

Date February 15, 2023
To Town of Cumberland Planning Board
From Carla Nixon, Town Planner
Subject **Subdivision Amendment: Elizabeth Johnson Subdivision**

1. REQUEST/OVERVIEW:

The applicant is the Cove Development Company, LLC, the current owner of 104 Foreside Rd. as shown on Tax Map U04/Lot 10A in the Low Density Residential (LDR) zoning district. This parcel is 3.48 acres (151,752 sf) in size. The proposal is to divide this lot into two separate lots for future development. There are no structures, driveways, or utilities on this lot. The applicant is represented by the Knickerbocker Group. Dan Diffin, P.E., of Sevee and Maher Engineers, reviewed the plan for the Town.

2. PROJECT HISTORY:

- Subdivision approved. Plan dated 10/13/77.
- Subdivision Amendment: 6/21/78. This was done to designate and rename Lot 3 as Lot 4.
- Subdivision Amendment 7/15/88. Planning Board approval 9/19/89 (recorded 12/14/88).
- December 20, 2023: Planning Board tabled application.

3. WAIVER REQUESTS:

1. Waiver Request 1 – Hydrogeological Study – Project will be served by public water and sewer. SME recommends approval of this waiver.
2. Waiver Request 2 – High Intensity Soils Survey – SME recommends approval of this waiver.

4. OUTSIDE AGENCY APPROVALS STATUS:

Agency	Type of Permit	Status
MDEP	SLODA Amendment	Pending
Maine Historic Preservation Commission		Pending
Maine Department of Agriculture, Conservation and Forestry	Rare & Exemplary Botanical Features. None documented.	On file
Maine Dept. of Inland Fisheries & Wildlife		On file
Portland Water District	Capacity to Serve	Approval dated 1/24/23

5. DEPARTMENT HEAD REVIEWS:

William Longley, CEO: No comments.

Police Chief Charles Rumsey: No concerns.

Fire Chief Dan Small: Reviewed plan for turnaround construction.

6. CUMBERLAND LANDS & CONSERVATION COMMITTEE: No comments.

7. TOWN ENGINEER REVIEW: Dan Diffin, P.E., Sevee and Maher Engineers.

We have reviewed the revised stormwater calculations submitted via email on February 5, 2023, and our comments have been addressed.

The sewer design provided is also acceptable. If an alternative location is proposed post approval, I would recommend we handle it one of two ways:

1. With a staff review of proposed changes, as are required in most shifts in utility designs; or
2. With a simple condition similar to: "If the Applicant proposes to revise the sewer service connection to the existing sewer stub identified by Town Staff, final design drawings must be submitted to the Town Engineer for review and approval prior to the start of construction of the sewer service."

IX. PROPOSED FINDINGS OF FACT - Chapter 250 - Subdivision of Land

The purpose of these standards shall be to assure the comfort, convenience, safety, health and welfare of the people, to protect the environment and to promote the development of an economically sound and stable community. To this end, in approving subdivisions within the Town of Cumberland, Maine, the Board shall consider the following criteria and before granting approval shall determine that the proposed subdivision:

1. Pollution. The proposed subdivision will not result in undue water or air pollution. In making this determination, it shall at least consider:
 - A. The elevation of the land above sea level and its relation to the flood plains;
 - B. The nature of soils and subsoil and their ability to adequately support waste disposal;
 - C. The slope of the land and its effect on effluents;
 - D. The availability of streams for disposal of effluents; and
 - E. The applicable state and local health and water resource rules and regulations;

There are no flood plains or streams on the site. The project will be served by public sewer.

Based on the information provided, the Board finds that the standards of this section have been met.

2. Sufficient Water. The proposed subdivision has sufficient water available for the reasonable foreseeable needs of the subdivision;

The project will be served by public water; a capacity to serve letter is on file from the Portland Water District.

Based on the information provided, The Board finds that the standards of this section have been met.

3. Municipal Water Supply. The proposed subdivision will not cause an unreasonable burden on an existing water supply, if one is to be used;

A capacity to serve letter is on file from the Portland Water District.

Based on the information provided, the Board finds the standards of this section have been met.

4. Erosion. The proposed subdivision will not cause unreasonable soil erosion or a reduction in the land's capacity to hold water so that a dangerous or unhealthy condition results;

An erosion and sedimentation control report dated 1/22/23 was prepared by SJR Engineering, Inc. The plan has been reviewed and approved by the Town Engineer.

Based on the information provided, the Board finds that the standards of this section have been met.

5. Traffic. The proposed subdivision will not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed;

The additional lot will not create congestion or unsafe conditions. An MDOT Entrance Permit has been applied for the receipt of which is a condition of approval.

Based on the information provided, and with the proposed condition of approval, the Board finds that the standards of this section have been met.

6. Sewage disposal. The proposed subdivision will provide for adequate sewage waste disposal and will not cause an unreasonable burden on municipal services, if they are utilized;

A capacity to serve letter is on file from the Portland Water District. A capacity to serve letter from the Town Manager is also on file.

Based on the information provided, the Board finds that the standards of this section have been met.

7. Municipal solid waste disposal. The proposed subdivision will not cause an unreasonable burden on the, if municipal services are to be utilized;

The additional house lot will not cause a burden on the municipality's ability to dispose of solid waste.

Based on the information provided, the Board finds that the standards of this section have been met.

8. Aesthetic, cultural and natural values. The proposed subdivision will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or the municipality, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline;

A letter from the Maine Department of Inland Fisheries and Wildlife is on file. There are no obvious historic sites, though a letter from the Maine Historic Preservation Commission is a proposed condition of approval.

Based on the information provided, and with the proposed condition of approval, the Board finds that the standards of this section have been met.

9. Conformity with local ordinances and plans. The proposed subdivision conforms to a duly adopted subdivision regulation or ordinance, comprehensive plan, development plan or land use plan, if any. In making this determination, the municipal reviewing authority may interpret these ordinances and plans;

The plans have been reviewed and approved by the Town Planner and Town department heads.

The Board finds that the standards of this section have been met.

10. Financial and technical capacity. The subdivider has adequate financial and technical capacity to meet the standards of this section;

Financial Capacity: A letter dated November 29, 2023 from Bangor Savings Bank states that Cove Development Company, LLC has cash reserves in excess of \$350,000 that will cover the costs of the public improvements.

Technical capacity is evidenced by the use of professional technical consultants as outlined in the submission letter dated November 29, 2022

Based on the information provided, the Board finds that the standards of this section have been met.

11. Surface waters; outstanding river segments. Whenever situated entirely or partially within the watershed of any pond or lake or within 250 feet of any wetland, great pond or river as defined in Title 38 chapter 3, subchapter I, article 2-B, the proposed subdivision will not adversely affect the quality of that body of water or unreasonably affect the shoreline of the body of water;

The project is not situated in any of the areas listed above.

Based on the information provided, the Board finds that the standards of this section have been met.

12. Ground water. The proposed subdivision will not alone, or in conjunction with, existing activities, adversely affect the quality or quantity of ground water;

The additional house lot will be served by public water and sewer, will not adversely affect the quantity or quality of groundwater.

Based on the information provided, the Board finds that the standards of this section have been met.

13. Flood areas. Based on the Federal Emergency Management Agency's Flood Boundary and Floodway Maps and Flood Insurance Rate Maps, and information presented by the applicant whether the subdivision is in a flood-prone area. If the subdivision, or any part of it, is in such an area, the subdivider shall determine the 100-year flood elevation and flood hazard boundaries within the subdivision. The proposed subdivision plan must include a condition of plan approval requiring that principal structures in the subdivision will be constructed with their lowest floor, including the basement, at least one foot above the 100-year flood elevation;

The development is not located within a 100-year flood plain as shown on the applicable FEMA Flood Insurance Rate Map.

Based on the information provided, the Board finds that the standards of this section have been met.

14. Storm water. The proposed subdivision will provide for adequate storm water management;

The current large lot is an approved buildable lot from a previous subdivision. The new lot will divert stormwater runoff from the road and driveway to a proposed soil filter pond adjacent to Route 88. The soil filter pond acts as both stormwater quantity detention and stormwater quality enhancement as it infiltrates through the soil filter. The stormwater report prepared by Steve Roberge, P.E. was reviewed and approved by the Town Engineer.

Based on the information provided, the Board finds that the standards of this section have been met.

15. Freshwater wetlands. All potential freshwater wetlands, as defined in 30-A M.R.S.A. §4401 (2-A), within the proposed subdivision have been identified on any maps submitted as part of the application, regardless of the size of these wetlands. Any mapping of freshwater wetlands may be done with the help of the local soil and water conservation district.

A natural resources survey dated 6/14/22 was included in the application packet. This survey states that two wetland areas were identified which do not meet the minimum criteria for designation as a Wetland of Special Significance under the Maine NRPA. All development will be outside of the wetland areas.

Based on the information provided, the Board finds that the standards of this section have been met.

16. River, stream or brook... Any river, stream, or brook within or abutting the proposed subdivision has been identified on any map submitted as a part of the application. For purposes of this

section, "river, stream or brook" has the same meaning as in Title 38, Section 480-B, Subsection 9. [Amended; Effective. 11/27/89]

There were no streams identified on the site.

Based on the information provided, the Board finds that the standards of this section have been met.

Design and Performance Standards

- (1) Route 1 Design Standards. N/A
- (2) Route 1 Design Standards. N/A
- (3) Town Center District Design and Performance Standards. N/A
- (4) Village Mixed Use Performance Standards. N/A

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 period. Such request must be made in writing and must be made to the Planning Board. The Planning Board may grant up to two one-year extensions to the period if the approved plan conforms to the ordinances in effect at the time the extension is granted and any and all federal and state approvals and permits are current.

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 de minimis 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.

PROPOSED CONDITIONS OF APPROVAL:

- 1. A preconstruction conference is required prior to the start of construction.
- 2. A copy of the MDOT Entrance Permit is required prior to the preconstruction conference.
- 3. The amended SLODA permit shall be submitted to the Town Planner prior to the preconstruction conference.
- 4. A performance guarantee in an amount and form acceptable to the Town Manager will be required prior to the preconstruction conference.
- 5. All clearing limits shall be flagged and approved by the Town Engineer prior to the preconstruction conference.
- 6. A copy of the MDIF & W approval letter shall be submitted prior to the preconstruction conference.
- 7. A copy of the Maine Historic Preservation approval letter shall be submitted prior to the preconstruction conference.
- 8. A blasting permit, if required, shall be obtained from the Code Enforcement Officer.
- 9. All legal and technical review fees shall be paid to the Town prior to the preconstruction conference.
- 10. An electronic copy of the as-built plans shall be submitted to the Town Planner prior to the release of any remaining inspection fees.

11. A copy of the recorded plan will be provided to the Town within 90 days of Planning Board approval.
12. If the Applicant proposes to revise the sewer service connection to the existing sewer stub identified by Town Staff, final design drawings must be submitted to the Town Engineer for review and approval prior to the start of construction of the sewer service.”

February 5, 2023

Dan Diffin
Sevee + Maher Engineers
4 Blanchard Road
Cumberland, Me. 04021



Re: Review letter comments for 104 Foreside Road, Cumberland, Me

Dear Dan,

Thank you for your February 1, 2023 review comments for the 104 Foreside Road, Cumberland Foreside project that involves a lot split from a previous subdivision. I have provided a response (bold text) to address your concerns in the same format as your letter.

1. SME recommends that the Applicant include both Lot A and Lot B in the drainage analysis to demonstrate that flows are being adequately controlled before leaving the property. This will document that the abutting properties will not be adversely affected by the development of either lot. Alternatively, please provide calculations from the previous subdivision application demonstrating that the development on the Proposed Lot A is the same size and drains to the same area as the previously approved plan.

Reply: I have attached the stormwater analysis for Lot A (and Lot B) for subdivision review. In summary, proposed stormwater flows for the 2, 10, and 25 year storm events show reduced flow rates at Design Point B (rear wetland).

