
E.1	Stone Monuments at Intersections	❑	❑	❑	❑
E.2	Stone Monuments or Capped Iron Pipe at Corners	❑	❑	❑	❑
E.3	Stone Monuments Minimum 4 inch square	❑	❑	❑	❑
E.4	All Others Marked by Suitable Monumentation	❑	❑	❑	❑
10-3 BROOK, POND, VERNAL POOL AND WETLAND BUFFERS					
A. <u>Purpose and Applicability</u>					
A.1	Protect Areas not covered in Section 9-1	❑	❑	❑	☑
A.2	Distinguish between High and Low Value Wetlands	❑	❑	❑	☑
A.3	More Restrictive Requirements Apply	❑	❑	❑	☑
B. <u>Protected Resources</u>					
B.1	Stream	☑	❑	❑	❑
B.2	Pond	❑	❑	❑	☑
B.3	Vernal Pool	❑	❑	❑	☑
B.4	High Value Wetlands	❑	❑	❑	☑
B.4.a	Contain Pond or Vernal Pool	❑	❑	❑	☑
B.4.b	Within Floodplain of Stream or Pond	❑	❑	❑	☑
B.4.c	Wetland Plant Species	☑	❑	❑	❑
B.5	Low Value Wetland	☑	❑	❑	❑
C. <u>Standards</u>					
C.1	Vegetative Buffers	☑	❑	❑	❑
C.2	Location, Species, Height, Canopy	☑	❑	❑	❑

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C.3	Buffer Width Related to Slope	☑	❑	❑	❑
C.4	Natural State to Greatest Extent Practical	☑	❑	❑	❑
C.5	Maintained in Natural State	☑	❑	❑	❑
C.5.a	Clearing of Dead and Diseased Trees	☑	❑	❑	❑
C.5.b	Underlying vegetation	☑	❑	❑	❑
C.6	Building and structure setback	☑	❑	❑	❑
C.7	Setback from low value wetland	☑	❑	❑	❑
C.8	Permanent markers	❑	❑	❑	☑
D. Plan Submittals					
D.1	Site plan	☑	❑	❑	❑
D.2	Existing vegetation	☑	❑	❑	❑
D.3	Buffer	☑	❑	❑	❑
D.4	Maintenance and restrictions	☑	❑	❑	❑
D.5	Deed restrictions and covenants	☑	❑	❑	❑
D.6	Plat	☑	❑	❑	❑
E. Exemptions					
E.1	Buffer and setbacks not required adjacent to	❑	❑	❑	☑
E.1.a	Swales and ditches	❑	❑	❑	❑
E.1.b	Artificial impoundments	❑	❑	❑	❑
E.1.c	Low value wetlands	❑	❑	❑	❑
E.2	Buffers and setbacks do not apply to	❑	❑	❑	☑
E.2.a	Storm water management facilities	❑	❑	❑	❑
E.2.b	Road crossings, bridges, culverts, utilities	❑	❑	❑	❑
E.2.c	Docks, boat ramps, direct access	❑	❑	❑	❑

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10-4 BUILDING DESIGN STANDARDS					
A. Applicability		☑	❑	❑	❑
B. Standards					
B.1	Visibly integrated	☑	❑	❑	❑
B.2	Window area	☑	❑	❑	❑
B.3	Minimum front yard building setback	☑	❑	❑	❑
B.4	Parking to side and rear of buildings	☑	❑	❑	❑
B.5	Drive-Through Facilities	❑	❑	❑	☑
10-5 COMMUNITY FACILITIES IMPACT ANALYSIS AND MITIGATION		☑	❑	❑	❑
10-6 EROSION AND SEDIMENTATION CONTROL					
A. Topography and Natural Surroundings		☑	❑	❑	❑
B. Best Management Practices					
B.1	Stripping, Removal, Re-Grading	☑	❑	❑	❑
B.2	Exposure to a Minimum	☑	❑	❑	❑
B.3	Temporary Measures	☑	❑	❑	❑
B.4	Permanent Measures	☑	❑	❑	❑
B.5	Sediment Basins or Silt Traps	☑	❑	❑	❑
B.6	Adjoining property and slope	☑	❑	❑	❑
B.7	Dust control	☑	❑	❑	❑
B.8	No grading or filling near water body	☑	❑	❑	❑
B.9	Measures monitored periodically	☑	❑	❑	❑
C. Soil Erosion and Control Plan		☑	❑	❑	❑
10-7 EMISSIONS		❑	❑	❑	❑
10-8 EXTERIOR LIGHTING					
A.	**Adequate for nighttime hours**	❑	❑	❑	☑
B.	**Street lighting**	❑	❑	❑	☑

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C.	**Lighting not produce deleterious effects**	☑	❑	❑	❑
D.	**Fixtures shielded or hooded**	❑	❑	❑	☑
E.	**Blinking lights prohibited**	☑	❑	❑	❑
F.	**Maximum height**	❑	❑	❑	☑
G.	**Spot lights prohibited**	❑	❑	❑	☑
10-9 FINANCIAL AND TECHNICAL CAPACITY					
A.	**Adequate financial resources**	☑	❑	❑	❑
B.	**Qualified contractors and consultants**	☑	❑	❑	❑
10-10 FLOODPLAIN MANAGEMENT					
A. Consistent with Floodplain Ordinance		☑	❑	❑	❑
B. Development/Subdivision Requirement		☑	❑	❑	❑
C. Building Prohibited on Floodplains					
C.1	Building prohibited in floodplain	❑	❑	❑	☑
C.2	Statement and restriction	❑	❑	❑	☑
C.3	Woodlands, grassland, pastureland, recreation	❑	❑	❑	☑
C.4	Piers, docks, wharves, bridges and boat ramps	❑	❑	❑	☑
10-11 HAZARDOUS, SPECIAL AND RADIOACTIVE MATERIALS					
A.	**Handling, storage and use per standards**	❑	❑	❑	☑
B.	**Reporting Requirement**	❑	❑	❑	☑
10-12 HISTORIC AND ARCHAEOLOGICAL SITES					
A.	**Protect resources**	❑	❑	❑	☑
B.	**Maine Historic Preservation Commission review**	❑	❑	❑	☑
10-13 LANDSCAPING, BUFFERS AND SCREENING					
A. Purpose		☑	❑	❑	❑
B. Standards					
B.1	Landscaping	☑	❑	❑	❑

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B.1.a	Natural state	☑	❑	❑	❑
B.1.b	Public roads, areas, recreation sites, buildings	☑	❑	❑	❑
B.1.c	Deciduous trees	☑	❑	❑	❑
B.1.d	Part of overall plan	☑	❑	❑	❑
B.2	Buffers and Screening	☑	❑	❑	❑
B.2.a	Adjacent uses and screening	☑	❑	❑	❑
B.2.b	Year-round visual screen	☑	❑	❑	❑
B.2.c	Parking lots and areas	❑	❑	❑	☑
B.2.d	Garbage collection areas	❑	❑	❑	☑
B.2.e	Sufficient buffering	☑	❑	❑	❑
B.2.f	Width of buffer	☑	❑	❑	❑
10-14 NATURAL BEAUTY AND AESTHETICS IN THE FARM AND FOREST DISTRICT, RESIDENTIAL SHORELAND DISTRICT AND RESOURCE PROTECTION DISTRICT		☑	❑	❑	❑
10-15 NOISE					
A.	**Control Levels for Neighboring Properties**	☑	❑	❑	❑
B.	**Sound Pressure Level Limits**	☑	❑	❑	❑
C.	**Measured by a Meter**	❑	❑	❑	☑
10-16 SEWAGE DISPOSAL					
A. <u>Subsurface Sewage Disposal</u>					
A.1	State of Maine Rules	☑	❑	❑	❑
A.2	Hydrogeologic assessment	☑	❑	❑	❑
A.2.a	Suitable soils	☑	❑	❑	❑
A.2.b	Water supplies	☑	❑	❑	❑
A.2.c	Groundwater quality	☑	❑	❑	❑
A.2.d	Monitoring wells	❑	❑	❑	☑
A.2.e	Operation and maintenance manual	☑	❑	❑	❑

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B. Public Sewer System Disposal					
B.1	Not allowed in Farm and Forest District, Residential Shoreland District or Resource Protection District	❑	❑	❑	☑
B.2	Sewer District statement of capacity	❑	❑	❑	☑
10-17 SIGNS					
A.	**General Requirements**	❑	❑	❑	☑
B.	**Village Center District**	❑	❑	❑	❑
C.	**Identify or Advertise Premises**	❑	❑	❑	❑
D.	**Sign Area**	❑	❑	❑	❑
E.	**Installation and Height**	❑	❑	❑	❑
F.	**Height and Location by Roads**	❑	❑	❑	❑
G.	**Attached to Structure**	❑	❑	❑	❑
H.	**Maintenance and Removal**	❑	❑	❑	❑
I.	**Illumination**	❑	❑	❑	❑
J.	**Nonconforming Signs**	❑	❑	❑	❑
K.	**Special Event Signs**	❑	❑	❑	❑
L.	**Home Occupation Signs**	❑	❑	❑	❑
M.	**Signs in the Resource Protection District and the Residential Shoreland District**	❑	❑	❑	❑
10-18 SOIL SUITABILITY		☑	❑	❑	❑
10-19 SOLID WASTE DISPOSAL					
A.	**Disposal at Licensed Facility**	☑	❑	❑	❑
B.	**Alternative Arrangements**	❑	❑	❑	❑
10-20 STORAGE OF MATERIALS					
A.	**Sufficient Setbacks and Screening**	❑	❑	❑	☑
B.	**Dumpsters**	❑	❑	❑	☑
C.	**Physical Screening**	❑	❑	❑	☑

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SUBDIVISION REGULATIONS		Received by Planning Board	Applicant Requests to be Waived	Waiver Approved by Planning Board	Not Applicable
D.	**Buffers and Screening**	❑	❑	❑	☑
10-21 STORM WATER CONTROL					
A.	**Designed to Minimize Runoff**	☑	❑	❑	❑
B.	**Requirements**				
B.1	Design by Maine engineer	☑	❑	❑	❑
B.2	Easement width	☑	❑	❑	❑
B.3	Oil and grease traps	❑	❑	❑	☑
B.4	Designing engineer statement	☑	❑	❑	❑
B.5	Designed to Town Roadway Criteria	☑	❑	❑	❑
B.6	Maintenance Plan	☑	❑	❑	❑
10-22 RECREATION AND OPEN SPACE LAND IN DEVELOPMENTS					
A.	**Applicability and Purpose**	☑	❑	❑	❑
B.	**Retention of Useable Open Space and Recreation Land in Residential Developments**				
B.1	Reservation of land	☑	❑	❑	❑
B.2	Identified needs	❑	❑	❑	☑
C.	**Waivers for Minor Subdivisions**	❑	❑	❑	☑
D.	**Ownership and Maintenance of Common Open Space and/or Recreation Land**				
D.1	Owned by HOA	❑	❑	❑	❑
D.1.a	Lot owners' association	☑	❑	❑	❑
D.1.b	Conservation association	❑	❑	❑	❑
D.1.c	Town	❑	❑	❑	❑
D.2	Further subdivision prohibited	❑	❑	❑	❑
D.3	Monitoring Fee	❑	❑	❑	❑
E.	**Homeowners Association Requirements**	☑	❑	❑	❑
10-23 WATER SUPPLY					
A.	**Public Water Supply**				
A.1	Written statement from Yarmouth Water District	❑	❑	❑	☑

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A.2	System approve by Yarmouth Water District and North Yarmouth Fire Chief	❑	❑	❑	☑
B. Required Connection to Public Water Supply		❑	❑	❑	☑
C. Individual Wells		☑	❑	❑	❑
D. Fire Protection					
D.1	Hydrant locations	❑	❑	❑	❑
D.2	Storage capacity	❑	❑	❑	❑
D.3	Hydrant specifications	❑	❑	❑	❑
D.4	Easement	☑	❑	❑	❑
10-24 WATER QUALITY					
A. Water Quality					
A.1	No discharge in surface or groundwater	☑	❑	❑	❑
A.2	Maine DEP and Fire Marshal's Office standards	❑	❑	❑	❑
A.3	License from Maine DEP	❑	❑	❑	❑
A.4	Discharge treated	❑	❑	❑	❑
B. Groundwater		☑	❑	❑	❑
C. Wellhead Protection		☑	❑	❑	❑
D. Requirements for Hydrogeologic Assessments					
D.1	Class A (high intensity) Soil Survey	☑	❑	❑	❑
D.2	Water table	☑	❑	❑	❑
D.3	Drainage conditions	☑	❑	❑	❑
D.4	Existing groundwater quality	☑	❑	❑	❑
D.5	Analysis and evaluation	☑	❑	❑	❑
D.6	Map of wastewater systems and wells	☑	❑	❑	❑
E. Projections of Groundwater Quality		☑	❑	❑	❑
F. Drinking Water Standards		☑	❑	❑	❑
G. Demonstrate Treatment		☑	❑	❑	❑

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H. Contaminants		☑	❑	❑	❑
I. Construction Standards		☑	❑	❑	❑
J. System and Well Zones		☑	❑	❑	❑
10-25 PROTECTION OF SIGNIFICANT WILDLIFE HABITAT					
A. Designed to Protect		❑	❑	❑	☑
B. Identify and Map Wildlife Habitats		☑	❑	❑	❑
C. Consult and Obtain Written Report		☑	❑	❑	❑
D. Deer Wintering Areas		❑	❑	❑	☑
E. Deed Restrictions		❑	❑	❑	☑
10-26 PUBLIC ACCESS TO THE SHORELINE		❑	❑	❑	☑
10-27 BACK LOTS AND ACCESS					
A. Right-of-Way					
A.1	Width and frontage	❑	❑	❑	❑
A.2	Emergency vehicles	❑	❑	❑	❑
A.3	Existing lot and right-of-way	❑	❑	❑	❑
A.4	Backlots prohibited in subdivisions	❑	❑	❑	❑
A.5	Private Roads Serving Three or More Residential Units and/or Non-residential Uses	❑	❑	❑	❑
A.6	In the Farm and Forest District, Residential Shoreland District and Resource Protection District – lot size and width	❑	❑	❑	❑
A.7	In the Village Center District and Village Residential District – dimensional requirements	❑	❑	❑	❑
10-28 ACCESS MANAGEMENT STANDARDS					
A. Applicability		❑	❑	❑	❑
B. Adequacy of the Public Road System		❑	❑	❑	❑
C. Safe Sight Distances					
C.1.	Designed	☑	❑	❑	❑
C.2	Measurements	☑	❑	❑	❑

TOWN OF NORTH YARMOUTH

PLANNING BOARD

MAJOR SUBDIVISION REVIEW CHECKLIST

SUBDIVISION REGULATIONS		Received by Planning Board	Applicant Requests to be Waived	Waiver Approved by Planning Board	Not Applicable
C.2.a	Sight distance	☑	❑	❑	❑
C.2.b	Height	❑	❑	❑	❑
C.2.c	Truck traffic	❑	❑	❑	❑
C.2.d	Recreational vehicle traffic	❑	❑	❑	❑
C.4	Placement	❑	❑	❑	❑
C.5	Site triangle	❑	❑	❑	❑
D. Access Management and Safety Standards					
D.1	Hazardous conflicts	❑	❑	❑	❑
D.2	Residential Lots	❑	❑	❑	❑
D.2.i	Farm and Forest District, Residential Shoreland District and Resource Protection District	❑	❑	❑	❑
D.2.ii	Village Center District and Village Residential District	❑	❑	❑	❑
D.3	Commercial and Other Non-Residential Lots	❑	❑	❑	❑
D.3.i	Farm and Forest District, Residential Shoreland District and Resource Protection District	❑	❑	❑	❑
D.3.ii	Village Center District and Village Residential District	❑	❑	❑	❑
D.4	Shared Driveways	❑	❑	❑	❑
D.5	Road, Pedestrian and Bicycle Connections Between Developments	❑	❑	❑	❑
D.6	Subdivisions	❑	❑	❑	❑
D.7	Corner Lot Access	❑	❑	❑	❑
D.8	Access Ways to Non-Residential Developments or to Multiplex Developments	❑	❑	❑	❑
D.9	Driveway Turn-Around Area	❑	❑	❑	❑
D.10	Driveway Grades	❑	❑	❑	❑
D.11	Access Way Location and Spacing	❑	❑	❑	❑
D.11.a	Location from intersection	❑	❑	❑	❑
D.11.b	Existing private roads	❑	❑	❑	❑

