Date	September 15, 2021
To	Town of Cumberland Planning Board
From	Carla Nixon, Planning Director
Subject:	**Site Plan Review: Rines Forest Parking Lot – Range Road**

I. REQUEST:

The applicant/owner is the Town of Cumberland. The applicant is requesting site plan approval for a 10-space parking area that will be used by the public to access the Rines Forest. The parcel is shown on Tax Assessor Map R5, Lot 23A. The access to the parking lot will be a 14' wide paved apron into a reclaimed asphalt parking area. The entrance location will be located 1/10 of a mile northwest of the existing forest trailhead off Range Road. The full build-out will result in approximately 11,000 sf of disturbed area and 6,220 sf off reclaimed asphalt pavement area. Total increase in impervious area will be 4,220 sf and tree trimming and removal of approximately 2,00 sf of vegetation. Access will be limited to daylight hours and will be controlled by a new 20' gate.

The parcel is located at 477 Greely Road Extension and is shown on Tax Assessor Map R7, Lot 48.

The parcel is located in the Rural Residential 2 zoning district. Municipal uses and buildings; subject to site plan review, are permitted in this zone.

Dan Diffen, P.E., of Sevee and Maher Engineers, prepared the application and is the representative for the project. Al Palmer, P.E., Gorrill Palmer Engineers reviewed the application for the Town.

II. PROJECT DESCRIPTION:

- Zoning: RR 2 (Rural Residential 2))
- Min. Lot Size: 2 acres
- Utilities: There are no proposed utilities. There will be no lighting on site. No trash storage on site.
- Outside Agency Reviews/Approvals Required: Review letters from the Maine Dept. of Inland Fisheries and Wildlife and The Maine Historical Society are on file. There were no identified resources of either type found in the vicinity of the Rines Forest Parking Area.

III. REQUESTED WAIVERS:

1. Hydrogeologic Evaluation: **Requested waiver due to the fact that there will be no subsurface wastewater disposal or other groundwater impacts as a result of this project.**
2. Market Study: **N/A**

IV. PROJECT HISTORY: None

V. DEPARTMENT HEAD REVIEWS:

Fire Chief Small: No comments
Police ChiefRumsey: No comments
Bill Longley, CEO: No comments

VI. CHEBEAGUE AND CUMBERLAND LAND TRUST COMMENTS:

A letter from the CHLT's executive director, Chris Cabot, states that the proposed parking lot complies with the terms of the conservation easement that protects the property.

VII. TOWN PLANNER'S COMMENTS:

1. Directional signage (into and out of lot) Turn-a-round plan if lot is full?

VIII. TOWN ENGINEER REVIEW:

MEMORANDUM

To: **Town of Cumberland**

From: **Alton Palmer, Principal**

Date: **September 13, 2021**

Project: **Rines Forest Parking Lot**

Subject: **Peer Review**

As requested by the Town, Gorrill Palmer has conducted an Engineering Peer Review for the above referenced project. Information received for this assignment included:

- Site Plan Application, dated August 31, 2021, prepared by SME on behalf of the Town of Cumberland, consisting of 78 pages
- Drawing Set, dated August 31, 2021, prepared by SME consisting of 8 drawings

Based on our review of this information, general engineering principles and the Town of Cumberland Zoning Ordinance, we offer the following comments related to the engineering and design aspects of this project:

Site Plan Application

1. As stated in the Application, two waivers were requested:

a. A waiver from performing a hydrogeological evaluation for the project. There will be no
subsurface wastewater disposal or other groundwater impacts as a result of this project.

b. A waiver from performing a market study.

We have no objections to the granting of these waivers from an engineering perspective based on the scale and nature of the project.

2. The project results in minimal increases in stormwater peak flow from predevelopment conditions. The Applicant states that the increases are insignificant and that the project will not have an adverse impact to the downstream drainage or abutting properties.

   We concur that the minimal increase in stormwater peak flows will not have an adverse impact due to attenuation in the adjacent wetlands.

Site Plans

3. It would appear that one accessible parking space is required and must be van accessible. A van accessible space and access aisle need to be a total of 16 feet wide. Revise layout to show accessible space.
4. Provide signage for the accessible space.
5. An accessible space is required to have a stable surface. Is the Applicant comfortable that the proposed reclaimed asphalt surface is stable enough for an accessible space?
6. Provide spot grades at the accessible space with a maximum of 2% slope in all directions.
7. Provide a gate detail.
8. The proposed gate is approximately 30' from Range Road and may not be visible for drivers approaching from the east. This could result in a user entering the site, encountering the gate, and then needing to back up onto Range Road. If the gate were relocated to the edge of the right of way, would it be more visible and potentially reduce the need for users to back out onto Range Road, while still allowing a vehicle to park between the gate and Range Road for opening/closing purposes.
9. Provide sign construction details.
10. Provide additional spot grades along the entrance drive from Range Road to the proposed 100' contour. Range road is at an elevation of approximately 100', so more definition of the grading is needed to ensure that a low point is introduced within the paved apron off the edge of pavement for Range Road.
11. The Wheel Stop Detail on Sheet C-301 indicates either a 6' or 8' wheel stop. Based on the Site Plan, the wheel stop appears to be 8' in length. Please clarify.

IX. Cumberland Lands and Conservation Commission: No comments

X. Findings of Fact – Site Plan Review

Sec. 229-10 Approval Standards and Criteria

The following criteria shall be used by the Planning Board in reviewing applications for site plan review and shall serve as minimum requirements for approval of the application. The application shall be approved unless the Planning Board determines that the applicant has failed to meet one or more of these standards. In all instances, the burden of proof shall be on the applicant who must produce evidence sufficient to warrant a finding that all applicable criteria have been met.

A. Utilization of the Site

Utilization of the Site - The plan for the development, including buildings, lots, and support facilities, must reflect the natural capabilities of the site to support development. Environmentally sensitive areas, including but not limited to, wetlands, steep slopes, floodplains, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, and sand and gravel aquifers must be maintained and preserved to the maximum extent. The development must include appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation.

The plan will minimize impacts to the natural features of the site by minimizing disturbance to undeveloped areas as much as possible. Land disturbance has been limited to the mostly open areas of the site with less mature tree growth. Clearing in the forested area has been avoided completely. A wetlands delineation was completed by Albert Frick Associates which identified the stream and forested wetlands associated with it to the west of the proposed parking area. The wetlands do not extend into the project area and therefore wetland impacts have been avoided. A letter from the Maine Department of Inland Fisheries and Wildlife has been provided.

Based on the above facts, the Planning Board finds the standards of this section have been met.

B. Traffic, Circulation and Parking

(1) **Traffic Access and Parking**: Vehicular access to and from the development must be safe and convenient.

(a) Any driveway or proposed street must be designed so as to provide the minimum sight distance according to the Maine Department of Transportation standards, to the maximum extent possible.

The Town Engineer has reviewed and approved the site distance for the entrance.

(b) Points of access and egress must be located to avoid hazardous conflicts with existing turning movements and traffic flows.
This standard has been met.

(c) The grade of any proposed drive or street must be not more than +3% for a minimum of two (2) car lengths, or forty (40) feet, from the intersection. **This standard has been met.**

(d) The intersection of any access/egress drive or proposed street must function: (a) at a Level of Service D, or better, following development if the project will generate one thousand (1,000) or more vehicle trips per twenty-four (24) hour period; or (b) at a level which will allow safe access into and out of the project if less than one thousand (1,000) trips are generated. **This standard has been met.**

(e) Where a lot has frontage on two (2) or more streets, the primary access to and egress from the lot must be provided from the street where there is less potential for traffic congestion and for traffic and pedestrians hazards. Access from other streets may be allowed if it is safe and does not promote short cutting through the site. **N/A**

(f) Where it is necessary to safeguard against hazards to traffic and pedestrians and/ or to avoid traffic congestion, the applicant shall be responsible for providing turning lanes, traffic directional islands, and traffic controls within public streets. **No turning lanes are necessary due to the low traffic volume expected.**

(g) Accessways must be designed and have sufficient capacity to avoid queuing of entering vehicles on any public street.
This standard has been met.

(h) The following criteria must be used to limit the number of driveways serving a proposed project:
No use which generates less than one hundred (100) vehicle trips per day shall have more than one (1) two-way driveway onto a single roadway. Such driveway must be no greater than thirty (30) feet wide. No use which generates one hundred (100) or more vehicle trips per day shall have more than two (2) points of entry from and two (2)

points of egress to a single roadway. The combined width of all accessways must not exceed sixty (60) feet.
Only 1 combined exit/entrance drive is proposed for the parking lot.

(2) Accessway Location and Spacing

Accessways must meet the following standards:

a. Private entrance / exits must be located at least fifty (50) feet from the closest unsignalized intersection and one hundred fifty (150) feet from the closest signalized intersection, as measured from the point of tangency for the corner to the point of tangency for the accessway. This requirement may be reduced if the shape of the site does not allow conformance with this standard. **N/A**

b. Private accessways in or out of a development must be separated by a minimum of seventy-five (75) feet where possible. **N/A**

(2) Internal Vehicular Circulation

The layout of the site must provide for the safe movement of passenger, service, and emergency vehicles through the site.

a. Projects that will be served by delivery vehicles must provide a clear route for such vehicles with appropriate geometric design to allow turning and backing. **N/A**
b. Clear routes of access must be provided and maintained for emergency vehicles to and around buildings and must be posted with appropriate signage (fire lane - no parking). **N.A**
c. The layout and design of parking areas must provide for safe and convenient circulation of vehicles throughout the lot. **This standard has been met.**
d. All roadways must be designed to harmonize with the topographic and natural features of the site insofar as practical by minimizing filling, grading, excavation, or other similar activities which result in unstable soil conditions and soil erosion, by fitting the development to the natural contour of the land and avoiding substantial areas of excessive grade and tree removal, and by retaining existing vegetation during construction. The road network must provide for vehicular, pedestrian, and cyclist safety, all season emergency access, snow storage, and delivery and collection services.This standard has been met.

Parking Layout and Design

Off street parking must conform to the following standards:

a. Parking areas with more than two (2) parking spaces must be arranged so that it is not necessary for vehicles to back into the street.

b. All parking spaces, access drives, and impervious surfaces must be located at least fifteen (15) feet from any side or rear lot line, except where standards for buffer yards require a greater distance. No parking spaces or asphalt type surface shall be located within fifteen (15) feet of the front property line. Parking lots on adjoining lots may be connected by accessways not exceeding twenty-four (24) feet in width.

c. Parking stalls and aisle layout must conform to the following standards.

Parking Angle	Stall Width	Skew Width	Stall Depth	Aisle Width
90°	9'-0"		18'-0"	24'-0" 2-way
60°	8'-6"	10'-6"	18'-0"	16'-0" 1-way
45°	8'-6"	12'-9"	17'-6"	12'-0" 1-way
30°	8'-6"	17'-0"	17'-0"	12'-0" 1 way

d. In lots utilizing diagonal parking, the direction of proper traffic flow must be indicated by signs, pavement markings or other permanent indications and maintained as necessary.

e. Parking areas must be designed to permit each motor vehicle to proceed to and from the parking space provided for it without requiring the moving of any other motor vehicles.

f. Provisions must be made to restrict the "overhang" of parked vehicles when it might restrict traffic flow on adjacent through roads, restrict pedestrian or bicycle movement on adjacent walkways, or damage landscape materials.

The driveway and parking areas were located and designed to provide safe circulation to the site while minimizing impacts to the surrounding land. Existing grades and vegetation will be maintained to the extent practicable. The above standards have been met.

(5) Building and Parking Placement. **N/A**

(6) Pedestrian Circulation

The site plan must provide for a system of pedestrian ways within the development appropriate to the type and scale of development. This system must connect the major building entrances/ exits with parking areas and with existing sidewalks, if they exist or are planned in the vicinity of the project. The

pedestrian network may be located either in the street right-of-way or outside of the right-of-way in open space or recreation areas. The system must be designed to link the project with residential, recreational, and commercial facilities, schools, bus stops, and existing sidewalks in the neighborhood or, when appropriate, to connect the amenities such as parks or open space on or adjacent to the site.
There are no sidewalks along Range Road but there is a paved shoulder which connects to the parking area.

Based on the above facts, the Planning Board finds the standards of this section have been met

C. Stormwater Management and Erosion Control

(1) Stormwater Management. Adequate provisions must be made for the collection and disposal of all stormwater that runs off proposed streets, parking areas, roofs, and other surfaces, through a stormwater drainage system and maintenance plan, which must not have adverse impacts on abutting or downstream properties.
   (a) To the extent possible, the plan must retain stormwater on the site using the natural features of the site.
   (b) Unless the discharge is directly to the ocean or major river segment, stormwater runoff systems must detain or retain water such that the rate of flow from the site after development does not exceed the predevelopment rate.
   (c) The applicant must demonstrate that on - and off-site downstream channel or system capacity is sufficient to carry the flow without adverse effects, including but not limited to, flooding and erosion of shoreland areas, or that he / she will be responsible for whatever improvements are needed to provide the required increase in capacity and / or mitigation.
   (d) All natural drainage ways must be preserved at their natural gradients and must not be filled or converted to a closed system unless approved as part of the site plan review.
   (e) The design of the stormwater drainage system must provide for the disposal of stormwater without damage to streets, adjacent properties, downstream properties, soils, and vegetation.
   (f) The design of the storm drainage systems must be fully cognizant of upstream runoff which must pass over or through the site to be developed and provide for this movement.
   (g) The biological and chemical properties of the receiving waters must not be degraded by the stormwater runoff from the development site. The use of oil and grease traps in manholes, the use of on-site vegetated waterways, and vegetated buffer strips along waterways and drainage swales, and the reduction in use of deicing salts and fertilizers may be required, especially where the development stormwater

discharges into a gravel aquifer area or other water supply source, or a great pond.

A stormwater management plan was reviewed and approved by the Town Engineer.

Based on the above facts, the Planning Board finds the standards of this section have been met.

2. Erosion Control

(a) All building, site, and roadway designs and layouts must harmonize with existing topography and conserve desirable natural surroundings to the fullest extent possible, such that filling, excavation and earth moving activity must be kept to a minimum. Parking lots on sloped sites must be terraced to avoid undue cut and fill, and / or the need for retaining walls. Natural vegetation must be preserved and protected wherever possible.

(b) Soil erosion and sedimentation of watercourses and water bodies must be minimized by an active program meeting the requirements of the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices, dated March 1991, and as amended from time to time.

The Town Engineer has reviewed and approved the erosion control plan that will be in conformance with the Maine Erosion and Sediment Control manual.

Based on the above facts, the Planning Board finds the standards of this section have been met.

D. Water, Sewer and Fire Protection

(1) Water Supply Provisions

The development must be provided with a system of water supply that provides each use with an adequate supply of water. If the project is to be served by a public water supply, the applicant must secure and submit a written statement from the supplier that the proposed water supply system conforms with its design and construction standards, will not result in an undue burden on the source of distribution system, and will be installed in a manner adequate to provide needed domestic and fire protection flows.

There will be no water supply or sewage disposal required for this project. The parking area has been sized to allow a fire truck to pull in the drive aisle if needed.

Based on the above facts, the Planning Board finds the standards of this section have been met.

(2) Sewage Disposal Provisions

The development must be provided with a method of disposing of sewage which is in compliance with the State Plumbing Code. If provisions are proposed for on-site waste disposal, all such systems must conform to the Subsurface Wastewater Disposal Rules.

There will be no need for sewage disposal.

Based on the above facts, the Planning Board finds the standards of this section have been met.

(3) Utilities

The development must be provided with electrical, telephone, and telecommunication service adequate to meet the anticipated use of the project. New utility lines and facilities must be screened from view to the extent feasible. If the service in the street or on adjoining lots is underground, the new service must be placed underground.

No utilities are required.

Based on the above facts, the Planning Board finds the standards of this section have been met.

1. Fire Protection

The plans have been reviewed and approved by the Fire Chief .

Based on the above facts, the Planning Board finds the standards of this section have been met.

E. Water Protection

(1) Groundwater Protection. The proposed site development and use must not adversely impact either the quality or quantity of groundwater available to abutting properties or to the public water supply systems. Applicants whose projects involve on-site water supply or sewage disposal systems with a capacity of two thousand (2,000) gallons per day or greater must demonstrate that the groundwater at the property line will comply, following development, with the standards for safe drinking water as established by the State of Maine.

There will be no groundwater or hazardous materials discharged as a result of this project. The property is *not* located within an area designated as an aquifer protection area. There will be no on-site water supply or sewage disposal systems.

Based on the above facts, the Planning Board finds the standards of this section have been met.

(2) Water Quality
All aspects of the project must be designed so that:

a. No person shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, obnoxious, toxicity, or temperature that may run off, seep, percolate, or wash into surface or groundwaters so as to contaminate, pollute, or harm such waters or cause nuisances, such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant, or aquatic life.
b. All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials, must meet the standards of the Maine Department of Environmental Protection and the State Fire Marshall's Office.

No substances described above will be stored or discharged in a way that could contaminate surface or groundwater.

Based on the above facts, the Planning Board finds the standards of this section have been met.

(3) Aquifer Protection (if applicable)

If the site is located within the Town Aquifer Protection Area a positive finding by the board that the proposed plan will not adversely affect the aquifer, is required.
The parcel is not located in the Aquifer Protection Area.

Based on the above facts, the Planning Board finds the standards of this section have been met.

F. Floodplain Management

If any portion of the site is located within a special flood hazard area as identified by the Federal Emergency Management Agency, all use and development of that

portion of the site must be consistent with the Town's Floodplain management provisions.

The parcel is shown on Floodplain map number 230162 0015B. The location of the proposed parking area is within an area designated as Zone C-Area of Minimal Flooding.

Based on the above facts, the Planning Board finds the standards of this section have been met.

G. Historic and Archaeological Resources

If any portion of the site has been identified as containing historic or archaeological resources, the development must include appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation.

A review letter from the Maine Historic Preservation Commission is on file.

Based on the above facts, the Planning Board finds the standards of this section have been met.

H. Exterior Lighting

The proposed development must have adequate exterior lighting to provide for its safe use during nighttime hours, if such use is contemplated. All exterior lighting must be designed and shielded to avoid undue glare, adverse impact on neighboring properties and rights - of way, and the unnecessary lighting of the night sky.

No exterior lighting is proposed.

Based on the above facts, the Planning Board finds the standards of this section have been met.

I. Buffering and Landscaping

(1) Buffering of Adjacent Uses

The development must provide for the buffering of adjacent uses where there is a transition from one type of use to another use and for the screening of mechanical equipment and service and storage areas. The buffer may be provided by distance, landscaping, fencing, changes in grade, and / or a combination of these or other techniques.

(2) Landscaping:
There are no proposed changes to the landscaping plan due to the minimal change in the amount of pavement.

Clearing of the property for the parking lot will be kept to a minimum. The existing forested and vegetated land will be undisturbed to allow natural buffering to effectively screen the parking lot.

Based on the above facts, the Planning Board finds the standards of this section have been met.

J. Noise
The development must control noise levels such that it will not create a nuisance for neighboring properties.

There will be no activities associated with the parking area that will result in noise.

Based on the above facts, the Planning Board finds the standards of this section have been met.

K. Storage of Materials

.1 Exposed nonresidential storage areas, exposed machinery, and areas used for the storage or collection of discarded automobiles, auto parts, metals or other articles of salvage or refuse must have sufficient setbacks and screening (such as a stockade fence or a dense evergreen hedge) to provide a visual buffer sufficient to minimize their impact on abutting residential uses and users of public streets.

.2 All dumpsters or similar large collection receptacles for trash or other wastes must be located on level surfaces which are paved or graveled. Where the dumpster or receptacle is located in a yard which abuts a residential or institutional use or a public street, it must be screened by fencing or landscaping.

.3 Where a potential safety hazard to children is likely to arise, physical screening sufficient to deter small children from entering the premises must be provided and maintained in good condition.

There will be no external storage of material. There will be no dumpster or trash receptacles on site. Signs will be placed instructing visitors to remove any trash generated.

Based on the above facts, the Planning Board finds the standards of this section have been met.

