

**Town of Kittery
Planning Board Meeting
November 17, 2016**

412 Haley Road – Preliminary Plan – Completeness Review

Action: Accept or deny application. Schedule a public hearing. Owner Marilyn Mann & James Smith, and applicant, Green & Company, requests consideration of a 12-lot cluster subdivision located at 412 Haley Road (Tax Map 34 Lot 3) in the Residential-Rural (R-RL) and Shoreland Overlay (SH-OZ-250') Zones. Agent is Joseph Coronati, Jones and Beach Engineers, Inc.

PROJECT TRACKING

REQ'D	ACTION	COMMENTS	STATUS
YES	Sketch Plan Review	8/11/2016 & 9/8/2016	APPROVED
NO	Site Visit	9/1/2016	HELD
YES	Preliminary Plan Review Completeness/Acceptance	Scheduled for 11/17/2016	PENDING
YES	Public Hearing		
YES	Preliminary Plan Approval		
YES	Final Plan Review and Decision		TBD

Applicant: Prior to the signing of the approved Plan any Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS. As per Section 16.4.4.13 - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.

Background

The parcel is a conforming lot, 27.45 acres in size, with one, conforming single-family dwelling located on the southern portion of the lot. The residence is accessed by an approved, unnamed 40-ft right-of-way (ROW), approximately 1,400 feet in length, which also provides access and frontage to 3 abutting lots. The proposed development is a 12-lot cluster subdivision, with 9 lots clustered on the northerly side of the property, and 3 lots closer to the waterfront.

The Planning Board approved a sketch plan on 9/8/2016. The purpose of this review is to determine completeness of the preliminary application, as well as determine what, if any, additional information the Board may require prior to their substantial review of the preliminary plan application.

Staff Review

Staff notes are in reference to the attached submission checklist.

1. Temporary markers are not labeled on the plans, however the applicant states they will be in place on site prior to a site walk.
2. A copy of the deed showing property owners Marilyn Mann and James Smith, as well as a signed letter of authorization referencing a purchase and sale agreement between Mann/Smith and Green & Company Building and Development Corp was included with the application. A copy of the actual purchase and sale agreement between Mann/Smith and Green & Company was not submitted.
3. The proposed development is located with a designated MS4 area and must comply with all state and federal MS4 regulations.

4. A traffic report estimating the amount and type of vehicular traffic to be generated by the development is not required. The proposed development will generate an annual average daily traffic of approximately 120 trips (9.57 trips per single family home).
5. Net Residential Acreage (NRA) calculations are shown on the Overview Subdivision Plan (OV2), however, it does not appear to be a complete list of deducted land areas, as outlined in 16.7.8.2 Net Residential Acreage Calculation. For example, 16.7.8.2.K instructs the applicant to deduct "Fifty percent of all land characterized as drainage class of somewhat poorly drained, unless public sewer is used, in which case no land area is subtracted". The soil survey included with the stormwater management plan shows there are areas of somewhat poorly drained soil on the site, and the site is not connected to public sewer, however this does not appear to be included with the list of NRA deductions. Prior to holding a public hearing, the applicant should resubmit NRA calculations to clearly address each of the deducted land area criteria, as outlined in 16.7.8.2.
6. As part of the sketch plan approval the Board requested the applicant complete a wildlife habitat study prior to the preliminary application submittal. The applicant has included a wildlife habitat map with their application that identifies the *types* of habitat on the property, however, the submitted study is not specific to the species of wildlife that will be impacted by the proposed development.
7. The applicant is requesting a waiver for 16.8, Table 1, design and construction standards for streets and pedestrian ways. A narrative of the request is included with the application.

Recommendation

As a site plan, a public hearing is required. The application appears sufficient to schedule a public hearing.

Move to accept the preliminary site plan application dated October 27, 2016 from owner, Marilyn Mann and James Smith, and applicant, Green and Company, for 412 Haley Road (Tax Map 34 Lot 3) in the Residential-Rural and Shoreland Overlay Zones.

And

Move to schedule a public hearing for the preliminary site plan application dated October 27, 2016 from owner, Marilyn Mann and James Smith, and applicant, Green and Company, for 412 Haley Road (Tax Map 34 Lot 3) in the Residential-Rural and Shoreland Overlay Zones for December 8, 2016.

In addition, during the site walk held on September 1st 2016, an abutter requested a second site walk occur after the applicant has finalized the location of all proposed right of ways and lot boundaries. Given this request along with the vested interest expressed by several abutters to both Staff and Board members, a second site walk is probably warranted.

Move to schedule a site walk for the preliminary site plan application dated October 27, 2016 from owner, Marilyn Mann and James Smith, and applicant, Green and Company, for 412 Haley Road (Tax Map 34 Lot 3) in the Residential-Rural and Shoreland Overlay Zones.

Town of Kittery

SUBMISSION CONTENTS CHECKLIST
COMPLETE PRELIMINARY PLAN

Applicants Name: Green & Company **Agent:** Joe Coronati **Email:** JCoronati@Jonesandbeach.com
Project Name: 412 Haley Road Cluster Subdivision **Date of Submission:** 10/27/2016 **Map-Lot:** 34-3

In accordance with Title 16.10.5.2, a completed application must be submitted to the Town Planner no later than 21 days prior to the meeting date for the item to be included on the agenda. The submission must include on the plan or attached thereto, the following items, unless upon the applicant's written request, the Planning Board, by formal action, waives or defers any requirement(s) for submission

<u>Submittal Requirement</u>	<u>Applicant Response</u>	<u>Staff Response</u> x - received
1. A minimum of fifteen (15) paper copies of the application form, plan and all attachments thereto plus, if applicable, five (5) paper copies of the 24"x36" size plan sheets		X
2. Plans must:		
a. Plan sheets drawn on a reproducible medium and measure no less than 11"x17" and no larger than 24"x36",		X
b. Scale of the drawings no greater than 1"=30' for developments less than ten (10) acres, and 1"=50' for all others		X
c. Code block in the lower right-hand corner. The block must contain:		
i. Name(s) and address(s) of the applicant and owner		X
ii. Name of the project		X
iii. Name and address of the preparer of the plan, with professional seal, if applicable		X
iv. Date of plan preparation/revision, and a unique ID number for the plan and any revisions		X
d. Standard boundary survey conducted by a surveyor licensed in the state of Maine, in the manner recommended by the State Board of Registration for Land Surveyors		X
e. An arrow showing true north and the magnetic declination, a graphic scale, and signature blocks for the owner(s) and members of the Planning Board		X
f. Locus map showing the property in relation to surrounding roads, within two thousand (2,000) feet of any property line of the development		X
g. Surveyed acreage of the total parcel, of rights-of-way, wetlands, and area to be disturbed and amount of street frontage.		X

h. Names and addresses of all owners of record of property abutting the development, including those across the street.		X
i. Locations of essential physical features such as watercourses, forest cover, and outcroppings		X
j. Proposed development area conditions including, but not limited to:		
i. Structures; their location and description including signs, to be placed on the site, floor plan of exterior walls and accesses located within 100' of the property line		X
ii. Utilities proposed including power, water, sewer, holding tanks, bridges, culverts and drainage ways		X
iii. Sewage facilities type and placement. Test pit locations, at least two of which must meet the state of Maine Plumbing Code Requirements, must be shown		X
iv. Domestic water source		X
v. Parks, open space, or conservation easement locations		X
vi. Lot lines, interior and exterior, right-of-way, and street alignments		X
vii. Road and other paved ways plans, profiles and typical sections including all relevant data		X
viii. Setbacks, existing and proposed		X
ix. Machinery permanently installed locations likely to cause appreciable noise at the lot lines		N/A
x. Raw, finished or waste materials to be stored outside the buildings, and any stored material of a toxic or hazardous nature		N/A
xi. Topographic contours of existing contours and finished grade elevations within the development		X
xii. Pedestrian ways/sidewalks, curbs, driveways, fences, retaining walls and other artificial features locations and dimensions proposed		X
xiii. Temporary markers locations adequate to enable the Planning Board to readily locate and appraise the layout of the development		See staff note #1
xiv. Land proposed to be dedicated to public use and the conditions of such dedication		None proposed
xv. Natural features or site elements to be preserved		X
3. Supporting documentation must include		
a. Vicinity map and aerial photograph showing the property in relation to surrounding properties, roads, geographic, natural resource (wetland, etc.), historic sites, applicable comprehensive plan features such as proposed park locations, land uses, zones, and other features within 500' from any boundary of the proposed development		X

b. Existing development area conditions including but not limited to:		
i. Location and description of all structures, including signs, existing on the site, together with accesses located within 100' of the property line		X
ii. Essential physical features such as watercourses, wetlands, flood plains, wildlife habitat areas, forest cover, and outcroppings		x
iii. Utilities existing, including power, water, sewer, holding tanks, bridges, culverts and drainage ways		x
c. Legal interest documents showing legal interest of the applicant in the property to be developed. Such documents must contain the description upon which the survey was based		See Staff note #2
d. Property encumbrances currently affecting the property, as well as any proposed encumbrances		X
e. Water District approval letter, if public water is used, indicating there is adequate supply and pressure to be provided to the development.		X
f. Erosion and sedimentation control plan endorsed by the York County Soil and Water Conservation District or the Town's engineering consultant		X
g. Stormwater management preliminary plan for stormwater and other surface water drainage prepared by a registered professional engineer including the general location of stormwater and other surface water drainage areas		X
h. Soil survey for York County covering the development. Where the soil survey shows soils with severe restrictions for development, a high intensity Class "A" soils survey must be provided		X
i. Vehicular traffic report estimating the amount and type of vehicular traffic that will be generated by the development on a daily basis and for peak hours		See staff note #4
j. Traffic impact analysis in accordance with Title 16.10.5.2.D.1 for development involving 40 or more parking spaces or which are projected to generate more than 400 vehicle trips per day		N/A
k. Test pit(s) analysis prepared by a licensed site evaluator when sewage disposal is to be accomplished by subsurface disposal, pits, prepared by a licensed site evaluator		X
l. Town Sewage Department or community system authority letter, when sewage disposal is to be through a public or community system, approving the connection and its location		N/A

16.8.11.5 – Cluster Residential and Cluster Mixed-Use Development Application Procedure

1. In addition to the requirements of Chapter 16.10, the following are requested:		
a. Proposed dimensional modifications and the dimensional standards required in the zone in which the development will be located		X
b. All land area identified in Title 16.7.8 Net Residential Acreage		See staff note #5
c. Net Residential Density		See staff note #5
d. Open space as defined in Section 16.8.11.6.D.2		X

JONES & BEACH ENGINEERS INC.

85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

October 26, 2016

Kittery Planning Board
Attn. Chris DiMatteo, Town Planner
200 Rogers Road
Kittery, ME 03094

**RE: Subdivision Application
412 Haley Road, Kittery, Maine
Tax Map 34, Lot 3
JBE Project No. 16030**

Dear Mr. DiMatteo,

Jones & Beach Engineers, Inc., on behalf of our project applicant, Green and Company, respectfully submits a Preliminary Plan Application for a Cluster Subdivision for the parcel referenced above. This development has already received Sketch Plan approval. We have since been working towards a complete Preliminary Plan submittal.

The property currently has a 12' wide roadway with a 40' wide Right of Way that provides access to the existing house and 3 abutting house lots. The Right of Way will be abandoned and re-configured in conformance with the Town regulations. This roadway currently has underground power and the first abutter on the right and left has water service from Haley Road. The other remaining homes have wells.

The intent of this project is to subdivide Tax Map 34, Lot 3 into twelve (12) lots with open space to be managed by the Homeowners Association. The site yields 12 lots from the net residential area calculations. The lots will have Kittery Water District for town water, underground electric and individual septic systems for each lot. The wetlands have been flagged by Mark West, CWS of West Environmental, the soils and test pits were completed by Joseph Noel, CSS and we have provided the survey and engineering.

We feel that individual septic systems for single family homes are important for the buyers within the subdivision. It keeps the HOA fees lower, prevents future arguments about septic management and we have provided for larger lots (over 20,000 square feet) each for the houses. The design of the cluster subdivision creates two separate mini clusters separated by a large wet meadow. It is not reasonable to connect the two mini clusters with a community septic system due to the infrastructure required. There would be the need for a pump station which creates unnecessary future maintenance cost on the residents. Also, the nitrates from the septic systems will be spread over a large receiving area. A community system located at the low spot on the property would concentrate the nitrates closer to the higher valued wetlands. The individual systems will spread the nitrates over the entire subdivision which is better for the environment.

The road extending from Haley Road has been designed as a Minor Street with a 60' Right of Way to a three way intersection. At the intersection, there is a proposed Class II private cul-de-

sac proposed to access 9 lots with a 40' Right of Way. Also at that intersection, the existing gravel roadway will be widened to a Class I standard to provide access to the existing house and two additional lots. Due to the location of the existing house, we are requesting a waiver for the Class I road length and have submitted a separate waiver request letter for justification.

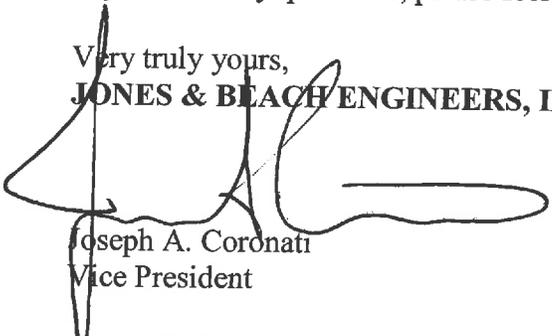
The traffic from the proposed subdivision will be minimal. Using 10 trips per day per house, the Class I roadway would generate 30 trips per day. The Class II cul-de-sac has 7 houses with driveways and will total 70 trips per day. The Minor Street, the main roadway will have a total of 15 homes using the roadway for a total of 150 trips per day.

The following is provided in support of this application:

1. 15 copies of the Completed Application.
2. Waiver Request Letter
3. Application Fee.
4. Letter of Authorization.
5. Deed representing lot ownership.
6. Test Pits for each lot
7. Water Availability Letter from Kittery Water District
8. Abutters List with Certified Receipts.
9. Tax Maps and Environmental maps
10. Aerial photograph from GIS
11. Wildlife Habitat Study
12. Two (2) Drainage Analysis copy.
13. Five (5) Full-size plan sets (24" x 36").
14. Ten (10) Half-size plan sets (11" x 17").

If you have any questions, please feel free to contact our office. Thank you for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.


 Joseph A. Coronati
 Vice President

cc: Richard Green, Green & Company, Applicant (application package & plan set via email)
 Greg Orso, Attorney (application package & plan set via email)
 Joseph Noel, CSS (plan set via email)
 Mark West (plan set via email)

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October 26, 2016

Kittery Planning Board
Attn. Chris DiMatteo, Town Planner
200 Rogers Road
Kittery, ME 03094

**RE: Waiver Request for Class I Road Length
412 Haley Road, Kittery, Maine
Tax Map 34, Lot 3
JBE Project No. 16030**

Dear Mr. DiMatteo,

On behalf of our client, Green and Company, Jones & Beach Engineers, Inc. respectfully requests waivers from the Section 16.8, Table 1 of the Land Use and Development Code for the maximum length of the Class I roadway.

This parcel is unique because the site has two distinctly different and separate upland areas on the parcel. There is an existing house located 1,500' from Haley Road and access a long gravel roadway which already exceeds the maximum length of 400'. The existing roadway is only 12' wide where 18' is required. The existing parcel was developed years ago and was conforming when created, and if done today, it would require the same waiver for road length, but would also require a waiver for road width. We are planning on widening the roadway all the way to the furthest house to 18', making that portion more conforming and reducing the overall length of the Class I road from 1,500' to 748', also improving the non-conformity.

The development creates two mini cluster neighborhoods with different style lots. The 9 homes located on the Class II roadway will have limited views and will be nestled into the small hill. These homes create a small neighborhood and will have a separate association for the maintenance of the private roadway. This roadway will be private, but will be paved with curbing and drainage infrastructure. The other small neighborhood is the 3 lots along the Class I roadway, these lots are separated by wetlands and uplands from the rest of the subdivision and will have their own association for the maintenance of their private roadway.

Since there are three existing abutting homes utilizing the existing gravel road and there is no maintenance agreement or association for the shared maintenance between the existing residents. We have designed the main road to be a future public street. We have kept the public portion as short as possible in order to reduce the maintenance costs to the Town, while providing safer access. The widened roadway will provide better Fire Department, Emergency Vehicle and delivery access to our proposed lots as well as the existing homes. It will also provide a wider paved roadway that allows two cars or fire trucks to pass safely. Snow plowing and sanding a paved roadway will also provide a safer roadway in the winter. The public portion ends after the intersection with the proposed cul-de-sac and the last abutting driveway. This roadway will be 824' long and the maximum amount allowed is 1,200' to the radius.

From the end of that public street, we start the Class I private 18' gravel roadway. This roadway extends from the end of the public street along the path of the existing 12' gravel drive. The Class I roadway is 748' long where the maximum is 400' to the radius. This roadway is 720' to the turnaround. This roadway could be shortened with the lengthening of the public roadway since that is 376' short of the maximum length. However, that would only increase cost and future maintenance to the Town, increase wetland impacts and create additional unnecessary impervious area.

The existing 12' gravel driveway traverses along an upland meadow and between two wet meadow wetlands. The Class I roadway, is only 18' wide of gravel and requires a simple addition of 3' of gravel to either side of the road. If the Minor Street was extended it would be paved 24' wide with 1' wide cape cod curbing and 2' gravel shoulders for a total width of 30', which would impact wetlands on either side of the wet meadow. The impacts would be extensive since the wetlands are located near the existing driveway and with this waiver, they would not be necessary.

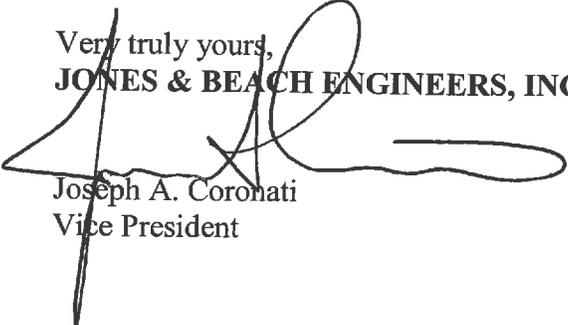
When we originally submitted the Sketch Plan, we had two odd shaped pork chop lots at the end of the Minor Street. Those lots were determined not to meet the Town's Lot Shape requirements. We had to provide more conventionally shaped lots to meet the code. Therefore, we had to extend a private roadway to the lots, which we did. The Sketch Plan was then approved by the Planning Board. We need to provide legal access to the existing house and 2 lots, therefore we have to extend the roadway.

We feel that the design of the subdivision addresses the purpose and intent of the cluster subdivision. We are providing small networks of utilities and streets, preserving open space and creating recreation areas, preserving the areas of highest ecological value, locating our homes on the area's most appropriate for development, linking our open spaces, creating greenways, reducing the impacts on water resources by minimizing land disturbance, impervious coverage and stormwater runoff and minimizing the impact of the residential development to the Town, neighboring properties and natural environment.

We are providing the shortest possible future public street, which will reduce future costs to the Town forever and reduce the amount of impervious area. We are reducing environmental impacts by widening the driveway from 12' to 18' and not a full 30' and providing stormwater treatment where there currently is none. This waiver accomplishes the goals of the cluster ordinance by reducing impervious coverage, environmental impacts, costs, while providing safe access.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.


 Joseph A. Coronati
 Vice President

JONES & BEACH
 ENGINEERS INC.

Minimum Plan Submittal Requirements

- 15 COPIES OF THE SUBDIVISION PLAN APPLICATION AND PLAN - 5 PLAN COPIES MUST BE 24" X 36"
- 1 PDF OF THE SUBDIVISION PLAN SHOWING GPS COORDINATES

PRIOR TO STARTING THE REVIEW PROCESS, THE PLANNING BOARD WILL DECIDE WHETHER SUFFICIENT INFORMATION HAS BEEN PROVIDED AND WILL VOTE TO DETERMINE COMPLETENESS/ACCEPTANCE.

NOTE: THE APPLICANT IS RESPONSIBLE TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

- A) Paper size:
 - No less than 11" X 17" (reduced) or greater than 24" X 36" (full)
- B) *N/A* Scale size:
 - Under 10 acres: no greater than 1" = 30'
 - 10 + acres: 1" = 50'
- C) Title block:
 - Applicant's name and address
 - Name of preparer of plans with professional information and professional seal
 - Parcel's tax map identification (map - lot)
 - Date of plan preparation
- D) Boundary survey performed and sealed by licensed surveyor:
 - Identify all existing boundary markers
 - Show all proposed boundary monuments (per ordinance)
- E) Provide orientation:
 - Arrow showing true north and magnetic declination
 - Graphic scale Parcel Owners and map and lot
 - Deed docket and page numbers Draft Deed of Covenants *N/A*
 - Signature block for planning board
- F) Show location and description of:
 - Elevations of dwelling units. If applicable *N/A*
 - All structures and accesses within 100 feet
- G) Show parcel data:
 - Zoning District(s) Lots Lot Widths Lot Depths
 - Street frontage Building setback lines Lot Areas
 - Rights-of-way ROW area Exist. & new street names
 - Wetlands Wetland area Wetland setbacks
 - Common tracts Easements parcel areas
 - Shoreland Zoning setbacks undisturbed areas
 - N/A* Note on the subdivision plan regarding areas to be taped off and protected until project construction is completed.
- H) Show names and addresses of all owners of record on abutting parcels and the assessor's map and lot numbers.
- I) Label all zoning districts abutting the property boundaries.
- J) Show locations of natural physical features such as water bodies, watercourses, forest cover, and ledge outcroppings.
- K) Show the location of existing and proposed Utilities and identify which utilities are to be privately owned/ municipally owned:
 - Overhead Electric underground electric
 - Water mains Wells *N/A* Gas mains *N/A* Cable TV
 - Sewer mains Test pits Septic tanks Leach fields
 - Storm drain lines Catch basins Culverts Gutters
 - Stormwater storage basins Rain gardens *N/A*
 - Nearest fire hydrant

- L) *N/A* Indicate required landscaping including:
 - Type of plant material Plant/Tree sizes
 - Placement Irrigation systems
- M) Show natural and historical topography:
 - Back walls *N/A* Railroad beds
 - The location of all natural features or site elements to be preserved.
- N) Provide a vicinity map and aerial photograph at a scale not more than 400 feet to the inch showing the relation to other properties and geographic features and show:
 - All the area within five hundred (500) feet of the boundary line of the proposed development including roads, geographic features, natural resources (wetlands, etc.), historic sites, applicable comprehensive plan features such as proposed park locations, land uses, Zones and other features;
 - Any smaller area between the tract and all existing streets, provided any part of such a street used as part of the perimeter for the vicinity map is at least five hundred (500) feet from any boundary of the proposed development.
- O) Show the locations of any:
 - N/A* Parks Preserved Open space Conservation easements
 - Note on the subdivision plan regarding areas to be dedicated for public use and conditions of such dedication.
- P) Identify and locate each:
 - Easements Rights-of-way Street alignments
 - All intersecting property lines within 50 feet of the parcel.
- Q) Include plans, profiles and typical sections of all roads and other paved ways, including all relevant street data.
 - Intersections or Distance to nearest intersection
 - Driveways onsite Distance to nearest driveway
 - Sight visibility lines
- R) Show all existing and proposed lighting
 - N/A* Map of all street lighting, attached lighting, and area lighting
 - Location of lighted signs Photo-metrics map
- S) *N/A* Indicate the location of any permanently installed machinery likely to cause appreciable noise at the lot lines.
- T) Provide description of these materials stored on the property:
 - N/A* Hazardous Toxic Raw Waste
- U) Show existing contours and finished grade elevations onsite and sufficiently offsite to demonstrate how the project is situated in the surrounding environment.
- V) Indicate the location and dimensions of:
 - N/A* Sidewalks Curbs Driveways
 - Fences Retaining walls Other artificial features
- W) Copies of State and Local permit applications:
 - N/A* Notice of Intent NRPA Permit by Rule
 - All other applicable permits
- X) Copy of FIRM Map showing the proposed subdivision boundary to scale.

NOTE TO APPLICANT: PRIOR TO THE SITE WALK, TEMPORARY MARKERS MUST BE ADEQUATELY PLACED THAT ENABLE THE PLANNING BOARD TO READILY LOCATE AND APPRAISE THE LAYOUT OF DEVELOPMENT.

SUBMITTALS THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.



TOWN OF KITTERY MAINE

TOWN PLANNING AND DEVELOPMENT DEPARTMENT

200 Rogers Road, Kittery, Maine 03904

PHONE: (207) 475-1323

Fax: (207) 439-6806

www.kittery.org

APPLICATION: SUBDIVISION PLAN REVIEW

FEE FOR REVIEW:	<input checked="" type="checkbox"/> \$500.00 PLUS	<input checked="" type="checkbox"/> \$50.00/LOT OR DWELLING UNIT 600.00	<input type="checkbox"/> Minor Subdivision: not more than 4 lots	Fee Paid: \$ <u>1,100</u> Date: <u>10/27/16</u>	
			<input checked="" type="checkbox"/> Major Subdivision: 5 or more lots	Escrow Fee Paid: \$ _____ Date: _____	
PROPERTY DESCRIPTION	Parcel ID	Map 34 Lot 3	Zone(s): Base: <u>R-RL</u> Overlay: <u>Shoreland</u> MS4: Yes <input checked="" type="checkbox"/> No _____	Total Land Area: 23.5 Ac +/-	
	Physical Address: 412 HALEY ROAD				
PROPERTY OWNER'S INFORMATION	Name	MARILYN MANN &	Mailing Address: 412 HALEY ROAD KITTERY POINT, ME 03905		
	Phone	JAMES SMITH			
	Fax	-			
	Email	-			
APPLICANT'S AGENT INFORMATION	Name	RICHARD GREEN	Name of Business: GREEN & COMPANY		
	Phone	603 964-7572	Mailing Address: 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862		
	Fax				
	Email				
PROJECT DESCRIPTION	Existing Use(s): 1 RESIDENTIAL LOT WITH LONG GRAVEL DRIVEWAY.				
	Number of Proposed Lots	12	Subdivision Name	NONE YET	
	Proposed Subdivision:				
	Design: (check)	<input type="checkbox"/> Conventional	Responsibilities: (check)	<input type="checkbox"/> Total Development	<input checked="" type="checkbox"/> Landscaping
		<input checked="" type="checkbox"/> Cluster Development		<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Road
	Ownership: (check)	<input checked="" type="checkbox"/> Fee- Simple		<input checked="" type="checkbox"/> Post-Construction Storm Water Runoff System Maintenance	
<input type="checkbox"/> Condominium					
Homeowner's Association	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	MAIN ROAD TO BE PUBLIC. CUL-DE-SAC AND CLASS I ROADS TO BE PRIVATE			

WAIVER REQUEST (Submittal Information or Development Standard)

Waivers	Ordinance Section	Describe why this request is being made.
	EXAMPLE 16.32.560 (B)- OFFSTREET PARKING.	***EXAMPLE*** Requesting a waiver of this ordinance since the proposed professional offices have a written agreement with the abutting Church owned property to share parking.
	16.8 TABLE 1	CLASS I ~ MAX STREET LENGTH OF 400' ~ SEE WAIVER REQUEST LETTER FOR JUSTIFICATION

Related Kittery Land Use and Development Code Provisions:

16.10.8.2.5 Conditions or Waivers.

Conditions required by the Planning Board at the final plan review phase must have been met before the final plan may be given final approval unless so specified in the condition or specifically waived, upon written request by the applicant, by formal Planning Board action wherein the character and extent of such waivers which may have been requested are such that they may be waived without jeopardy to the public health, safety and general welfare.

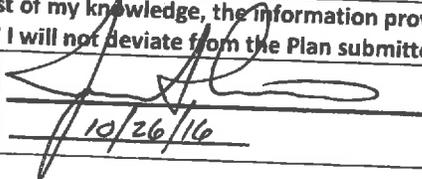
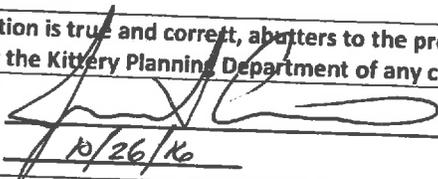
16.7.4.1 Objectives Met. In granting modifications or waivers, the Planning Board must require such conditions as will, in its judgment, substantially meet the objectives of the requirements so waived or modified.

ABUTTER NOTIFICATION

16.10.5.1.1. Preliminary Plan Application Filing and Completeness Review. ... The application must be accompanied by a Plan and the required fee together with a certification the applicant has notified abutters by mail of the filing of the Plan application for approval.

Submitted Application must include a list showing the names and addresses of the abutters notified and date mailed.

The Abutter Notice must include a copy of page one and where applicable page 2 of a signed Application.

I certify, to the best of my knowledge, the information provided in this Application is true and correct, abutters to the project have been notified, and I will not deviate from the Plan submitted without notifying the Kittery Planning Department of any changes.			
Applicant's Signature:		Owner's Signature:	
Date:	10/26/16	Date:	10/26/16



TOWN OF KITTEERY, MAINE

TOWN PLANNING DEPARTMENT

200 Rogers Road, Kittery, Maine 03904

PHONE: (207) 475-1323

Fax: (207) 439-6806

www.kittery.org

APPLICATION: WETLAND ALTERATION PLAN REVIEW

MITIGATION FEE TO BE DETERMINED BY THE PLANNING BOARD DURING THE REVIEW PROCESS AND PAID WITH PERFORMANCE GUARANTY.

Application Fee Paid: \$ _____
 Date: _____
 Escrow Fee Paid: \$ _____
 Date: _____

PROPERTY DESCRIPTION	Parcel ID	Map	34	Lot	3	Zone(s):	R-RL _____	Total Land Area	23.5 +/-
	Physical Address	412 HALEY ROAD							
						Base	SHORELAND _____		
						Overlay	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
						MS4			

PROPERTY OWNER'S INFORMATION	Name	Marilyn Mann &	Mailing Address	412 Haley Road Kittery Point, ME 03905
	Phone	James Smith		
	Fax			
	Email			

APPLICANT'S AGENT INFORMATION	Name	Richard Green	Mailing Address	Green & Company, Inc. 11 Lafayette Road North Hampton, NH 03862
	Phone	603-964-7572		
	Fax			
	Email			
	Name of Business			

PROJECT DESCRIPTION	Existing parcel and wetlands:	
	This parcel has wet meadow, stream wetland and tidal buffer wetlands on or adjacent to the property.	
	Project Name	No name yet
	Provide a brief summary of the proposed development, its impact on the existing wetlands and the proposed mitigation plan:	
	The existing parcel consists of 23.5 acres of varying terrain and habitat and there is an existing gravel road that provides access to the existing house and 3 abutting parcels. We propose to do a Cluster Subdivision and add 11 more houses to the lot which requires roadway upgrades. Some of the wet meadow wetlands are adjacent to the existing gravel roadway and with the widening of the streets, the wetland impacts are unavoidable. Overall we are protection the most valuable wetlands on the property.	

I certify, to the best of my knowledge, the information provided in this application is true and correct and will not deviate from the plans submitted without notifying the Kittery Planning Department of any changes.

Applicant's Signature:		Owner's Signature:	
Date:	_____	Date:	_____

Minimum Application Submission Requirements

15 COPIES OF THIS APPLICATION

1 PDF OF THE SITE PLAN SHOWING GPS COORDINATES

15 COPIES OF THE PLAN – 5 OF WHICH MUST BE 24"X 36"

IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

16.28.500 Submission requirements for a Request to Alter a Wetland.

Unless specifically waived by the planning board, all applications must contain the following information:

A copy of the official documents showing legal interest of the applicant in the property to be affected;

A narrative describing:

- The purpose of the project,
- The type of alteration to the wetland (fill, culvert, dredge, etc.),
- Why there is no practicable alternative to impacting the wetland, and
- How the proposed activity has been designed to minimize the impact on the wetland

The block must contain:

- The name(s) and address(es) of the applicant or owner,
- The name and address of the preparer of the plan, with professional seal, name of plan, date of plan preparation,
- a revision number and date, if applicable,
- map and lot number(s) according to Kittery tax maps shown in the lower right-hand corner in bold lettering and ¼ inches high;

Site plan:

- minimum scale is 1" = 100' indicate the proposed activity
- location and size of all existing and proposed, structures, roads, parking areas, and sewage treatment facilities
- existing and proposed rights-of way, easements and parcels
- 2-foot contours wetland boundaries proposed buffers
- protective measures such as sediment control methods
- proposed boundaries and characteristics of the mitigation site, including elevation, sources of water, and proposed vegetation

Show the location (tied by measurement to identifiable structures or boundary points) of all proposed:

- property boundaries on site wetland boundaries
- offsite wetland areas significantly impacted by the project
- Sq Ft of Wetland areas (onsite area and offsite area, if applicable)
- shorelines flood plains vegetation removal
- drainage structures filling grading dredging,
- include specification for quantity of materials to be added or removed and procedures to be used

Show the direction of natural overland flow in the wetland, and in the proposed alteration area

- 100-year FEMA flood plain boundaries
- number of CY, and type of material to be used as fill
- method of handling, and the location of fill and spoil disposal area, if dredge material is involved
- all owners of property within 150 feet of the proposed alteration together with their mailing addresses and map and lot designations from the assessor's records.
- a vicinity map utilizing a topographic map at a scale no smaller than one inch equals 600 feet showing the boundary of the proposed activity;

Submit:

- one set of photographs, taken during the growing season if possible, showing the wetland, adjacent water bodies if applicable, and the alteration area before development begins.

Drainage:

- Submit a hydrologic analysis in accordance with the requirements of Article IX of Chapter 16.32

Wetlands mitigation plan and report. A wetlands mitigation plan and report is required for activities which, in total, affect or fill more than 500 square feet of wetlands. Wetland Mitigation Plan And Report must contain the following:

- a plan at a scale of 1" = 100' with 2-foot contour intervals, existing wetland boundaries, the area of wetland to be altered, project dimensions and all offsite wetlands, being extensions of the wetland to be altered
- existing wetland characteristics including water depth, vegetation and fauna
- a functional Assessment conducted and prepared by a qualified wetlands scientist or a Maine Certified Soils Scientists

Maintenance Agreement:

- The agreement must be approved by the board and recorded in the York County Registry of deeds and must meet, or exceed, the criteria listed in subsection 16.28.500.C.3. parts d through i.

Conservation Easement:

- (for projects involving preservation of wetlands or adjacent uplands) a conservation easement must be conveyed or deed restriction imposed so that the parcel will remain undeveloped in perpetuity.

Material not submitted in accordance with the above MUST acquire planning board approval of a Request for Waiver of the material per Section 16.28.180.

Other materials the board may require are:

- cross-section drawings showing the nature of the construction, the depth of excavation or height of fill, if applicable, and surface water and groundwater elevations

The board may require a narrative describing:

- the specific goals in terms of particular wetland functions and values. These goals must be related to those of the original wetland;
- the available literature or experience to date (if any) for carrying out the mitigation work;
- the proposed implementation and management procedures for the wetlands work;
- the short-term and long-term sources of water for this wetland, including the water quality of these sources;
- plans for re-planting, including a description of plant species, sizes and sources of plant material, as well as how, when and where seeding or planting will take place;
- plans for monitoring the wetlands work, showing capability for mid-course corrections
- plans, if applicable, for control of non-indigenous plant species.
- wetlands work involving creation, restoration and or enhancement of degraded wetlands,

Section 16.28.440-E. Abutter Notice. Owners of property within one hundred and fifty (150) feet, horizontal distance, of the proposed alteration must be notified by first class U.S. mail of any public hearing on the Request for Wetland Alteration.

The applicant must provide 2 sets of mailing labels with the submission of this request.

APPLICATION SUBMITTALS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE FORWARDED TO THE PLANNING BOARD.

Town of Kittery

SUBMISSION CONTENTS CHECKLIST
COMPLETE PRELIMINARY PLAN

Applicants Name:

Agent:

Email:

Project Name:

Date of Submission:

Map-Lot:

In accordance with Title 16.10.5.2, a completed application must be submitted to the Town Planner no later than 21 days prior to the meeting date for the item to be included on the agenda. The submission must include on the plan or attached thereto, the following items, unless upon the applicant's written request, the Planning Board, by formal action, waives or defers any requirement(s) for submission

<u>Submittal Requirement</u>	<u>Applicant Response</u>	<u>Staff Response</u>
1. A minimum of fifteen (15) paper copies of the application form, plan and all attachments thereto plus, if applicable, five (5) paper copies of the 24"x36" size plan sheets	✓	
2. Plans must:		
a. Plan sheets drawn on a reproducible medium and measure no less than 11"x17" and no larger than 24"x36",	✓	
b. Scale of the drawings no greater than 1"=30' for developments less than ten (10) acres, and 1"=50' for all others	✓	
c. Code block in the lower right-hand corner. The block must contain:	✓	
i. Name(s) and address(s) of the applicant and owner	✓	
ii. Name of the project	✓	
iii. Name and address of the preparer of the plan, with professional seal, if applicable	✓	
iv. Date of plan preparation/revision, and a unique ID number for the plan and any revisions	✓	
d. Standard boundary survey conducted by a surveyor licensed in the state of Maine, in the manner recommended by the State Board of Registration for Land Surveyors	✓	
e. An arrow showing true north and the magnetic declination, a graphic scale, and signature blocks for the owner(s) and members of the Planning Board	✓	
f. Locus map showing the property in relation to surrounding roads, within two thousand (2,000) feet of any property line of the development	✓	
g. Surveyed acreage of the total parcel, of rights-of-way, wetlands, and area to be disturbed and amount of street frontage.	✓	
h. Names and addresses of all owners of record of property abutting the development, including those across the	✓	

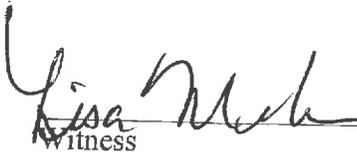
street.		
i. Locations of essential physical features such as watercourses, forest cover, and outcroppings	✓	
j. Proposed development area conditions including, but not limited to:	✓	
i. Structures; their location and description including signs, to be placed on the site, floor plan of exterior walls and accesses located within 100' of the property line	✓	
ii. Utilities proposed including power, water, sewer, holding tanks, bridges, culverts and drainage ways	✓	
iii. Sewage facilities type and placement. Test pit locations, at least two of which must meet the state of Maine Plumbing Code Requirements, must be shown	✓	
iv. Domestic water source	✓	
v. Parks, open space, or conservation easement locations	✓	
vi. Lot lines, interior and exterior, right-of-way, and street alignments	✓	
vii. Road and other paved ways plans, profiles and typical sections including all relevant data	✓	
viii. Setbacks, existing and proposed	✓	
ix. Machinery permanently installed locations likely to cause appreciable noise at the lot lines	N/A	
x. Raw, finished or waste materials to be stored outside the buildings, and any stored material of a toxic or hazardous nature	N/A	
xi. Topographic contours of existing contours and finished grade elevations within the development	✓	
xii. Pedestrian ways/sidewalks, curbs, driveways, fences, retaining walls and other artificial features locations and dimensions proposed	✓	
xiii. Temporary markers locations adequate to enable the Planning Board to readily locate and appraise the layout of the development	NOT YET, Will BE Done Prior To SITE WALK	
xiv. Land proposed to be dedicated to public use and the conditions of such dedication	N/A	
xv. Natural features or site elements to be preserved	✓	
3. Supporting documentation must include		
a. Vicinity map and aerial photograph showing the property in relation to surrounding properties, roads, geographic, natural resource (wetland, etc.), historic sites, applicable comprehensive plan features such as proposed park locations, land uses, zones, and other features within 500' from any boundary of the proposed development	✓	
b. Existing development area conditions including but not limited to:	✓	

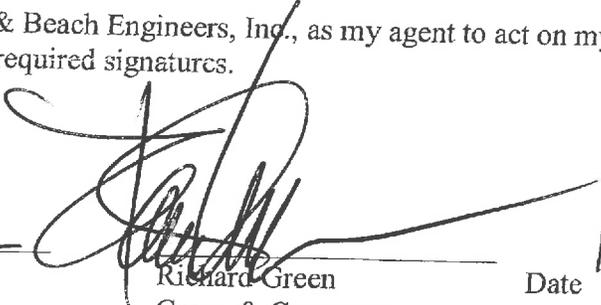
i. Location and description of all structures, including signs, existing on the site, together with accesses located within 100' of the property line	✓	
ii. Essential physical features such as watercourses, wetlands, flood plains, wildlife habitat areas, forest cover, and outcroppings	✓	
iii. Utilities existing, including power, water, sewer, holding tanks, bridges, culverts and drainage ways	✓	
c. Legal interest documents showing legal interest of the applicant in the property to be developed. Such documents must contain the description upon which the survey was based	✓	
d. Property encumbrances currently affecting the property, as well as any proposed encumbrances	✓	
e. Water District approval letter, if public water is used, indicating there is adequate supply and pressure to be provided to the development.	✓	
f. Erosion and sedimentation control plan endorsed by the York County Soil and Water Conservation District or the Town's engineering consultant	✓	
g. Stormwater management preliminary plan for stormwater and other surface water drainage prepared by a registered professional engineer including the general location of stormwater and other surface water drainage areas	✓	
h. Soil survey for York County covering the development. Where the soil survey shows soils with severe restrictions for development, a high intensity Class "A" soils survey must be provided	✓	
i. Vehicular traffic report estimating the amount and type of vehicular traffic that will be generated by the development on a daily basis and for peak hours	✓	
j. Traffic impact analysis in accordance with Title 16.10.5.2.D.1 for development involving 40 or more parking spaces or which are projected to generate more than 400 vehicle trips per day	N/A	
k. Test pit(s) analysis prepared by a licensed site evaluator when sewage disposal is to be accomplished by subsurface disposal, pits, prepared by a licensed site evaluator	✓	
l. Town Sewage Department or community system authority letter, when sewage disposal is to be through a public or community system, approving the connection and its location	N/A	

Letter of Authorization

I, Richard Green, Green & Company, 11 Lafayette Road, North Hampton, NH 03862, developer of property located in Kittery, ME, known as Tax Map 34, Lot 03, do hereby authorize Jones & Beach Engineers, Inc., PO Box 219, Stratham, NH, to act on my behalf concerning the previously-mentioned property. The parcel is located on 412 Haley Road in Kittery, ME.

I hereby appoint Jones & Beach Engineers, Inc., as my agent to act on my behalf in the review process, to include any required signatures.


Witness

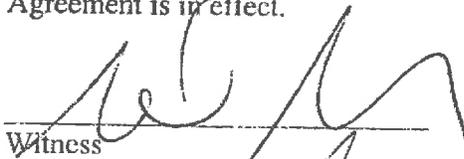

Richard Green
Green & Company

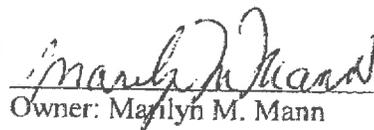
Date 10/25/16

Letter of Authorization pursuant to Purchase and Sale Agreement

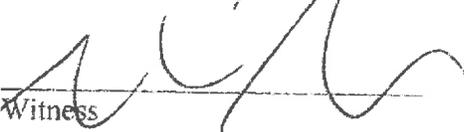
We, Marilyn M. Mann & James P. Smith, both of 412 Haley Road, Kittery, ME 03905-5625, as owner of certain real property situated in Kittery, Maine, further described as 27.45 Acres of land, with existing house and all other improvements, as recorded in the York County Registry of Deeds Book 15129, Page 248, and as also shown on the Town of Kittery Tax Assessors Map 34, Lot 3, have entered into a Purchase and Sale Agreement for Green & Company Building and Development Corp. of 11 Lafayette Road, P.O. Box 1297, North Hampton, New Hampshire 03862, for it to purchase the property described herein and located at 412 Haley Road, Kittery, Maine. Therefore, we agree that this Purchase and Sale Agreement dated April 29, 2016 is still in full force and effect, and while it is in full force and effect it gives Green & Company Building and Development Corp., and its Affiliates, Agents, Assigns and Engineers, authority to appear before the zoning board of adjustment and/or the planning board of said city/town and/or any of its boards or commissions, for the purpose of seeking any regulatory relief that may be requested, including variances, special exceptions, dimensional waivers, site plan approval, lot line adjustment approval and subdivision approval, related to the above described property at 412 Haley Road, Kittery, Maine This Letter of Authorization is in effect so long as the Purchase and Sale Agreement remains valid and in full force and effect, and should the Purchase and Sale Agreement no longer be in full force and effect we will notify the Town of Kittery and any regulatory authorities of this fact and revoked this authorization at that time.