TOWN OF NORTH YARMOUTH

PLANNING BOARD

MAJOR SUBDIVISION REVIEW CHECKLIST

SUBDIVISION REGULATIONS		Received by Planning Board	Applicant Requests to be Waived	Waiver Approved by Planning Board	Not Applicable
D.11.c	Demonstration of No Alternative	❑	❑	❑	❑
10-29 SUBDIVISION STREET CONNECTIVITY REQUIRED IN THE VILLAGE CENTER AND VILLAGE RESIDENTIAL DISTRICT					
A. Purpose		☑	❑	❑	❑
B. Applicability		☑	❑	❑	❑
C. Requirements					
C.1	Designed as public through roads	☑	❑	❑	❑
C.2	Adjacent uses	☑	❑	❑	❑
C.3	Continue to boundary	☑	❑	❑	❑
C.4	Provide increased connectivity	☑	❑	❑	❑
C.5	Temporary dead end road	☑	❑	❑	❑
C.6	Reserved streets	❑	❑	❑	❑
C.7	Waivers	❑	❑	❑	☑
C.7.a	Length	❑	❑	❑	❑
C.7.b	Hammerhead	❑	❑	❑	❑
C.7.c	No driveway off turn-around	❑	❑	❑	❑
C.7.d	Adequate emergency access	❑	❑	❑	❑
10-30 SUBDIVISION STREET LENGTH AND CONNECTION REQUIREMENTS IN THE FARM AND FOREST DISTRICT AND RESIDENTIAL SHORELAND DISTRICT					
A. Purpose		❑	❑	❑	❑
B. Standards			❑		
B.1	Emergency second access street	❑	❑	❑	❑
B.2	Length	❑	❑	❑	❑
B.3	Connectivity Requirements	❑	❑	❑	❑
10-31 PEDESTRIAN WAYS AND BICYCLE ACCESS, CIRCULATION AND FACILITIES					
A. Applicability and Purpose		☑	❑	❑	❑
B. Standards					

TOWN OF NORTH YARMOUTH

PLANNING BOARD

MAJOR SUBDIVISION REVIEW CHECKLIST

SUBDIVISION REGULATIONS		Received by Planning Board	Applicant Requests to be Waived	Waiver Approved by Planning Board	Not Applicable
B.1	Village Center District and Village Residential District	☑	❑	❑	❑
B.2	Farm and Forest District and Residential Shoreland District, Resource Protection District	❑	❑	❑	❑
B.3	Sidewalks	☑	❑	❑	❑
B.4	Connect to existing	❑	❑	❑	☑
B.5	Site Plan	☑	❑	❑	❑
B.6	Parking Plans	❑	❑	❑	❑
B.6.a	Bicycle parking	❑	❑	❑	❑
B.6.b	Pedestrian ways	❑	❑	❑	❑
B.6.c	Village Center District and Village Residential District sidewalks on frontage	☑	❑	❑	❑
10-32 INTERNAL VEHICULAR CIRCULATION					
A. <u>Safe Movement</u>					
A.1	Clear route	☑	❑	❑	❑
A.2	Emergency vehicles	☑	❑	❑	❑
A.3	Layout and design	☑	❑	❑	❑
A.4	Designed to harmonize with site	☑	❑	❑	❑
10-33 OFF STREET PARKING					
A. <u>Applicability</u>		❑	❑	❑	☑
B. <u>General Requirements</u>		❑	❑	❑	☑
C. <u>Parking Layout and Design</u>					
C.1	On lot or adjacent lot	❑	❑	❑	❑
C.2	Arranged so not necessary to back out on road	❑	❑	❑	❑
C.3	Located behind or to side of building	❑	❑	❑	❑
C.4	Landscaping plan	❑	❑	❑	❑
C.5	Joint use of parking area	❑	❑	❑	❑
C.6	Durable surface	❑	❑	❑	❑

TOWN OF NORTH YARMOUTH

PLANNING BOARD

MAJOR SUBDIVISION REVIEW CHECKLIST

SUBDIVISION REGULATIONS		Submitted by Applicant	Not Applicable	Applicant Requests to be Waived	Received by Planning Board
C.7	Parking space size	❑	❑	❑	❑
C.8	Diagonal parking	❑	❑	❑	❑
D. Parking Space Requirements					
D.1	Sufficient to accommodate	❑	❑	❑	❑
D.2	Size of structure	❑	❑	❑	❑
D.3	Reduce structure for sufficient parking	❑	❑	❑	❑
D.4	On-street parking	❑	❑	❑	❑
D.5	Availability of parking	❑	❑	❑	❑
D.6	Pedestrian and bicycle safety	❑	❑	❑	❑
D.7	Other standards	❑	❑	❑	❑
E. Waivers		❑	❑	❑	❑
10-34 OFF STREET LOADING REQUIREMENTS					
A. Specific Uses					
A.1	Maximum number of trucks	❑	❑	❑	❑
A.2	Type of business	❑	❑	❑	❑
A.3	Location of loading facility	❑	❑	❑	❑
A.4	Screening	❑	❑	❑	❑
A.5	Desirability of service roads or alleys	❑	❑	❑	❑
A.6	Other characteristics	❑	❑	❑	❑
A.7	Traditional layout and historical character	❑	❑	❑	❑
A.8	Minimize noise impacts	❑	❑	❑	❑

TOWN OF NORTH YARMOUTH
PLANNING BOARD
FEE CALCULATION SHEET

NAME OF APPLICANT: Construction Aggregate, INC
PROPERTY ADDRESS: 80 Gray Road
MAP: 10 LOT: 71 & 72

SITE PLAN FEES

Description	Fees	Total
Preliminary Sketch Plan Review	$0	
Site Plan Review Permit	$250.00	
Amendment to Site Plan Review Permit	$75.00	

SUBDIVISION APPROVAL FEES

MINOR SUBDIVISION (4 lots or less)

Description	Fees	Total
Non-refundable Application Fee	$250.00	
Each Lot/Dwelling Unit	$100.00	
Technical Review	Cost + $25.00	

MAJOR SUBDIVISION (5 lots or more)

Description	Fees	Total
Non-refundable Application Fee	$350.00	350
Each lot/Dwelling Unit	$100.00	1,300
Technical Review	Cost + $25.00	?+25

TOTAL FEES REQUIRED

NOTE: Certain Subdivisions will be required to complete a Site Plan Review Permit. Review fees are not typically refundable. If extenuating circumstances occur, the Board may consider a partial or full refund.

PROJECT DESCRIPTION

The following package is an application for a Preliminary Plan meeting with Town of North Yarmouth Planning Board. The application is for a 13-lot subdivision off Gray Road (Route 115). The site is gradually sloping from east to west and consists of mostly sandy material. The road will bisect the parcel to allow for building lots on either side of the road. The smaller lots will be served by engineered pretreatment wastewater systems. The septic systems for all the lots will be located along the western side of the property but far enough off the property line to keep any plumes from crossing the property line. The lots will be separated by fifty (50) foot strips of open space to provide some stormwater treatment and allow for maintenance access to the septic fields. Private wells will serve each lot. A large fire cistern will be installed to provide fire protection for the subdivision. The proposed stormwater treatment measures include an under drained soil filter (lined) and a meadow buffer behind a level spreader.

NOTIFICATION STATEMENT

Notices were mailed out to the abutters on 3/30/2021. The full list of abutters is included in Attachment I.

PERFORMANCE AND DESIGN STANDARDS

10-2 General Layout of Development – The 13 lots and roadway have been designed and placed were there are the most suitable conditions. There is a full is a full plan set in Attachment H.

10-3 Brook, Pond, Vernal Pool, and Wetland Buffers – The wetlands and streams have been identified for the entire 92+ acre parcel. The proposed project does not impact any brook, pond, vernal pool, or wetland buffer.

10-4 Building Design Standards – Not applicable to this project.

10-5 Community Facilities Impact Analysis and Mitigation – Not applicable to this project.

10-6 Erosion and Sedimentation Control – An Erosion Control Plan has been provided in Attachment F.

10-7 Emissions – Not applicable to this project.

10-8 Exterior Lighting – Not applicable to this project.

10-9 Financial and Technical Capacity – A bank letter of good standing has been provided in Attachment A.

10-10 Floodplain Management – The proposed subdivision has been designed to meet the standards set forth by the Maine Department of Environmental Protection (DEP). There will be negligible impacts to any flood plains. A FEMA Firmette can be found in Attachment B.

10-11 Hazardous, Special, and Radioactive Materials – Not applicable to this project.

10-12 Historic and Archaeological Sites – The correspondence with the Maine Historic Preservation Commission and the Maine Natural Areas Program are included in Attachment D.

10-13 Landscaping, Buffers, and Screening – There will be 8 trees planted along the rear property lines of each lot on the Western side of the road. These trees will be either Spruce, Austrian pine, or Blue Spruce. Along the front of every lot there will be two street trees that will alternate between Lilac, Flowering Crab, and Flowering Pear. Each lot will be separated by a fifty-foot buffer and there is an open strip that runs the length of the western property line.

10-14 Natural Beauty and Aesthetics in the Farm and Forest District, Residential Shoreland District, and Resource Protection District – Not applicable to this project.

10-15 Noise – No noise over residential standards is expected for this project other than the initial construction. Construction will only take place between the hours of 7:00AM and 7:00PM.

10-16 Sewage Disposal – Individual septic systems are proposed for each lot. Test pits have been dug and the soils were deemed acceptable for subsurface wastewater disposal systems. The soils report is included in Attachment G.

10-17 Signs – No signage is proposed at this time.

10-18 Soil Suitability – A Soil Narrative and Report completed by Mark Hampton Associates, Inc is included in Attachment G.

10-19 Solid Waste Disposal – There will be common residential waste as part of the subdivision. Clearing and Construction debris will be disposed of at a facility licensed to receive construction and demolition debris.

10-20 Storage of Materials – No storage of materials is proposed for this project.

10-21 Stormwater Control – A Stormwater Management Report has been provided in Attachment E.

10-22 Recreation and Open Space Land in Developments – Average lot size for this project is approximately 40,000 S.F. According to the North Yarmouth Design Standards 3.3% of the total parcel is to be reserved. At least 3.3% of the total parcel size has been reserved, and is shown on the Plan Set located in Attachment H.

10-23 Water Supply – Each lot will have its own gravel well.

10-24 Water Quality – Stormwater leaving the site is treated using the Maine Department of Environmental Protection's best management practices. The two stormwater treatment mechanisms utilized on the site are an underdrained soil filter and a meadow buffer. In addition, the septic systems have been designed to minimize any negative impacts on the ground water.

10-25 Protection of Significant Wildlife Habitat – Correspondence with the Maine Department of Inland Fisheries and Wildlife is included in Attachment D.

10-26 Public Access to the Shoreline – Not applicable to this project, there is no existing right-of-way to Deer Brook.

10-27 Back Lots and Access – Not applicable to this project, back lots are not part of the designed subdivision.

10-28 Access Management Standards – MDOT Entrance Permit, all lots will have only one point of access.

10-29 Subdivision Street Connectivity Required in the Village Center and Village Residential District – A right of way has been included to each of the larger abutting parcels. In addition, a trail will be built connecting the proposed subdivision to the power lines corridor.

10-30 Subdivision Street Length and Connection Requirements in the Farm and Forest District and Residential Shoreland District – Not applicable to this project.

10-31 Pedestrian Ways and Bicycle Access, Circulation, and Facilities – There will be sidewalk along one side of the subdivision road. Please see Plan Set in Attachment H. As previously mentioned there will be a trail built to provide access to the power corridor.

10-32 Internal Vehicular Circulation – The road has been designed to meet the Town's performance standards, with

10-33 Off Street Parking – Not applicable to this project.

10-34 Off Street Loading Requirements – Not applicable to this project.

ATTACHMENT A

Norway Savings Bank

January 15, 2021

Board of Selectmen and Planning Board
Town of North Yarmouth
10 Village Square Road
North Yarmouth, ME 04097

RE: Construction Aggregate, Inc.-Phase I of York Ridge Subdivision

Ladies and Gentlemen,

At the request of Ben Grover, I write this letter to provide to you my opinion on the financial capacity of Construction Aggregate, Inc. and Ben Grover to undertake phase I of York Ridge Subdivision.

I spoke with Ben about the plans and scope of the project in some detail recently. Construction Aggregate, Inc. and Ben Grover maintain a comprehensive banking relationship with Norway Savings Bank so I am familiar with both the company and Ben's background and finances.

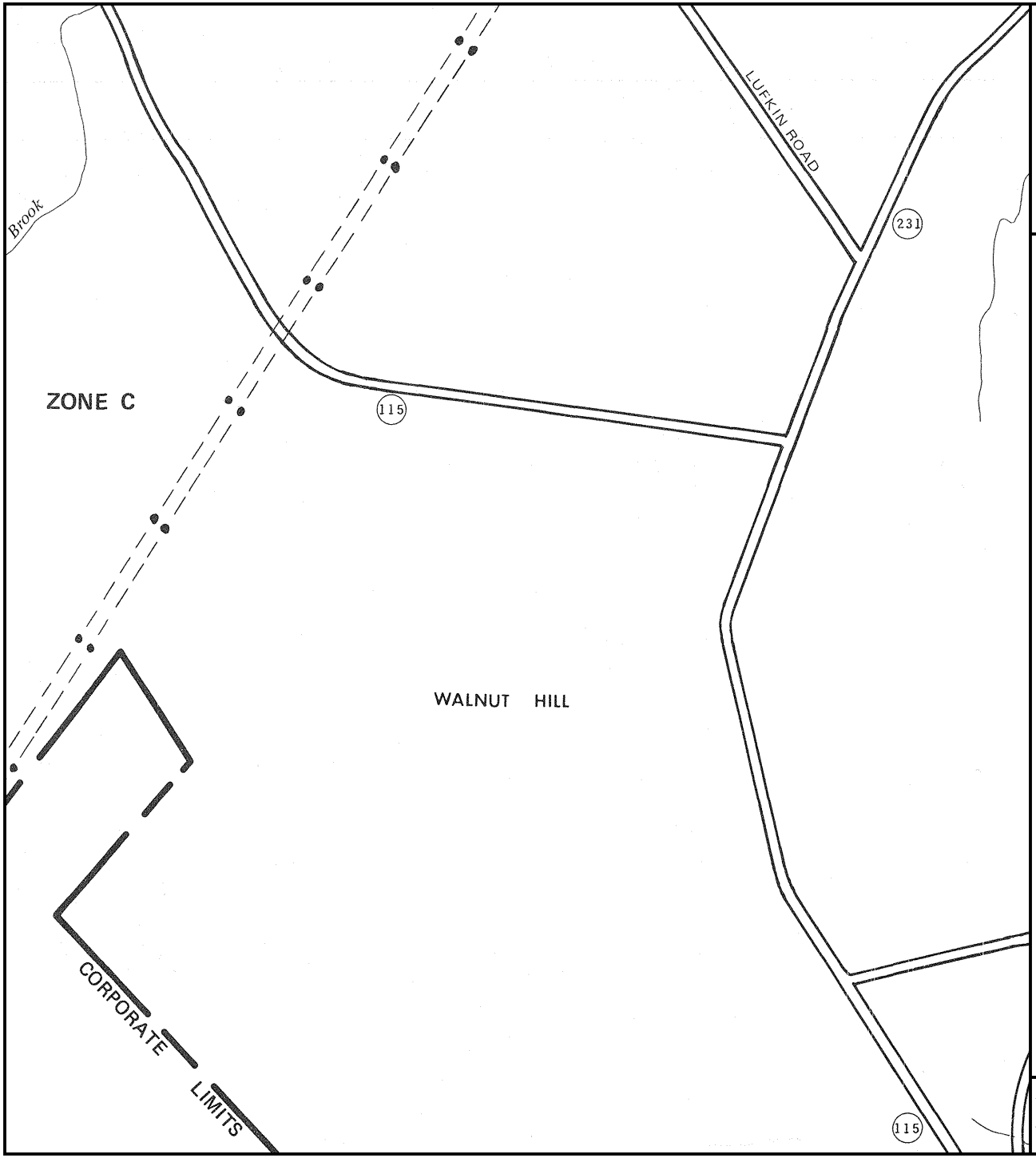
Based on my banking relationship with both and the information discussed with Ben about the proposal and plans for the subdivision, it is my opinion that Ben Grover and Construction Aggregate, Inc. have the financial capacity to support this project.

Sincerely,

Brian C. Desjardins
Regional Vice President
Commercial Lending

BCD/tbm

ATTACHMENT B



APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

230202

TOWN OF
NORTH YARMOUTH,
MAINE
CUMBERLAND COUNTY

PANEL 10 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

P.10

E
1,555

COMMUNITY-PANEL NUMBER
230202 0010 B

EFFECTIVE DATE:
JULY 16, 1981

N90

federal emergency management agency
federal insurance administration

ATTACHMENT C

PURCHASE AND SALE AGREEMENT - LAND ONLY

("days" means business days unless otherwise noted, see paragraph 20)

August 9, 2020
Offer Date

_____, _____ Effective Date
Effective Date is defined in Paragraph 20 of this Agreement.

1. PARTIES: This Agreement is made between _____
Construction Aggregate Inc ("Buyer") and
Ruth York ("Seller").

2. DESCRIPTION: Subject to the terms and conditions hereinafter set forth, Seller agrees to sell and Buyer agrees to buy ☐ all ☑ part of (if "part of" see para. 22 for explanation) the property situated in municipality of **North Yarmouth**, County of **Cumberland**, State of Maine, located at 80 Gray Road and described in deed(s) recorded at said County's Registry of Deeds Book(s) _____, Page(s) _____.