2. A minimum TC path of 5 minutes is used in stormwater modelling because the typical rainfall data (i.e., the IDF curve) does not extend below 5 minutes. Extrapolating the IDF curve below 5 minutes can lead to inaccurate overestimations of actual runoff. In addition, the minimum Tc path for the TR-55 and TR-20 methods is typically a minimum of 0.1 hours which would be 6 minutes. SME recommends that the runoff calculations be completed with a minimum Tc path of 5 minutes.

Reply: I have performed the stormwater analysis with minimum 5' minute incremental Tc for each segment of the flow path in order to move the project forward. The stormwater analysis backup data is attached. Using the 5 Minute TC revision suggested by SME, the stormwater analysis has not changed flow rates or pond design calculations.

3. There is no design information provided on the plans for the common sewer and water main size in the proposed road or where it ties into the public main in Foreside Road. Please provide design information on the proposed utilities. There appears to be an existing 6-inch sewer main stub available to the project as shown on the attached sewer service card provided by the Town.

Reply: I'm not sure why the sewer information was not provided to SME. The sewer design is shown on sheets C11 and the 10 scale sheet 12. I've

104 Foreside Road, Cumberland, Me.

attached those plans with this submission.

I hope my replies have answered your comments adequately. Please contact me if you have any other comments.

Sincerely yours,

Stephen Roberge

Stephen Roberge, PE
for SJR Engineering Inc.



attachments: Stormwater narrative Lot A, updated stormwater plan

February 5, 2023

Randy Smith
Knickerbocker Group
3 Builders Square
Boothbay, ME 04537



Re: Revised Stormwater Quantity/Quality Narrative, 104 Foreside Road, Cumberland, Me (updated 02-05-2023, Lot A)

Dear Randy,

Golden Star, LLC owns a parcel of land at 104 Foreside Road in Cumberland, Maine. The parcel is part of a previous subdivision requiring this proposed lot split to fall under an amended subdivision criterion. This project is to create 2 new lots for residential buildings. Proposed Lot A is to have 71,543 sf of land area and proposed Lot B is to have 80,215 sf of land area. A new private shared 18' wide gravel driveway (road) is to be created along the southerly sideline. The driveway road slope is to be tipped to drain to one side ditch that leads to a proposed soil filter pond and then to the existing ditch along the Route 88 frontage. Each of the buildings will be served with public water, public sewer, and underground electricity. It is anticipated that this projects site infrastructure (shared driveway) will be started in March of 2023 once all approvals have been obtained.

The site is identified as Tax Map U4 Lot 10A of the Town's Tax Map. The parcel is approximately 3.48 acres in size and lies within the Low Density Residential Zoning District.

Existing Site Conditions

The existing site consists of woods/brush areas. An old former driveway access has previously been cut on the parcel in the general location of the proposed road. No other improvements are located on the existing parcel. Existing conditions have been taken from plans prepared by Owen Haskell Boundary and Topographic Survey dated 11/09/2022. The topography of the proposed developed site is shown at a one-foot contour interval in the areas of proposed development. The slope of the property varies from 10% along the flatter areas to 30% along the banks of the steeper slopes of the property.

Adjacent Areas

Adjacent areas and land uses are similar in nature to that being proposed (residential housing). Runoff from the property is generally sheet flow to the existing drainage ditch to the front property line corner.

Soils

Soils delineation was taken from the medium intensity soils maps of the Cumberland County Soil Survey. I have overlaid the proposed developed site onto this map. Onsite soils are identified as being Deerfield and Windsor sands (hydro group "A").

Summary Overview

We have prepared an erosion/sedimentation narrative under separate cover. This narrative is to address stormwater quantity/quality during (and after) the construction of the project.

We have prepared stormwater quantity and quality analysis in order to properly evaluate existing and proposed stormwater quantity impacts from the development. The Maine DEP Chapter 500 rules of the Maine DEP stormwater rules require proposed flow rates for 2/10/25 year storm events to be the same or less than existing flows at the property line of the parcel. We have designed this project to generally meet these standards by use of a combined soil filter pond/detention pond to be constructed within the project infrastructure.

Runoff from the developed portions of the parcel B is directed to the proposed soil filter pond adjacent to the Route 88 frontage area. Site drainage eventually enters an 18" diameter culvert (Concrete) that crosses Route 88.

We have designed the soil filter/detention pond to provide water quantity/quality enhancement. The pond will function as a detention pond to limit flows to almost pre-construction flow rates. Proposed soil filter/detention ponds are necessary to control flows to pre-existing conditions and to treat the stormwater quality within the pond.

Stormwater flows will be attenuated by diverting and capturing stormwater flows from the new construction on Lot B into the new soil filter/detention pond with the stormwater control outlet being utilized to control runoff water discharges to pre-existing conditions as well as providing stormwater quality

treatment for the developed runoff water. In summary, the proposed stormwater flows will be approximately equal to the existing condition. No significant downstream impacts from stormwater flows are expected with this proposal.

Approximately 16,530 sf of new impervious surface (access driveway, parking/storage, and building) will be treated during proposed construction improvements. Proposed impervious surfaces will be treated through the soil filter pond located along the parcel frontage with Route 88. A portion of the building's roof water will be infiltrated into 4' wide stone drip edges for water quantity/quality treatment.

Stormwater Quantity

We have prepared the plans and details in order to properly evaluate existing and proposed stormwater impacts from the development. Topography of the existing site is shown at two-foot contour intervals. The slope of the property varies from 1% along the flatter areas to 30% along the existing slopes in the rear of the developed site.

Soils mapping was taken from Natural Resources Conservation Service "Web Soil Survey" medium intensity mapping. These soils have been overlaid onto the proposed site development plan.

Soils have been identified as:

- Windsor loamy sand (hydro group "A", K= 0.17)
- Deerfield loamy fine sand (hydro group "A", K= 0.17)

I have reviewed the drainage characteristics of the watershed area which includes impervious areas, lawn areas, and woods, as well upslope watershed areas. The analysis requires post construction stormwater flow rates to be approximately equal to or less than the existing stormwater rates.

I have used the SCS TR-20 (HydroCad 10.0 computer model) method of computing stormwater runoff peak flow rates. This method accounts for soil types, existing land uses, topography, vegetative cover, and proposed land use for the parcel to be developed. The proposed conditions were analyzed using data for Cumberland County type III, 24-hour storm distribution (Northeast Regional Climate Center June 2014) with a design frequency of occurrence of 2/10/25 years. One day precipitation values of 3.19"/4.77"/6.01" have been

used for each respective event. All supporting calculations and data are submitted with this report.

The existing and proposed site conditions were analyzed using information taken from existing/proposed topographic plan of the parcel to be developed. Impervious areas, lawns, meadows, and woods areas for each hydrological soil condition were measured within AutoCad in order to calculate a weighted curve number that typifies the drainage condition of the site.

Watershed calculations (pre and post construction)

Please see the attached stormwater plans for both the existing and proposed conditions to help determine location of each watershed and drainage flow path.

The project has two watershed areas within the parcel to be split. We have performed stormwater analysis on Lot A development with a Design Point B on the plan as being the wetland along the rear property line. We have also performed analysis on Lot B development including the access road to the two lots. We have designated this Design Point of interest on the plan as being the northeast corner of parcel B. Stormwater from this design point downslope flows to a 15" culvert crossing Route 88 onto land of others.

Design Point B: Lot A

We have calculated the existing flows with the proper land surface cover and soils hydrological group in order to compare these flows with the proposed flows. Existing flows at this location have been calculated to be 0.26/0.88/1.48 cfs for the 2/10/25 year storm events. In the proposed condition, we have deducted out the proposed house (roof drip strip/infiltration) and the pool retention area from the watershed area. Proposed flows are reduce to 0.27/0.73/1.15 cfs for the 2/10/25/ year storm events. A 15' wide level spreader is proposed along the corner of the fill area near the rear of the development flow path. No other improvements are necessary.

Stormwater Summary at Design Point B (rear property wetland)

	2 year storm (cfs)	10 year storm (cfs)	25 year storm (cfs)
Existing flows	0.26	0.88	1.48
Proposed flows	0.27	0.73	1.15

Design Point A – Northeast corner of Parcel B

The stormwater existing/proposed Design Point A is located at the northeast corner of Parcel B. We have calculated the existing flows with the proper land surface cover and soils hydrological group in order to compare these flows with the proposed flows. Existing flows at this location have been calculated to be 0.00/0.00/0.01 cfs for the 2/10/25 year storm events due to the wooded condition of the site and very pervious soils.

Soil Filter Pond: Our analysis indicates that the incoming flow rates to the Soil Filter Pond are 0.03/0.30/73 cfs and are reduced to 0.02/0.05/0.08 cfs for the 2/10/25 year storm events at the outlet from the soil filter pond control structure. The soil filter ground elevation is set at elevation 102.0. The water elevation within the pond is expected to peak at elevations 102.02/102.75/103.75 for the 2/10/25 year storm events.

When these flows from the pond are hydraulically added together (with respect to time) with the uncontrolled watershed areas (Watershed 1B), the flows are approximately the same as the existing condition at the inlet to the existing culvert under Walnut Hill Road

Stormwater Summary at Design Point A culvert entrance

	2 year storm (cfs)	10 year storm (cfs)	25 year storm (cfs)
Existing flows	0.00	0.00	0.01
Proposed flows	0.03	0.08	0.16

Lot B Soil Filter Pond:

In the proposed development condition, the watershed has somewhat significant increases in impervious and developed areas. The increased flows are captured in the combined soil filter/detention pond (along the front of the proposed developed Lot B) within the parcel. Runoff water within the soil filter pond will be detained and treated in the pond. Discharges from the pond will then be directed to the existing ditching along Route 88.

The soil filter pond has been sized to accommodate and store flows for stormwater quantity and quality functions and to control flows to pre-development runoff conditions. We have calculated increases in flow rates in

the developed portion of the project for the 2/10/25 year storm events. By constructing the soil filter/detention ponds and sizing the inlets within the stormwater control structure, stormwater flows are captured and contained. These increased flows are then stored (detained and treatment provided) within the pond area for short periods of time allowing existing peak flow rates to be approximately the same.

Pond construction Control structures

The soil filter pond will need to be configured with a control manhole structure that has a 6" diameter outlet pipe at invert 99.25. The control structure has inlet connection to the two 4" diameter underdrain pipes within the pond filter area. The 6" diameter outlet is capped at the inlet end and a 1" diameter hole cut in the cap at elevation 99.5. The top of the control manhole has an access rim elevation of 105.0. A 25' wide emergency spillway is to be constructed at elevation 103.75. The top of the 4' wide berm is elevation 105.0. No water will flow from the pond (except filtered water within the filter media underdrain). We have checked the spillway design with the control structure plugged (ie all flows through the spillway) and have calculated 25 year flows within the pond reach elevation 103.76. The top of berm is at least 12" higher than this water surface (elev 105.0).

Water quality - Soil Filter Pond

Soil Filter Pond: We have designed the project to redirect impervious and lawn area runoff into a soil filter pond along the front of the developed site. The total area draining to this pond is 64,100 sf. We have calculated 16,530 sf of the new impervious area (portion of driveways, access road, and building roof) and 47,570 sf of the landscaped area of the project would be treated through the proposed soil filter pond.

The soil filter/detention pond is designed to act such that initial and ending runoff flows are captured and infiltrated through the soil filter media within the pond. The higher flows will be bypassed through the pond and dispersed through the riprap spillway.

The soil filter pond is to be constructed that has a ground elevation at 102.0 (top of ground surface for filtering system). The pond is to be sized such that the surface area meets (or exceeds) 5% of the impervious area plus 2% of the landscape area that drains to the pond. We have calculated 16,530 sf of

impervious area runoff and 47,570 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 1,778 sf of surface filter area. We have provided 1,806 sf of available area within contour 102.0.