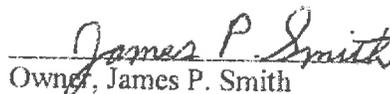
We agree to sign any needed further authorization or statement required by the Town of Kittery or any regulatory authority so that Green & Company Building and Development Corp. can seek approvals related to 412 Haley Road, Kittery, Maine while the Purchase and Sale Agreement is in effect.


Witness


Owner: Marilyn M. Mann

7-18-16
Date


Witness


Owner, James P. Smith

7 18 16
Date

Doc# 2007017329
Bk 15129 Pg 0248 - 024
Received York SS
04/10/2007 3:30PM
Debra L. Anderson
Register of Deeds

QUITCLAIM DEED WITH COVENANT

I, **Marilyn M. Mann**, of 412 Haley Road, Kittery, York County, Maine, for consideration paid, grant to **Marilyn M. Mann** and **James P. Smith**, as joint tenants with rights of survivorship, with QUITCLAIM COVENANTS, the land and buildings thereon, located in Kittery, County of York, and State of Maine, more particularly described as follows:

SEE ATTACHED EXHIBIT A

Being the same premises conveyed by Wallis H. Brooks and Marilyn M. Mann by Quitclaim Deed to Marilyn M. Mann dated June 29, 2005 and recorded in the York County Registry of Deeds in Book 14534, Page 461.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 10 day of July.

2006.



Witness



Marilyn M. Mann

STATE OF MAINE
York, ss.

July 10, 2006

Personally appeared before me the above-named Marilyn M. Mann and acknowledged this instrument to be her free act and deed.



Notary Public/Attorney at Law

Please type or print name below.

MARTIN J. RIVER

NO R.E. TRANSFER TAX PAID

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

Applicant Name:

Project Location (municipality):

GREEN & COMPANY

412 HALEY ROAD, KITTERY POINT, MAINE

Observation Hole 1 Test Pit Boring

1 " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
STONY		DARK BROWN	
FINE		YELLOWISH	
SANDY	FRIABLE	BROWN	NONE
LOAM			
GRAVELLY		BROWN	
LOAMY			
SAND			
L.O.E. @ 37"			

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water
<u>2</u> <u>B</u>	<u> </u> %	<u>37</u> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

Observation Hole 2 Test Pit Boring

1 " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
SILT	FRIABLE	DARK BROWN	NONE
LOAM		OLIVE	COMMON
SILTY	FIRM	TO	DISTINCT
CLAY		OLIVE	
LOAM		GRAY	
L.O.E. @ 30"			

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water
<u>9</u> <u>E</u>	<u> </u> %	<u>5</u> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2' CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20 % THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 16.9.

Observation Hole 3 Test Pit Boring

1 " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE		DARK BROWN	
SANDY	FRIABLE	DARK	NONE
LOAM		YELLOWISH	
		BROWN	
SANDY LOAM		YELLOWISH	COMMON
TO	FIRM	BROWN	DISTINCT
LOAMY FINE SAND			

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water
<u>3</u> <u>C</u>	<u> </u> %	<u>30</u> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

Observation Hole 4 Test Pit Boring

1 " Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
SILT	FRIABLE	DARK BROWN	NONE
LOAM		OLIVE	COMMON
SILTY	FIRM	TO	DISTINCT
CLAY		OLIVE	
LOAM		GRAY	
L.O.E. @ 30"			

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water
<u>9</u> <u>E</u>	<u> </u> %	<u>6</u> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

Joseph W. Hill
Signature

221 209
SE # SS#

7/5/16
Date

AUG 18 2016

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

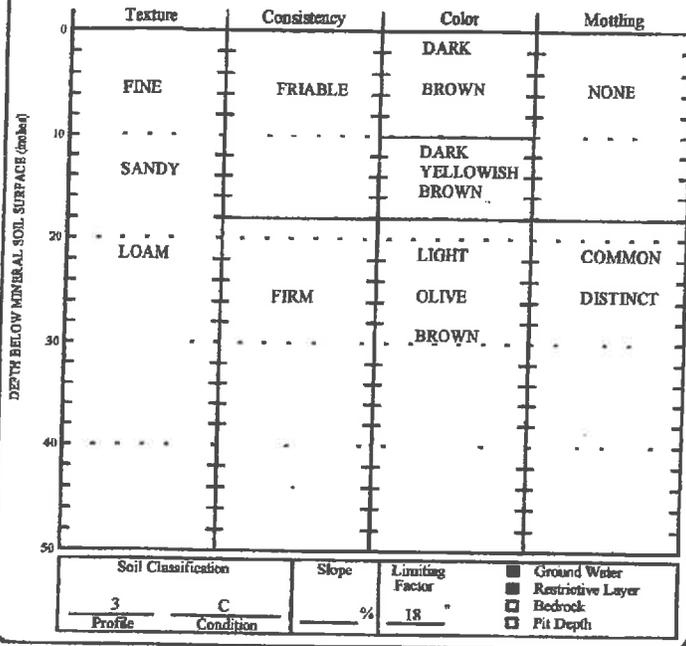
Applicant Name:

Project Location (municipality)

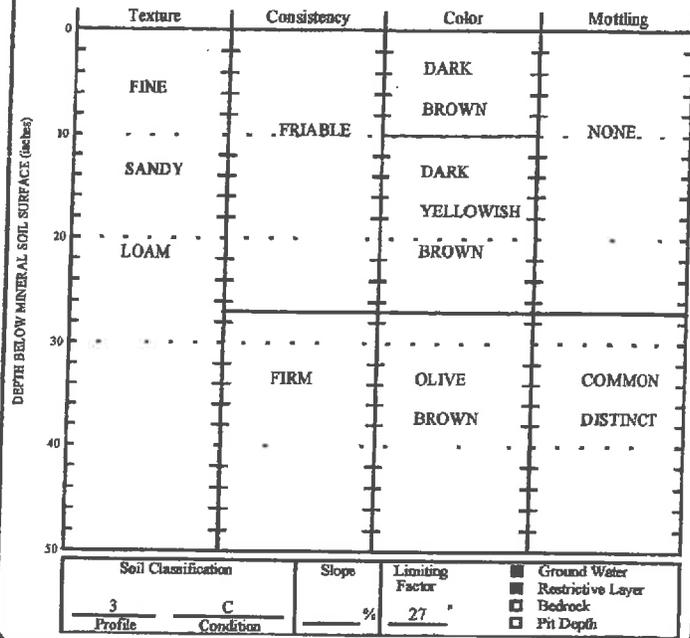
GREEN & COMPANY

412 HALEY ROAD, KITTERY POINT, MAINE

Observation Hole 5 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

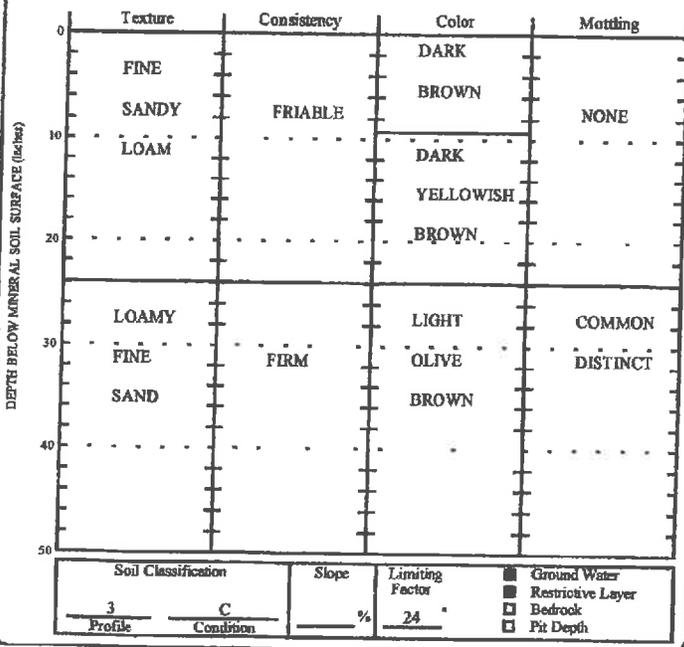


Observation Hole 6 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

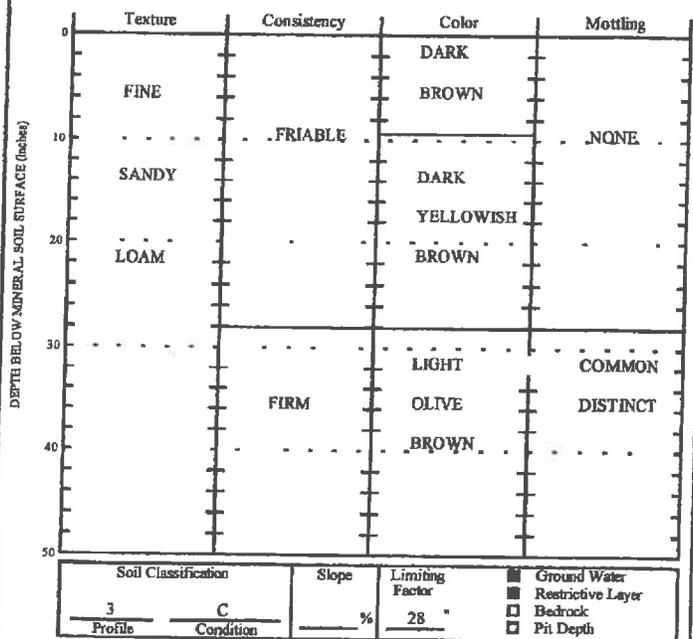


BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2' CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20 % THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 16.9.

Observation Hole 7 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Observation Hole 8 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



John W. Neil
 Signature

221 209

SE # SS#

7/5/16

Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

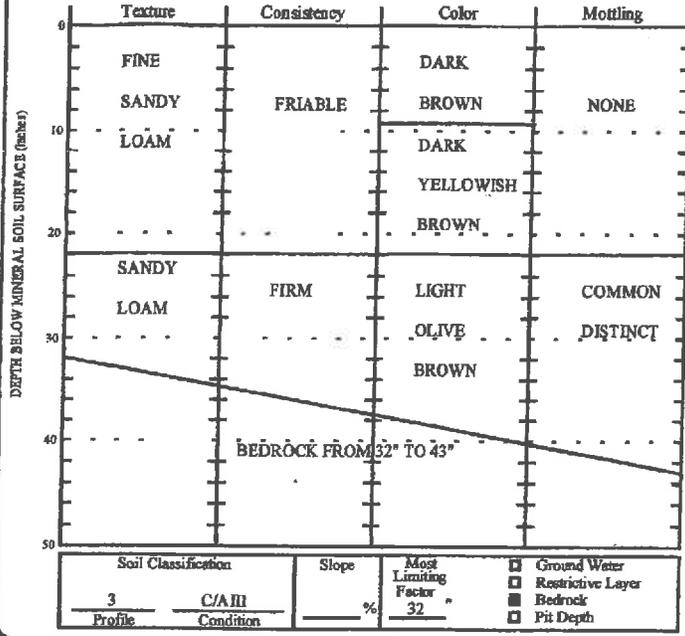
Applicant Name:

GREEN & COMPANY

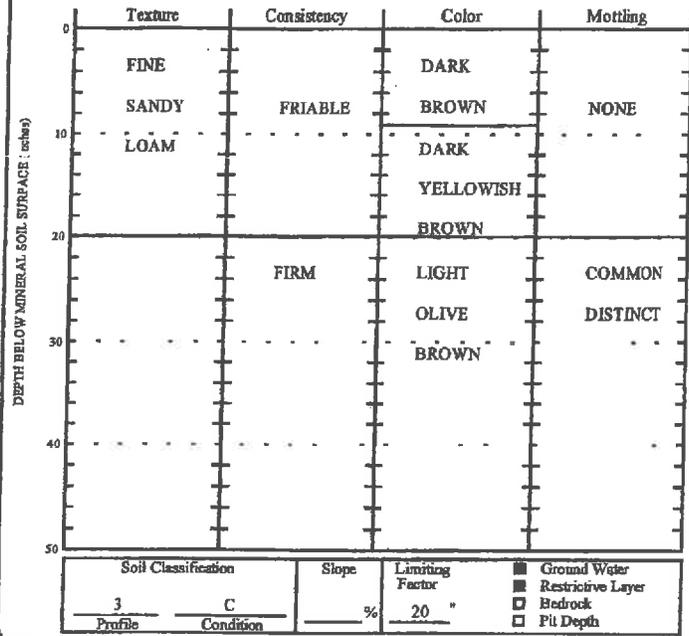
Project Location (municipality)

412 HALEY ROAD, KITTERY POINT, MAINE

Observation Hole 9 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

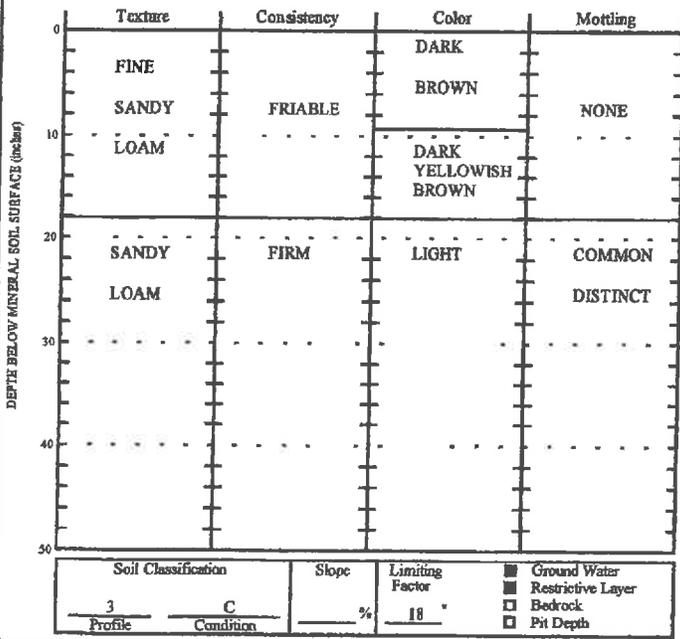


Observation Hole 10 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

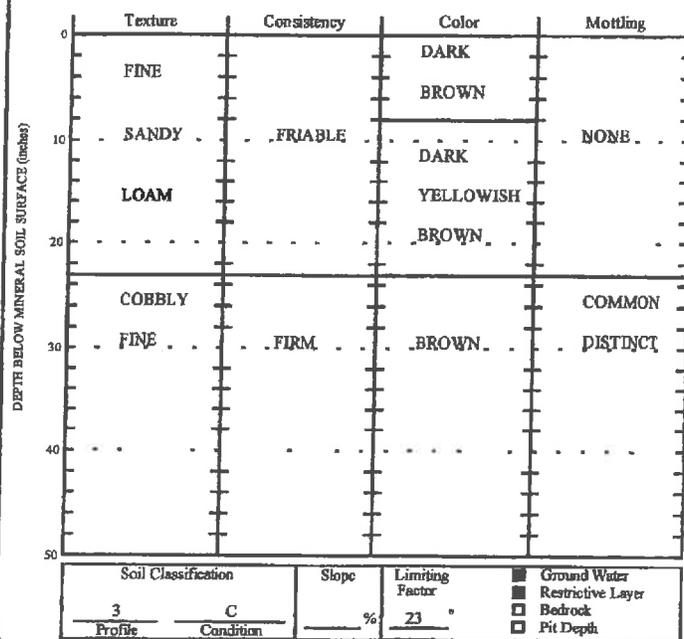


BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2' CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20 % THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 16.9.

Observation Hole 11 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Observation Hole 12 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Joseph W. Nail
 Signature

221 209
 SE # SS#

7/5/16
 Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

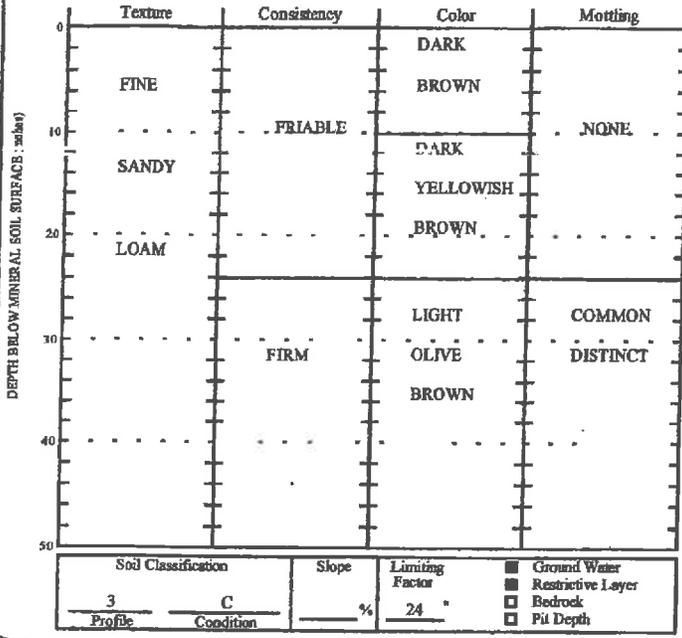
Applicant Name:

GREEN & COMPANY

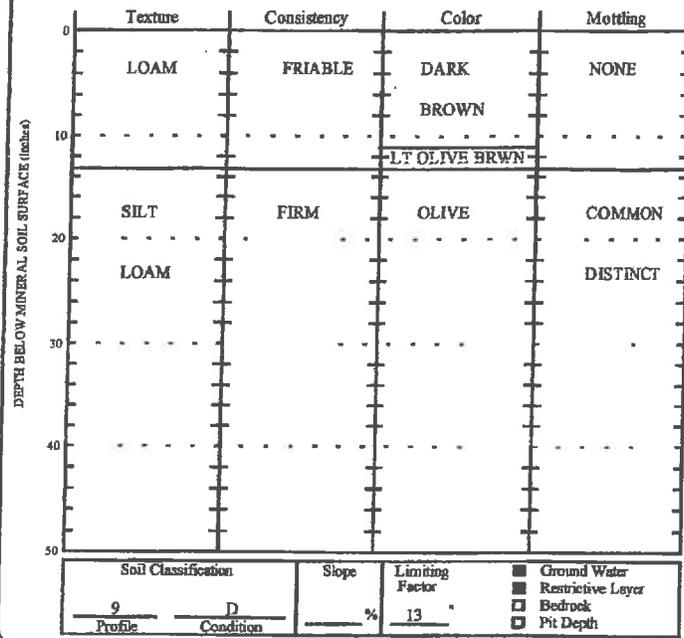
Project Location (municipality)

412 HALEY ROAD, KITTERY POINT, MAINE

Observation Hole 13 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

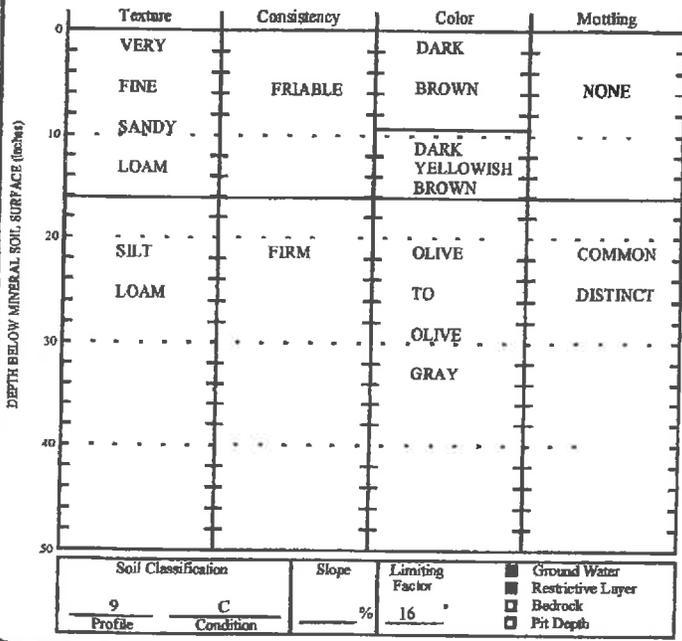


Observation Hole 14 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

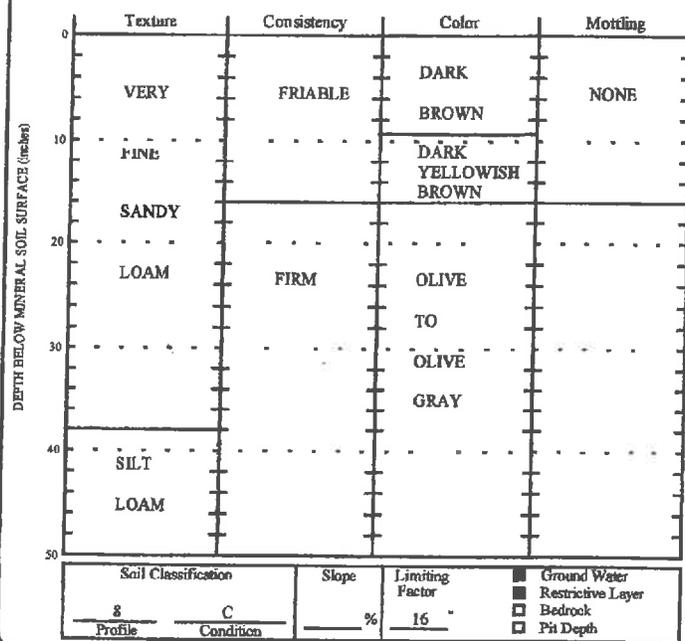


BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2 CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20 % THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 16.9.

Observation Hole 15 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Observation Hole 16 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



John W. Nield
 Signature

221 209
 SE # SS#

7/5/16
 Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

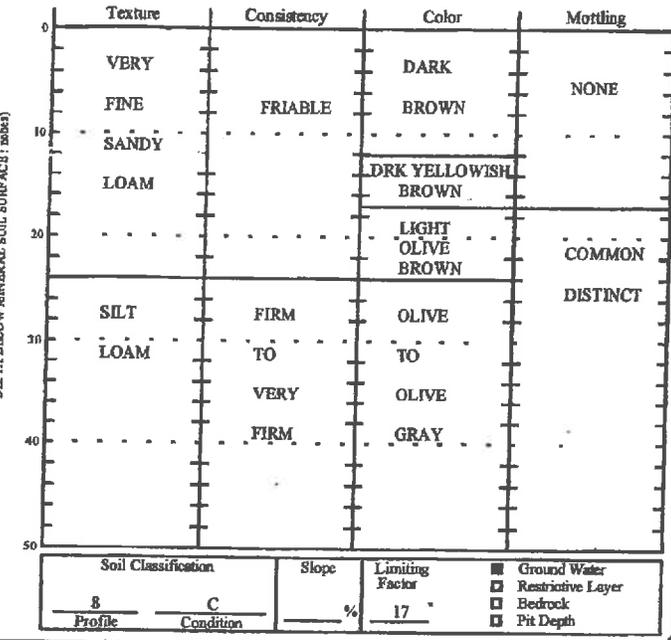
Applicant Name:

GREEN & COMPANY

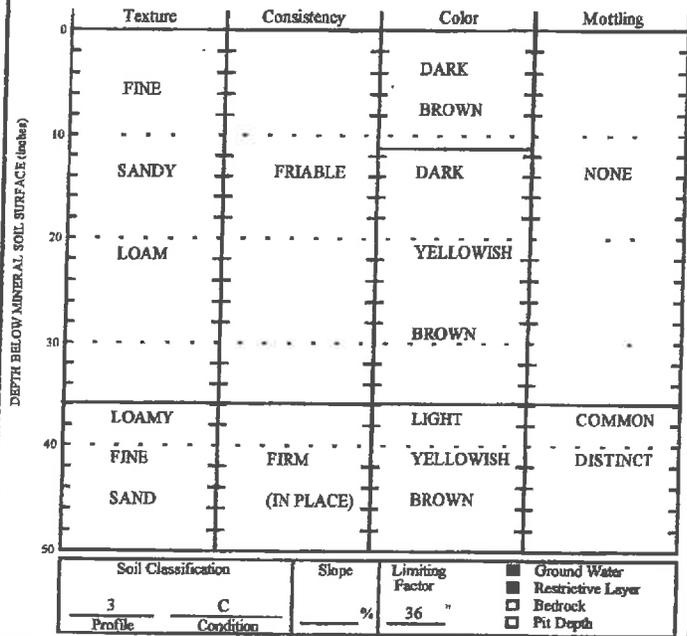
Project Location (municipality)

412 HALBY ROAD, KITTERY POINT, MAINE

Observation Hole 17 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

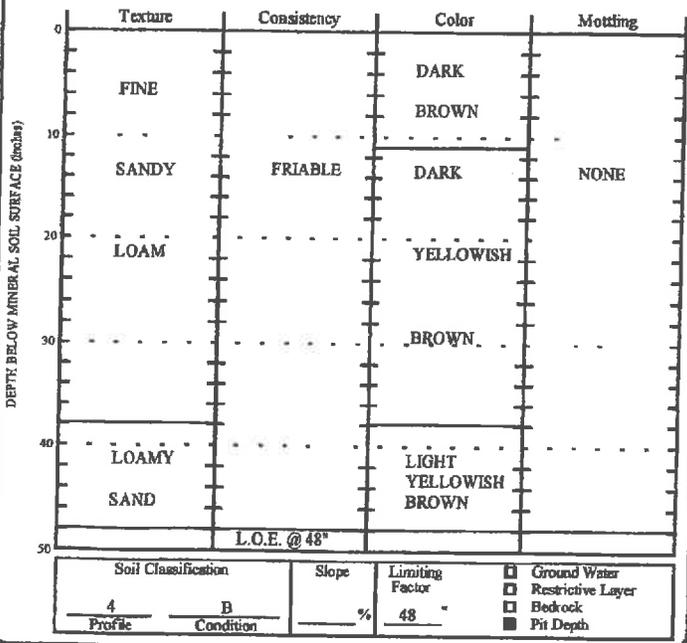


Observation Hole 18 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

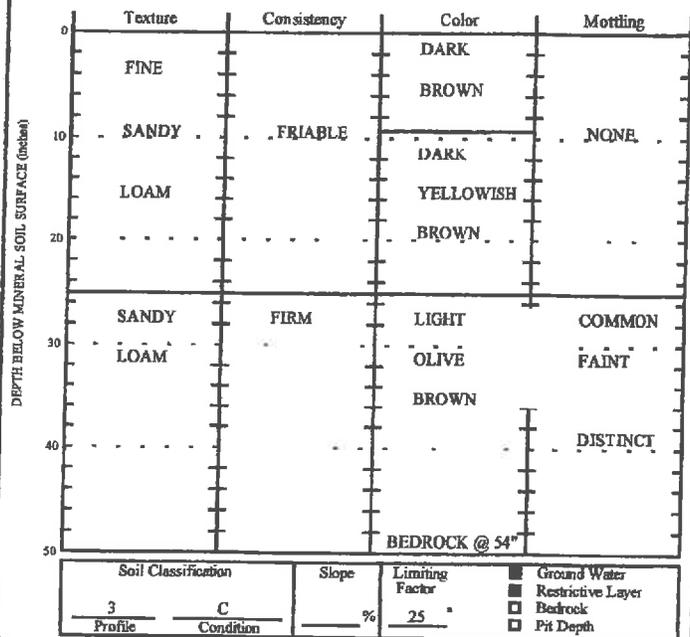


BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2' CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20% THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 169.

Observation Hole 19 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Observation Hole 20 Test Pit Boring
2 " Depth of Organic Horizon Above Mineral Soil



John W. Hill
 Signature

221 209
 SE# SS#

7/5/16
 Date

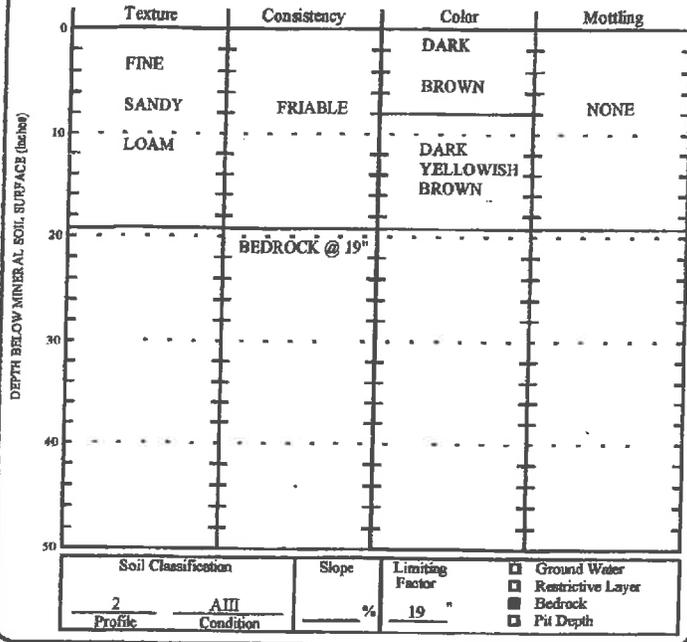
SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

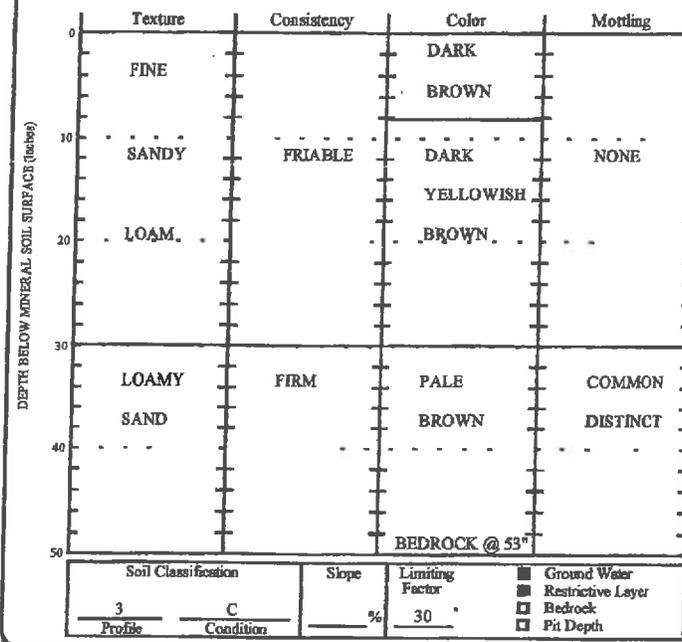
Applicant Name:
GREEN & COMPANY

Project Location (municipality)
412 HALEY ROAD, KITTERY POINT, MAINE

Observation Hole 21 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

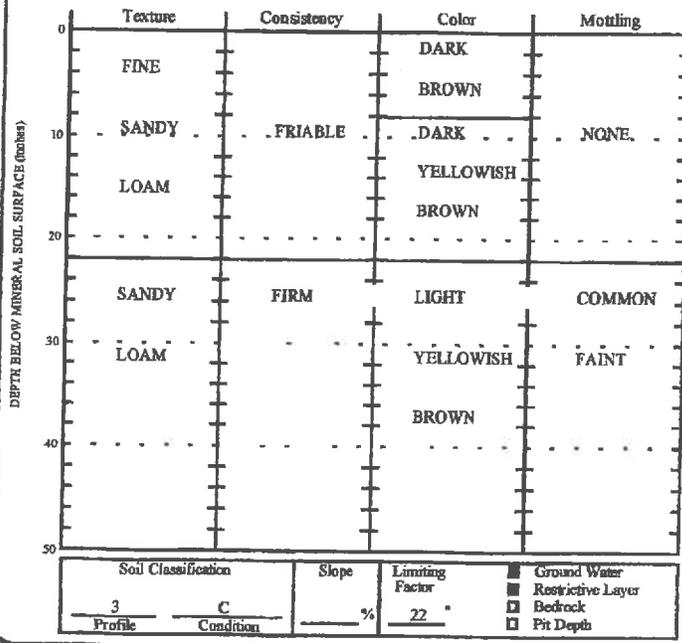


Observation Hole 22 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

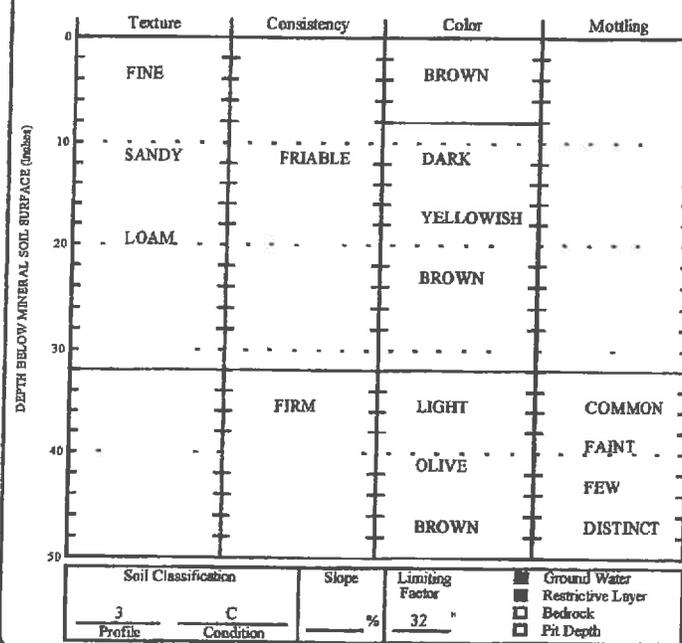


BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2' CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20 % THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 16.9.

Observation Hole 23 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Observation Hole 24 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Joseph W. Hill
Signature

221 209
SE # - SS#

7/5/16
Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

Applicant Name:

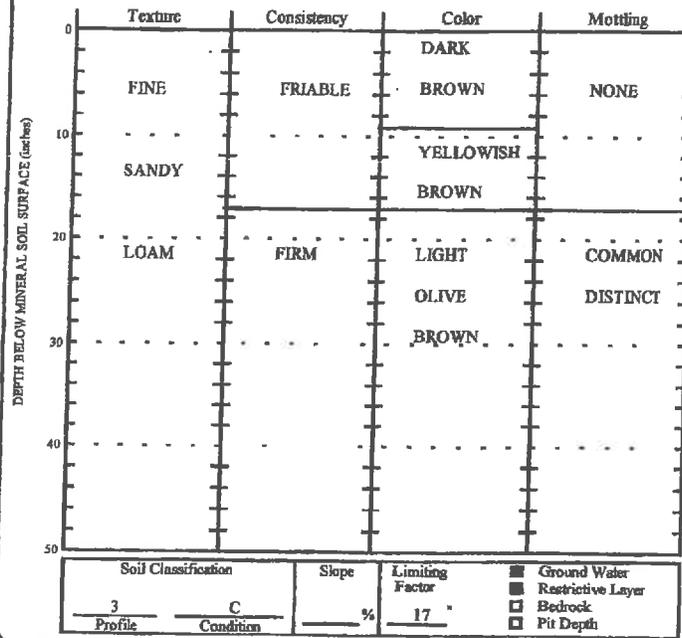
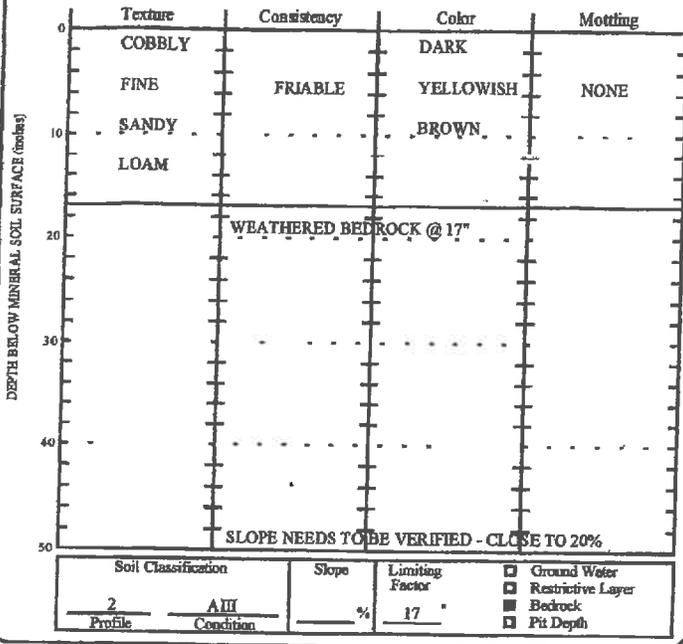
Project Location (municipality)

GREEN & COMPANY

412 HALBY ROAD, KITTERY POINT, MAINE

Observation Hole 25 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

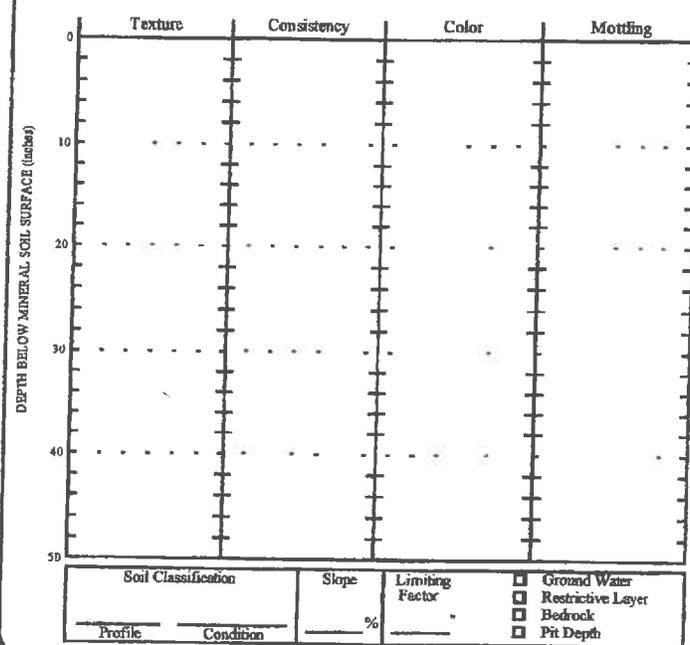
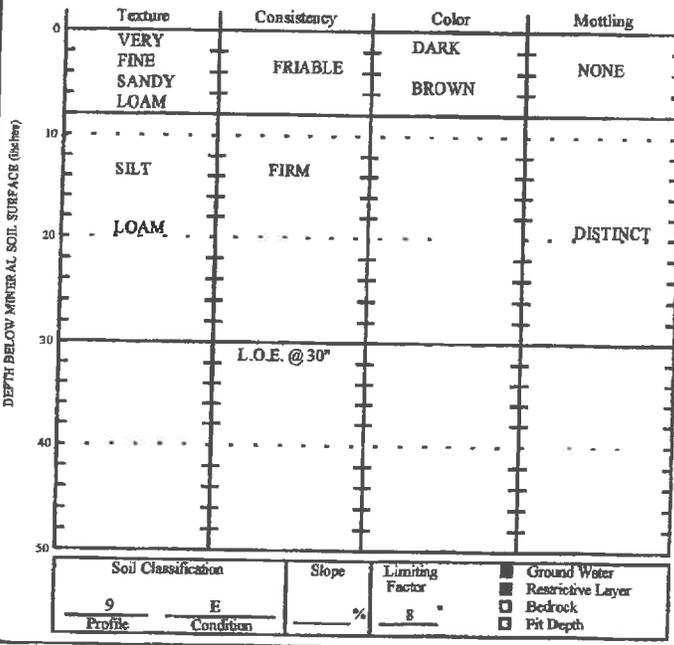
Observation Hole 26 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



BACKHOE-EXCAVATED TEST PITS WERE CONDUCTED ON JUNE 28, 2016. SLOPES CAN BE DETERMINED AFTER TEST PITS ARE SURVEY LOCATED AND PLACED ON THE PROJECT BASE MAP THAT CONTAINS 2 CONTOURS. SUITABLE SOILS FOR WASTEWATER DISPOSAL FOR NEW SYSTEMS ARE SOILS THAT HAVE AT LEAST 9 INCHES (OUTSIDE OF SHORELAND ZONE) AND 15 INCHES (WITHIN SHORELAND ZONE) OF NATURAL MINERAL SOIL MATERIAL FREE OF RESTRICTIVE FEATURES (LIMITING FACTORS) WITH SLOPES LESS THAN 20 % THAT MEET ALL RELEVANT STATE SETBACKS. SETBACKS FOR WASTEWATER DISPOSAL (SUBSURFACE SEWAGE DISPOSAL) MUST ALSO MEET THE SETBACKS IN THE KITTERY CODE - TABLE 16.9.

Observation Hole 27 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

Observation Hole 28 Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil



Joseph W. Nail
Signature

221 209
SE # SS#

7/5/16
Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name:

Applicant Name
GREEN & COMPANY

Project Location (in municipality)
412 HALEY ROAD - KITTEERY POINT, MAINE

Observation Hole 28 Test Pit Boring
1' Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	LIGHT OLIVE BROWN TO OLIVE	COMMON DISTINCT
L.O.E. @ 30"			

Soil Classification: 9 D Profile Condition
Slope: _____ %
Luminae Factor: 8
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole 29 Test Pit Boring
1' Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	YELLOWISH BROWN LIGHT OLIVE BROWN TO OLIVE	COMMON DISTINCT
L.O.E. @ 31"			

Soil Classification: 9 D Profile Condition
Slope: _____ %
Luminae Factor: 12
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Backhoe excavated test pits were conducted on October 20, 2016. Refer to project plans for slope information.