L. Capacity of the Applicant

The applicant must demonstrate that he / she has the financial and technical capacity to carry out the project in accordance with this ordinance and the approved plan.

Technical Capacity: The applicant has retained the services of a professional engineer, wetlands analyst and land surveyor.

Financial Capacity: Project improvements will be funded by the Town of Cumberland and public works employees will be utilized.

Based on the above facts, the Planning Board finds the standards of this section have been met.

229-11 EXPIRATION OF APPROVAL:

Construction of the improvements covered by any site plan approval must be substantially commenced within 12 months of the date upon which the approval was granted. If construction has not been substantially commenced within 12 months of the date upon which approval was granted, the approval shall be null and void. If construction has not been substantially completed within 24 months of the date upon which approval was granted or within a time period as specified by the Planning Board, the approval shall be null and void. The applicant may request an extension of the deadline to commence or complete construction prior to expiration of the period. Such request must be in writing and must be made to the Planning Board. The Planning Board may grant up to two one-year extensions to the period of any and all federal and state approvals and permits are current.

229-12 STANDARD CONDITION OF APPROVAL:

This approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted by the applicant. Any variation from the plans, proposals and supporting documents, except deminimus changes as so determined by the Town Planner which do not affect approval standards, is subject to review and approval of the Planning Board prior to implementation

X. PROPOSED CONDITIONS OF APPROVAL

1. A preconstruction conference shall be held prior to the start of construction.
2. All clearing limits are to be staked and inspected by the Town Engineer prior to the preconstruction conference.

SME
SEVEE & MAHER
ENGINEERS

4 Blanchard Road, P.O. Box 85A
Cumberland, ME 04021
Tel: 207.829.5016 • Fax: 207.829.5692
info@smemaine.com
smemaine.com

August 31, 2021

Ms. Carla Nixon, Town Planner
Town of Cumberland
290 Tuttle Road
Cumberland, Maine 04021

Subject: Rines Forest Parking Lot
Planning Board Site Plan Review Application

Dear Ms. Nixon:

On behalf of the Town of Cumberland (Town), Sevee & Maher Engineers, Inc. (SME) is pleased to submit the attached Planning Board Site Plan Review Application for the proposed 10 space parking lot for the Rines Forest on Range Road in Cumberland.

We have enclosed two copies and a USB with a digital copy of the application package and drawings.

We look forward to reviewing the project in more detail with the Planning Board on September 21, 2021 and appreciate your consideration of our application. Please feel free to contact me at 207.829.5016 or dpd@smemaine.com if you have any questions or need additional information.

Very truly yours,

SEVEE & MAHER ENGINEERS, INC.

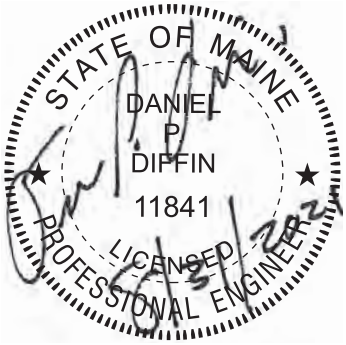
Daniel Diffin, P.E., LEED AP BD+C
Vice President/Senior Civil Engineer

Attachments

SITE PLAN REVIEW APPLICATION
RINES FOREST PARKING PLAN
CUMBERLAND, MAINE

Prepared for

TOWN OF CUMBERLAND
PLANNING BOARD SITE PLAN REVIEW APPLICATION



August 2021

4 Blanchard Road
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Cumberland, Maine 04021
Phone: 207.829.5016 smemaine.com

SME
SEVEE & MAHER
ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

SITE PLAN REVIEW
Town of Cumberland

Appendix C
Planning Board Site Plan Review Application

Applicant's name Town of Cumberland

Applicant's address 290 Tuttle Road Cumberland, Maine 04021

Cell phone 207-829-5559 Home phone _____ Office phone _____

Email Address N/A

Project address Range Road, Cumberland, Maine 04021

Project name Rines Forest Parking Lot

Describe project Proposed 10 space parking area for Town of Cumberland off Range Road into southerly edge of Rines Forest

Number of employees N/A

Days and hours of operation N/A

Project review and notice fee Waived by the town

Name of representative Bill Shane

Contact information: Cell:_____Office: 207-829-2205

What is the applicant's interest in the property?

Own X Lease_____Purchase and sale agreement_____(provide copy of document)
If you are not the owner, list owner's name, address and phone number _____

_____

If you are not the owner, list owner's name, address and phone number _____

Boundary Survey
Submitted? Yes X No _____

Are there any deed restrictions or easements? Yes X No_____If yes, provide information and show easement location on site plan.

Building Information
Are there existing buildings on the site? Yes _____ No X Number: _____
Will they be removed? Yes _____ No_____(Note: A demolition permit is required 10 days prior to demolition.)

Will a new structure(s) be built on the site? Yes _____ No X
Describe: _____
Number of new buildings _____
Square footage _____
Number of floor levels including basement _____

Parking
Number of existing parking spaces 0
Number of new parking spaces 10
Number of handicapped spaces 1
Will parking area be paved? __Yes x No

Entrance
Location: Paved apron southwest of the Rine's Forest Area off of Range Road.
Width 14' Length _____
Is it paved?_____Yes_____No x _____If not, do you plan to pave it?

Where will snow storage for entrance and parking be located? Show on site plan.

Utilities: Not applicable

Water: Public water_____Well_____(Show location on site plan.) Not Applicable

Sewer/septic: Public sewer_____Private septic_____Show location on site plan and submit HHE-200 septic design or location of passing test pit locations if new system is proposed. Also show any wells on abutting properties within 200 feet of the site. Not Applicable

Electric: On site? Yes_____No _____ Not Applicable
Show location of existing and proposed utilities on the site plan and indicate if they are above or below ground.

Signs
Number: 1
Size:_____
Material: _____
Submit sign design and completed sign application.
Will the sign be lighted?_____Submit information on type and wattage of lights.
Show location of sign(s) on the site plan.

Natural Features
Show location of any of the following on the site plan:
River_____Stream_____Wetland X Pond _____ Lake _____ Stone walls _____
Are there any other historic or natural features? _____

Lighting
Will there be any exterior lights? Yes _____ No X Show location on site plan (e.g., pole fixtures, wall packs on building) and provide fixture and lumen information.

Trees
Show location of existing trees on the site plan and indicate if any are to be removed.

Landscaping
Is there existing landscaping on the site? Yes _____ No X Show type and location on site plan.

Is new landscaping proposed? (Note: if property has frontage on Route 100, a twenty-five-foot landscape easement to the Town is required.)

Buffering
Show any existing or proposed buffering measures for adjacent properties, e.g., plantings, fences.

Erosion Control
Has an erosion and sedimentation control plan been submitted? Yes __X__ No _____

Stormwater Management Plan
Provide stormwater information for both pre and post development of the site. Show location of any detention areas and/or culverts on the site plan.

Fire Protection
Location of nearest hydrant Non-proposed Sprinklers? Yes _____ No _____
Do you plan to have an alarm system? Yes_____No_____Please contact the Fire/EMS Department at 829-4573 to discuss any Town or state requirements.

Trash N/A
Will trash be stored inside _____ outside_____. If outside, will a dumpster be used? Yes_____No_____. Show location on site plan and show type of screening proposed (e.g., fencing, plantings).

Technical Capacity
List and provide contact information for all consultants who worked on the project, for example: licensed land surveyor, licensed soils evaluator, professional engineer, attorney, etc.
Narrative

Financial Capacity
Please indicate how project will be financed. If obtaining a bank loan, provide a letter from the bank Project funded by Town Council approved funds

- Zoning district: Rural Residential 1
- Minimum lot size: 2.0 acres
- Classification of proposed use: Municipal Use
- Parcel size: 52 acres
- Frontage: 200'
- Setbacks: Front 50 Side 30 (75 comb.) Rear 75
- Board of Appeals Required? No
- Tax Map R5 Lot 23A Deed book 36 Deed page 185
- Floodplain map number : 5100430125B Designation Narrative
- Vernal pool identified? No
- Is parcel in a subdivision? No
- Outside agency permits required:
  MDEP Tier 1 N/A MDEP Tier 2 N/A Army Corps of Engineers N/A
  MDEP general construction (stormwater) permit (for disturbance of 1 acre or more)
- MDOT entrance permit N/A
- MDOT traffic movement permit N/A
- Traffic study required Narrative
- Hydrogeologic evaluation N/A
- Market study N/A
- Route 1 Design Guidelines? _____
- Route 100, VMU or TCD Design Standards? N/A

Applicant's signature _____

Submission date: 8/31/21

PLANNING BOARD SITE PLAN REVIEW SUBMISSION CHECKLIST

FOR ALL PROJECTS:

Submission Requirement	**Provide Location in Application Packet (e.g., plan sheet number, binder section, narrative**	**If requesting a waiver, indicate below:**
Example: Erosion Control	*Plan Sheet E-1*	
General Information:		
Completed Site Plan Application Form	This Document	
Names and addresses of all consultants	Narrative	
Narrative describing existing conditions and the proposed project	Narrative	
Evidence of right, title or interest (deed, option, etc.)	Attachment A and B	
Names and Addresses of all property owners within 200 feet	Attachment G	
Boundaries of all contiguous property under control of owner		
Tax map and lot numbers	Narrative	
Area of the parcel	Narrative	
FEMA Floodplain designation & map #	This Document	
Zoning classification	This Document	
Evidence of technical and financial capability to carry out the project	Attachment B	
Boundary survey		
List of waiver requests on separate sheet with reason for request.	Narrative	
Proposed solid waste disposal plan	N/A	
Existing Conditions Plan showing:		
Name, registration number and seal of person who prepared plan	Drawing C-101	
North arrow, date, scale, legend	Drawing C-101	
Area of the parcel	Drawing C-101	
Setbacks and building envelope	Drawing C-101	
Utilities, including sewer & water, culverts & drains, on-site sewage	N/A	
Location of any septic systems	N/A	
Location, names, widths of existing public or private streets ROW's	Drawing C-101	

Location, dimension of ground floor elevation of all existing buildings	N/A	
Location, dimension of existing driveways, parking, loading, walkways	Drawing C-101	
Location of intersecting roads & driveways within 200 feet of the site	Drawing C-101	
Wetland areas	Drawing C-101	
Natural and historic features such as water bodies, stands of trees, streams, graveyards, stonewalls, floodplains	Drawing C-101	
Direction of existing surface water drainage across the site & off site	Drawing C-101	
Location, front view, dimensions and lighting of existing signs	N/A	
Location and dimensions of existing easements & copies of documents	N/A	
Location of nearest fire hydrant or water supply for fire protection	N/A	
Proposed Development Site Plan showing:		
Name of development	Drawing C-102	
Date	Drawing C-102	
North arrow	Drawing C-102	
Scale	Drawing C-102	
Legend	Drawing C-102	
Landscape plan	N/A	
Stormwater management	Drawing D-100 and D-101	
Wetland delineation	Drawing C-102	
Current & proposed stands of trees	Drawing C-102	
Erosion control plan	Drawing C-102	
Landscape plan	N/A	
Lighting/photometric plan	N/A	
Location and dimensions of all proposed buildings	N/A	
Location and size of utilities, including sewer, water, culverts and drains	N/A	
Location and dimension of proposed on-site septic system; test pit locations and nitrate plumes	N/A	
Location of wells on subject property and within 200’ of the site	N/A	
Location, names and widths of existing and proposed streets and ROW’s	Drawing C-102	

Location and dimensions of all accessways and loading and unloading facilities	Drawing C-102	
Location and dimension of all existing and proposed pedestrian ways	Drawing C-102	
Location, dimension and # of spaces of proposed parking areas, including handicapped spaces	Drawing C-102	
Total floor area and ground coverage of each proposed building and structure	N/A	
Proposed sign location and sign lighting	Drawing C-102	
Proposed lighting location and details	N/A	
Covenants and deed restrictions proposed	N/A	
Snow storage location	N/A	
Solid waste storage location and fencing/buffering	N/A	
Location of all fire protection	N/A	
Location of all temporary & permanent monuments	Drawing C-101	
Street plans and profiles	N/A	

ADDITIONAL REQUIREMENTS FOR MAJOR SITE PLAN PROJECTS:

Submission Requirement	**Provide Location in Application Packet (e.g., plan sheet number, binder section, narrative**	**If requesting a waiver, indicate below:**
High intensity soils survey	N/A	
Hydro geologic evaluation	N/A	
Traffic Study	N/A	
Market Study		X
Location of proposed recreation areas (parks, playgrounds, other public areas)	N/A	
Location and type of outdoor furniture and features such as benches, fountains.	N/A	

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LIST OF ATTACHMENTS

ATTACHMENT A TITLE, RIGHT OR INTEREST
ATTACHMENT B CONSERVATION EASEMENT
ATTACHMENT C STORMWATER MANAGEMENT REPORT
ATTACHMENT D FEMA FLOODPLAIN MAP
ATTACHMENT E CHEBEAGUE & CUMBERLAND LAND TRUST LETTER
ATTACHMENT F OUTSIDE AGENCY REVIEW LETTERS

TOWN OF CUMBERLAND
SITE PLAN REVIEW APPLICATION
RINES FOREST PARKING PLAN
CUMBERLAND, MAINE

A. PROJECT DESCRIPTION

The Rines Forest (Forest) was first opened to the public to provide the opportunity for low-impact passive recreation. The Forest consists of a 268 acres of forest land, a network of trails and critical wildlife habitat. The Forest is owned by the Town of Cumberland and protected by conservation easements held by the Chebeague and Cumberland Land Trust (CCLT). The most recent addition to the Forest included a parcel of land obtained by the Town in 2019 that was then protected with a revised Conservation Easement from CCLT. Within this easement, an addition to the property of up to ten (10) parking spaces for passenger vehicles is permitted. The Town intends to provide this parking approximately one-tenth of a mile to the northwest of the existing Forest trailhead off Range Road. A copy of the Deed and Conservation Easement for the property are included as Attachment A and B. In addition, a letter from the CCLT that outlines approval of the proposed parking plan is included in Attachment E.

The parking area will be accessed through a paved entry way approximately 70 feet to the west of the Idlewood Drive and Range Road intersection. The new access will be constructed over an historically cleared area that includes approximately 2,000 square feet of existing dirt access road area. The pavement will end at the edge of the right-of-way at which point the access aisle and parking area will be constructed of reclaimed asphalt pavement. The full build out will result in approximately 11,000 square feet (0.25 acres) of disturbed area and 6,220 square feet of reclaimed asphalt pavement area. In total, the new parking area will result in an increase in impervious area of 4,220 square feet and tree trimming and removal of approximately 2,000 square feet of vegetation.

The grading and drainage associated with the new parking area has been minimized as much as possible to limit the tree-clearing and disturbance to natural soils required to construct the project.

The Town is still finalizing the layout of the signage for the parking area and the Rines Forest. A preliminary location for the signage has been added to Drawing C-102. The layout includes a directional sign on Range Road to direct vehicles to the parking area and a small information kiosk to the west of the parking area. The use of the parking area will be limited to daylight hours only and will be controlled by a new 20-foot-wide gate.

The following describes how the project complies with the applicable Chapters of the Town of Cumberland Zoning and Site Plan Review Ordinances.

CHAPTER 229 - SITE PLAN REVIEW

§229-10 Waivers and Modifications

As part of this application the Town requests the following waivers from the Site Plan Review ordinance:

1. A waiver from performing a hydrogeological evaluation for the project. There will be no subsurface wastewater disposal or other groundwater impacts as a result of this project.
2. A waiver from performing a market study.

§229-10 Approval Standards and Criteria

A. Utilization of the Site

The proposed plan will minimize impacts to the natural features of the site by minimizing disturbance to undeveloped areas as much as possible. Land disturbance has been limited to the mostly open area of the site that was historically used for access for earthwork and logging operations. The wetlands were identified on the survey plan as forested wetlands and lie to the west, northeast and south of the proposed parking area. The wetlands did not extend into the project area and therefore, wetland impacts have been avoided to the extent practicable with some minor impacts around the site entrance of 5 square feet.

A project review letter has been provided to the Maine Department of Inland Fisheries & Wildlife (IF&W). A copy of their response has been included as Appendix F in this application.

B. Traffic, Circulation and Parking

Traffic will access the Rines Forest parking lot from Range Road through the newly created paved entrance. The apron has been sized to provide safe and adequate space for two-way traffic. The majority of traffic will be directed through on-site signage to the new parking area and will then use the pedestrian trails to access the trails into the Forest. The Town will install signage along Range Road to direct vehicles to the parking lot. The final size and location of these signs has not yet been determined, but a representative location has been added to Drawing C-102.

The speed limit for Range Road is 35 miles per hour through this section and the required sight distances are a minimum of 350 feet. Sight distance in each direction exceeds 400 feet and has been added to Drawing C-101 and C-102.

The traffic at the proposed parking area will be controlled by the restrictions of the conservation easement. The proposed parking was designed to provide adequate space for recreational users of the property while conserving as much of the natural environment as possible. Based on the limited parking

available, traffic volume will be limited well below 100 trips in a peak hour and a traffic movement permit will not be required for the project.

C. Stormwater Management and Erosion Control

The stormwater at the site will be managed as detailed in the Stormwater Management Report included as Attachment C.

The construction will be completed in accordance with the most recent version of the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices and as detailed in the drawing set.

D. Water, Sewer and Fire Protection

There will be no water supply or sewage disposal required for this project. The entrance will be secured by a gate and a key will be provided to the Fire and Police Departments. The parking area has been sized to allow a fire truck to pull in the drive aisle if needed. An ambulance will be able to enter and exit the parking lot at the entrance as needed. If the parking lot is full, the ambulance will likely have to turnaround using the paved entrance and portions of Range Road Extension. In an effort to minimize disturbance to the property in compliance with the conservation easement, the footprint of the parking lot was kept to a minimum. However, ambulance maneuvering is possible using the 25-foot paved entrance and portions of Range Road.

E. Water Protection

There will be no groundwater or hazardous materials discharged as a result of this project. The property is not located within an area designated as an aquifer protection region.

F. Floodplain Management

The Flood Insurance Rate Map for the project area is included in Attachment D. The parking area is not within an identified floodplain.

G. Historic and Archaeological resources.

The site has not previously been identified to contain historic or archaeological resources. A review letter has been submitted to the Maine Historic Preservation Commission (MHPC) and a copy of their review is in Attachment F.

H. Exterior Lighting

There is no exterior lighting proposed for this project.

I. Buffering and Landscaping

The parking area will be buffered from views on all sides through existing vegetation. The views to the north and west will remain wooded and undeveloped due to the conservation easement.

J. Noise

There is no exterior equipment or operations proposed that will result in significant noise at the parking area. The only noise expected will be from the vehicular and pedestrian traffic which will be buffered through the existing vegetation on the east, west and north. The Forest will be open to the public during daylight hours only. A gate will be placed on the parking lot entrance to control use of the parking lot during the overnight hours.

K. Storage of Materials

Not applicable to this project as no wastes are anticipated to be generated from the development. Signs will be placed instructing visitors to remove any trash generated.

L. Capacity of the Applicant

1. Financial Capacity – The project will be funded through the Town of Cumberland using public works crews and town gravel and equipment.
2. The Town has hired Sevee & Maher Engineers, Inc. to assist with the design of the parking lot and access improvements. Construction and maintenance of the project will be performed by experienced Town of Cumberland staff and contractors, as necessary.

M. Design and Performance Standards

Not applicable to this project.

ATTACHMENT A

TITLE, RIGHT OR INTEREST

SME
SEVEE & MAHER
ENGINEERS

AMENDMENT TO A CONSERVATION EASEMENT ADDING ADDITIONAL LAND ONTO RINES FOREST TOWN OF CUMBERLAND, CUMBERLAND COUNTY, MAINE

THIS AMENDMENT TO A CONSERVATION EASEMENT made this 19th day of November, 2019, by the **TOWN OF CUMBERLAND**, a duly organized Maine municipal corporation, located in Cumberland County, Maine and having an office at 290 Tuttle Road, Cumberland, ME 04021; (hereinafter referred to as "Grantor") and the **CHEBEAGUE & CUMBERLAND LAND TRUST,** a nonprofit corporation organized and operating under the laws of the State of Maine, having a mailing address of 371 Tuttle Road, #2, Cumberland, ME 04021 (hereinafter referred to as the "Holder") hereby adds an additional 52± acres described in Exhibit A and depicted in Exhibit B (hereinafter referred to as the "Additional Protected Property") to the Rines Forest Conservation Easement (hereinafter referred to as "Original Protected Property").