In addition, a minimum treatment volume must be contained such that the required volume contained is less than 18" deep over the surface filter area. The channel protection volume is based on 1" of impervious surface area and .4" of vegetative area entering the pond. Using the same impervious and landscape areas noted above, we are required to have 2,964 cf of pond storage above the soil filter surface area. Our design has provided 3,024 cf of storage area at elevation 103.45 (17" deep).

The soil filter pond is controlled by a stormwater control manhole that has specific holes cut into the control panel to limit flows leaving the ponds and provide adequate holding time to be treated by the filter media. The holes have been sized using the DEP orifice sizing equation for both filter area and quality area sizing requirements. Water quality enhancement flows are detained within the soil filter pond by restricting the discharge flow through a small 1" orifice control that is located within the stormwater control capped discharge pipe (elevation 99.5).

Summary

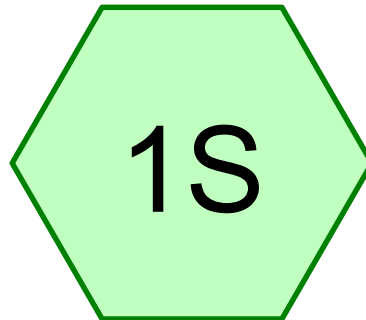
The proposed development of the parcel can be constructed utilizing a soil filter pond as designed to the berm height and control structure in the pond as noted above.

Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project. It is important to note that proper erosion control and revegetation of disturbed areas are essential for the proper operation of the stormwater facilities. Maintenance of the yard impervious areas, careful attention to the pavement/seeded interface, and continued maintenance to the pond system must be a top priority in order for the system to function properly. Thank you for involving this firm on your project.

Sincerely yours,

Stephen Roberge

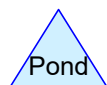
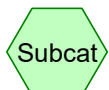
Stephen Roberge, PE



Subcatchment 1



Design Point A



Existing Condition 02032023

Prepared by SJR Engineering Inc

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NRCC 24-hr	D	Default	24.00	1	3.19	2
2	10-Year	NRCC 24-hr	D	Default	24.00	1	4.77	2
3	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2

Existing Condition 02032023

Prepared by SJR Engineering Inc

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.494	30	Woods, Good, HSG A (1S)
1.494	30	TOTAL AREA

Existing Condition 02032023

Prepared by SJR Engineering Inc

Printed 2/3/2023

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.494	HSG A	1S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.494		TOTAL AREA

Existing Condition 02032023

Prepared by SJR Engineering Inc

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.494	0.000	0.000	0.000	0.000	1.494	Woods, Good	1S
1.494	0.000	0.000	0.000	0.000	1.494	TOTAL AREA	

Existing Condition 02032023*NRCC 24-hr D 2-Year Rainfall=3.19"*

Prepared by SJR Engineering Inc

Printed 2/3/2023

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1

Runoff Area=65,068 sf 0.00% Impervious Runoff Depth=0.00"

Flow Length=100' Slope=0.0300 '/' Tc=28.3 min CN=30 Runoff=0.00 cfs 0.000 af

Reach DP A: Design Point A

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 1.494 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 1.494 ac 0.00% Impervious = 0.000 ac

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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Subcatchment 1S: Subcatchment 1

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Reach DP A : Design Point A

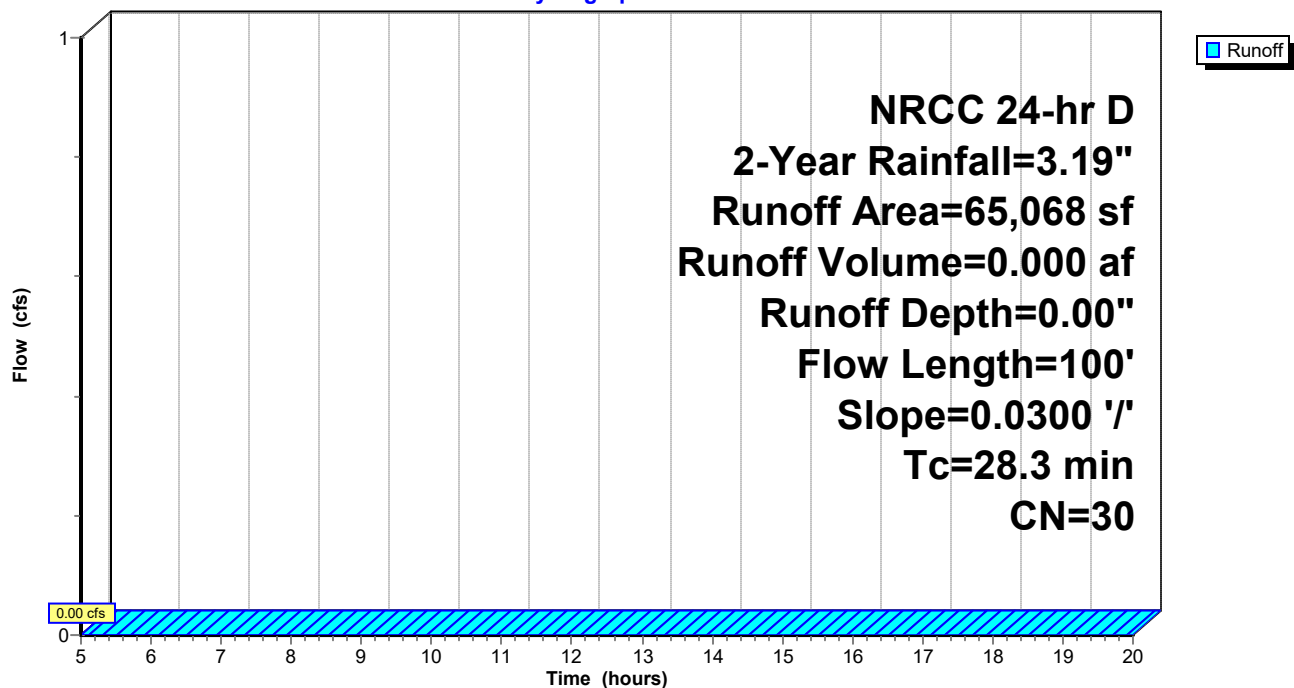
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
65,068	30	Woods, Good, HSG A
65,068		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0300	0.09		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc 315' 6.7% Tc=4.1 min
5.0					Direct Entry, Ditch 50' 1% Tc=0.2
28.3	100	Total			

Subcatchment 1S: Subcatchment 1

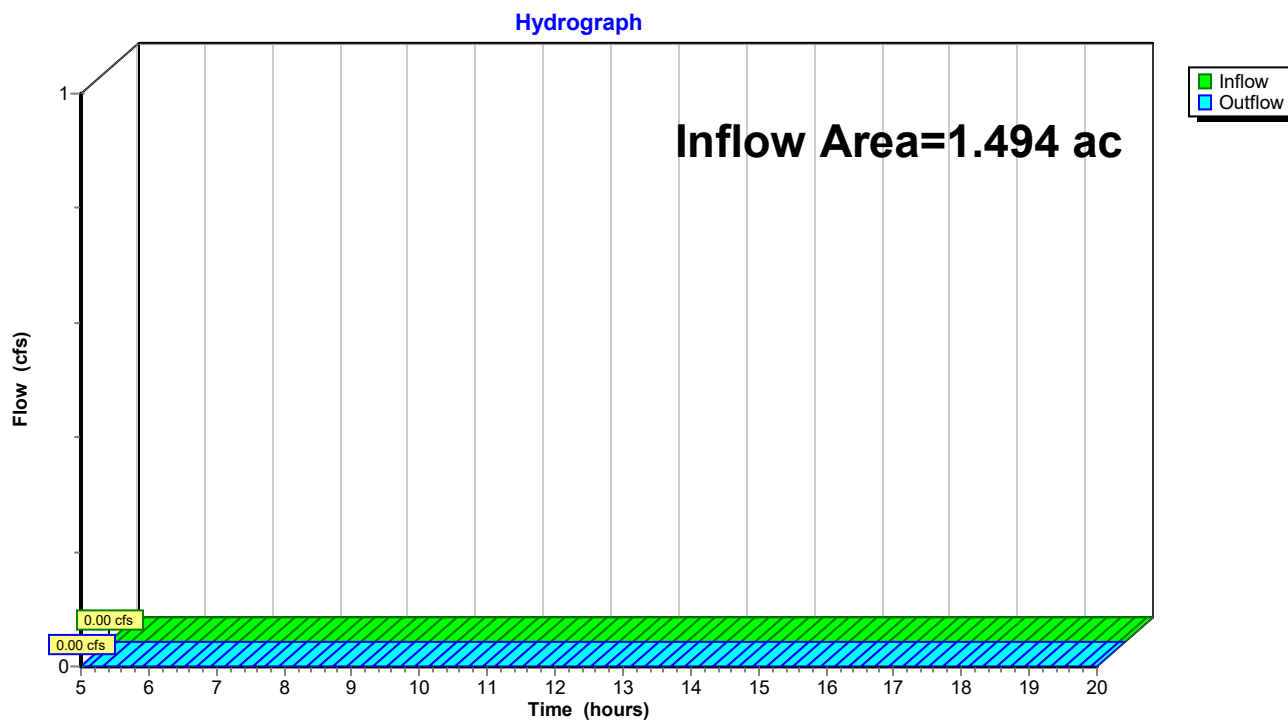
Hydrograph



Summary for Reach DP A: Design Point A

Inflow Area = 1.494 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A

Existing Condition 02032023

NRCC 24-hr D 10-Year Rainfall=4.77"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1

Runoff Area=65,068 sf 0.00% Impervious Runoff Depth=0.00"

Flow Length=100' Slope=0.0300 '/' Tc=28.3 min CN=30 Runoff=0.00 cfs 0.000 af

Reach DP A: Design Point A

Inflow=0.00 cfs 0.000 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 1.494 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 1.494 ac 0.00% Impervious = 0.000 ac

Existing Condition 02032023

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NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment 1S: Subcatchment 1

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Reach DP A : Design Point A

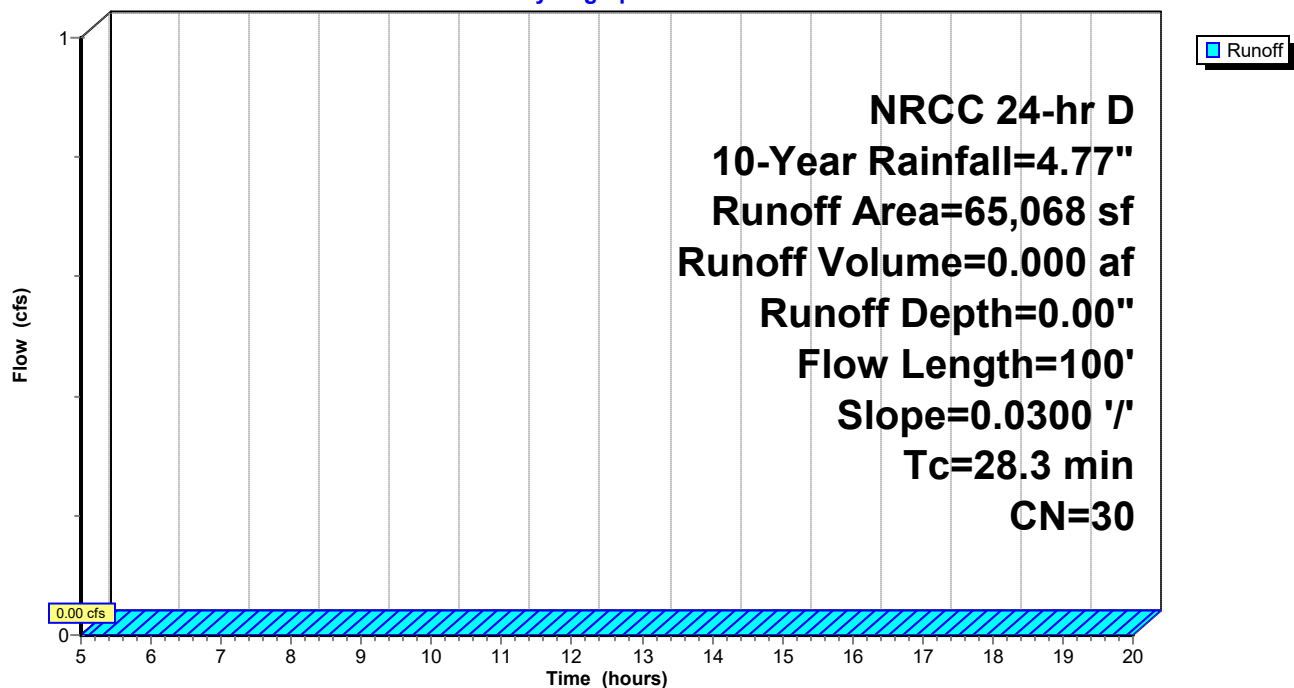
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
65,068	30	Woods, Good, HSG A
65,068		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0300	0.09		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc 315' 6.7% Tc=4.1 min
5.0					Direct Entry, Ditch 50' 1% Tc=0.2
28.3	100	Total			