3. PURCHASE PRICE/EARNEST MONEY: For such Deed and conveyance Buyer agrees to pay the total purchase price of $___. ~~Buyer ☐ has delivered~~; or ☐ ~~will deliver to the Agency within~~ N/A days of the Effective Date, a deposit of earnest money in the amount $ N/A. Buyer agrees that an additional deposit of earnest money in the amount of $ N/A will be delivered N/A.
If Buyer fails to deliver the initial or additional deposit in compliance with the above terms Seller may terminate this Agreement. This right to terminate ends once Buyer has delivered said deposit (s). The remainder of the purchase price shall be paid by wire, certified, cashier's or trust account check upon delivery of the Deed.

This Purchase and Sale Agreement is subject to the following conditions:

4. ESCROW AGENT/ACCEPTANCE: N/A ("Agency") shall hold said earnest money and act as escrow agent until closing; this offer shall be valid until 8/10/2020 (date) 5:00 ☐ AM ☑ PM; and, in the event of non-acceptance, this earnest money shall be returned promptly to Buyer.

5. TITLE AND CLOSING: A deed, conveying good and merchantable title in accordance with the Standards of Title adopted by the Maine Bar Association shall be delivered to Buyer and this transaction shall be closed and Buyer shall pay the balance due and execute all necessary papers on April 15, 2021 (closing date) or before, if agreed in writing by both parties. If Seller is unable to convey in accordance with the provisions of this paragraph, then Seller shall have a reasonable time period, not to exceed 30 calendar days, from the time Seller is notified of the defect, unless otherwise agreed to in writing by both Buyer and Seller, to remedy the title. Seller hereby agrees to make a good-faith effort to cure any title defect during such period. If, at the later of the closing date set forth above or the expiration of such reasonable time period, Seller is unable to remedy the title, Buyer may close and accept the deed with the title defect or may terminate this Agreement in which case the parties shall be relieved of any further obligations hereunder and any earnest money shall be returned to the Buyer.

6. DEED: The property shall be conveyed by a Warranty deed, and shall be free and clear of all encumbrances except covenants, conditions, easements and restrictions of record which do not materially and adversely affect the continued current use of the property.

7. POSSESSION: Possession of premises shall be given to Buyer immediately at closing unless otherwise agreed in writing.

8. RISK OF LOSS: Until the closing, the risk of loss or damage to said premises by fire or otherwise, is assumed by Seller. Buyer shall have the right to view the property within 24 hours prior to closing for the purpose of determining that the premises are in substantially the same condition as on the date of this Agreement.

9. PRORATIONS: The following items, where applicable, shall be prorated as of the date of closing: rent, association fees, (other) N/A. Real estate taxes shall be prorated as of the date of closing (based on municipality's fiscal year). Seller is responsible for any unpaid taxes for prior years. If the amount of said taxes is not known at the time of closing, they shall be apportioned on the basis of the taxes assessed for the preceding year with a reapportionment as soon as the new tax rate and valuation can be ascertained, which latter provision shall survive closing. Buyer and Seller will each pay their transfer tax as required by State of Maine.

10. DUE DILIGENCE: Buyer is encouraged to seek information from professionals regarding any specific issue or concern. Neither Seller nor Licensee makes any warranties regarding the condition, permitted use or value of Sellers' real property. This Agreement is subject to the following contingencies, with results being satisfactory to Buyer:

RE/MAX Shoreline, The Common at 88 Middle Street Portland ME 4101 Phone: (207)553-7500 Fax: (207)773-2525 Grover York land
Scott Kerr

ATTACHMENT D

Maine Department of Transportation

Janet T. Mills
Governor

Driveway/Entrance Permit

Bruce A. Van Note
Commissioner

Permit Number: 29158 - **Entrance ID:** 1

OWNER

Name: **Construction Aggregate, Inc.**
Address: **82 Doughty Road**
North Yarmouth, ME 04097
Telephone: **(207)233-6463**

Date Printed: **March 10, 2021**

LOCATION

Route: **0115X, Gray Road**
Municipality: **North Yarmouth**
County: **Cumberland**
Tax Map: **10** Lot Number: **71**
Culvert Size: **inches**
Culvert Type: **N/R**
Culvert Length: **feet**
Date of Permit: **March 10, 2021**
Approved Entrance Width: **24 feet**

In accordance with rules promulgated under 23 M.R.S.A., Chapter 13, Subchapter I, Section 704, the Maine Department of Transportation (MaineDOT) approves a permit and grants permission to perform the necessary grading to construct, in accordance with sketch or attached plan, **an Entrance** to **Subdivision/Development** at a point **1403** feet **West** from **Steeple Chase Road**, subject to the Chapter 299 Highway Driveway and Entrance Rules, standard conditions and special conditions (if any) listed below.

Conditions of Approval:

This Permittee acknowledges and agrees to comply with the Standard Conditions and Approval attached hereto and to any Specific Conditions of Approval shown here.

(G = GPS Location; W = Waiver; S = Special Condition)

G - THE ENTRANCE SHALL BE LOCATED AT GPS COORDINATES: 43.843020N, -70.262070W.

S - In the town of North Yarmouth on the southerly side of Route 115 / Gray Road, the centerline being approximately 1403 feet westerly of the centerline of Steeple Chase Road and approximately 23 feet easterly of utility pole 149.

Approved by: Anthony Bontaeci Date: 3-10-2021

STANDARD CONDITIONS AND APPROVAL

1. Provide, erect and maintain all necessary barricades, lights, warning signs and other devices as directed by MaineDOT to properly safeguard traffic while the construction is in progress.

2. At no time cause the highway to be closed to traffic

3. Where the driveway is located within a curb, curb and gutter, and/or sidewalk section, completely remove the existing curb, curb and gutter, and/or sidewalk as may be required to create the driveway and restore drainage. All driveways abutting sidewalk sections shall meet the requirements set forth in the Americans with Disabilities Act of 1990, 42 U.S.C. Sec. 12131 et seq.

4. Obtain, have delivered to the site, and install any culverts and/or drainage structures which may be necessary for drainage, the size, type and length as called for in the permit pursuant to 23 M.R.S.A. Sec. 705. All culverts and/or drainage structures shall be new.

5. Start construction of the proposed driveway within twenty-four (24) months of the date of permit issuance and substantially complete construction of the proposed driveway within twelve months of commencement of construction.

6. Comply with all applicable federal, state and municipal regulations and ordinances.

7. Do not alter, without the express written consent of the MaineDOT, any culverts or drainage swales within the MaineDOT right of way.

8. File a copy of the approved driveway permit with the affected municipality or LURC, as appropriate within 5 business days of receiving the MaineDOT approval.

9. Construct and maintain the driveway side slopes to be no steeper than the adjacent roadway side slopes, but in no case to be steeper than 3 horizontal to 1 vertical, unless the side slope is behind existing roadway guardrail, in which case it shall be no steeper than 2 horizontal to 1 vertical.

10. Notify the MaineDOT of a proposed change of use served by the driveway when increase in traffic flow is expected to occur. This does not exempt the need for obtaining a Traffic Movement Permit (TMP) if trip generation meets or exceeds 100 passenger car equivalents (PCE) during the peak hour of the day.

11. Construct or implement and maintain erosion and sedimentation measures sufficient to protect MaineDOT facilities.

12. Driveways shall be designed such that all maneuvering and parking of any vehicles will take place outside the highway right-of-way and where vehicles will exit the premises without backing onto the highway traveled way or shoulders. All driveways will have a turnaround area to accomodate vehicles using the premises.

13. Closing any portion of a highway or roadway including lanes, shoulders, sidewalks, bike lanes, or ATV access routes is not permitted without MaineDOT approval.

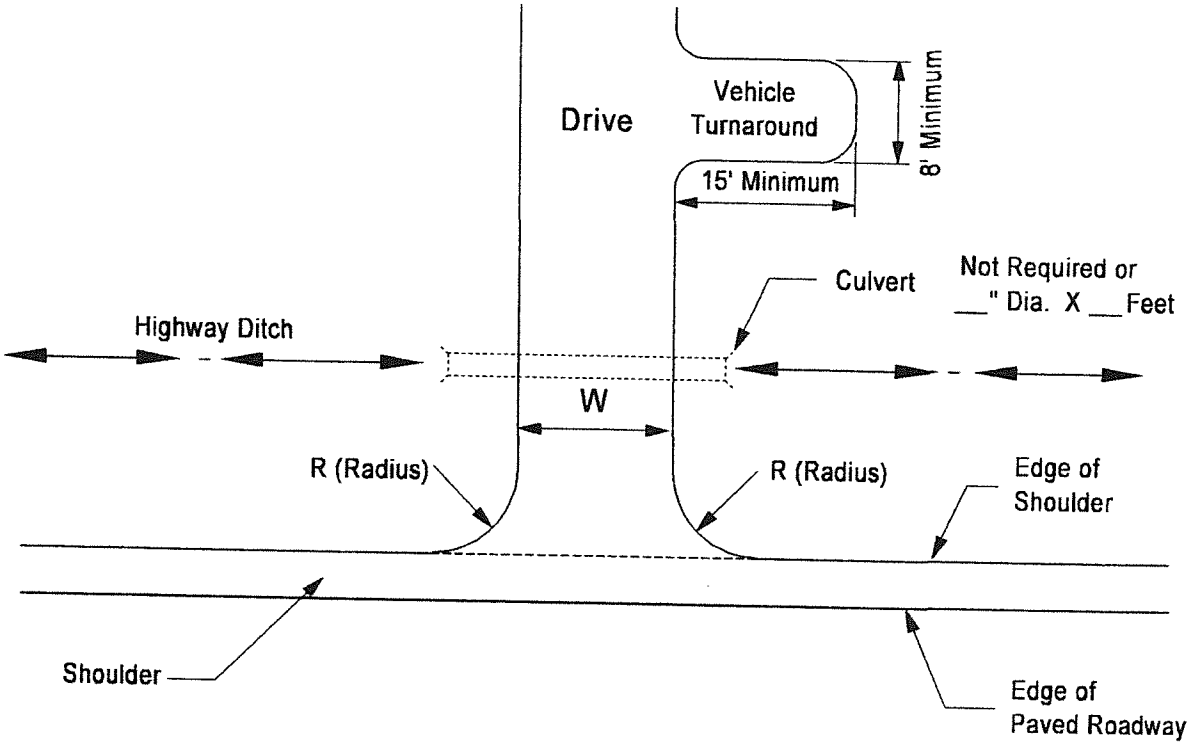
FURTHER CONDITION OF THE PERMIT

The owner shall assume, the defense of, and pay all damages, fines, and penalties for which he/she shall become liable, and shall indemnify and safe harmless said Department, its representatives, agents and employees from liability, actions against all suits, claims, damages for wrongful death, personal injuries or property damage suffered by any person or association which results from the willful or negligent action or inaction of the owner/applicant (agent) and in proceedings of every kind arising out of the construction and maintenance of said entrance(s), including snow removal.

Nothing herein shall, nor is intended to, waive any defense, immunity or limitation of liability which may be available to the MaineDOT, their officers, agents or employees under the Maine Tort Claims Act or any other privileges and/or immunities provided by law. It is a further condition that the owner will agree to keep the right of way inviolate for public highway purposes and no signs (other than traffic signs and signals), posters, billboards, roadside stands, culvert end walls or private installations shall be permitted within Right of Way limits.

State of Maine
Department of Transportation
Entrance / Driveway Details

PLAN

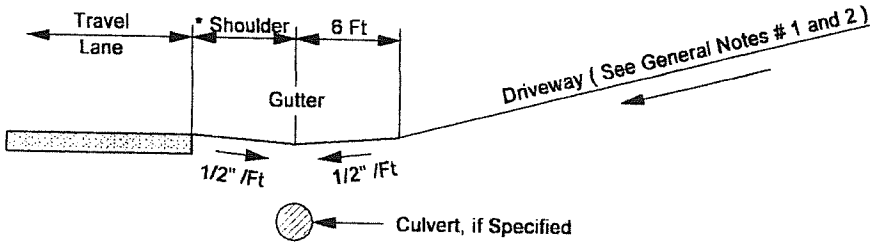


GENERAL NOTES -

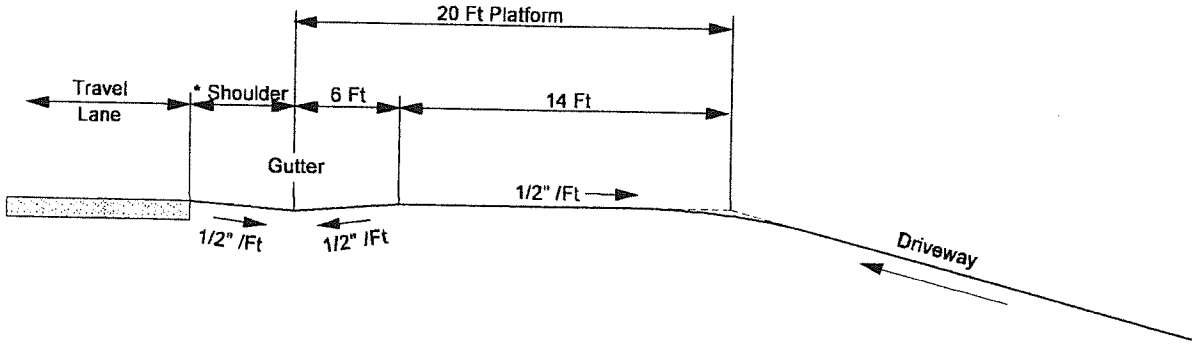
1. ALL RESIDENTAL OR COMMERCIAL DRIVES WITH 10% GRADE OR MORE SLOPING DOWN TOWARDS THE HIGHWAY SHALL BE PAVED TO THE RIGHT OF WAY LINE, AS A MINIMUM, INCUDING SHOULDER, IF GRAVEL AND HAVE DITCHES TO CONTROL RUNOFF.
2. DRIVES SLOPING TO THE HIGHWAY SHALL BE CROWNED (1/2" PER FT. MINIMUM).
3. TO THE MAXIMUM EXTENT PRACTICAL, THE ENTRANCE MUST BE CONSTRUCTED PERPENDICULAR TO THE HIGHWAY AT THE POINT OF ACCESS. EXCEPT WHERE CURBING EXISTS OR IS PROPOSED, THE MINIMUM RADIUS ON THE EDGES OF THE ENTRANCE MUST BE 10 FEET OR AS OTHERWISE REQUIRED AS SHOWN.
4. ENTRANCES/DRIVEWAYS WILL BE BUILT WITH AN ADEQUATE TURN-AROUND AREA ON SITE TO ALLOW ALL VEHICLES TO MANUVER AND PARK WITHOUT BACKING ONTO THE HIGHWAY. THIS TURN-AROUND SHALL BE AT LEAST 8 FEET WIDE BY 15 FEET LONG.
5. ENTRANCES/DRIVEWAYS AND OTHER ASSOCIATED SITE WORK WHICH DIRECTS WATER (RUNOFF) TOWARD THE HIGHWAY MUST BE CONSTRUCTED, CROWNED STABILIZED AND MAINTAINED WITH MATERIALS AND APPROPRIATE TEMPORARY/PERMANENT EROSION CONTROL MATERIALS IN ACCORDANCE WITH MDOT BEST MANAGEMENT PRACTICES.
6. THE PROFILE OF THE ENTRANCES MUST COMPLY WITH THE DETAILS SHOWN ON PAGE 2.

MDOT Entrance / Driveway Details, Continued

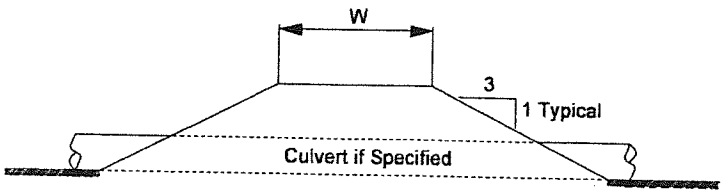
PROFILE
Details



NOTE :
Grade of Existing Shoulder Should Be Maintained To Create A Gutter With a Minimum Of Three Inches Below The Edge Of Traveled Way.
* Distance Of The Gutter From The Edge Of Traveled Way Should Be The Same As Existing Shoulder Or A Minimum Of 4 Feet.