Observation Hole 30 Test Pit Boring
1' Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	LIGHT OLIVE BROWN OLIVE	COMMON DISTINCT
L.O.E. @ 30"			

Soil Classification: 9 D Profile Condition
Slope: _____ %
Luminae Factor: 10
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole 31 Test Pit Boring
1' Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	DRK YELLOWISH BROWN OLIVE	COMMON DISTINCT
L.O.E. @ 32"			

Soil Classification: 9 D Profile Condition
Slope: _____ %
Luminae Factor: 13
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Joshua Hill
Signature

221 209
SE: 55

10.25.16
Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name

Applicant Name

Project Location (municipality)

GREEN & COMPANY

412 HALEY ROAD - KITTERY POINT, MAINE

Observation Hole 32 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	DARK BROWN & DARK YELLOWISH BROWN	NONE
LOAM		LIGHT OLIVE BROWN	COMMON
SILT LOAM	FIRM	OLIVE	DISTINCT
1.0 L of 38"			

Soil Classification: B Profile, D Condition
 Slope: _____ %
 Limiting Factor: 11
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole 33 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
LOAM		DRK YELLOWISH BROWN	
VERY FINE SANDY LOAM TO SILT LOAM	FIRM	OLIVE	COMMON
			DISTINCT
1.0 L of 38"			
STRATIFIED FINE SANDY LOAM			
VERY FINE SANDY LOAM			
A			
OLIVE			

Soil Classification: B Profile, C Condition
 Slope: _____ %
 Limiting Factor: 15
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

*Backhoe excavated test pits were conducted on October 20, 2016.
 Refer to project plans for slope information.*

Observation Hole 34 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM & VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
		DRK YELLOWISH BROWN	
SILT LOAM	FIRM	OLIVE TO OLIVE GRAY	COMMON
			DISTINCT
1.0 L of 36"			

Soil Classification: B Profile, D Condition
 Slope: _____ %
 Limiting Factor: 14
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole 35 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	OLIVE GRAY	COMMON
			PROMINENT
1.0 L of 36"			

Soil Classification: 9 Profile, E Condition
 Slope: _____ %
 Limiting Factor: 8
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Jane M. Hill
 Signature

221 209

10-25-16

SE: SS

Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name

Applicant Name

Project Location (municipality)

GREEN & COMPANY

412 HALEY ROAD - KITTERY POINT, MAINE

Observation Hole 36

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
SILT	FRIABLE	DARK	NONE
		BROWN	COMMON
LOAM	FIRM	OLIVE	PROMINENT
		TO	
		OLIVE	
		GRAY	
C.O.E @ 34"			
Soil Classification		Slope	Limiting Factor
<u>U</u>	<u>E</u>	%	<u>5</u>
Profile	Condition		

Legend: Ground Water, Restrictive Layer, Bedrock, Pit Depth

Observation Hole 37

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE	FRIABLE	DARK	NONE
		BROWN	
SANDY	FIRM	DARK	COMMON
LOAM		YELLOWISH	
		BROWN	
LOAMY	FIRM	PALE	FAINT
FINE		BROWN	
SAND			
Soil Classification			
<u>3</u>	<u>C</u>	%	<u>27</u>
Profile	Condition		

Legend: Ground Water, Restrictive Layer, Bedrock, Pit Depth

*Backhoe excavated test pits were conducted on October 20, 2016.
Refer to project plans for slope information.*

Observation Hole 38

Test Pit

Boring

2 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE	FRIABLE	DARK	NONE
		BROWN	
SANDY	FIRM	DARK	COMMON
LOAM		YELLOWISH	
		BROWN	
WEATHERED BEDROCK @ 27"			
Soil Classification		Slope	Limiting Factor
<u>2</u>	<u>AIII</u>	%	<u>27</u>
Profile	Condition		

Legend: Ground Water, Restrictive Layer, Bedrock, Pit Depth

Observation Hole 39

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE	FRIABLE	DARK	NONE
		BROWN	
SANDY	FIRM	DARK	COMMON
LOAM		YELLOWISH	
		BROWN	
LOAMY	FIRM	PALE	FAINT
SAND		BROWN	
BEDROCK @ 45"			
Soil Classification		Slope	Limiting Factor
<u>1</u>	<u>C AIII</u>	%	<u>26</u>
Profile	Condition		

Legend: Ground Water, Restrictive Layer, Bedrock, Pit Depth

Josh W. Hill
Signature

221 209
SE # 558

10.25.16
Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name

Applicant Name

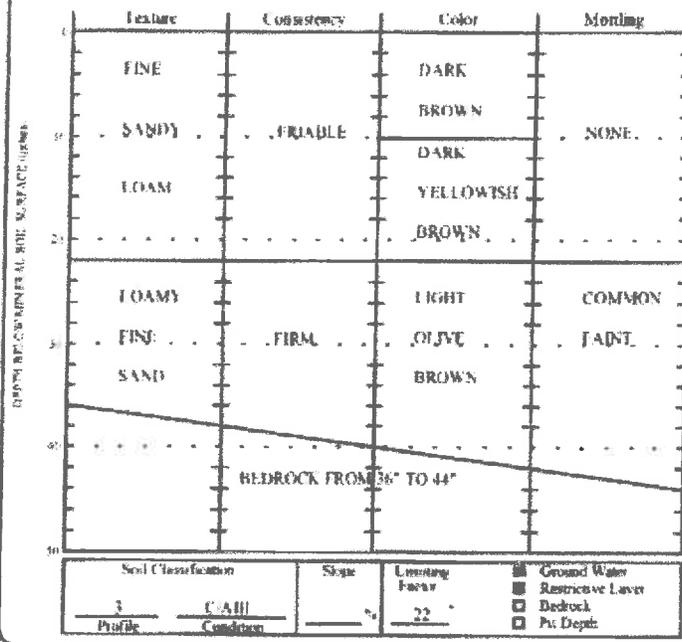
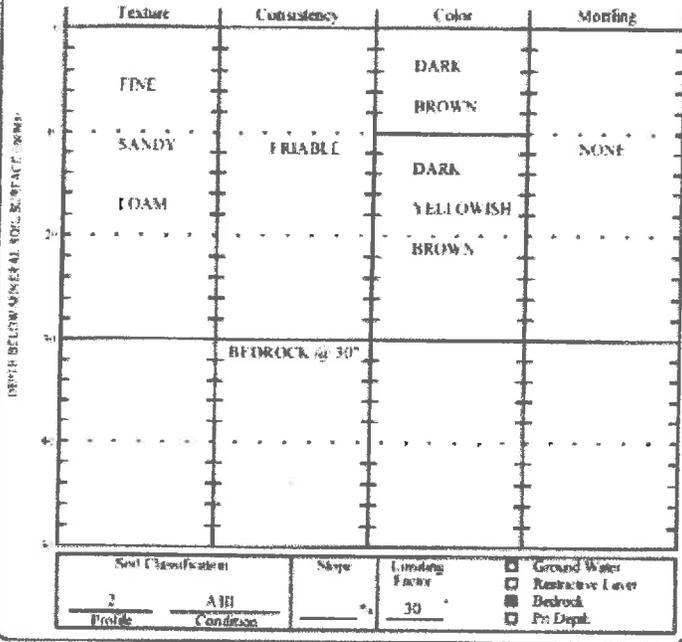
Project Location (municipality)

GREEN & COMPANY

412 HALEY ROAD - KITTERY POINT, MAINE

Observation Hole 40 Test Pit Boring
 / * Depth of Organic Horizon Above Mineral Soil

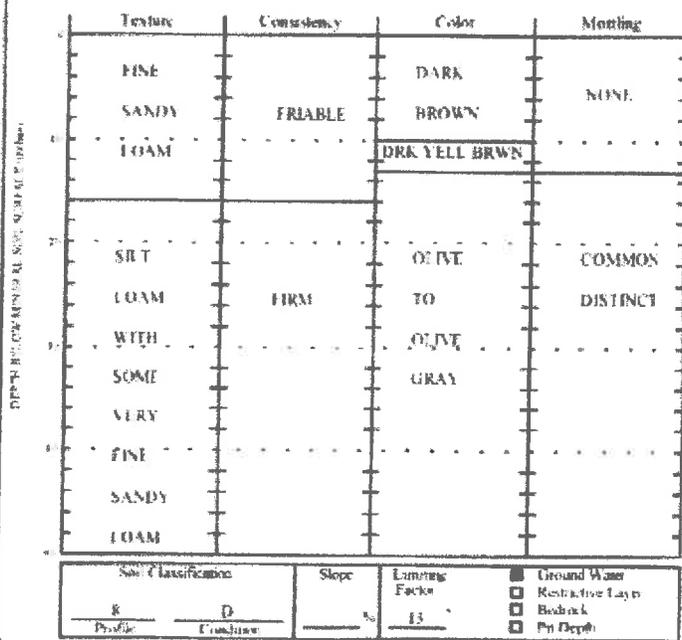
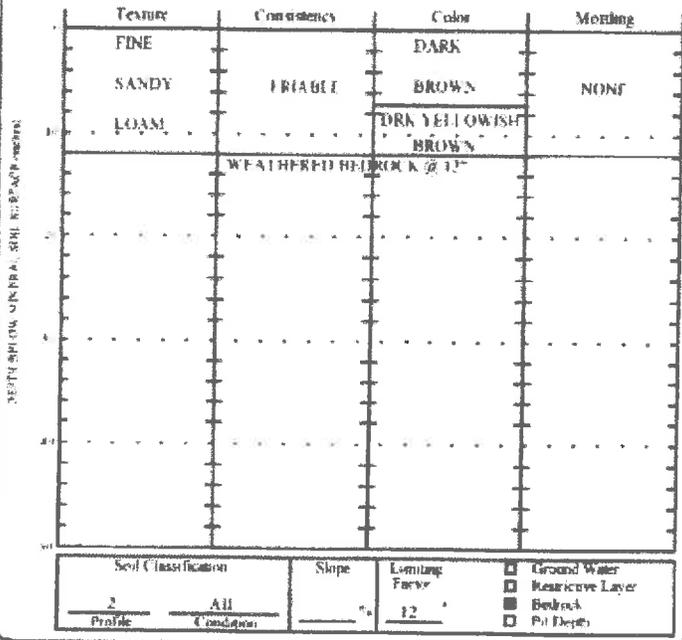
Observation Hole 41 Test Pit Boring
 / * Depth of Organic Horizon Above Mineral Soil



*Backhoe excavated test pits were conducted on October 20, 2016.
 Refer to project plans for slope information.*

Observation Hole 42 Test Pit Boring
 / * Depth of Organic Horizon Above Mineral Soil

Observation Hole 43 Test Pit Boring
 / * Depth of Organic Horizon Above Mineral Soil



Josh W. Hill
 Signature

221 209
 SF # 55e

10/25/16
 Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name

Applicant Name

Project Location (municipality)

GREEN & COMPANY

412 HALEY ROAD - KITTERY POINT, MAINE

Observation Hole 44

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
TO		DRK YELLOWISH BROWN	
VERY FINE SANDY LOAM	FIRM	OLIVE TO OLIVE GRAY	COMMON DISTINCT
LOL @ 40"			

Soil Classification: S Profile C Condition

Slope: _____ %

Limiting Factor: 15

Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole 45

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	OLIVE	COMMON DISTINCT
LOL @ 26"			

Soil Classification: S Profile D Condition

Slope: _____ %

Limiting Factor: 12

Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Backhoe excavated test pits were conducted on October 20, 2016. Refer to project plans for slope information.

Observation Hole 46

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
TO		DRK YELLOWISH BROWN	
VERY FINE SANDY LOAM	FIRM	OLIVE TO OLIVE GRAY	COMMON DISTINCT

Soil Classification: S Profile C Condition

Slope: _____ %

Limiting Factor: 15

Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole 47

Test Pit

Boring

1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE
SILT LOAM	FIRM	OLIVE	COMMON DISTINCT
LOL @ 30"			

Soil Classification: S Profile D Condition

Slope: _____ %

Limiting Factor: 9

Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

John W. Neil
 Signature

221 209

10-25-16

SL # 554

Date

SOIL PROFILE/CLASSIFICATION INFORMATION

Project Name

Applicant Name

Project Location (municipality)

GREEN & COMPANY

412 HALEY ROAD - KITTERY POINT, MAINE

Observation Hole 48 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
		DRK YELL. BRWN	
VERY FINE SANDY LOAM TO SILTY LOAM	FIRM	OLIVE	COMMON DISTINCT
LOE of 40"			

Soil Classification: 8 C
 Profile Condition
 Limiting Factor: 15
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

DEPTH BELOW MINERAL: 0.00, 0.25, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00

Observation Hole 49 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
		DARK YELLOWISH BROWN	
LOAM	FIRM	OLIVE	COMMON DISTINCT
LOE of 48"			

Soil Classification: 3 C
 Profile Condition
 Limiting Factor: 24
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

DEPTH BELOW MINERAL: 0.00, 0.25, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00

*Backhoe excavated test pits were conducted on October 20, 2016.
 Refer to project plans for slope information.*

Observation Hole 50 Test Pit Boring
1 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE
		DARK YELLOWISH BROWN	
BEDROCK @ 18"			

Soil Classification: 2 AH
 Profile Condition
 Limiting Factor: 18
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

DEPTH BELOW MINERAL: 0.00, 0.25, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00

Observation Hole Test Pit Boring
 Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling

Soil Classification:
 Profile Condition
 Limiting Factor:
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

DEPTH BELOW MINERAL: 0.00, 0.25, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00

Joseph W. J. L...
 Signature

221 209
 ST. # 553

10/25/16
 Date

ROGER C. RAYMOND, JR., President
ROBERT P. WYMAN, Treasurer

JAMES E. GOLTER, Secretary
MICHAEL S. ROGERS, Superintendent

OFFICE OF
KITTERY WATER DISTRICT

17 State Road
Kittery, Maine 03904-1565
TEL: 207-439-1128
FAX: 207-439-8549
Email: kitterywater@comcast.net

Kittery Planning Board
200 Rogers Road
Kittery, ME 03904

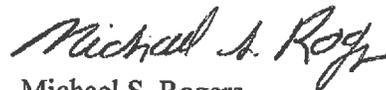
September 29, 2016

Re: Proposed Subdivision – 412 Haley Road, Kittery Point

Dear Planning Board Members,

Please accept this letter as verification that the Kittery Water District does have the capacity to supply the proposed subdivision at 412 Haley Road in Kittery Point, the applicant being Green and Company.

Sincerely,



Michael S. Rogers
Superintendent

cc: Joseph Coronati, V.P. Jonest & Beach Engineers, Inc.

**ABUTTERS LIST (150 FT)
FOR
412 HALEY ROAD, KITTERY, ME
JBE PROJECT No. 16030
OCTOBER 11, 2016**

OWNER OF RECORD:

TAX MAP 34/ LOT 3
MARILYN M. MANN
JAMES P. SMITH
412 HALEY RD
KITTERY POINT, ME 03905
BK 15129 / PG 248

APPLICANT:

GREEN & COMPANY
ATTN. RICHARD GREEN
11 LAFAYETTE RD
NORTH HAMPTON, NH 03862

ABUTTERS:

25/23A (21 FOLCUTT RD)
DAVID K. CLARK
KATHRYN CLARK
125 EAST 12TH ST, 6A
NEW YORK, NY 10003
17100/411 (09/18/15)

25/23B-1 (FOLCUTT RD)
WLADISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/484 (08/20/14)

25/24 (17 FOLCUTT RD)
BRONISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/482 (08/20/14)

34/1
ANDREW R. VALERI
LYNNE E. VALERI
40 GOOSE POINT
KITTERY POINT, ME 03905
8405/48

34/2A
THOMAS A JOHNSON
1 GOOSE POINT
KITTERY POINT, ME 03905
16170/182

34/3-1 (428 HALEY RD)
RAYMOND A. GRENIER TRUSTEE
RAYMOND A. GRENIER REV TRUST
PO BOX 43
KITTERY POINT, ME 03905
10443/262

34/3-2
PETER D WILKINS
CHERI L MAURER WILKINS
398 HALEY RD
KITTERY POINT, ME 03905
8424/85

34/3-3
DAVID E MCCARTNEY
ELAINE MCCARTNEY
404 HALEY RD
KITTERY POINT, ME 03905
14296/509

34/3-3A
JOHN M ROBBINS
SHAYE MCGANN ROBBINS
402 HALEY RD
KITTERY POINT, ME 03905
15482/66

34/3-4
WARREN P & JANE M SCHILL
424 HALEY RD
KITTERY POINT, ME 03905
7681/35

34/3-5 (426 HALEY RD)
RAYMOND A GRENIER
LISA R MORIGUCHI
PO BOX 43
KITTERY POINT, ME 03905
7713/285

34/5C
OFELIA A DAHLEN
MARVIN DAHLEN
12 TUCKERS COVE
KITTERY POINT, ME 03905
6021/243

34/5D
CANDANCE C. WHEELER TRUSTEE
CANDANCE C. WHEELER REV TRUST
4 TUCKERS COVE
KITTERY POINT, ME 03905
16070/154

34/5E (6 TUCKERS COVE)
MICHAEL M STEPHENS
ELIZABETH A STEPHENS
PO BOX 553
KITTERY, ME 03904
11233/288

34/35
CHANDLER O DALZELL JR
JEANNE L DALZELL
29 GOOSE POINT
KITTERY POINT, ME 03905
10109/155

34/36
KALLE E MATSO
KAREN A MATSO
31 GOOSE POINT
KITTERY POINT, ME 03905
10417/22

41/07-2
SUSAN L NICKELL
401 HALEY RD
KITTERY POINT, ME 03905
4091/123

41/07-3 (411 HALEY RD)
PETER S GIFTOS JR
SUSANE B GIFTOS
PO BOX 58
KITTERY POINT, ME 03905
2841/244

41/07-4A (419A HALEY RD)
THOMAS MCTAGGART
CATHERINE BOSBACH
PO BOX 775
KITTERY, ME 03904
17117/58

41/07-4B
JILL CARD
419 HALEY RD, UNIT B
KITTERY POINT, ME 03905
16883/64

ENGINEERS/SURVEYORS:

JONES & BEACH ENGINEERS, INC.
ATTN: JOSEPH CORONATI
PO BOX 219
STRATHAM, NH 03885

WETLANDS:

WEST ENVIRONMENTAL, INC.
ATTN. MARK WEST
48 STEVENS HILL ROAD
NOTTINGHAM, NH 03290

SOILS:

JOSEPH NOEL
PO BOX 174
SOUTH BERWICK, ME 03908

ATTORNEY:

ORSO LAW
ATTN. GREG ORSO
439 YORK STREET
YORK HARBOR, ME 03911

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ELIZABETH A STEPHENS
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LISA R MORIGUCHI
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SHAYE MCGANN ROBBINS
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PETER D WILKINS
CHERI L MAURER WILKINS
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NEW YORK, NY 10003

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WEST ENVIRONMENTAL INC



48 Stevens Hill Road, Nottingham, NH 03290
603-734-4298 ♦ mark@westenv.net

Joseph Coronati
Jones and Beach Engineers, Inc.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885

October 27, 2016

RE: 412 Haley Road Kittery

SUBJ: Wetland and Wildlife Habitat Maps

Dear Joe:

At your request, West Environmental, Inc. (WEI) delineated wetlands at the above referenced property with Joe Noel in September of this year. The onsite wetlands were delineated according to the following standards:

- **US Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (January, 1987).**
- **Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (October 2009).**
- **MEDEP Regulations**

We evaluated plant communities, soils through augered soil samples and hydrology to determine the wetland boundary. There were eight wetlands identified on and adjacent to the property. There is tidal marsh, rocky shore and mudflats bordering the tide line. There are two ditched intermittent streams one in the northwest and one in the southeast. Both have wet meadow and scrub-shrub wetlands associated with them. The southeastern drainage extends off site and has a small area of forested swamp. There is also a wet meadow in the center of the site. Finally, there are two small isolated wet meadows and two small manmade ponds along the northern property boundary. One is a roadside swale along the existing driveway. all of the freshwater wetlands have poorly drained silt loam and clay soils.

All of these wetlands are shown on the Existing Conditions Plan prepared by Jones and Beach Engineers, Inc. An aerial photo map will be prepared showing wetlands west, north, and east of the site and will be submitted under separate cover.

WEI has prepared a color Preliminary Wildlife Habitat Map with Jones and Beach Engineers, Inc. to rank the habitat types onsite. The Uplands onsite are dominated by mowed fields and scrub-shrub vegetation often dominated by invasive shrub species. The most important habitat is the tidal wetlands and their associated 100 foot buffer zone (Habitat A). Habitat B is forested the portion of the stream wetland and its associated 100 foot buffer. Habitat C includes three wet meadow areas with their 50 and 100 foot buffers. Habitat D is the upland areas dominated by sapling and shrub-shrub vegetation. The majority of the proposed development is within Habitat D the least important habitat on the site.

412 Haley Road Kittery

Page 2

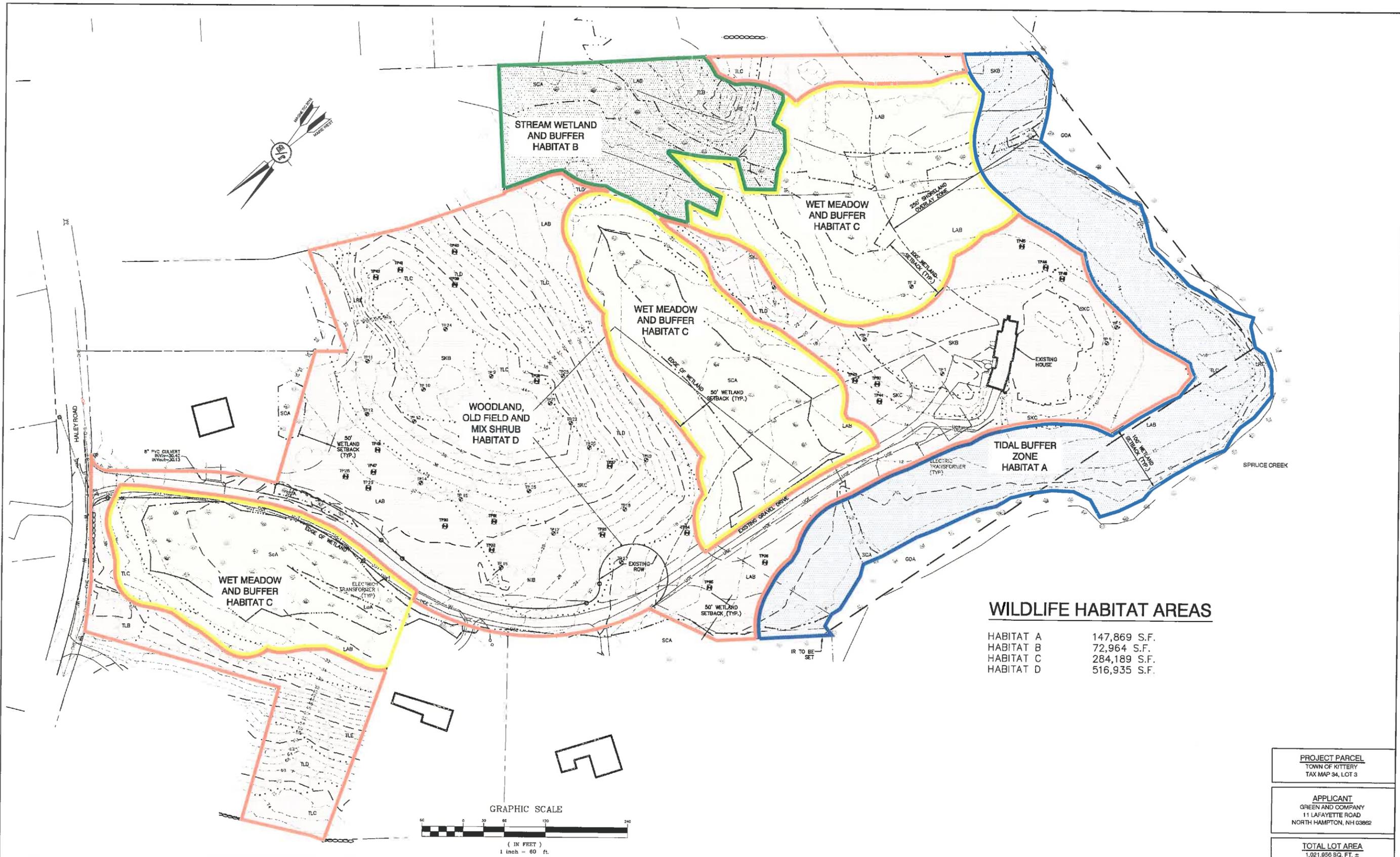
This completes our report at this time and we hope that it meets your needs. Please call our office if you have any questions or require additional information.

Sincerely,
West Environmental, Inc.

A handwritten signature in black ink, appearing to read 'Mark C. West', with a long horizontal stroke extending to the right.

Mark C. West,
President/Wetland Scientist

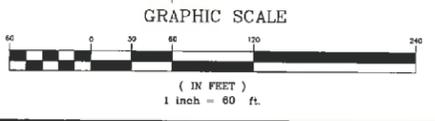
Michael Green



WILDLIFE HABITAT AREAS

HABITAT A	147,869 S.F.
HABITAT B	72,964 S.F.
HABITAT C	284,189 S.F.
HABITAT D	516,935 S.F.

PROJECT PARCEL TOWN OF KITTERY TAX MAP 34, LOT 3
APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03882
TOTAL LOT AREA 1,021,856 SQ. FT. ± 23.46 ACRES ±



W:\16030\KITTERY, ME-412 HALEY ROAD-GREEN & CO.dwg 10/27/2016 9:29:04 AM EDT

Design: LAZ	Draft: LAZ	Date: 9/30/16
Checked: JAC	Scale: 1"=60'	Project No.: 16030
Drawing Name: 16030-PLAN.DWG		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		

REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
 Civil Engineering Services
 85 Portsmouth Ave.
 PO Box 218
 Stratham, NH 03885
 603-772-4746
 FAX: 603-772-0227
 E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	WILDLIFE HABITAT MAP
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE

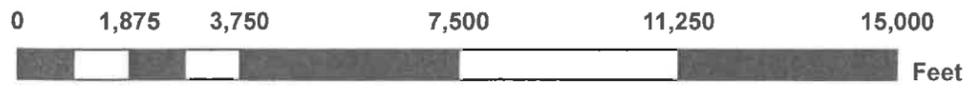
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SHEET 1 OF 1 JBE PROJECT NO. 16030	





This map was prepared by the Kittery Planning Department to educate the public and provide a better understanding of the proposed implementation of the new Zoning Map and Resource Protection Overlay Zone.
November 19, 2009 - maa

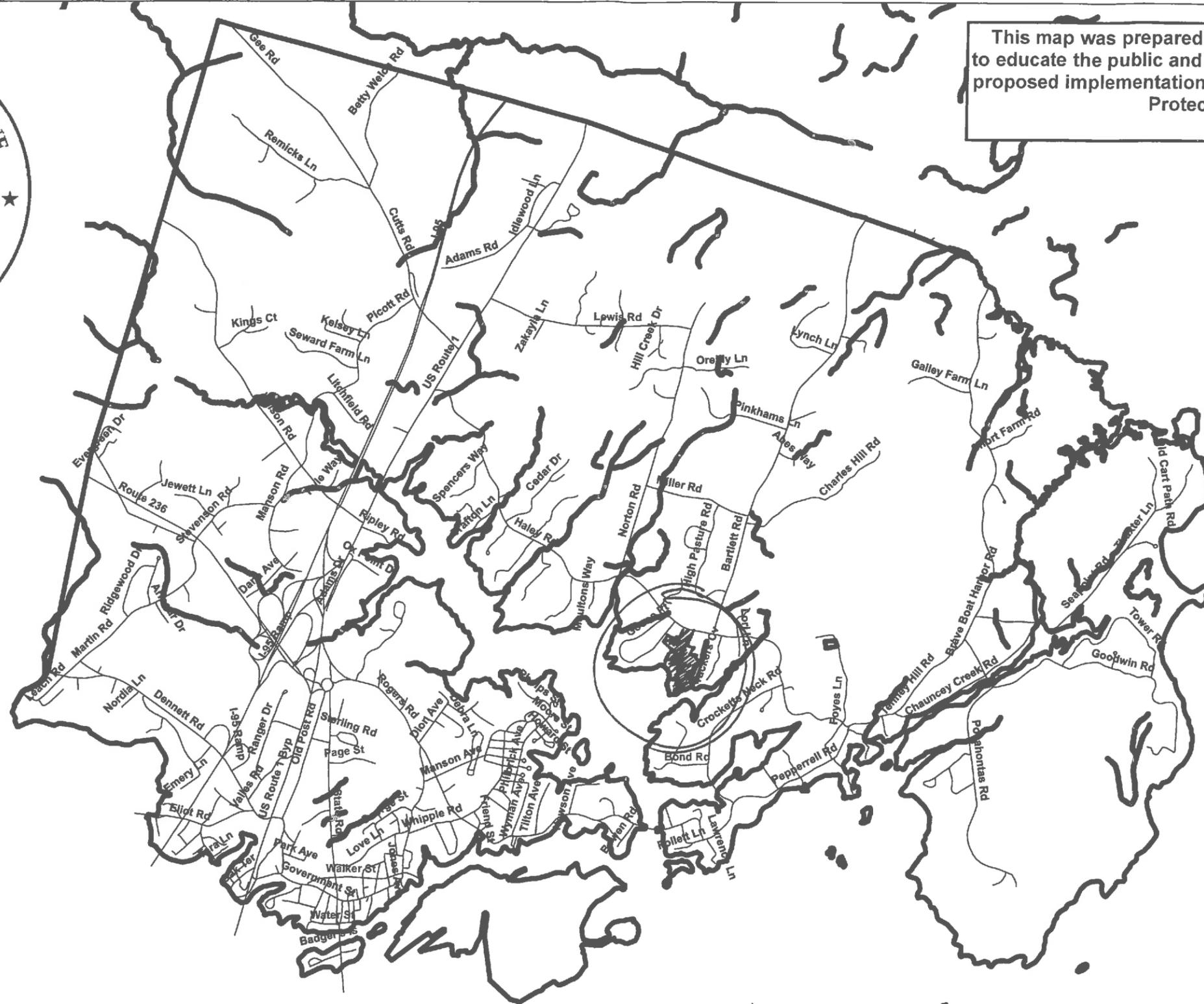
1 inch = 1,500 feet



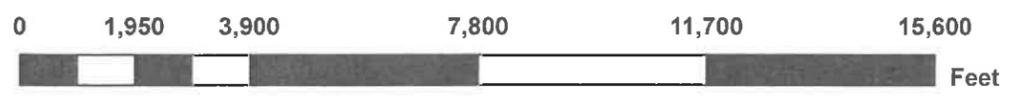
FEMA 100 Year Floodplain in Kittery



This map was prepared by the Kittery Planning Department to educate the public and provide a better understanding of the proposed implementation of the new Zoning Map and Resource Protection Overlay Zone.
November 19, 2009 - maa

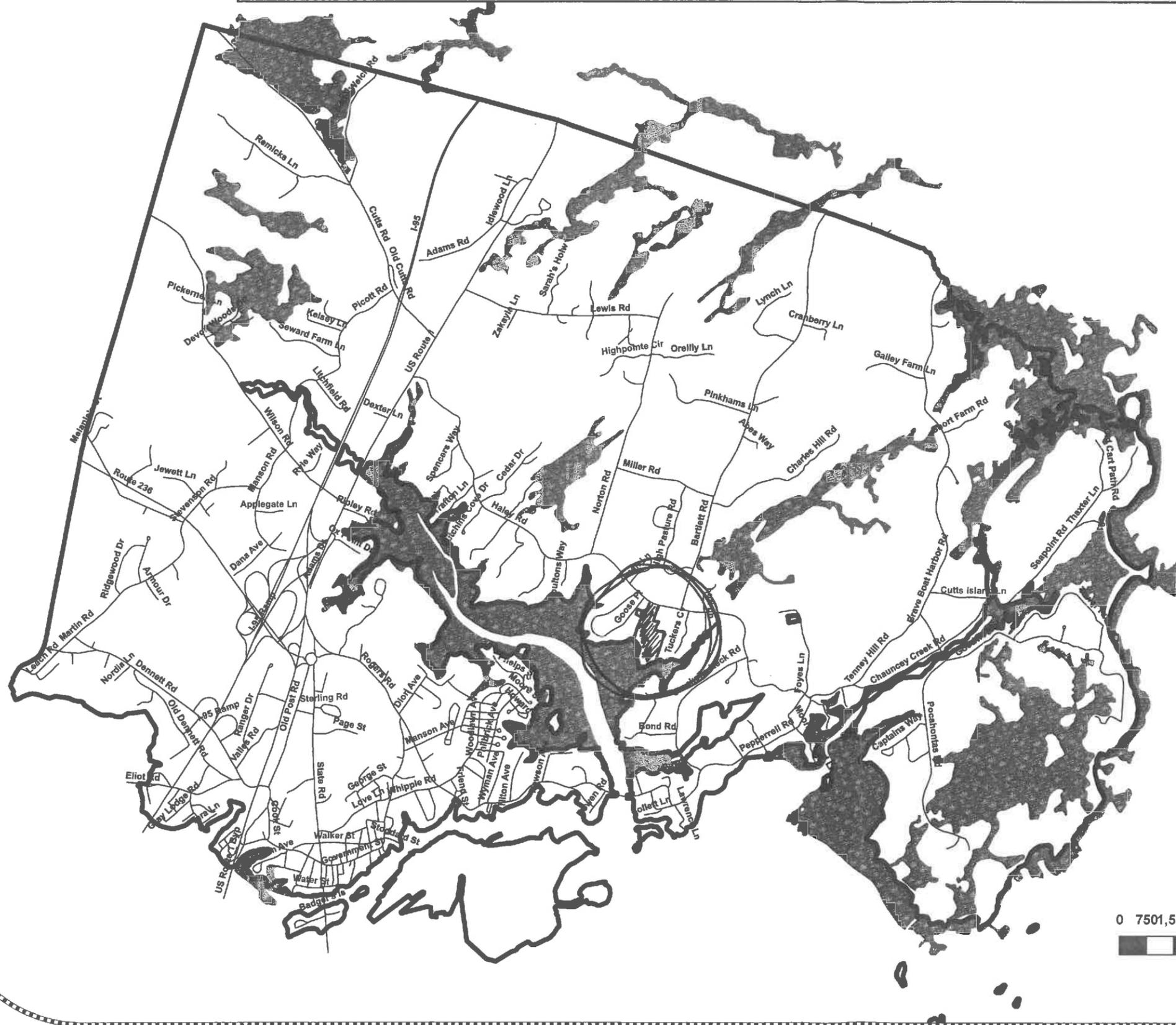


1 inch = 1,500 feet



Stream Buffers in Kittery

Significant Wetlands (+2 Acres) in Kittery

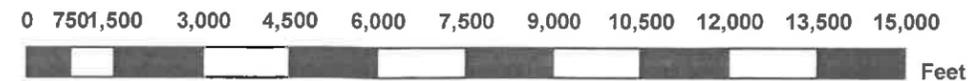


This map was prepared by the Kittery Planning Department to educate the public and provide a better understanding of the proposed implementation of the new Zoning Map and Resource Protection Overlay Zone.

November 19, 2009 - maa



1 inch = 1,500 feet



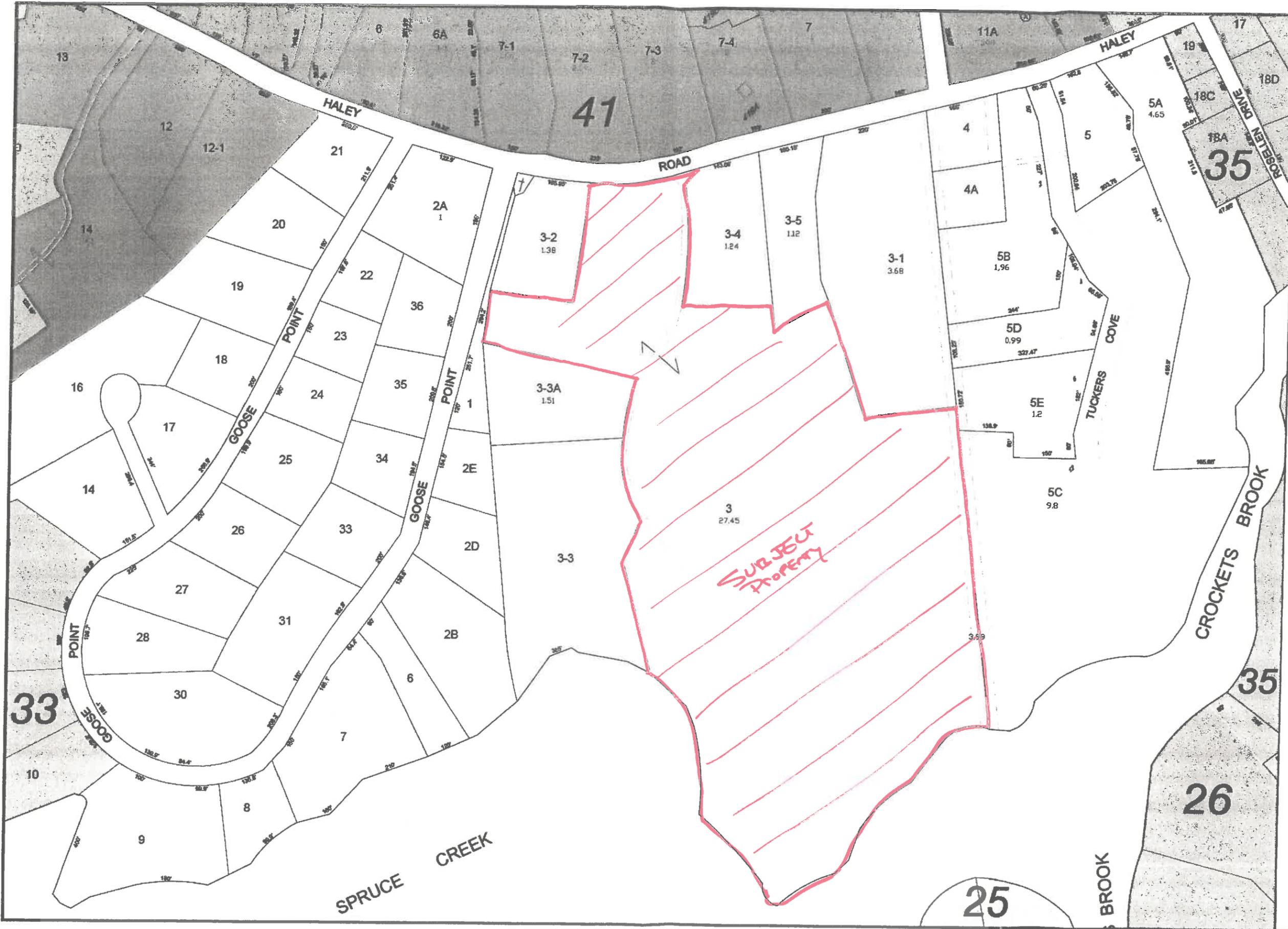
PROPERTY MAP
KITTERY
MAINE



LEGEND
AUTOMATICALLY R11 LOT DIMENSIONS
MAP NUMBER 74 PROPERTY BOUNDARIES
BERRY ROAD LOT NO. 1-30
BERRY ADDRESS NO. 1-30
REVISION TO APRIL 1, 2012
FOR AMENDING PLANNING BOARD
NOT FOR CONVEYANCE



John E. O'Donnell & Associates
632 Bald Hill Road
New Gloucester, Maine 04260
(207) 926-4044
www.joedonnell.com



PROPERTY MAP KITTERY MAINE



LEGEND

ACREAGE	ADJUTING MAP NO.	LOT DIMENSION
74	R11	PROPERTY INDEX
74	74	RIGHT OF WAY
74	74	EXHIBIT



John E. O'Donnell & Associates
632 Bald Hill Road
New Gloucester, Maine 04260
(207) 926-4044
www.jeodonnell.com

REVISED TO APRIL 1, 2015
THIS PROPERTY MAP SHOWS ONLY
NOT FOR RECORDING PURPOSES



SPRUCE CREEK

CROCKETTS BROOK

CROCKETTS NECK ROAD

FOLCUTT ROAD

BOND ROAD

BARTER'S

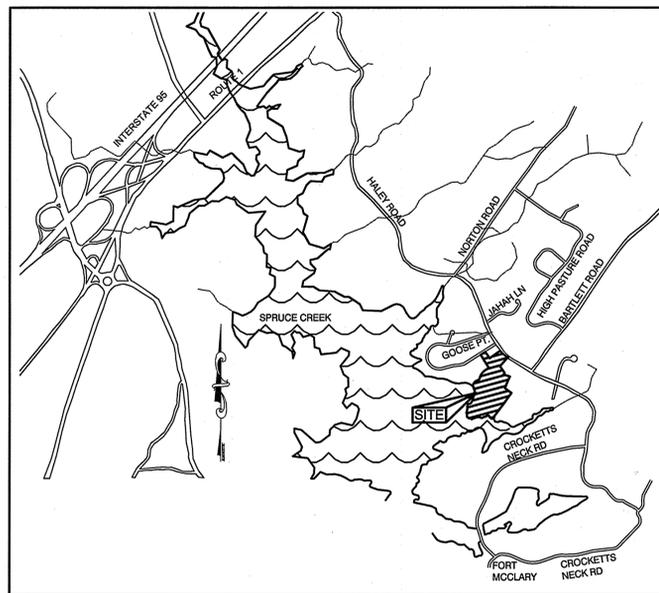
26

25

GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINES
---	---	SETBACK LINES
---	---	CENTERLINE
---	---	FRESHWATER WETLANDS LINE
---	---	TIDAL WETLANDS LINE
---	---	STREAM CHANNEL
---	---	TREE LINE
---	---	STONEWALL
---	---	FENCE
---	---	STOCKADE FENCE
---	---	SOIL BOUNDARY
---	---	FLOOD PLAIN LINE
---	---	ZONELINE
---	---	EASEMENT
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
---	---	EDGE OF PAVEMENT
---	---	VERTICAL GRANITE CURB
---	---	SLOPE GRANITE CURB
---	---	CAPE COD BERM
---	---	POURED CONCRETE CURB
---	---	SILT FENCE
---	---	DRAINAGE LINE
---	---	WATER LINE
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	UNDERDRAIN
---	---	THRUST BLOCK
---	---	IRON PIPE/IRON ROD
---	---	DRILL HOLE
---	---	IRON ROD/DRILL HOLE
---	---	STONE/GRANITE BOUND
---	---	SPOT GRADE
---	---	PAVEMENT SPOT GRADE
---	---	CURB SPOT GRADE
---	---	BENCHMARK (TBM)
---	---	DOUBLE POST SIGN
---	---	SINGLE POST SIGN
---	---	WELL
---	---	TEST PIT
---	---	FAILED TEST PIT
---	---	MONITORING WELL
---	---	TREES AND BUSHES
---	---	UTILITY POLE
---	---	LIGHT POLES
---	---	DRAIN MANHOLE
---	---	HYDRANT
---	---	WATER GATE
---	---	WATER SHUT OFF
---	---	REDUCER
---	---	SINGLE GRATE CATCH BASIN
---	---	DOUBLE GRATE CATCH BASIN
---	---	TRANSFORMER
---	---	CULVERT W/WINGWALLS
---	---	CULVERT W/FLARED END SECTION
---	---	CULVERT W/STRAIGHT HEADWALL
---	---	STONE CHECK DAM
---	---	DRAINAGE FLOW DIRECTION
---	---	4K SEPTIC AREA
---	---	WETLAND IMPACT
---	---	VEGETATED FILTER STRIP
---	---	RIPRAP
---	---	OPEN WATER
---	---	FRESHWATER WETLANDS
---	---	TIDAL WETLANDS
---	---	STABILIZED CONSTRUCTION ENTRANCE
---	---	CONCRETE
---	---	GRAVEL
---	---	SNOW STORAGE
---	---	RETAINING WALL

CLUSTER SUBDIVISION "HALEY ROAD SUBDIVISION" TAX MAP 34, LOT 3 412 HALEY ROAD, KITTERY, MAINE



LOCUS MAP
SCALE 1" = 2000'

SHEET INDEX

CS	COVER SHEET
OV1	EXISTING CONDITIONS OVERVIEW PLAN
OV2	OVERVIEW SUBDIVISION PLAN
A1-A2	SUBDIVISION PLAN
C1	DEMOLITION PLAN
C2-C3	GRADING, DRAINAGE & UTILITY PLAN
P1-P3	PLAN AND PROFILE
D1-D3	DETAIL SHEETS
E1	EROSION AND SEDIMENT CONTROL DETAILS

CIVIL ENGINEER / SURVEYOR
JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885
(603) 772-4746
CONTACT: JOSEPH CORONATI
JCORONATI@JONESANDBEACH.COM

WETLAND CONSULTANT
WEST ENVIRONMENTAL, INC.
122 MAST ROAD, SUITE 6
LEE, NH 03824
(603) 659-0416
CONTACT: MARK WEST

SOIL SCIENTIST
JOSEPH NOEL
PO BOX 174
SOUTH BERWICK, ME 03908
(207) 384-5587
CONTACT: JOSEPH NOEL

WATER
KITTERY WATER DISTRICT
17 STATE ROAD
KITTERY, ME 03904
(207) 439-0775
CONTACT: MICHAEL S. ROGERS

ELECTRIC
CENTRAL MAINE POWER COMPANY
162 CANCO ROAD
PORTLAND, ME 04103
(800) 750-4500
CONTACT: HERBERT STEVENS

TELEPHONE
FAIRPOINT COMMUNICATIONS
155 GANNETT DRIVE
SOUTH PORTLAND, ME 04106
(866) 984-2001

CABLE TV
COMCAST COMMUNICATION CORPORATION 180
GREENLEAF AVENUE
PORTSMOUTH, NH 03801
(800) 266-2278

APPLICANT		10/27/16	DATE:
OWNER		10/27/16	DATE:
APPROVED - KITTERY, MAINE PLANNING BOARD			
CHAIRPERSON			DATE:

PROJECT PARCEL
TOWN OF KITTERY
TAX MAP 34, LOT 3

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,021,956 SQ. FT. ±
23.46 ACRES ±

W:\16030 KITTERY ME-412 HALEY ROAD-GREEN & CO\dwg\16030-PLAN.DWG 10/27/2016 12:48:46 PM EDT

Design: LAZ	Draft: LAZ	Date: 9/30/16
Checked: JAC	Scale: AS NOTED	Project No.: 16030
Drawing Name: 16030-PLAN.DWG		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		



REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
Civil Engineering Services

85 Portsmouth Ave. 603-772-4746
PO Box 219 FAX: 603-772-0227
Stratham, NH 03885 E-Mail: JBE@JONESANDBEACH.COM

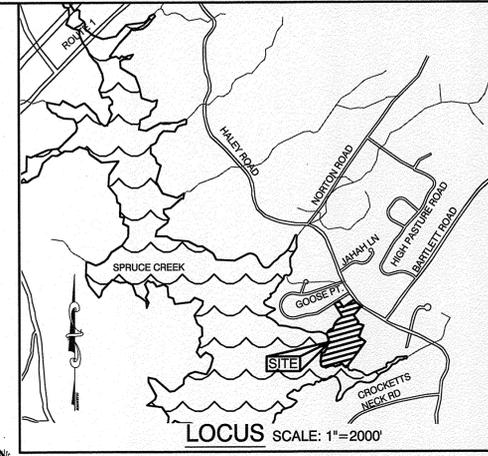
Plan Name:	COVER SHEET
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248

DRAWING No.
CS
SHEET 1 OF 15
JBE PROJECT NO. 16030

HALEY ROAD SUBDIVISION - KITTERY, MAINE
JBE # 16030
REVISION: 10/27/16

ABUTTERS NOT SHOWN:

- 34/1 ANDREW R. VALERI
LYNNE E. VALERI
40 GOOSE POINT
KITTERY POINT, ME 03905
8405/48
- 34/2A THOMAS A JOHNSON
1 GOOSE POINT
KITTERY POINT, ME 03905
16170/182
- 34/2C OFELIA A DAHLEN
MARVIN DAHLEN
12 TUCKERS COVE
KITTERY POINT, ME 03905
6021/243
- 34/2D CANDANCE C. WHEELER TRUSTEE
CANDANCE C. WHEELER REV TRUST
4 TUCKERS COVE
KITTERY POINT, ME 03905
16070/154
- 34/3-5 (426 HALEY RD)
RAYMOND A GRENIER
LISA R MORIGUCHI
PO BOX 43
KITTERY POINT, ME 03905
7713/285
- 34/3-4 WARREN P & JANE M SCHILL
424 HALEY RD
KITTERY POINT, ME 03905
7681/35
- 34/3-2 PETER D WILKINS
CHERI L MAURER WILKINS
398 HALEY RD
KITTERY POINT, ME 03905
8424/85
- 34/5E (6 TUCKERS COVE)
MICHAEL M STEPHENS
ELIZABETH A STEPHENS
PO BOX 553
KITTERY, ME 03904
11233/288
- 34/35 CHANDLER O DALZELL JR
JEANNE L DALZELL
29 GOOSE POINT
KITTERY POINT, ME 03905
10109/155
- 34/38 KAREN A MATSO
KAREN A MATSO
31 GOOSE POINT
KITTERY POINT, ME 03905
10417/22
- 41/07-3 (411 HALEY RD)
PETER S GIFTOS JR
SUSANE B GIFTOS
PO BOX 58
KITTERY POINT, ME 03905
2841/244
- 41/07-4A (419A HALEY RD)
THOMAS MCTAGGART
CATHERINE BOSBACH
PO BOX 775
KITTERY, ME 03904
17117/58
- 41/07-4B JILL CARD
419 HALEY RD, UNIT B
KITTERY POINT, ME 03905
16883/64
- 41/07-2 SUSAN L NICKELL
401 HALEY RD
KITTERY POINT, ME 03905
4091/123
- 25/23A (21 FOLCUTT RD)
DAVID K. CLARK
KATHRYN CLARK
126 EAST 12TH ST, 6A
NEW YORK, NY 10003
17100/411 (09/18/15)
- 25/23B-1 (FOLCUTT RD)
WLAISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/484 (08/20/14)
- 25/24 (17 FOLCUTT RD)
BRONISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/482 (08/20/14)
- 34/3-1 (428 HALEY RD)
RAYMOND A. GRENIER TRUSTEE
RAYMOND A. GRENIER REV TRUST
PO BOX 43
KITTERY POINT, ME 03905
10443/262



EXISTING CONDITIONS NOTES:

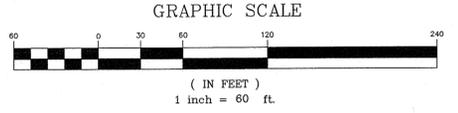
1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC. NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-SAFE (1-888-344-7233).
2. VERTICAL DATUM: NGVD 29. HORIZONTAL DATUM: MAINE STATE PLANE WEST
3. SUBJECT PROPERTY IS PARTIALLY LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE (ELEVATION 9 NGVD 1929). REFERENCE FEMA COMMUNITY PANEL NO. 2301710005D 0012 B, DATED JULY 3, 1986.
4. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY WEST ENVIRONMENTAL, DURING FALL, 2016, IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
 - a. THE CORPUS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.
 - b. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.
 - c. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.
 - d. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.
5. WETLAND IMPACTS SHALL NOT OCCUR UNTIL ALL PERMITS HAVE BEEN ACQUIRED AND IMPACT MITIGATION REQUIREMENTS HAVE BEEN SATISFIED.
6. TEST PITS PERFORMED BY JOSEPH NOEL ON 7/5/16 AND 10/20/16.
7. WETLAND BOUNDARIES AND CONSTRUCTION LIMITS ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.
8. OLD MILL ROAD, AKA OLD BARTLETT MILL ROAD, WAS INDICATED AS ABANDONED, PER PLAN OF REFERENCE 7. LETTER AS REFERENCED ON SAID PLAN WAS RESEARCHED AT TOWN, ATTORNEY & PREVIOUS SURVEYOR BUT NO RECORD FOUND. NO OTHER EVIDENCE HAS YET BEEN FOUND BY THIS OFFICE INCLUDING RIGHTS SUBJECT LOT MAY HAVE TO OLD MILL ROAD THAT WOULD PASS WITH TITLE CONVEYANCE.