This conveyance and Conservation Easement Amendment shall only become effective and enforceable upon the conveyance by Elizabeth B. Rines of the underlying fee interest in the Protected Property to the Town of Cumberland. In the event the underlying fee interest in the Protected Property is not conveyed to the Town of Cumberland, this instrument shall not burden the property. The Additional Protected Property includes all of the conservation attributes of the Original Protected Property and is subjected to the same requirements protected by the original Rines Forest Conservation Easement.

The Additional Protected Property was also purchased by Grantor, in part, with grant funds from the United States Forest Service to effect the Community Forest Program authorized by Section 8003 of the Food, Conservation, and Energy Act of 2008 (16 U.S.C. 2103d) with the purpose of establishing community forests that provide community benefits by acquiring and protecting private forestlands. This authority continues indefinitely. Program delivery is guided by the Community Forest Program regulations (36 CFR 230 Subpart A, published 10/20/2001; 76 FR 65121). A Notice of Grant Requirements ("NOGR), signed by Grantor, is attached hereto as Exhibit C and incorporated herein by reference.

WITNESSETH:

WHEREAS, Grantor holds title to a parcel of real estate comprising approximately 216 acres on Range Road under a deed from Dale S. Rines to the Grantor, dated August 29, 2003, and recorded in the Cumberland County Registry of Deeds at Book 20109, Page 82, said real estate is the Original Protected Property;

WHEREAS, the Original Protected Property is subject to a Conservation Easement held by Chebeague & Cumberland Land Trust (formerly Cumberland Mainland and Islands Trust, Inc.), under a conservation easement granted by Grantor to Cumberland Mainland and Islands Trust, dated October 17, 2005, and recorded in the Cumberland County Registry of Deeds at Book 23273, Page 72; hereinafter referred to as "Conservation Easement," and

WHEREAS, Grantor also holds title to a parcel of real estate comprising 52± acres on Range Road in Cumberland, Maine being described in a deed from Elisabeth B. Rines to the Town of Cumberland dated November 19, , 2019 and to be recorded herewith in the Cumberland County Registry of Deeds; and more particularly described in Exhibit A and depicted in Exhibit B attached hereto and made part hereof known as Additional Protected Property.

WHEREAS, Grantor wishes to amend the Conservation Easement to add the Additional Protected Property to the Original Protected Property, and thereby better assure the coordinated management and conservation protection of 268± contiguous acres on Range Road; and

WHEREAS, the Original Protected Property and Additional Protected Property are so similar in character that the conservation values of both are adequately described by the purpose and recitals in the Conservation Easement, and by the Conservation Easement Baseline Documentation; and the parties hereto have prepared an Amended Baseline Documentation, on file with Holder, adding separate information on the Additional Protected Property alone, incorporated into the Conservation Easement by this reference, and certified this day by Grantor and Holder as an accurate description of the conservation values of the Additional Protected Property; and

WHEREAS this Easement Amendment is created pursuant to Title 33, Maine Revised Statutes, Sections 476 through 479-C, inclusive, as amended; and

NOW, THEREFORE, for and in consideration of the facts above recited and of the provisions herein contained, the Grantor grants to the Holder, its successors and assigns, this Amendment to a Conservation Easement, as a gift, as follows:

1. The Additional Protected Property, described in Exhibit A and depicted in Exhibit B, is hereby added to the Original Protected Property, and to the terms and conditions of the Conservation Easement, which shall be interpreted as though both parcels are part of the Original Conservation Easement.
2. In all other respects, the parties hereby ratify and confirm the Conservation Easement.

TO HAVE AND TO HOLD the said Conservation Easement Amendment unto the said Holder, its successors and assigns forever.

AND THE GRANTOR DOES COVENANT with the Holder, its successors and assigns that they are lawfully seized in fee of the Additional Protected Property, that it is free of all encumbrances except as listed in Exhibit C, that they have good right to convey this Amendment to a Conservation Easement to the said Holder to hold as aforesaid, and that the Grantor shall and will WARRANT and DEFEND the same to the said Holder and its successors and assigns, forever, against the lawful claims and demands of all persons.

SIGNATURES FOLLOW

IN WITNESS, WHEREOF, the Town of Cumberland has caused its acknowledgement and corporate seal to be hereto affixed and these presents to be signed by William R. Shane, its Town Manager in its name and on its behalf this 19th day of November, 2019.

TOWN OF CUMBERLAND

Witness

William R. Shane, Town Manager

STATE OF MAINE
COUNTY OF CUMBERLAND, ss November 19, 2019

Personally appeared the above named, William R. Shane, Town Manager of the **TOWN OF CUMBERLAND**, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the **TOWN OF CUMBERLAND**.

Before me,

Notary Public

Charles Katz-Leavy, Esq.
Print name of Notary Attorney at Law
Bar #4039

My commission expires_____

HOLDER ACCEPTANCE

The above foregoing Conservation Easement Amendment being duly authorized to be accepted by the **CHEBEAGUE & CUMBERLAND LAND TRUST, INC.** Holder, hereby accepts this Conservation Easement Amendment by and through Penny Asherman, its President, hereunto duly authorized, this 19th day of November, 2019.

CHEBEAGUE & CUMBERLAND LAND TRUST, INC.

Witness

Penny Asherman, President

Personally appeared Penny Asherman, President and authorized representative of the **CHEBEAGUE & CUMBERLAND LAND TRUST, INC.** and acknowledged the acceptance of the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of the **CHEBEAGUE & CUMBERLAND LAND TRUST, INC.**, a Maine non-profit corporation.

Before me,

Notary Public

Charles Katz-Leary, Esq.

Print name of Notary Attorney Bar #4039

My commission expires_____

EXHIBIT A
The Additional Protected Property
Legal Description

A certain lot or parcel of land with any improvements thereon situated on the Northeasterly Side of Range Road in the Town of Cumberland, County of Cumberland, State of Maine and more particularly bounded and described as follows:

Beginning at a point marked by a capped 5/8-inch rebar marked PLS 1137, set on the northeasterly sideline of Range Road at the southerly corner of land recently conveyed by Dale S. Rines to Robert J. Crawford and Sarah S. Stockwell,

Then running in the following courses along land of Crawford and Stockwell:

North 52° 55' 02" East a distance of 229.47 feet to a capped 5/8-inch rebar,

North 07° 57' 43" East a distance of 116.43 feet to a capped 5/8-inch rebar,

North 37° 02' 17" West a distance of 220.00 feet to a 1-inch iron rod set in a stone wall at land now or formerly of Thomas A. and Lisa K. Judd as described in Book 18025, Page 116 at the Cumberland County Registry of Deeds.

Then turning and running North 52° 55' 02" East a distance of 1014.47 feet along Judd land and the stone wall to a point marked by a capped 5/8-inch rebar inscribed PLS 586 at land now or formerly of Andrew R. Berube as described in Book 18060, at Page 237.

Then continuing North 52° 55' 02" East a distance of 300 feet along Berube land and continuing along the stone wall to a point marked by a drill hole in an 8-inch by 16-inch stone standing 2 feet tall at the corner of the stone wall and at land recently conveyed by Dale S. Rines to the Town of Cumberland as described in Book 20109, Page 82.

Then turning and running along land of the Town of Cumberland:

South 37° 00' 00" East a distance of 999.88 feet to a point marked by a drill hole in a 6-inch by 6-inch granite monument,

South 02° 34' 55" East a distance of 777.89 feet to a point marked by a drill hole in a 6-inch by 6-inch granite monument,

South 53° 12' 39" West a distance of 1046.54 feet to a point marked by a drill hole in a 6-inch by 6-inch granite monument set on the northeasterly sideline of Range Road,

Then turning and running northwesterly along the northeasterly sideline of Range Road approximately 1225 feet to the point of beginning.

EXHIBIT B, PAGE 1, Boundary Survey - Additional Protected Property Shown as "Land to be Retained Dale S. Rines"

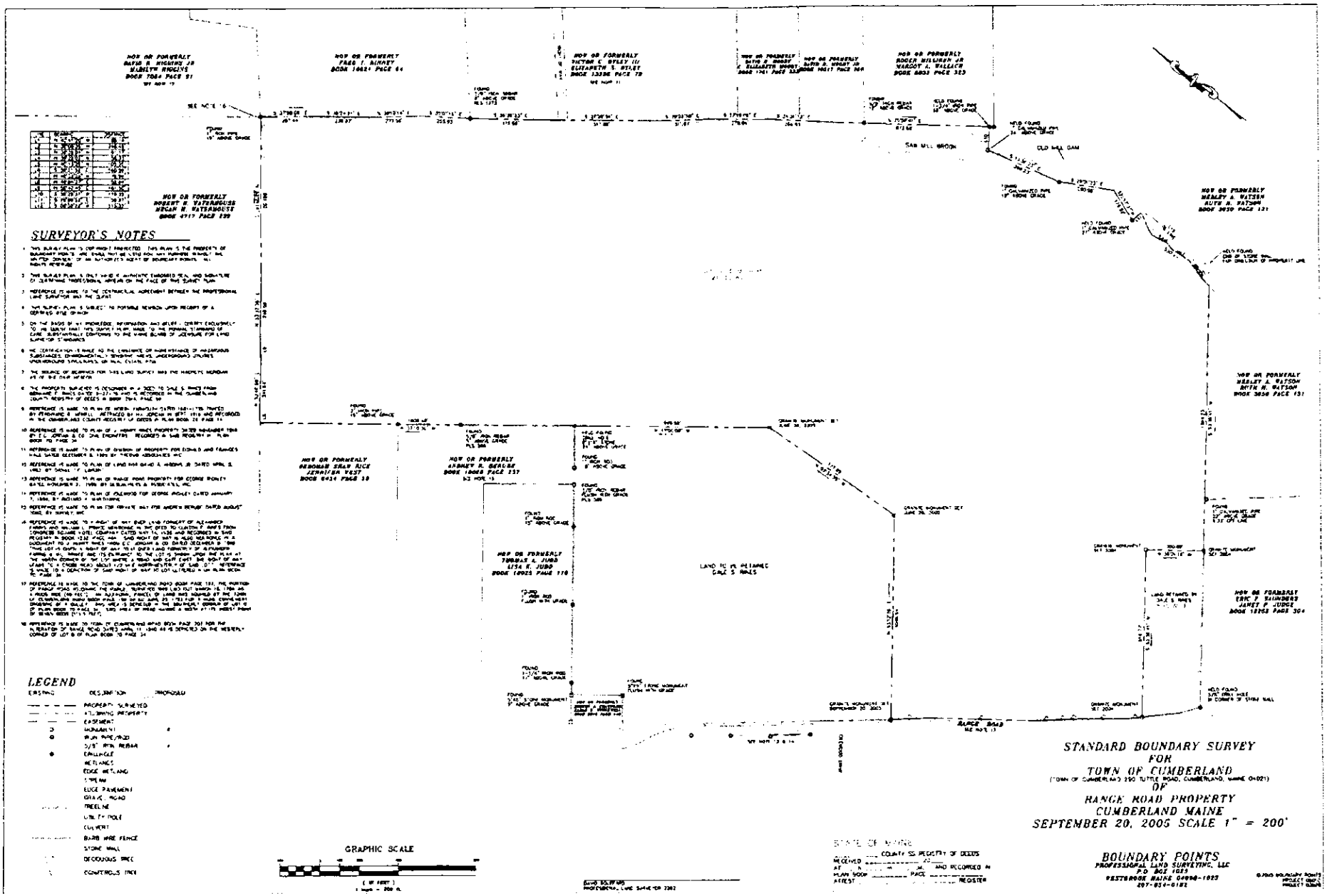
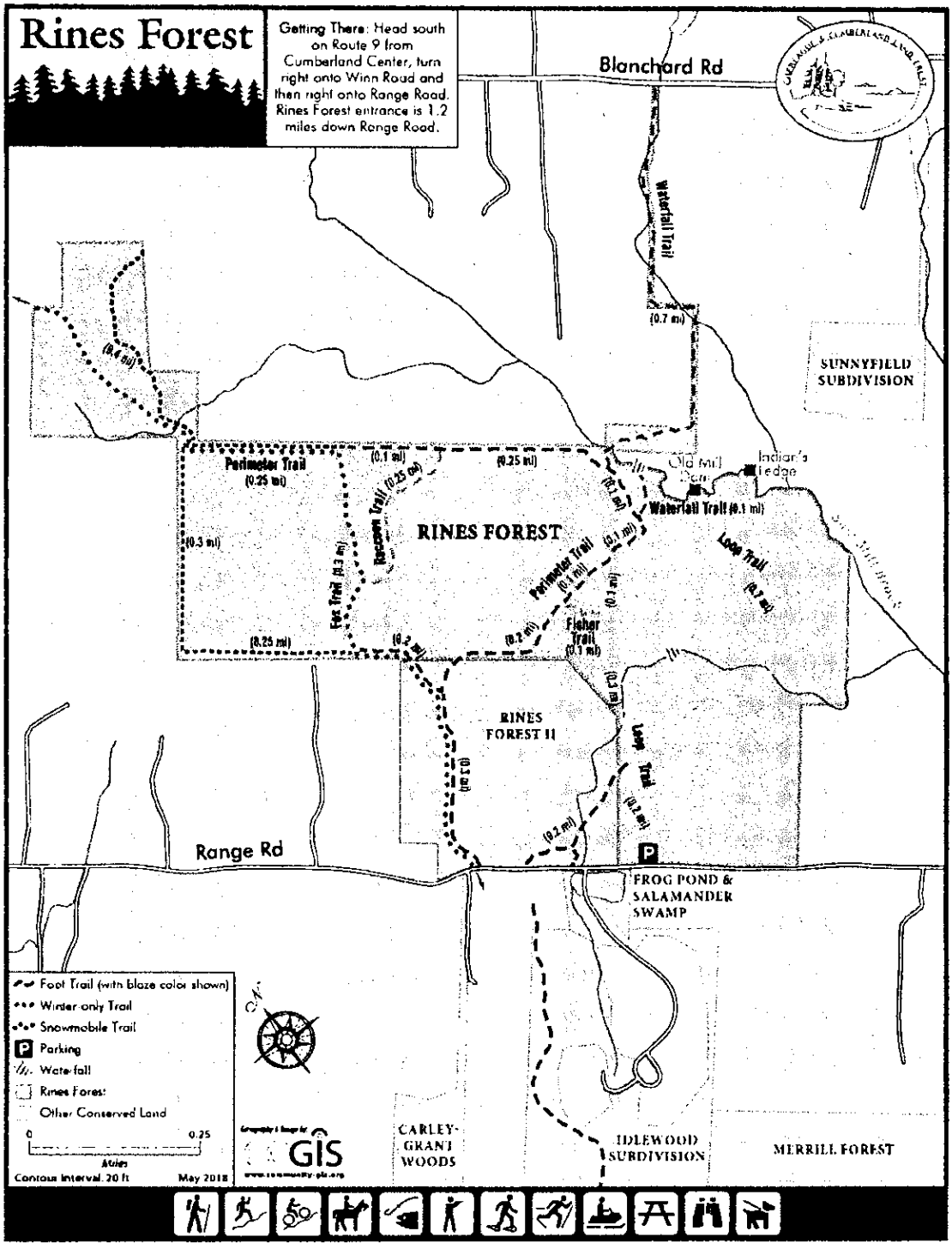


EXHIBIT B – PAGE 2
Map of Additional Protected Property



[c2]

EXHIBIT C
Notice of Grant Requirement on Additional Protected Property

The Additional Protected Property described herein was acquired pursuant to a monetary grant awarded to the Town of Cumberland, Maine (the "Grant Recipient"). The purpose of this acquisition is to effect the goals of the U.S. Department of Agriculture (USDA) Forest Service's Community Forest and Open Space Conservation Program (CFP) in accordance with the provisions of Section 8003 of the Food, Conservation, and Energy Act of 2008 (16 U.S.C. 2103d) for the purposes of establishing community forests that provide community benefits by acquiring and protecting private forestlands. Program delivery is guided by the Community Forest Program regulations (36 CFR Part 230 Subpart A) (published 10/20/2011; 76 FR 65121).

In accordance with these regulations the Grant Recipient acknowledges that:

1) This Additional Protected Property was purchased in part with federal funds in accordance with the Community Forest Program (36 CFR Part 230Subpart A) (published 10/20/2011; 76 FR 65121);
2) The legal description of the Additional Protected Property is set forth in Exhibit A;
3) The address of the Grant Recipient and authorized title holder listed above is: Town of Cumberland, 290 Tuttle Road, Cumberland, ME 04021.
4) This Additional Protected Property is designated with the USDA Forest Service is agreement number 19-DG11420000-172 and it is kept on file at: U.S. Forest Service, Eastern Region State & Private Forestry, 626 E. Wisconsin Ave., Milwaukee, WI 53202
5) The Grant Recipient shall ensure that for all land acquired pursuant to this grant is held in perpetuity by an eligible entity as defined by 36 CFR Part 230 (published 10/20/2001; 76 FR 65121) and that the Community Forest will be (i) managed pursuant to the grant, the Community Forest Plan, and the purpose of the CFP; (ii) will not be conveyed or encumbered, in whole or in part, to another party without written permission and instructions from the awarding agency; and (iii) will be managed consistent with the purposes of the CFP.
6) In the event that the Community Forest is sold or converted to nonforest uses or a use inconsistent with the purpose of the CFP, the Grant Recipient or subsequent Community Forest landowner shall: (1) pay the United States an amount equal to the current sale price or the current appraised value of the parcel, whichever is greater; and (2) not be eligible for additional grants under the CFP.

Received
Recorded Register of Deeds
Nov 19,2019 01:01:56P
Cumberland County
Nancy A. Lane

ATTACHMENT B

CONSERVATION EASEMENT

SME
SEVEE & MAHER
ENGINEERS

DLN: 1001940079409

Doc#: 59430 Bk:36185 Pg: 83

WARRANTY DEED

KNOW ALL PERSONS BY THESE PRESENTS, that **ELIZABETH B. RINES**, an individual with a mailing address of 29 Walnut Crest Road, Gorham, Maine 04038, for consideration paid, grant to the **TOWN OF CUMBERLAND**, a municipal corporation organized and existing under the laws of the State of Maine, with a mailing address of 290 Tuttle Road, Cumberland, Maine 04021, with WARRANTY COVENANTS, certain real estate located on the northeasterly side of Range Road in the Town of Cumberland, County of Cumberland and State of Maine, as more particularly described in **Exhibit A** attached hereto and incorporated herein, together with any and all easements, rights-of-way and other rights appurtenant thereto.

MAINE REAL ESTATE TAX PAID

Meaning and intending to convey and hereby conveying the same premises conveyed to Elizabeth B. Rines by Dale S. Rines by Warranty Deed dated March 20, 2009 and recorded in the Cumberland County Registry of Deeds in Book 26735, Page 1.

This property is purchased by the Town of Cumberland, in part, with grant funds from the United States Forest Service to effect the Community Forest Program authorized by Section 8003 of the Food, Conservation and Energy Act of 2008 (16 U.S.C. 2103d) with the purpose of establishing community forests that provide community benefits by acquiring and protecting private forestlands. This authority continues indefinitely. Program delivery is guided by the Community Forest Program regulations (36 CFR 230 Subpart A, published 10/20/2001; 76FR 65121). A Notice of Grant Requirements ("NOGR), signed by the Town of Cumberland, is attached hereto as **Exhibit B** and incorporated herein by reference.

IN WITNESS WHEREOF, Elizabeth B. Rines has caused this instrument to be executed this 19 day of November, 2019.

WITNESS:

Elizabeth B. Rines

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

Nov. 19, 2019

Then personally appeared before me the above-named Elizabeth B. Rines and acknowledged the foregoing instrument to be her free act and deed.