Driveway Cross Section



JANET T. MILLS
GOVERNOR

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

JUDITH CAMUSO
COMMISSIONER

February 10, 2021

Charles Burnham
Atlantic Resource Consultants
541 US Route 1, Suite 21
Freeport, ME 04032

RE: Information Request – Subdivision 80 Gray Road Project, North Yarmouth

Dear Charles:

Per your request received on January 06, 2021, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *Subdivision 80 Gray Road* project in North Yarmouth.

Our Department has not mapped any Essential Habitats or inland fisheries habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bat Species – Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

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

Best regards,

Becca Settele
Wildlife Biologist

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

January 13, 2021

Mr. Charlie Burnahm
Atlantic Resource Consultants
541 US Route One
Suite 21
Freeport, ME 04032

Project: MHPC# 0012-21 80 Gray Road
13 Lot Subdivision
Town: North Yarmouth, ME

Dear Mr. Burnahm:

In response to your recent request, I have reviewed the information received January 6, 2021 to initiate consultation on the above referenced project.

Based on the information provided, I have concluded that there are no National Register eligible properties on or adjacent to the parcels. In addition, the project area is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, at megan.m.rideout@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

January 21, 2021

Charlie Burnham
Atlantic Resource Consultants
541 US Route One, Suite 21
Freeport, ME 04032

Via email: charlie@arc-maine.com

Re: Rare and exemplary botanical features in proximity to: #20-049, 13-Lot Subdivision, Gray Road, North Yarmouth, Maine

Dear Mr. Burnham:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received January 6, 2021 for information on the presence of rare or unique botanical features documented from the vicinity of the project in North Yarmouth, 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
BLOSSOM LANE, DEERING BUILDING

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

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

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

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

Sincerely,

Lisa St. Hilaire

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

Rare and Exemplary Botanical Features within 4 miles of
Project: #20-049, 13-Lot Subdivision, Gray Road, North Yarmouth, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	SC	S3	G5	1893-08-28	14	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed						
	SC	S2	G5?	2015-10-15	26	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Oak - Hickory Forest						
	<null>	S1	G4G5	2014-08-21	5	Hardwood to mixed forest (forest, upland)
Ram's-head Lady's-slipper						
	E	S1	G3	1935	11	Forested wetland,Hardwood to mixed forest (forest, upland)
Rattlesnake Hawkweed						
	E	S1	G5T4Q	1909-07	1	Dry barrens (partly forested, upland)
Spotted Wintergreen						
	T	S2	G5	2009-07-26	30	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Upper Floodplain Hardwood Forest						

Rare and Exemplary Botanical Features within 4 miles of
Project: #20-049, 13-Lot Subdivision, Gray Road, North Yarmouth, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
	<null>	S3	GNR	2017-05-17	18	Forested wetland
Water-plantain Spearwort						
	PE	SH	G4	1903-07-29	2	Open water (non-forested, wetland)
Wild Leek						
	SC	S3	G5	2017-05-17	47	Hardwood to mixed forest (forest, upland),Forested wetland
	SC	S3	G5	2017-05-17	28	Hardwood to mixed forest (forest, upland),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

ATTACHMENT E

Atlantic Resource Cons
Engineering Strategies and

STORMWATER MANAGEMENT REPORT
YORK RIDGE SUBDIVISION
NORTH YARMOUTH, MAINE
MARCH 2021

INTRODUCTION

The project is a 13-lot open space residential subdivision. The project is located off 115 in North Yarmouth, Maine. The property is approximately 92 acres, with a few patches of forested wetlands and a stream that runs along the northeastern corner.

This report discusses the Site's hydrological conditions and quantifies the stormwater runoff generated in the existing and proposed conditions.

DATA COLLECTION AND ASSUMPTIONS

Site Data was gathered from field observations as well as AutoCAD files and drawings. Site contour information was provided by a combination of field survey in the project area and GIS contours outside of the project area. Soils information, vernal pool assessment, BMP test pits and wetlands delineation was provided by Mark Hampton. Calculations were performed to create a HydroCAD stormwater model, which is based on the United States Department of Agriculture's (USDA) Technical Release 20 (TR-20) and Technical Release 55 (TR-55) hydraulic programs.

Curve numbers (CN's) assigned to differing land cover and soil types were taken from tables within the HydroCAD software, which are from the SCS TR-55 manual, revised 1986. 24-hour rainfall depths were taken from the 'Stormwater Management for Maine: Volume III BMP's Technical Design Manual, January 2006". Time of concentrations were calculated with the HydroCAD software using the TR-55 methodologies including direct entry.

EXISTING SITE CONDITIONS

The existing site is nearly half wooded and half open field. The High Intensity Soil Survey (see Attachment G), and test pits were performed on-site by Mark Hampton, which revealed well-draining sandy soils in all locations (see Attachment G).

The site generally drains to the southwest where there is an existing pond on the abutting parcel. This area is considered Point of Analysis #1 for the purposes of this report. The north eastern corner of the property drains to the east where it begins to channelize. The beginning of this channel is called Point of Analysis #2.

541 US Route One, Suite 21
Freeport, Maine 04032
207-266-5618

PROPOSED SITE CONDITIONS

The proposed improvements will include building approximately 1,200 feet of new road. The road will be 22 feet wide with a 5 foot paved sidewalk on one side.

The improvements don't trigger any Maine Department of Environmental Protection permits, but the project is still being designed to Chapter 500 standards.

All points of analysis have been retained from the pre development conditions.

In order to achieve stormwater quantity and quality mitigation, an Underdrained Soil Filters (UDSF) has been designed to both attenuate and treat stormwater run-off flows. A level spreader ahead of a meadow buffer will be used to treat a portion of the new road.

WATER QUANTITY & QUALITY

Water Quality and Quantity mitigation will be achieved through the installation of the aforementioned stormwater BMP. The soil filters intercepts the vast majority of stormwater from the developed areas. A summary comparison of stormwater peak flows can be found below:

POA	2 YR -PRE (cfs)	2 YR - POST (cfs)	10 YR - PRE (cfs)	10 YR – POST (cfs)	25 YR – PRE (cfs)	25 YR – POST (cfs)
#1	9.17	9.16	36.26	35.98	65.63	65.06
#2	4.52	4.52	12.04	12.04	19.09	19.09

The peak flows are decreased for the 2 year and 10-year storms. During a 25-year storm the peak runoff increases 0.5%, which we would consider negligible for a watershed of this size.

Stormwater quality mitigation is achieved through the use of the underdrained soil filter BMP. A summary of stormwater treatment percentages can be found as Attachment D. **Total project treatment results in the treatment 100% of impervious area and 90% of total developed area.**

All construction will be in accordance with the most current Maine Erosion and Sedimentation Control Best Management Practices. These measures include temporary and permanent seeding, sediment barriers, and stabilized construction entrance. These measures are described on the enclosed Drawing C-300, "Erosion & Sedimentation Control Notes & Details."

CONCLUSIONS

This project will use long-term and short-term erosion control measures that will mitigate environmental impacts from stormwater. This project will not have any significant adverse impacts on downstream properties as a result of stormwater.

ATTACHMENTS

Attachment A – Pre and Post Development Hydrologic Calculations
Attachment B – Stormwater Quality Sizing Calculations
Attachment C - Stormwater Treatment Summary
Attachment D – Stormwater Maintenance Plan
Attachment E – Pre and Post Development Watershed Maps

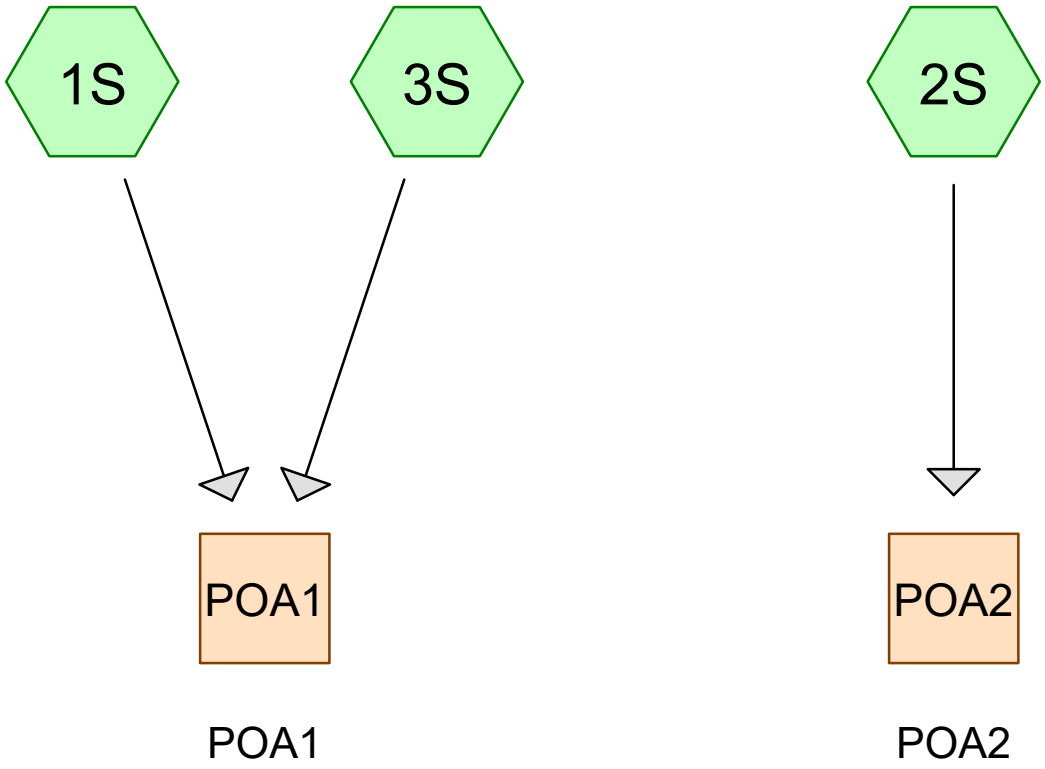
ADDITIONAL REFERENCES

Soil Survey - Attachment G

ATLANTIC RESOURCE CONSULTANTS

Charles E. Burnham, PE

Attachment A – Pre and Post Development Hydrologic Calculations



Subcat Reach Pond Link

Routing Diagram for 20-049 Pre-Development
Prepared by Full Version, Printed 3/30/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
37.167	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S)
19.927	74	>75% Grass cover, Good, HSG C (1S, 3S)
0.121	98	Impervious (1S)
37.450	73	Woods, Fair, HSG C (1S, 2S)
10.129	70	Woods, Good, HSG C (1S, 2S)
104.794	**61**	**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
37.167	0.000	19.927	0.000	0.000	57.094	>75% Grass cover, Good	1S, 2S, 3S
0.000	0.000	0.000	0.000	0.121	0.121	Impervious	1S
0.000	0.000	37.450	0.000	0.000	37.450	Woods, Fair	1S, 2S
0.000	0.000	10.129	0.000	0.000	10.129	Woods, Good	1S, 2S
37.167	**0.000**	**67.506**	**0.000**	**0.121**	**104.794**	**TOTAL AREA**	

Summary for Subcatchment 1S:

Runoff = 8.62 cfs @ 13.13 hrs, Volume= 2.571 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	1,342,242	73	Woods, Fair, HSG C
	644,441	74	>75% Grass cover, Good, HSG C
	1,356,531	39	>75% Grass cover, Good, HSG A
*	5,289	98	Impervious
	283,453	70	Woods, Good, HSG C
	3,631,956	60	Weighted Average
	3,626,667		99.85% Pervious Area
	5,289		0.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.2	100	0.0050	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
19.5	859	0.0110	0.73		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	468	0.0120	7.53	271.25	**Channel Flow, C-D** Area= 36.0 sf Perim= 22.0' r= 1.64' n= 0.030 Earth, grassed & winding
18.2	905	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
63.9	2,332	Total			

Summary for Subcatchment 2S:

Runoff = 4.52 cfs @ 12.46 hrs, Volume= 0.653 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
289,071	73	Woods, Fair, HSG C
55,920	39	>75% Grass cover, Good, HSG A
157,767	70	Woods, Good, HSG C
502,758	68	Weighted Average
502,758		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
15.7	1,361	0.0840	1.45		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
28.2	1,461	Total			

Summary for Subcatchment 3S:

Runoff = 0.97 cfs @ 12.60 hrs, Volume= 0.228 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
206,523	39	>75% Grass cover, Good, HSG A
223,580	74	>75% Grass cover, Good, HSG C
430,103	57	Weighted Average
430,103		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
10.6	797	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	443	0.0430	14.44	866.33	**Channel Flow, C-D** Area= 60.0 sf Perim= 36.0' r= 1.67' n= 0.030 Earth, grassed & winding
26.2	1,340	Total			

Summary for Reach POA1: POA1

Inflow Area = 93.252 ac, 0.13% Impervious, Inflow Depth = 0.36" for 2-Yr Storm event
Inflow = 9.17 cfs @ 13.12 hrs, Volume= 2.800 af
Outflow = 9.17 cfs @ 13.12 hrs, Volume= 2.800 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Reach POA2: POA2

Inflow Area = 11.542 ac, 0.00% Impervious, Inflow Depth = 0.68" for 2-Yr Storm event
Inflow = 4.52 cfs @ 12.46 hrs, Volume= 0.653 af
Outflow = 4.52 cfs @ 12.46 hrs, Volume= 0.653 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Subcatchment 1S:

Runoff = 34.09 cfs @ 12.99 hrs, Volume= 7.464 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	1,342,242	73	Woods, Fair, HSG C
	644,441	74	>75% Grass cover, Good, HSG C
	1,356,531	39	>75% Grass cover, Good, HSG A
*	5,289	98	Impervious
	283,453	70	Woods, Good, HSG C
	3,631,956	60	Weighted Average
	3,626,667		99.85% Pervious Area
	5,289		0.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.2	100	0.0050	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
19.5	859	0.0110	0.73		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	468	0.0120	7.53	271.25	**Channel Flow, C-D** Area= 36.0 sf Perim= 22.0' r= 1.64' n= 0.030 Earth, grassed & winding
18.2	905	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
63.9	2,332	Total			

Summary for Subcatchment 2S:

Runoff = 12.04 cfs @ 12.43 hrs, Volume= 1.539 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
289,071	73	Woods, Fair, HSG C
55,920	39	>75% Grass cover, Good, HSG A
157,767	70	Woods, Good, HSG C
502,758	68	Weighted Average
502,758		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
15.7	1,361	0.0840	1.45		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
28.2	1,461	Total			

Summary for Subcatchment 3S:

Runoff = 5.04 cfs @ 12.45 hrs, Volume= 0.739 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
206,523	39	>75% Grass cover, Good, HSG A
223,580	74	>75% Grass cover, Good, HSG C
430,103	57	Weighted Average
430,103		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
10.6	797	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	443	0.0430	14.44	866.33	**Channel Flow, C-D** Area= 60.0 sf Perim= 36.0' r= 1.67' n= 0.030 Earth, grassed & winding
26.2	1,340	Total			

Summary for Reach POA1: POA1

Inflow Area = 93.252 ac, 0.13% Impervious, Inflow Depth = 1.06" for 10-Yr Storm event
Inflow = 36.26 cfs @ 12.94 hrs, Volume= 8.204 af
Outflow = 36.26 cfs @ 12.94 hrs, Volume= 8.204 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Reach POA2: POA2

Inflow Area = 11.542 ac, 0.00% Impervious, Inflow Depth = 1.60" for 10-Yr Storm event
Inflow = 12.04 cfs @ 12.43 hrs, Volume= 1.539 af
Outflow = 12.04 cfs @ 12.43 hrs, Volume= 1.539 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Subcatchment 1S:

Runoff = 61.49 cfs @ 12.92 hrs, Volume= 12.451 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	1,342,242	73	Woods, Fair, HSG C
	644,441	74	>75% Grass cover, Good, HSG C
	1,356,531	39	>75% Grass cover, Good, HSG A
*	5,289	98	Impervious
	283,453	70	Woods, Good, HSG C
	3,631,956	60	Weighted Average
	3,626,667		99.85% Pervious Area
	5,289		0.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.2	100	0.0050	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
19.5	859	0.0110	0.73		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	468	0.0120	7.53	271.25	**Channel Flow, C-D** Area= 36.0 sf Perim= 22.0' r= 1.64' n= 0.030 Earth, grassed & winding
18.2	905	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
63.9	2,332	Total			

Summary for Subcatchment 2S:

Runoff = 19.09 cfs @ 12.41 hrs, Volume= 2.374 af, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
289,071	73	Woods, Fair, HSG C
55,920	39	>75% Grass cover, Good, HSG A
157,767	70	Woods, Good, HSG C
502,758	68	Weighted Average
502,758		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
15.7	1,361	0.0840	1.45		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
28.2	1,461	Total			

Summary for Subcatchment 3S:

Runoff = 9.76 cfs @ 12.41 hrs, Volume= 1.280 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
206,523	39	>75% Grass cover, Good, HSG A
223,580	74	>75% Grass cover, Good, HSG C
430,103	57	Weighted Average
430,103		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
10.6	797	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	443	0.0430	14.44	866.33	**Channel Flow, C-D** Area= 60.0 sf Perim= 36.0' r= 1.67' n= 0.030 Earth, grassed & winding
26.2	1,340	Total			

Summary for Reach POA1: POA1

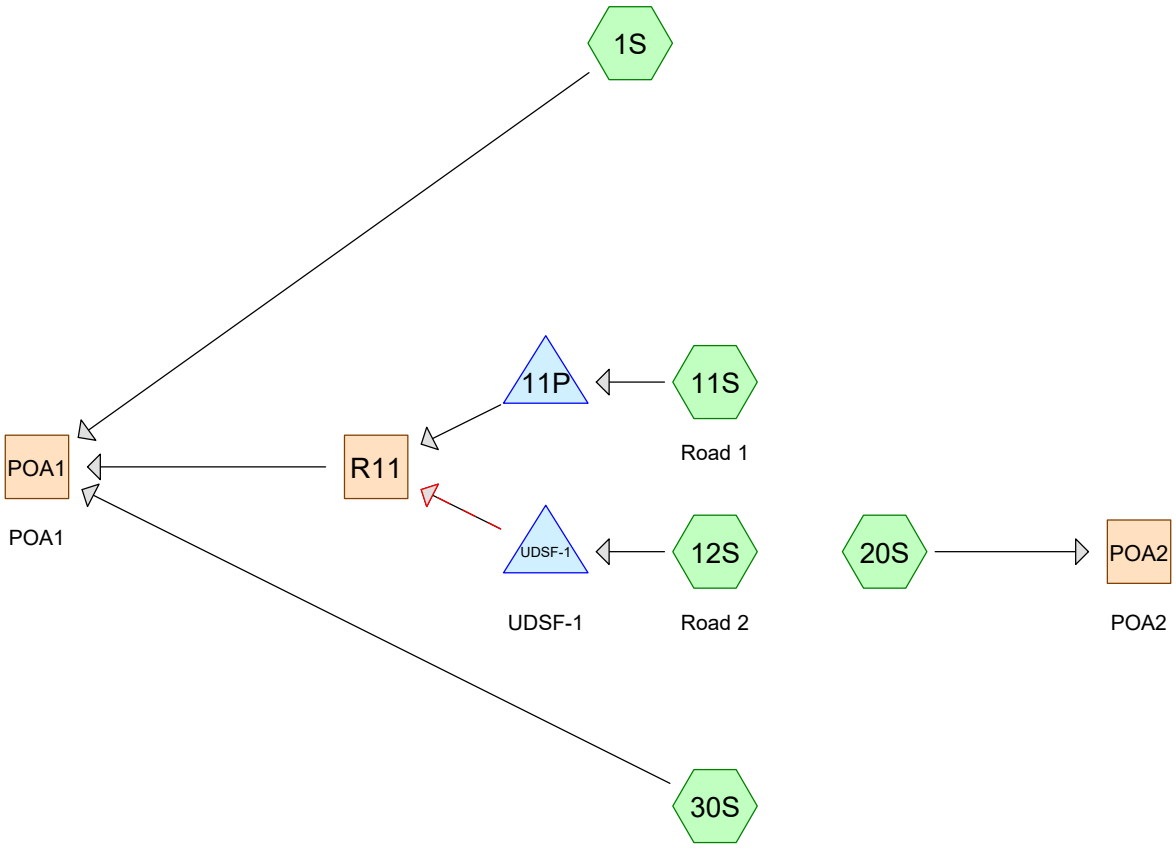
Inflow Area = 93.252 ac, 0.13% Impervious, Inflow Depth = 1.77" for 25-Yr Storm event
Inflow = 65.63 cfs @ 12.86 hrs, Volume= 13.732 af
Outflow = 65.63 cfs @ 12.86 hrs, Volume= 13.732 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Reach POA2: POA2

Inflow Area = 11.542 ac, 0.00% Impervious, Inflow Depth = 2.47" for 25-Yr Storm event
Inflow = 19.09 cfs @ 12.41 hrs, Volume= 2.374 af
Outflow = 19.09 cfs @ 12.41 hrs, Volume= 2.374 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs



Subcat Reach Pond Link

Routing Diagram for 20-049 Post-Development
Prepared by Full Version, Printed 3/30/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
37.260	39	>75% Grass cover, Good, HSG A (1S, 11S, 12S, 20S, 30S)
19.021	74	>75% Grass cover, Good, HSG C (1S, 11S, 12S, 30S)
0.067	98	Curb (11S, 12S)
0.121	98	Impervious (1S)
0.608	98	Road (11S, 12S)
0.137	98	Sidewalk (11S, 12S)
37.450	73	Woods, Fair, HSG C (1S, 20S)
10.129	70	Woods, Good, HSG C (1S, 20S)
104.794	**61**	**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
37.260	0.000	19.021	0.000	0.000	56.281	>75% Grass cover, Good	1S, 11S, 12S, 20S, 30S
0.000	0.000	0.000	0.000	0.067	0.067	Curb	11S, 12S
0.000	0.000	0.000	0.000	0.121	0.121	Impervious	1S
0.000	0.000	0.000	0.000	0.608	0.608	Road	11S, 12S
0.000	0.000	0.000	0.000	0.137	0.137	Sidewalk	11S, 12S
0.000	0.000	37.450	0.000	0.000	37.450	Woods, Fair	1S, 20S
0.000	0.000	10.129	0.000	0.000	10.129	Woods, Good	1S, 20S
37.260	**0.000**	**66.600**	**0.000**	**0.934**	**104.794**	**TOTAL AREA**	

Summary for Subcatchment 1S:

Runoff = 8.52 cfs @ 13.13 hrs, Volume= 2.542 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	1,342,242	73	Woods, Fair, HSG C
	602,580	74	>75% Grass cover, Good, HSG C
	1,356,531	39	>75% Grass cover, Good, HSG A
*	5,289	98	Impervious
	283,453	70	Woods, Good, HSG C
	3,590,095	60	Weighted Average
	3,584,806		99.85% Pervious Area
	5,289		0.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.2	100	0.0050	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
19.5	859	0.0110	0.73		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	468	0.0120	7.53	271.25	**Channel Flow, C-D** Area= 36.0 sf Perim= 22.0' r= 1.64' n= 0.030 Earth, grassed & winding
18.2	905	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
63.9	2,332	Total			

Summary for Subcatchment 11S: Road 1

Runoff = 0.66 cfs @ 12.41 hrs, Volume= 0.084 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	3,133	98	Sidewalk
*	950	98	Curb
*	13,954	98	Road
	997	74	>75% Grass cover, Good, HSG C
	3,013	39	>75% Grass cover, Good, HSG A
	22,047	89	Weighted Average
	4,010		18.19% Pervious Area
	18,037		81.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5 Minute Min**
25.2	100	0.0050	0.07		**Sheet Flow, Sheet Flow From Level Spreader**
					Grass: Dense n= 0.240 P2= 3.10"
30.2	100	Total			

Summary for Subcatchment 12S: Road 2

Runoff = 1.26 cfs @ 12.07 hrs, Volume= 0.089 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	2,819	98	Sidewalk
*	1,976	98	Curb
*	12,549	98	Road
	1,390	74	>75% Grass cover, Good, HSG C
	1,076	39	>75% Grass cover, Good, HSG A
	19,810	93	Weighted Average
	2,466		12.45% Pervious Area
	17,344		87.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5 Minute Min**

Summary for Subcatchment 20S:

Runoff = 4.52 cfs @ 12.46 hrs, Volume= 0.653 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
289,071	73	Woods, Fair, HSG C
55,920	39	>75% Grass cover, Good, HSG A
157,767	70	Woods, Good, HSG C
502,758	68	Weighted Average
502,758		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.13		**Sheet Flow, A-B**
					Woods: Light underbrush n= 0.400 P2= 3.10"
15.7	1,361	0.0840	1.45		**Shallow Concentrated Flow, B-C**
					Woodland Kv= 5.0 fps
28.2	1,461	Total			

Summary for Subcatchment 30S:

Runoff = 0.97 cfs @ 12.60 hrs, Volume= 0.228 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
206,523	39	>75% Grass cover, Good, HSG A
223,580	74	>75% Grass cover, Good, HSG C
430,103	57	Weighted Average
430,103		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
10.6	797	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	443	0.0430	14.44	866.33	**Channel Flow, C-D** Area= 60.0 sf Perim= 36.0' r= 1.67' n= 0.030 Earth, grassed & winding
26.2	1,340	Total			

Summary for Reach POA1: POA1

Inflow Area = 93.252 ac, 1.00% Impervious, Inflow Depth = 0.37" for 2-Yr Storm event
Inflow = 9.16 cfs @ 13.12 hrs, Volume= 2.855 af
Outflow = 9.16 cfs @ 13.12 hrs, Volume= 2.855 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Reach POA2: POA2

Inflow Area = 11.542 ac, 0.00% Impervious, Inflow Depth = 0.68" for 2-Yr Storm event
Inflow = 4.52 cfs @ 12.46 hrs, Volume= 0.653 af
Outflow = 4.52 cfs @ 12.46 hrs, Volume= 0.653 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

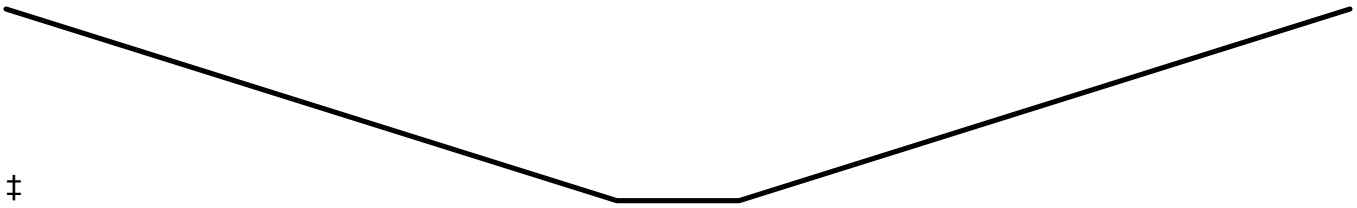
Summary for Reach R11:

Inflow Area = 0.961 ac, 84.53% Impervious, Inflow Depth = 1.07" for 2-Yr Storm event
Inflow = 0.24 cfs @ 12.51 hrs, Volume= 0.085 af
Outflow = 0.20 cfs @ 15.06 hrs, Volume= 0.085 af, Atten= 16%, Lag= 153.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.52 fps, Min. Travel Time= 61.4 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 61.4 min

Peak Storage= 728 cf @ 14.04 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 2.00' Flow Area= 240.0 sf, Capacity= 1,860.62 cfs

20.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 50.0 '/' Top Width= 220.00'
Length= 1,925.0' Slope= 0.0218 '/'
Inlet Invert= 280.00', Outlet Invert= 238.00'



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Summary for Pond 11P:

Inflow Area = 0.506 ac, 81.81% Impervious, Inflow Depth = 1.99" for 2-Yr Storm event
Inflow = 0.66 cfs @ 12.41 hrs, Volume= 0.084 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 293.00' @ 25.70 hrs Surf.Area= 15,415.740 ac Storage= 0.084 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	293.00'	18,565.706 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
293.00	15,415.706	0.000	0.000
294.00	21,715.706	18,565.706	18,565.706

Device	Routing	Invert	Outlet Devices
#1	Primary	293.75'	**100.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=293.00' (Free Discharge)
↑—1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond UDSF-1: UDSF-1

Inflow Area = 0.455 ac, 87.55% Impervious, Inflow Depth = 2.35" for 2-Yr Storm event
Inflow = 1.26 cfs @ 12.07 hrs, Volume= 0.089 af
Outflow = 0.24 cfs @ 12.51 hrs, Volume= 0.085 af, Atten= 81%, Lag= 26.2 min
Primary = 0.24 cfs @ 12.51 hrs, Volume= 0.085 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 282.98' @ 12.51 hrs Surf.Area= 1,256 sf Storage= 1,486 cf
Flood Elev= 123.00' Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= 96.9 min calculated for 0.085 af (96% of inflow)
Center-of-Mass det. time= 73.0 min (865.9 - 792.8)

Volume	Invert	Avail.Storage	Storage Description
#1	280.50'	6,786 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.50	1,256	0.0	0	0
280.82	1,256	40.0	161	161
281.50	1,256	40.0	342	502
282.00	1,256	30.0	188	691
282.50	1,256	30.0	188	879
283.00	1,256	100.0	628	1,507
284.00	1,575	100.0	1,416	2,923
286.00	2,288	100.0	3,863	6,786

Device	Routing	Invert	Outlet Devices
#1	Primary	280.82'	**12.0" Round Culvert** L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 280.82' / 280.27' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	280.82'	**2.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	284.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	285.50'	**9.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.24 cfs @ 12.51 hrs HW=282.98' (Free Discharge)
└**1=Culvert** (Passes 0.24 cfs of 3.79 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.24 cfs @ 6.91 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=280.50' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S:

Runoff = 33.70 cfs @ 12.99 hrs, Volume= 7.378 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	1,342,242	73	Woods, Fair, HSG C
	602,580	74	>75% Grass cover, Good, HSG C
	1,356,531	39	>75% Grass cover, Good, HSG A
*	5,289	98	Impervious
	283,453	70	Woods, Good, HSG C
	3,590,095	60	Weighted Average
	3,584,806		99.85% Pervious Area
	5,289		0.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.2	100	0.0050	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
19.5	859	0.0110	0.73		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	468	0.0120	7.53	271.25	**Channel Flow, C-D** Area= 36.0 sf Perim= 22.0' r= 1.64' n= 0.030 Earth, grassed & winding
18.2	905	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
63.9	2,332	Total			

Summary for Subcatchment 11S: Road 1

Runoff = 1.11 cfs @ 12.40 hrs, Volume= 0.143 af, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	3,133	98	Sidewalk
*	950	98	Curb
*	13,954	98	Road
	997	74	>75% Grass cover, Good, HSG C
	3,013	39	>75% Grass cover, Good, HSG A
	22,047	89	Weighted Average
	4,010		18.19% Pervious Area
	18,037		81.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5 Minute Min**
25.2	100	0.0050	0.07		**Sheet Flow, Sheet Flow From Level Spreader**
					Grass: Dense n= 0.240 P2= 3.10"
30.2	100	Total			

Summary for Subcatchment 12S: Road 2

Runoff = 1.98 cfs @ 12.07 hrs, Volume= 0.144 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	2,819	98	Sidewalk
*	1,976	98	Curb
*	12,549	98	Road
	1,390	74	>75% Grass cover, Good, HSG C
	1,076	39	>75% Grass cover, Good, HSG A
	19,810	93	Weighted Average
	2,466		12.45% Pervious Area
	17,344		87.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5 Minute Min**

Summary for Subcatchment 20S:

Runoff = 12.04 cfs @ 12.43 hrs, Volume= 1.539 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
289,071	73	Woods, Fair, HSG C
55,920	39	>75% Grass cover, Good, HSG A
157,767	70	Woods, Good, HSG C
502,758	68	Weighted Average
502,758		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.13		**Sheet Flow, A-B**
					Woods: Light underbrush n= 0.400 P2= 3.10"
15.7	1,361	0.0840	1.45		**Shallow Concentrated Flow, B-C**
					Woodland Kv= 5.0 fps
28.2	1,461	Total			

Summary for Subcatchment 30S:

Runoff = 5.04 cfs @ 12.45 hrs, Volume= 0.739 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
206,523	39	>75% Grass cover, Good, HSG A
223,580	74	>75% Grass cover, Good, HSG C
430,103	57	Weighted Average
430,103		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
10.6	797	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	443	0.0430	14.44	866.33	**Channel Flow, C-D** Area= 60.0 sf Perim= 36.0' r= 1.67' n= 0.030 Earth, grassed & winding
26.2	1,340	Total			

Summary for Reach POA1: POA1

Inflow Area = 93.252 ac, 1.00% Impervious, Inflow Depth = 1.06" for 10-Yr Storm event
Inflow = 35.98 cfs @ 12.94 hrs, Volume= 8.258 af
Outflow = 35.98 cfs @ 12.94 hrs, Volume= 8.258 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Reach POA2: POA2

Inflow Area = 11.542 ac, 0.00% Impervious, Inflow Depth = 1.60" for 10-Yr Storm event
Inflow = 12.04 cfs @ 12.43 hrs, Volume= 1.539 af
Outflow = 12.04 cfs @ 12.43 hrs, Volume= 1.539 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