9. CERTAIN DATA HEREON MAY VARY FROM RECORDED DATA DUE TO DIFFERENCES IN DECLINATION, ORIENTATION, AND METHODS OF MEASUREMENT.
10. RESEARCH WAS PERFORMED AT THE TOWN OF KITTERY ASSESSORS OFFICE AND THE YORK COUNTY REGISTRY OF DEEDS.
11. THE SURVEY LINES SHOWN ON THIS PLAN ARE NOT BOUNDARY LINES. THEY SHOULD BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY SURVEY.
12. ALL BOOK AND PAGE NUMBERS REFER TO THE YORK COUNTY REGISTRY OF DEEDS.
13. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE TOWN OF KITTERY TAX RECORDS AND ARE SUBJECT TO CHANGE.
14. OBSERVATIONS TAKEN TO DETERMINE THE SHORELINE AS INDICATED HEREON WERE TAKEN AT THE HIGHEST OBSERVABLE TIDE LINE.

PLAN REFERENCES:

1. "FINAL PLAN DORRNEY HOME SITES INC., KITTERY, ME" PREPARED BY G.L. DAVIS & ASSOCIATES DATED SEPTEMBER 1967, SCALE 1" = 100', YORK COUNTY REGISTRY OF DEEDS, BK 44/PG 42.
2. "PLAN OF SUBDIVISION FOR MARVIN O. DAHLEN, 328 HALEY RD, KITTERY, ME" PREPARED BY K.E. MOORE & B.G. STAPLES LAND SURVEYORS, DATED DECEMBER 1986, SCALE 1" = 40', YORK COUNTY REGISTRY OF DEEDS, # 00963, BK 153/PG 9.
3. "PLAN SHOWING PARCELS A & B FOR MARVIN O. DAHLEN, 328 HALEY RD, KITTERY, ME" PREPARED BY K.E. MOORE & B.G. STAPLES LAND SURVEYORS, DATED JUNE 1988, SCALE 1" = 40', YORK COUNTY REGISTRY OF DEEDS, #08871, BK 177/PG 36.
4. "PLAN OF LAND PREPARED FOR A. DAVID MANN, KITTERY, ME" PREPARED BY THOMAS F. MORAN INC., DATED MAY 16, 1989, SCALE 1" = 100'
5. "RIGHT OF WAY PLAN FOR A. DAVID MANN, OFF HALEY RD, KITTERY, ME" PREPARED BY ANDERSON LIVINGSTON ENGINEERS, INC., DATED SEPTEMBER 1995, SCALE 1" = 100', YORK COUNTY REGISTRY OF DEEDS, #000028, BK 227/PG 44.
6. "WETLAND ALTERATION & SUBDIVISION PLAN FOR MICHAEL J. & JULIA A. KILCHENSTEIN, OFF HALEY RD, KITTERY, ME" PREPARED BY ANDERSON LIVINGSTON ENGINEERS, INC., DATED DECEMBER 1996, SCALE 1" = 50', YORK COUNTY REGISTRY OF DEEDS, #000072, BK 234/PG 1.
7. "PLAN SHOWING 60' WIDE R.O.W. FOR MARVIN AND OFELIA DAHLEN, HALEY RD, KITTERY, ME" PREPARED BY KEM LAND SURVEY, INC. DATED JUNE 2, 2001, SCALE 1" = 50', YORK COUNTY REGISTRY OF DEEDS, #00107, BK 268/PG 42.
8. "RIGHT OF WAY PLAN FOR MARILYN MANN OFF HALEY ROAD, KITTERY, MAINE" PREPARED BY ANDERSON LIVINGSTON ENGINEERS, INC., DATED DECEMBER 13, 2001, SCALE 1"=100', FOUND AT TOWN AND NOT RECORDED.

CERTIFICATION:
 THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER 90, PARTS 1 & 2 OF THE STATE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS EXCEPT A WRITTEN REPORT AND MONUMENTS SET.
Gordon D. Hislop, Jr. Oct. 27, 2016
 GORDON D. HISLOP, JR. PLS #2293 DATE:
 ON BEHALF OF JONES & BEACH ENGINEERS, INC.



PROJECT PARCEL
 TOWN OF KITTERY
 TAX MAP 34, LOT 3

APPLICANT
 GREEN AND COMPANY
 11 LAFAYETTE ROAD
 NORTH HAMPTON, NH 03862

TOTAL LOT AREA
 1,021,956 SQ. FT. ±
 23.46 ACRES ±

Design: LAZ	Draft: LAZ	Date: 9/30/16
Checked: JAC	Scale: 1"=60'	Project No.: 16030
Drawing Name: 16030-PLAN.DWG		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		



REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ
		REVISION	BY

J/B Jones & Beach Engineers, Inc.
 Civil Engineering Services
 85 Portsmouth Ave.
 PO Box 219
 Stratham, NH 03885
 603-772-4746
 FAX: 603-772-0227
 E-Mail: JBE@JONESANDBEACH.COM

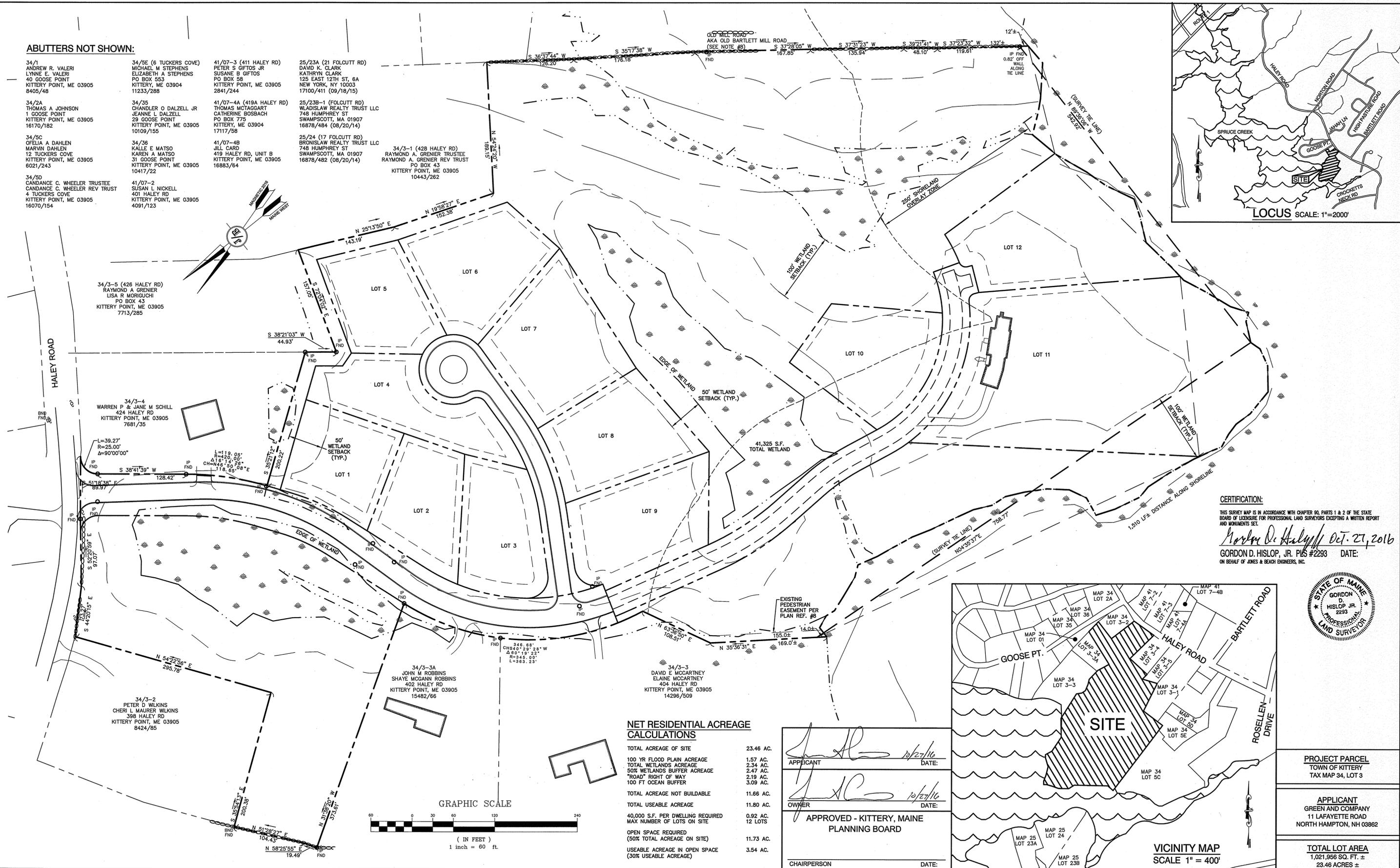
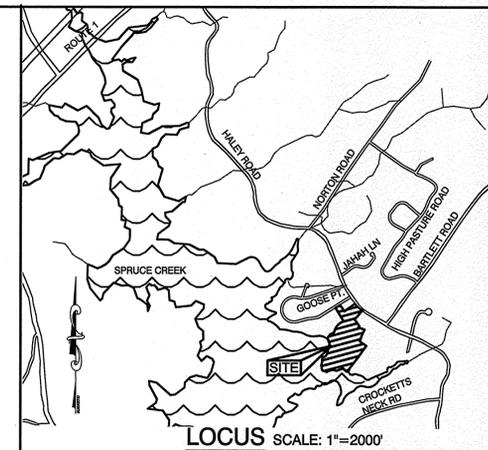
Plan Name: **EXISTING CONDITIONS OVERVIEW PLAN**
 Project: **PROPOSED SUBDIVISION
 412 HALEY ROAD, KITTERY, ME**
 Owner of Record: **MARILYN MANN AND JAMES SMITH
 412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248**

DRAWING No.
OV1
 SHEET 2 OF 15
 JBE PROJECT NO. 16030

W:\16030 KITTERY ME-412 HALEY ROAD-GREEN & CO\dwg\16030-PLAN.dwg, 10/27/2016 1:50:32 PM EDT

ABUTTERS NOT SHOWN:

- | | | | |
|---|--|--|---|
| 34/1
ANDREW R. VALERI
LYNNE E. VALERI
40 GOOSE POINT
KITTERY POINT, ME 03905
8405/48 | 34/5E (6 TUCKERS COVE)
MICHAEL M STEPHENS
ELIZABETH A STEPHENS
PO BOX 553
KITTERY, ME 03904
11233/288 | 41/07-3 (411 HALEY RD)
PETER S GIFOTOS JR
SUSANE B GIFOTOS
PO BOX 58
KITTERY POINT, ME 03905
2841/244 | 25/23A (21 FOLCUTT RD)
DAVID K. CLARK
KATHRYN CLARK
125 EAST 12TH ST, 6A
NEW YORK, NY 10003
17100/411 (09/18/15) |
| 34/2A
THOMAS A JOHNSON
1 GOOSE POINT
KITTERY POINT, ME 03905
16170/182 | 34/35
CHANDLER O DALZELL JR
JEANNE L DALZELL
23 GOOSE POINT
KITTERY POINT, ME 03905
10109/155 | 41/07-4A (419A HALEY RD)
THOMAS MCTAGGART
CATHERINE BOSBACH
PO BOX 775
KITTERY, ME 03904
17117/58 | 25/23B-1 (FOLCUTT RD)
WLADISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/484 (08/20/14) |
| 34/5C
OFELIA A DAHLEN
MARVIN DAHLEN
12 TUCKERS COVE
KITTERY POINT, ME 03905
6021/243 | 34/36
KALLE E MATSO
KAREN A MATSO
31 GOOSE POINT
KITTERY POINT, ME 03905
10417/22 | 41/07-4B
JILL CARD
419 HALEY RD, UNIT B
KITTERY POINT, ME 03905
16883/64 | 25/24 (17 FOLCUTT RD)
BRONISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/482 (08/20/14) |
| 34/5D
CANDANCE C. WHEELER TRUSTEE
CANDANCE C. WHEELER REV TRUST
4 TUCKERS COVE
KITTERY POINT, ME 03905
16070/154 | 41/07-2
SUSAN L NICKELL
401 HALEY RD
KITTERY POINT, ME 03905
4091/123 | 34/3-1 (428 HALEY RD)
RAYMOND A. GRENIER TRUSTEE
RAYMOND A. GRENIER REV TRUST
PO BOX 43
KITTERY POINT, ME 03905
10443/282 | |

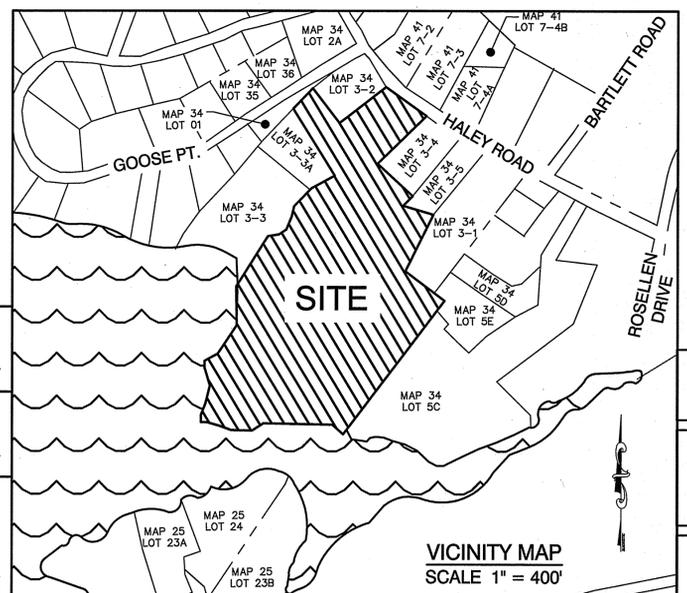
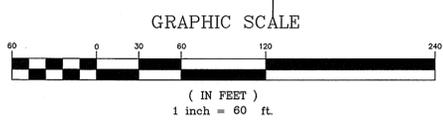


CERTIFICATION:
THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER 80, PARTS 1 & 2 OF THE STATE BOARD OF LICENSES FOR PROFESSIONAL LAND SURVEYORS EXCEPTING A WRITTEN REPORT AND MONUMENTS SET.
Gordon D. Hislop, Jr. Oct. 27, 2016
GORDON D. HISLOP, JR. PLS #2293 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.



NET RESIDENTIAL ACREAGE CALCULATIONS

TOTAL ACREAGE OF SITE	23.46 AC.
100 YR FLOOD PLAIN ACREAGE	1.57 AC.
TOTAL WETLANDS ACREAGE	2.34 AC.
50% WETLANDS BUFFER ACREAGE	2.47 AC.
"ROAD" RIGHT OF WAY	2.19 AC.
100 FT OCEAN BUFFER	3.09 AC.
TOTAL ACREAGE NOT BUILDABLE	11.66 AC.
TOTAL USEABLE ACREAGE	11.80 AC.
40,000 S.F. PER DWELLING REQUIRED	0.92 AC.
MAX NUMBER OF LOTS ON SITE	12 LOTS
OPEN SPACE REQUIRED (50% TOTAL ACREAGE ON SITE)	11.73 AC.
USEABLE ACREAGE IN OPEN SPACE (30% USEABLE ACREAGE)	3.54 AC.



APPLICANT: *[Signature]* DATE: 10/27/16
OWNER: *[Signature]* DATE: 10/27/16
APPROVED - KITTERY, MAINE PLANNING BOARD
CHAIRPERSON: _____ DATE: _____

PROJECT PARCEL
TOWN OF KITTERY
TAX MAP 34, LOT 3

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,021,956 SQ. FT. ±
23.46 ACRES ±

W:\16030 KITTERY ME-412 HALEY ROAD-GREEN & CO\dwg\16030-PLAN.dwg 10/27/2016 1:28:46 PM EDT

Design: LAZ Draft: LAZ Date: 7/20/16
Checked: JAC Scale: 1"=60' Project No.: 16030
Drawing Name: 16030 DESIGN.dwg

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REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ
		REVISION	BY

J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: **OVERVIEW SUBDIVISION PLAN**
Project: **PROPOSED SUBDIVISION
412 HALEY ROAD, KITTERY, ME**
Owner of Record: **MARILYN MANN AND JAMES SMITH
412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248**

DRAWING No.
OV2
SHEET 3 OF 15
JBE PROJECT NO. 16030

ABUTTERS NOT SHOWN:

34/1
ANDREW R. VALERI
LYNNE E. VALERI
40 GOOSE POINT
KITTERY POINT, ME 03905
8405/48

34/2A
THOMAS A JOHNSON
1 GOOSE POINT
KITTERY POINT, ME 03905
16170/182

34/5C
OFELIA A DAHLEN
MARVIN DAHLEN
12 TUCKERS COVE
KITTERY POINT, ME 03905
60217/243

34/5D
CANDANCE C. WHEELER TRUSTEE
CANDANCE C. WHEELER REV TRUST
4 TUCKERS COVE
KITTERY POINT, ME 03905
16070/154

34/5E (6 TUCKERS COVE)
MICHAEL M STEPHENS
ELIZABETH A STEPHENS
PO BOX 553
KITTERY, ME 03904
11233/288

34/35
CHANDLER O DALZELL JR
JEANNE L DALZELL
29 GOOSE POINT
KITTERY POINT, ME 03905
10109/155

34/36
KALLE E MATSO
KAREN A MATSO
31 GOOSE POINT
KITTERY POINT, ME 03905
10417/22

41/07-2
SUSAN L NICKELL
401 HALEY RD
KITTERY POINT, ME 03905
4091/123

41/07-3 (411 HALEY RD)
PETER S GIFTOS JR
SUSAN B GIFTOS
PO BOX 58
KITTERY POINT, ME 03905
2841/244

41/07-4A (419A HALEY RD)
THOMAS MCTAGGART
CATHERINE BOSBACH
PO BOX 775
KITTERY, ME 03904
17117/58

41/07-4B
JILL CARD
419 HALEY RD, UNIT B
KITTERY POINT, ME 03905
16883/64

25/23A (21 FOLCUTT RD)
DAVID K. CLARK
KATHRYN CLARK
125 EAST 12TH ST, 6A
NEW YORK, NY 10003
17100/411 (09/18/15)

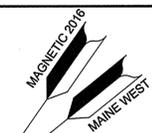
25/23B-1 (FOLCUTT RD)
WLADISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/484 (08/20/14)

25/24 (17 FOLCUTT RD)
BRONISLAW REALTY TRUST LLC
748 HUMPHREY ST
SWAMPSCOTT, MA 01907
16878/482 (08/20/14)

34/3-1 (428 HALEY RD)
RAYMOND A. GRENIER TRUSTEE
RAYMOND A. GRENIER REV TRUST
PO BOX 43
KITTERY POINT, ME 03905
10443/282

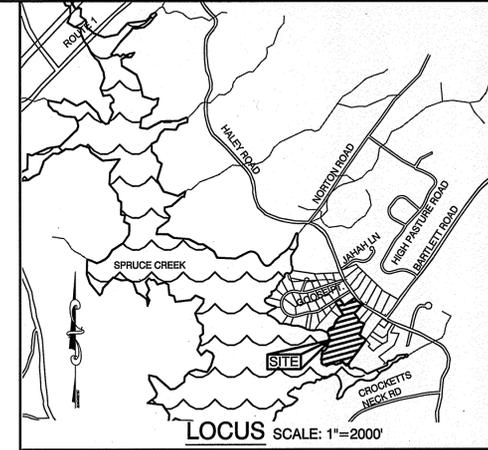
34/3-5 (426 HALEY RD)
RAYMOND A GRENIER
LISA R MORRIGUCHI
PO BOX 43
KITTERY POINT, ME 03905
7713/285

34/3-4
WARREN P & JANE M SCHILL
424 HALEY RD
KITTERY POINT, ME 03905
7681/35



LOT INFORMATION					
LOT NO.	AREA (SF)	ACRES	FRONTAGE	FRONT SETBACK	SIDE & REAR SETBACKS
1	20,018	0.46	139.90'	20'	10'
2	20,026	0.46	152.75'	20'	10'
3	21,882	0.50	103.43' (MNR) 206.59' (CI)	20'	10'
4	23,854	0.55	266.57'	20'	10'
5	20,386	0.47	46.58'	20'	10'
6	26,763	0.61	48.73'	20'	10'
7	30,201	0.69	149.95'	20'	10'
8	25,544	0.59	115.70'	20'	10'
9	27,358	0.63	148.09' (CI) 173.50' (CI)	20'	10'
10	26,112	0.60	203.42'	20'	10'
11	100,664	2.31	253.23'	20'	10'
12	40,276	0.92	61.36'	20'	10'

OPEN SPACE		
OPEN SPACE	AREA (SF)	AREA (AC)
A	120,689	2.77
B	77,948	1.79
C	337,921	7.76
TOTAL	536,558	12.30

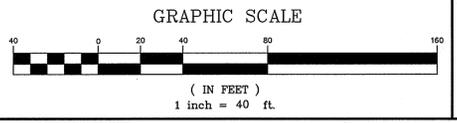


SUBDIVISION NOTES:

- THE INTENT OF THIS PLAN IS TO SUBDIVIDE MAP 34 LOT 3 INTO 12 RESIDENTIAL LOTS. PROJECT TO BE SERVED BY MUNICIPAL WATER AND INDIVIDUAL ON SITE SEPTIC SYSTEMS. COMPLETE PLAN SET IS ON FILE AT THE PLANNING BOARD OFFICE.
- ZONING DISTRICT: RESIDENTIAL RURAL ZONE, R-RL. MINIMUM LOT SIZE: 40,000 SF. BUILDING SETBACKS (MINIMUM): FRONT SETBACK = 40', SIDE SETBACK = 20', REAR SETBACK = 20'. MAX. BUILDING HEIGHT = 35'. CLUSTER RESIDENTIAL AND CLUSTER MIXED-USE DEVELOPMENT ZONING APPLICABLE. MINIMUM LOT SIZE: 20,000 SF (WITH INDIVIDUAL ON-SITE SEPTIC). BUILDING SETBACKS (MINIMUM): FRONT SETBACK = 40', SIDE SETBACK = 20' (BETWEEN BUILDINGS), REAR SETBACK = 20'. MAX. BUILDING HEIGHT = 35'.
- REQUIRED OPEN SPACE: 11.7 ACRES (50%). PROPOSED OPEN SPACE: 12.3 ACRES (52.5%).
- THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORSEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
- SUBJECT PROPERTY IS PARTIALLY LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE (ELEVATION 9 NGVD 1929). REFERENCE FEMA COMMUNITY PANEL NO. 230170005D, DATED JULY 3, 1986.
- ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.). THIS DOCUMENT IS TO BE KEPT ON-SITE AT ALL TIMES AND UPDATED AS REQUIRED.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
- ALL CONSTRUCTION WILL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND MAINE DOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
- ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- GRANITE BOUNDS TO BE SET AT ALL ROADWAY POINTS OF CURVATURE AND TANGENCY. IRON RODS WITH SURVEY CAPS TO BE SET AT ALL PROPERTY CORNERS AND ANGLE POINTS, UNLESS OTHERWISE INDICATED. ALL MONUMENTS SET ARE 5/8" IRON RODS WITH ALUMINUM CAPS MARKED "JONES & BEACH ENGINEERS BOUNDARY, DO NOT DISTURB, STRATHAM, N.H." AS SHOWN.
- WETLANDS WERE DELINEATED BY WEST ENVIRONMENTAL DURING FALL, 2016, AND LOCATED BY THIS OFFICE.
- LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
- UPON APPROVAL BY THE TOWN, THE PROPOSED MINOR ROAD WILL BE CONVEYED TO THE TOWN. CLASS II AND CLASS I ROADS TO BE PRIVATELY MAINTAINED.
- ALL BOOK AND PAGE NUMBERS REFER TO THE YORK COUNTY REGISTRY OF DEEDS.
- THE TAX MAP AND LOT NUMBERS AND ABUTTING OWNERS ARE BASED ON THE TOWN OF KITTERY TAX RECORDS AND ARE SUBJECT TO CHANGE.
- RESEARCH WAS PERFORMED AT THE TOWN OF KITTERY ASSESSORS OFFICE AND THE YORK COUNTY REGISTRY OF DEEDS.

CERTIFICATION:

THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER 90, PARTS 1 & 2 OF THE STATE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS EXCEPTING A WRITTEN REPORT AND MONUMENTS SET.
Gordon D. Hislop, Jr. OCT. 27, 2016
 GORDON D. HISLOP, JR. PLS #2293 DATE:
 ON BEHALF OF JONES & BEACH ENGINEERS, INC.



PROJECT PARCEL TOWN OF KITTERY TAX MAP 34, LOT 3	
APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862	
TOTAL LOT AREA 1,021,956 SQ. FT. ± 23.46 ACRES ±	
<i>Gordon D. Hislop, Jr.</i> 10/27/16 DATE: 10/27/16	APPLICANT
<i>Gordon D. Hislop, Jr.</i> 10/27/16 DATE: 10/27/16	OWNER
APPROVED - KITTERY, MAINE PLANNING BOARD	
CHAIRPERSON	DATE:

W:\16030 KITTERY ME-412 HALEY ROAD-GREEN & CO.DWG\16030-PLAN.dwg 10/27/2016 12:48:46 PM EDT

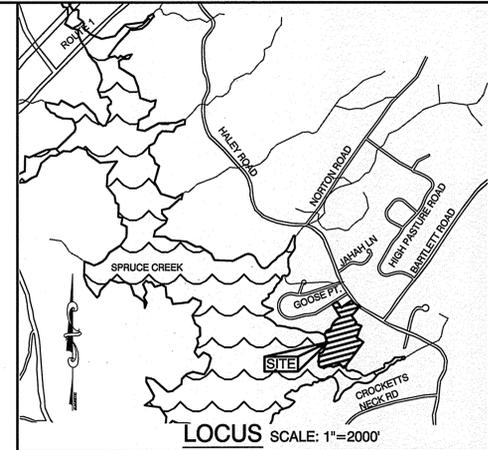
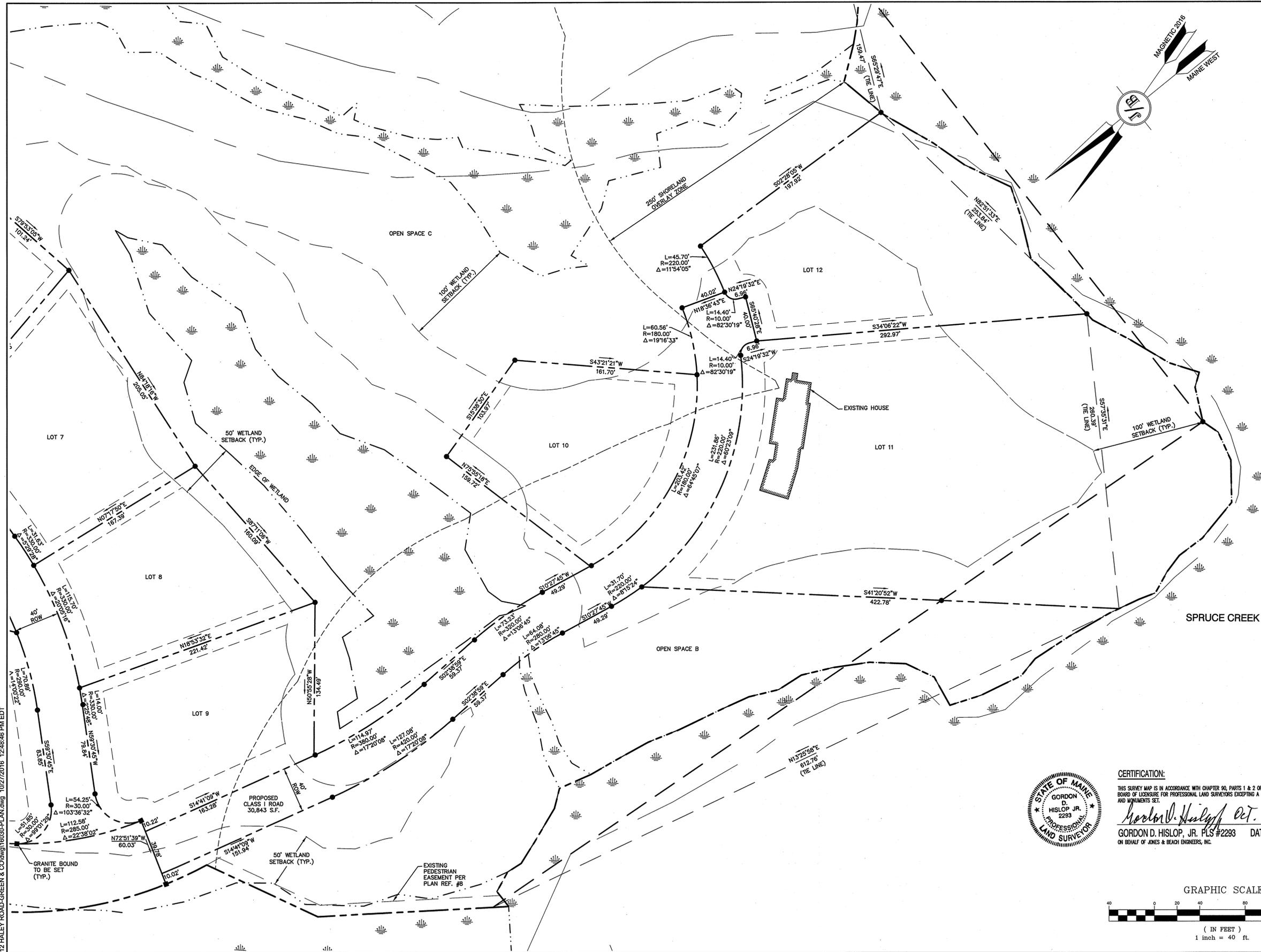
Design: LAZ	Draft: LAZ	Date: 9/30/16
Checked: JAC	Scale: 1"=60'	Project No.: 16030
Drawing Name: 16030-PLAN.DWG		
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REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
 Civil Engineering Services
 85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
 603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	SUBDIVISION PLAN
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248

DRAWING No.	A1
SHEET 4 OF 15 JBE PROJECT NO. 16030	



- PLAN REFERENCES:**
- "FINAL PLAN DORNEY HOME SITES INC., KITTERY, ME" PREPARED BY G.L. DAVIS & ASSOCIATES DATED SEPTEMBER 1967, SCALE 1" = 100', YORK COUNTY REGISTRY OF DEEDS, BK 44/Pg 42.
 - "PLAN OF SUBDIVISION FOR MARVIN O. DAHLEN, 328 HALEY RD, KITTERY, ME" PREPARED BY K.E. MOORE & B.G. STAPLES LAND SURVEYORS, DATED DECEMBER 1986, SCALE 1" = 40', YORK COUNTY REGISTRY OF DEEDS, # 00963, BK 153/Pg 9.
 - "PLAN SHOWING PARCELS A & B FOR MARVIN O. DAHLEN, 328 HALEY RD, KITTERY, ME" PREPARED BY K.E. MOORE & B.G. STAPLES LAND SURVEYORS, DATED JUNE 1988, SCALE 1" = 40', YORK COUNTY REGISTRY OF DEEDS, #08871, BK 177/Pg 36.
 - "PLAN OF LAND PREPARED FOR A. DAVID MANN, KITTERY, ME" PREPARED BY THOMAS F. MORAN INC., DATED MAY 16, 1989, SCALE 1" = 100'
 - "RIGHT OF WAY PLAN FOR A. DAVID MANN, OFF HALEY RD, KITTERY, ME" PREPARED BY ANDERSON LIVINGSTON ENGINEERS, INC., DATED SEPTEMBER 1995, SCALE 1" = 100', YORK COUNTY REGISTRY OF DEEDS, #000028, BK 227/Pg 44.
 - "WETLAND ALTERATION & SUBDIVISION PLAN FOR MICHAEL J. & JULIA A. KILCHENSTEIN, OFF HALEY RD, KITTERY, ME" PREPARED BY ANDERSON LIVINGSTON ENGINEERS, INC., DATED DECEMBER 1996, SCALE 1" = 50', YORK COUNTY REGISTRY OF DEEDS, #000072, BK 234/Pg 1.
 - "PLAN SHOWING 60' WIDE R.O.W FOR MARVIN AND OFELIA DAHLEN, HALEY RD, KITTERY, ME" PREPARED BY KEM LAND SURVEY, INC, DATED JUNE 2, 2001, SCALE 1" = 50', YORK COUNTY REGISTRY OF DEEDS, #000107, BK 268/Pg 42.
 - "RIGHT OF WAY PLAN FOR MARILYN MANN OFF HALEY ROAD, KITTERY, MAINE", PREPARED BY ANDERSON LIVINGSTON ENGINEERS, INC., DATED DECEMBER 13, 2001, SCALE 1"=100', FOUND AT TOWN AND NOT RECORDED.

PROJECT PARCEL
TOWN OF KITTERY
TAX MAP 34, LOT 3

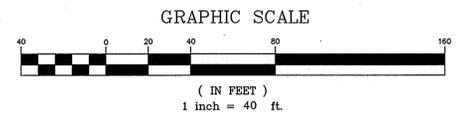
APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,021,966 SQ. FT. ±
23.46 ACRES ±



CERTIFICATION:
THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER 90, PARTS 1 & 2 OF THE STATE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS EXCEPTING A WRITTEN REPORT AND MONUMENTS SET.

Gordon D. Hislop, Jr. Oct. 27, 2016
GORDON D. HISLOP, JR. PLS #2293 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.