Subcatchment 1S: Subcatchment 1

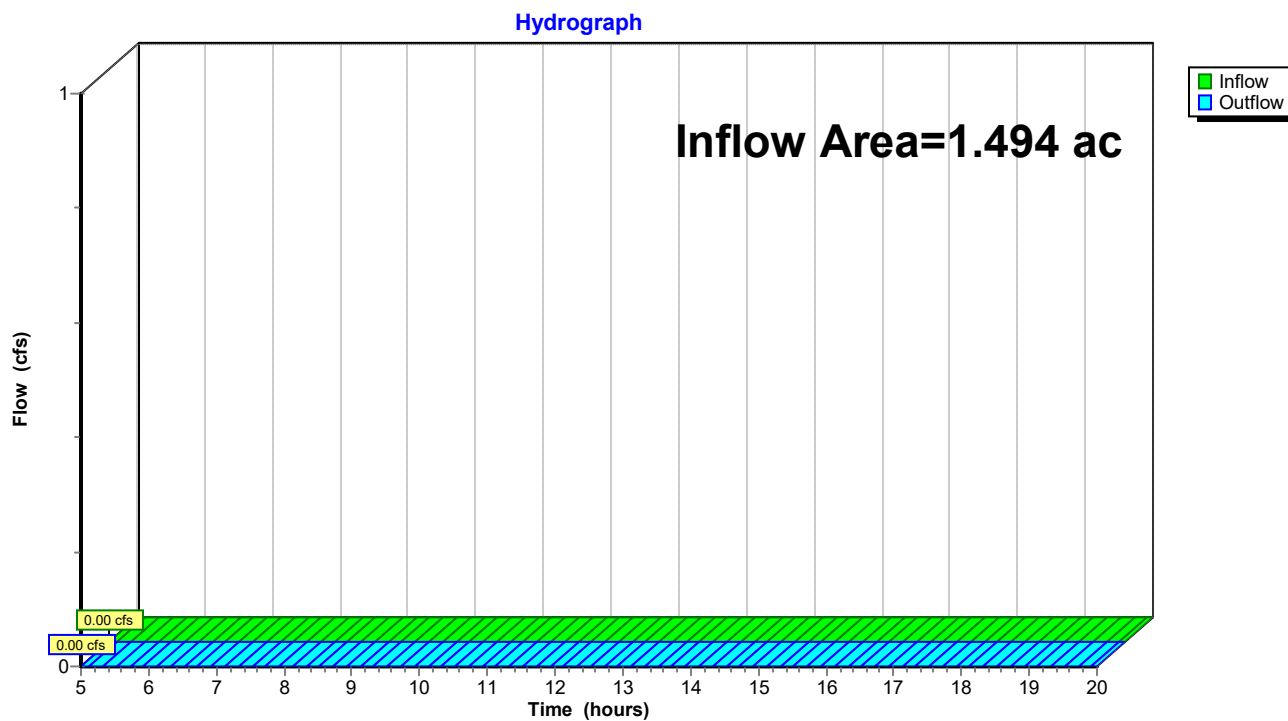
Hydrograph



Summary for Reach DP A: Design Point A

Inflow Area = 1.494 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A

Existing Condition 02032023

NRCC 24-hr D 25-Year Rainfall=6.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1

Runoff Area=65,068 sf 0.00% Impervious Runoff Depth>0.03"

Flow Length=100' Slope=0.0300 '/' Tc=28.3 min CN=30 Runoff=0.01 cfs 0.004 af

Reach DP A: Design Point A

Inflow=0.01 cfs 0.004 af

Outflow=0.01 cfs 0.004 af

Total Runoff Area = 1.494 ac Runoff Volume = 0.004 af Average Runoff Depth = 0.03"
100.00% Pervious = 1.494 ac 0.00% Impervious = 0.000 ac

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NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Subcatchment 1S: Subcatchment 1

Runoff = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Depth> 0.03"

Routed to Reach DP A : Design Point A

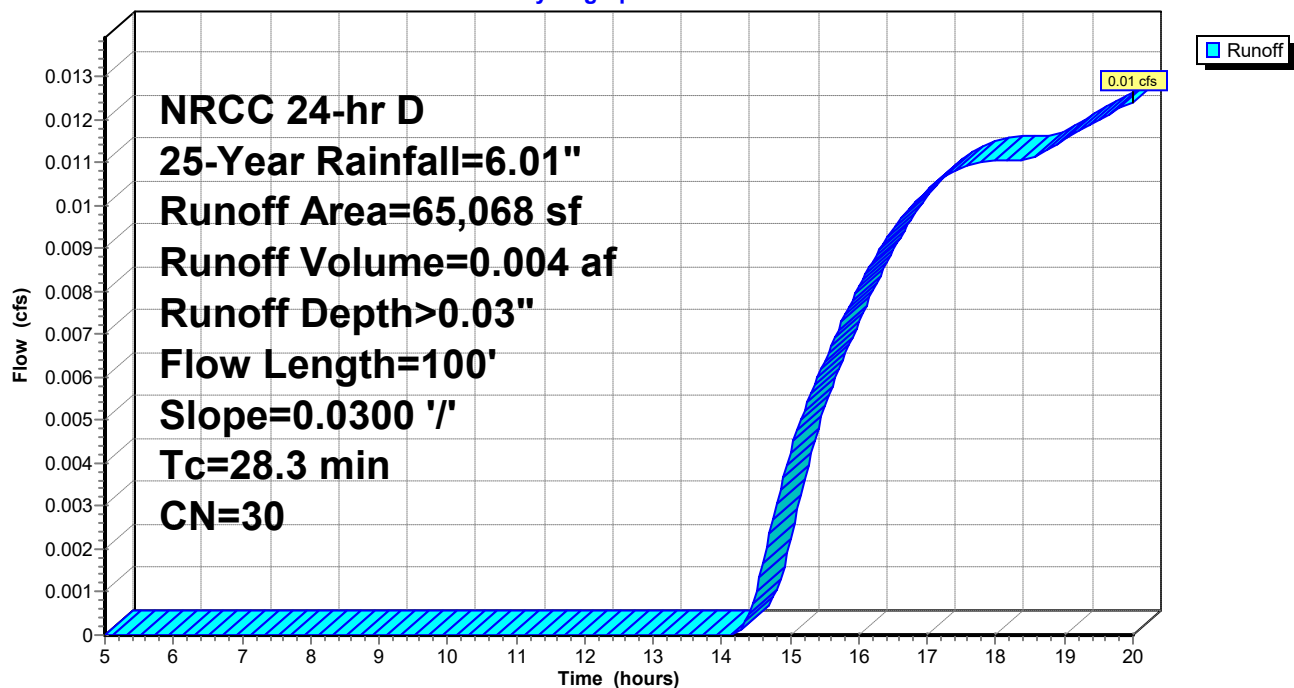
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
65,068	30	Woods, Good, HSG A
65,068		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0300	0.09		Sheet Flow,
5.0					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc 315' 6.7% Tc=4.1 min
					Direct Entry, Ditch 50' 1% Tc=0.2
28.3	100	Total			

Subcatchment 1S: Subcatchment 1

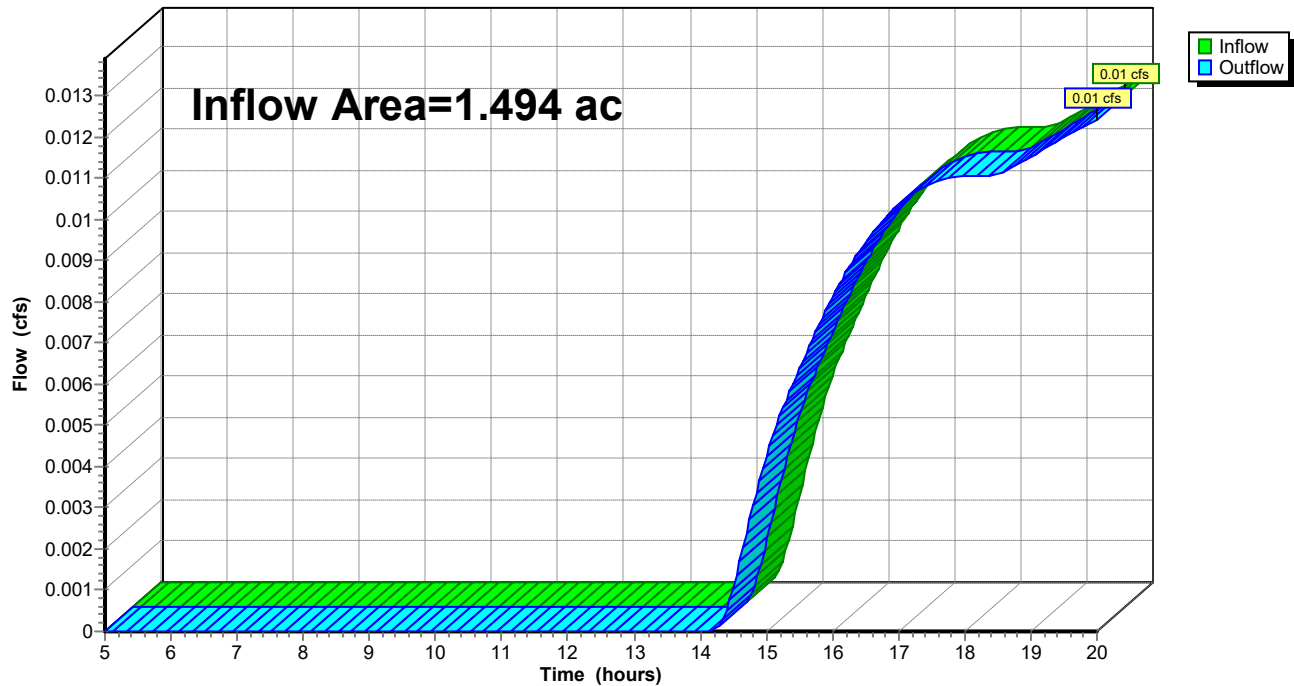
Hydrograph

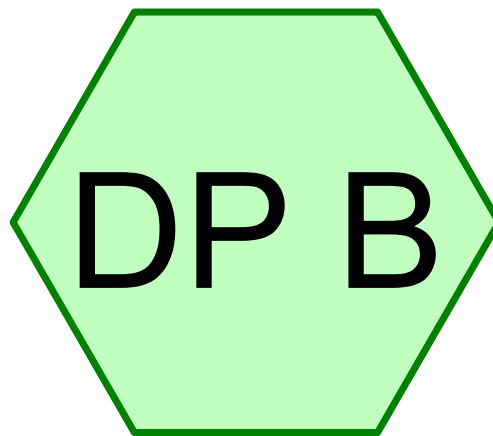


Summary for Reach DP A: Design Point A

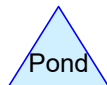
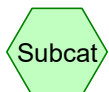
Inflow Area = 1.494 ac, 0.00% Impervious, Inflow Depth > 0.03" for 25-Year event
Inflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A**Hydrograph**