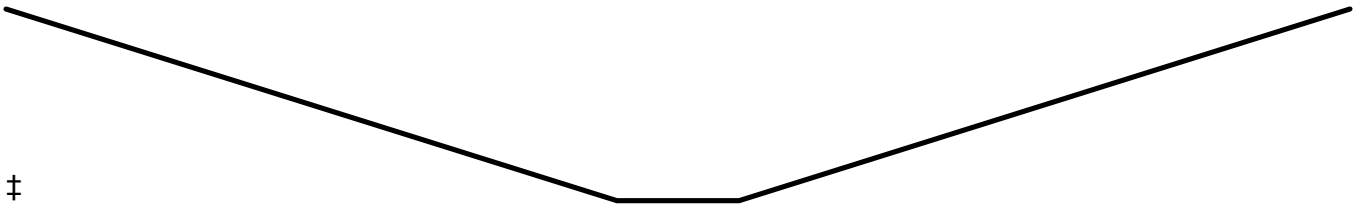
Summary for Reach R11:

Inflow Area = 0.961 ac, 84.53% Impervious, Inflow Depth = 1.75" for 10-Yr Storm event
Inflow = 0.28 cfs @ 12.57 hrs, Volume= 0.141 af
Outflow = 0.25 cfs @ 15.04 hrs, Volume= 0.141 af, Atten= 8%, Lag= 148.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.56 fps, Min. Travel Time= 57.3 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 61.1 min

Peak Storage= 868 cf @ 14.08 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 2.00' Flow Area= 240.0 sf, Capacity= 1,860.62 cfs

20.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 50.0 '/' Top Width= 220.00'
Length= 1,925.0' Slope= 0.0218 '/'
Inlet Invert= 280.00', Outlet Invert= 238.00'



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Summary for Pond 11P:

Inflow Area = 0.506 ac, 81.81% Impervious, Inflow Depth = 3.39" for 10-Yr Storm event
Inflow = 1.11 cfs @ 12.40 hrs, Volume= 0.143 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 293.00' @ 25.70 hrs Surf.Area= 15,415.764 ac Storage= 0.143 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	293.00'	18,565.706 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
293.00	15,415.706	0.000	0.000
294.00	21,715.706	18,565.706	18,565.706

Device	Routing	Invert	Outlet Devices
#1	Primary	293.75'	**100.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=293.00' (Free Discharge)
↑—1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond UDSF-1: UDSF-1

Inflow Area = 0.455 ac, 87.55% Impervious, Inflow Depth = 3.81" for 10-Yr Storm event
Inflow = 1.98 cfs @ 12.07 hrs, Volume= 0.144 af
Outflow = 0.28 cfs @ 12.57 hrs, Volume= 0.141 af, Atten= 86%, Lag= 29.7 min
Primary = 0.28 cfs @ 12.57 hrs, Volume= 0.141 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 283.74' @ 12.57 hrs Surf.Area= 1,492 sf Storage= 2,522 cf
Flood Elev= 123.00' Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= 108.6 min calculated for 0.140 af (97% of inflow)
Center-of-Mass det. time= 93.3 min (873.2 - 779.9)

Volume	Invert	Avail.Storage	Storage Description
#1	280.50'	6,786 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.50	1,256	0.0	0	0
280.82	1,256	40.0	161	161
281.50	1,256	40.0	342	502
282.00	1,256	30.0	188	691
282.50	1,256	30.0	188	879
283.00	1,256	100.0	628	1,507
284.00	1,575	100.0	1,416	2,923
286.00	2,288	100.0	3,863	6,786

Device	Routing	Invert	Outlet Devices
#1	Primary	280.82'	**12.0" Round Culvert** L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 280.82' / 280.27' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	280.82'	**2.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	284.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	285.50'	**9.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.28 cfs @ 12.57 hrs HW=283.74' (Free Discharge)
└**1=Culvert** (Passes 0.28 cfs of 4.55 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 8.08 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=280.50' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S:

Runoff = 60.79 cfs @ 12.92 hrs, Volume= 12.308 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	1,342,242	73	Woods, Fair, HSG C
	602,580	74	>75% Grass cover, Good, HSG C
	1,356,531	39	>75% Grass cover, Good, HSG A
*	5,289	98	Impervious
	283,453	70	Woods, Good, HSG C
	3,590,095	60	Weighted Average
	3,584,806		99.85% Pervious Area
	5,289		0.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.2	100	0.0050	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
19.5	859	0.0110	0.73		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	468	0.0120	7.53	271.25	**Channel Flow, C-D** Area= 36.0 sf Perim= 22.0' r= 1.64' n= 0.030 Earth, grassed & winding
18.2	905	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
63.9	2,332	Total			

Summary for Subcatchment 11S: Road 1

Runoff = 1.47 cfs @ 12.40 hrs, Volume= 0.192 af, Depth= 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	3,133	98	Sidewalk
*	950	98	Curb
*	13,954	98	Road
	997	74	>75% Grass cover, Good, HSG C
	3,013	39	>75% Grass cover, Good, HSG A
	22,047	89	Weighted Average
	4,010		18.19% Pervious Area
	18,037		81.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5 Minute Min**
25.2	100	0.0050	0.07		**Sheet Flow, Sheet Flow From Level Spreader**
					Grass: Dense n= 0.240 P2= 3.10"
30.2	100	Total			

Summary for Subcatchment 12S: Road 2

Runoff = 2.55 cfs @ 12.07 hrs, Volume= 0.189 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	2,819	98	Sidewalk
*	1,976	98	Curb
*	12,549	98	Road
	1,390	74	>75% Grass cover, Good, HSG C
	1,076	39	>75% Grass cover, Good, HSG A
	19,810	93	Weighted Average
	2,466		12.45% Pervious Area
	17,344		87.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5 Minute Min**

Summary for Subcatchment 20S:

Runoff = 19.09 cfs @ 12.41 hrs, Volume= 2.374 af, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
289,071	73	Woods, Fair, HSG C
55,920	39	>75% Grass cover, Good, HSG A
157,767	70	Woods, Good, HSG C
502,758	68	Weighted Average
502,758		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.13		**Sheet Flow, A-B**
					Woods: Light underbrush n= 0.400 P2= 3.10"
15.7	1,361	0.0840	1.45		**Shallow Concentrated Flow, B-C**
					Woodland Kv= 5.0 fps
28.2	1,461	Total			

Summary for Subcatchment 30S:

Runoff = 9.76 cfs @ 12.41 hrs, Volume= 1.280 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
206,523	39	>75% Grass cover, Good, HSG A
223,580	74	>75% Grass cover, Good, HSG C
430,103	57	Weighted Average
430,103		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
10.6	797	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	443	0.0430	14.44	866.33	**Channel Flow, C-D** Area= 60.0 sf Perim= 36.0' r= 1.67' n= 0.030 Earth, grassed & winding
26.2	1,340	Total			

Summary for Reach POA1: POA1

Inflow Area = 93.252 ac, 1.00% Impervious, Inflow Depth = 1.77" for 25-Yr Storm event
Inflow = 65.06 cfs @ 12.86 hrs, Volume= 13.773 af
Outflow = 65.06 cfs @ 12.86 hrs, Volume= 13.773 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Summary for Reach POA2: POA2

Inflow Area = 11.542 ac, 0.00% Impervious, Inflow Depth = 2.47" for 25-Yr Storm event
Inflow = 19.09 cfs @ 12.41 hrs, Volume= 2.374 af
Outflow = 19.09 cfs @ 12.41 hrs, Volume= 2.374 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

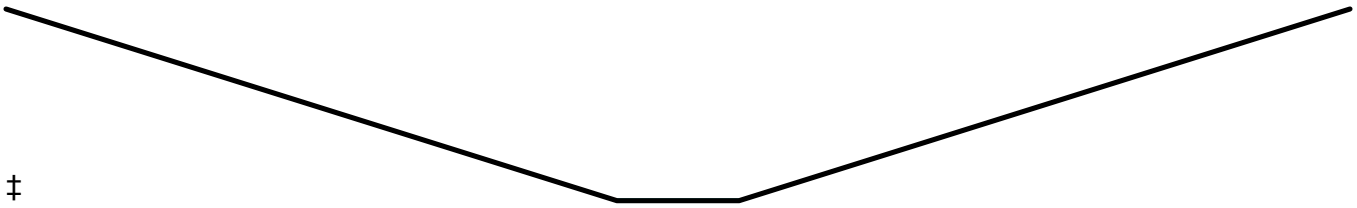
Summary for Reach R11:

Inflow Area = 0.961 ac, 84.53% Impervious, Inflow Depth = 2.31" for 25-Yr Storm event
Inflow = 0.30 cfs @ 12.63 hrs, Volume= 0.185 af
Outflow = 0.29 cfs @ 14.94 hrs, Volume= 0.185 af, Atten= 5%, Lag= 138.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.59 fps, Min. Travel Time= 54.1 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 60.6 min

Peak Storage= 928 cf @ 14.04 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 2.00' Flow Area= 240.0 sf, Capacity= 1,860.62 cfs

20.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 50.0 '/' Top Width= 220.00'
Length= 1,925.0' Slope= 0.0218 '/'
Inlet Invert= 280.00', Outlet Invert= 238.00'



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Summary for Pond 11P:

Inflow Area = 0.506 ac, 81.81% Impervious, Inflow Depth = 4.54" for 25-Yr Storm event
Inflow = 1.47 cfs @ 12.40 hrs, Volume= 0.192 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 293.00' @ 25.70 hrs Surf.Area= 15,415.784 ac Storage= 0.191 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	293.00'	18,565.706 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
293.00	15,415.706	0.000	0.000
294.00	21,715.706	18,565.706	18,565.706

Device	Routing	Invert	Outlet Devices
#1	Primary	293.75'	**100.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=293.00' (Free Discharge)
↑—1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond UDSF-1: UDSF-1

Inflow Area = 0.455 ac, 87.55% Impervious, Inflow Depth = 4.99" for 25-Yr Storm event
Inflow = 2.55 cfs @ 12.07 hrs, Volume= 0.189 af
Outflow = 0.30 cfs @ 12.63 hrs, Volume= 0.185 af, Atten= 88%, Lag= 33.6 min
Primary = 0.30 cfs @ 12.63 hrs, Volume= 0.185 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 284.30' @ 12.63 hrs Surf.Area= 1,681 sf Storage= 3,405 cf
Flood Elev= 123.00' Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= 124.2 min calculated for 0.185 af (98% of inflow)
Center-of-Mass det. time= 111.8 min (884.9 - 773.0)

Volume	Invert	Avail.Storage	Storage Description
#1	280.50'	6,786 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.50	1,256	0.0	0	0
280.82	1,256	40.0	161	161
281.50	1,256	40.0	342	502
282.00	1,256	30.0	188	691
282.50	1,256	30.0	188	879
283.00	1,256	100.0	628	1,507
284.00	1,575	100.0	1,416	2,923
286.00	2,288	100.0	3,863	6,786

Device	Routing	Invert	Outlet Devices
#1	Primary	280.82'	**12.0" Round Culvert** L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 280.82' / 280.27' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	280.82'	**2.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	284.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	285.50'	**9.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.30 cfs @ 12.63 hrs HW=284.30' (Free Discharge)
└**1=Culvert** (Passes 0.30 cfs of 5.04 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.30 cfs @ 8.84 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=280.50' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment B – Stormwater Quality Sizing Calculations

Infiltration Basin #1 Sizing		
		Units
Impervious Area	16,107	Square Feet
Landscaped Area	2,707	Square Feet
Storage Volume Required	1,432	Cubic Feet
Surface Area Required	859	Square Feet
Ponding Depth for Water Quality Volume	~18	Inches
Filter Media Thickness	18	Inches
Filter Media Void Ratio	30%	
Bed Surface Area	1,215	Square Feet
Storage in Filter Media	547	Cubic Feet
Total Water Quality Storage Volume	2,369	Cubic Feet

Meadow Buffer 1

Impervious Area Captured 0.39 acres

Flow Path Inside Buffer 150 feet

Table 5.5
Berm and Flow Path Length per Acre of Impervious area

Hydrologic Soil Group	Length of Flow Path in Buffer (feet)	Berm Length (feet)							
		0-8% Slope				9-15% Slope			
		Per Acre of Impervious Area		Per Acre of Lawn		Per Acre of Impervious Area		Per Acre of Lawn	
		FB	MB	FB	MB	FB	MB	FB	MB
A	75	75	125	25	35	90	150	30	42
	100	65	75	20	25	78	90	24	30
	150	50	60	15	20	60	72	18	24
B	75	100	150	30	45	120	180	36	54
	100	80	100	25	30	96	120	30	36
	150	65	75	20	25	78	90	24	30
C Loamy Sand or Sandy Loam	75	125	150	35	45	150	180	42	54
	100	100	125	30	35	120	150	36	42
	150	75	100	25	30	90	120	30	36
C Silty Loam, Clay Loam or Silty Clay Loam	100	150	200	45	60	180	240	54	72
	150	100	150	30	45	120	180	36	54
D Non-Wetland	150	150	200	45	60	180	240	54	72

FB = Forest Buffer **MB** = Meadow Buffer

NOTE: *These tables were developed using a 1.25 inch, 24 hour storm of type III distribution, giving a maximum unit flow rate of less than 0.009 cfs per foot.*

Berm Length 23.4 feet

A 24-foot level spreader will be built upgradient of Meadow Buffer 1.

Attachment E – Pre and Post Development Watershed Maps (see project plan set)

ATTACHMENT F

SOIL EROSION AND SEDIMENTATION CONTROL

Introduction

The project is a 13-lot open space residential subdivision. The site is located along 115 in North Yarmouth, Maine. The property is approximately 92 acres and has minimal wetlands but certainly has some slopes. The site slope consistently from the western edge up to the east.

Site History and Existing Site Conditions

The existing site is partially wooded and partially open fields. The

The site is slopes from the east to the west and then turns to the south. The runoff all eventually makes it to a large pond just outside the southwestern corner.

Existing Erosion Problems

There are no existing erosion problems evident at the site.

Critical Areas

The critical areas in the proximity of the site are Pleasant River and the surrounding forested wetlands.

Protected Natural Resources

Forested wetlands on the Site have been identified and mapped by Mark Hampton and are shown on the drawings that accompany this submission.

Soil Erosion and Sedimentation Control Measures

The primary goals of the Erosion and Sediment Control Plan for the project are to minimize exposure of native soil materials during construction, to prevent soil erosion and sediment transport to downstream areas, receiving waters and natural resources. Measures will also be taken to ensure sediment is not tracked onto adjacent streets and that stockpiles of imported construction materials are protected from potential contamination.

The primary emphasis of the Erosion and Sedimentation Control Plan to be implemented for this project is as follows:

- Construction Schedule – Major earth moving activities at the site will be scheduled for the summer and will be started when a suitable weather window has been identified. This will minimize the potential for exposure of bare soil to inclement weather.
- Temporary Measures – Planning the project to have erosion resistant measures in place with measures to prevent erosion from occurring. The plan includes measures to intercept and convey runoff to temporary sediment control devices as the construction of the project occurs.
- Stabilization of areas denuded to underlying parent material to minimize the period of soil exposure.

- Stabilization of drainage paths to avoid rill and gully erosion.
- The use of on-site measures to capture sediment (hay bales/silt fence, etc.) before it is conveyed to sediment sumps.

Description and Location of Limits of All Proposed Earth Movements

The proposed project will require stripping and grubbing for the construction of the road. The native sandy soil material is suitable for re-use as fill on the site. This will minimize import/export quantities. The topography is relatively flat, but some leveling and grade adjustment will be required.

Erosion/Sedimentation Control Devices

As part of the site development, the Contractor will be obligated to implement the following erosion and sediment control devices. These devices shall be installed as indicated on the plans or as described within this report. For further reference on these devices, see the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers, Maine DEP, October 2016.*

1. Silt fence shall be installed down slope of any disturbed areas to trap runoff borne sediments. The silt fence shall be installed per the detail provided in the plan set and inspected immediately after each rainfall, and at least weekly in the absence of significant rainfall. The Contractor shall make repairs immediately if there are any signs of erosion or sedimentation below the fence line. If such erosion is observed, the Contractor shall take proactive action to identify the cause of the erosion and take action to avoid its reoccurrence. Proper placement of stakes and keying the bottom of the fabric into the ground is critical to the fence's effectiveness. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam and measures taken to avoid the concentration of flows not intended to be directed to the silt fence.
2. Twin rows of siltation fence with hay bales shall be installed at the foot of steep slopes and adjacent to protected natural resources (wetland areas).
3. Silt fence shall be installed along the downgradient side of construction work areas, with locations being adjusted along with the construction phasing areas. The Contractor may use erosion mix in place of single silt fence barrier.
4. Silt fence will be installed along the upstream perimeter of the work area as shown on the plans, to divert run-on from upslope areas and prevent surface water from entering the construction area. If necessary, and at the direction of the Project Engineer, interception trenches shall be constructed to prevent shallow groundwater from flowing into construction areas
5. Temporary sediment sumps will provide sedimentation control for stormwater runoff from disturbed areas during construction until stabilization has been achieved.
6. A construction entrance will be constructed at all access points onto the site to prevent tracking of soil onto adjacent local roads and streets and the existing parking lot.
7. Stone sediment traps or a premanufactured SiltSack™ and a sediment bag will be installed at catch basin inlets to prevent silt from entering the storm drain system. Installation details are provided in the plan set on the erosion control detail sheets.
8. Dirtbags™ will be required to be on site and available for construction dewatering. The Contractor will be required to provide four Dirtbags™ with one prepared for operation prior to commencing any trenching operations.