APPLICANT: *[Signature]* 10/27/16 DATE:

OWNER: *[Signature]* 10/27/16 DATE:

APPROVED - KITTERY, MAINE
PLANNING BOARD

CHAIRPERSON: _____ DATE: _____

W:\16030 KITTERY ME-412 HALEY ROAD-GREEN & CO\dwg\16030-PLAN.dwg 10/27/2016 12:48:46 PM EDT

Design: LAZ Draft: LAZ Date: 9/30/16
Checked: JAC Scale: 1"=60' Project No.: 16030
Drawing Name: 16030-PLAN.DWG

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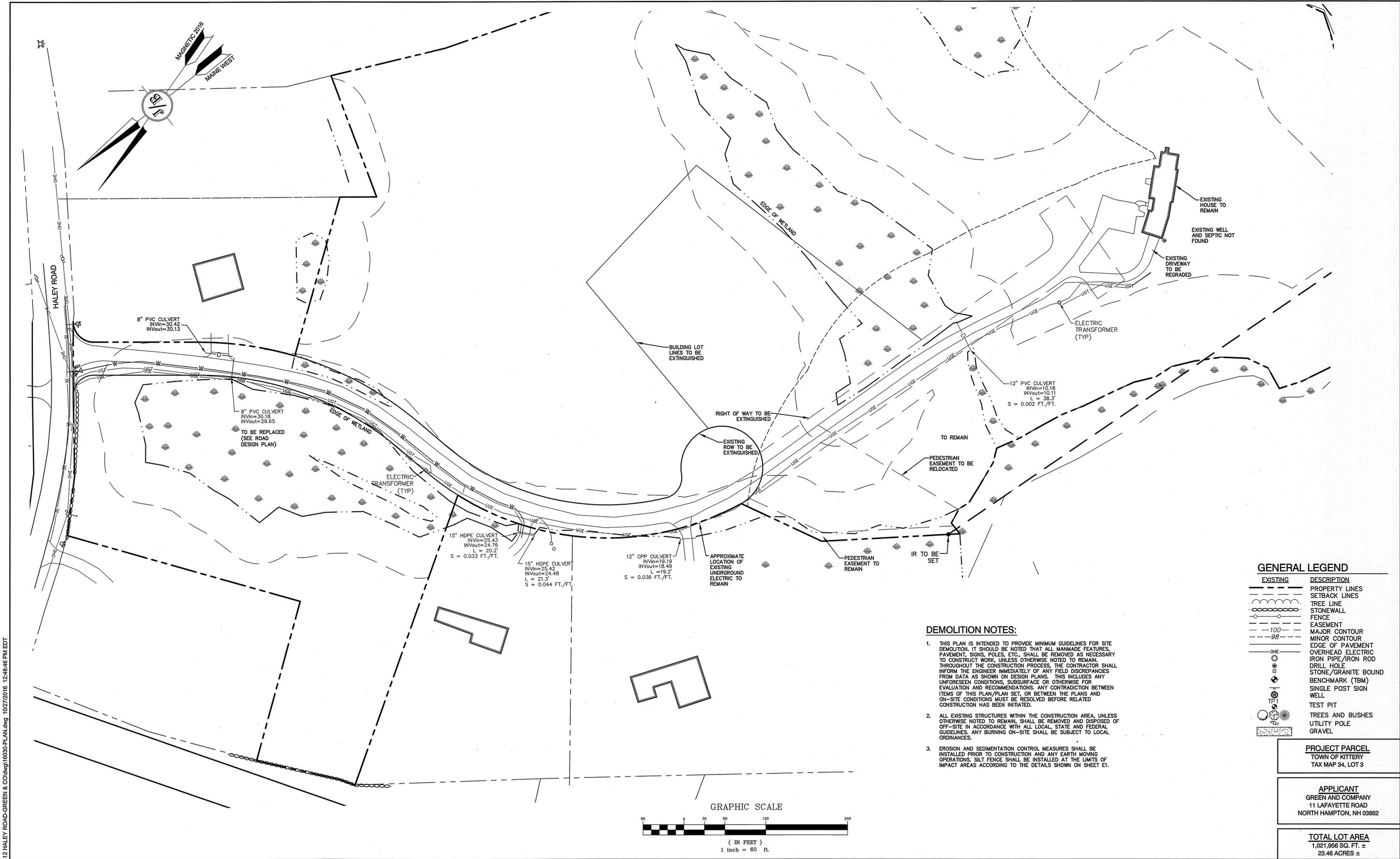
J/B Jones & Beach Engineers, Inc.
Civil Engineering Services

85 Portsmouth Ave. PO Box 219 Stratham, NH 03885

603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name: **SUBDIVISION PLAN**
Project: **PROPOSED SUBDIVISION 412 HALEY ROAD, KITTERY, ME**
Owner of Record: **MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248**

DRAWING No. **A2**
SHEET 5 OF 15
JBE PROJECT NO. 16030



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Design: LAZ Draft: LAZ Date: 9/30/16
 Checked: JAC Scale: 1"=60' Project No.: 16030
 Drawing Name: 16030-PLAN.DWG

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1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ
		REVISION	BY

J/B Jones & Beach Engineers, Inc.
 Civil Engineering Services

85 Portsmouth Ave.
 PO Box 219
 Stratham, NH 03885

603-772-4746
 FAX: 603-772-0227
 E-Mail: JBE@JONESANDBEACH.COM

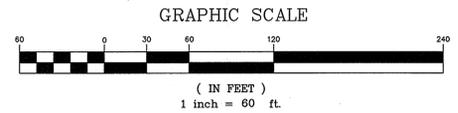
Plan Name: **DEMOLITION PLAN**
 Project: **PROPOSED SUBDIVISION
 412 HALEY ROAD, KITTEERY, ME**
 Owner of Record: **MARILYN MANN AND JAMES SMITH
 412 HALEY ROAD, KITTEERY, MAINE, BK 15129 PG 248**

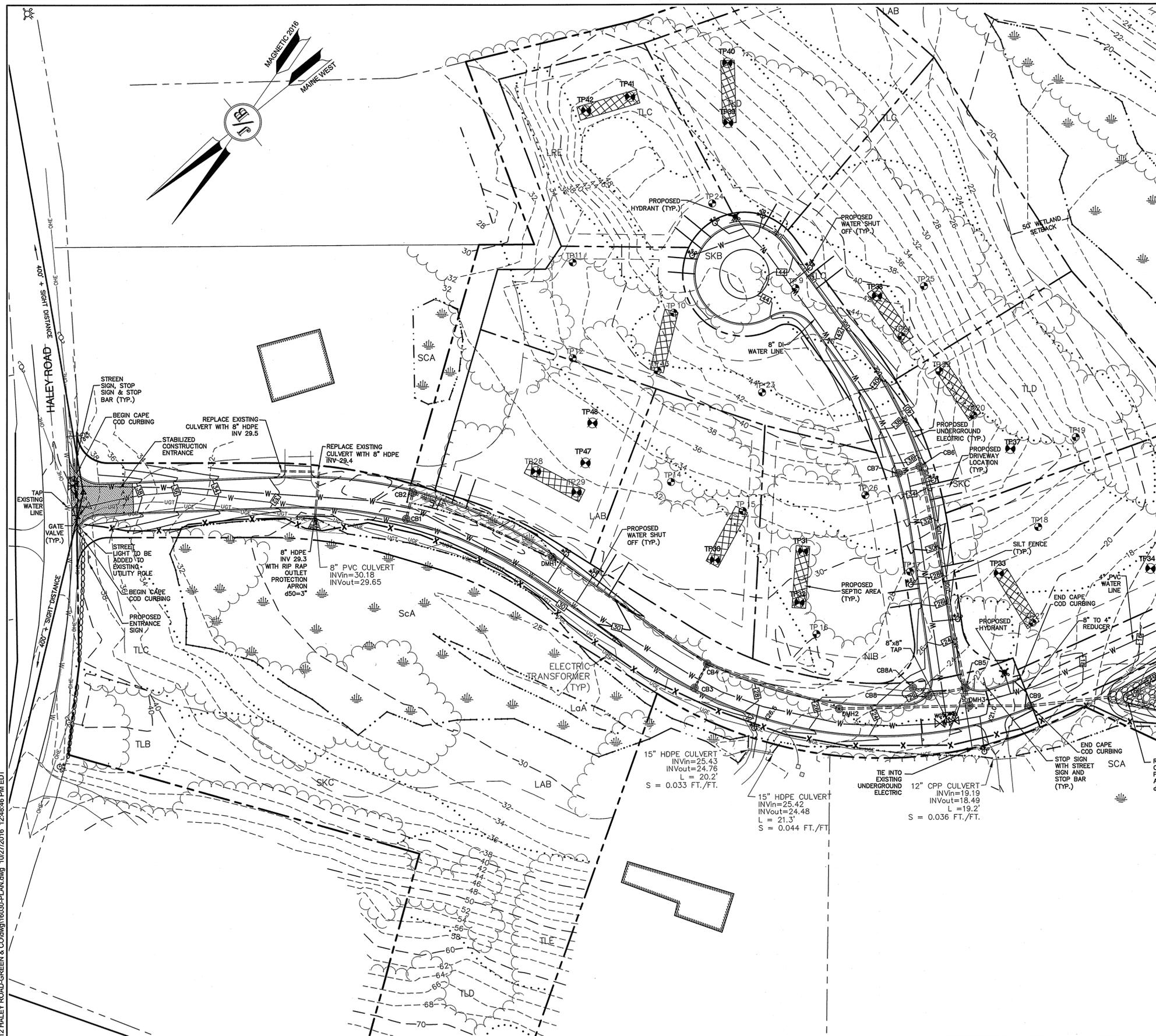
DRAWING No.
C1
 SHEET 6 OF 15
 JBE PROJECT NO. 16030

PROJECT PARCEL
 TOWN OF KITTEERY
 TAX MAP 34, LOT 3

APPLICANT
 GREEN AND COMPANY
 11 LAFAYETTE ROAD
 NORTH HAMPTON, NH 03862

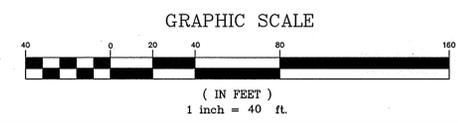
TOTAL LOT AREA
 1,021,956 SQ. FT. ±
 23.46 ACRES ±





GRADING, DRAINAGE & UTILITY NOTES:

- UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE (888-344-7233).
- ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEE CONSTRUCTION SEQUENCE ON SHEET E1.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT'S LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
- ALL SWALES AND DETENTION PONDS ARE TO BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
- ALL SWALES AND ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHERWISE SPECIFIED.
- ALL DRAINAGE STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 3' DEEP SUMPS WITH GREASE HOODS, UNLESS OTHERWISE NOTED.
- ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED.
- ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC H2O LOADING AND SHALL BE INSTALLED ACCORDINGLY.
- IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
- ALL DRAINAGE PIPE SHALL BE NON-PERFORATED ADS N-12 OR APPROVED EQUAL.
- STONE INLET PROTECTION SHALL BE PLACED AT ALL CATCH BASINS. SEE DETAIL WITHIN THE DETAIL SHEETS.
- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
- ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
- SHOULD CONSTRUCTION STOP FOR LONGER THAN 3 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED.
- MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.25" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION.
- IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
- SEE ALSO EROSION AND SEDIMENT CONTROL SPECIFICATIONS ON SHEET E1.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
- THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATION, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
- THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
- A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
- ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- BUILDINGS TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
- FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA. CLEAR OPENING. THE WORD "DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
- PROPOSED RIM ELEVATIONS OF DRAINAGE MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
- ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
- WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMANS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICHEVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMANS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, MECHANICAL JOINTS AND FIRE HYDRANTS.
- DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
- CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
- ALL WATER LINES SHALL HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
- ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END AT RIGHT OF WAY AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
- ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.



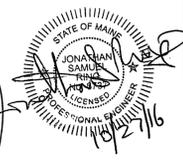
PROJECT PARCEL
TOWN OF KITTEERY
TAX MAP 34, LOT 3

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,021,986 SQ. FT. ±
23.46 ACRES ±

W:\16030\KITTEERY ME-412\HALEY ROAD-GREEN & CO\dwg\16030-PLAN.dwg 10/27/2016 12:48:46 PM EDT

Design: LAZ	Draft: LAZ	Date: 9/30/16
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Drawing Name: 16030-PLAN.DWG		
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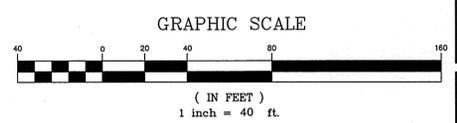
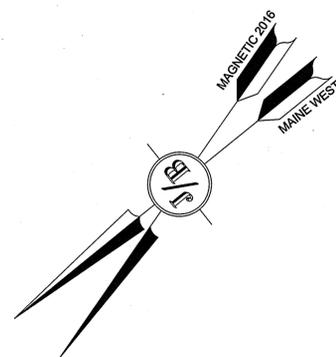
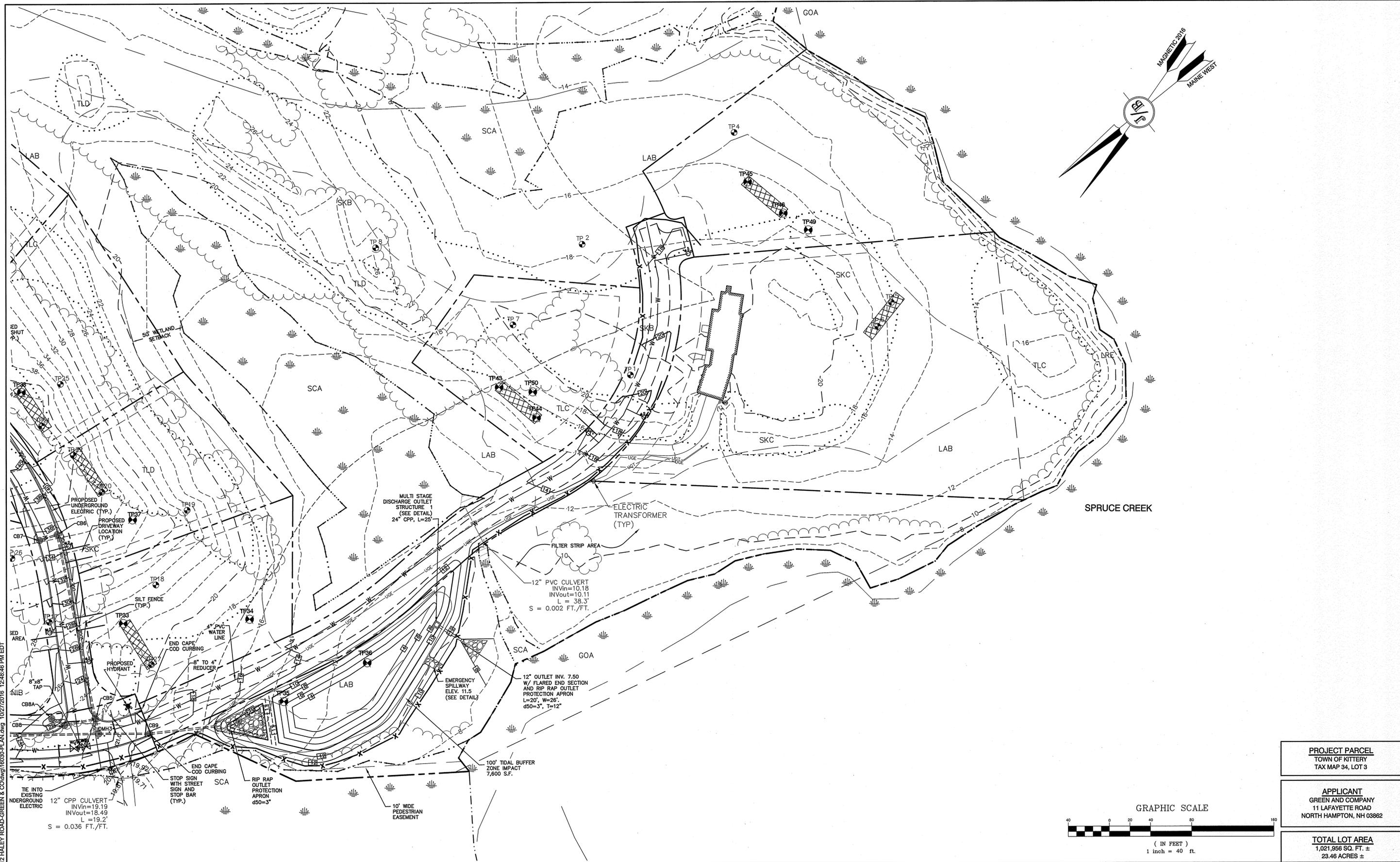


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1	10/27/16	ISSUED FOR REVIEW	LAZ
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J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name: **GRADING, DRAINAGE & UTILITY PLAN**
Project: **PROPOSED SUBDIVISION 412 HALEY ROAD, KITTEERY, ME**
Owner of Record: **MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTEERY, MAINE, BK 15129 PG 248**

DRAWING No. **C2**
SHEET 7 OF 15
JBE PROJECT NO. 16030



PROJECT PARCEL TOWN OF KITTERY TAX MAP 34, LOT 3
APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862
TOTAL LOT AREA 1,021,956 SQ. FT. ± 23.46 ACRES ±

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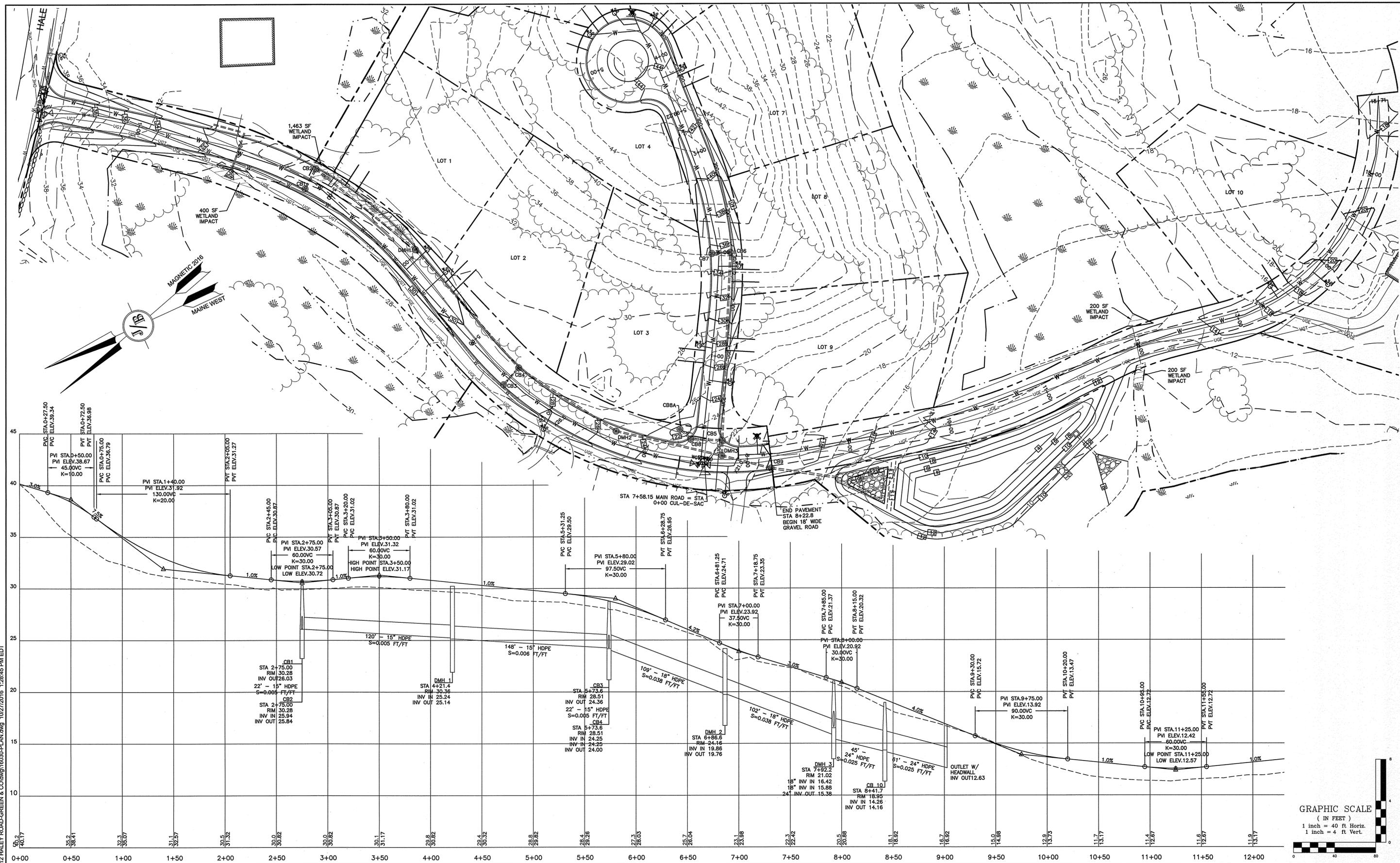


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 603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	GRADING, DRAINAGE & UTILITY PLAN
Project:	PROPOSED SUBDIVISION 412 HAILEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HAILEY ROAD, KITTERY, MAINE, BK 15129 PG 248

DRAWING No.
C3
SHEET 8 OF 15
JBE PROJECT NO. 16030



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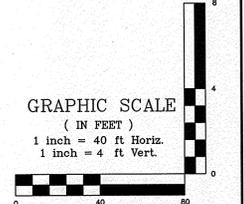
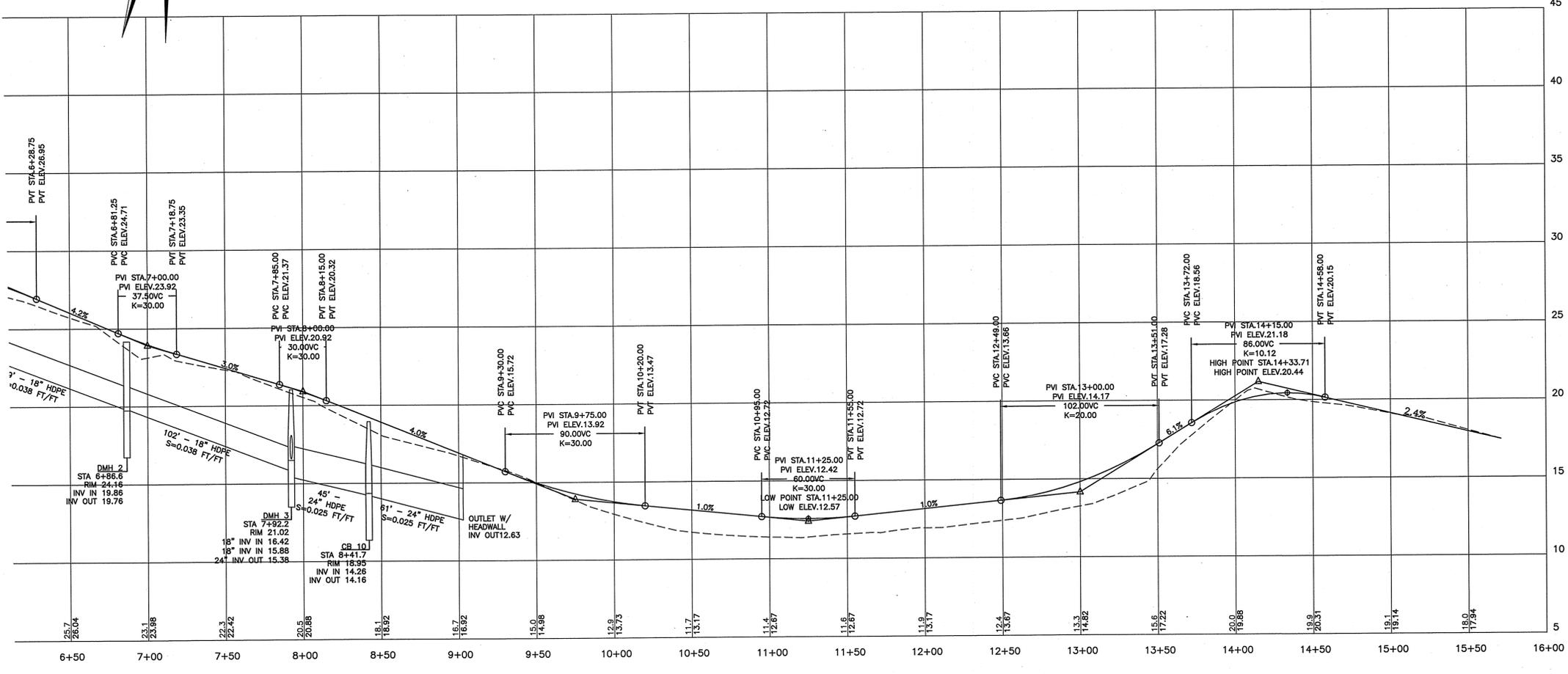
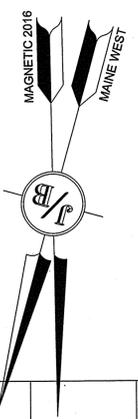
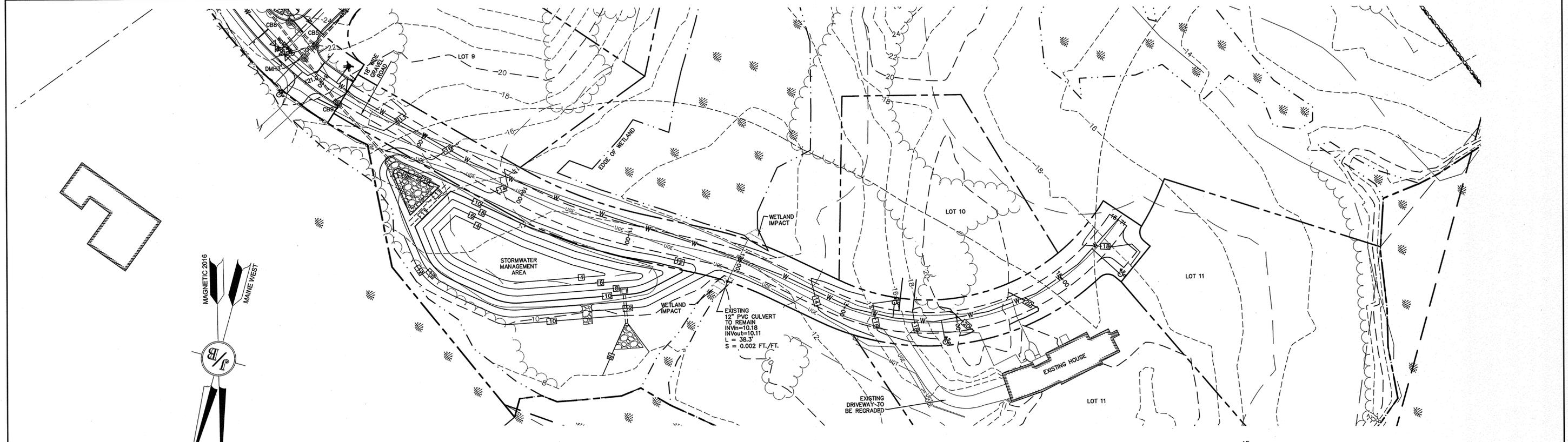


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 85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
 603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	MAIN ROAD PROFILE
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTEERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTEERY, MAINE, BK 15129 PG 248

DRAWING No. **P1**
 SHEET 9 OF 15
 JBE PROJECT NO. 16030



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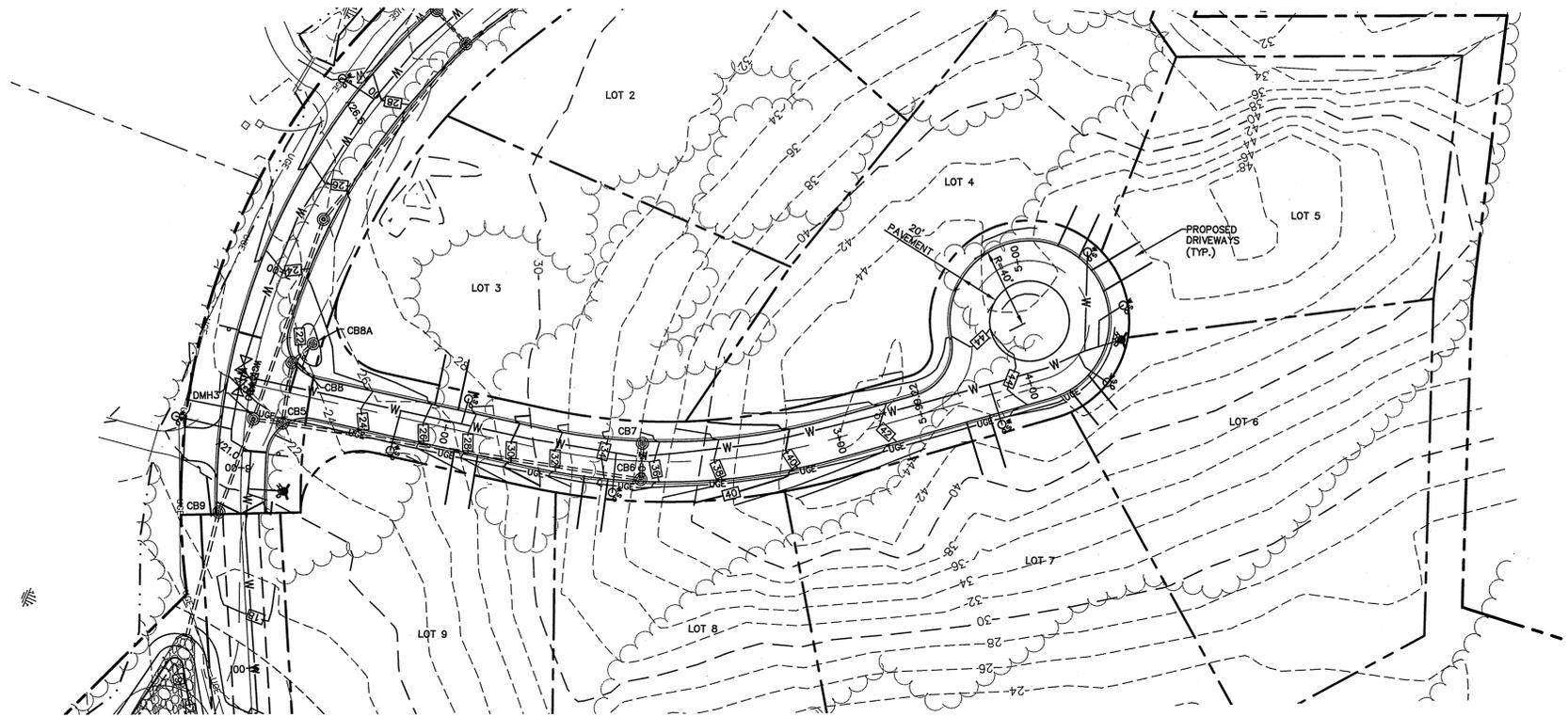
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 Civil Engineering Services

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 PO Box 219
 Stratham, NH 03885

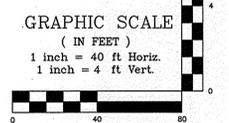
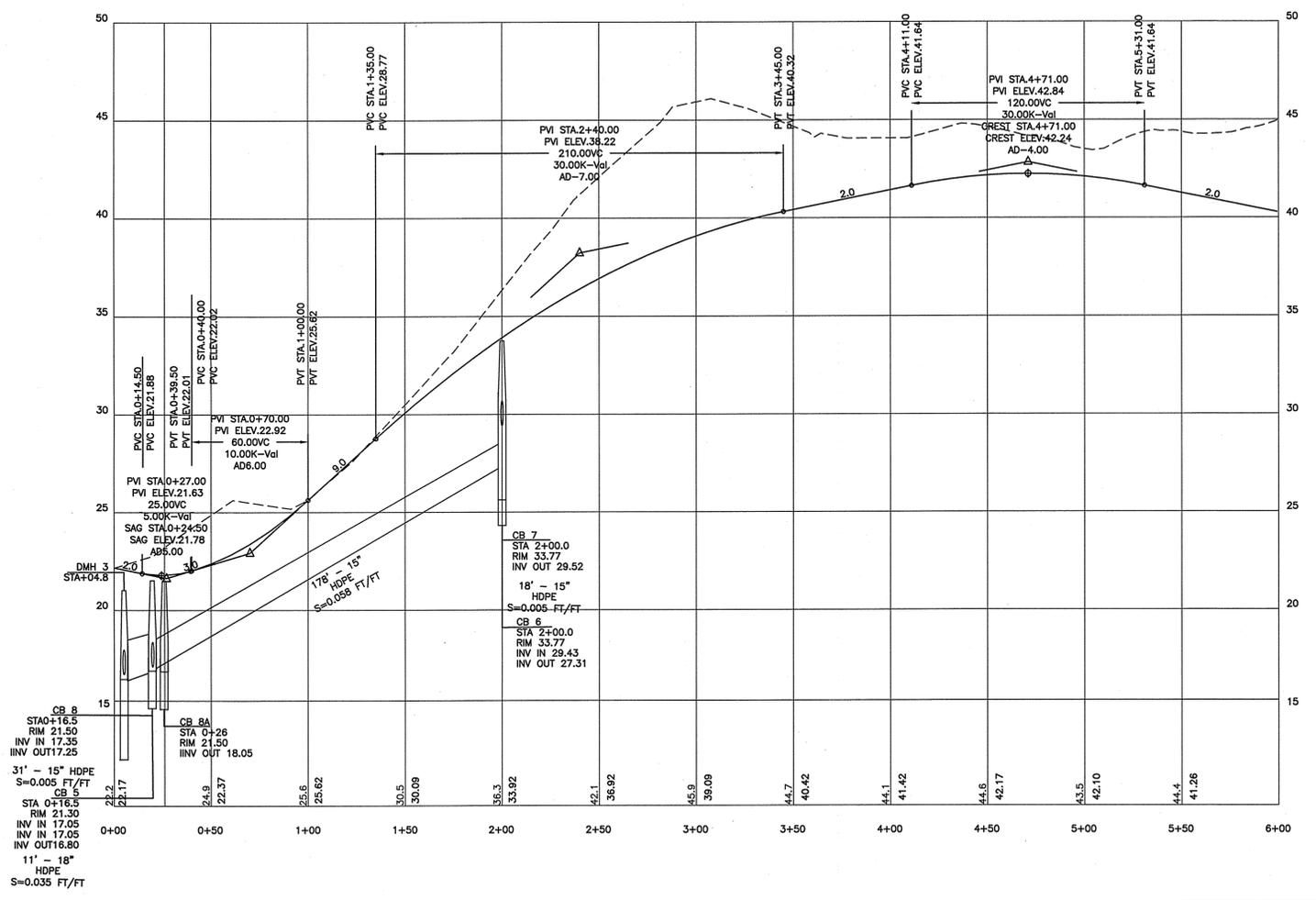
603-772-4746
 FAX: 603-772-0227
 E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	MAIN ROAD PROFILE
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTEERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTEERY, MAINE, BK 15129 PG 248

DRAWING No.
P2
 SHEET 10 OF 15
 JBE PROJECT NO. 16030



- NOTES:**
- THIS SITE WILL REQUIRE A SEWPCP PERMIT FOR STORMWATER DISCHARGE FOR THE CONSTRUCTION SITE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION PLAN, WHICH SHALL REMAIN ON SITE AND BE MADE ACCESSIBLE TO THE PUBLIC. THE CONSTRUCTION SITE OPERATOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA REGIONAL OFFICE SEVEN DAYS PRIOR TO COMMENCEMENT OF ANY WORK ON SITE. A COMPLETED NOTICE OF TERMINATION SHALL BE SUBMITTED TO THE SEWPCP PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET:
 - FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR
 - ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED. PROVIDE DPW WITH A COPY OF THE NOTICE OF TERMINATION (NOT).
 - ALL ROAD AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE TOWN, AND MDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
 - AS-BUILT PLANS TO BE SUBMITTED TO THE TOWN PRIOR TO ACCEPTANCE OF THE ROADWAY.
 - DEVELOPER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
 - CONTRACTOR TO COORDINATE AND COMPLETE ALL WORK REQUIRED FOR THE RELOCATION AND/OR INSTALLATION OF ELECTRIC, CATV, TELEPHONE, AND FIRE ALARM PER UTILITY DESIGN AND STANDARDS. LOCATIONS SHOWN ARE APPROXIMATE. LOW PROFILE STRUCTURES SHALL BE USED TO THE GREATEST EXTENT POSSIBLE.
 - THIS PLAN HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC. FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
 - SILTATION AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN UNTIL SITE HAS BEEN STABILIZED WITH PERMANENT VEGETATION. SEE DETAIL SHEET E1 FOR ADDITIONAL NOTES ON EROSION CONTROL.
 - ALL DISTURBED AREAS NOT STABILIZED BY NOVEMBER 1st SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. PRODUCT TO BE SPECIFIED BY THE ENGINEER.
 - FINAL DRAINAGE, GRADING AND EROSION PROTECTION MEASURES SHALL CONFORM TO REGULATIONS OF THE PUBLIC WORKS DEPARTMENT.
 - CONTRACTOR TO VERIFY EXISTING UTILITIES AND TO NOTIFY ENGINEER OF ANY DISCREPANCY IMMEDIATELY.
 - ALL DRIVEWAYS TO BE CONSTRUCTED MAXIMUM 10% SLOPE. SEE DETAIL SHEET. ALL DRIVEWAYS TO HAVE CULVERTS UNLESS APPROVED BY THE TOWN ROAD AGENT.
 - DRAINAGE INSPECTION AND MAINTENANCE SCHEDULE: SILT FENCING WILL BE INSPECTED DURING AND AFTER STORM EVENTS TO ENSURE THAT THE FENCE STILL HAS INTEGRITY AND IS NOT ALLOWING SEDIMENT TO PASS. SEDIMENT BUILD UP IN SWALES WILL BE REMOVED IF IT IS DEEPER THAN SIX INCHES, AND IS TO BE REMOVED IMMEDIATELY FROM SUMPS BELOW THE INLET OF CULVERTS SEMIANNUALLY, AS WELL AS FROM CATCH BASINS. FOLLOWING MAJOR STORM EVENTS, THE STAGE DISCHARGE OUTLET STRUCTURES ARE TO BE INSPECTED AND ANY DEBRIS REMOVED FROM THE ORIFICE. TRASH TRAP AND EMERGENCY SPILL WAY, INFREQUENTLY, SEDIMENT MAY ALSO HAVE TO BE REMOVED FROM THE SUMP OF THE STRUCTURE.
 - ALL DRAINAGE INFRASTRUCTURE SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING ANY RUNOFF TO IT.
 - DETENTION PONDS REQUIRE TIMELY MAINTENANCE AND SHOULD BE INSPECTED AFTER EVERY MAJOR STORM EVENT, AS WELL AS FREQUENTLY DURING THE FIRST YEAR OF OPERATION, AND ANNUALLY THEREAFTER, EVERY FIVE YEARS, THE SERVICES OF A PROFESSIONAL ENGINEER SHOULD BE RETAINED TO PERFORM A THOROUGH INSPECTION OF THE DETENTION POND AND ITS INFRASTRUCTURE. ANY DEBRIS AND SEDIMENT ACCUMULATIONS SHOULD BE REMOVED FROM THE OUTLET STRUCTURE(S) AND EMERGENCY SPILLWAY(S) AND DISPOSED OF PROPERLY. DETENTION POND BERMS SHOULD BE MOWED AT LEAST ONCE ANNUALLY SO AS TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION. TREES SHOULD NEVER BE ALLOWED TO GROW ON A DETENTION POND BERM, AS THEY MAY DESTABILIZE THE STRUCTURE AND INCREASE THE POTENTIAL FOR FAILURE. AREAS SHOWING SIGNS OF EROSION OR THIN OR DYING VEGETATION SHOULD BE REPAIRED IMMEDIATELY BY WHATEVER MEANS NECESSARY, WITH THE EXCEPTION OF FERTILIZER. RODENT BORROWS SHOULD BE REPAIRED IMMEDIATELY AND THE ANIMALS SHOULD BE TRAPPED AND RELOCATED IF THE PROBLEM PERSISTS.
 - THE DETENTION PONDS ARE TO BE CONSTRUCTED PRIMARILY THROUGH EXCAVATION. IN THOSE AREAS WHERE THE BERMS MUST BE CONSTRUCTED BY THE PLACEMENT OF FILL, THE ENTIRE EMBANKMENT AREA OF THE DETENTION PONDS SHALL BE EXCAVATED TO PROPOSED GRADE, STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 95% AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. IN THE EVENT THE FOUNDATION MATERIAL EXPOSED DOES NOT ALLOW THE SPECIFIED COMPACTION, AN ADDITIONAL ONE FOOT (1') OF EXCAVATION AND THE PLACEMENT OF A ONE FOOT (1') THICK, TWELVE FOOT (12') WIDE PAD OF THE MATERIAL DESCRIBED IN THE NOTE BELOW, COMPACTED TO 95% OF ASTM D-1557 MAY BE NECESSARY. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%, AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED WITHIN FOR ANY REASON.
 - EMBANKMENT MATERIAL FOR THE BERMS SHALL BE CLEAN MINERAL SOIL WITH A CLAY COMPONENT FREE OF ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES, AND SHALL CONTAIN NO ROCKS OR LUMPS OVER FOUR INCHES (4") IN DIAMETER. THIS MATERIAL SHOULD BE INSTALLED IN 6" LIFTS AND COMPACTED TO 95% OF ASTM D-1557, AND SHOULD MEET THE FOLLOWING SPECIFICATIONS: 4" PASSING 100%, #4 SIEVE 25-70%, #200 SIEVE 10-28% (IN TOTAL SAMPLE).
 - EMBANKMENT IS TO HAVE 3:1 SIDE SLOPES (MAX.) AND IS TO BE BROUGHT TO SPECIFIED GRADES PRIOR TO THE ADDITION OF LOAM (4" MINIMUM) SO AS TO ALLOW FOR THE COMPACTION OF THE STRUCTURE OVER TIME WHILE MAINTAINING THE PROPER BERM ELEVATION.
 - COMPACTION TESTING SERVICES (I.E. NUCLEAR DENSITY TESTS) ARE TO BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR FOR ROADWAY CONSTRUCTION, AND ON THE FOUNDATION OF THE BERM AND ON EVERY LIFT OF NEWLY PLACED MATERIAL.



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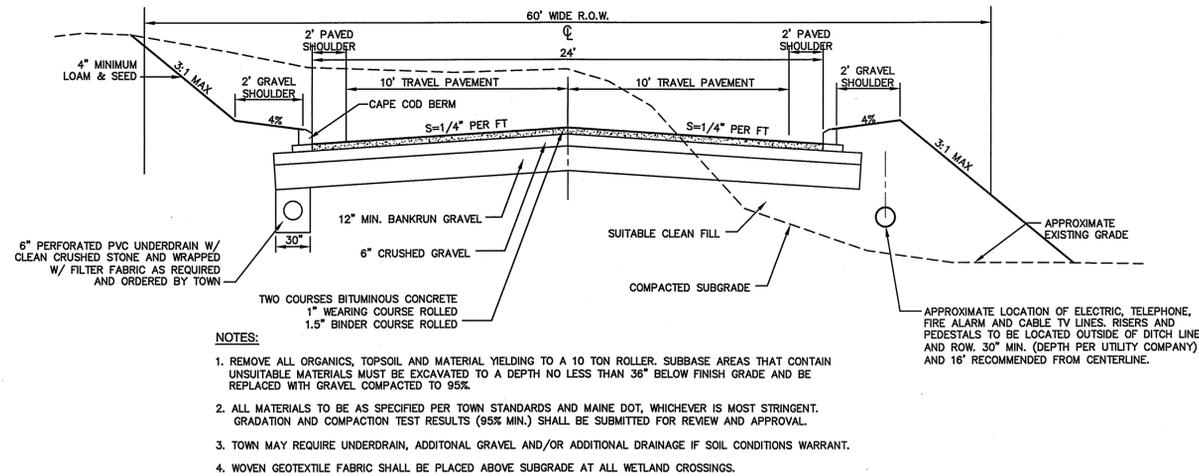


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 Civil Engineering Services
 85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
 603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name: **CUL-DE-SAC PROFILE**
 Project: **PROPOSED SUBDIVISION 412 HALEY ROAD, KITTEY, ME**
 Owner of Record: **MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTEY, MAINE, BK 15129 PG 248**

DRAWING No. **P3**
 SHEET 11 OF 15
 JBE PROJECT NO. 16030

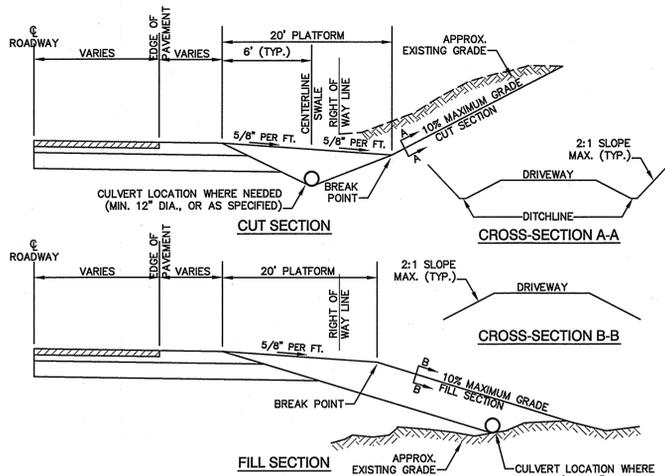


NOTES:

1. REMOVE ALL ORGANICS, TOPSOIL AND MATERIAL YIELDING TO A 10 TON ROLLER. SUBBASE AREAS THAT CONTAIN UNSUITABLE MATERIALS MUST BE EXCAVATED TO A DEPTH NO LESS THAN 36" BELOW FINISH GRADE AND BE REPLACED WITH GRAVEL COMPACTED TO 95%.
2. ALL MATERIALS TO BE AS SPECIFIED PER TOWN STANDARDS AND MAINE DOT, WHICHEVER IS MOST STRINGENT. GRADATION AND COMPACTION TEST RESULTS (95% MIN.) SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TOWN MAY REQUIRE UNDERDRAIN, ADDITIONAL GRAVEL AND/OR ADDITIONAL DRAINAGE IF SOIL CONDITIONS WARRANT.
4. WOVEN GEOTEXTILE FABRIC SHALL BE PLACED ABOVE SUBGRADE AT ALL WETLAND CROSSINGS.

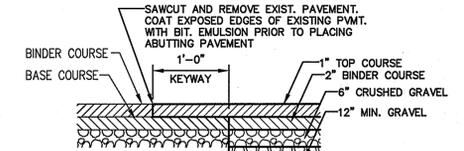
TYPICAL ROADWAY SECTION W/CURBING - PUBLIC MINOR STREETS

NOT TO SCALE



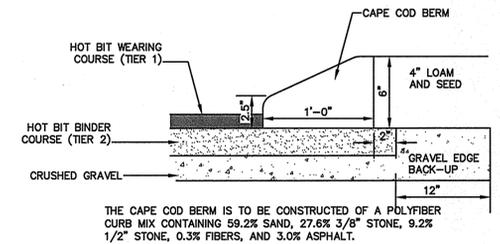
TYPICAL DRIVEWAY SECTIONS

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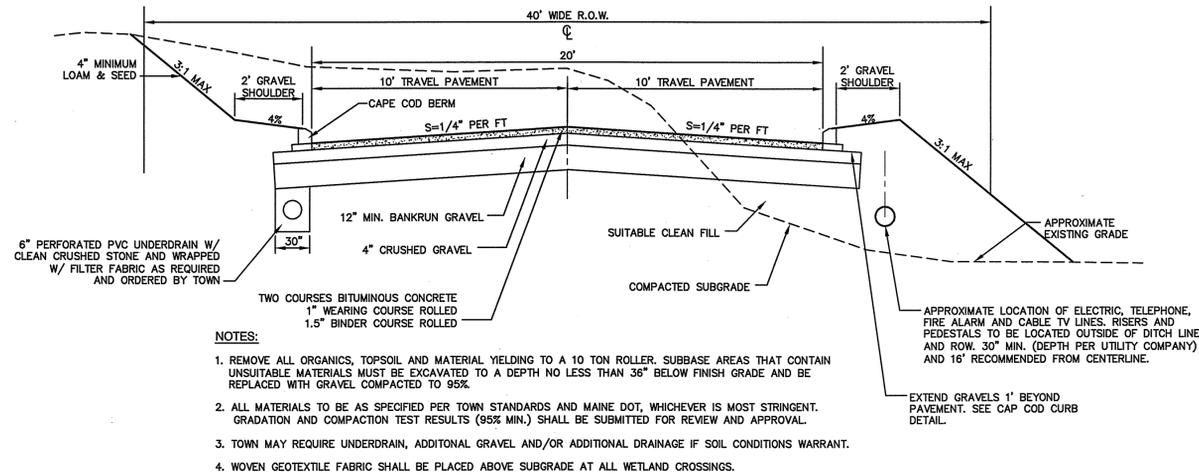
KEYWAY DETAIL FOR CONNECTION TO EXISTING PAVEMENT

NOT TO SCALE



CAPE COD BERM

NOT TO SCALE

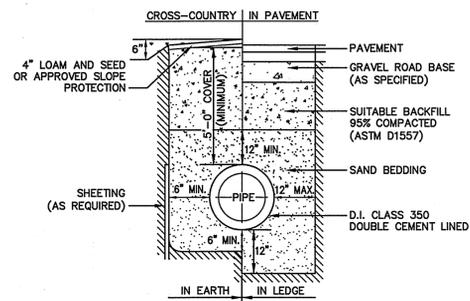


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2. ALL MATERIALS TO BE AS SPECIFIED PER TOWN STANDARDS AND MAINE DOT, WHICHEVER IS MOST STRINGENT. GRADATION AND COMPACTION TEST RESULTS (95% MIN.) SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
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4. WOVEN GEOTEXTILE FABRIC SHALL BE PLACED ABOVE SUBGRADE AT ALL WETLAND CROSSINGS.