Notary Public/Attorney at Law
Print Name Charles Katz-Leary Esq
My Commission Expires #4059

EXHIBIT A

A certain lot or parcel of land with any improvements thereon situated on the Northeasterly Side of Range Road in the Town of Cumberland, County of Cumberland, State of Maine and more particularly bounded and described as follows:

Beginning at a point marked by a capped 5/8-inch rebar marked PLS 1137, set on the northeasterly sideline of Range Road at the southerly corner of land recently conveyed by Dale S. Rines to Robert J. Crawford and Sarah S. Stockwell;

Then running in the following courses along land of Crawford and Stockwell.

North 52° 55' 02" East a distance of 229.47 feet to a capped 5/8-inch rebar,

North 07° 57' 43" East a distance of 116.43 feet to a capped 5/8-inch rebar,

North 37° 02' 17" West a distance of 220.00 feet to a 1-inch iron rod set in a stone wall at land now or formerly of Thomas A. and Lisa K. Judd as described in Book 18025, Page 116 at the Cumberland County Registry of Deeds.

Then turning and running North 52° 55' 02" East a distance of 1014.47 feet along Judd land and the stone wall to a point marked by a capped 5/8-inch rebar inscribed PLS 586 at land now or formerly of Andrew R. Berube as described in Book 18060, at Page 237.

Then continuing North 52° 55' 02" East a distance of 300 feet along Berube land and continuing along the stone wall to a point marked by a drill hole in an 8-inch by 16-inch stone standing 2 feet tall at the corner of the stone wall and at land recently conveyed by Dale S. Rines to the Town of Cumberland as described in Book 20109, Page 82.

Then turning and running along land of the Town of Cumberland:

South 37° 00' 00" East a distance of 999.88 feet to a point marked by a drill hole in a 6-inch by 6-inch granite monument,

South 02° 34' 55" East a distance of 777.89 feet to a point marked by a drill hole in a 6-inch by 6-inch granite monument,

South 53° 12' 39" West a distance of 1046.54 feet to a point marked by a drill hole in a 6-inch by 6-inch granite monument set on the northeasterly sideline of Range Road,

Then turning and running northwesterly along the northeasterly sideline of Range Road approximately 1225 feet to the point of beginning.

EXHIBIT B
Notice of Grant Requirement

The property described in Exhibit A hereto (the "Property") is acquired, in part, pursuant to a monetary grant awarded to the Town of Cumberland, Maine (the "Grant Recipient"). The purpose of this acquisition is to effect the goals of the U.S. Department of Agriculture (USDA) Forest Service's Community Forest and Open Space Conservation Program (CFP) in accordance with the provisions of Section 8003 of the Food, Conservation, and Energy Act of 2008 (16 U.S.C. 2103d) for the purposes of establishing community forests that provide community benefits by acquiring and protecting private forestlands. Program delivery is guided by the Community Forest Program regulations (36 CFR Part 230 Subpart A) (published 10/20/2011; 76 FR 65121).

In accordance with these regulations the Grant Recipient acknowledges that:

1) This Property was purchased in part with federal funds in accordance with the Community Forest Program (36 CFR Part 230Subpart A) (published 10/20/2011; 76 FR 65121);
2) The legal description of the Property is set forth in Exhibit A;
3) The address of the Grant Recipient and authorized title holder listed above is: Town of Cumberland, 290 Tuttle Road, Cumberland, ME 04021.
4) The Property is designated with the USDA Forest Service in agreement number 19-DGI1420004-172 and it is kept on file at: U.S. Forest Service, Eastern Region State & Private Forestry, 626 E. Wisconsin Ave., Milwaukee, WI 53202
5) The Grant Recipient shall ensure that for all land acquired pursuant to this grant is held in perpetuity by an eligible entity as defined by 36 CFR Part 230 (published 10/20/2001; 76 FR 65121) and that the Community Forest will be (i) managed pursuant to the grant, the Community Forest Plan, and the purpose of the CFP; (ii) will not be conveyed or encumbered, in whole or in part, to another party without written permission and instructions from the awarding agency; and (iii) will be managed consistent with the purposes of the CFP.
6) In the event that the Community Forest is sold or converted to nonforest uses or a use inconsistent with the purpose of the CFP, the Grant Recipient or subsequent Community Forest landowner shall: (I) pay the United States an amount equal to the current sale price or the current appraised value of the parcel, whichever is greater; and (2) not be eligible for additional grants under the CFP.

TOWN OF CUMBERLAND, MAINE

William R. Shane, Town Manager

Received
Recorded Register of Deeds
Nov 19,2019 12:59:55P
Cumberland County
Nancy A. Lane

ATTACHMENT C

STORMWATER MANAGEMENT REPORT

SME
SEVEE & MAHER
ENGINEERS

STORMWATER MANAGEMENT REPORT
RINES FOREST PARKING PLAN
CUMBERLAND, MAINE

Prepared for

TOWN OF CUMBERLAND, MAINE
290 Tuttle Road
Cumberland, Maine

STATE OF MAINE
DANIEL P. DIFFIN
11841
LICENSED PROFESSIONAL ENGINEER

August 2021

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SME
SEVEE & MAHER ENGINEERS

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TOWN OF CUMBERLAND
STORMWATER MANAGEMENT REPORT
RINES FOREST PARKING PLAN
CUMBERLAND, MAINE

1.0 INTRODUCTION

This Stormwater Management Report has been prepared by Sevee & Maher Engineers, Inc. (SME) for the proposed parking area at the Rines Forest (Forest) located off Range Road in Cumberland, Maine. The stormwater design is based on the water quantity objectives identified in the Town of Cumberland (Town) Land Use Ordinance.

2.0 PROJECT DESCRIPTION

The Forest is owned by the Town of Cumberland and protected by conservation easements held by the Chebeague and Cumberland Land Trust (CCLT). To improve access and use of the Forest trails, the Town intends to provide parking approximately one-tenth of a mile to the northwest of the existing Forest trailhead off Range Road. The Conservation easement limits the amount of parking to a maximum of ten passenger vehicles.

The parking area will be accessed through a paved entry way approximately 70 feet to the west of the Idlewood Drive and Range Road intersection. The new access will be constructed over an historical cleared area that includes approximately 2,000 square feet of existing dirt access road area. The pavement will end at the edge of the right-of-way at which point the access aisle and parking area will be constructed of reclaimed asphalt pavement. The full build out will result in approximately 11,000 square feet (0.25 acres) of disturbed area and 6,220 square feet of reclaimed asphalt pavement area. In total, the new parking area will result in an increase in impervious area of 4,220 square feet and tree trimming and removal of approximately 2,000 square feet of vegetation.

The grading and drainage associated with the new parking area has been minimized as much as possible to limit the tree-clearing and disturbance to natural soils required to construct the project.

The Town is still finalizing the layout of the signage for the parking area and the Rines Forest. A preliminary location for the signage has been added to Drawing C-102. The layout includes a directional sign on Range Road to direct vehicles to the parking area and a small information kiosk to the west of the parking area. The use of the parking area will be limited to daylight hours only and will be controlled by a new 20-foot-wide gate.

3.0 SITE WATERSHED

On-site soils for the proposed drainage area were identified using the Natural Resources Conservation Service (NRCS) soil information for Cumberland County, Maine. A copy of the custom Soil Resource Report used to develop the stormwater model is included in Appendix A. The soil within the area of work includes Scantic silt loam (Sn) classified as "Poorly Drained" Hydrologic Soil Group D.

The ground surface on the property generally slopes from northwest to southeast with grades ranging from 3 to 10 percent. As previously outlined, the central portion of the project area is a gravel drive with grass with woods adjacent to the property lines. Under existing conditions, stormwater runoff generally travels across the project area from central high point to west, northeast and southeast and collects in the wetlands that are beyond the project extents.

Stormwater runoff on the west portion of the project area flows overland to the west and collects in a wetland area off the project area. This wetland was selected as Analysis Point 1 (AP-1) for this report.

Runoff on the southern portion of the project area flows overland to the southeast and collects in a wetland area adjacent to the eastern edge of the project area. This wetland was selected as Analysis Point 2 (AP-2) for this report.

Runoff on the northern portion of the of the project area flows overland to the northeast and collects in a wetland area adjacent to the northeast corner of the project area. This wetland was selected as Analysis Point 3 (AP-3) for this report.

In developed conditions, adjustment to existing drainage patterns will be minimal. The majority of surface runoff from site development, including some proposed gravel parking will drain overland to the existing wetland area at AP1, and the southern half of the gravel access drive will drain to the existing wetland at AP-2. Runoff from the northern portion of the gravel parking lot will follow the existing wetland collection area at AP-3.

The pre-development and post-development stormwater management plans included in the project plan set outline the on-site drainage patterns before and after development (see Drawings D-100 and D-101). Appendices B and C provide pre- and post-development calculations using TR-20 methodologies prepared with the HydroCAD computer stormwater modeling system by Applied Microcomputer Systems of Chocorua, New Hampshire.

4.0 STORMWATER QUALITY ANALYSIS

As previously outlined, stormwater treatment will not be required for this project based on Town stormwater requirements and Maine Department of Environmental Protection (MEDEP) Chapter 500

standards. The project will result in an increase of approximately 4,220 sf of impervious surface within the project area.

5.0 STORMWATER QUANTITY ANALYSIS

Stormwater quantity for this project is managed to the maximum extent practicable through minimizing the amount of impervious area on the site and utilizing natural drainage to convey new flows. Table 1 demonstrates peak flow rates from the subcatchment areas to the analysis point shown on Drawings D-100 and D-101.

TABLE 1
STORMWATER QUANTITY SUMMARY

	2-Year Storm		10-Year Storm		25-Year Storm	
	Existing	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
Analysis Point 1 (cfs)	0.32	0.36	0.65	0.72	0.93	1.03
Analysis Point 2 (cfs)	0.32	0.36	0.63	0.68	0.89	0.94
Analysis Point 3 (cfs)	0.35	0.45	0.70	0.88	1.00	1.24

As indicated in Table 1, project impacts will result in very minor increases in peak flows in the 2-, 10-, and 25-year events. These minor increase in peak flows will flow off the proposed parking area as overland flow into established wetland and natural drainage areas. Modeling assumptions are outlined in the HydroCAD reports included in Appendices B and C.

6.0 SUMMARY

Increases in peak flows for the proposed site in the 2-, 10-, and 25-year events when compared to the existing conditions are minor. The 0.10 cfs increase observed for the 2-year storm, 0.18 cfs increase observed for the 10-year storm, and 0.24 cfs increase observed for the 25-year storm at AP-3 is within the tolerance of the stormwater modeling program. The flows have been maintained as sheet flows from the new parking area to spread the peak flows from the site out into the natural wetland and drainage areas. This project will not have an adverse impact to the downstream drainage or abutting properties.

APPENDIX A

USDA SOIL REPORT

SME
SEVEE & MAHER
ENGINEERS

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine

August 30, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,150 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 17, Jun 5, 2020

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

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	1.7	26.2%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	1.3	20.5%
Sn	Scantic silt loam, 0 to 3 percent slopes	3.4	53.3%
Totals for Area of Interest		**6.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

HrB—Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2x1cx
Elevation: 0 to 520 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lyman and similar soils: 50 percent
Tunbridge and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loam
E - 3 to 5 inches: fine sandy loam
Bhs - 5 to 7 inches: loam
Bs1 - 7 to 11 inches: loam
Bs2 - 11 to 18 inches: channery loam
R - 18 to 79 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 11 to 24 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Hydric soil rating: No

Description of Tunbridge

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
Oa - 3 to 5 inches: highly decomposed plant material
E - 5 to 8 inches: fine sandy loam
Bhs - 8 to 11 inches: fine sandy loam
Bs - 11 to 26 inches: fine sandy loam
BC - 26 to 28 inches: fine sandy loam
R - 28 to 79 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 21 to 41 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ragmuff

Percent of map unit: 10 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Abram

Percent of map unit: 5 percent
Landform: Hills, ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope, crest

Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Peru

Percent of map unit: 4 percent
Landform: Hills, ridges
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Hills, ridges
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Nose slope, crest, free face
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

HrC—Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2x1cy
Elevation: 0 to 520 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Lyman and similar soils: 45 percent
Tunbridge and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loam
E - 3 to 5 inches: fine sandy loam
Bhs - 5 to 7 inches: loam
Bs1 - 7 to 11 inches: loam
Bs2 - 11 to 18 inches: channery loam
R - 18 to 79 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 11 to 24 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Tunbridge

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
Oa - 3 to 5 inches: highly decomposed plant material
E - 5 to 8 inches: fine sandy loam
Bhs - 8 to 11 inches: fine sandy loam
Bs - 11 to 26 inches: fine sandy loam
BC - 26 to 28 inches: fine sandy loam
R - 28 to 79 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 21 to 41 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ragmuff

Percent of map unit: 5 percent
Landform: Hills, ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Abram

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Peru

Percent of map unit: 4 percent
Landform: Hills, ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Ridges, hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Nose slope, crest, free face
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Sn—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2slv3
Elevation: 10 to 900 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Scantic and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scantic

Setting

Landform: Marine terraces, river valleys
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Bg1 - 9 to 16 inches: silty clay loam
Bg2 - 16 to 29 inches: silty clay
Cg - 29 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Lamoine

Percent of map unit: 8 percent
Landform: River valleys, marine terraces
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Biddeford

Percent of map unit: 3 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: F144BY002ME - Marine Terrace Depression
Hydric soil rating: Yes

Roundabout

Percent of map unit: 2 percent
Landform: River valleys, marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Buxton

Percent of map unit: 2 percent
Landform: Marine terraces, river valleys
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

APPENDIX B

PRE-DEVELOPMENT HYDROCAD CALCULATIONS

SME
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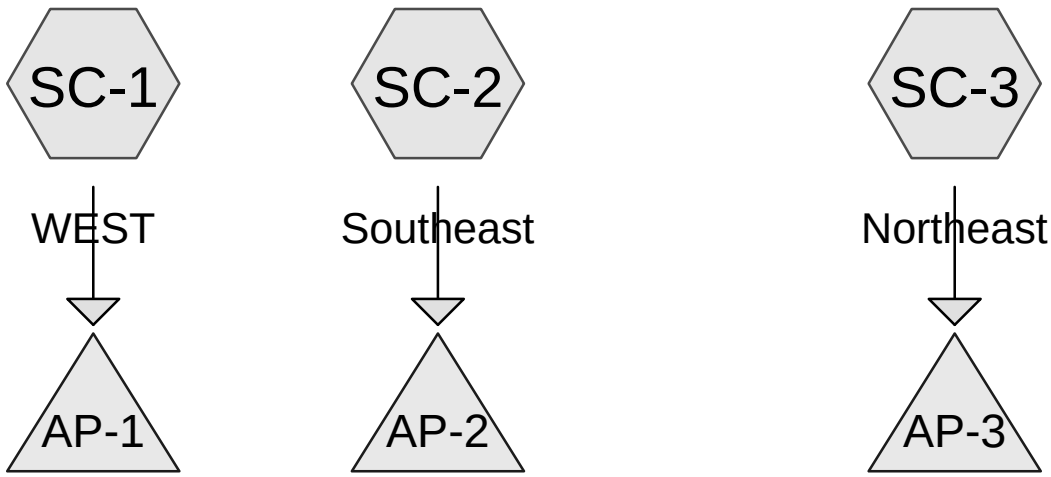

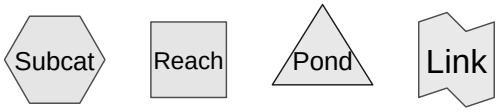

Routing Diagram for Rines Pre-Development
Prepared by {enter your company name here}, Printed 8/31/2021
HydroCAD® 10.10-4a s/n 01260 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment SC-1: WEST

Runoff = 0.32 cfs @ 12.13 hrs, Volume= 0.026 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Storm Rainfall=3.10"

Area (sf)	CN	Description
340	91	Gravel roads, HSG D
3,120	80	>75% Grass cover, Good, HSG D
7,812	77	Woods, Good, HSG D
11,272	78	Weighted Average
11,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment SC-2: Southeast

Runoff = 0.32 cfs @ 12.17 hrs, Volume= 0.028 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	3,500	80	>75% Grass cover, Good, HSG D
	6,419	77	Woods, Good, HSG D
*	1,143	96	Gravel surface,
	11,062	80	Weighted Average
	11,062		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0380	0.22		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
4.0	117	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.7	217	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 0.35 cfs @ 12.22 hrs, Volume= 0.034 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	827	96	Gravel surface
	2,047	80	>75% Grass cover, Good, HSG D
	11,120	77	Woods, Good, HSG D
	13,994	79	Weighted Average
	13,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	24	0.1029	0.24		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	10	0.0200	0.85		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.10"
12.1	66	0.0379	0.09		**Sheet Flow, C-D** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	29	0.0100	0.50		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
15.0	129	Total			

Summary for Pond AP-1:

Inflow Area = 0.259 ac, 0.00% Impervious, Inflow Depth = 1.20" for 2-yr Storm event
Inflow = 0.32 cfs @ 12.13 hrs, Volume= 0.026 af
Primary = 0.32 cfs @ 12.13 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.254 ac, 0.00% Impervious, Inflow Depth = 1.33" for 2-yr Storm event
Inflow = 0.32 cfs @ 12.17 hrs, Volume= 0.028 af
Primary = 0.32 cfs @ 12.17 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 1.26" for 2-yr Storm event
Inflow = 0.35 cfs @ 12.22 hrs, Volume= 0.034 af
Primary = 0.35 cfs @ 12.22 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC-1: WEST

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.051 af, Depth= 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Storm Rainfall=4.60"

Area (sf)	CN	Description
340	91	Gravel roads, HSG D
3,120	80	>75% Grass cover, Good, HSG D
7,812	77	Woods, Good, HSG D
11,272	78	Weighted Average
11,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment SC-2: Southeast

Runoff = 0.63 cfs @ 12.16 hrs, Volume= 0.054 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	3,500	80	>75% Grass cover, Good, HSG D
	6,419	77	Woods, Good, HSG D
*	1,143	96	Gravel surface,
	11,062	80	Weighted Average
	11,062		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0380	0.22		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
4.0	117	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.7	217	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 0.70 cfs @ 12.21 hrs, Volume= 0.066 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	827	96	Gravel surface
	2,047	80	>75% Grass cover, Good, HSG D
	11,120	77	Woods, Good, HSG D
	13,994	79	Weighted Average
	13,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	24	0.1029	0.24		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	10	0.0200	0.85		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.10"
12.1	66	0.0379	0.09		**Sheet Flow, C-D** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	29	0.0100	0.50		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
15.0	129	Total			

Summary for Pond AP-1:

Inflow Area = 0.259 ac, 0.00% Impervious, Inflow Depth = 2.38" for 10-yr Storm event
Inflow = 0.65 cfs @ 12.13 hrs, Volume= 0.051 af
Primary = 0.65 cfs @ 12.13 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.254 ac, 0.00% Impervious, Inflow Depth = 2.55" for 10-yr Storm event
Inflow = 0.63 cfs @ 12.16 hrs, Volume= 0.054 af
Primary = 0.63 cfs @ 12.16 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 2.46" for 10-yr Storm event
Inflow = 0.70 cfs @ 12.21 hrs, Volume= 0.066 af
Primary = 0.70 cfs @ 12.21 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC-1: WEST

Runoff = 0.93 cfs @ 12.13 hrs, Volume= 0.073 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Storm Rainfall=5.80"

Area (sf)	CN	Description
340	91	Gravel roads, HSG D
3,120	80	>75% Grass cover, Good, HSG D
7,812	77	Woods, Good, HSG D
11,272	78	Weighted Average
11,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment SC-2: Southeast