9. Silt logs are an option for stone check dams and may be substituted provided the devices are well anchored.

Temporary Erosion/Sedimentation Control Measures

The following are planned as temporary erosion/sedimentation control measures during construction:

The primary and most effective soil erosion and sediment control measure is proactive work scheduling to minimize exposure of erodible soils. The Contractor will make every effort to promptly stabilize and disturbed areas on the site, after removal of existing vegetation, by placing imported granular material over disturbed areas. This will limit exposure of native soils and fill materials and provide a stable surface with minimal erosion potential.

1. It is anticipated that work on the site will begin in the Spring of 2021. This will allow for the earthwork to be undertaken in the early and mid-summer months when the risk of inclement weather is significantly lower. Scheduling of the field work will be critical to minimizing potential soil erosion impacts. The Contractor will be responsible for selecting an appropriate weather window in which to commence the work to minimize erosion and sediment transport risk.
2. Crushed stone-stabilized construction entrances will be placed at any construction access points from adjacent streets. The locations of the construction entrances shown on the drawings should be considered illustrative and will need to be adjusted as appropriate and located at any area where there is the potential for tracking of mud and debris onto existing roads or streets. Stone stabilized construction entrances will require the stone to be removed and replaced, as it becomes covered or filled with mud and material tracked by vehicles exiting the site.
3. Silt fence shall be installed along the downgradient side of the proposed improvement areas. The silt fence will remain in place and properly maintained until the site is acceptably stabilized. Silt fence needs to be checked to ensure the bottom is properly keyed in and inspected after significant rains. Wood chips from clearing can be used in front of the silt fence to provide an extra margin of safety and security for the silt fence. This practice is encouraged, provided the chips are removed when the fence is removed.
4. Silt fencing with a maximum stake spacing of 6 feet should be used, unless the fence is supported by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence should be properly anchored a minimum of 6" per the plan detail and backfilled. Any silt fence identified by the owner or reviewing agencies as not being properly installed during construction shall be immediately repaired in accordance with the installation details.
5. Dirtbags™ shall be installed in accordance with the details in the plan set. The Dirtbags'™ function on the project is to receive any water pumped from excavations during construction. A Dirtbag™ shall be installed and prepared for operation prior to any trenching on site. When Dirtbags™ are observed to be at 50% capacity, they shall be cleaned or replaced. Stone under the Dirtbag™ shall be removed and replaced concurrently with the replacement of the Dirtbag™.
6. Stone check dams, silt logs, or hay bale barriers will be installed at any evident concentrated flow discharge points during construction and earthwork operations

7. Storm drain catch basin inlet protection shall be provided through the use of stone sediment barriers or a premanufactured SiltSack™ as distributed by A. H. Harris Company, Portland, Maine. Stone sediment barrier installation details are provided in the plan set. The barriers or SiltSacks™ shall be inspected after each rainfall and repairs made as necessary, including the removal of sediment. Sediment shall be removed and the barrier or SiltSack™ restored to its original dimensions when the sediment has accumulated to one-half the design depth of the barrier. Sediment shall be removed from SiltSacks™ as necessary. Inlet protection shall be removed when the tributary drainage area has been stabilized.
8. All slopes steeper than 4:1 shall receive erosion control blankets.
9. Areas of visible erosion and the temporary sediment sumps shall be stabilized with crushed stone. The size of the stone shall be determined by the contractor's designated representative in consultation with the Owner.

Special Measures for Summer Construction

The summer period is generally optimum for construction in Maine, but it is also the period when intense short duration storms are most common, making denuded areas very susceptible to erosion, when dust control needs to be the most stringent, and when the potential to establish vegetation is often restricted by moisture deficit. During these periods, the Contractor must:

1. Implement a program to apply dust control measures on a daily basis except those days where precipitation is sufficient to suppress dust formation. This program shall extend to and include adjacent streets.
2. Spray any mulches with water after anchoring to dampen the soil and encourage early growth. Spraying may be required several times. Temporary seed may be required until the late summer seeding season.
3. Cover stockpiles of fine-grained materials, or excavated soils which are susceptible to erosion. To protect from the intense, short-duration storms which are more prevalent in the summer months.
4. Take additional steps needed, including watering, or covering excavated materials to control fugitive dust emissions to minimize reductions in visibility and the airborne disbursement of fine-grained soils. This is particularly important given the potential presence of soil contaminants, and the proximity of along the adjacent streets and properties.
5. These measures may also be required in the spring and fall during the drier periods of these seasons.

Permanent Erosion Control Measures

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

1. The drainage conveyance systems have been designed to intercept and convey the 25-year storm.
2. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.), will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas where the finish grade slope is greater than 10

percent. Native topsoil shall be stockpiled and temporarily stabilized with seed and mulch and reused for final restoration when it is of sufficient quality.

3. Catch basins shall be provided with sediment sumps for all outlet pipes that are 12" in diameter or greater or where winter sand use is contemplated. A sediment collection bag shall be installed in all basins.

Timing and Sequence of Erosion/Sedimentation Control Measures

The following construction sequence shall be required to ensure the effectiveness of the erosion and sedimentation control measures is optimized.

The following construction sequence is required:

1. Install construction entrances.
2. Install safety and construction fence to secure the site for demolition.
3. Install all perimeter siltation fence and erosion control barriers. Particular attention shall be paid to areas upstream of protected natural resources and in the vicinity of the two streams at the project site. Signs shall be erected periodically along these perimeter barriers indicating that the downstream areas are off limits to all construction activities.
4. Conduct demolition activities including salvage of materials that can be used for site work aggregate.
5. Construct activities on the site to optimize the handling of materials and restrict the denuded areas to the time stipulated.
6. Construct stabilized pads for foundation and building construction.
7. Maintain stabilized site access and working areas during building construction.
8. Install binder pavement.
9. Landscape (loam and seed).
10. Install surface pavements.
11. Install striping, signage, and miscellaneous site improvements.
12. Review and punch the site.
13. Remove any temporary erosion control measures.

It is anticipated that site construction on the project will be completed by the end of summer 2021, with some building finishing work extending into the fall. The site will be stabilized prior to October 1st and there will be no Winter Site Construction work.

Maine Construction General Permit Requirements

The project will be constructed by a General Contractor under contract to the Owner/Applicant. The Contractor will submit a detailed schedule for the completion of the work at the start of construction.

The work will be conducted in sections which will limit the amount of exposed area to those areas in which work is expected to be undertaken during the next 30 days. Exposed areas will be covered and stabilized as rapidly as practical. All areas will be permanently stabilized within 7 days of final grading and temporarily stabilized within 7 days of initial disturbance or before a predicted storm event of over ½" of rain. The area of denuded, non-stabilized construction shall be limited to the minimum area practicable. An area shall be considered to be denuded until the subbase gravel is installed in parking areas, or the areas of future loam and seed have been loamed, seeded, and mulched, or stabilized with erosion control blanket.

The Contractor must maintain an accurate set of record drawings indicating the date when an area is first denuded, the date of temporary stabilization, and the date of final stabilization. On October 1 of

any calendar year, the Contractor shall submit a detailed plan for stabilizing the site for the winter and a description of what activities are planned during the winter.

The Contractor must install any added measures which may be necessary to control erosion/sedimentation and fugitive dust emissions from the site, with adjustments made dependent upon forecasted and actual site and weather conditions.

Maintenance of the Erosion/Sedimentation Control Features

The project will be contracted by the Owner. The Contractor shall prepare a list and designate by name, address and telephone number all individuals who will be responsible for implementation, inspection, and maintenance of all erosion control measures identified within this section and as contained in the Erosion and Sedimentation Control Plan of the contract drawings. Specific responsibilities of the inspector(s) will include:

Execution of the Contractor/Subcontractor Certification contained in Attachment B by any and all parties responsible for erosion control measures on the site.

A weekly certification stating compliance, any deviations, and corrective measures necessary to comply with the erosion control requirements of this section shall be prepared and signed by the inspector(s).
In addition to the weekly certifications, the inspector(s) shall maintain written reports recording construction activities on site which include:

1. Dates when major grading activities occur in a particular area.
2. Dates when major construction activities cease in a particular area, either temporarily or permanently.
3. Dates when an area is stabilized.
4. Inspection of this project work site on a weekly basis and after each significant rainfall event (0.25 inch or more within any consecutive 24-hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized.

Inspection of the project work site shall include:

1. Identification of proper erosion control measure installation in accordance with the erosion control detail sheet or as specified in this section.
2. Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
3. Identify areas which appear vulnerable to erosion and determine additional erosion control measures which should be used to improve conditions.
4. Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 90 percent is required prior to removal of erosion control measures.
5. All erosion controls shall be removed within 30 days of permanent stabilization except for mulch and netting not detrimental to the project. Removals shall include but not be limited to all silt fence, hay bales, inlet protection, and stone check dams.
6. Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.
7. Silt sacks should be removed and replaced at least every three months and at any time where the weekly inspection reveals that siltation has significantly retarded the rate of flow through the silt sack.
8. If inspection of the site indicates a change should be made to the erosion control plan, to either improve effectiveness or correct a site-specific deficiency, the inspector shall immediately implement the corrective measure and notify the Owner of the change.

All certifications, inspection forms, and written reports prepared by the inspector(s) shall be filed with the Owner, and the Permit File contained on the project site. All written certifications, inspection forms, and written reports must be filed within one (1) week of the inspection date.

The Contractor has sole responsibility for complying with the erosion/sediment control report, including control of fugitive dust, and shall be responsible for any monetary penalties resulting from failure to comply with these standards.

Once construction has been completed, long-term maintenance of the stormwater management system will the responsibility of the applicant. Operations & Maintenance items with a list of maintenance requirements and frequency are listed at the end of Section 12 of the Maine DEP Permit Application.

Preconstruction Conference

Prior to any construction at the site, representatives of the Contractor, the Architect, the Owner, and the site design engineer shall meet to discuss the scheduling of the site construction and the designation of the responsible parties for implementing the plan. The Contractor shall be responsible for scheduling the meeting. Prior to the meeting, the Contractor will prepare a detailed schedule and a marked-up site plan indicating areas and components of the work and key dates showing date of disturbance and completion of the work. The Contractor shall conduct a meeting with employees and sub-contractors to review the erosion control plan, the construction techniques which will be employed to implement the plan and provide a list of attendees and items discussed at the meeting to the Owner. Three copies of the schedule, the Contractor's meeting minutes, and marked-up site plan shall be provided to the Owner.

ATTACHMENT G

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6453

January 28, 2021

Mr. Charlie Burnham
Atlantic Resource Consultants
541 US Route 1 Suite 21
Freeport, ME 04032

Re: Preliminary soil evaluation, York Property Subdivision, North Yarmouth, ME

Dear Charlie,

I have completed a preliminary soil evaluation on a proposed 13 lot subdivision located on the York property on Gray Road North Yarmouth, ME. The soil evaluation was conducted in accordance with the Maine Subsurface Wastewater Disposal Rules dated August 2015, as amended. I evaluated a backhoe excavated soil test pit in the location of each septic system for each lot. The soils found on each lot are glacial outwash soils with a limiting factor greater than 48 inches. I was able to find suitable soils and area for a septic system on the parcel for each lot. Soil log descriptions are included.

The soils as evaluated meet the minimum requirements of the state rules. As such, each lot has a suitable location for a septic system. Each lot will utilize a denitrifying pretreatment system. The disposal bed for a 4 bedroom system would then require 500 square feet. In my opinion, there are suitable soils and area on the parcel for each septic system. Subsurface wastewater disposal designs can be prepared at a future date.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton L.S.E., C.S.S.
Licensed Site Evaluator #263
Certified Soil Scientist #216

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

Quality services that meet your deadline

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	None Noted
20				
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
6 Profile / B Condition	2 Percent	>48 " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Colton WD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	None Noted
20				
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
6 Profile / B Condition	2 Percent	>48 " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Colton WD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	None Noted
20				
30				
40	Gravelly Sand	Friable	Tan	
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
6 Profile / B Condition	2 Percent	>48 " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Colton WD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	None Noted
20				
30				
40	Gravelly Sand	Friable	Tan	
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
6 Profile / B Condition	2 Percent	>48 " Depth	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Colton WD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark J. Hampton	1/25/2021
Name Printed	**Cert/Lic/Reg. #**
Mark J. Hampton	263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

Exploration Symbol # TP-5 ☒ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	Groundwater	Restrictive Layer	Bedrock
6 Profile / B Condition	2 Percent	>?48 " Depth	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group ____

Exploration Symbol # TP-6 ☒ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	Groundwater	Restrictive Layer	Bedrock
6 Profile / B Condition	2 Percent	>48 " Depth	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group ____

Exploration Symbol # TP-7 ☐ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	Groundwater	Restrictive Layer	Bedrock
6 Profile / B Condition	2 Percent	>48 " Depth	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group ____

Exploration Symbol # TP-8 ☐ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	Groundwater	Restrictive Layer	Bedrock
6 Profile / B Condition	2 Percent	>48 " Depth	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group ____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
	1/25/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. # 263/216

Title ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

Exploration Symbol # TP-9 ☒ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater	Restrictive Layer	Bedrock
6 Profile	B Condition	2 Percent	>?48 Depth	"	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # TP-10 ☒ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater	Restrictive Layer	Bedrock
6 Profile	B Condition	2 Percent	>48 Depth	"	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # TP-11 ☐ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater	Restrictive Layer	Bedrock
6 Profile	B Condition	2 Percent	>48 Depth	"	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # TP-12 ☐ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Gravelly Sand	Friable	Red Brown	
20				None Noted
30	Gravelly Sand	Friable	Tan	
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater	Restrictive Layer	Bedrock
6 Profile	B Condition	2 Percent	>48 Depth	"	☐	☐	☐

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark Hampton	1/25/2021
Name Printed Mark J. Hampton	**Cert/Lic/Reg. #** 263/216

Title ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: York Property Subdivision

Applicant Name: Ben Grover

Project Location (municipality): North Yarmouth

Exploration Symbol # TP-13

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness   Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0–~6	Loamy Sand	Friable	Dark Brown	
~6–~26	Gravelly Sand	Friable	Red Brown	None Noted
~26–60	Gravelly Sand	Friable	Tan	

Soil Details by S.E.:

Soil Classification		Slope	Limiting Factor	
Profile: 6	Condition: B	Percent: 4	Depth: >48 "	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Colton WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # ____

☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness   Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth	Texture	Consistency	Color	Redox Features
0–60				

Soil Classification: Profile ____ Condition ____ Slope Percent ____ Limiting Factor Depth ____ " ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: ____ ☐ Hydric ☐ Non-hydric Hydrologic Soil Group ____

Exploration Symbol # ____

☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness   Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth	Texture	Consistency	Color	Redox Features
0–60				

Soil Classification: Profile ____ Condition ____ Slope Percent ____ Limiting Factor Depth ____ " ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: ____ ☐ Hydric ☐ Non-hydric Hydrologic Soil Group ____

Exploration Symbol # ____

☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness   Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth	Texture	Consistency	Color	Redox Features
0–60				

Soil Classification: Profile ____ Condition ____ Slope Percent ____ Limiting Factor Depth ____ " ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: ____ ☐ Hydric ☐ Non-hydric Hydrologic Soil Group ____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [signature]

Date: 1/25/2021

Name Printed: Mark J. Hampton

Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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MARK HAMPTON ASSOCIATES, INC.

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6453

York Subdivision
80 Gray Road
North Yarmouth, ME
Ben Grover

Soil Narrative Report

DATE:	Soil Profiles observed on January 25, 2021
BASE MAP:	Base plan provided by Atlantic Resource Consultants scale 1 inch equals 100 feet and two foot contours.
GROUND CONTROL:	Soil survey boundaries located by Mark Hampton Associates, Inc. for Class B Soil Survey

Class B-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1 acre or less.
Scale of 1"= 200 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located by means of compass by chaining, pacing or taping from known control points
Base Map –2 foot contour intervals

Provided:

Mapping units of 1/2 acre or less
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by gps equipment with accuracy to less than 3 feet.
Ground topographic survey with one foot contours and ground control provided.