Design Point B



Routing Diagram for Existing Condition DP B 02032023
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Existing Condition DP B 02032023

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NRCC 24-hr	D	Default	24.00	1	3.19	2
2	10-Year	NRCC 24-hr	D	Default	24.00	1	4.77	2
3	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2
4	100-Year	NRCC 24-hr	D	Default	24.00	1	8.54	2

Existing Condition DP B 02032023

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.329	30	Woods, Good, HSG A (DP B)
0.773	77	Woods, Good, HSG D (DP B)
1.102	63	TOTAL AREA

Existing Condition DP B 02032023

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.329	HSG A	DP B
0.000	HSG B	
0.000	HSG C	
0.773	HSG D	DP B
0.000	Other	
1.102		TOTAL AREA

Existing Condition DP B 02032023

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.329	0.000	0.000	0.773	0.000	1.102	Woods, Good	DP B
0.329	0.000	0.000	0.773	0.000	1.102	TOTAL AREA	

Existing Condition DP B 02032023*NRCC 24-hr D 2-Year Rainfall=3.19"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=48,022 sf 0.00% Impervious Runoff Depth>0.42"

Flow Length=100' Slope=0.0550 '/' Tc=24.4 min CN=63 Runoff=0.26 cfs 0.038 af

Total Runoff Area = 1.102 ac Runoff Volume = 0.038 af Average Runoff Depth = 0.42"**100.00% Pervious = 1.102 ac 0.00% Impervious = 0.000 ac**

Existing Condition DP B 02032023

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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Subcatchment DP B: Design Point B

Runoff = 0.26 cfs @ 12.41 hrs, Volume= 0.038 af, Depth> 0.42"

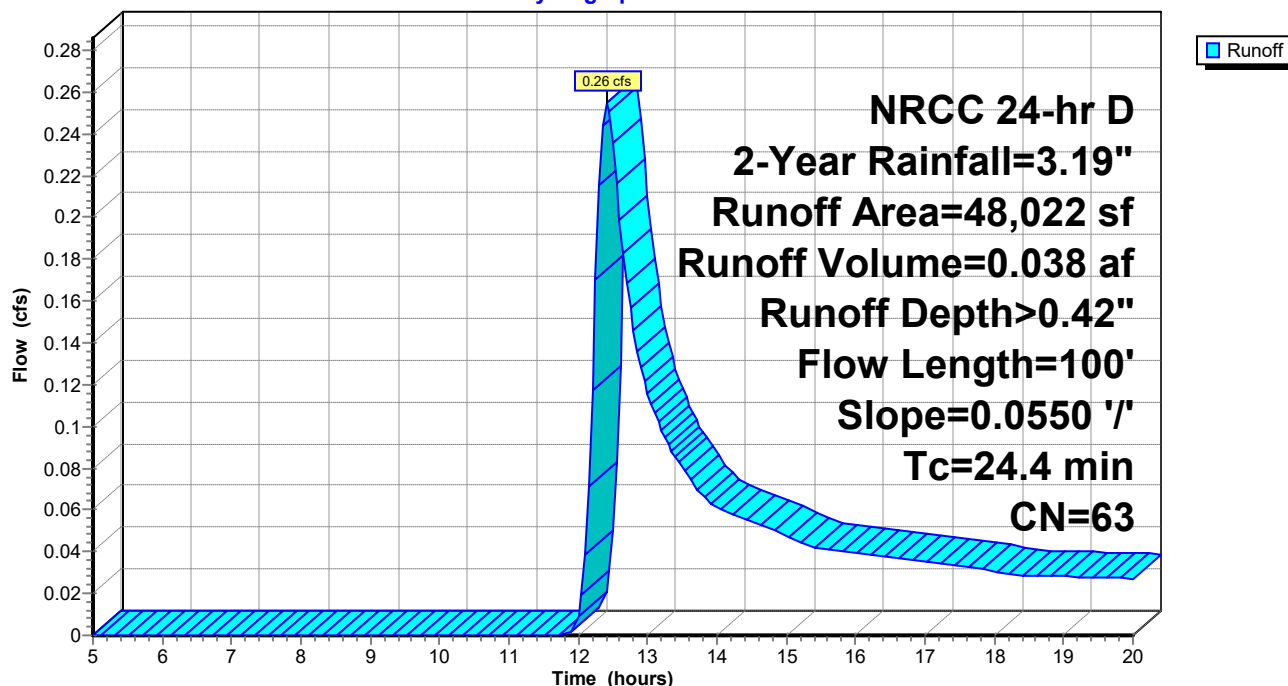
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
14,332	30	Woods, Good, HSG A
33,690	77	Woods, Good, HSG D
48,022	63	Weighted Average
48,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc woods 160' 1.25% Tc=4.8
5.0					Direct Entry, Swale Woods 90' 1.5% Tc=0.3
24.4	100	Total			

Subcatchment DP B: Design Point B

Hydrograph



Existing Condition DP B 02032023

NRCC 24-hr D 10-Year Rainfall=4.77"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=48,022 sf 0.00% Impervious Runoff Depth>1.16"

Flow Length=100' Slope=0.0550 '/' Tc=24.4 min CN=63 Runoff=0.88 cfs 0.107 af

Total Runoff Area = 1.102 ac Runoff Volume = 0.107 af Average Runoff Depth = 1.16"**100.00% Pervious = 1.102 ac 0.00% Impervious = 0.000 ac**

Existing Condition DP B 02032023

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NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment DP B: Design Point B

Runoff = 0.88 cfs @ 12.37 hrs, Volume= 0.107 af, Depth> 1.16"

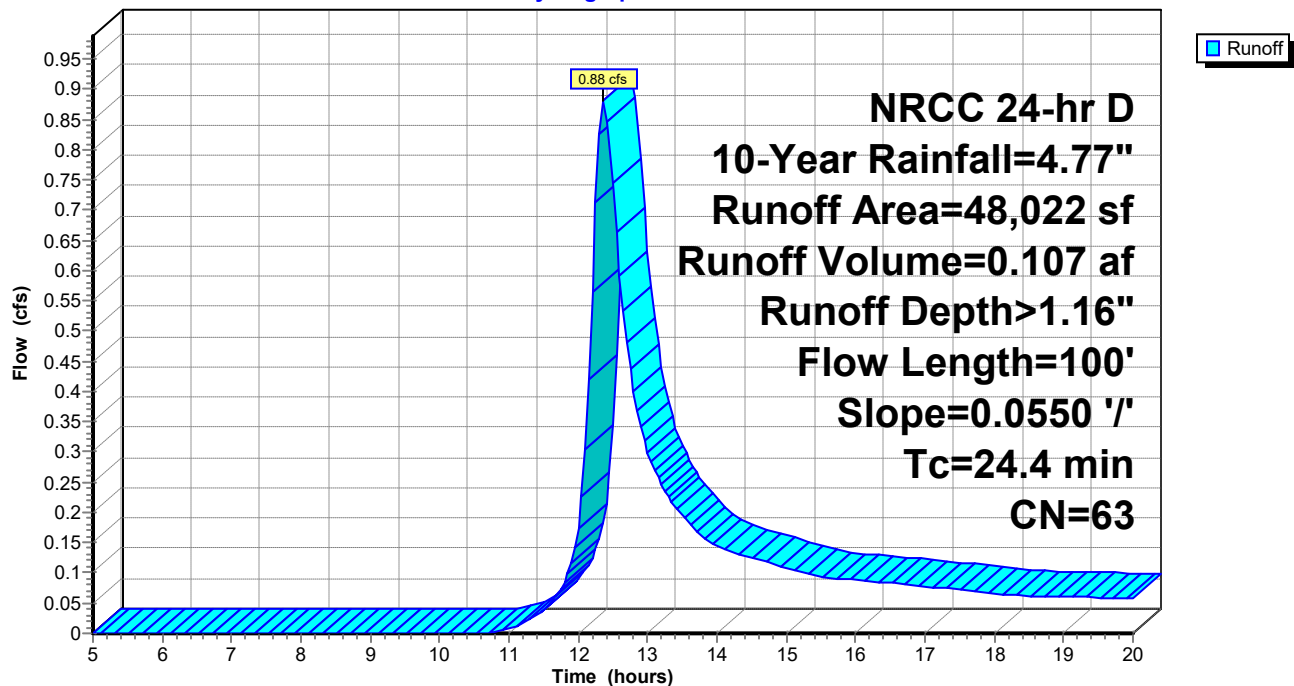
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
14,332	30	Woods, Good, HSG A
33,690	77	Woods, Good, HSG D
48,022	63	Weighted Average
48,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc woods 160' 1.25% Tc=4.8
5.0					Direct Entry, Swale Woods 90' 1.5% Tc=0.3
24.4	100	Total			

Subcatchment DP B: Design Point B

Hydrograph



Existing Condition DP B 02032023

NRCC 24-hr D 25-Year Rainfall=6.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=48,022 sf 0.00% Impervious Runoff Depth>1.89"

Flow Length=100' Slope=0.0550 '/' Tc=24.4 min CN=63 Runoff=1.48 cfs 0.174 af

Total Runoff Area = 1.102 ac Runoff Volume = 0.174 af Average Runoff Depth = 1.89"**100.00% Pervious = 1.102 ac 0.00% Impervious = 0.000 ac**

Existing Condition DP B 02032023

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NRCC 24-hr D 25-Year Rainfall=6.01"

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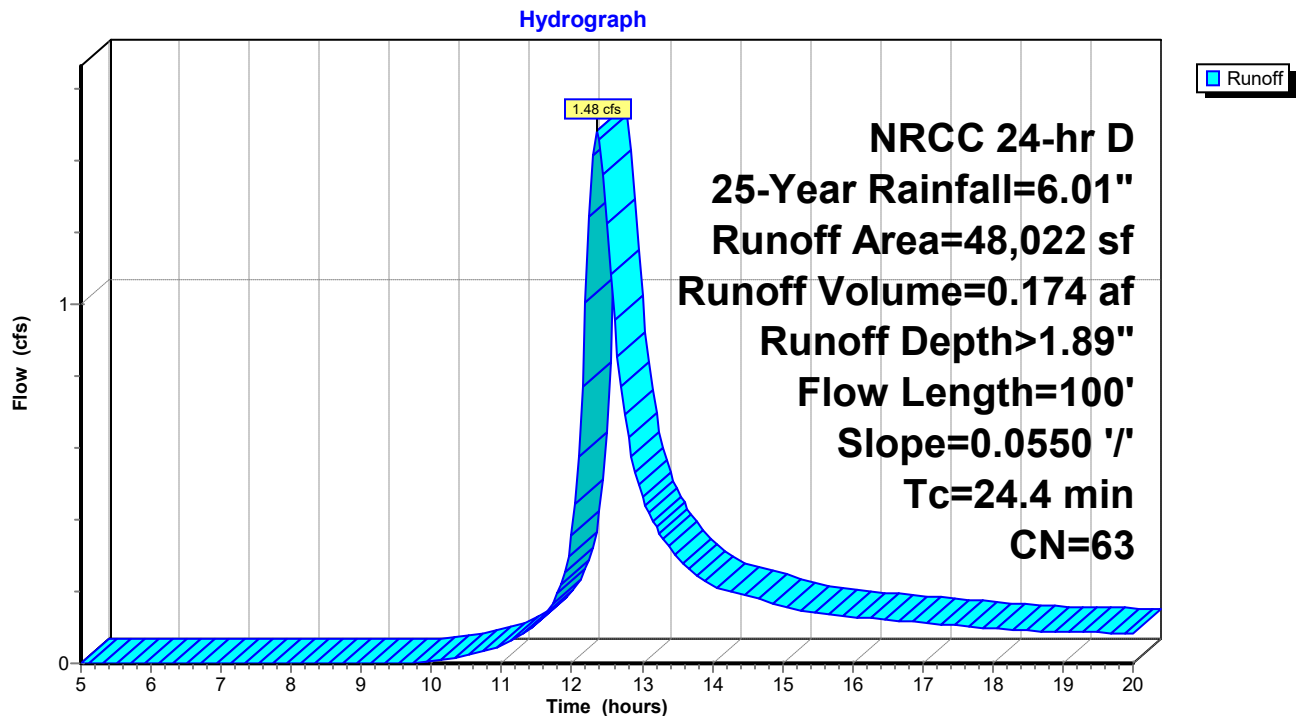
Summary for Subcatchment DP B: Design Point B