Runoff = 0.89 cfs @ 12.16 hrs, Volume= 0.076 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	3,500	80	>75% Grass cover, Good, HSG D
	6,419	77	Woods, Good, HSG D
*	1,143	96	Gravel surface,
	11,062	80	Weighted Average
	11,062		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0380	0.22		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
4.0	117	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.7	217	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 1.00 cfs @ 12.21 hrs, Volume= 0.094 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	827	96	Gravel surface
	2,047	80	>75% Grass cover, Good, HSG D
	11,120	77	Woods, Good, HSG D
	13,994	79	Weighted Average
	13,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	24	0.1029	0.24		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	10	0.0200	0.85		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.10"
12.1	66	0.0379	0.09		**Sheet Flow, C-D** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	29	0.0100	0.50		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
15.0	129	Total			

Summary for Pond AP-1:

Inflow Area = 0.259 ac, 0.00% Impervious, Inflow Depth = 3.40" for 25-yr Storm event
Inflow = 0.93 cfs @ 12.13 hrs, Volume= 0.073 af
Primary = 0.93 cfs @ 12.13 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.254 ac, 0.00% Impervious, Inflow Depth = 3.60" for 25-yr Storm event
Inflow = 0.89 cfs @ 12.16 hrs, Volume= 0.076 af
Primary = 0.89 cfs @ 12.16 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 3.50" for 25-yr Storm event
Inflow = 1.00 cfs @ 12.21 hrs, Volume= 0.094 af
Primary = 1.00 cfs @ 12.21 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC-1: WEST

Runoff = 1.49 cfs @ 12.13 hrs, Volume= 0.118 af, Depth= 5.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Storm Rainfall=8.10"

Area (sf)	CN	Description
340	91	Gravel roads, HSG D
3,120	80	>75% Grass cover, Good, HSG D
7,812	77	Woods, Good, HSG D
11,272	78	Weighted Average
11,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment SC-2: Southeast

Runoff = 1.39 cfs @ 12.16 hrs, Volume= 0.121 af, Depth= 5.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
	3,500	80	>75% Grass cover, Good, HSG D
	6,419	77	Woods, Good, HSG D
*	1,143	96	Gravel surface,
	11,062	80	Weighted Average
	11,062		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0380	0.22		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
4.0	117	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.7	217	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 1.58 cfs @ 12.20 hrs, Volume= 0.150 af, Depth= 5.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	827	96	Gravel surface
	2,047	80	>75% Grass cover, Good, HSG D
	11,120	77	Woods, Good, HSG D
	13,994	79	Weighted Average
	13,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	24	0.1029	0.24		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.10"
0.2	10	0.0200	0.85		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.10"
12.1	66	0.0379	0.09		**Sheet Flow, C-D** Woods: Light underbrush n= 0.400 P2= 3.10"
1.0	29	0.0100	0.50		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
15.0	129	Total			

Summary for Pond AP-1:

Inflow Area = 0.259 ac, 0.00% Impervious, Inflow Depth = 5.48" for 100-yr Storm event
Inflow = 1.49 cfs @ 12.13 hrs, Volume= 0.118 af
Primary = 1.49 cfs @ 12.13 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.254 ac, 0.00% Impervious, Inflow Depth = 5.72" for 100-yr Storm event
Inflow = 1.39 cfs @ 12.16 hrs, Volume= 0.121 af
Primary = 1.39 cfs @ 12.16 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 5.60" for 100-yr Storm event
Inflow = 1.58 cfs @ 12.20 hrs, Volume= 0.150 af
Primary = 1.58 cfs @ 12.20 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

APPENDIX C

POST-DEVELOPMENT HYDROCAD CALCULATIONS

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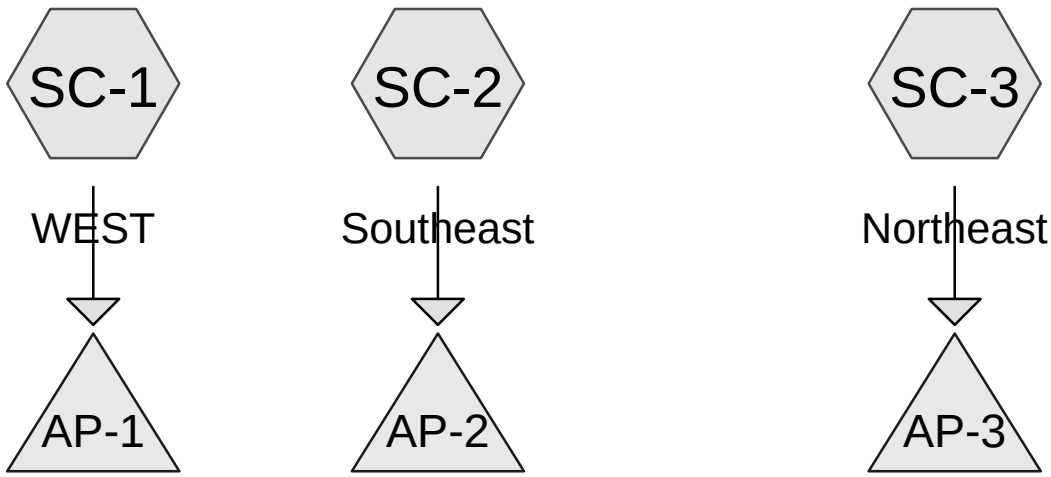
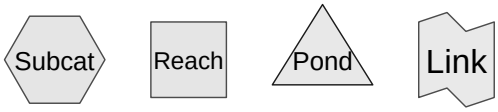




Routing Diagram for Rines Post-Development
Prepared by {enter your company name here}, Printed 8/31/2021
HydroCAD® 10.10-4a s/n 01260 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment SC-1: WEST

Runoff = 0.36 cfs @ 12.14 hrs, Volume= 0.030 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Storm Rainfall=3.10"

Area (sf)	CN	Description
1,382	91	Gravel roads, HSG D
3,456	80	>75% Grass cover, Good, HSG D
7,546	77	Woods, Good, HSG D
12,384	79	Weighted Average
12,384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0330	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
9.6	64	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
9.8	77	Total			

Summary for Subcatchment SC-2: Southeast

Runoff = 0.36 cfs @ 12.15 hrs, Volume= 0.030 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	2,954	80	>75% Grass cover, Good, HSG D
	5,058	77	Woods, Good, HSG D
	2,329	91	Gravel roads, HSG D
*	442	98	Pavement
	10,783	82	Weighted Average
	10,341		95.90% Pervious Area
	442		4.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	49	0.0380	1.52		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
6.8	52	0.1000	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
3.2	93	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	194	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 0.45 cfs @ 12.10 hrs, Volume= 0.033 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Storm Rainfall=3.10"

Area (sf)	CN	Description
2,163	91	Gravel roads, HSG D
1,749	80	>75% Grass cover, Good, HSG D
9,250	77	Woods, Good, HSG D
13,162	80	Weighted Average
13,162		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	58	0.0340	1.50		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
4.9	42	0.1500	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	39	0.0094	0.48		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
6.8	139	Total			

Summary for Pond AP-1:

Inflow Area = 0.284 ac, 0.00% Impervious, Inflow Depth = 1.26" for 2-yr Storm event
Inflow = 0.36 cfs @ 12.14 hrs, Volume= 0.030 af
Primary = 0.36 cfs @ 12.14 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.248 ac, 4.10% Impervious, Inflow Depth = 1.46" for 2-yr Storm event
Inflow = 0.36 cfs @ 12.15 hrs, Volume= 0.030 af
Primary = 0.36 cfs @ 12.15 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.302 ac, 0.00% Impervious, Inflow Depth = 1.33" for 2-yr Storm event
Inflow = 0.45 cfs @ 12.10 hrs, Volume= 0.033 af
Primary = 0.45 cfs @ 12.10 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC-1: WEST

Runoff = 0.72 cfs @ 12.14 hrs, Volume= 0.058 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Storm Rainfall=4.60"

Area (sf)	CN	Description
1,382	91	Gravel roads, HSG D
3,456	80	>75% Grass cover, Good, HSG D
7,546	77	Woods, Good, HSG D
12,384	79	Weighted Average
12,384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0330	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
9.6	64	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
9.8	77	Total			

Summary for Subcatchment SC-2: Southeast

Runoff = 0.68 cfs @ 12.15 hrs, Volume= 0.056 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	2,954	80	>75% Grass cover, Good, HSG D
	5,058	77	Woods, Good, HSG D
	2,329	91	Gravel roads, HSG D
*	442	98	Pavement
	10,783	82	Weighted Average
	10,341		95.90% Pervious Area
	442		4.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	49	0.0380	1.52		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
6.8	52	0.1000	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
3.2	93	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	194	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 0.88 cfs @ 12.10 hrs, Volume= 0.064 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Storm Rainfall=4.60"

Area (sf)	CN	Description
2,163	91	Gravel roads, HSG D
1,749	80	>75% Grass cover, Good, HSG D
9,250	77	Woods, Good, HSG D
13,162	80	Weighted Average
13,162		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	58	0.0340	1.50		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
4.9	42	0.1500	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	39	0.0094	0.48		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
6.8	139	Total			

Summary for Pond AP-1:

Inflow Area = 0.284 ac, 0.00% Impervious, Inflow Depth = 2.46" for 10-yr Storm event
Inflow = 0.72 cfs @ 12.14 hrs, Volume= 0.058 af
Primary = 0.72 cfs @ 12.14 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.248 ac, 4.10% Impervious, Inflow Depth = 2.72" for 10-yr Storm event
Inflow = 0.68 cfs @ 12.15 hrs, Volume= 0.056 af
Primary = 0.68 cfs @ 12.15 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.302 ac, 0.00% Impervious, Inflow Depth = 2.55" for 10-yr Storm event
Inflow = 0.88 cfs @ 12.10 hrs, Volume= 0.064 af
Primary = 0.88 cfs @ 12.10 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC-1: WEST

Runoff = 1.03 cfs @ 12.14 hrs, Volume= 0.083 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Storm Rainfall=5.80"

Area (sf)	CN	Description
1,382	91	Gravel roads, HSG D
3,456	80	>75% Grass cover, Good, HSG D
7,546	77	Woods, Good, HSG D
12,384	79	Weighted Average
12,384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0330	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
9.6	64	0.0640	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
9.8	77	Total			

Summary for Subcatchment SC-2: Southeast

Runoff = 0.94 cfs @ 12.14 hrs, Volume= 0.078 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	2,954	80	>75% Grass cover, Good, HSG D
	5,058	77	Woods, Good, HSG D
	2,329	91	Gravel roads, HSG D
*	442	98	Pavement
	10,783	82	Weighted Average
	10,341		95.90% Pervious Area
	442		4.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	49	0.0380	1.52		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
6.8	52	0.1000	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.10"
3.2	93	0.0094	0.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	194	Total			

Summary for Subcatchment SC-3: Northeast

Runoff = 1.24 cfs @ 12.10 hrs, Volume= 0.091 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Storm Rainfall=5.80"

Area (sf)	CN	Description
2,163	91	Gravel roads, HSG D
1,749	80	>75% Grass cover, Good, HSG D
9,250	77	Woods, Good, HSG D
13,162	80	Weighted Average
13,162		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	58	0.0340	1.50		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
4.9	42	0.1500	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	39	0.0094	0.48		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
6.8	139	Total			

Summary for Pond AP-1:

Inflow Area = 0.284 ac, 0.00% Impervious, Inflow Depth = 3.50" for 25-yr Storm event
Inflow = 1.03 cfs @ 12.14 hrs, Volume= 0.083 af
Primary = 1.03 cfs @ 12.14 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-2:

Inflow Area = 0.248 ac, 4.10% Impervious, Inflow Depth = 3.80" for 25-yr Storm event
Inflow = 0.94 cfs @ 12.14 hrs, Volume= 0.078 af
Primary = 0.94 cfs @ 12.14 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond AP-3:

Inflow Area = 0.302 ac, 0.00% Impervious, Inflow Depth = 3.60" for 25-yr Storm event
Inflow = 1.24 cfs @ 12.10 hrs, Volume= 0.091 af
Primary = 1.24 cfs @ 12.10 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

ATTACHMENT D

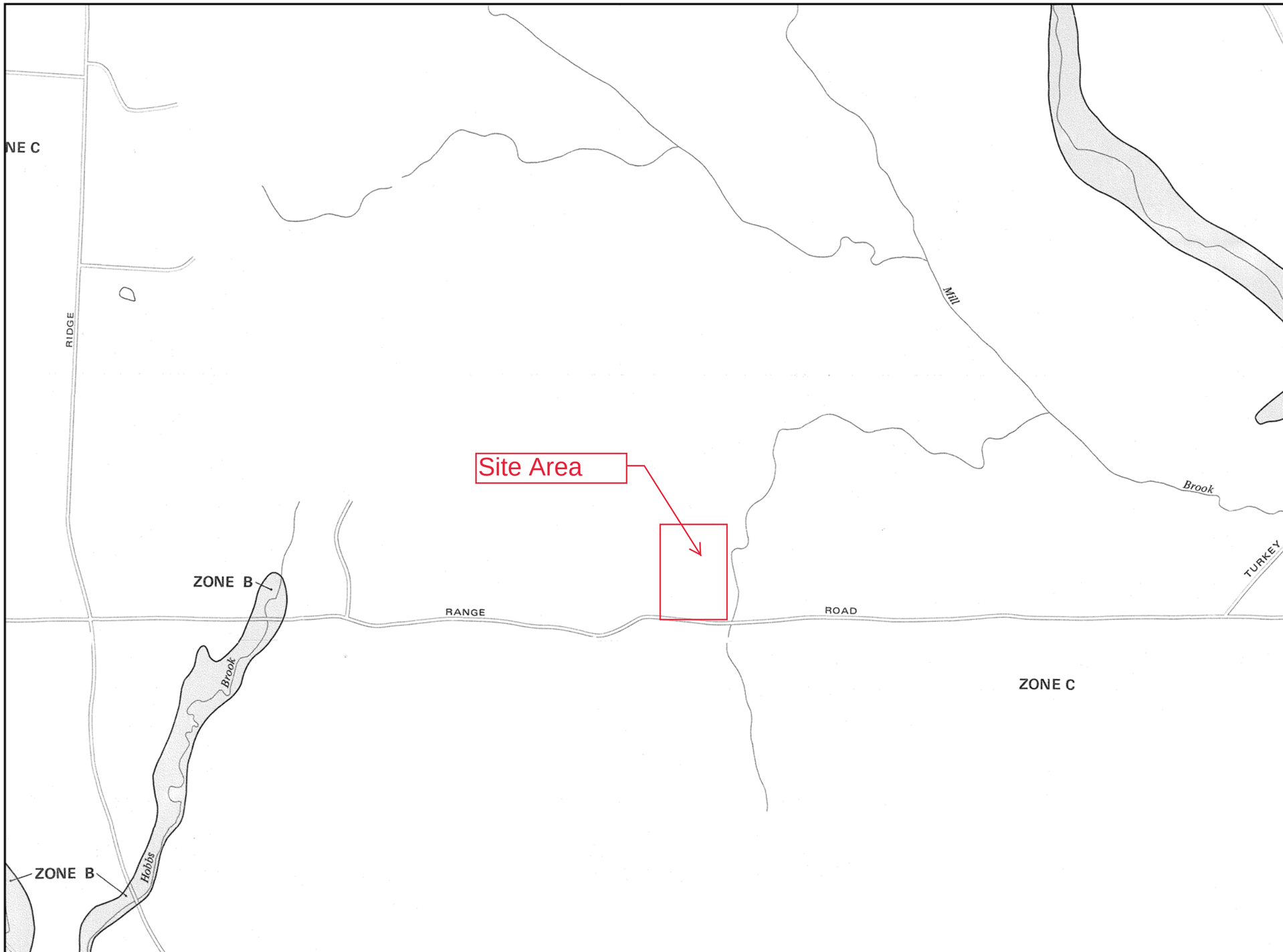
FEMA FLOODPLAIN MAP

SME
SEVEE & MAHER
ENGINEERS

gram at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE

800 0 800 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
CUMBERLAND, MAINE
CUMBERLAND COUNTY

PANEL 15 OF 25
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230162 0015 B

EFFECTIVE DATE:
MAY 19, 1981

federal emergency management agency
federal insurance administration

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.

ATTACHMENT E

CHEBEAGUE & CUMBERLAND LAND TRUST LETTER

SME
SEVEE & MAHER
ENGINEERS

CC
LT

Nurturing land, sea
and community

371 Tuttle Road, Suite 2
Cumberland, ME 04021
ccltmaine.org

Board of Directors
Brian Allenby
Penny Asherman, President
Heidi Fitz
Matie Little
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Leah McDonald
Ayres Stockly
Geoff Summa
Rod Vogel, Vice President
Courtney Wilson, Treasurer

Staff
Chris Cabot
Bonnie Vance

Directors Emeriti
Robert Crawford
Stephen W. Moriarty

June 14, 2021

Bill Shane
Town Manager
Town of Cumberland
290 Tuttle Road
Cumberland, ME 04021

Re: Rines Forest Parking Area

Dear Bill:

The Chebeague & Cumberland Land Trust has reviewed the proposed design for a 10-car parking area in Rines Forest. The plan by Boundary Points is dated 5-3-2021.

CCLT Board President Penny Asherman and I walked the site with you and members of the Town's Lands & Conservation Commission on August 20, 2020.

The lot, as designed, complies with the terms of the conservation easement that protects the property. Please keep in mind that the easement restricts the size of the lot to a maximum of 10 passenger vehicles.

Additionally, in order to protect the wetland shown on the plan and preserve important amphibian habitat, please keep as much of the vegetation intact as possible in the southeastern corner of the lot.

We appreciate the advanced notice of this project and opportunity to provide input. We agree that this will increase safety and provide a useful space for visitors to Rines Forest.

Sincerely,

Chris Cabot
Executive Director

ACCREDITED LAND TRUST ACCREDITATION COMMISSION

Chebeague&
Cumberland
Land Trust

ATTACHMENT F

OUTSIDE AGENCY REVIEW LETTERS

SME
SEVEE & MAHER
ENGINEERS

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

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

August 5, 2021

Mr. Daniel P. Diffin
Sevee & Maher Engineers
PO Box 85A
Cumberland, ME 04021

Project: MHPC# 1300-21 Town of Cumberland; Range Road
New Rines Forest Parking Lot

Town: Cumberland, ME

Dear Mr. Diffin:

In response to your recent request, I have reviewed the information received July 26, 2021 to initiate consultation on the above referenced project.

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

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

Sincerely,

Kirk F. Mohney

Kirk F. Mohney
State Historic Preservation Officer

JANET T. MILLS
GOVERNOR

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

JUDITH CAMUSO
COMMISSIONER

August 11, 2021

Daniel Diffin
Sevee & Maher Engineers
4 Blanchard Rd., P.O. Box 85A
Cumberland Center, ME 04021

RE: Information Request – Rines Forest Parking Area Project, Cumberland

Dear Daniel:

Per your request received on July 26, 2021, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *Rines Forest Parking Area* project in Cumberland.