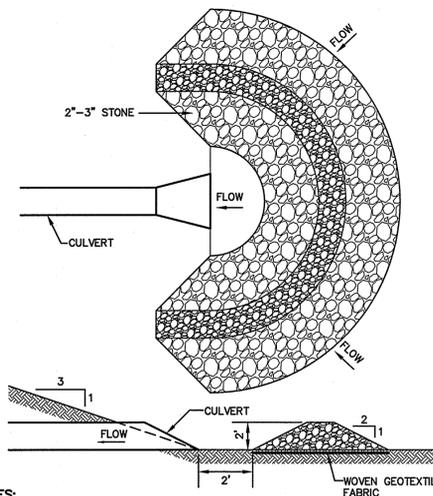
TYPICAL ROADWAY SECTION W/CURBING - CLASS II PRIVATE STREETS

NOT TO SCALE



WATER SYSTEM TRENCH

NOT TO SCALE

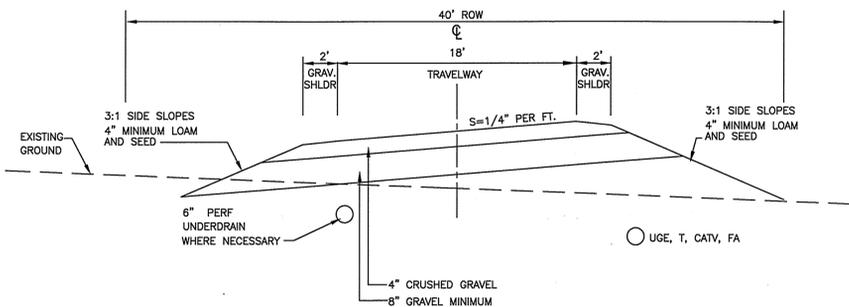


NOTES:

1. TEMPORARY CULVERT INLET PROTECTION CHECK DAMS SHALL BE CONSTRUCTED OF 2-3" STONE OVER WOVEN GEOTEXTILE FABRIC.
2. INLET PROTECTION MEASURES SHALL BE INSTALLED AT THE OPENINGS OF ALL EXISTING AND PROPOSED CULVERTS LOCATED BELOW (DOWNSTREAM) FROM AND WITHIN 100' OF THE PROJECT SITE.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURE WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
4. STRUCTURES SHALL BE REMOVED WHEN THE SITE IS STABILIZED WITH VEGETATION AND THE CHANNEL SHALL BE SMOOTHED AND REVEGETATED.

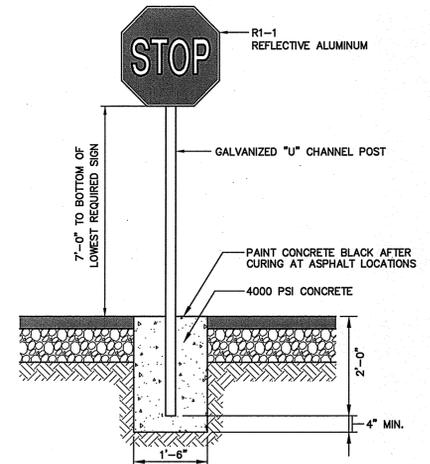
TEMPORARY CULVERT INLET PROTECTION CHECK DAM

NOT TO SCALE



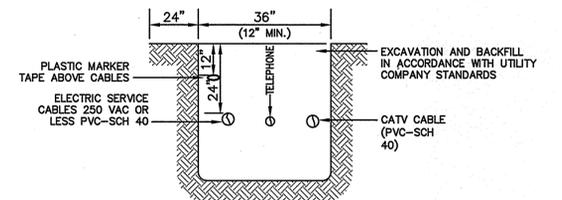
TYPICAL ROADWAY SECTION - CLASS I PRIVATE STREETS

NOT TO SCALE



STOP SIGN (R1-1)

NOT TO SCALE



NOTE: ALL UTILITIES SHALL BE REVIEWED AND APPROVED BY APPROPRIATE UTILITY COMPANY.

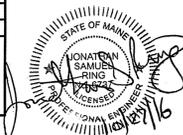
UTILITY TRENCH

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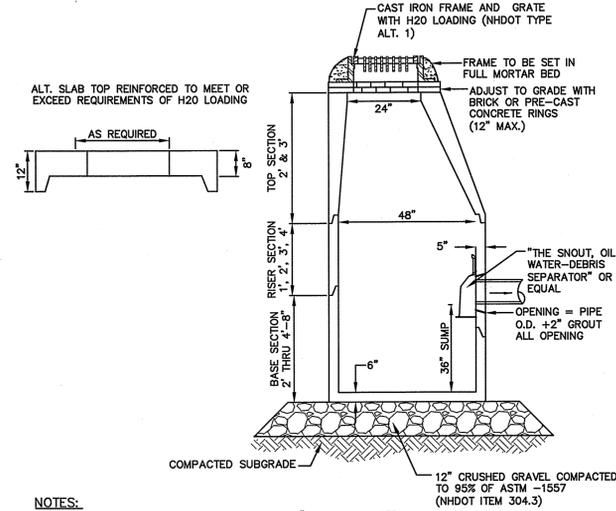


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 Civil Engineering Services
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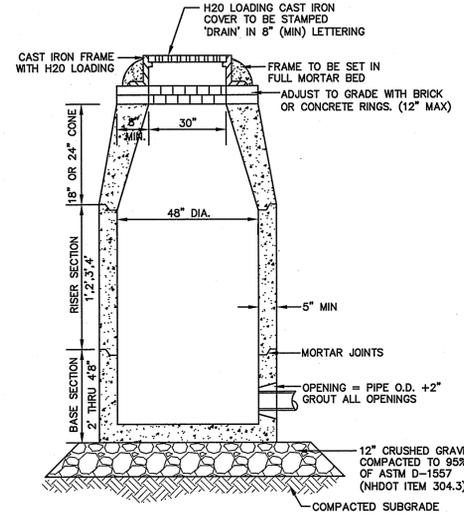
Plan Name:	DETAIL SHEET
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248

DRAWING No.	D1
SHEET 12 OF 15	JBE PROJECT NO. 16030



- NOTES:**
1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
 2. ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
 3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
 4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H2O LOADING.
 5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
 6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
 7. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NHDOT CATCH BASIN TYPE ALTERNATE 1 OR NEENAH R-3570 OR APPROVED EQUAL (24"x24" TYPICAL).
 8. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.
 9. ALL CATCH BASINS ARE TO BE FITTED WITH GREASE HOODS.

CATCH BASIN WITH GREASE HOOD
NOT TO SCALE



- NOTES:**
1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
 2. ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
 3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
 4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H2O LOADING.
 5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
 6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
 7. ALL DRAIN MANHOLE FRAMES AND GRATES SHALL BE NHDOT TYPE MH-1, OR NEENAH R-1798 OR APPROVED EQUAL (30" DIA. TYPICAL).
 8. STANDARD FRAME(S) AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.

DRAIN MANHOLE
NOT TO SCALE

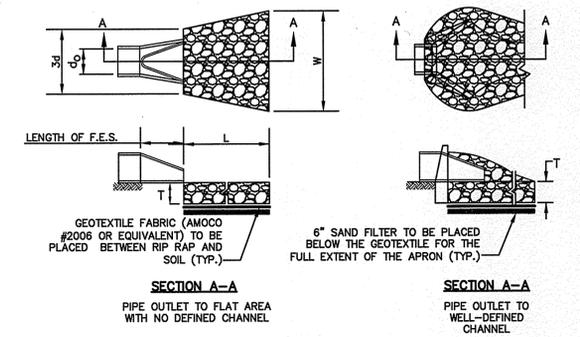
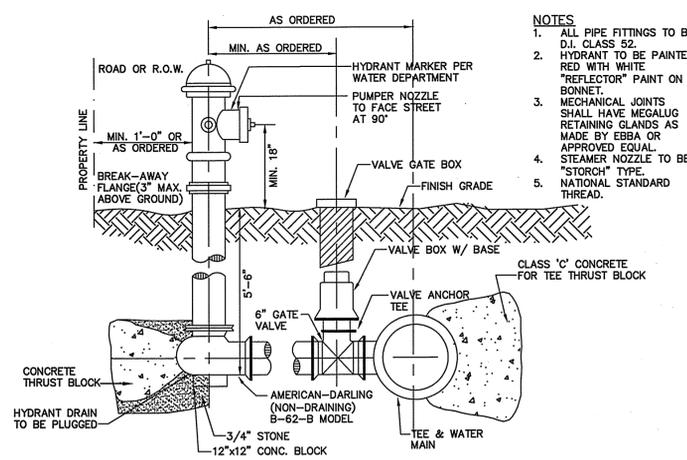


TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES

THICKNESS OF RIP RAP = 1.5 FEET		
d50 SIZE =	FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM TO	
100%	9	12
85%	8	11
50%	6	9
15%	2	3

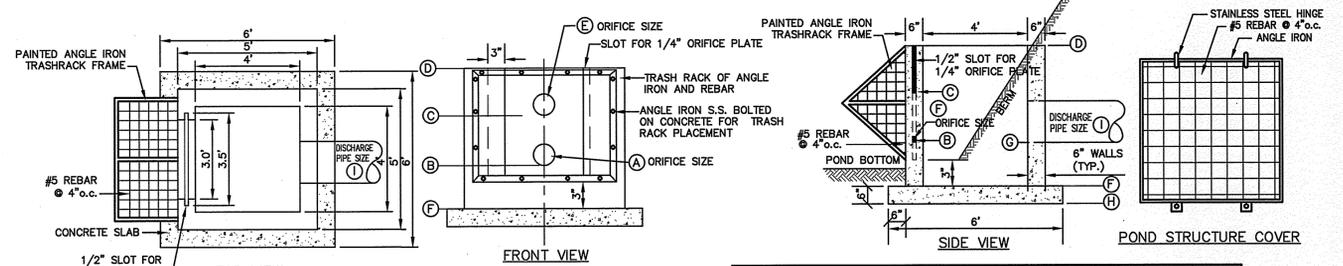
- NOTES:**
1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
 2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
 3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
 4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
 5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
 6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

RIP RAP OUTLET PROTECTION APRON
NOT TO SCALE



- NOTES:**
1. ALL PIPE FITTINGS TO BE D.I. CLASS 52
 2. HYDRANT TO BE PAINTED RED WITH WHITE "REFLECTOR" PAINT ON BONNET.
 3. MECHANICAL JOINTS SHALL HAVE MEGALUG RETAINING GLANDS AS MADE BY EBBA OR APPROVED EQUAL. STEAMER NOZZLE TO BE "STORCH" TYPE.
 4. NATIONAL STANDARD THREAD.

HYDRANT INSTALLATION
NOT TO SCALE



- APPROXIMATE LIST OF MATERIALS**
1. 3 C.Y. - 5000 PSI CONCRETE
 2. 15 ANGLE IRONS @ 4' LENGTH
 3. REQUIRED S.S. BOLTS AND FASTENERS
 4. 1/4" STEEL PLATE WITH DRILLED ORIFICES
 5. 1 C.Y. - CRUSHED STONE FOR BASE
 6. 48 #5 REBARS @ 1', 2' AND 3' LENGTHS
 7. 32 #4 REBARS @ 4.5' LENGTH

- NOTES:**
1. REINFORCING STEEL SHALL CONSIST OF A SINGLE LAYER OF HORIZONTAL AND VERTICAL PLACED #4 REBAR @ 12" O.C.
 2. CONCRETE BOX TO BE CONSTRUCTED OR PRECAST OF EQUAL DIMENSIONS AND REINFORCING.
 3. CONCRETE SLAB TO BE CONSTRUCTED ALONG WITH BASE. FOR PRECAST BOX, A SLOTTED CONCRETE SLAB TO BE USED.
 4. SECTION JOINTS AND PIPE OPENING SHALL BE SEALED WATERTIGHT WITH MORTAR BY CONTRACTOR.

5. ALL EXPOSED REBAR TO BE PAINTED WITH RUST-RESISTANT PAINT, COLOR AT CONTRACTOR'S DISCRETION.
6. TO BE SUPPLIED BY CAPITAL CONCRETE PRODUCTS OF HENNIKER, N.H., (1-603-428-3218) OR EQUAL.
7. STRUCTURE TO HAVE TEMPORARY PLYWOOD INSTALLED IN THE ORIFICE PLATE SLOT UNTIL THE SITE IS STABILIZED.
8. STRUCTURE IS TO BE DESIGNED FOR H2O LOADING.
9. SOIL UNDERLYING THE STRUCTURE IS TO BE COMPACTED TO 95% MODIFIED PROCTOR.

MULTI-STAGE DISCHARGE OUTLET STRUCTURE (MSDOS)
NOT TO SCALE

	A	B	C	D	E	F	G	H	I
MSDOS 1	8"	8.00	9.63	11.50	12"	7.50	8.00	7.00	24"

W:\16030\KITTEERY_ME-412_HALEY_ROAD_GREEN & CO\dwg\16030-PLAN.dwg 10/27/2016 12:48:46 PM EDT

Design: LAZ Draft: LAZ Date: 9/30/16
 Checked: JAC Scale: AS NOTED Project No.: 16030
 Drawing Name: 16030-PLAN.DWG

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STATE OF MAINE
 JONATHAN SAMUEL KING
 PROFESSIONAL ENGINEER
 No. 10272

REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ
		REVISION	BY

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Plan Name: **DETAIL SHEET**
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 Owner of Record: **MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTEERY, MAINE, BK 15129 PG 248**

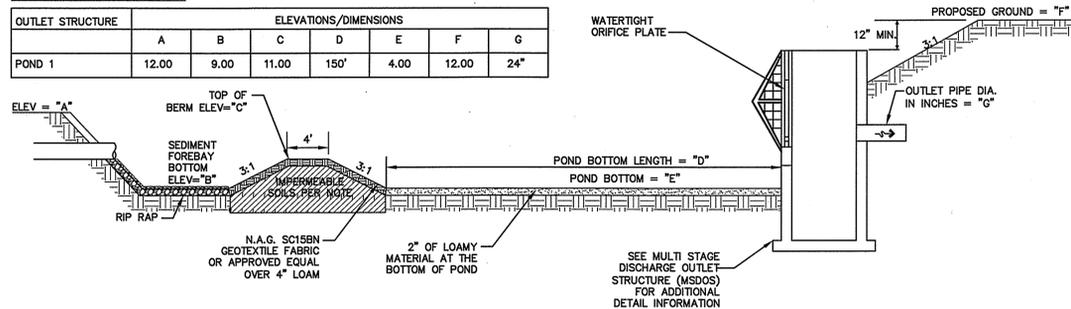
DRAWING No. **D2**
 SHEET 13 OF 15
 JBE PROJECT NO. 16030

WET POND CONSTRUCTION CRITERIA

- FOUNDATION PREPARATION** --- THE FOUNDATION AREA SHALL BE CLEARED OF TREES LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED DAM AND SPILLWAYS. FOUNDATION SURFACES SHALL BE SLOPED NO STEEPER THAN 1:1. THE FOUNDATION AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE MATERIAL. THE SURFACE SHALL HAVE MOISTURE ADDED OR IT SHALL BE COMPACTED, IF NECESSARY, SO THAT THE FIRST LAYER OF FILL MATERIAL CAN BE COMPACTED AND BONDED TO THE FOUNDATIONS. THE CUTOFF TRENCH AND ANY OTHER REQUIRED EXCAVATIONS SHALL BE DUG TO THE LINES AND GRADES SHOWN ON THE PLANS OR AS STAKED IN THE FIELD. IF THEY ARE SUITABLE, EXCAVATED MATERIALS SHALL BE USED IN THE PERMANENT FILL. EXISTING STREAM CHANNELS IN THE FOUNDATION AREA SHALL BE SLOPED NO STEEPER THAN 1:1 AND DEEPENED AND WIDENED AS NECESSARY TO REMOVE ALL STONES, GRAVEL, SAND, STUMPS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND TO ACCOMMODATE COMPACTION EQUIPMENT. FILL PLACEMENT --- THE MATERIAL PLACED IN THE FILL SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATTER.
- SELECTED BACK FILL MATERIAL** SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS AND ANTI SEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES, TO PREVENT DAMAGE FROM UNEQUAL LOADING. THE PLACING AND SPREADING OF FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL BROUGHT UP IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED. THE FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. THE BONDING SURFACE SHALL BE TREATED THE SAME AS THAT SPECIFIED FOR THE FOUNDATION SO AS TO INSURE A GOOD BOND WITH THE NEW FILL. THE DISTRIBUTION AND GRADATION OF MATERIALS SHALL BE SUCH THAT NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OF GRADATION FROM THE SURROUNDING MATERIAL. IF IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE CENTER AND UPSTREAM PARTS OF THE FILL. IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PLACED ACCORDING TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. THE COMPLETE WORK SHALL CONFORM TO THE LINES, GRADES, AND ELEVATIONS SHOWN ON THE DRAWINGS OR AS STAKED IN THE FIELD.
- MOISTURE CONTROL** --- THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.
- COMPACTION** --- CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREAS OR EACH LAYER OF FILL TO INSURE THAT THE REQUIRED COMPACTION IS OBTAINED. SPECIAL EQUIPMENT SHALL BE USED IF NEEDED TO OBTAIN THE REQUIRED COMPACTION. IF A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY. FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS. FILL ADJACENT TO CONCRETE STRUCTURES SHALL NOT BE COMPACTED UNTIL THE CONCRETE IS STRONG ENOUGH TO SUPPORT THE LOAD.
- PROTECTION** --- A PROTECTIVE COVER OF VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, AND BORROW AREA IF SOIL AND CLIMATIC CONDITIONS PERMIT. IF SOIL OR CLIMATIC CONDITIONS PRECLUDE THE USE OF VEGETATION AND PROTECTION IS NEEDED, NON-VEGETATIVE MEANS SUCH AS MULCHES OR GRAVEL MAY BE USED. IN SOME PLACES, TEMPORARY VEGETATION MAY BE USED UNTIL CONDITIONS PERMIT ESTABLISHMENT OF PERMANENT VEGETATION. THE EMBANKMENT AND SPILLWAY SHALL BE FENCED IF NECESSARY TO PROTECT THE VEGETATION.
- SEEDBED PREPARATION, SEEDING, FERTILIZING, AND MULCHING** SHALL COMPLY WITH THE APPROPRIATE VEGETATIVE BMP'S.
- CONCRETE** --- THE MIX DESIGN AND TESTING OF CONCRETE SHALL BE CONSISTENT WITH THE STRENGTH REQUIREMENTS OF THE JOB. MIX REQUIREMENTS OR NECESSARY STRENGTH SHALL BE SPECIFIED. THE TYPE OF CEMENT, AIR ENTRAPMENT, SLUMP, AGGREGATE, OR OTHER PROPERTIES SHALL BE SPECIFIED IF NECESSARY. ALL CONCRETE IS TO CONSIST OF A WORKABLE MIX THAT CAN BE PLACED AND FINISHED IN AN ACCEPTABLE MANNER. NECESSARY CURING SHALL BE SPECIFIED. REINFORCING STEEL SHALL BE PLACED AS INDICATED ON THE PLANS AND SHALL BE HELD SECURELY IN PLACE DURING CONCRETE PLACEMENT. SUB GRADES AND FORMS SHALL BE INSTALLED TO LINE AND GRADE, AND THE FORMS SHALL BE MORTAR TIGHT AND UNYIELDING AS THE CONCRETE IS PLACED.
- THE CONTRACTOR WILL NOTIFY JONES AND BEACH ENGINEERS AFTER EACH OF THE GRAVEL WETLAND PONDS HAVE BEEN EXCAVATED TO THE BOTTOM OF THE SYSTEM FOR A MANDATORY INSPECTION PRIOR TO BUILDING BERMS, PLACING STONE OR INSTALLING PIPE SYSTEM.
- BERMS AND WEIRS SEPARATING THE FOREBAY AND TREATMENT CELLS SHOULD BE CONSTRUCTED WITH CLAY, OR NON-CONDUCTIVE SOILS, AND/OR A FINE GEOTEXTILE, OR SOME COMBINATION THEREOF, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THESE EARTHEN DIVIDERS.

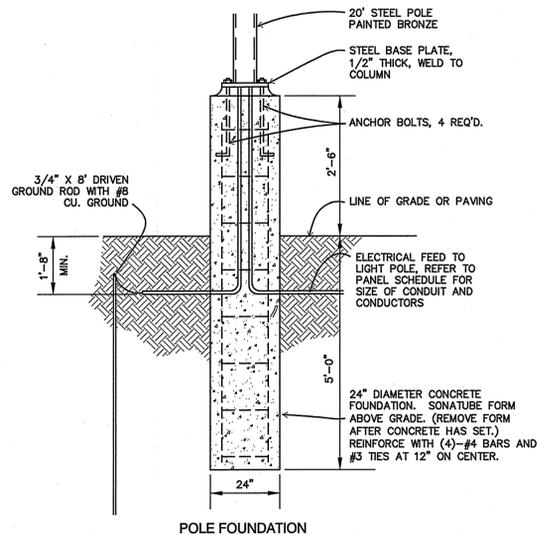
WET POND INVERT TABLE

OUTLET STRUCTURE	ELEVATIONS/DIMENSIONS						
	A	B	C	D	E	F	G
POND 1	12.00	9.00	11.00	150'	4.00	12.00	24"



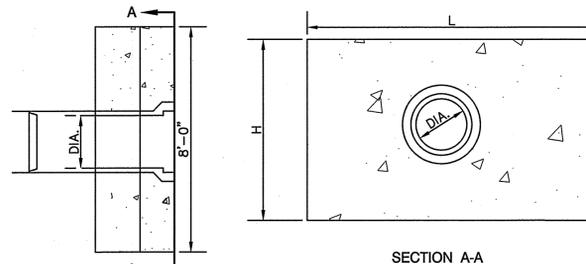
WET POND SECTION

NOT TO SCALE



LIGHT BASE

NOT TO SCALE



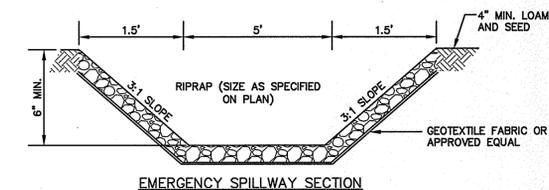
DIA	HEADWALL LENGTH	HEADWALL HEIGHT	FILL HEIGHT	PIPE COVER	HEADWALL BOTTOM WIDTH
12"	4'-2"	3'-9"	1'-6"	1'-3"	1'-11"
15"	5'-11"	4'-2"	1'-6"	1'-5"	2'-0"
18"	6'-11"	4'-5"	1'-6"	1'-5"	2'-1"
24"	8'-10"	4'-11"	1'-6"	1'-5"	2'-3"

NOTES:

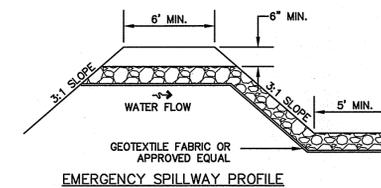
- ALL DIMENSIONS GIVEN IN FEET & INCHES.
- PROVIDE BELL END AT INLET HEADWALL, AND SPIGOT END AT OUTLET END HEADWALL.
- CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS. CEMENT TO BE TYPE III PER ASTM C-150. REINFORCING TO MEET OR EXCEED ASTM A-615 GRADE 60 DEFORMED BARS.
- 1" THREADED INSERTS PROVIDED FOR FINAL ATTACHMENT IN FIELD BY OTHERS.

PRECAST CONCRETE HEADWALL

NOT TO SCALE



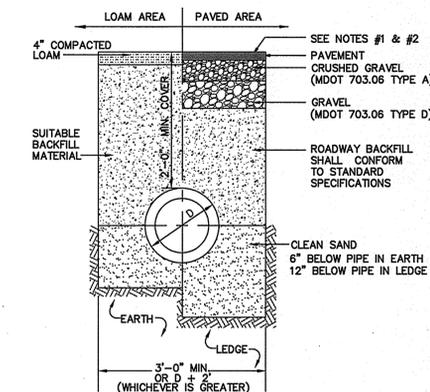
EMERGENCY SPILLWAY SECTION



EMERGENCY SPILLWAY PROFILE

EMERGENCY SPILLWAY

NOT TO SCALE



NOTES:

- PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
- NEW ROADWAY CONSTRUCTION SHALL CONFORM WITH PROJECT AND TOWN SPECIFICATIONS.
- ALL MATERIALS ARE TO BE COMPACTED TO 95% OF ASTM D-1557.

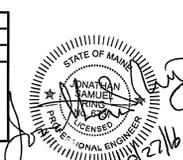
TYPICAL DRAINAGE TRENCH

NOT TO SCALE

W:\16030 KITTERY ME-412 HALEY ROAD-GREEN & CO.dwg 10/27/2016 12:48:46 PM EDT

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Checked: JAC	Scale: AS NOTED	Project No.: 16030
Drawing Name: 16030-PLAN.DWG		

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Plan Name:	DETAIL SHEET
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE, BK 15129 PG 248

DRAWING No.
D3
SHEET 14 OF 15
JBE PROJECT NO. 16030

TEMPORARY EROSION CONTROL NOTES

- THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF 5 ACRES BE EXPOSED AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
- ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE 'C' AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
- SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.5" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
- AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
- AREAS MUST BE SEEDED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
- ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER) ON SLOPES GREATER THAN 3:1, AND SEEDED AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER NOVEMBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- FUGITIVE DUST CONTROL IS REQUIRED TO BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000, AND THE PROJECT IS TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
- PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL BE LOCATED AND IDENTIFIED ON THIS PLAN.

SEEDING SPECIFICATIONS

- GRADING AND SHAPING**
 - SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED).
 - WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
- SEEDBED PREPARATION**
 - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
 - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND FERTILIZER AND LIME MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
- ESTABLISHING A STAND**
 - LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
 - AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT.
 - NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT.
 - PHOSPHATE(P2O5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
 - POTASH(K2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
 (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
 - SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH 25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
 - REFER TO THE 'SEEDING GUIDE' AND 'SEEDING RATES' TABLES ON THIS SHEET FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT, TREFOL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE.
 - WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.
- MULCH**
 - HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
 - MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
- MAINTENANCE TO ESTABLISH A STAND**
 - PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
 - FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
 - IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT	2/
	F	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT, SEE NH-PM-24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

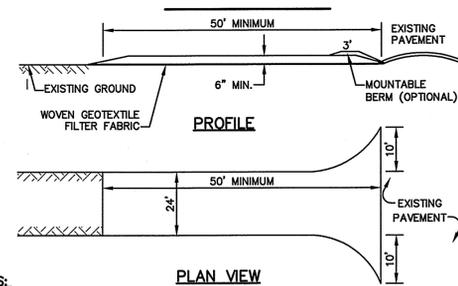
NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

SEEDING GUIDE

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREeping RED FESCUE	10	0.25
CROWN VETCH OR FLAT PEA	30	0.75
TOTAL	40 OR 55	0.95 OR 1.35
C. TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
BIRDS FOOT TREFOL	8	0.20
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREeping RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/2	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

SEEDING RATES

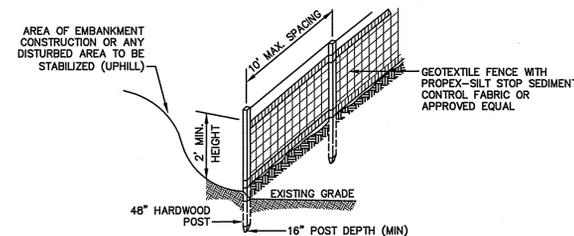


NOTES:

- STONE FOR STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
- THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS, OR 10 FEET, WHICHEVER IS GREATER.
- GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER FABRIC IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
- ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A STONE BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED OUT TO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

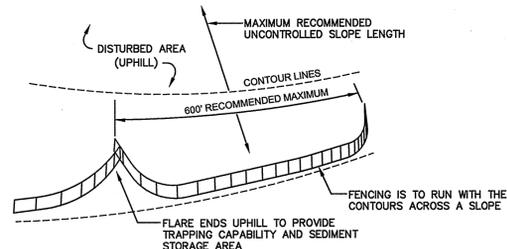


CONSTRUCTION SPECIFICATIONS:

- WOVEN FABRIC FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP, MID AND BOTTOM AND EMBEDDED IN THE GROUND A MINIMUM OF 8" AND THEN COVERED WITH SOIL.
- THE FENCE POSTS SHALL BE A MINIMUM OF 48" LONG, SPACED A MAXIMUM 10' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED 6", FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED AND PROPERLY DISPOSED OF WHEN IT IS 6" DEEP OR VISIBLE 'BULGES' DEVELOP IN THE SILT FENCE.
- PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE.
- SILT FENCE SHALL REMAIN IN PLACE FOR 24 MONTHS.

SILT FENCE

NOT TO SCALE



- SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER. THE AREA DISTURBED BY THE REMOVAL SHALL BE SMOOTHED AND REVEGETATED.

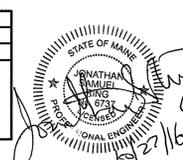
MAINTENANCE:

- SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE DONE IMMEDIATELY.
- IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
- SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
- SEDIMENT DEPOSITS THAT ARE REMOVED, OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED, SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

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Design: LAZ	Draft: LAZ	Date: 9/30/16
Checked: JAC	Scale: AS NOTED	Project No.: 16030
Drawing Name: 16030-PLAN.DWG		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



REV.	DATE	REVISION	BY
1	10/27/16	ISSUED FOR REVIEW	LAZ
0	9/28/16	ISSUED FOR REVIEW	LAZ
		REVISION	BY

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 FAX: 603-772-0227
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Plan Name:	EROSION AND SEDIMENT CONTROL DETAILS
Project:	PROPOSED SUBDIVISION 412 HALEY ROAD, KITTEERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTEERY, MAINE, BK 15129 PG 248

DRAWING No.
E1
 SHEET 15 OF 15
 JBE PROJECT NO. 16030

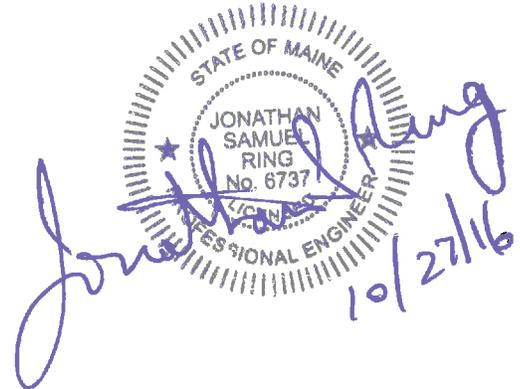
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603.772.4746 - JonesandBeach.com

DRAINAGE ANALYSIS SEDIMENT AND EROSION CONTROL PLAN

Prepared for:

**412 Haley Road Subdivision
Tax Map 34, Lot 3
Haley Road
Kittery, ME 03833**



**October 27, 2016
JBE Project No. 16030**

TABLE OF CONTENTS

Executive Summary

USGS Quadrangle

1.0	Rainfall Characteristics	Page 1
2.0	Existing Conditions Analysis	Page 1
3.0	Proposed Conditions Analysis	Pages 1
4.0	Sediment & Erosion Control Best Management Practices	Pages 1-7
5.0	MPDES Overview	Page 7-14
6.0	Conclusion	Page 15

Appendix I Existing Conditions Analysis

- 2 Year - 24 Hour Summary
- 10 Year - 24 Hour Summary
- 25 Year - 24 Hour Complete
- 100 Year - 24 Hour Summary

Appendix II Proposed Conditions Analysis

- 2 Year - 24 Hour Summary
- 10 Year - 24 Hour Summary
- 25 Year - 24 Hour Complete
- 100 Year - 24 Hour Summary

Appendix III Soil Information, Table 2-1, Table 2-2 and Figure 2-3 County Rainfall Data BMP's Technical Design Manual, and Rip Rap Calculations

Appendix IV Permit Information

Enclosed: Sheet W1 Existing Conditions Watershed Plan
 Sheet W2 Proposed Conditions Watershed Plan

EXECUTIVE SUMMARY

Green and Company proposes to construct a 12 single-family unit subdivision project on a 23.46 acre parcel located at 412 Haley Road in Kittery, ME. A drainage analysis of the entire site areas was conducted for the purpose of estimating the peak rate of stormwater runoff and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-construction) condition, and a second for its proposed (post-construction) condition. The analysis was conducted using data for the 2 Year – 24 Hour (3.00”), 10 Year – 24 Hour (4.60”), 25 Year – 24 Hour (5.40”) and 100 Year – 24 Hour (6.60”) storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. A summary of the existing and proposed conditions peak rates of runoff is as follows:

COMPONENT	ANALYSIS	PEAK RATE OF RUNOFF (CUBIC FEET/SECOND)			
		2 Year	10 Year	25 Year	100 Year
Analysis Point #1	Existing	8.79	28.08	38.72	50.23
	Proposed	8.58	18.01	24.14	44.16

The project site is located in Zone R-RL – Residential Rural Zone. The subject parcel consists primarily of grass and woodlands, with a single family dwelling accessed by a gravel driveway. The existing topography is such that the existing conditions site analysis requires three (3) subcatchments. The entire site drains to Spruce Creek (Analysis Point #1).

The proposed site development consists of the aforementioned 12 single-family units. The existing single-family dwelling will remain. The construction of approximately 1,420-feet of paved roadway and 750 feet of gravel driveway, in addition to site grading divides the existing drainage basins into 13 subcatchments. The runoff from these subcatchments has increased from that of the existing conditions due to the addition of the impervious buildings and paved roadway. Stormwater is collected into a wet pond before exiting the site to Spruce Creek. As shown in the above table, the proposed peak rates of stormwater runoff will be reduced from that of existing conditions for all Reaches.

In addition, the potential for increased erosion and sedimentation is handled by way of erosion control blankets, vegetated treatment swales, and riprap inlet and outlet protection aprons. The use the Stormwater Management for Maine Best Management Practices have been applied to the design of this drainage system and will be observed during all stages of construction. All land disturbed during construction will be stabilized within thirty days of groundbreaking, and existing wetlands and abutting property owners will suffer minimal adversity resultant of this development.



SITE COORDINATES: 43° 05' 45" N, 70° 42' 37" W

GRAPHIC SCALE



(IN FEET)

1 inch = 2000ft.

J/B Designed and Produced in NH
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Drawing Name:

USGS PLAN

Project:

HALEY ROAD

Owner of Record: **MARILYN MANN & JAMES SMITH**
 412 HALEY ROAD, KITTERY, ME

DRAWING No.

USGS1

SHEET 1 OF 1

JBE PROJECT
 No. 16030

1.0 RAINFALL CHARACTERISTICS

This drainage report includes an existing conditions analysis of the area involved in the proposed development, as well as a proposed condition, or post-construction analysis, of the same location. These analyses were accomplished using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. The curve numbers were developed using the SCS TR-55 Runoff Curve numbers for Urban Areas. A Type III SCS 24-hour rainfall distribution was utilized in analyzing the data for the 2 Year – 24 Hour (3.00”), 10 Year – 24 Hour (4.60”), 25 Year – 24 Hour (5.40”) and 100 Year – 24 Hour (6.60”) storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment.

As the table in the Executive Summary demonstrates, the proposed peak rates of runoff will be reduced from the existing conditions of the site, thereby minimizing any potential for a negative impact on abutting properties or infrastructure by allowing for better control of peak rates of stormwater runoff.

2.0 EXISTING CONDITIONS ANALYSIS

The subject parcel consists primarily of grass and woodlands, with a single family dwelling accessed by a gravel driveway. The topography of the site varies from flat to steep throughout the site, with few slopes exceeding 15%.

Classified through the use of a High Intensity Soil Survey (HISS), the land of the site is composed of a variety of soil types. The in-situ soils are categorized into Hydrologic Soil Groups (HSG) C and D (see appendix for soil types and HSG designations).

The existing topography is such that the existing conditions site analysis requires 3 subcatchments. The entire site drains to Spruce Creek (Analysis Point #1).

3.0 PROPOSED CONDITIONS ANALYSIS

The proposed site development consists of the aforementioned 12 single-family units. The existing single-family dwelling will remain. The construction of approximately 1,420-feet of paved roadway and 750 feet of gravel driveway, in addition to site grading divides the existing drainage basins into 13 subcatchments. The runoff from these subcatchments has increased from that of the existing conditions due to the addition of the impervious buildings and paved roadway. Stormwater is collected into a wet pond before exiting the site to Spruce Creek. As shown in the above table, the proposed peak rates of stormwater runoff will be reduced from that of existing conditions for all Reaches.

4.0 SEDIMENT & EROSION CONTROL BEST MANAGEMENT PRACTICES

The proposed site development is protected from erosion and the roadways and abutting properties are protected from sediment by the use of the Stormwater Management for Maine Best Management Practices. Any area disturbed by construction will be re-stabilized within 45 days and abutting properties and wetlands will suffer minimal adversity resultant of this development. All swales and drainage structures will be constructed and stabilized prior to having runoff directed to them.

4.1 Silt Fence / Construction Fence

The plan set demonstrates the location of silt fence for sediment control. Sheet E1 – Erosion and Sediment Control Details, has the specifications for installation and maintenance of the silt fence. In areas where the limits of construction need to be emphasized to operators, construction fence for added visibility will be installed. Orange construction fence will be VISI Perimeter Fence by Conwed Plastic Fencing, or equal. The four-foot fencing to be installed using six foot posts at least two feet in the ground at a spacing of six to eight feet.

4.2 Drainage Swales / Stormwater Conveyance Channels

Drainage swales will be stabilized with vegetation for long term cover as outlined below, and on Sheet E1 using seed mixture C. As a general rule, velocities in the swale should not exceed 3.0 feet per second for a vegetated swale although velocities as high as 4.5 FPS are allowed under certain soil conditions.

4.3 Stabilized Construction Entrance

A temporary gravel construction entrance provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the pad should be between 2 to 3 inch coarse aggregate, and the pad itself constructed to a minimum length of 50 feet for the full width of the access road and not less than 10 feet wide. The aggregate should be placed at least six inches thick. A plan view and profile are shown on Sheet E1.

4.4 Environmental Dust Control

Dust will be controlled on the site by the use of multiple Maine Erosion and Sedimentation Control Best Management Practices handbook (March 2003). Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water can be applied. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

4.5 Vegetated Stabilization

All areas that are disturbed during construction will be stabilized with vegetated material within 30 days of breaking ground. Construction will be managed in such a manner that erosion is prevented and that no abutting property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specification are as follows:

Seed	Lb./Acre	Seeding depth (inches)	Recommended Seeding Dates	Remarks
Winter Rye	112	1 to 1.5	8/15 to 10/1	Good for fall seeding. Select a hardy species, such as Aroostook Rye.
Oats	80	1 to 1.5	4/1 to 7/1 8/15 to 9/15	Best for spring seeding. Early seeding will die when winter weather moves in, but mulch will provide protection.

Annual Ryegrass	40	0.25	4/1 to 7/1	Grows quickly but is of short duration. Use where appearance is important. With mulch, seeding may be done throughout growing season.
Sudangrass	40	0.5 to 1	5/15 to 8/15	Good growth during hot summer periods.
Perennial	40	0.25	8/15 to 9/15	Good cover, longer lasting than Annual Ryegrass. Mulching will allow seeding throughout growing season.
Temporary mulch with or Without dormant seeding			10/1 to 4/1	Refer to TEMPORARY MULCHING BMP And/or PERMANENT VEGETATION BMP.

For additional information see Appendix A Seed Mixtures in the Maine Erosion and Sedimentation BMP's (March 2003).

4.6 Temporary Sediment Traps

Temporary Sediment Traps are small temporary ponding areas that are formed by excavation or by constructing an earthen embankment across a drainage way and providing a stabilized outlet. These structures intercept sediment-laden runoff from small, disturbed areas and detain it long enough for the majority of the sediment to settle out into the sump of the trap.

4.7 Riprap Outlet Protection

Riprap Outlet Protection will be provided at the outlet of all culverts that discharge runoff into the environment (as opposed to a catch basin). The riprap outlet protection has been designed with the equations provided in the Maine Erosion and Sedimentation Control Best Management Practices handbook (March 2003). Details of the protection design can be found on Sheet E1 – Erosion & Sediment Control Details.

4.8 Riprap Inlet Protection Aprons

Riprap Inlet Protection Aprons are four-foot by four-foot sections of riprap placed on the ground in front of the inlet of a culvert. These aprons, built to the same specifications as the outlet protection aprons mentioned above, help to prevent the growth of vegetation directly adjacent to an inlet, therefore reducing the potential for a debilitating clog.

4.9 Catch Basins

A catch basin is a pre-cast concrete structure intended for the capture of stormwater utilized in streets and parking areas. All catch basins are to be equipped with three-foot sedimentation sumps in order to provide an area for sediment to settle out of runoff prior to its discharge from the structure. Grease hoods attached to the outlet pipe of the structures allow for the capture of grease, oils, and other floatable solids from runoff, thereby minimizing their presence in the subsequent discharge.

4.10 Drain Manholes

A drain manhole is a pre-cast concrete structure intended for the transport of stormwater, typically utilized in streets and parking areas. All drain manholes are to be equipped with three-foot sedimentation sumps in order to provide an area for sediment to settle out of runoff prior to its discharge from the structure. These structures are to be cleaned regularly.

4.11 Wet Retention Pond

Wet ponds are designed to have a permanent pool of water which prevents the re-suspension of sediments in the pond from previous storm events. Microorganisms and plants in the permanent pool assist in biological uptake and degradation of pollutants. Sediment is further handled by a sediment fore-bay separated from the permanent pool by an aquatic bench, which will allow for the increased removal and collection of sediment prior to discharging into the permanent pool. Below the inlet of the permanent pool's outlet, a 10:1 side slope will be constructed to a 1' depth prior to making a transition to 3:1 slopes to allow for the establishment of an extensive wetland plant community in the area around the pond edge. Additional storage is provided above the permanent pool to detain stormwater, which in this case drains out of the pond by way of a 24" culvert outlet. A 5'-wide emergency spillway will also be included as a safety precaution and is designed to accommodate storms in excess of the 100 Yr.- 24 Hr. event and to provide for one half foot of freeboard between it and the top of the berm.

4.12 Construction Sequence

1. Prior to the start of *any* activity, the Site Developer (or Owner) to file a Maine DEP Permit by Rule, and the Notice of Intent (NOI) to comply with the Maine Construction General Permit. These permits have been filed and sent to the Maine DEP. Copies of the two permits have been sent to the Town and are in this document.
2. Prior to construction, the Site Developer (or Owner) shall conduct a pre-construction meeting. Participants shall include the developer (or owner), the General Contractor, the Site Contractor, the Town of Wells and utility districts.
3. Cut and remove trees in construction area as required or directed.
4. Install silt fencing, hay bales, and construction entrances prior to the start of construction. These are to be maintained until the final pavement surfacing and landscaping areas are established.
5. Clear, cut, grub, and dispose of debris in approved facilities. This includes any required demolition of existing structures, utilities, etc.
6. Construct and/or install temporary and permanent sediment and/or detention basin(s) as required. These facilities shall be installed and stabilized prior to directing runoff to them.
7. Strip loam and pavement, or reclaim existing pavement within limits of work, and stockpile excess material. Stabilize stockpile as necessary.
8. Perform preliminary site grading in accordance with the plans, including the construction of any retaining walls.