Runoff = 1.48 cfs @ 12.36 hrs, Volume= 0.174 af, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
14,332	30	Woods, Good, HSG A
33,690	77	Woods, Good, HSG D
48,022	63	Weighted Average
48,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc woods 160' 1.25% Tc=4.8
5.0					Direct Entry, Swale Woods 90' 1.5% Tc=0.3
24.4	100	Total			

Subcatchment DP B: Design Point B

Existing Condition DP B 02032023

NRCC 24-hr D 100-Year Rainfall=8.54"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=48,022 sf 0.00% Impervious Runoff Depth>3.62"

Flow Length=100' Slope=0.0550 '/' Tc=24.4 min CN=63 Runoff=2.87 cfs 0.332 af

Total Runoff Area = 1.102 ac Runoff Volume = 0.332 af Average Runoff Depth = 3.62"**100.00% Pervious = 1.102 ac 0.00% Impervious = 0.000 ac**

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NRCC 24-hr D 100-Year Rainfall=8.54"

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Summary for Subcatchment DP B: Design Point B

Runoff = 2.87 cfs @ 12.35 hrs, Volume= 0.332 af, Depth> 3.62"

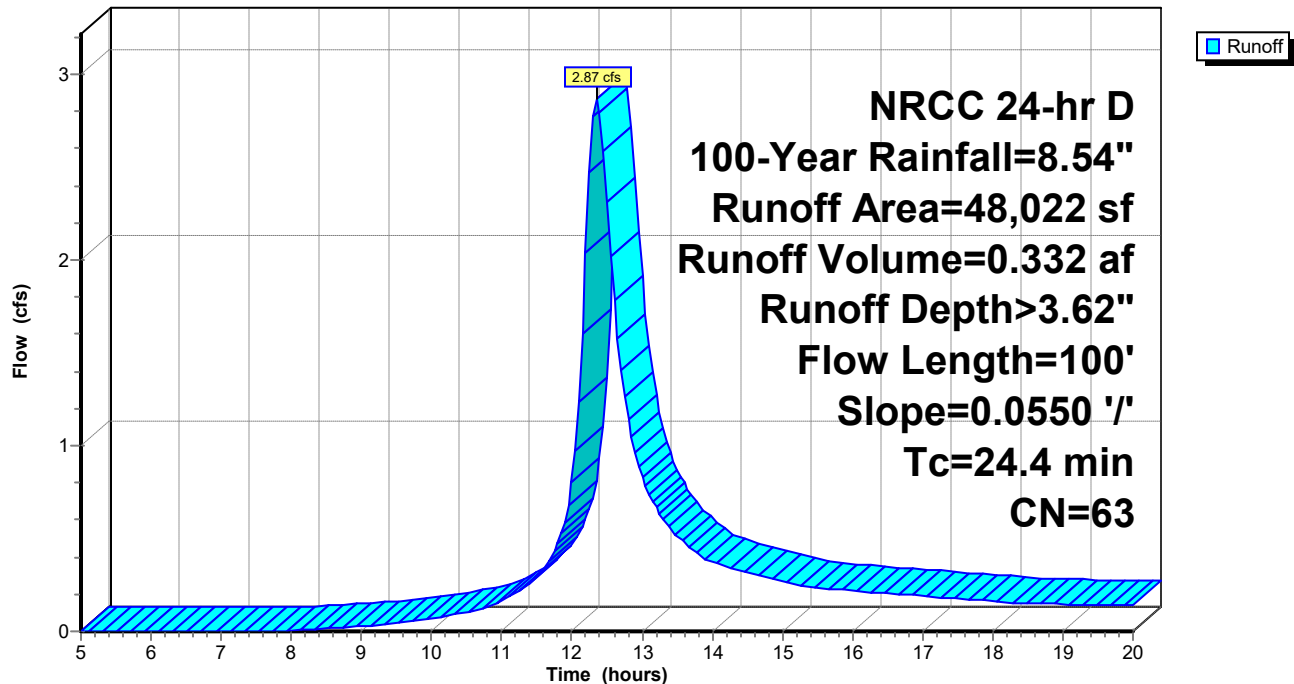
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 100-Year Rainfall=8.54"

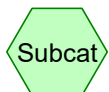
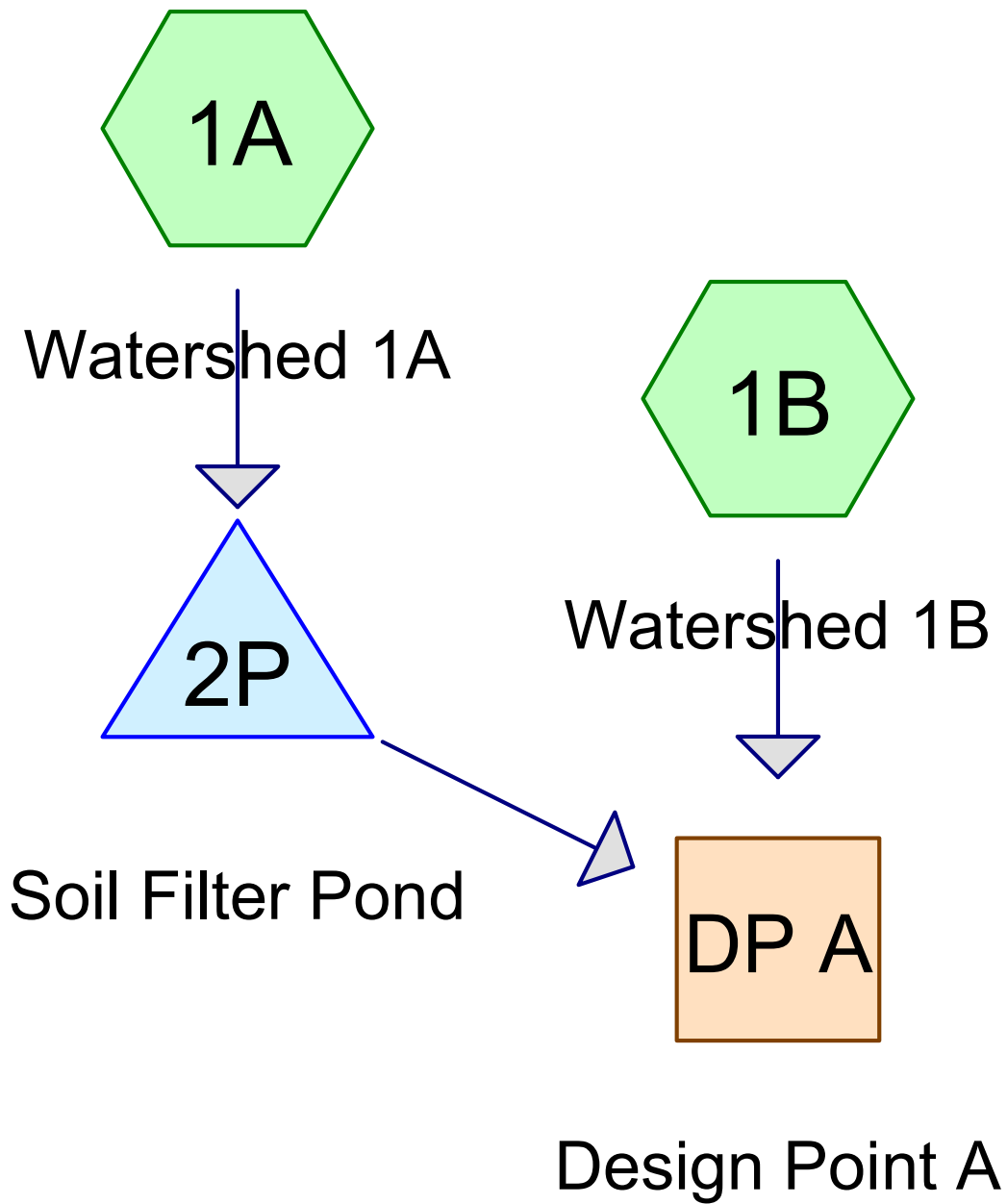
Area (sf)	CN	Description
14,332	30	Woods, Good, HSG A
33,690	77	Woods, Good, HSG D
48,022	63	Weighted Average
48,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shal Conc woods 160' 1.25% Tc=4.8
5.0					Direct Entry, Swale Woods 90' 1.5% Tc=0.3
24.4	100	Total			

Subcatchment DP B: Design Point B

Hydrograph

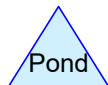




Subcat



Reach



Pond



Link

Routing Diagram for Proposed Condition

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NRCC 24-hr	D	Default	24.00	1	3.19	2
2	10-Year	NRCC 24-hr	D	Default	24.00	1	4.77	2
3	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.648	39	>75% Grass cover, Good, HSG A (1A, 1B)
0.379	98	Building/Pavement surface, HSG A (1A)
0.065	96	Gravel surface, HSG A (1B)
0.684	30	Woods, Good, HSG A (1A, 1B)
1.777	50	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.777	HSG A	1A, 1B
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.777		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.648	0.000	0.000	0.000	0.000	0.648	>75% Grass cover, Good	1A, 1B
0.379	0.000	0.000	0.000	0.000	0.379	Building/Pavement surface	1A
0.065	0.000	0.000	0.000	0.000	0.065	Gravel surface	1B
0.684	0.000	0.000	0.000	0.000	0.684	Woods, Good	1A, 1B
1.777	0.000	0.000	0.000	0.000	1.777	TOTAL AREA	

Proposed Condition

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2P	99.00	98.50	20.0	0.0250	0.012	0.0	6.0	0.0

Proposed Condition*NRCC 24-hr D 2-Year Rainfall=3.19"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>0.10"
Flow Length=105' Tc=37.5 min CN=51 Runoff=0.03 cfs 0.012 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>0.05"
Flow Length=70' Slope=0.0420 '/' Tc=35.9 min CN=48 Runoff=0.00 cfs 0.001 af

Reach DP A: Design Point A

Inflow=0.03 cfs 0.013 af
Outflow=0.03 cfs 0.013 af

Pond 2P: Soil Filter Pond

Peak Elev=102.02' Storage=32 cf Inflow=0.03 cfs 0.012 af
Outflow=0.02 cfs 0.012 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.014 af Average Runoff Depth = 0.09"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

Proposed Condition

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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 0.03 cfs @ 13.58 hrs, Volume= 0.012 af, Depth> 0.10"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Sheet, smooth, 40' 2.5% Tc=0.5
5.0					Direct Entry, Shal Conc,grass, 100' 2.5% Tc=1.5
5.0					Direct Entry, Shal Conc woods 45' 9% Tc=0.5
5.0					Direct Entry, Ditch 140 7.8% Tc=0.2
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
37.5	105	Total			