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

C.S.S. #216, L.S.E. #263 1/25/21

Mark J. Hampton Date

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6453

York Subdivision
Gray Road
North Yarmouth, ME
Ben Grover

Dixfield
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from compact loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(B) 3-8%,(C) 8-15%, (D) 15-25%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained with a perched watertable from 1.0 to 2.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer:	Dark brown, stony sandy loam, 0-7"
Subsurface Layer:	Brown, sandy loam, 7-20"
Subsoil Layer:	Olive brown, stony sandy loam 16-31"
Substratum:	Olive gray, stony sandy loam, 25-65"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Colton, Croghan, Au Gres

USE AND MANAGEMENT

Development: There are few limiting factors for building site development

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York Subdivision
Gray Road
North Yarmouth, ME
Ben Grover

Colton
(Typic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from glacial-fluvial, glacio-lacustrine sand.
LANDFORM:	Outwash plains, deltas, and terraces
POSITION IN LANDSCAPE:	Sidehill, shoulders and plains
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Excessively well drained. Depth to seasonal high watertable greater than 4 feet throughout the year.

TYPICAL PROFILE:

Surface Layer:	Grayish brown, sand, 0-8"
Subsurface Layer:	Reddish brown,] gravelly loamy sand, 8-16"
Subsoil Layer:	Yellow-brown, stony, very gravelly sand, 16-25"
Substratum:	Pale brown stony, gravelly sand, 25-72"

HYDROLOGIC GROUP:	Group A
SURFACE RUNOFF:	Very slow to medium
PERMEABILITY:	Rapid or very rapid
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Adams, Croghan, Dixfield

USE AND MANAGEMENT

Development: There are no limiting factors for building site development.

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6453

York Subdivision
Gray Road
North Yarmouth, ME
Ben Grover

Croghan
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from outwash and deltaic sandy deposits.
LANDFORM:	Outwash plains, deltas, and terraces
POSITION IN LANDSCAPE:	Sidehill, shoulders and plains
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained Depth to seasonal high watertable ranges from 1.5 to 2.0 feet below the surface at some time from November to May.

TYPICAL PROFILE:

Surface Layer:	Dark Brown fine sand, 0-7"
Subsurface Layer:	Reddish brown sand, 7-16"
Subsoil Layer:	Brown sand, 16-32"
Substratum:	Gray sand, 32-65"

HYDROLOGIC GROUP:	Group B
SURFACE RUNOFF:	Moderately rapid to rapid
PERMEABILITY:	Rapid or very rapid
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Au Gres, Colton, Dixfield

USE AND MANAGEMENT

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

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York Subdivision
Gray Road
North Yarmouth, ME
Ben Grover

Naumburg
(Typic Endoaquods)

SETTING

PARENT MATERIAL:	Derived from outwash and deltaic sandy deposits.
LANDFORM:	Outwash plains, deltas, and terraces
POSITION IN LANDSCAPE:	Low depressions and plains
SLOPE GRADIENT RANGES:	(A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Somewhat poorly drained. Depth to seasonal high watertable ranges from 0.0 to 1.0 feet below the surface at some time from November to May.

TYPICAL PROFILE:

Surface Layer:	Dark Brown loamy sand, 0-7"
Subsurface Layer:	Reddish brown sand, 8-15"
Subsoil Layer:	Brown fine sand, 15-32"
Substratum:	Gray sand, 42-65"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Slow to very slow
PERMEABILITY:	Rapid or very rapid
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Croghan, Au Gres

USE AND MANAGEMENT

DEVELOPMENT: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended. Naumburg may be hydric and may be mapped as wetlands.

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York Subdivision
Gray Road
North Yarmouth, ME
Ben Grover

Au Gres
(Typic Endoaquods)

SETTING

PARENT MATERIAL:	Derived from outwash and deltaic sandy deposits.
LANDFORM:	Outwash plains, deltas, and terraces
POSITION IN LANDSCAPE:	Low depressions and plains
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained. Depth to seasonal high watertable ranges from 0.0 to 1.0 feet below the surface at some time from November to May.

TYPICAL PROFILE:

Surface Layer:	Black loamy sand, 0-7"
Subsurface Layer:	Reddish brown sand, 8-15"
Subsoil Layer:	Brown sand, 15-32"
Substratum:	Gray sand, 42-65"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Slow to very slow
PERMEABILITY:	Rapid or very rapid
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Croghan, Naumburg, Dixfield

USE AND MANAGEMENT

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


NORTH
GRAY ROAD
RTE. 115
MAP: 10 MAP: 10 LOT: 24
MAP: 10 MAP: 10 LOT: 68
MAP: 10 MAP: 10 LOT: 69
MAP: 10 MAP: 10 LOT: 73
MAP: 10 MAP: 10 LOT: 78
MAP: 10 MAP: 10 LOT: 81
MAP: 10 MAP: 10 LOT: 90
MAP: 10 MAP: 10 LOT: 92
MAP: 10 MAP: 10 LOT: 93
MAP: 10 MAP: 10 LOT: 96
MAP: 10 MAP: 10 LOT: 97
MAP: 10 MAP: 10 LOT: 98
MAP: 10 MAP: 10 LOT: 99
MAP: 10 MAP: 10 LOT: 100-3
MAP: 10 MAP: 10 LOT: 100-1
EXISTING LOT 47,524 S.F.
LOT: 1 22,054 S.F.
LOT: 2 26,083 S.F.
LOT: 3 22,443 S.F.
LOT: 4 20,508 S.F.
LOT: 5 20,595 S.F.
LOT: 6 20,082 S.F.
LOT: 7 38,827 S.F.
LOT: 8 44,032 S.F.
LOT: 9 41,452 S.F.
LOT: 10 38,223 S.F.
LOT: 11 40,645 S.F.
LOT: 12 38,617 S.F.
LOT: 13 28,260 S.F.
50' x 50' FIRE PROTECTION EASEMENT TO THE TOWN OF NORTH YARMOUTH
MAP: 10 LOT: 71
3,145,032± S.F.
72.2± Ac.

S:\20-049 Grover York Property\Drawings\20-049 BASE GIS.dwg

PLAN REFERENCE:

EXISTING GROUND TOPOGRAPHY AND LOT LINES ARE FROM STATE OF MAINE GIS DATA.

SCALE

0 50 100 200

SCALE in FEET
1"=100'

REV	DATE	DESCRIPTION
		REVISIONS

TAX MAP: 10
LOTS: 71 & 72
SITE LAYOUT

BEN GROVER
82 DOUGHTY ROAD
NORTH YARMOUTH, MAINE 04097

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN:	MPV	DATE:	JANUARY 15, 2021
DESIGNED:	CEB	SCALE:	1" = 100'
CHECKED:	CB/MV	JOB NO.	20-049
FILE NAME:			
SHEET:	C-100		

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	Loamy Sand	Friable	Dark Brown	
10–30	Gravelly Sand	Friable	Red Brown	None Noted
30–60	Gravelly Sand	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
6	B	2	>48 "	☐	☐	☐

Soil Series/Phase Name: Colton WD Hydric ☐ Non-hydric ☒ Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	Loamy Sand	Friable	Dark Brown	
10–30	Gravelly Sand	Friable	Red Brown	None Noted
30–60	Gravelly Sand	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
6	B	2	>48 "	☐	☐	☐

Soil Series/Phase Name: Colton WD Hydric ☐ Non-hydric ☐ Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	Sandy Loam	Friable	Dark Brown	
10–30	Sandy Loam	Friable	Red Brown	Common and Distinct
30–60	Sandy Loam	Firm	Olive	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
3	C	12	16 "	☒	☒	☐

Soil Series/Phase Name: Dixfield MWD Hydric ☐ Non-hydric ☒ Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	Sandy Loam	Friable	Dark Brown	
10–30	Sandy Loam	Friable	Brown	Common and Distinct
30–60	Sandy Loam	Firm	Olive	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
3	C	12	18 "	☒	☒	☐

Soil Series/Phase Name: Dixfield MWD Hydric ☐ Non-hydric ☒ Hydrologic Soil Group: _____

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

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
	1/25/2021
Name Printed	**Cert/Lic/Reg. #**
Mark J. Hampton	263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

Exploration Symbol # SS-5 ☒ Test Pit ☐ Boring ☐ Probe

_____" Organic horizon thickness Ground surface elev. _____

_____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

	Texture	Consistency	Color	Redox Features
0–10	Sandy Loam	Friable	Dark Brown	
10–20	Sandy Loam	Friable	Brown	
20–30	Sandy Loam	Firm	Olive	Common and Distinct

Soil Details by ▸▸ S.E. ▸▸ S.S.

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	22 Percent	17 " Depth	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Dixfield MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-6 ☒ Test Pit ☐ Boring ☐ Probe

_____" Organic horizon thickness Ground surface elev. _____

_____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

	Texture	Consistency	Color	Redox Features
0–10	Loamy Sand	Friable	Dark Brown	
10–20	Sand	Friable	Brown	
20–30	Sand	Friable	Olive	Common and Distinct

Soil Details by ▸▸ S.E. ▸▸ S.S.

Soil Classification	Slope	Limiting Factor	
5 Profile / C Condition	4 Percent	22 " Depth	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Croghan MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-7 ☐ Test Pit ☐ Boring ☐ Probe

_____" Organic horizon thickness Ground surface elev. _____

_____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

	Texture	Consistency	Color	Redox Features
0–10	Loamy Sand	Friable	Dark Brown	
10–20	Sand	Friable	Brown	
20–30	Sand	Friable	Olive	Common and Distinct

Soil Details by ▸▸ S.E. ▸▸ S.S.

Soil Classification	Slope	Limiting Factor	
5 Profile / C Condition	2 Percent	16 " Depth	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Croghan MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-8 ☐ Test Pit ☐ Boring ☐ Probe

_____" Organic horizon thickness Ground surface elev. _____

_____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

	Texture	Consistency	Color	Redox Features
0–10	Loamy Sand	Friable	Dark Brown	
10–20	Sand	Friable	Brown	
20–30	Sand	Friable	Olive	Common and Distinct

Soil Details by ▸▸ S.E. ▸▸ S.S.

Soil Classification	Slope	Limiting Factor	
5 Profile / D Condition	2 Percent	10 " Depth	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Au Gres SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
	1/25/2021
Name Printed	**Cert/Lic/Reg. #**
Mark J. Hampton	263/216

Title ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

Exploration Symbol # SS-9

☒ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Black	
Sand	Friable	Gray	Common and Distinct

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
5 Profile	E Condition	2 Percent	6 Depth	"	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Naumburg PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # SS-10

☒ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Sand	Friable	Brown	
Sand	Friable	Olive	Common and Distinct

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
5 Profile	C Condition	2 Percent	26 Depth	"	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Croghan MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # SS-11

☐ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Sand	Friable	Brown	
Sand	Friable	Olive	Common and Distinct

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
5 Profile	C Condition	2 Percent	18 Depth	"	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Croghan MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # SS-12

☐ Test Pit ☐ Boring ☐ Probe

____" Organic horizon thickness Ground surface elev. ____

____" Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Sand	Friable	Brown	
		Olive	
	Friable		Common and Distinct
Sand			

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
5 Profile	C Condition	5 Percent	18 Depth	"	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Au Gres SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

STATE OF MAINE MARK HAMPTON #216 CERTIFIED SOIL SCIENTIST

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark Hampton	1/25/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
0 Loamy Sand	Friable	Black	
10 Sand	Friable	Brown	
20 Sand	Friable	Olive	Common and Distinct
30			
40			
50			
60			

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
5 (Profile)	D (Condition)	6 (Percent)	12 " (Depth)	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Au Gres SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
0 Loamy Sand	Friable	Black	
10 Sand	Friable	Gray	Common and Distinct
20			
30			
40			
50			
60			

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
5 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Naumburg PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-15 ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
0 Loamy Sand	Friable	Dark Brown	
10 Sand	Friable	Brown	
20 Sand	Friable	Olive	Common and Distinct
30			
40			
50			
60			

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
5 (Profile)	D (Condition)	6 (Percent)	10 " (Depth)	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Au Gres SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-16 ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
0 Loamy Sand	Friable	Dark Brown	
10 Sand	Friable	Brown	
20		Olive	
30 Sand	Friable		Common and Distinct
40			
50			
60			

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
5 (Profile)	C (Condition)	5 (Percent)	20 " (Depth)	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Croghan MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

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

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark J. Hampton	1/25/2021
Name Printed	**Cert/Lic/Reg. #**
Mark J. Hampton	263/216

Title ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Sand	Friable	Brown	
20	Sand	Friable	Olive	Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
5 Profile / D Condition	6 Percent	12 " Depth	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Naumburg PD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Sandy Loam	Friable	Brown	
20	Sandy Loam	Firm	Olive	
30				Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	12 Percent	16 " Depth	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Dixfield MWD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group

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

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Sand	Friable	Brown	
20	Sand	Friable	Olive	Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
5 Profile / D Condition	6 Percent	10 " Depth	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Au Gres SPD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group

Exploration Symbol # SS-20 ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Sandy Loam	Friable	Brown	
20				
30	Sandy Loam	Firm	Olive	Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification	Slope	Limiting Factor	
3 Profile / C Condition	5 Percent	24 " Depth	☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Croghan MWD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark J. Hampton	1/25/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
York Property Subdivision	Ben Grover	North Yarmouth

Exploration Symbol # SS-21 ☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Sand	Friable	Brown	
20	Sand	Friable	Olive	Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
5 Profile	D Condition	6 Percent	12 " Depth		☒ Groundwater ☐ Restrictive Layer ☐ Bedrock
Soil Series/Phase Name: Naumburg PD			☐ Hydric ☒ Non-hydric	Hydrologic Soil Group	

Exploration Symbol # SS-22 ☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Sandy Loam	Friable	Brown	
20	Sandy Loam	Firm	Olive	
30				Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
3 Profile	C Condition	12 Percent	16 " Depth		☒ Groundwater ☒ Restrictive Layer ☐ Bedrock
Soil Series/Phase Name: Dixfield MWD			☐ Hydric ☒ Non-hydric	Hydrologic Soil Group	

Exploration Symbol # SS-23 ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Loamy Sand	Friable	Dark Brown	
10	Sandy Loam	Friable	Brown	
20	Sandy Loam	Firm	Olive	
30				Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
3 Profile	C Condition	8 Percent	18 " Depth		☒ Groundwater ☒ Restrictive Layer ☐ Bedrock
Soil Series/Phase Name: Au Gres SPD			☐ Hydric ☒ Non-hydric	Hydrologic Soil Group	

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0				
10				
20				
30				
40				
50				
60				

Soil Details by S.E. ▸▸ S.S. ▸▸

Soil Classification		Slope	Limiting Factor		Groundwater / Restrictive Layer / Bedrock
Profile	Condition	Percent	Depth "		☐ Groundwater ☐ Restrictive Layer ☐ Bedrock
Soil Series/Phase Name:			☐ Hydric ☐ Non-hydric	Hydrologic Soil Group	

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark J. Hampton	1/25/2021
Name Printed	**Cert/Lic/Reg. #**
Mark J. Hampton	263/216

Title ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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

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ATTACHMENT H

ATTACHMENT I

Abutter List

North Yarmouth Subdivision

Map	Lot	Owner	Mailing Address	Town	State	Zip Code
North Yarmouth, Maine						
10	21-001	Joanne Burgess Trustee	PO Box 73	Cumberland	ME	04021
10	24	Joyce Ann Gervais	83 Gray Road	North Yarmouth	ME	04097
10	68	Satell Woodlands, LLC	75 Fieldstone Drive	Yarmouth	ME	04096
10	69	Gail F Strattard	38 Wander-R-Way	North Yarmouth	ME	04097
10	73	Barry L Howgate	62 Gray Road	North Yarmouth	ME	04097
10	78	Polly A Grindle	654 Walnut Hill Road	North Yarmouth	ME	04097
10	81	Douglas A Grindle	654 Walnut Hill Road	North Yarmouth	ME	04097
10	83	Allen M & Victoria G Bornheimer	358 Main Street	Cumberland	ME	04021
10	84	Anthony Correale	211 Chandlers Wharf	Portland	ME	04101
10	87	Paul R Godin	13 Delwin Drive	North Yarmouth	ME	04097
10	88	William A & Michelle George	21 Delwin Drive	North Yarmouth	ME	04097
10	90	Michelle G Smith	28 Castle Hill Road	North Yarmouth	ME	04097
10	93	Stephen C Harris	26 Castle Hill Road	North Yarmouth	ME	04097
10	96	Toby Scott Young	47 Delwin Drive	North Yarmouth	ME	04097
10	97	Christopher Canto	61 Delwin Drive	North Yarmouth	ME	04097
10	98	Christopher Canto	61 Delwin Drive	North Yarmouth	ME	04097
10	99	Seth G Rivard	73 Delwin Drive	North Yarmouth	ME	04097
10	100	Naomi S. M. & Robert A. Davidowitz	111 Henry Road	North Yarmouth	ME	04097
10	101	Peter E Robbins	170 Delwin Drive	North Yarmouth	ME	04097
Cumberland, Maine						
R08	20	Satell Woodlands, LLC	25 Wander-R-Way	North Yarmouth	ME	04097