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

Endangered, Threatened, and Special Concern Species

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

Significant Wildlife Habitat

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

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

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

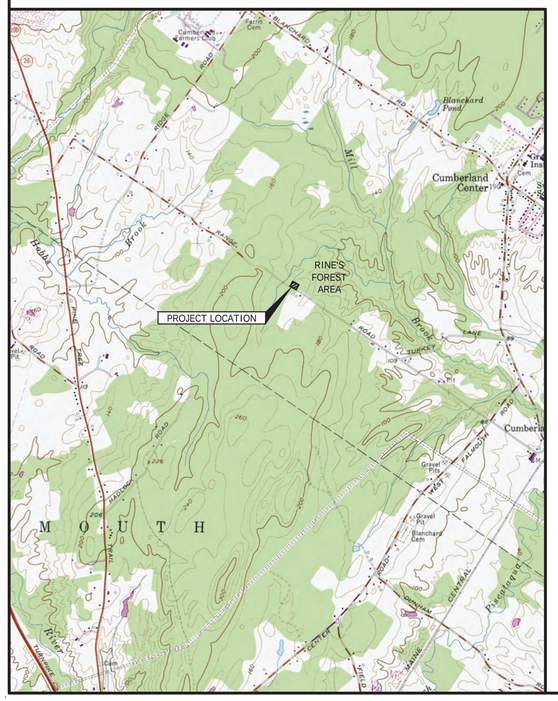
Best regards,

Becca Settele
Wildlife Biologist

RINES FOREST PARKING LOT
TOWN OF CUMBERLAND
RANGE ROAD
CUMBERLAND, MAINE

TITLE	DWG NO
COVER SHEET	
GENERAL NOTES, LEGEND, AND ABBREVIATIONS	C-100
EXISTING CONDITIONS PLAN	C-101
SITE PLAN	C-102
EROSION CONTROL NOTES AND DETAILS	C-300
SECTIONS AND DETAILS	C-301
STORMWATER MANAGEMENT PLAN PRE-DEVELOPED CONDITIONS	D-100
STORMWATER MANAGEMENT PLAN POST DEVELOPEMENT CONDITIONS	D-101

LOCATION MAP



SME
SEVEE & MAHER ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

STATE OF MAINE
DANIEL P. DIPFIN
11841
LICENSED
PROFESSIONAL ENGINEER

GENERAL NOTES:

1. BASE MAP FROM PLAN TITLED "PROPOSED PARKING AREA FOR TOWN OF CUMBLERAND OFF RANGE ROAD INTO RINES FOREST, CUMBERLAND, MAINE", BY BOUNDARY POINTS PROFESSIONAL LAND SURVEYORS, DATED 5-3-2021.
2. TOPOGRAPHIC DATA, WETLAND BOUNDARIES, AND EXISTING CONDITIONS ARE BASED UPON A GROUND SURVEY CONDUCTED WITH ASSUMED ELEVATIONS BY BOUNDARY POINTS PROFESSIONAL LAND SURVEYORS, DATED MAY 3, 2021.
3. PROPERTY LINE INFORMATION FROM AVAILABLE GIS TAX MAP INFORMATION.
4. PLACE TEMPORARY SOIL STABILIZATION WITHIN 30 DAYS OF INITIAL DISTURBANCE. PLACE PERMANENT SOIL SATURATION WITHIN 7 DAYS OF FINAL GRADING.
5. EXCAVATE AND STOCKPILE ON-SITE TOPSOIL. TOPSOIL IS TO REMAIN THE PROPERTY OF THE OWNER DURING CONSTRUCTION, AND SHALL NOT BE REMOVED FROM THE SITE. AFTER FINAL LOAM AND SEED, EXCESS TOPSOIL SHALL BE REMOVED FROM SITE BY CONTRACTOR.

GRADING NOTES:

1. ADD 4-INCHES OF LOAM, SEED AND MULCH TO DISTURBED AREAS UNLESS OTHERWISE NOTED. PROVIDE EROSION CONTROL MESH ON ALL SLOPES 6:1 OR STEEPER AND ALONG DITCH CHANNELS.
2. GRADE SURFACES TO DRAIN AWAY FROM BUILDING. PUDDLING OF WATER IN PAVED OR UNPAVED AREAS WILL NOT BE ACCEPTABLE, EXCEPT FOR AREAS DESIGNATED AS PONDS.
3. MAINTAIN TEMPORARY EROSION CONTROL MEASURES FOR THE FULL DURATION OF CONSTRUCTION. INSPECT WEEKLY AND AFTER EACH STORM AND REPAIR AS NEEDED. REMOVE SEDIMENTS FROM THE SITE. PLACE IN AREA OF LOW EROSION POTENTIAL AND STABILIZE WITH SEED AND MULCH.

SURVEYORS NOTES:

1. NO CERTIFICATION IS MADE TO THE EXISTENCE OR NONEXISTENCE OF HAZARDOUS SUBSTANCES, ENVIRONMENTALLY SENSITIVE AREAS, UNDERGROUND UTILITIES, UNDERGROUND STRUCTURES, ZONING REGULATIONS OR REAL ESTATE TITLE.
2. DIG SAFE MUST BE CONTACTED AND CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND DIMENSIONS OF ALL UTILITIES PRIOR TO EXCAVATION.
3. THE SOURCE OF BEARINGS FOR THIS LAND SURVEY WAS THE MAGNETIC MERIDIAN AS OF THE DATE HEREON.
4. THE PROPERTY IS DEPICTED ON THE TOWN ASSESSOR'S MAP R05 AS LOT 23A.

DIG SAFE NOTES:

PRIOR TO EXCAVATION, VERIFY THE UNDERGROUND UTILITIES, PIPES, STRUCTURES AND FACILITIES. PROVIDE THE FOLLOWING MINIMUM MEASURES:

1. PRE-MARK THE BOUNDARIES OF YOUR PLANNED EXCAVATION WITH WHITE PAINT, FLAGS OR STAKES, SO UTILITY CREWS KNOW WHERE TO MARK THEIR LINES.
2. CALL DIG SAFE AT 811 AT LEAST THREE BUSINESS DAYS - BUT NO MORE THAN 30 CALENDAR DAYS - BEFORE STARTING WORK. DO NOT ASSUME SOMEONE ELSE WILL MAKE THE CALL.
3. IF BLASTING, NOTIFY DIG SAFE AT LEAST ONE BUSINESS DAY IN ADVANCE.
4. WAIT THREE BUSINESS DAYS FOR LINES TO BE LOCATED AND MARKED WITH COLOR-CODED PAINT, FLAGS OR STAKES. NOTE THE COLOR OF THE MARKS AND THE TYPE OF UTILITIES THEY INDICATE. TRANSFER THESE MARKS TO THE AS-BUILT DRAWINGS.
5. CONTACT THE LANDOWNER AND OTHER "NON-MEMBER" UTILITIES (WATER, SEWER, GAS, ETC.) FOR THEM TO MARK THE LOCATIONS OF THEIR UNDERGROUND FACILITIES. TRANSFER THESE MARKS TO THE AS-BUILT DRAWINGS.
6. RE-NOTIFY DIG SAFE AND THE NON-MEMBER UTILITIES IF THE DIGGING, DRILLING OR BLASTING DOES NOT OCCUR WITHIN 30 CALENDAR DAYS OF INITIAL NOTIFICATION, OR IF THE MARKS ARE LOST DUE TO WEATHER CONDITIONS, SITE WORK ACTIVITY OR ANY OTHER REASON.
7. HAND DIG WITHIN 18 INCHES IN ANY DIRECTION OF ANY UNDERGROUND LINE UNTIL THE LINE IS EXPOSED. MECHANICAL METHODS MAY BE USED FOR INITIAL SITE PENETRATION, SUCH AS REMOVAL OF PAVEMENT OR ROCK.
8. DIG SAFE REQUIREMENTS ARE IN ADDITION TO TOWN, CITY AND/OR STATE DOT STREET OPENING PERMIT REQUIREMENTS.
9. FOR COMPLETE DIG SAFE REQUIREMENTS, CALL THE PUBLIC UTILITIES COMMISSION (PUC) OR VISIT THEIR WEBSITE.
10. IF YOU DAMAGE, DISLOCATE OR DISTURB ANY UNDERGROUND UTILITY LINE, IMMEDIATELY NOTIFY THE AFFECTED UTILITY. IF DAMAGE CREATES SAFETY CONCERNS, CALL THE FIRE DEPARTMENT AND TAKE IMMEDIATE STEPS TO SAFEGUARD HEALTH AND PROPERTY.
11. ANY TIME AN UNDERGROUND LINE IS DAMAGED OR DISTURBED OR IF LINES ARE IMPROPERLY MARKED, YOU MUST FILE AN INCIDENT REPORT WITH THE PUC FOR AN INCIDENT REPORT FORM VISIT WWW.STATE.ME.US/MPUC OR CALL THE PUC AT 1-800-452-4699.

LEGEND

EXISTING		PROPOSED
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL	
100	CONTOUR	100
114.23	SPOT GRADE	114.23
	WETLAND	
	TREELINE	
	CLEARING LIMIT LINE	CLL
	SIGN	
	GATE	
	CONCRETE WHEEL STOP	

EROSION CONTROL LEGEND

SF	SILT FENCE
	CHECK DAM
	STABILIZED ENTRANCE

TYPICAL ABBREVIATIONS:

ACCMP	ASPHALT COATED CMP
ACP	ASBESTOS CEMENT PIPE
AC	ACRE
AGG	AGGREGATE
ALUM	ALUMINUM
APPD	APPROVED
APPROX	APPROXIMATE
ARMH	AIR RELEASE MANHOLE
ASB	ASBESTOS
ASP	ASPHALT
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AZ	AZIMUTH
BCCMP	BITUMINOUS COATED CMP
BM	BENCH MARK
BIT	BITUMINOUS
BLDG	BUILDING
BOT	BOTTOM
BRG	BEARING
BV	BALL VALVE
CB	CATCH BASIN
CEN	CENTER
CEM LIN	CEMENT LINED
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CLASS
CONC	CONCRETE
CONST	CONSTRUCTION
CONTR	CONTRACTOR
CS	CURB STOP
CTR	CENTER
CU	COPPER
CY	CUBIC YARD
D	DEGREE OF CURVE
DBL	DOUBLE
DEG OR °	DEGREE
DEPT	DEPARTMENT
DI	DUCTILE IRON
DIA OR	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DN	DOWN
DR	DRAIN
DWG	DRAWING
EA	EACH
EG	EXISTING GROUND OR GRADE
ELEC	ELECTRIC
EL	ELEVATION
ELB	ELBOW
EOP	EDGE OF PAVEMENT
EQUIP	EQUIPMENT
EST	ESTIMATED
EXC	EXCAVATE
EXIST	EXISTING
FI	FIELD INLET
FG	FINISH GRADE
FBRGL	FIBERGLASS
FDN	FOUNDATION
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FPS	FEET PER SECOND
FT OR '	FEET
FTG	FOOTING
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HYD	HYDRANT
ID	INSIDE DIAMETER
IN OR "	INCHES
INV	INVERT
INV EL	INVERT ELEVATION
LB	POUND
LC	LEACHATE COLLECTION
LD	LEAK DETECTION
LF	LINEAR FEET
LOC	LOCATION
LT	LEACHATE TRANSPORT
MH	MANHOLE
MJ	MECHANICAL JOINT
MATL	MATERIAL
MAX	MAXIMUM
MFR	MANUFACTURE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
NITC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
N/F	NOW OR FORMERLY
NO OR #	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
PC	POINT OF CURVE
PD	PERIMETER DRAIN
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PT	POINT OF TANGENT
PERF	PERFORATED
PP	POWER POLE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QTY	QUANTITY
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
RAD	RADIUS
REQD	REQUIRED
RT	RIGHT
RTE	ROUTE
S	SLOPE
SCH	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SMH	SANITARY MANHOLE
ST	STREET
STA	STATION
SY	SQUARE YARD
TAN	TANGENT
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPORARY
TYP	TYPICAL
UD	UNDERDRAIN
V	VOLTS
VA TEE	VALVE ANCHORING TEE
VERT	VERTICAL
WG	WATER GATE
W/	WITH
W/O	WITHOUT
YD	YARD

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIPPIN
11841
LICENSED
PROFESSIONAL ENGINEER

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

GENERAL NOTES, LEGEND, AND ABBREVIATIONS

SME
SEVEE & MAHER ENGINEERS
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE
4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • sme-engineers.com

DESIGN BY: AML
DRAWN BY: SJM
DATE: 8/2021
CHECKED BY: DPD
LMN: NONE
CTB: SME-STD

JOB NO. 21648.00 DWG FILE GEN-NOTES

C-100

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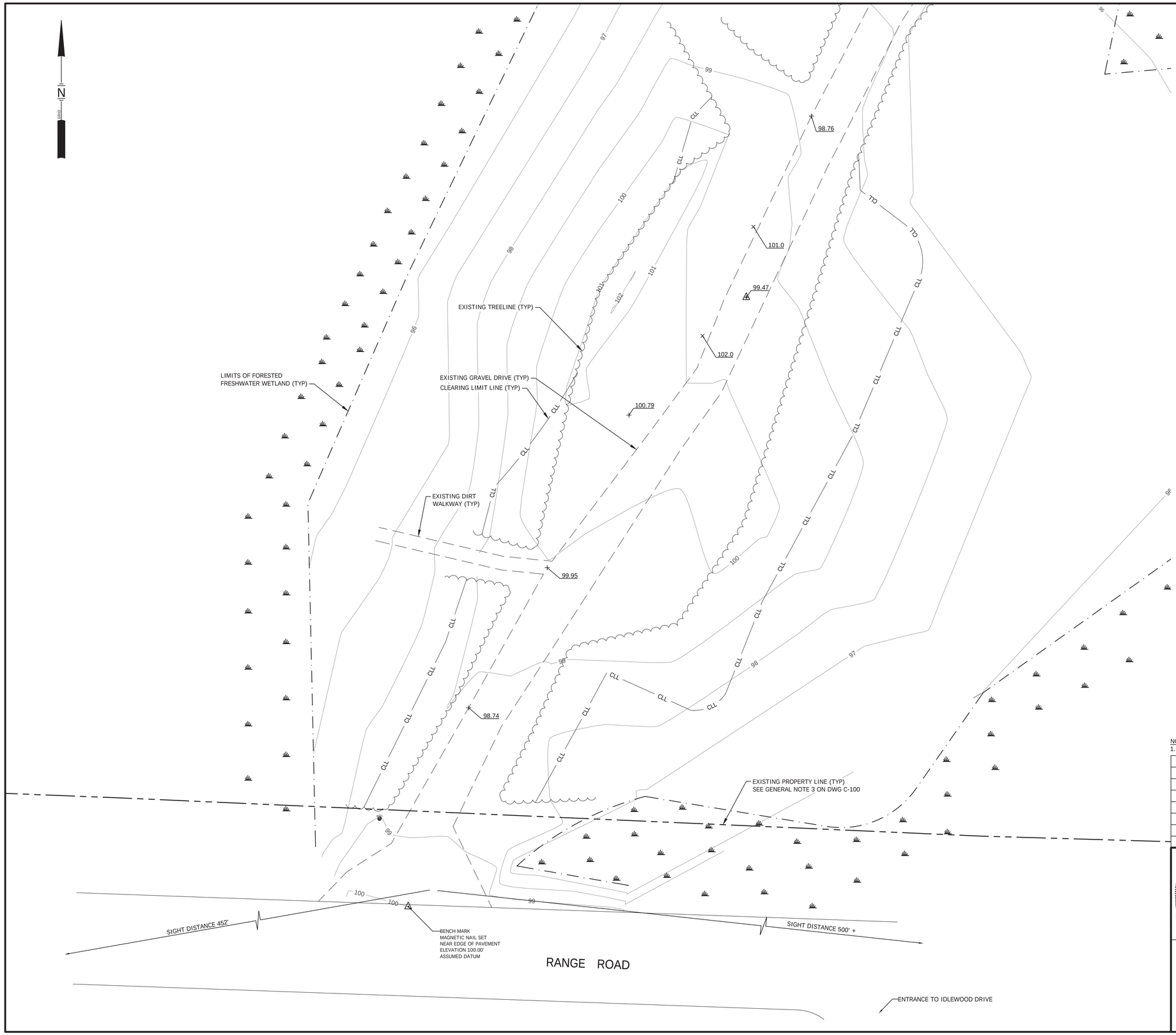

NOTE:
1. SEE DRAWING C-100 FOR GENERAL SITE NOTES AND PLAN REFERENCES.

5 0 10 20 FEET

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIPPIN
11841
LICENSED
PROFESSIONAL ENGINEER
8-27-21

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

EXISTING CONDITIONS PLAN

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4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • sme-engineers.com

DESIGN BY:	AML
DRAWN BY:	SJM
DATE:	8/2021
CHECKED BY:	DPD
LMN:	EXCON
CTB:	SME-STD

JOB NO. 21648.00 DWG FILE BASE

C-101

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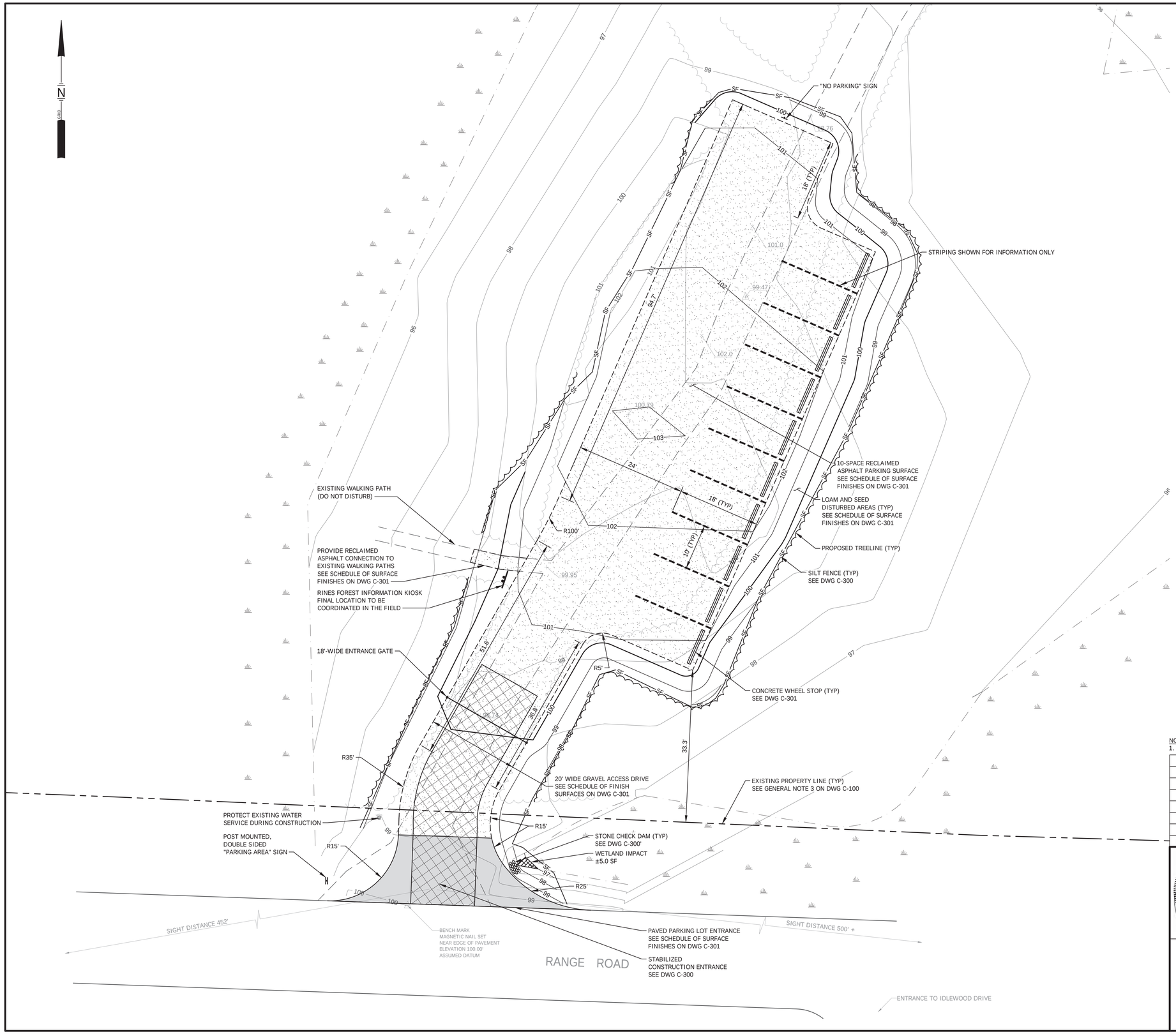

ZONING NOTES:

1. OWNER/DEVELOPER: TOWN OF CUMBERLAND
290 TUTTLE ROAD
CUMBERLAND, MAINE

2. PROJECT: RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

3. ZONING DISTRICT: RR1 - RURAL RESIDENTIAL 1

4. ZONE STANDARDS:

	REQUIRED	PROVIDED
SETBACKS		
FRONT	50 FEET	N/A
SIDE	30 FEET (COMBINED WIDTH OF 75 FEET)	N/A
REAR	75 FEET	N/A
MIN LOT SIZE	4 ACRES	>4 ACRES
STREET FRONTAGE	200 FEET	>200 FEET

5. TAX MAP R05 LOT 23A

6. PROPOSED USE: MUNICIPAL USES

7. PARKING SUMMARY:
EXISTING PARKING 0 SPACES
PROPOSED PARKING 10 SPACES

8. THERE ARE NO UTILITIES PROPOSED WITH THIS PROJECT.

9. NO WORK IS PROPOSED IN A FLOODPLAIN ON THE PROPERTY.

10. THERE ARE ±5.0 SF OF WETLAND IMPACTS ASSOCIATED WITH THIS PROJECT

11. RANGE ROAD HAS A SPEED LIMIT OF 35 MPH WITH A REQUIRED SIGHT DISTANCE OF 350 FEET.

NOTE:
1. SEE DRAWING C-100 FOR GENERAL SITE NOTES AND PLAN REFERENCES.