9. Prepare building pad(s) to enable building construction to begin.
10. Install the sewer and drainage systems first, then any other utilities in accordance with the plans and details. Any conflicts between utilities are to be resolved with the involvement and approval of the engineer.
11. Install inlet protection at all catch basins as they are constructed, in accordance with the details.
12. All swales and drainage structures are to be constructed and stabilized prior to having runoff directed to them.
13. Daily, or as required, construct temporary berms, drainage ditches, check dams, sediment traps, etc., to prevent erosion on the site and prevent any siltation of abutting waters and/or property.
14. Perform final fine grading, including placement of any “select” sub grade materials.
15. Pave all parking lots and roadways with initial base course.
16. Perform all remaining site construction (i.e. building, curbing, utility connections, etc.).
17. Loam and seed all disturbed areas and install any required sediment and erosion control facilities (i.e. riprap, erosion control blankets, etc.).
18. Finish paving all roadways and parking areas with finish course.
19. Complete permanent seeding and landscaping.
20. Remove temporary erosion control measures after seeding areas have been established and site improvements are complete. Smooth and re-vegetate all disturbed areas.
21. Clean site and all drainage structures, pipes, and sumps of all silt and debris.
22. Install all painted pavement markings and signage per the plans and details.
23. Upon completion of construction, the contractor is to file a Notice of Termination with the MEDEP in order to satisfy the requirements under the MPDES Construction General Permit.

4.13 Temporary Erosion Control Measures

1. The smallest practical area of land shall be exposed at any one time. At no time shall an area in excess of five acres be exposed.
2. Erosion, sediment and detention measures shall be installed as shown on the plans and at locations as required, or directed by the engineer.

3. All disturbed areas shall be returned to proposed grades and elevations. Disturbed areas shall be loamed with a minimum of 4" of loam and seeded with seed mixture "C" at a rate not less than 1.10 pounds of seed per 1,000 square feet of area (48 lbs. per acre).
4. Silt fences and other barriers shall be inspected periodically and after every rain during the life of the project. All damaged areas shall be repaired, and sediment deposits shall periodically be removed and properly disposed of.
5. After all disturbed areas have been stabilized, the temporary erosion control measures are to be removed and the area disturbed by the removal smoothed and revegetated.
6. Areas must be seeded and mulched within 5 days of final grading, permanently stabilized within 15 days of final grading, or temporarily stabilized within 30 days of initial disturbance of soil.
7. All areas not stabilized by November 1st must be protected with North American Green S75 erosion control blankets (or an equivalent approved in writing by the engineer) and seeded with winter rye or oats at a rate of 2.50 pounds per 1,000 square feet of area (108.90 lbs. per acre).

4.19 Temporary Best Management Practices-Maintenance

Silt Fencing

During the construction process, all silt fencing will be inspected during and after storm events to ensure that the fence still has integrity and is not allowing sediment to pass. Any section of fence that has failed or is failing is to be replaced immediately, overlapping adjacent fence sections by at least one foot. If the problem persists, measures such as additional fencing (i.e. double) or the addition of hay bales on the project side of the fence line should be considered. Sediment is to be removed from behind the fencing if found to be deeper than six inches and disposed of properly.

Swales

Sediment build-up in swales will be removed if it is deeper than six inches and disposed of properly.

Sediment Traps

Sediment traps are to be inspected once per week and after every precipitation event. Sediment is to be removed from the traps if it is deeper than six inches and disposed of properly. The lip of the outlet crest should be maintained so as to provide an even, level edge so as to promote sheet flow out of the structure so as to minimize the potential for erosion downstream from the structure. Any erosion must be repaired and stabilized immediately.

Stone Check Dams

Sediment build-up behind stone check dams should be removed if found to be deeper than six inches and disposed of properly. Any erosion around the edges of the dam must be corrected immediately.

4.20 Permanent Best Management Practices

Catch Basins

Sediment and debris is to be removed from catch basin sumps semi-annually (as well as from sumps below the inlet of culverts). Grease hoods are to be wiped clean and the rags disposed of properly. Debris obscuring the grate inlet should also be removed.

Drainage Swales

Sediment build-up in swales is to be removed if it is deeper than six inches, and any debris also removed. Areas where vegetation has not become established or has died should be reseeded. If this fails, additional loam and seed may be required. *Fertilizers should be utilized only as a last resort.* Mowing should be performed at least once a year, but not shorter than four inches, and all grass clippings removed.

Wet Ponds

Wet ponds should require little maintenance, but should be inspected frequently during the first year of operation, and annually thereafter. Every five years, the services of a professional engineer should be retained to perform a thorough inspection of all the aspects of the pond and its infrastructure. Any debris and sediment accumulations should be removed from the outlet structure(s) and emergency spillway(s) and disposed of properly. Wet pond berms should be mowed at least once annually so as to prevent the establishment of woody vegetation – trees should *never* be allowed to grow on a wet pond berm, as they may destabilize the structure and increase the potential for failure. Areas showing signs of erosion or thin or dying vegetation should be repaired immediately by whatever means necessary, *with the exception of fertilizer.* Rodent burrows are to be repaired immediately and the suspect animals apprehended with non-lethal traps if the problem persists.

5.0 MPDES GENERAL CONSTRUCTION OVERVIEW

The Stormwater Pollution Prevention Plan is to be stored onsite at all times by the contractor and the owner of the project is to have a copy as well. The owner and the contractor are to sign the onsite copy to certify that they have read and understand the terms of the requirements. The contractor can incorporate any changes that need to be made in order to accommodate field and construction conditions. These changes should be made a part of the onsite SWPPP and the log updated as to the changes.

These Plans are to be updated after every rain event and on a weekly basis. The contractor is responsible for monitoring and updating the field copy. Anyone from the public has the right to inspect the SWPPP at anytime during the process. When the construction activities are finalized, the contractor

is responsible to either file the Notice of Termination or contact the Engineer to file the form as specified in the Construction Sequence.

5.1 Waste Disposal

No waste materials will be generated by work remaining on the site. No hazardous waste will be stored onsite. All sanitary waste will be collected from the portable units as needed based on the number of employees and the filling rate.

5.2 Non-Storm Water Discharges

No non-permitted, non-stormwater discharges are expected with this project. Uncontaminated groundwater (from dewatering excavation) will be contained in temporary sediment traps before discharge into vegetated upland areas or stormwater structures.

5.3 Spill Prevention

The site superintendent will use best efforts to ensure that the material management practices are used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

The following good housekeeping practices will be followed onsite during the construction project:

- An effort will be made to store only enough product required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- Trash on site will be controlled by monitoring and by periodic clean up.

5.4 Hazardous Products

The operator will use no hazardous products on the site.

5.5 Product Specific Practices

PETROLEUM PRODUCTS:

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

FERTILIZERS:

Fertilizers will be applied as directed in the above-mentioned detailed sheet.

5.6 Re-fueling Equipment Onsite

- Refueling of onsite equipment should be performed with either delivered onsite tanker trucks or the following method.
- All off-road diesel or gasoline kept onsite should be located near the existing road in order to provide access by pickup trucks, refueling trucks and the fire department.
- Off-road diesel or gasoline containers should be kept within a sealed protective enclosure. The bottom half of a septic tank works well to contain any possible spillage during the refueling process.
- The refueling area should be kept a minimum of 100' from wetlands.

5.7 Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Site personnel will be made aware of the recommended procedures and the location of the information and cleanup supplies.
- For large oil spills, DEP Maine Emergency & Spill Response Petroleum Spill Response program will be notified immediately at (800) 482-0777 and an emergency response contractor would be called in.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials may include but not limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for the purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency as required by State and Local regulations.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The site superintendent responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator.

Pollution Prevention Plan Certification

Owner	Responsibility
Name:	The owner is responsible for the conduct of all construction activities, and ultimate compliance with all the provisions of the Stormwater Pollution Prevention Plan.
Address:	
Telephone:	

Chapter 2 Owner certification

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____ Date: _____

Printed Name:

Representing:

CONTRACTORS

Contractors	Responsibility
Name: Address: Telephone:	The contractor is responsible for the completion of planned construction activities, including the installation and maintenance of control measures as outlined in this Stormwater Pollution Prevention.

I certify under penalty of law that I understand the terms and conditions of the MPDES General Construction permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature: _____ Date: _____

Printed Name:

Representing:

(Note: Additional copies of this form may be attached in cases where more than one contractor has responsibility for compliance.)

INSPECTION AND MAINTENANCE REPORT FORM

To be completed every 7-14 days and within 24 hours of a significant rain event of 0.5 inches or more

Note: The following records are required to be kept, and attached, to the Stormwater Pollution Prevention Plan.

Inspector: _____ Representing: _____ Qualifications: _____

Date of Inspection : ___/___/___ Last Date Inspected: ___/___/___

Inspection due to rainfall event greater than 0.5 inches? Y N
 If so, date of rain event: ___/___/___, and amount: _____ inches

Photos Taken? Y N

Major Grading Activities since last inspection? Y N
 If so, describe (phase/lot/station, etc.):

New Stabilization Measures initiated? Y N
 If so, describe (phase/lot/station, etc.):

Construction Activity temporarily or permanently ceased? Y N
 If so, describe (phase/lot/station, etc.):

CONSTRUCTION UPDATE

	Status	Additional Notes
Install Erosion Control		
Cut and Clear Vegetation		
Structural Controls		
Installed		
Structural Controls		
Stabilized		
Final Grading Complete		
Final Soil Stabilization		

GENERAL INSPECTION ITEMS

<i>Inspection Item</i>	<i>Status</i>	<i>If no/ recommendation:</i>
Are any changes to the Stormwater Pollution Prevention Plan required to reflect modifications to the pollution prevention measures?	Y N	
If accumulated sediments have been removed from silt fencing, detention basins, etc., have they been disposed of in an upland area away from wetland resource?	Y N	
Is there a supply of hay bales, stakes and silt fencing on	Y N	

CHANGES TO THE STORMWATER POLLUTION PREVENTION PLAN

Date:

Change:

6.0 CONCLUSION

This proposed site development located at 1708 Post Road, Wells, Maine will have minimal adverse effect on abutting infrastructures or properties by way of stormwater runoff or siltation. The post-construction peak rates of runoff for the site will be equal to or lower than the existing conditions for all analyzed storm events. Appropriate steps will be taken to eliminate erosion and sedimentation; these will be accomplished through the construction of a drainage system consisting of site grading, stormwater detention, and riprap inlet and outlet protection aprons. The use of the Maine Stormwater Best Management Practices Manual has been utilized in the design of this system and their application will be enforced throughout the construction process.

Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

Michael J. Kerivan, P.E.
Project Engineer

APPENDIX I

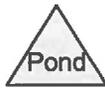
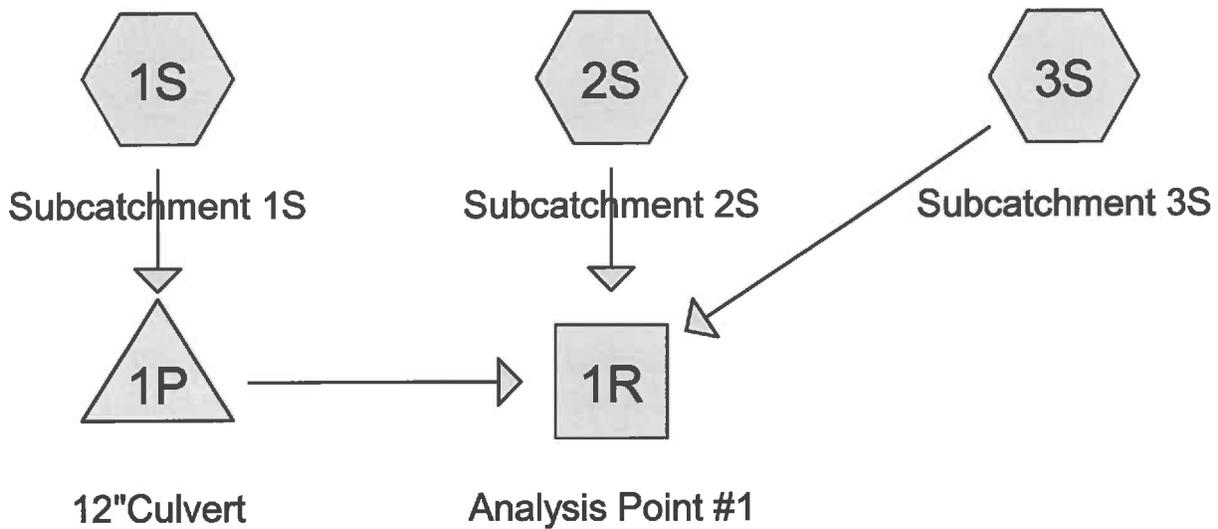
EXISTING CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR - 24 HOUR Rainfall = 3.0"

Summary 10 YEAR - 24 HOUR Rainfall = 4.6"

Complete 25 YEAR - 24 HOUR Rainfall = 5.4"

Summary 100 YEAR - 24 HOUR Rainfall = 6.6"



16030 - EXISTING CONDITION

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.722	84	1 acre lots, 20% imp, HSG D (1S)
3.343	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S)
6.886	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S)
0.103	96	Gravel surface, HSG C (1S, 2S, 3S)
0.447	96	Gravel surface, HSG D (1S, 2S)
0.003	98	Paved parking, HSG C (3S)
0.088	98	Paved roads w/curbs & sewers, HSG C (1S, 2S)
0.063	98	Roofs, HSG C (2S, 3S)
2.788	70	Woods, Good, HSG C (1S, 2S, 3S)
1.999	77	Woods, Good, HSG D (1S, 2S, 3S)
17.443	78	TOTAL AREA

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
6.389	HSG C	1S, 2S, 3S
11.054	HSG D	1S, 2S, 3S
0.000	Other	
17.443		TOTAL AREA

16030 - EXISTING CONDITION

Type III 24-hr 2-YR STORM Rainfall=3.00"

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Page 4

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcatchment 1S Runoff Area=480,087 sf 3.80% Impervious Runoff Depth>1.07"
Flow Length=890' Tc=21.0 min CN=77 Runoff=8.75 cfs 0.979 af

Subcatchment 2S: Subcatchment 2S Runoff Area=151,374 sf 1.26% Impervious Runoff Depth>1.31"
Flow Length=175' Tc=6.0 min CN=81 Runoff=5.20 cfs 0.380 af

Subcatchment 3S: Subcatchment 3S Runoff Area=128,341 sf 1.23% Impervious Runoff Depth>1.13"
Flow Length=310' Slope=0.0300 '/ Tc=8.5 min CN=78 Runoff=3.39 cfs 0.277 af

Reach 1R: Analysis Point #1 Inflow=8.79 cfs 1.561 af
Outflow=8.79 cfs 1.561 af

Pond 1P: 12"Culvert Peak Elev=11.60' Storage=14,907 cf Inflow=8.75 cfs 0.979 af
Outflow=2.73 cfs 0.905 af

Total Runoff Area = 17.443 ac Runoff Volume = 1.635 af Average Runoff Depth = 1.13"
97.14% Pervious = 16.943 ac 2.86% Impervious = 0.499 ac

16030 - EXISTING CONDITION

Type III 24-hr 10-YR STORM Rainfall=4.60"

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Page 5

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcatchment 1S Runoff Area=480,087 sf 3.80% Impervious Runoff Depth>2.28"
Flow Length=890' Tc=21.0 min CN=77 Runoff=19.44 cfs 2.096 af

Subcatchment 2S: Subcatchment 2S Runoff Area=151,374 sf 1.26% Impervious Runoff Depth>2.63"
Flow Length=175' Tc=6.0 min CN=81 Runoff=10.52 cfs 0.762 af

Subcatchment 3S: Subcatchment 3S Runoff Area=128,341 sf 1.23% Impervious Runoff Depth>2.37"
Flow Length=310' Slope=0.0300 '/ Tc=8.5 min CN=78 Runoff=7.41 cfs 0.582 af

Reach 1R: Analysis Point #1 Inflow=28.08 cfs 3.341 af
Outflow=28.08 cfs 3.341 af

Pond 1P: 12"Culvert Peak Elev=12.14' Storage=21,273 cf Inflow=19.44 cfs 2.096 af
Outflow=20.71 cfs 1.997 af

Total Runoff Area = 17.443 ac Runoff Volume = 3.441 af Average Runoff Depth = 2.37"
97.14% Pervious = 16.943 ac 2.86% Impervious = 0.499 ac

16030 - EXISTING CONDITION

Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 6

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcatchment 1S Runoff Area=480,087 sf 3.80% Impervious Runoff Depth>2.95"
Flow Length=890' Tc=21.0 min CN=77 Runoff=25.20 cfs 2.708 af

Subcatchment 2S: Subcatchment 2S Runoff Area=151,374 sf 1.26% Impervious Runoff Depth>3.34"
Flow Length=175' Tc=6.0 min CN=81 Runoff=13.29 cfs 0.967 af

Subcatchment 3S: Subcatchment 3S Runoff Area=128,341 sf 1.23% Impervious Runoff Depth>3.05"
Flow Length=310' Slope=0.0300 '/ Tc=8.5 min CN=78 Runoff=9.55 cfs 0.749 af

Reach 1R: Analysis Point #1 Inflow=38.72 cfs 4.313 af
Outflow=38.72 cfs 4.313 af

Pond 1P: 12"Culvert Peak Elev=12.16' Storage=21,531 cf Inflow=25.20 cfs 2.708 af
Outflow=25.05 cfs 2.598 af

Total Runoff Area = 17.443 ac Runoff Volume = 4.424 af Average Runoff Depth = 3.04"
97.14% Pervious = 16.943 ac 2.86% Impervious = 0.499 ac

16030 - EXISTING CONDITION

Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 7

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 25.20 cfs @ 12.29 hrs, Volume= 2.708 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
3,259	98	Paved roads w/curbs & sewers, HSG C
1,081	96	Gravel surface, HSG C
6,838	96	Gravel surface, HSG D
75,014	84	1 acre lots, 20% imp, HSG D
91,069	74	>75% Grass cover, Good, HSG C
121,347	80	>75% Grass cover, Good, HSG D
113,932	70	Woods, Good, HSG C
67,547	77	Woods, Good, HSG D
480,087	77	Weighted Average
461,825		96.20% Pervious Area
18,262		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0550	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
0.9	90	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	100	0.1200	2.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.9	650	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.0	890	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 13.29 cfs @ 12.09 hrs, Volume= 0.967 af, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
580	98	Paved roads w/curbs & sewers, HSG C
1,327	98	Roofs, HSG C
2,215	96	Gravel surface, HSG C
12,622	96	Gravel surface, HSG D
16,103	74	>75% Grass cover, Good, HSG C
104,824	80	>75% Grass cover, Good, HSG D
580	70	Woods, Good, HSG C
13,123	77	Woods, Good, HSG D
151,374	81	Weighted Average
149,467		98.74% Pervious Area
1,907		1.26% Impervious Area

16030 - EXISTING CONDITION

Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 8

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	8	0.0200	0.80		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
3.4	42	0.0550	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
1.0	95	0.0550	1.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0					Direct Entry,
6.0	175	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 9.55 cfs @ 12.12 hrs, Volume= 0.749 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
1,436	98	Roofs, HSG C
145	98	Paved parking, HSG C
1,173	96	Gravel surface, HSG C
38,452	74	>75% Grass cover, Good, HSG C
73,790	80	>75% Grass cover, Good, HSG D
6,950	70	Woods, Good, HSG C
6,395	77	Woods, Good, HSG D
128,341	78	Weighted Average
126,760		98.77% Pervious Area
1,581		1.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
3.6	260	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.5	310	Total			

Summary for Reach 1R: Analysis Point #1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.443 ac, 2.86% Impervious, Inflow Depth > 2.97" for 25-YR STORM event
 Inflow = 38.72 cfs @ 12.27 hrs, Volume= 4.313 af
 Outflow = 38.72 cfs @ 12.27 hrs, Volume= 4.313 af, Atten= 0%, Lag= 0.0 min

16030 - EXISTING CONDITION

Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 9

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: 12" Culvert

Inflow Area = 11.021 ac, 3.80% Impervious, Inflow Depth > 2.95" for 25-YR STORM event
 Inflow = 25.20 cfs @ 12.29 hrs, Volume= 2.708 af
 Outflow = 25.05 cfs @ 12.31 hrs, Volume= 2.598 af, Atten= 1%, Lag= 1.0 min
 Primary = 25.05 cfs @ 12.31 hrs, Volume= 2.598 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 12.16' @ 12.31 hrs Surf.Area= 13,106 sf Storage= 21,531 cf

Plug-Flow detention time= 68.8 min calculated for 2.598 af (96% of inflow)
 Center-of-Mass det. time= 46.6 min (884.2 - 837.6)

Volume	Invert	Avail.Storage	Storage Description			
#1	10.18'	26,529 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
10.18	9,730	418.4	0	0	9,730	
12.00	11,805	460.3	19,566	19,566	12,767	
12.50	16,159	518.2	6,963	26,529	17,282	

Device	Routing	Invert	Outlet Devices
#1	Primary	10.18'	12.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.18' / 10.11' S= 0.0018 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	12.00'	135.0' long x 11.0' 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) 2.53 2.59 2.70 2.68 2.67 2.68 2.66 2.64

Primary OutFlow Max=24.96 cfs @ 12.31 hrs HW=12.16' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 3.63 cfs @ 4.62 fps)
- 2=Broad-Crested Rectangular Weir (Weir Controls 21.33 cfs @ 1.00 fps)

16030 - EXISTING CONDITION

Type III 24-hr 100-YR STORM Rainfall=6.60"

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Page 10

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcatchment 1S Runoff Area=480,087 sf 3.80% Impervious Runoff Depth>3.99"
Flow Length=890' Tc=21.0 min CN=77 Runoff=34.09 cfs 3.667 af

Subcatchment 2S: Subcatchment 2S Runoff Area=151,374 sf 1.26% Impervious Runoff Depth>4.43"
Flow Length=175' Tc=6.0 min CN=81 Runoff=17.51 cfs 1.283 af

Subcatchment 3S: Subcatchment 3S Runoff Area=128,341 sf 1.23% Impervious Runoff Depth>4.11"
Flow Length=310' Slope=0.0300 '/' Tc=8.5 min CN=78 Runoff=12.82 cfs 1.009 af

Reach 1R: Analysis Point #1 Inflow=50.23 cfs 5.833 af
Outflow=50.23 cfs 5.833 af

Pond 1P: 12"Culvert Peak Elev=12.20' Storage=22,079 cf Inflow=34.09 cfs 3.667 af
Outflow=34.02 cfs 3.541 af

Total Runoff Area = 17.443 ac Runoff Volume = 5.959 af Average Runoff Depth = 4.10"
97.14% Pervious = 16.943 ac 2.86% Impervious = 0.499 ac

APPENDIX II

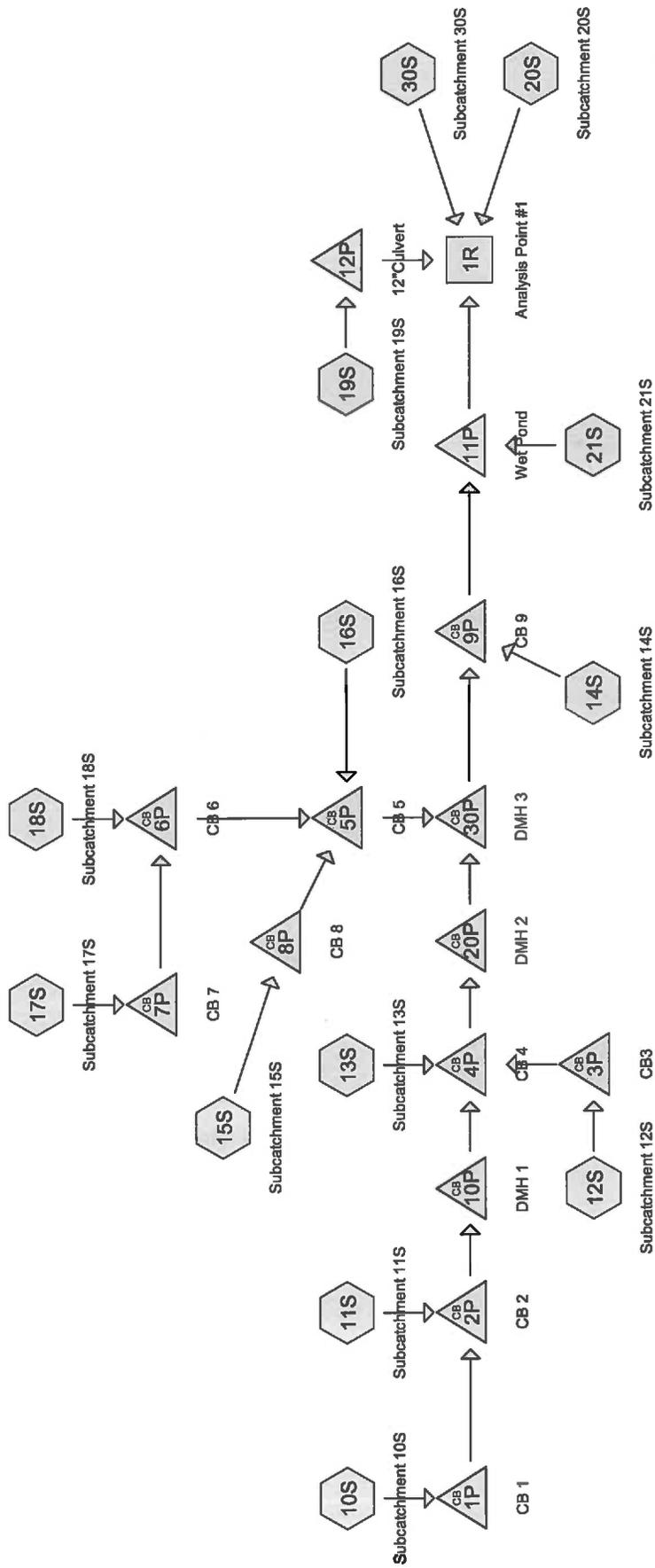
PROPOSED CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR - 24 HOUR Rainfall = 3.0"

Summary 10 YEAR - 24 HOUR Rainfall = 4.6"

Complete 25 YEAR - 24 HOUR Rainfall = 5.4"

Summary 100 YEAR - 24 HOUR Rainfall = 6.6"



Routing Diagram for 16030 - PROPOSED CONDITION
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Subcat



Reach



Pond



Link

16030 - PROPOSED CONDITION

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.722	84	1 acre lots, 20% imp, HSG D (13S)
4.789	74	>75% Grass cover, Good, HSG C (10S, 11S, 13S, 15S, 16S, 17S, 18S, 19S, 20S, 30S)
7.289	80	>75% Grass cover, Good, HSG D (10S, 11S, 12S, 13S, 14S, 15S, 16S, 18S, 19S, 20S, 21S, 30S)
0.086	96	Gravel surface, HSG C (20S, 30S)
0.257	96	Gravel surface, HSG D (20S, 21S, 30S)
0.092	98	Paved parking, HSG C (15S, 16S, 17S, 18S, 19S)
0.034	98	Paved parking, HSG D (13S, 30S)
0.436	98	Paved roads w/curbs & sewers, HSG C (10S, 11S, 13S, 15S, 16S, 17S, 18S)
0.436	98	Paved roads w/curbs & sewers, HSG D (10S, 11S, 12S, 13S, 14S, 15S, 21S)
0.518	98	Roofs, HSG C (15S, 16S, 17S, 18S, 19S, 20S, 30S)
0.177	98	Roofs, HSG D (13S, 16S, 30S)
0.196	98	Water Surface, HSG D (21S)
0.469	70	Woods, Good, HSG C (19S, 20S, 30S)
0.943	77	Woods, Good, HSG D (19S, 20S, 30S)
17.443	81	TOTAL AREA

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
6.389	HSG C	10S, 11S, 13S, 15S, 16S, 17S, 18S, 19S, 20S, 30S
11.054	HSG D	10S, 11S, 12S, 13S, 14S, 15S, 16S, 18S, 19S, 20S, 21S, 30S
0.000	Other	
17.443		TOTAL AREA

16030 - PROPOSED CONDITION

Type III 24-hr 2-YR STORM Rainfall=3.00"

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Page 4

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Subcatchment 10S	Runoff Area=4,106 sf 86.58% Impervious Runoff Depth>2.45" Tc=6.0 min CN=95 Runoff=0.25 cfs 0.019 af
Subcatchment 11S: Subcatchment 11S	Runoff Area=4,319 sf 86.55% Impervious Runoff Depth>2.45" Tc=6.0 min CN=95 Runoff=0.26 cfs 0.020 af
Subcatchment 12S: Subcatchment 12S	Runoff Area=5,120 sf 87.36% Impervious Runoff Depth>2.55" Tc=6.0 min CN=96 Runoff=0.32 cfs 0.025 af
Subcatchment 13S: Subcatchment 13S	Runoff Area=130,965 sf 21.74% Impervious Runoff Depth>1.51" Flow Length=505' Tc=14.4 min CN=84 Runoff=4.08 cfs 0.379 af
Subcatchment 14S: Subcatchment 14S	Runoff Area=3,569 sf 86.66% Impervious Runoff Depth>2.55" Tc=6.0 min CN=96 Runoff=0.22 cfs 0.017 af
Subcatchment 15S: Subcatchment 15S	Runoff Area=28,180 sf 26.42% Impervious Runoff Depth>1.31" Tc=6.0 min CN=81 Runoff=0.97 cfs 0.071 af
Subcatchment 16S: Subcatchment 16S	Runoff Area=18,810 sf 34.17% Impervious Runoff Depth>1.38" Tc=6.0 min CN=82 Runoff=0.68 cfs 0.050 af
Subcatchment 17S: Subcatchment 17S	Runoff Area=29,548 sf 23.96% Impervious Runoff Depth>1.25" Tc=0.0 min CN=80 Runoff=1.13 cfs 0.071 af
Subcatchment 18S: Subcatchment 18S	Runoff Area=41,974 sf 35.59% Impervious Runoff Depth>1.45" Tc=6.0 min CN=83 Runoff=1.60 cfs 0.116 af
Subcatchment 19S: Subcatchment 19S	Runoff Area=222,260 sf 1.35% Impervious Runoff Depth>1.07" Flow Length=838' Tc=17.6 min CN=77 Runoff=4.35 cfs 0.454 af
Subcatchment 20S: Subcatchment 20S	Runoff Area=113,206 sf 1.17% Impervious Runoff Depth>1.25" Tc=6.0 min CN=80 Runoff=3.68 cfs 0.270 af
Subcatchment 21S: Subcatchment 21S	Runoff Area=31,113 sf 29.79% Impervious Runoff Depth>1.90" Tc=6.0 min CN=89 Runoff=1.55 cfs 0.113 af
Subcatchment 30S: Subcatchment 30S	Runoff Area=126,632 sf 3.50% Impervious Runoff Depth>1.19" Flow Length=310' Slope=0.0300 '/' Tc=8.5 min CN=79 Runoff=3.55 cfs 0.287 af
Reach 1R: Analysis Point #1	Inflow=8.58 cfs 1.793 af Outflow=8.58 cfs 1.793 af
Pond 1P: CB 1	Peak Elev=26.55' Inflow=0.25 cfs 0.019 af 15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=0.25 cfs 0.019 af
Pond 2P: CB 2	Peak Elev=26.43' Inflow=0.52 cfs 0.039 af 15.0" Round Culvert n=0.013 L=120.0' S=0.0052 '/' Outflow=0.52 cfs 0.039 af

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Page 5

Pond 3P: CB3	Peak Elev=25.68'	Inflow=0.32 cfs	0.025 af
	15.0" Round Culvert	n=0.013 L=22.0' S=0.0050 '/'	Outflow=0.32 cfs 0.025 af
Pond 4P: CB 4	Peak Elev=25.68'	Inflow=4.57 cfs	0.443 af
	18.0" Round Culvert	n=0.013 L=109.0' S=0.0332 '/'	Outflow=4.57 cfs 0.443 af
Pond 5P: CB 5	Peak Elev=18.85'	Inflow=3.89 cfs	0.307 af
	18.0" Round Culvert	n=0.013 L=11.0' S=0.0345 '/'	Outflow=3.89 cfs 0.307 af
Pond 6P: CB 6	Peak Elev=28.19'	Inflow=2.33 cfs	0.187 af
	15.0" Round Culvert	n=0.013 L=178.0' S=0.0532 '/'	Outflow=2.33 cfs 0.187 af
Pond 7P: CB 7	Peak Elev=31.75'	Inflow=1.13 cfs	0.071 af
	15.0" Round Culvert	n=0.013 L=18.0' S=0.0050 '/'	Outflow=1.13 cfs 0.071 af
Pond 8P: CB 8	Peak Elev=19.61'	Inflow=0.97 cfs	0.071 af
	15.0" Round Culvert	n=0.013 L=31.0' S=0.0400 '/'	Outflow=0.97 cfs 0.071 af
Pond 9P: CB 9	Peak Elev=17.43'	Inflow=7.98 cfs	0.768 af
	24.0" Round Culvert	n=0.013 L=61.0' S=0.0516 '/'	Outflow=7.98 cfs 0.768 af
Pond 10P: DMH 1	Peak Elev=25.79'	Inflow=0.52 cfs	0.039 af
	15.0" Round Culvert	n=0.013 L=148.0' S=0.0051 '/'	Outflow=0.52 cfs 0.039 af
Pond 11P: Wet Pond	Peak Elev=9.63'	Storage=39,447 cf	Inflow=9.48 cfs 0.881 af
			Outflow=1.92 cfs 0.834 af
Pond 12P: 12" Culvert	Peak Elev=10.92'	Storage=7,512 cf	Inflow=4.35 cfs 0.454 af
			Outflow=1.14 cfs 0.402 af
Pond 20P: DMH 2	Peak Elev=21.96'	Inflow=4.57 cfs	0.443 af
	18.0" Round Culvert	n=0.013 L=102.0' S=0.0331 '/'	Outflow=4.57 cfs 0.443 af
Pond 30P: DMH 3	Peak Elev=18.55'	Inflow=7.77 cfs	0.750 af
	24.0" Round Culvert	n=0.013 L=45.0' S=0.0231 '/'	Outflow=7.77 cfs 0.750 af

Total Runoff Area = 17.443 ac Runoff Volume = 1.892 af Average Runoff Depth = 1.30"
87.20% Pervious = 15.210 ac 12.80% Impervious = 2.233 ac

16030 - PROPOSED CONDITION

Type III 24-hr 10-YR STORM Rainfall=4.60"

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Page 6

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Subcatchment 10S	Runoff Area=4,106 sf 86.58% Impervious Runoff Depth>4.02" Tc=6.0 min CN=95 Runoff=0.40 cfs 0.032 af
Subcatchment 11S: Subcatchment 11S	Runoff Area=4,319 sf 86.55% Impervious Runoff Depth>4.02" Tc=6.0 min CN=95 Runoff=0.42 cfs 0.033 af
Subcatchment 12S: Subcatchment 12S	Runoff Area=5,120 sf 87.36% Impervious Runoff Depth>4.13" Tc=6.0 min CN=96 Runoff=0.51 cfs 0.040 af
Subcatchment 13S: Subcatchment 13S	Runoff Area=130,965 sf 21.74% Impervious Runoff Depth>2.90" Flow Length=505' Tc=14.4 min CN=84 Runoff=7.81 cfs 0.726 af
Subcatchment 14S: Subcatchment 14S	Runoff Area=3,569 sf 86.66% Impervious Runoff Depth>4.13" Tc=6.0 min CN=96 Runoff=0.35 cfs 0.028 af
Subcatchment 15S: Subcatchment 15S	Runoff Area=28,180 sf 26.42% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=1.96 cfs 0.142 af
Subcatchment 16S: Subcatchment 16S	Runoff Area=18,810 sf 34.17% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=1.35 cfs 0.098 af
Subcatchment 17S: Subcatchment 17S	Runoff Area=29,548 sf 23.96% Impervious Runoff Depth>2.55" Tc=0.0 min CN=80 Runoff=2.33 cfs 0.144 af
Subcatchment 18S: Subcatchment 18S	Runoff Area=41,974 sf 35.59% Impervious Runoff Depth>2.81" Tc=6.0 min CN=83 Runoff=3.11 cfs 0.226 af
Subcatchment 19S: Subcatchment 19S	Runoff Area=222,260 sf 1.35% Impervious Runoff Depth>2.28" Flow Length=838' Tc=17.6 min CN=77 Runoff=9.66 cfs 0.971 af
Subcatchment 20S: Subcatchment 20S	Runoff Area=113,206 sf 1.17% Impervious Runoff Depth>2.54" Tc=6.0 min CN=80 Runoff=7.61 cfs 0.551 af
Subcatchment 21S: Subcatchment 21S	Runoff Area=31,113 sf 29.79% Impervious Runoff Depth>3.39" Tc=6.0 min CN=89 Runoff=2.71 cfs 0.202 af
Subcatchment 30S: Subcatchment 30S	Runoff Area=126,632 sf 3.50% Impervious Runoff Depth>2.46" Flow Length=310' Slope=0.0300 '/ Tc=8.5 min CN=79 Runoff=7.59 cfs 0.595 af
Reach 1R: Analysis Point #1	Inflow=18.01 cfs 3.659 af Outflow=18.01 cfs 3.659 af
Pond 1P: CB 1	Peak Elev=26.89' Inflow=0.40 cfs 0.032 af 15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/ Outflow=0.40 cfs 0.032 af
Pond 2P: CB 2	Peak Elev=26.88' Inflow=0.82 cfs 0.065 af 15.0" Round Culvert n=0.013 L=120.0' S=0.0052 '/ Outflow=0.82 cfs 0.065 af

16030 - PROPOSED CONDITION*Type III 24-hr 10-YR STORM Rainfall=4.60"*

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Page 7

Pond 3P: CB3	Peak Elev=26.85' Inflow=0.51 cfs 0.040 af 15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/ Outflow=0.51 cfs 0.040 af
Pond 4P: CB 4	Peak Elev=26.85' Inflow=8.61 cfs 0.832 af 18.0" Round Culvert n=0.013 L=109.0' S=0.0332 '/ Outflow=8.61 cfs 0.832 af
Pond 5P: CB 5	Peak Elev=20.66' Inflow=7.76 cfs 0.610 af 18.0" Round Culvert n=0.013 L=11.0' S=0.0345 '/ Outflow=7.76 cfs 0.610 af
Pond 6P: CB 6	Peak Elev=28.92' Inflow=4.64 cfs 0.370 af 15.0" Round Culvert n=0.013 L=178.0' S=0.0532 '/ Outflow=4.64 cfs 0.370 af
Pond 7P: CB 7	Peak Elev=32.09' Inflow=2.33 cfs 0.144 af 15.0" Round Culvert n=0.013 L=18.0' S=0.0050 '/ Outflow=2.33 cfs 0.144 af
Pond 8P: CB 8	Peak Elev=20.78' Inflow=1.96 cfs 0.142 af 15.0" Round Culvert n=0.013 L=31.0' S=0.0400 '/ Outflow=1.96 cfs 0.142 af
Pond 9P: CB 9	Peak Elev=18.61' Inflow=15.29 cfs 1.470 af 24.0" Round Culvert n=0.013 L=61.0' S=0.0516 '/ Outflow=15.29 cfs 1.470 af
Pond 10P: DMH 1	Peak Elev=26.86' Inflow=0.82 cfs 0.065 af 15.0" Round Culvert n=0.013 L=148.0' S=0.0051 '/ Outflow=0.82 cfs 0.065 af
Pond 11P: Wet Pond	Peak Elev=10.70' Storage=52,049 cf Inflow=17.93 cfs 1.671 af Outflow=5.43 cfs 1.609 af
Pond 12P: 12"Culvert	Peak Elev=11.71' Storage=16,154 cf Inflow=9.66 cfs 0.971 af Outflow=3.02 cfs 0.903 af
Pond 20P: DMH 2	Peak Elev=23.13' Inflow=8.61 cfs 0.832 af 18.0" Round Culvert n=0.013 L=102.0' S=0.0331 '/ Outflow=8.61 cfs 0.832 af
Pond 30P: DMH 3	Peak Elev=20.08' Inflow=14.96 cfs 1.441 af 24.0" Round Culvert n=0.013 L=45.0' S=0.0231 '/ Outflow=14.96 cfs 1.441 af

Total Runoff Area = 17.443 ac Runoff Volume = 3.789 af Average Runoff Depth = 2.61"
87.20% Pervious = 15.210 ac 12.80% Impervious = 2.233 ac

16030 - PROPOSED CONDITION

Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 8

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Subcatchment 10S	Runoff Area=4,106 sf 86.58% Impervious Runoff Depth>4.81" Tc=6.0 min CN=95 Runoff=0.48 cfs 0.038 af
Subcatchment 11S: Subcatchment 11S	Runoff Area=4,319 sf 86.55% Impervious Runoff Depth>4.81" Tc=6.0 min CN=95 Runoff=0.50 cfs 0.040 af
Subcatchment 12S: Subcatchment 12S	Runoff Area=5,120 sf 87.36% Impervious Runoff Depth>4.93" Tc=6.0 min CN=96 Runoff=0.60 cfs 0.048 af
Subcatchment 13S: Subcatchment 13S	Runoff Area=130,965 sf 21.74% Impervious Runoff Depth>3.63" Flow Length=505' Tc=14.4 min CN=84 Runoff=9.73 cfs 0.909 af
Subcatchment 14S: Subcatchment 14S	Runoff Area=3,569 sf 86.66% Impervious Runoff Depth>4.93" Tc=6.0 min CN=96 Runoff=0.42 cfs 0.034 af
Subcatchment 15S: Subcatchment 15S	Runoff Area=28,180 sf 26.42% Impervious Runoff Depth>3.34" Tc=6.0 min CN=81 Runoff=2.47 cfs 0.180 af
Subcatchment 16S: Subcatchment 16S	Runoff Area=18,810 sf 34.17% Impervious Runoff Depth>3.44" Tc=6.0 min CN=82 Runoff=1.70 cfs 0.124 af
Subcatchment 17S: Subcatchment 17S	Runoff Area=29,548 sf 23.96% Impervious Runoff Depth>3.24" Tc=0.0 min CN=80 Runoff=2.96 cfs 0.183 af
Subcatchment 18S: Subcatchment 18S	Runoff Area=41,974 sf 35.59% Impervious Runoff Depth>3.54" Tc=6.0 min CN=83 Runoff=3.88 cfs 0.284 af
Subcatchment 19S: Subcatchment 19S	Runoff Area=222,260 sf 1.35% Impervious Runoff Depth>2.95" Flow Length=838' Tc=17.6 min CN=77 Runoff=12.53 cfs 1.255 af
Subcatchment 20S: Subcatchment 20S	Runoff Area=113,206 sf 1.17% Impervious Runoff Depth>3.24" Tc=6.0 min CN=80 Runoff=9.67 cfs 0.702 af
Subcatchment 21S: Subcatchment 21S	Runoff Area=31,113 sf 29.79% Impervious Runoff Depth>4.15" Tc=6.0 min CN=89 Runoff=3.29 cfs 0.247 af
Subcatchment 30S: Subcatchment 30S	Runoff Area=126,632 sf 3.50% Impervious Runoff Depth>3.14" Flow Length=310' Slope=0.0300 '/ Tc=8.5 min CN=79 Runoff=9.71 cfs 0.762 af
Reach 1R: Analysis Point #1	Inflow=24.14 cfs 4.662 af Outflow=24.14 cfs 4.662 af
Pond 1P: CB 1	Peak Elev=27.76' Inflow=0.48 cfs 0.038 af 15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/ Outflow=0.48 cfs 0.038 af
Pond 2P: CB 2	Peak Elev=27.76' Inflow=0.97 cfs 0.078 af 15.0" Round Culvert n=0.013 L=120.0' S=0.0052 '/ Outflow=0.97 cfs 0.078 af

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Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 9