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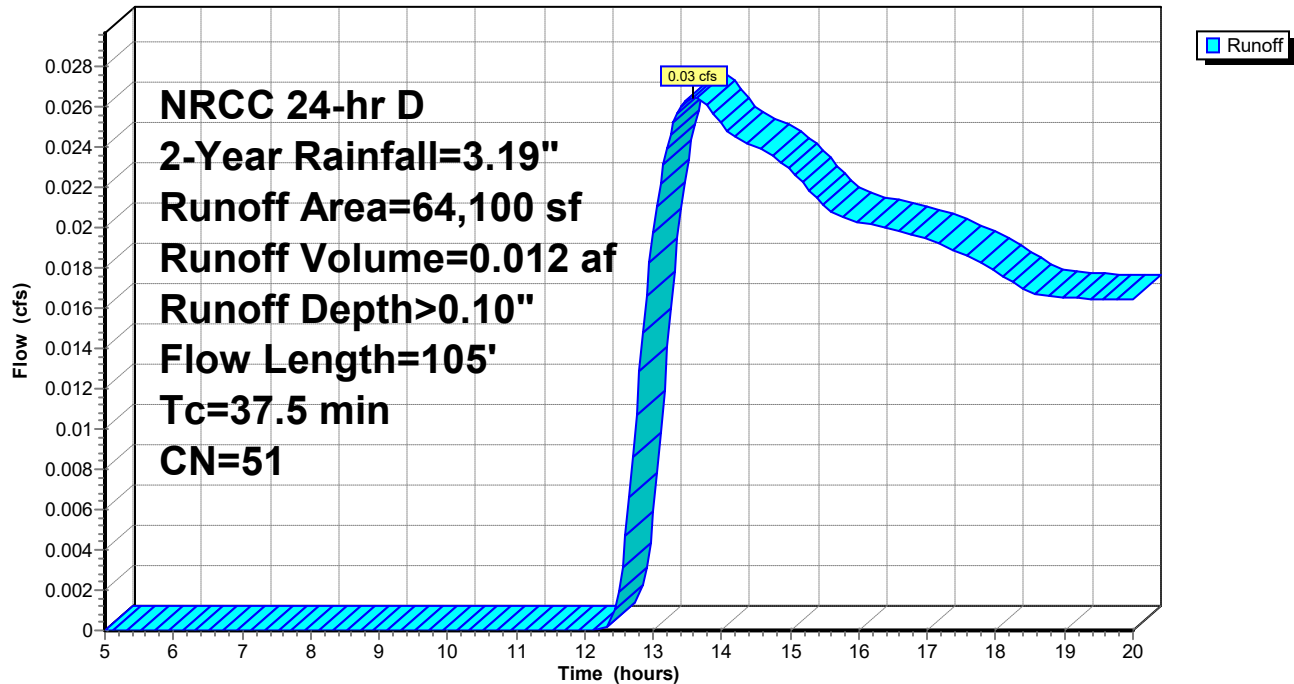
NRCC 24-hr D 2-Year Rainfall=3.19"

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Subcatchment 1A: Watershed 1A

Hydrograph



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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.00 cfs @ 16.80 hrs, Volume= 0.001 af, Depth> 0.05"

Routed to Reach DP A : Design Point A

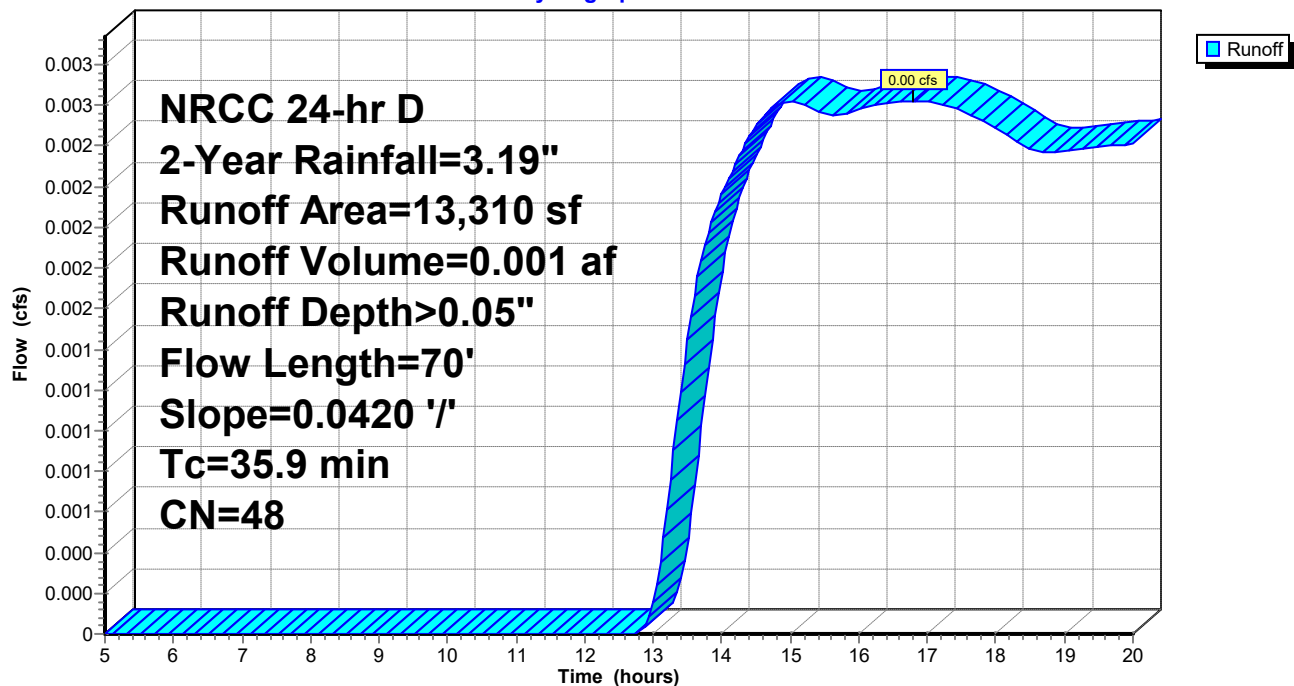
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
5.0					Direct Entry, Shal Conc, Forest, 90' 7% Tc=2.3
5.0					Direct Entry, 15" Culvert 36' 1% Tc=0.1
5.0					Direct Entry, Ditch 80' 1% Tc=0.3
35.9	70	Total			

Subcatchment 1B: Watershed 1B

Hydrograph



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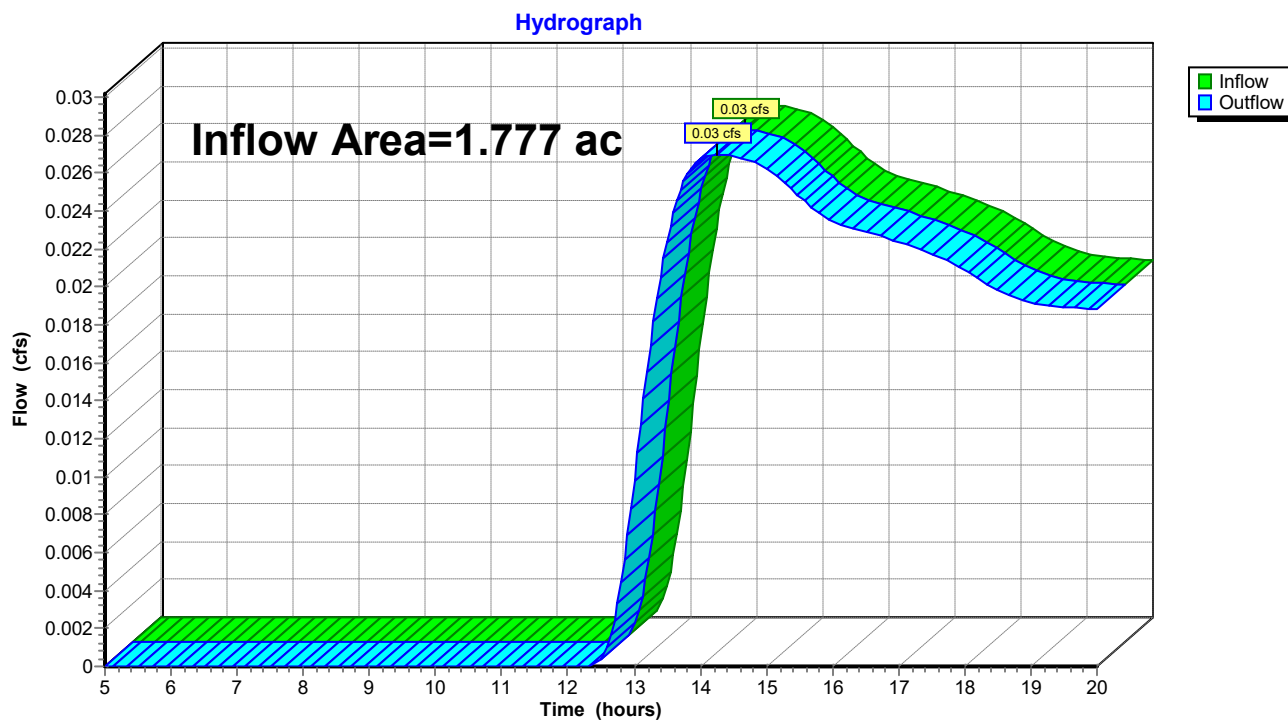
Page 11

Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 0.09" for 2-Year event
Inflow = 0.03 cfs @ 14.27 hrs, Volume= 0.013 af
Outflow = 0.03 cfs @ 14.27 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 0.10" for 2-Year event
Inflow = 0.03 cfs @ 13.58 hrs, Volume= 0.012 af
Outflow = 0.02 cfs @ 14.12 hrs, Volume= 0.012 af, Atten= 7%, Lag= 32.2 min
Primary = 0.02 cfs @ 14.12 hrs, Volume= 0.012 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 102.02' @ 14.12 hrs Surf.Area= 1,813 sf Storage= 32 cf

Plug-Flow detention time= 21.4 min calculated for 0.012 af (96% of inflow)
Center-of-Mass det. time= 11.9 min (976.9 - 965.0)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.04 cfs @ 14.12 hrs HW=102.02' (Free Discharge)

1=Culvert (Passes 0.04 cfs of 1.57 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.04 cfs @ 7.58 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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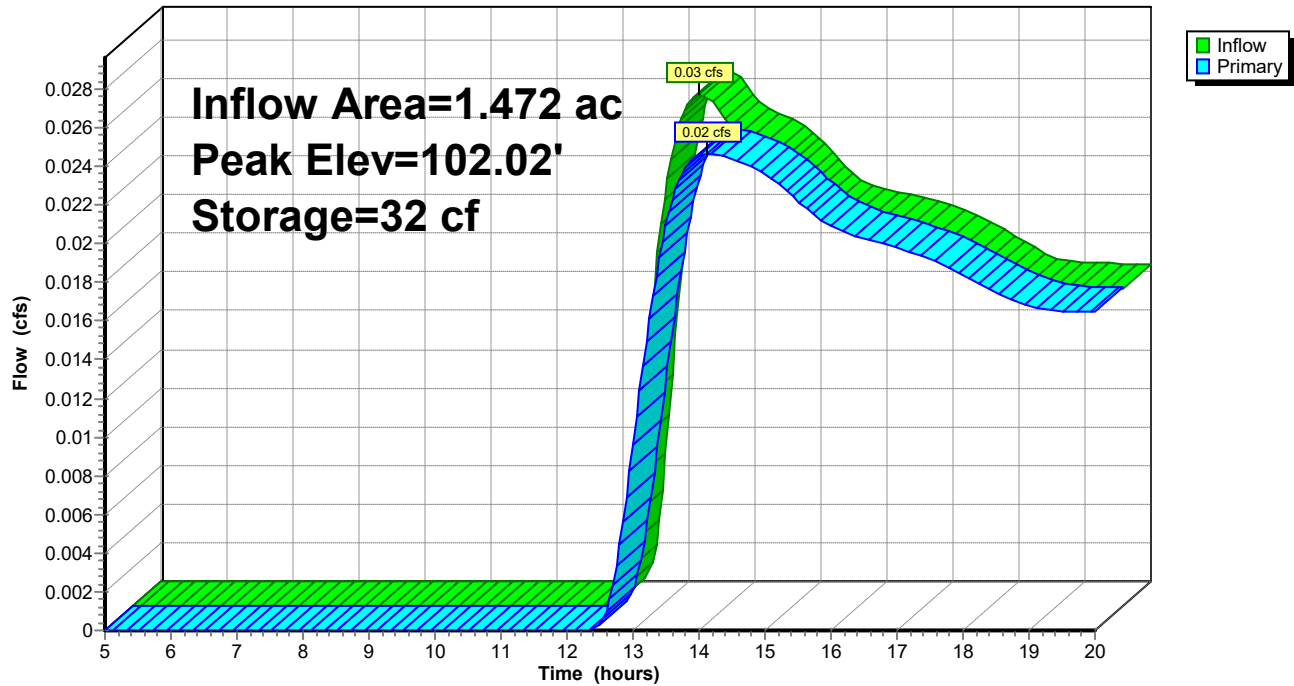
NRCC 24-hr D 2-Year Rainfall=3.19"