5 0 10 20 FEET

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIPPIN
11841
LICENSED
PROFESSIONAL ENGINEER

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

SITE PLAN

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DESIGN BY: AML
DRAWN BY: SJM
DATE: 8/2021
CHECKED BY: DPD
LMN: SITE
CTB: SME-STD

JOB NO. 21648.00 DWG FILE BASE

C-102

EROSION CONTROL NOTES:

A. GENERAL

1. All soil erosion and sediment control will be done in accordance with: (1) the Maine Erosion and Sediment Control Handbook: Best Management Practices, Maine Department of Environmental Protection (MEDEP), October 2016.

2. The site Contractor (to be determined) will be responsible for the inspection and repair/replacement/maintenance of all erosion control measures, disturbed areas, material storage areas, and vehicle access points until all disturbed areas are stabilized.

3. Disturbed areas will be permanently stabilized within 7 days of final grading. Disturbed areas not to be worked upon within 14 days of disturbance will be temporarily stabilized within 7 days of the disturbance.

4. In all areas, removal of trees, bushes and other vegetation, as well as disturbance of topsoil will be kept to a minimum while allowing proper site operations.

5. Any suitable topsoil will be stripped and stockpiled for reuse as directed by the Owner. Topsoil will be stockpiled in a manner such that natural drainage is not obstructed and no off-site sediment damage will result. In any event, stockpiles will not be located within 100 feet of wetlands and will be at least 50 feet upgradient of the stockpile's perimeter silt fence. The sideslopes of the topsoil stockpile will not exceed 2:1. Silt fence will be installed around the perimeter of all topsoil stockpiles. Topsoil stockpiles will be surrounded with siltation fencing and will be temporarily seeded with Aroostook rye, annual or perennial ryegrass within 7 days of formation, or temporarily mulched.

6. Winter excavation and earthwork will be completed so as to minimize exposed areas while satisfactorily completing the project. Limit exposed areas to those areas in which work is to occur during the following 15 days and that can be mulched in one day. All areas will be considered denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded, and mulched.

Install any added measures necessary to control erosion/sedimentation. The particular measure used will be dependent upon site conditions, the size of the area to be protected, and weather conditions.

To minimize areas without erosion control protection, continuation of earthwork operations on additional areas will not begin until the exposed soil surface on the area being worked has been stabilized.

B. TEMPORARY MEASURES

1. STABILIZED CONSTRUCTION ENTRANCE/EXIT

A crushed stone stabilized construction entrance/exit will be placed at any point of vehicular access to the site, in accordance with the detail shown on this sheet.

2. SILT FENCE

a. Silt fence will be installed prior to all construction activity, where soil disturbance may result in erosion. Silt fence will be erected at locations shown on the plans and/or downgradient of all construction activity.

b. Silt fences will be removed when they have served their useful purpose, but not before the upgradient areas have been permanently stabilized.

c. Silt fences will be inspected immediately after each rainfall and at least daily during prolonged rainfall. They will be inspected if there are any signs of erosion or sedimentation below them. Any required repairs will be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind them, they will be replaced with a temporary crushed stone check dam.

d. Sediment deposits will be removed after each storm event if significant build-up has occurred or if deposits exceed half the height of the barrier.

3. STONE CHECK DAMS

Stone check dams should be installed before runoff is directed to the swale. Stone check dams will be installed in grass-lined swales and ditches during construction. Remove stone check dams when they have served their useful purpose, but not before upgradient areas have been permanently stabilized.

4. EROSION CONTROL MIX SEDIMENT BARRIER

a. It may be necessary to cut, pack down, or remove tall grasses, brush, or woody vegetation to avoid voids and bridges that allow the washing away of fine soil particles.

b. Where approved, erosion control mix sediment barriers may be used as a substitute for silt fence. See the details in this drawing set for specifications.

b. Rock Filter Berms: To provide more filtering capacity or to act as a velocity check dam, a berm's center can be composed of clean crushed rock ranging in size from the french drain stone to riprap.

5. TEMPORARY SEEDING

Stabilize disturbed areas that will not be brought to final grade and reduce problems associated with mud and dust production from exposed soil surface during construction with temporary vegetation.

6. TEMPORARY MULCHING

Use temporary mulch in the following locations and/or circumstances:

- In sensitive areas (within 100 feet of streams, wetlands and in lake watersheds) temporary mulch will be applied within 7 days of exposing spill or prior to any storm event.
- Apply temporary mulch within 14 days of disturbance or prior to any storm event in all other areas.
- Areas which have been temporarily or permanently seeded will be mulched immediately following seeding.
- Areas which cannot be seeded within the growing season will be mulched for over-winter protection and the area will be seeded at the beginning of the growing season.
- Mulch can be used in conjunction with tree, shrub, vine, and ground cover plantings.
- Mulch anchoring will be used on slopes greater than 5 percent in late fall (past October 15), and over-winter (October 15 - April 15).

The following materials may be used for temporary mulch:

a. Hay or Straw material shall be air-dried, free of seeds and coarse material. Apply 2 bales/1,000 sf or 1.5 to 2 tons/acre to cover 90% of ground surface.

b. Erosion Control Mix: It can be used as a stand-alone reinforcement:
- 2-inches thick for slopes flatter than 3H:1V;
- 4-inches thick for slopes greater than 3H:1V;
- on slopes 2 horizontal to 1 vertical or less;
- on frozen ground or forested areas; and
- at the edge of gravel parking areas and areas under construction.

c. Erosion control mix alone is not suitable:
- on slopes with groundwater seepage;
- at low points with concentrated flows and in gullies;
- at the bottom of steep perimeter slopes exceeding 100 feet in length;
- below culvert outlet aprons; and around catch basins and closed storm systems.

d. Chemical Mulches and Soil Binders: Wide ranges of synthetic spray-on materials are marketed to protect the soil surface. These are emulsions that are mixed with water and applied to the soil. They may be used alone, but most often are used to hold wood fiber, hydro-mulches or straw to the soil surface.

e. Erosion Control Blankets and Mats: Mats are manufactured combinations of mulch and netting designed to retain soil moisture and modify soil temperature. During the growing season (April 15th to November 1st) use mats indicated on drawings or North American Green (NAG) S75 (or mulch and netting) on:
- the base of grassed waterways;
- steep slopes (15 percent or greater); and
- any disturbed soil within 100 feet of lakes, streams, or wetlands.

During the late fall and winter (November 1st to April 15th) use heavy grade mats indicated on drawings for NAG SC250 on all areas noted above plus use lighter grade mats NAG S75 (or mulch and netting) on:
- sideslopes of grassed waterways; and moderate slopes (between 8 and 15 percent).

C. TEMPORARY DUST CONTROL

To prevent the blowing and movement of dust from exposed soil surfaces, and reduce the presence of dust, use water or calcium chloride to control dusting by preserving the moisture level in the road surface materials.

D. CONSTRUCTION DE-WATERING

1. Water from construction de-watering operations shall be cleaned of sediment before reaching wetlands, water bodies, streams or site boundaries. Utilize temporary sediment basins, erosion control soil filter berms backed by staked hay bales, A Dirt Bag 55" sediment filter bag by ACF Environmental, or other approved Best Management Practices (BMP's).

2. In sensitive areas near streams or ponds, discharge the water from the de-watering operation into a temporary sediment basin created by a surrounding filter berm of uncompacted erosion control mix immediately backed by staked hay bales (see the site details). Locate the temporary sediment basin at lease 100 feet from the nearest water body, such that the filtered water will flow through undisturbed vegetated soil areas prior to reaching the water body or property line.

E. PERMANENT MEASURES

1. Riprapped Aprons: All storm drain pipe outlets and the inlet and outlet of culverts will have riprap aprons to protect against scour and deterioration.

2. Topsoil, Seed, and Mulch: All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, seeded, and mulched.

Seeded Preparation: Use stockpiled materials spread to the depths shown on the plans, if available. Approved topsoil substitutes may be used. Grade the site as needed.

a. Seeding will be completed by August 15 of each year. Late season seeding may be done between August 15 and October 15. Areas not seeded or which do not obtain satisfactory growth by October 15, will be seeded with Aroostook Rye or mulched. After November 1, or the first killing frost, disturbed areas will be seeded at double the specified application rates, mulched, and anchored.

PERMANENT SEEDING SPECIFICATIONS OUTSIDE OF SOLAR ARRAY FOOTPRINT

Mixture:	Roadside (lbs/acre)	Lawn (lbs/acre)
Kentucky Bluegrass	20	55
White Clover	5	0
Creeping Red Fescue	20	55
Perennial Ryegrass	5	15

b. Provide New England Meadow mix seed in areas of solar array

c. Mulch in accordance with specifications for temporary mulching.

d. If permanent vegetated stabilization cannot be established due to the season of the year, all exposed and disturbed areas not to undergo further disturbance are to have dormant seeding applied and be temporarily mulched to protect the site.

3. Ditches and Channels: All ditches on-site will be lined with North American Green S75 erosion control mesh (or an approved equal) upon installation of loam and seed.

F. WINTER CONSTRUCTION AND STABILIZATION

1. Natural Resource Protection: During winter construction, a double-row of sediment barriers (i.e., silt fence backed with hay bales or erosion control mix) will be placed between any natural resource and the disturbed area. Projects crossing the natural resource will be protected a minimum distance of 100 feet on either side from the resource.

2. Sediment Barriers: During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

3. Mulching:

- All areas will be considered to be denuded until seeded and mulched. Hay and straw mulch will be applied at a rate of twice the normal accepted rate.
- Mulch will not be spread on top of snow.
- After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting.
- Between the dates of November 1 and April 15, all mulch will be anchored by either mulch netting, emulsion chemical, tracking or wood cellulose fiber.

5. Soil Stockpiling: Stockpiles of soil or subsoil will be mulched for over-winter protection with hay or straw at twice the normal rate or with a 4-inch layer of erosion control mix. This will be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpiles shall not be placed (even covered with mulch) within 100 feet from any natural resources. Sediment barriers should be installed downgradient of stockpiles. Stormwater shall be directed away from stockpiles.

6. Seeding: Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas will receive 4 inches of loam and seed at an application rate of three times the rate for permanent seeding. All areas seeded during the winter will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 percent catch) will be revegetated by replacing loam, seed, and mulch.

If dormant seeding is not used for the site, all disturbed areas will be revegetated in the spring.

7. Maintenance: Maintenance measures will be applied as needed during the entire construction season. After each rainfall, snow storm, or period of thawing and runoff, and at least once a week, the site Contractor will perform a visual inspection of all installed erosion control measures and perform repairs as needed to ensure their continuous function.

8. Identified repairs will be started no later than the end of the net work day and be completed within seven (7) calendar days.

Following the temporary and/or final seeding and mulching, the Contractor will, in the spring, inspect and repair any damages and/or bare spots. An established vegetative cover means a minimum of 85 to 90 percent of areas vegetated with vigorous growth.

G. OVER-WINTER CONSTRUCTION EROSION CONTROL MEASURES

1. Stabilization of Disturbed Soil: By October 15, all disturbed soils on areas having a slope less than 15 percent will be seeded and mulched. If the Contractor fails to stabilize these soils by this date, then the Contractor shall stabilize the soil for late fall and winter, by using either temporary seeding or mulching.

2. Stabilization of Disturbed Slopes: All slopes to be vegetated will be completed by October 15. The Owner will consider any area having a grade greater than 15 percent (6.5H:1V) to be a slope. Slopes not vegetated by October 15 will receive one of the following actions to stabilize the slope for late fall and winter:

a. Stabilize the soil with temporary vegetation and erosion control mesh.
b. Stabilize the slope with erosion control mix.
c. Stabilize the slope with stone riprap.
d. Slopes steeper than 1.5:1 are prohibited.

3. Stabilization of Ditches and Channels: All stone-lined ditches and channels to be used to convey runoff through the winter will be constructed and stabilized by November 15. Grass-lined ditches and channels will be complete by September 15. Grass-lined ditches not stabilized by September 15 shall be lined with either sod or riprap.

H. MAINTENANCE PLAN

1. Routine Maintenance: Inspection will be performed as outlined in the project's Erosion Control Plan. Inspection will be by a qualified person during wet weather to ensure that the facility performs as intended. Inspection priorities will include checking erosion controls for accumulation of sediments.

I. Housekeeping

1. Spill prevention. Controls must be used to prevent pollutants from being discharged from materials on site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

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

3. Fugitive sediment and dust. Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control. If off-site tracking occurs roadways should be swept immediately and no loss once a week and prior to significant storm events.

4. Debris and other materials. Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

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

6. Authorized Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

(a) Discharges from firefighting activity;

(b) Fire hydrant flushings;

(c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);

(d) Dust control runoff in accordance with permit conditions and section I3;

(e) Routine external building washdown, not including surface paint removal, that does not involve detergents;

(f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;

(g) Uncontaminated air conditioning or compressor condensate;

(h) Uncontaminated groundwater or spring water;

(i) Foundation or footer drain-water where flows are not contaminated;

(j) Uncontaminated excavation dewatering (see requirements in section I5);

(k) Potable water sources including waterline flushings; and

(l) Landscape irrigation.

7. Unauthorized non-stormwater discharges. The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non stormwater, other than those discharges in compliance with section I6. Specifically, the Department's approval does not authorize discharges of the following:

(a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;

(b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;

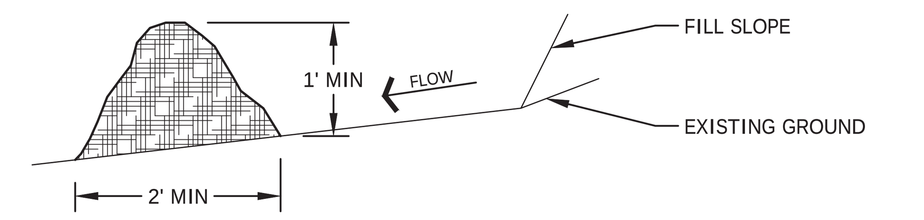
(c) Soaps, solvents, or detergents used in vehicle and equipment washing; and

(d) Toxic or hazardous substances from a spill or other release.

8. Additional requirements. Additional requirements may be applied on a site-specific basis.

J. CONSTRUCTION SEQUENCE

In general, the expected sequence of construction for each phase is provided below. Construction is proposed to start in Fall 2021 and end in 2022.
- Mobilization
- Install temporary erosion control measures
- Clearing and grubbing
- Site Grading
- Install reclaimed parking lot and drive
- Site stabilization, loam and seed, and landscaping



EROSION CONTROL MIX SEDIMENT BARRIER

NOTES:

1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR FLUME GRIT AND FRAGMENTED WOOD GENERATED FROM WATER-FLUME LOG HANDLING SYSTEMS. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX. EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH.

   THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
   A. ORGANIC MATERIAL: BETWEEN 20% - 100% (DRY WEIGHT BASIS)
   B. PARTICLE SIZE: BY WEIGHT, 100% PASSING 6" SCREEN, 70-85% PASSING 0.75" SCREEN
   C. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
   D. LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
   E. SOLUBLE SALTS CONTENT SHALL BE LESS THAN 4.0 MMHOS/CM.
   F. PH: 5.0 - 8.0

2. ON SLOPES LESS THAN 5% OR AT THE BOTTOM OF SLOPES 2:1 OR LESS UP TO 20 FEET LONG, THE BARRIER MUST CONFORM TO THE ABOVE DIMENSIONS. ON THE LONGER OR STEEPER SLOPES, THE BARRIER SHOULD BE WIDER TO ACCOMMODATE THE ADDITIONAL FLOW.

3. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL ELEVATION. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.

4. LOCATIONS WHERE OTHER BMP'S SHOULD BE USED:
   A. AT LOW POINTS OF CONCENTRATED FLOW
   B. BELOW CULVERT OUTLET APRONS
   C. WHERE A PREVIOUS STAND-ALONE EROSION CONTROL MIX APPLICATION HAS FAILED
   D. AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM (LARGE UPGRADIENT WATERSHED)
   E. AROUND CATCH BASINS AND CLOSED STORM DRAIN SYSTEMS.

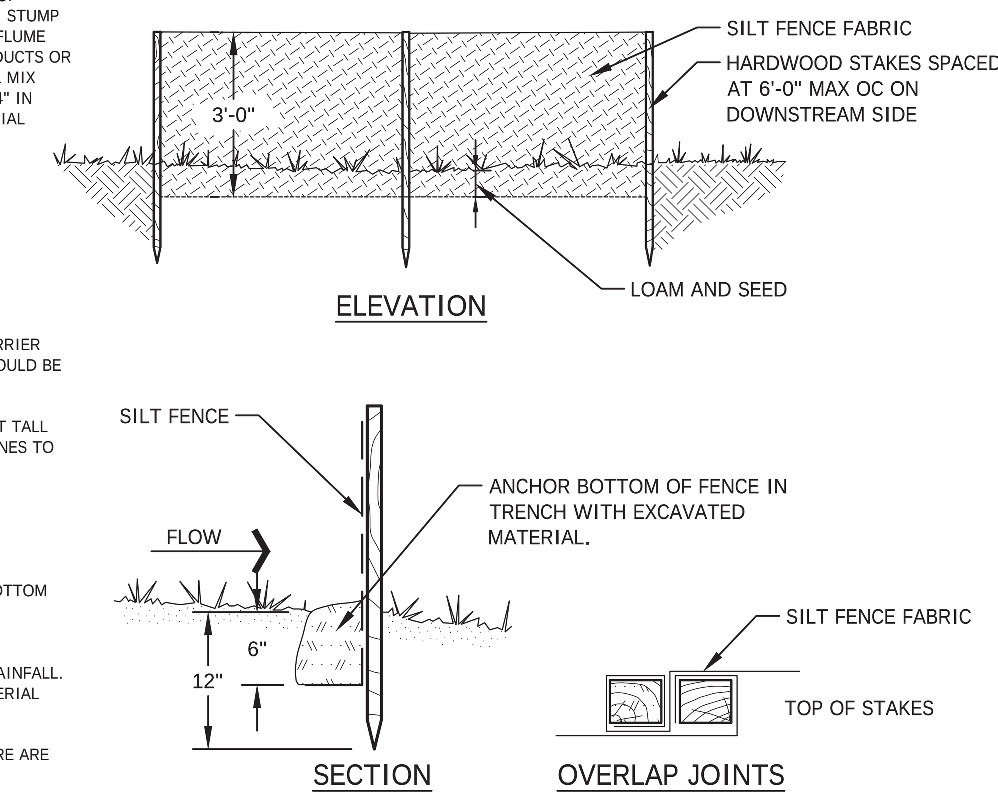
5. THE EROSION CONTROL MIX BARRIERS SHOULD BE INSPECTED REGULARLY AND AFTER EACH LARGE RAINFALL. REPAIR ALL DAMAGED SECTIONS OF BERM IMMEDIATELY BY REPLACING OR ADDING ADDITIONAL MATERIAL PLACED ON THE BERM TO THE DESIRED HEIGHT AND WIDTH.

6. IT MAY BE NECESSARY TO REINFORCE THE BARRIER WITH SILT FENCE OR STONE CHECK DAMS IF THERE ARE SIGNS OF UNDERCUTTING OR THE IMPOUNDMENT OF LARGE VOLUMES OF WATER.

7. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

8. REPLACE SECTIONS OF BERM THAT DECOMPOSE, BECOME CLOGGED WITH SEDIMENT OR OTHERWISE BECOME INEFFECTIVE. THE BARRIER SHOULD BE RESHAPED AS NEEDED.