Pond 3P: CB3	Peak Elev=27.74' Inflow=0.60 cfs 0.048 af 15.0" Round Culvert n=0.013 L=22.0' S=0.0050 ' Outflow=0.60 cfs 0.048 af
Pond 4P: CB 4	Peak Elev=27.73' Inflow=10.68 cfs 1.035 af 18.0" Round Culvert n=0.013 L=109.0' S=0.0332 ' Outflow=10.68 cfs 1.035 af
Pond 5P: CB 5	Peak Elev=22.77' Inflow=9.77 cfs 0.771 af 18.0" Round Culvert n=0.013 L=11.0' S=0.0345 ' Outflow=9.77 cfs 0.771 af
Pond 6P: CB 6	Peak Elev=29.50' Inflow=5.84 cfs 0.467 af 15.0" Round Culvert n=0.013 L=178.0' S=0.0532 ' Outflow=5.84 cfs 0.467 af
Pond 7P: CB 7	Peak Elev=32.26' Inflow=2.96 cfs 0.183 af 15.0" Round Culvert n=0.013 L=18.0' S=0.0050 ' Outflow=2.96 cfs 0.183 af
Pond 8P: CB 8	Peak Elev=22.86' Inflow=2.47 cfs 0.180 af 15.0" Round Culvert n=0.013 L=31.0' S=0.0400 ' Outflow=2.47 cfs 0.180 af
Pond 9P: CB 9	Peak Elev=19.51' Inflow=19.06 cfs 1.840 af 24.0" Round Culvert n=0.013 L=61.0' S=0.0516 ' Outflow=19.06 cfs 1.840 af
Pond 10P: DMH 1	Peak Elev=27.75' Inflow=0.97 cfs 0.078 af 15.0" Round Culvert n=0.013 L=148.0' S=0.0051 ' Outflow=0.97 cfs 0.078 af
Pond 11P: Wet Pond	Peak Elev=11.12' Storage=57,715 cf Inflow=22.26 cfs 2.087 af Outflow=8.69 cfs 2.018 af
Pond 12P: 12" Culvert	Peak Elev=12.04' Storage=20,049 cf Inflow=12.53 cfs 1.255 af Outflow=6.24 cfs 1.180 af
Pond 20P: DMH 2	Peak Elev=24.31' Inflow=10.68 cfs 1.035 af 18.0" Round Culvert n=0.013 L=102.0' S=0.0331 ' Outflow=10.68 cfs 1.035 af
Pond 30P: DMH 3	Peak Elev=21.80' Inflow=18.66 cfs 1.806 af 24.0" Round Culvert n=0.013 L=45.0' S=0.0231 ' Outflow=18.66 cfs 1.806 af

Total Runoff Area = 17.443 ac Runoff Volume = 4.806 af Average Runoff Depth = 3.31"
87.20% Pervious = 15.210 ac 12.80% Impervious = 2.233 ac

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Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 10

Summary for Subcatchment 10S: Subcatchment 10S

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
1,032	98	Paved roads w/curbs & sewers, HSG C
2,523	98	Paved roads w/curbs & sewers, HSG D
113	74	>75% Grass cover, Good, HSG C
438	80	>75% Grass cover, Good, HSG D
4,106	95	Weighted Average
551		13.42% Pervious Area
3,555		86.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 11S: Subcatchment 11S

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
1,029	98	Paved roads w/curbs & sewers, HSG C
2,709	98	Paved roads w/curbs & sewers, HSG D
123	74	>75% Grass cover, Good, HSG C
458	80	>75% Grass cover, Good, HSG D
4,319	95	Weighted Average
581		13.45% Pervious Area
3,738		86.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 12S: Subcatchment 12S

Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

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Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 11

Area (sf)	CN	Description
4,473	98	Paved roads w/curbs & sewers, HSG D
647	80	>75% Grass cover, Good, HSG D
5,120	96	Weighted Average
647		12.64% Pervious Area
4,473		87.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 13S: Subcatchment 13S

Runoff = 9.73 cfs @ 12.20 hrs, Volume= 0.909 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
3,130	98	Paved roads w/curbs & sewers, HSG C
4,338	98	Paved roads w/curbs & sewers, HSG D
75,014	84	1 acre lots, 20% imp, HSG D
5,000	98	Roofs, HSG D
1,000	98	Paved parking, HSG D
12,935	74	>75% Grass cover, Good, HSG C
29,548	80	>75% Grass cover, Good, HSG D
130,965	84	Weighted Average
102,494		78.26% Pervious Area
28,471		21.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0500	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
1.9	100	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.5	355	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.4	505	Total			

Summary for Subcatchment 14S: Subcatchment 14S

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.034 af, Depth> 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

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Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 12

Area (sf)	CN	Description
3,093	98	Paved roads w/curbs & sewers, HSG D
476	80	>75% Grass cover, Good, HSG D
3,569	96	Weighted Average
476		13.34% Pervious Area
3,093		86.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 15S: Subcatchment 15S

Runoff = 2.47 cfs @ 12.09 hrs, Volume= 0.180 af, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
3,342	98	Paved roads w/curbs & sewers, HSG C
1,102	98	Paved roads w/curbs & sewers, HSG D
2,500	98	Roofs, HSG C
500	98	Paved parking, HSG C
19,012	74	>75% Grass cover, Good, HSG C
1,724	80	>75% Grass cover, Good, HSG D
28,180	81	Weighted Average
20,736		73.58% Pervious Area
7,444		26.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 16S: Subcatchment 16S

Runoff = 1.70 cfs @ 12.09 hrs, Volume= 0.124 af, Depth> 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
2,400	98	Paved roads w/curbs & sewers, HSG C
500	98	Paved parking, HSG C
3,324	98	Roofs, HSG C
204	98	Roofs, HSG D
11,569	74	>75% Grass cover, Good, HSG C
813	80	>75% Grass cover, Good, HSG D
18,810	82	Weighted Average
12,382		65.83% Pervious Area
6,428		34.17% Impervious Area

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Page 13

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 17S: Subcatchment 17S

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.96 cfs @ 12.00 hrs, Volume= 0.183 af, Depth> 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
4,081	98	Paved roads w/curbs & sewers, HSG C
2,500	98	Roofs, HSG C
500	98	Paved parking, HSG C
22,467	74	>75% Grass cover, Good, HSG C
29,548	80	Weighted Average
22,467		76.04% Pervious Area
7,081		23.96% Impervious Area

Summary for Subcatchment 18S: Subcatchment 18S

Runoff = 3.88 cfs @ 12.09 hrs, Volume= 0.284 af, Depth> 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
3,967	98	Paved roads w/curbs & sewers, HSG C
8,972	98	Roofs, HSG C
2,000	98	Paved parking, HSG C
25,586	74	>75% Grass cover, Good, HSG C
1,449	80	>75% Grass cover, Good, HSG D
41,974	83	Weighted Average
27,035		64.41% Pervious Area
14,939		35.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

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Page 14

Summary for Subcatchment 19S: Subcatchment 19S

Runoff = 12.53 cfs @ 12.25 hrs, Volume= 1.255 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
2,500	98	Roofs, HSG C
500	98	Paved parking, HSG C
64,476	74	>75% Grass cover, Good, HSG C
107,601	80	>75% Grass cover, Good, HSG D
14,336	70	Woods, Good, HSG C
32,847	77	Woods, Good, HSG D
222,260	77	Weighted Average
219,260		98.65% Pervious Area
3,000		1.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0200	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
0.9	138	0.1200	2.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.9	650	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.6	838	Total			

Summary for Subcatchment 20S: Subcatchment 20S

Runoff = 9.67 cfs @ 12.09 hrs, Volume= 0.702 af, Depth> 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
1,327	98	Roofs, HSG C
1,979	96	Gravel surface, HSG C
3,014	96	Gravel surface, HSG D
15,630	74	>75% Grass cover, Good, HSG C
88,832	80	>75% Grass cover, Good, HSG D
580	70	Woods, Good, HSG C
1,844	77	Woods, Good, HSG D
113,206	80	Weighted Average
111,879		98.83% Pervious Area
1,327		1.17% Impervious Area

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Page 15

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 21S: Subcatchment 21S

Runoff = 3.29 cfs @ 12.09 hrs, Volume= 0.247 af, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
8,531	98	Water Surface, HSG D
739	98	Paved roads w/curbs & sewers, HSG D
7,473	96	Gravel surface, HSG D
14,370	80	>75% Grass cover, Good, HSG D
31,113	89	Weighted Average
21,843		70.21% Pervious Area
9,270		29.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Summary for Subcatchment 30S: Subcatchment 30S

Runoff = 9.71 cfs @ 12.12 hrs, Volume= 0.762 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR STORM Rainfall=5.40"

Area (sf)	CN	Description
1,436	98	Roofs, HSG C
2,500	98	Roofs, HSG D
500	98	Paved parking, HSG D
1,771	96	Gravel surface, HSG C
695	96	Gravel surface, HSG D
36,681	74	>75% Grass cover, Good, HSG C
71,161	80	>75% Grass cover, Good, HSG D
5,493	70	Woods, Good, HSG C
6,395	77	Woods, Good, HSG D
126,632	79	Weighted Average
122,196		96.50% Pervious Area
4,436		3.50% Impervious Area

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Page 16

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
3.6	260	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.5	310	Total			

Summary for Reach 1R: Analysis Point #1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.443 ac, 12.80% Impervious, Inflow Depth > 3.21" for 25-YR STORM event
 Inflow = 24.14 cfs @ 12.12 hrs, Volume= 4.662 af
 Outflow = 24.14 cfs @ 12.12 hrs, Volume= 4.662 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB 1

Inflow Area = 0.094 ac, 86.58% Impervious, Inflow Depth > 4.81" for 25-YR STORM event
 Inflow = 0.48 cfs @ 12.09 hrs, Volume= 0.038 af
 Outflow = 0.48 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.48 cfs @ 12.09 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 27.76' @ 12.33 hrs

Flood Elev= 30.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	26.25'	15.0" Round Culvert L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.25' / 26.14' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.34 cfs @ 12.09 hrs HW=26.69' TW=26.62' (Dynamic Tailwater)

1=Culvert (Outlet Controls 0.34 cfs @ 1.29 fps)

Summary for Pond 2P: CB 2

[80] Warning: Exceeded Pond 1P by 0.54' @ 12.25 hrs (3.42 cfs 0.027 af)

Inflow Area = 0.193 ac, 86.56% Impervious, Inflow Depth > 4.81" for 25-YR STORM event
 Inflow = 0.97 cfs @ 12.09 hrs, Volume= 0.078 af
 Outflow = 0.97 cfs @ 12.09 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.97 cfs @ 12.09 hrs, Volume= 0.078 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 27.76' @ 12.28 hrs

Flood Elev= 30.50'

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Page 17

Device	Routing	Invert	Outlet Devices
#1	Primary	26.04'	15.0" Round Culvert L= 120.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.04' / 25.42' S= 0.0052 ' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.66 cfs @ 12.09 hrs HW=26.62' TW=26.34' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.66 cfs @ 1.75 fps)

Summary for Pond 3P: CB3

Inflow Area = 0.118 ac, 87.36% Impervious, Inflow Depth > 4.93" for 25-YR STORM event
 Inflow = 0.60 cfs @ 12.09 hrs, Volume= 0.048 af
 Outflow = 0.60 cfs @ 12.09 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.60 cfs @ 12.09 hrs, Volume= 0.048 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 27.74' @ 12.24 hrs

Flood Elev= 29.04'

Device	Routing	Invert	Outlet Devices
#1	Primary	24.67'	15.0" Round Culvert L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 24.67' / 24.56' S= 0.0050 ' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=26.23' TW=26.86' (Dynamic Tailwater)

↑1=Culvert (Controls 0.00 cfs)

Summary for Pond 4P: CB 4

[80] Warning: Exceeded Pond 3P by 0.69' @ 12.10 hrs (3.87 cfs 0.080 af)

[80] Warning: Exceeded Pond 10P by 0.61' @ 12.10 hrs (3.33 cfs 0.038 af)

Inflow Area = 3.317 ac, 27.84% Impervious, Inflow Depth > 3.74" for 25-YR STORM event
 Inflow = 10.68 cfs @ 12.19 hrs, Volume= 1.035 af
 Outflow = 10.68 cfs @ 12.19 hrs, Volume= 1.035 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.68 cfs @ 12.19 hrs, Volume= 1.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 27.73' @ 12.19 hrs

Flood Elev= 29.04'

Device	Routing	Invert	Outlet Devices
#1	Primary	24.46'	18.0" Round Culvert L= 109.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 24.46' / 20.84' S= 0.0332 ' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=10.57 cfs @ 12.19 hrs HW=27.69' TW=24.18' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 10.57 cfs @ 5.98 fps)

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Page 18

Summary for Pond 5P: CB 5

[58] Hint: Peaked 0.58' above defined flood level

[80] Warning: Exceeded Pond 8P by 0.98' @ 12.05 hrs (4.62 cfs 0.057 af)

Inflow Area = 2.721 ac, 30.29% Impervious, Inflow Depth > 3.40" for 25-YR STORM event
 Inflow = 9.77 cfs @ 12.07 hrs, Volume= 0.771 af
 Outflow = 9.77 cfs @ 12.07 hrs, Volume= 0.771 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.77 cfs @ 12.07 hrs, Volume= 0.771 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 22.77' @ 12.16 hrs

Flood Elev= 22.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.59'	18.0" Round Culvert L= 11.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.59' / 17.21' S= 0.0345 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.72 cfs @ 12.07 hrs HW=21.74' TW=20.74' (Dynamic Tailwater)

↳1=Culvert (Inlet Controls 6.72 cfs @ 3.80 fps)

Summary for Pond 6P: CB 6

Inflow Area = 1.642 ac, 30.79% Impervious, Inflow Depth > 3.42" for 25-YR STORM event
 Inflow = 5.84 cfs @ 12.05 hrs, Volume= 0.467 af
 Outflow = 5.84 cfs @ 12.05 hrs, Volume= 0.467 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.84 cfs @ 12.05 hrs, Volume= 0.467 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 29.50' @ 12.05 hrs

Flood Elev= 35.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	27.31'	15.0" Round Culvert L= 178.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.31' / 17.84' S= 0.0532 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.83 cfs @ 12.05 hrs HW=29.50' TW=21.38' (Dynamic Tailwater)

↳1=Culvert (Inlet Controls 5.83 cfs @ 4.75 fps)

Summary for Pond 7P: CB 7

Inflow Area = 0.678 ac, 23.96% Impervious, Inflow Depth > 3.24" for 25-YR STORM event
 Inflow = 2.96 cfs @ 12.00 hrs, Volume= 0.183 af
 Outflow = 2.96 cfs @ 12.00 hrs, Volume= 0.183 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.96 cfs @ 12.00 hrs, Volume= 0.183 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

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Page 19

Peak Elev= 32.26' @ 12.00 hrs

Flood Elev= 35.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	31.11'	15.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.11' / 31.02' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.91 cfs @ 12.00 hrs HW=32.24' TW=29.26' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.91 cfs @ 3.28 fps)

Summary for Pond 8P: CB 8

[58] Hint: Peaked 0.67' above defined flood level

Inflow Area =	0.647 ac, 26.42% Impervious, Inflow Depth > 3.34" for 25-YR STORM event
Inflow =	2.47 cfs @ 12.09 hrs, Volume= 0.180 af
Outflow =	2.47 cfs @ 12.09 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min
Primary =	2.47 cfs @ 12.09 hrs, Volume= 0.180 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 22.86' @ 12.21 hrs

Flood Elev= 22.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.08'	15.0" Round Culvert L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.08' / 17.84' S= 0.0400 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=21.46' TW=22.07' (Dynamic Tailwater)

↑1=Culvert (Controls 0.00 cfs)

Summary for Pond 9P: CB 9

Inflow Area =	6.120 ac, 29.72% Impervious, Inflow Depth > 3.61" for 25-YR STORM event
Inflow =	19.06 cfs @ 12.11 hrs, Volume= 1.840 af
Outflow =	19.06 cfs @ 12.11 hrs, Volume= 1.840 af, Atten= 0%, Lag= 0.0 min
Primary =	19.06 cfs @ 12.11 hrs, Volume= 1.840 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.51' @ 12.11 hrs

Flood Elev= 20.57'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.97'	24.0" Round Culvert L= 61.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.97' / 12.82' S= 0.0516 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

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Page 20

Primary OutFlow Max=18.82 cfs @ 12.11 hrs HW=19.45' TW=10.23' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 18.82 cfs @ 5.99 fps)

Summary for Pond 10P: DMH 1

[80] Warning: Exceeded Pond 2P by 0.53' @ 12.20 hrs (3.40 cfs 0.027 af)

Inflow Area = 0.193 ac, 86.56% Impervious, Inflow Depth > 4.81" for 25-YR STORM event
 Inflow = 0.97 cfs @ 12.09 hrs, Volume= 0.078 af
 Outflow = 0.97 cfs @ 12.09 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.97 cfs @ 12.09 hrs, Volume= 0.078 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 27.75' @ 12.23 hrs

Flood Elev= 30.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	25.32'	15.0" Round Culvert L= 148.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 25.32' / 24.56' S= 0.0051 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=26.34' TW=26.86' (Dynamic Tailwater)

↑1=Culvert (Controls 0.00 cfs)

Summary for Pond 11P: Wet Pond

Inflow Area = 6.834 ac, 29.72% Impervious, Inflow Depth > 3.66" for 25-YR STORM event
 Inflow = 22.26 cfs @ 12.11 hrs, Volume= 2.087 af
 Outflow = 8.69 cfs @ 12.48 hrs, Volume= 2.018 af, Atten= 61%, Lag= 22.3 min
 Primary = 8.69 cfs @ 12.48 hrs, Volume= 2.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 8.00' Surf.Area= 8,531 sf Storage= 23,571 cf

Peak Elev= 11.12' @ 12.48 hrs Surf.Area= 14,783 sf Storage= 57,715 cf (34,144 cf above start)

Plug-Flow detention time= 242.9 min calculated for 1.477 af (71% of inflow)

Center-of-Mass det. time= 86.3 min (893.0 - 806.7)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	71,488 cf	Custom Stage Data (Irregular) Listed below (Recalc)

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Page 21

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	3,542	324.4	0	0	3,542
6.00	5,839	413.3	9,286	9,286	8,813
8.00	8,531	471.7	14,285	23,571	13,020
10.00	11,572	528.9	20,026	43,597	17,683
11.00	13,229	563.3	12,391	55,988	20,722
11.01	14,583	619.3	139	56,127	25,992
12.00	16,469	638.2	15,361	71,488	27,983

Device	Routing	Invert	Outlet Devices
#1	Primary	8.00'	24.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.00' / 7.50' S= 0.0200 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	8.00'	8.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	9.63'	12.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	11.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	11.50'	5.0' 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=8.63 cfs @ 12.48 hrs HW=11.12' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 8.63 cfs of 22.01 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 2.80 cfs @ 8.03 fps)
- 3=Orifice/Grate (Orifice Controls 3.76 cfs @ 4.78 fps)
- 4=Orifice/Grate (Weir Controls 2.08 cfs @ 1.12 fps)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 12P: 12" Culvert

Inflow Area = 5.102 ac, 1.35% Impervious, Inflow Depth > 2.95" for 25-YR STORM event
 Inflow = 12.53 cfs @ 12.25 hrs, Volume= 1.255 af
 Outflow = 6.24 cfs @ 12.58 hrs, Volume= 1.180 af, Atten= 50%, Lag= 20.2 min
 Primary = 6.24 cfs @ 12.58 hrs, Volume= 1.180 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 12.04' @ 12.58 hrs Surf.Area= 12,131 sf Storage= 20,049 cf

Plug-Flow detention time= 103.3 min calculated for 1.177 af (94% of inflow)
 Center-of-Mass det. time= 72.3 min (907.3 - 834.9)

Volume	Invert	Avail.Storage	Storage Description
#1	10.18'	26,529 cf	Custom Stage Data (Irregular) Listed below (Recalc)

16030 - PROPOSED CONDITION

Type III 24-hr 25-YR STORM Rainfall=5.40"

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Page 22

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.18	9,730	418.4	0	0	9,730
12.00	11,805	460.3	19,566	19,566	12,767
12.50	16,159	518.2	6,963	26,529	17,282

Device	Routing	Invert	Outlet Devices
#1	Primary	10.18'	12.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 10.18' / 10.11' S= 0.0018 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	12.00'	135.0' long x 11.0' 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) 2.53 2.59 2.70 2.68 2.67 2.68 2.66 2.64

Primary OutFlow Max=6.15 cfs @ 12.58 hrs HW=12.04' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 3.48 cfs @ 4.43 fps)

↑2=Broad-Crested Rectangular Weir (Weir Controls 2.67 cfs @ 0.50 fps)

Summary for Pond 20P: DMH 2

Inflow Area = 3.317 ac, 27.84% Impervious, Inflow Depth > 3.74" for 25-YR STORM event
 Inflow = 10.68 cfs @ 12.19 hrs, Volume= 1.035 af
 Outflow = 10.68 cfs @ 12.19 hrs, Volume= 1.035 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.68 cfs @ 12.19 hrs, Volume= 1.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 24.31' @ 12.19 hrs

Flood Elev= 25.16'

Device	Routing	Invert	Outlet Devices
#1	Primary	20.74'	18.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 20.74' / 17.36' S= 0.0331 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=11.02 cfs @ 12.19 hrs HW=24.18' TW=21.43' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 11.02 cfs @ 6.23 fps)

Summary for Pond 30P: DMH 3

[58] Hint: Peaked 0.16' above defined flood level

Inflow Area = 6.038 ac, 28.94% Impervious, Inflow Depth > 3.59" for 25-YR STORM event
 Inflow = 18.66 cfs @ 12.12 hrs, Volume= 1.806 af
 Outflow = 18.66 cfs @ 12.12 hrs, Volume= 1.806 af, Atten= 0%, Lag= 0.0 min
 Primary = 18.66 cfs @ 12.12 hrs, Volume= 1.806 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

16030 - PROPOSED CONDITION*Type III 24-hr 25-YR STORM Rainfall=5.40"*

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Page 23

Peak Elev= 21.80' @ 12.15 hrs

Flood Elev= 21.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.11'	24.0" Round Culvert L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.11' / 16.07' S= 0.0231 ' S= 0.0231 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=17.29 cfs @ 12.12 hrs HW=21.55' TW=19.45' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 17.29 cfs @ 5.50 fps)

APPENDIX III

Soil Information

Table 2-1, Table 2-2 and Figure 2-3 County Rainfall Data BMP's Technical Design Manual

PRELIMINARY CLASS A HIGH INTENSITY SOIL SURVEY

I HEREBY CERTIFY THAT THIS CLASS A HIGH INTENSITY SOIL SURVEY WAS CONDUCTED IN CONFORMANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS.

NAME	#209 M.C.S.S.	DATE
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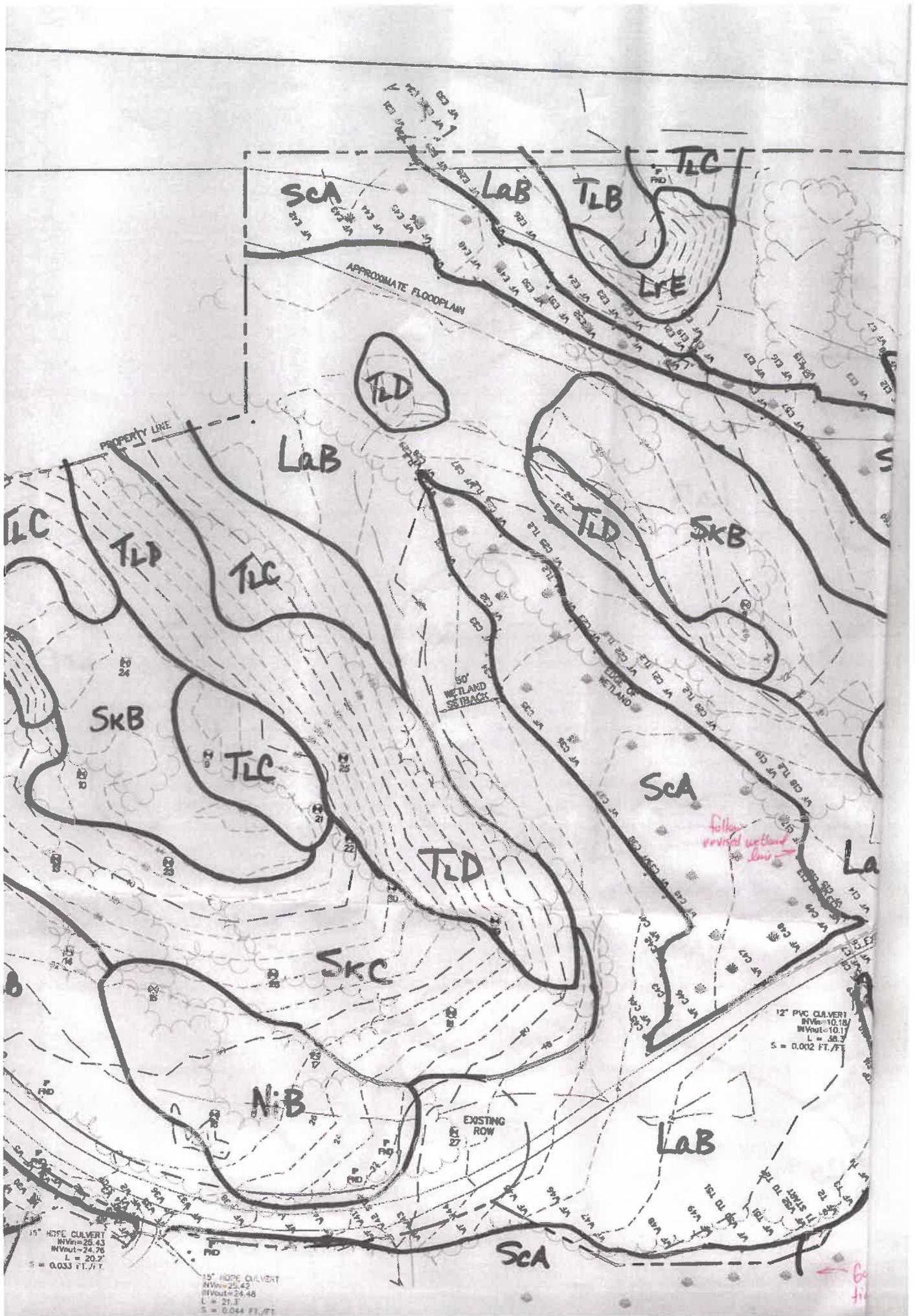
SOIL LEGEND

<u>Symbol</u>	<u>Soil Type</u>	<u>Drainage Class</u>	<u>HSG</u>
Go	Gouldsboro	very poorly drained	D
La	Lamoine	somewhat poorly drained	D
Lr	Lyman-Rock Outcrop Complex	somewhat excessively drained	D
Ni	Nicholville	moderately well drained	C
Sc	Scantic	poorly drained	D
Sk	Skerry	moderately well drained	C
Tl	Tunbridge-Lyman Complex	well drained & somewhat excessively drained	C

<u>ALPHA SLOPE SYMBOL</u>	<u>RANGE</u>
A	0-3%
B	3-8%
C	8-15%
D	15-25%
E	>25%

Notes:

- 1) Go and Sc are hydric soils.
- 2) The hydrologic soil groups for the soil map are taken from the NRCS Web Soil Survey or determined using the "Hydrologic Soil Triangle" (HST) provided by the NRCS.
- 3) This soil survey may be revised/fine-tuned as additional test pits are conducted.



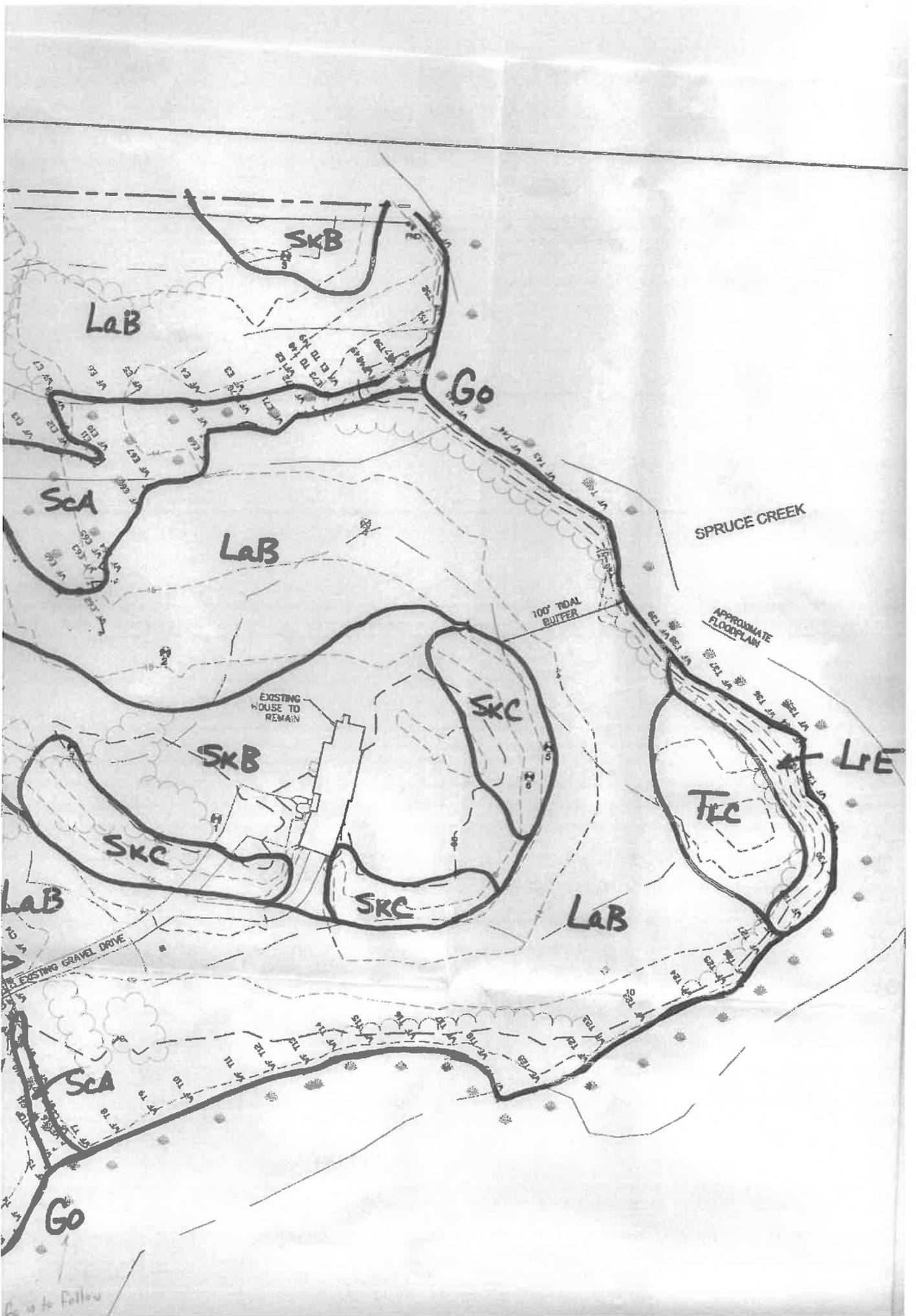


Table 2-1
24 Hour Duration Rainfalls for Various Return Periods
Natural Resources Conservation Service County Rainfall Data

County	Storm Type	Return Interval or Frequency								Annual	
		1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	100-Yr	500-Yr			
Androscoggin		2.5	3.0	3.9	4.6	5.4	6.5	7.8	45.3		
Aroostook C		2.1	2.1	3.2	3.6	4.2	5.0	5.9	36.1		(Presque Isle Area)
Aroostook N	S	2.0	2.3	3.0	3.5	4.0	4.8	5.7	36.1		(Fort Kent Area)
Aroostook S	E	2.2	2.5	3.3	3.8	4.4	5.3	6.4	39.0		(Houlton Area)
Cumberland NW	E	2.8	3.3	4.3	5.0	5.8	6.9	8.3	43.4		(NW of St. Route 11)
Cumberland SE		2.5	3.0	4.0	4.7	5.5	6.7	8.1	44.4		(SE of St. Route 11)
Franklin		2.4	2.9	3.7	4.2	4.9	5.9	7.0	45.6		
Hancock		2.4	2.7	3.6	4.2	4.9	6.0	7.2	45.2		
Kennebec	N	2.4	3.0	3.8	4.4	5.1	6.1	7.2	41.7		
Knox-Lincoln	O	2.5	2.9	3.8	4.4	5.1	6.2	7.4	46.1		
Oxford E	T	2.5	3.0	4.0	4.6	5.3	6.4	7.6	43.0		(E of St Route 26)
Oxford W	E	3.0	3.5	4.5	5.2	6.0	7.1	8.4	43.8		(W of St Route 26)
Penobscot N	S	2.2	2.5	3.3	3.8	4.4	5.4	6.4	41.5		(N of Can. – Atl. Rwy)
Penobscot S		2.4	2.7	3.5	4.1	4.8	5.8	6.9	39.5		(S of Can. – Atl. Rwy)
Piscataquis N	1	2.2	2.5	3.3	3.8	4.4	5.3	6.3	38.5		(N of Can. – Atl. Rwy)
Piscataquis S		2.3	2.6	3.4	4.0	4.6	5.5	6.6	41.0		(S of Can. – Atl. Rwy)
Sagadahoc	A	2.5	3.0	3.9	4.6	5.4	6.5	7.8	45.3		
Somerset N	N	2.2	2.5	3.3	3.8	4.4	5.3	6.3	37.3		(N of Can. – Atl. Rwy)
Somerset S	D	2.4	2.7	3.5	4.1	4.7	5.7	6.8	39.5		(S of Can. – Atl. Rwy)
Waldo		2.5	2.8	3.7	4.3	4.9	6.0	7.1	47.2		
Washington	2	2.4	2.5	3.4	4.0	4.8	5.9	7.1	44.2		
York		2.5	3.0	4.0	4.6	5.4	6.6	7.8	46.7		

NOTES: REVISED 4/10/92 Len, P. Crosby
 24-HR DURATION RAINFALL

SOURCES: 24-HR. DATA - TP 40
 ANNUAL DATA - CDAN

Note 1: ¹Use Type II for Oxford County (with the exception of towns listed below) and Penobscot County (with the exception of towns listed below) and all Main counties not listed below)

Note 2: ²Use Type III for York, Cumberland, Androscoggin, Sagadahoc, Kennebec, Waldo, Knox, Piscataquis, Somerset, Franklin, Aroostook, Lincoln, Hancock, Washington Counties; the following Oxford County Towns: Porter, Brownfield, Hiram, Denmark, Oxford, Hebron, Buckfield and Hartford; and the following Penobscot County Towns: Dixmont, Newburgh, Hampden, Bangor, Veazie, Orono, Bradley, Clifton, Eddington, Holden, Brewer, Orrington, Plymouth, Etna, Carmel, Hermon, Glenhwrn, Old Town, Milford and Greenfield.

Table 2-2
Rainfall Distribution Comparisons for Maine
 (DA = Drainage Area)

Numbers refer to percent of total 24 hour precipitation.

Duration	Uniform	Type I For DA >3 sq. mi	Type II ¹ For DA <3 sq. mi	Type III ² For DA <3 sq. mi
6 Min.	0.4%	6.0%	11.25%	8.4%
15 Min.	1.0%	21.0%	38.0%	31.0%
1 Hour	4.2%	28.0%	43.0%	40.0%
2 Hour	8.3%	37.0%	54.0%	50.0%
3 Hour	12.5%	43.0%	58.0%	57.0%
6 Hour	25.0%	57.0%	70.0%	71.0%
12 Hour	50.0%	75.0%	84.0%	86.0%
24 Hour	100.0%	100.0%	100.0%	100.0%

Source: SCS & NWS, NEH-4 and TR-20

d. **Return Period/Frequency:** The return period (sometimes referred to as frequency) of a hydrologic event is the expected (or average) value of the recurrence interval (time between occurrences) of an event equal to or greater than a given magnitude. For example, in Portland, Maine, the return period between storm events with rainfall equal to or greater than 4.7 inches (24-hour storm duration) is 10 years. Alternatively stated, 4.7 inches is the 10-year frequency, 24-hour duration storm for Portland. The probability of a hydrologic event occurring in a given year is the inverse of the return period. Thus, the 10-year frequency storm has a 0.10 probability of being equaled or exceeded in any given year, and the 100-year frequency storm has a 0.01 probability of being equaled or exceeded in any given year. The reader is referred to hydrologic texts from more extensive discussions of frequency analysis (and associated risk analysis).

Note that different types of hydrologic

events can have different return periods (or frequencies). For example, the 100-year frequency storm is a rainfall event. The 100-year flood is a peak stage or runoff event. A common assumption of hydrologic estimating methods is that the flood event corresponds with the rainfall event of the same frequency. This is not always true; for instance, a relatively minor storm accompanied by a spring snow melt can result in a relatively major flood event. A flood event may also result from a coastal surge caused by high winds, independent of rainfall.

Severity of a hydrologic event varies inversely with its return period; that is, very severe storms occur less frequently than moderate storm events. The choice of a storm frequency for designing a hydraulic structure can be based on analyzing the risk of damages from storms of greater severity compared to the costs of initial construction.

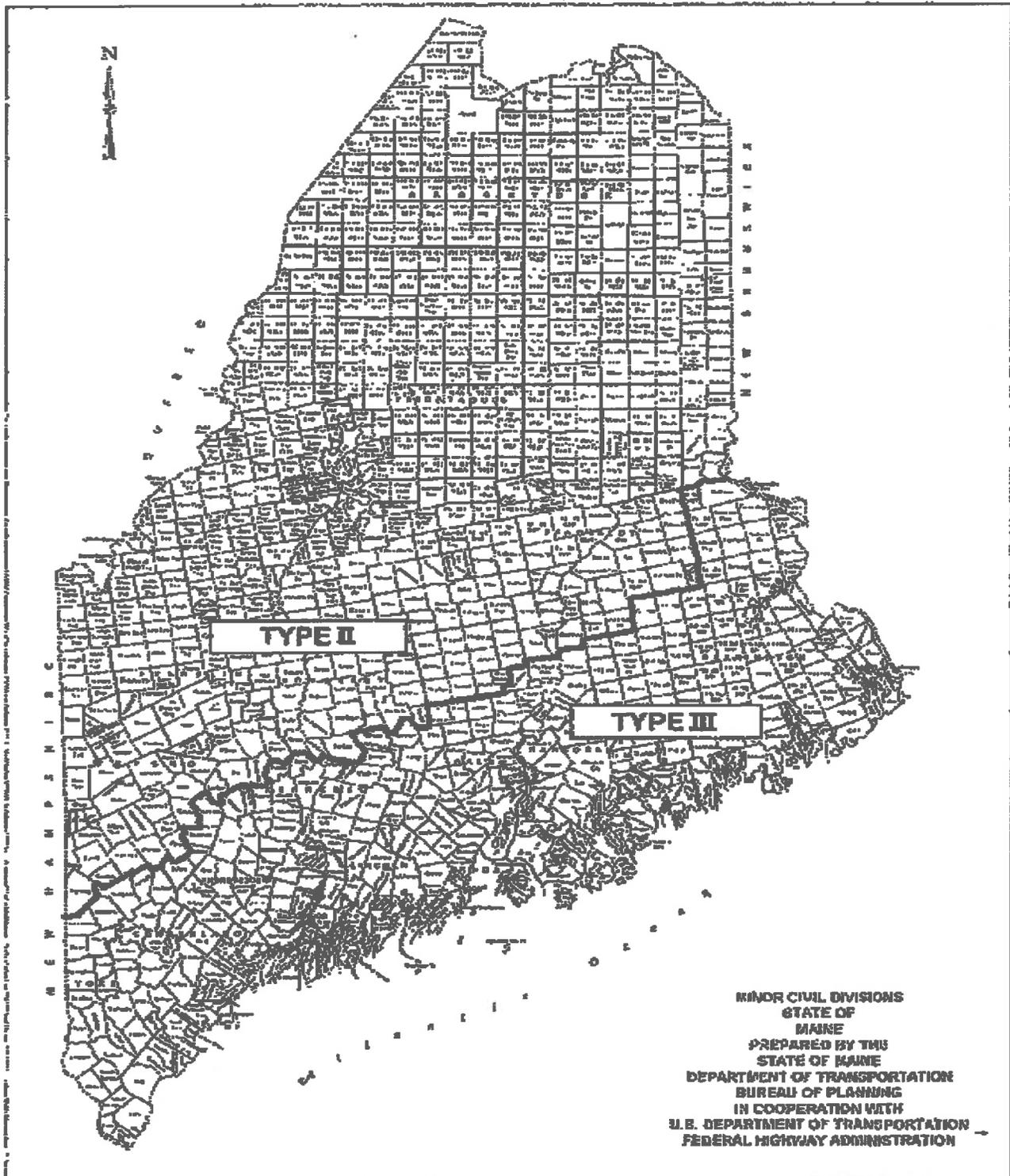
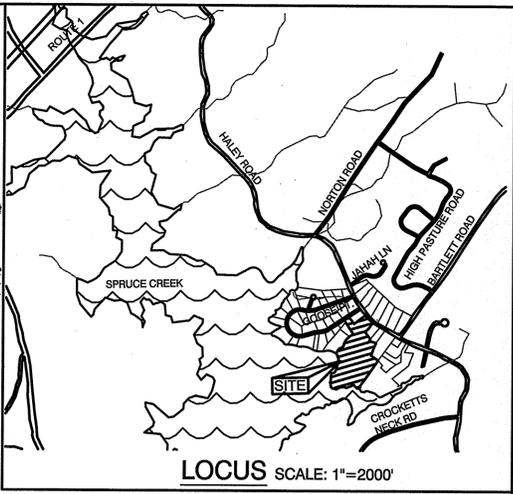


Figure 2-3. Type II and Type III Storm Distributions in Maine



LEGEND

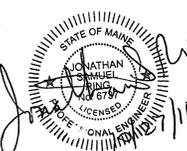
- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT X
- REACH X
- POND A
- TC PATH
- WETLANDS
- HISS SOILS
- FLOW ARROW

PROJECT PARCEL TOWN OF KITTERY TAX MAP 34, LOT 3
APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862
TOTAL LOT AREA 1,031,020 SQ. FT. ± 23.7 ACRES ±

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Design: LAZ Draft: LAZ Date: 9/30/16
 Checked: JAC Scale: 1"=60' Project No.: 16030
 Drawing Name: 16030-PLAN.DWG

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2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	ISSUED FOR REVIEW	---

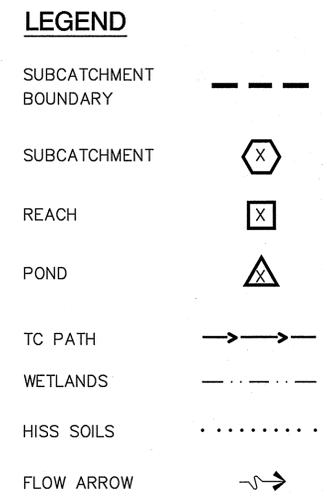
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J/B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. Civil Engineering Services 603-772-4746
 PO Box 219 Stratham, NH 03885 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	EXISTING WATERSHED PLAN
Project:	HALEY ROAD 412 HALEY ROAD, KITTERY, ME
Owner of Record:	MARILYN MANN AND JAMES SMITH 412 HALEY ROAD, KITTERY, MAINE

DRAWING No.
W1
 SHEET X OF X
 JBE PROJECT NO. 16030



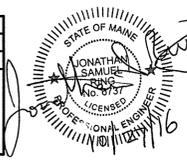
PROJECT PARCEL
TOWN OF KITTEERY
TAX MAP 34, LOT 3

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,031,020 SQ. FT. ±
23.7 ACRES ±

Design: LAZ Draft: LAZ Date: 9/30/16
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J/B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. Civil Engineering Services 603-772-4746
 PO Box 219 Stratham, NH 03885 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **PROPOSED WATERSHED PLAN**

Project: **HALEY ROAD
412 HALEY ROAD, KITTEERY, ME**

Owner of Record: **MARILYN MANN AND JAMES SMITH
412 HALEY ROAD, KITTEERY, MAINE**

DRAWING No.
W2

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JBE PROJECT NO. 16030

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