9. EROSION CONTROL MIX BARRIERS CAN BE LEFT IN PLACE AFTER CONSTRUCTION. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER BARRIER IS NO LONGER REQUIRED SHOULD BE SPREAD TO CONFORM TO THE EXISTING GRADE AND BE SEEDED AND MULCHED. WOODY VEGETATION CAN BE PLANTED INTO THE BARRIERS, OR THEY CAN BE OVER-SEEDED WITH LEGUMES. IF THE BARRIER NEEDS TO BE REMOVED, IT CAN BE SPREAD OUT INTO THE LANDSCAPE.

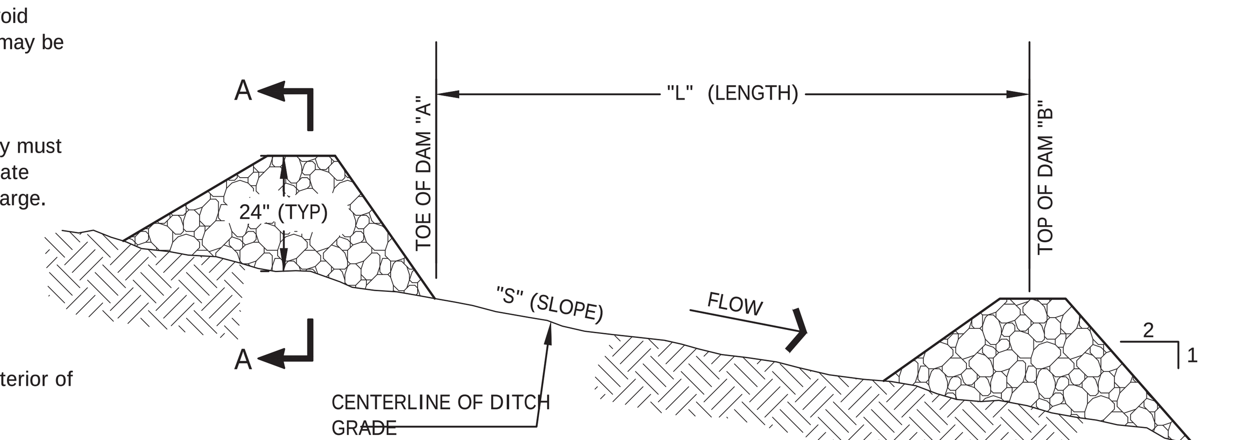


SILT FENCE

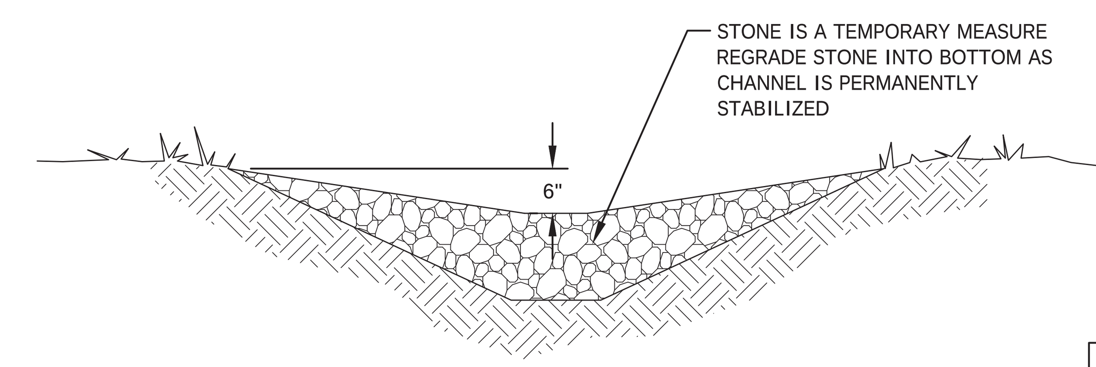
NOTE:
CONTRACTORS OPTION TO USE SEDIMENT BARRIER OR SILT FENCE FOR SLOPE PROTECTION.

SURFACE DRAINAGE SEDIMENT CONTROL

NTS



ELEVATION VIEW



SECTION A-A

SLOPE & LENGTH TABLE

"S" (SLOPE) FT/FT	"L" (LENGTH) FT
0.020	100
0.030	66
0.040	50
0.050	40
0.080	25
0.100	20
0.120	17
0.150	13

L= THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

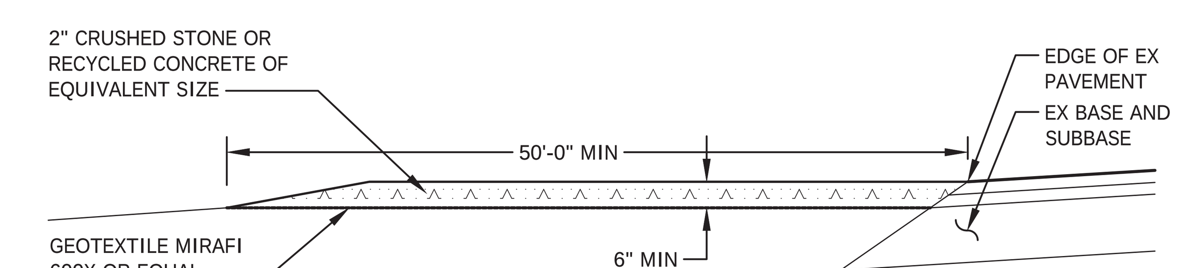
NOTES:

1. WHILE THIS PRACTICE IS NOT INTENDED TO BE USED PRIMARILY FOR SEDIMENT TRAPPING, SOME SEDIMENT WILL ACCUMULATE BEHIND DAMS. SEDIMENT SHOULD BE REMOVED FROM BEHIND DAMS WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE DAM.

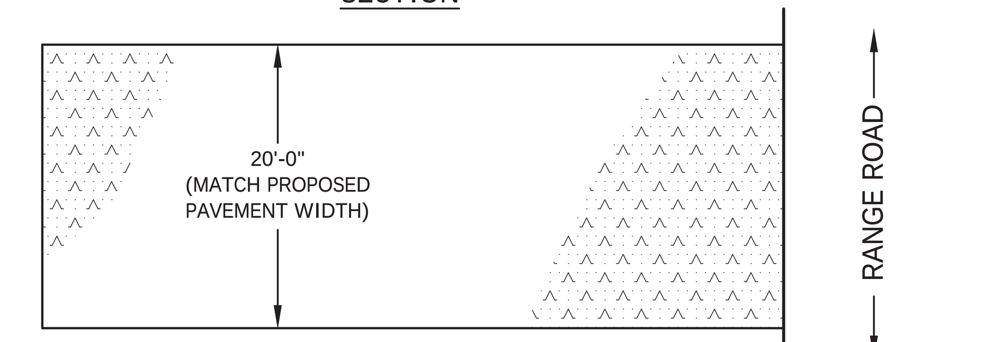
2. STONE: 2"-3" CRUSHED STONE (MDOT 703.31)

STONE CHECK DAM

NTS



SECTION



PLAN

NOTES:

1. MAINTAIN ENTRANCE IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. IF WASHING IS REQUIRED PREVENT SEDIMENT FROM ENTERING WATERWAYS, DITCHES OR STORM DRAINS.

2. REMOVE STABILIZED CONSTRUCTION ENTRANCE TO FINISH ROAD CONSTRUCTION & PAVEMENT.

STABILIZED CONSTRUCTION ENTRANCE

NTS

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIFFIN
11841
LICENSED PROFESSIONAL ENGINEER

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

EROSION CONTROL NOTES AND DETAILS

SME
SEVEE & MAHER ENGINEERS
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE
4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • sme-engineers.com

DESIGN BY:	AML
DRAWN BY:	SJM
DATE:	8/2021
CHECKED BY:	DPD
LMN:	NONE
CTB:	SME-STD

JOB NO. 21648.00 DWG FILE DETAILS

C-300

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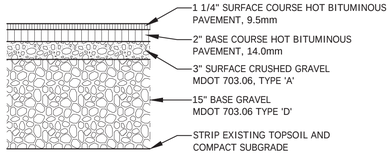
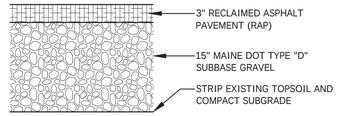
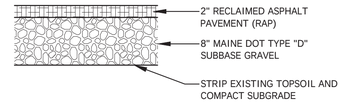


PARKING LOT ENTRANCE SURFACE
NTS



RECLAIMED ASPHALT PARKING LOT SURFACE
NTS



RECLAIMED ASPHALT WALK SURFACE
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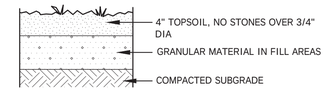
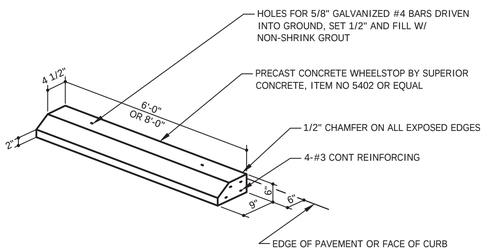


LOAM AND SEED SURFACE
NTS



CONCRETE WHEELSTOP DETAIL
NTS

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIPPIN
11841
LICENSED
PROFESSIONAL ENGINEER

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

SECTIONS AND DETAILS

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DESIGN BY: DPD
DRAWN BY: SJM
DATE: 8/2021
CHECKED BY: DPD
LMN: NONE
CTB: SME-STD

JOB NO. 21648.00 DWG FILE DETAILS

C-301

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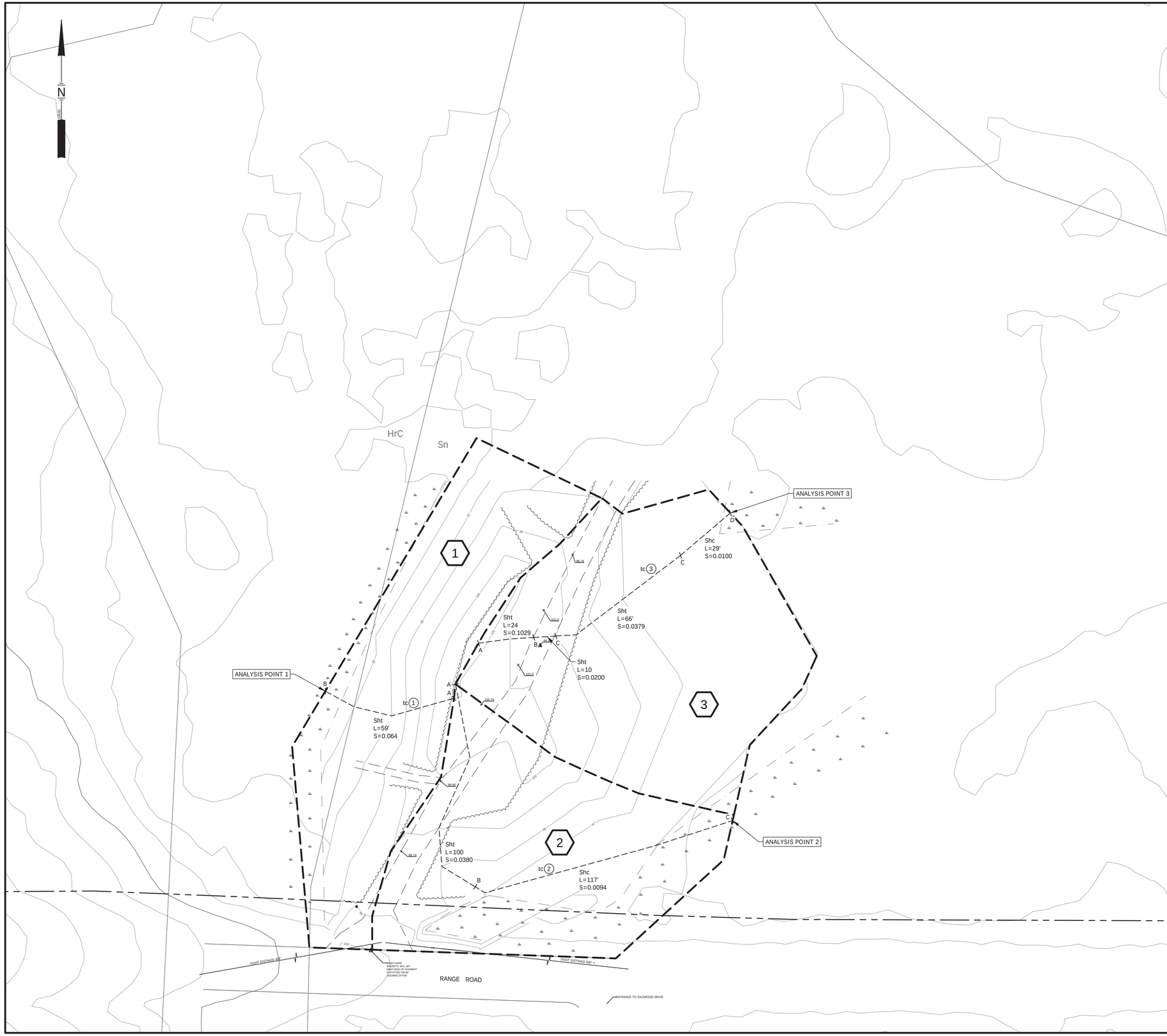

STORMWATER MANAGEMENT LEGEND

1	SUBCATCHMENT DESIGNATION
	SUBCATCHMENT BOUNDARY
A B C	TIME OF CONCENTRATION SEGMENT DESIGNATION TIME OF CONCENTRATION PATH
Sht L=50' S=0.005	TIME OF CONCENTRATION TYPE, LENGTH AND SLOPE. (75% TEXT HT)
Sht	SHEET FLOW
Shc	SHALLOW CONCENTRATED FLOW
Cf	CHANNEL FLOW
	DRAINAGE REACH
R4	REACH DESIGNATION (HYDROCAD)
P9	POND/STRUCTURE DESIGNATION (HYDROCAD)
tc 1	TIME OF CONCENTRATION WITH SUBCATCHMENT DESIGNATION
	SOIL TYPE BOUNDARY
Sn	SOIL SYMBOL

NOTE:
1. SEE DRAWING C-100 FOR GENERAL SITE NOTES AND PLAN REFERENCES.

10 0 20 40 FEET

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIPPIN
11841
LICENSED
PROFESSIONAL ENGINEER

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

STORMWATER MANAGEMENT PLAN
PRE-DEVELOPED CONDITIONS

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DESIGN BY: AML
DRAWN BY: SJM
DATE: 8/2021
CHECKED BY: DPD
LMN: SMP-E
CTB: SME-STD

JOB NO. 21648.00 DWG FILE BASE

D-100

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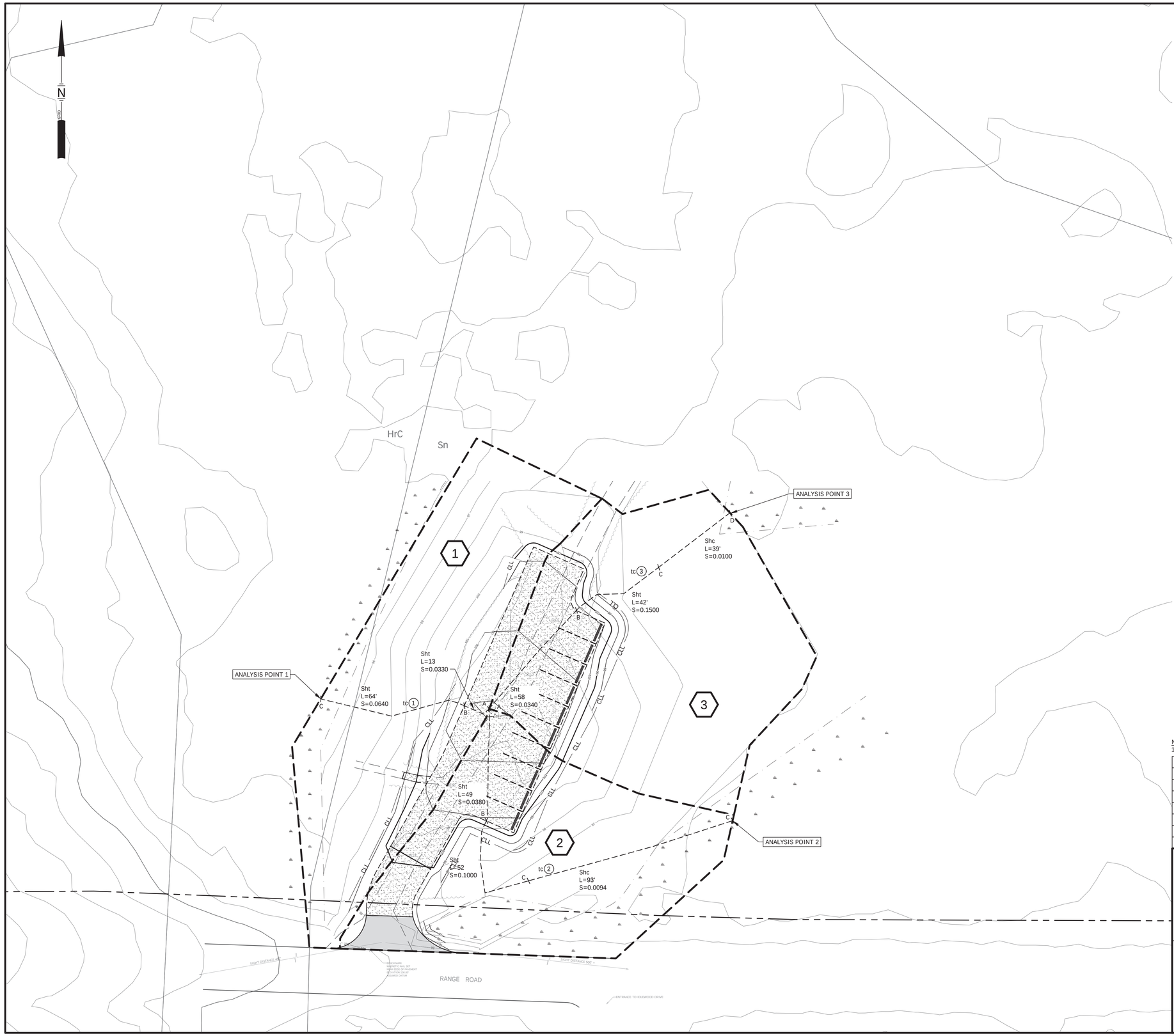

STORMWATER MANAGEMENT LEGEND

2	SUBCATCHMENT DESIGNATION
	SUBCATCHMENT BOUNDARY
A B C	TIME OF CONCENTRATION SEGMENT DESIGNATION TIME OF CONCENTRATION PATH
Sht L=100' S=0.035	TIME OF CONCENTRATION TYPE, LENGTH AND SLOPE. (75% TEXT HT)
Sht	SHEET FLOW
Shc	SHALLOW CONCENTRATED FLOW
Cf	CHANNEL FLOW
	DRAINAGE REACH
R4	REACH DESIGNATION (HYDROCAD)
P9	POND/STRUCTURE DESIGNATION (HYDROCAD)
tc 2	TIME OF CONCENTRATION WITH SUBCATCHMENT DESIGNATION
	SOIL TYPE BOUNDARY
Sn	SOIL TYPE DESIGNATION

NOTE:
1. SEE DRAWING C-100 FOR GENERAL SITE NOTES AND PLAN REFERENCES.

10 0 20 40 FEET

REV.	BY	DATE	STATUS
	DPD	8/2021	ISSUED TO PLANNING BOARD FOR REVIEW

STATE OF MAINE
DANIEL P. DIPPIN
11841
LICENSED
PROFESSIONAL ENGINEER

TOWN OF CUMBERLAND
RINES FOREST PARKING LOT
RANGE ROAD
CUMBERLAND, MAINE

STORMWATER MANAGEMENT PLAN
POST DEVELOPMENT CONDITIONS

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DATE: 8/2021
CHECKED BY: DPD
LMN: SMP-P
CTB: SME-STD

JOB NO. 21648.00 DWG FILE BASE

D-101

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