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Pond 2P: Soil Filter Pond

Hydrograph



Proposed Condition

NRCC 24-hr D 10-Year Rainfall=4.77"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>0.51"
Flow Length=105' Tc=37.5 min CN=51 Runoff=0.30 cfs 0.063 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>0.39"
Flow Length=70' Slope=0.0420 '/' Tc=35.9 min CN=48 Runoff=0.04 cfs 0.010 af

Reach DP A: Design Point A

Inflow=0.08 cfs 0.039 af
Outflow=0.08 cfs 0.039 af

Pond 2P: Soil Filter Pond

Peak Elev=102.75' Storage=1,460 cf Inflow=0.30 cfs 0.063 af
Outflow=0.05 cfs 0.029 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.073 af Average Runoff Depth = 0.49"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

Proposed Condition

NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 0.30 cfs @ 12.65 hrs, Volume= 0.063 af, Depth> 0.51"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Sheet, smooth, 40' 2.5% Tc=0.5
5.0					Direct Entry, Shal Conc,grass, 100' 2.5% Tc=1.5
5.0					Direct Entry, Shal Conc woods 45' 9% Tc=0.5
5.0					Direct Entry, Ditch 140 7.8% Tc=0.2
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
37.5	105	Total			

Proposed Condition

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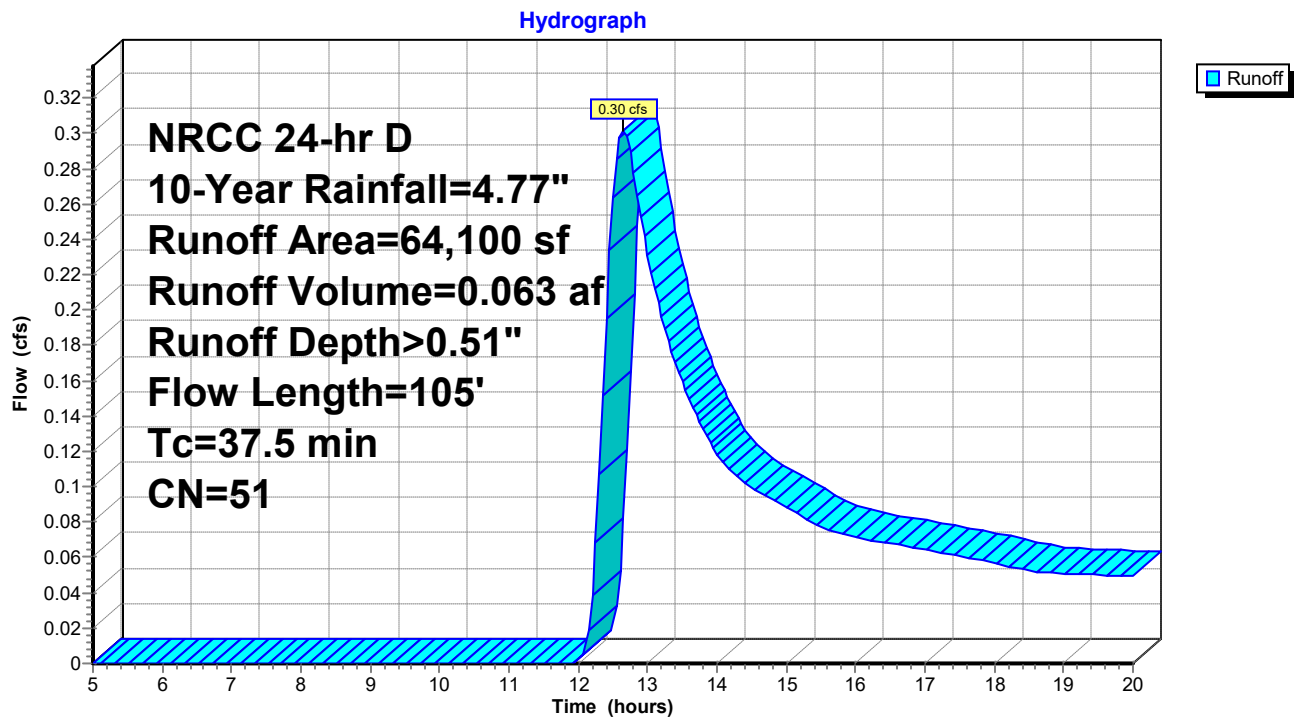
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Subcatchment 1A: Watershed 1A



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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.04 cfs @ 12.69 hrs, Volume= 0.010 af, Depth> 0.39"
Routed to Reach DP A : Design Point A

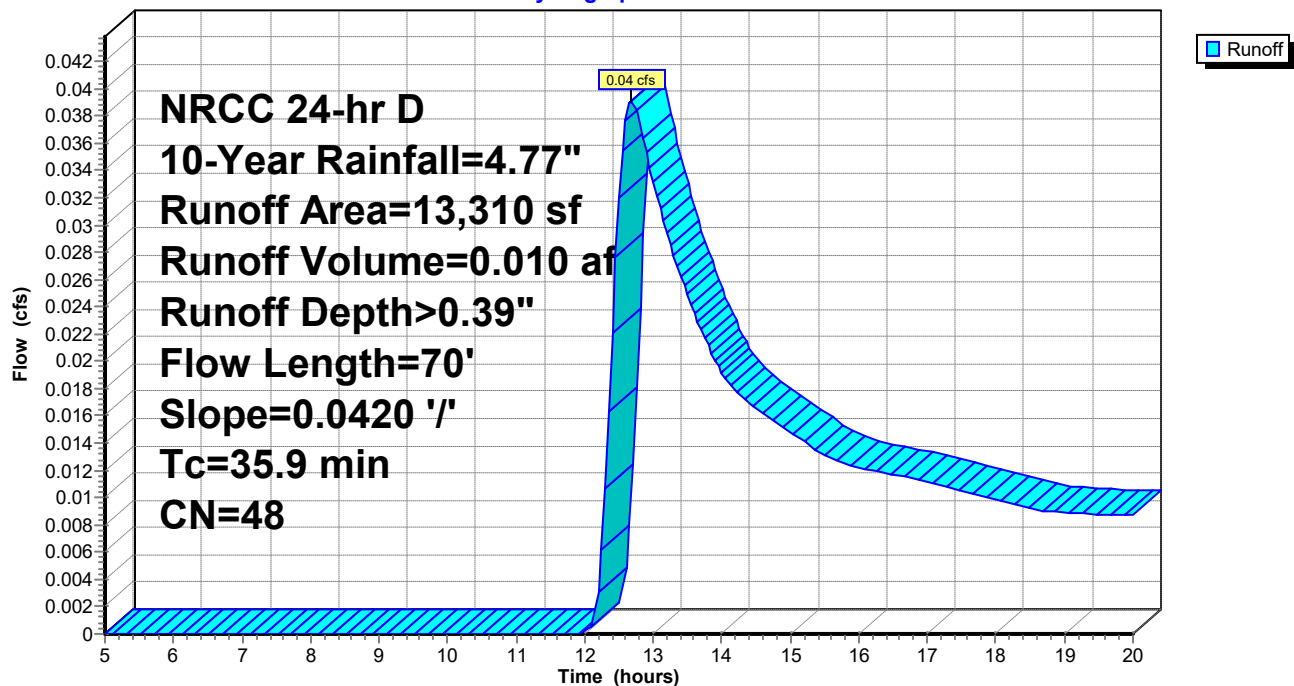
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
5.0					Direct Entry, Shal Conc, Forest, 90' 7% Tc=2.3
5.0					Direct Entry, 15" Culvert 36' 1% Tc=0.1
5.0					Direct Entry, Ditch 80' 1% Tc=0.3
35.9	70	Total			

Subcatchment 1B: Watershed 1B

Hydrograph



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NRCC 24-hr D 10-Year Rainfall=4.77"

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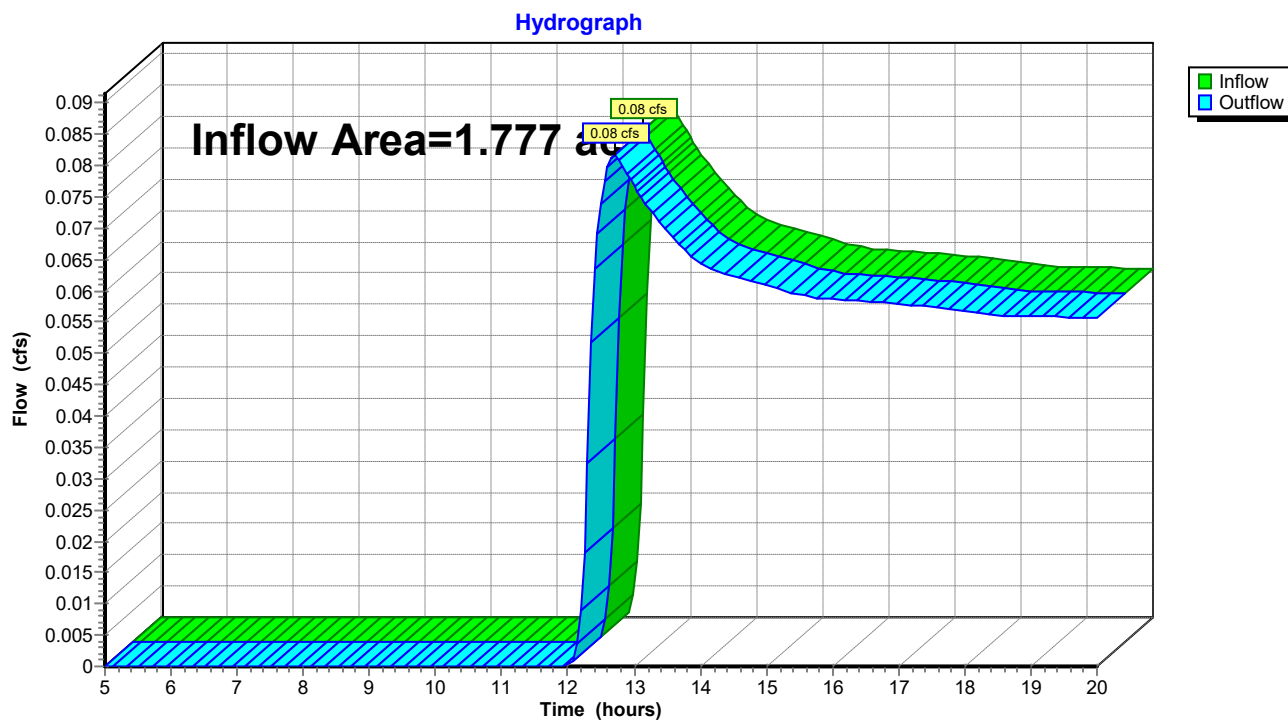
Page 18

Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 0.27" for 10-Year event
Inflow = 0.08 cfs @ 12.70 hrs, Volume= 0.039 af
Outflow = 0.08 cfs @ 12.70 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



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NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 0.51" for 10-Year event
Inflow = 0.30 cfs @ 12.65 hrs, Volume= 0.063 af
Outflow = 0.05 cfs @ 20.00 hrs, Volume= 0.029 af, Atten= 84%, Lag= 440.8 min
Primary = 0.05 cfs @ 20.00 hrs, Volume= 0.029 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 102.75' @ 20.00 hrs Surf.Area= 2,088 sf Storage= 1,460 cf

Plug-Flow detention time= 189.7 min calculated for 0.029 af (47% of inflow)
Center-of-Mass det. time= 75.7 min (972.6 - 896.9)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.05 cfs @ 20.00 hrs HW=102.75' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 1.77 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.05 cfs @ 8.62 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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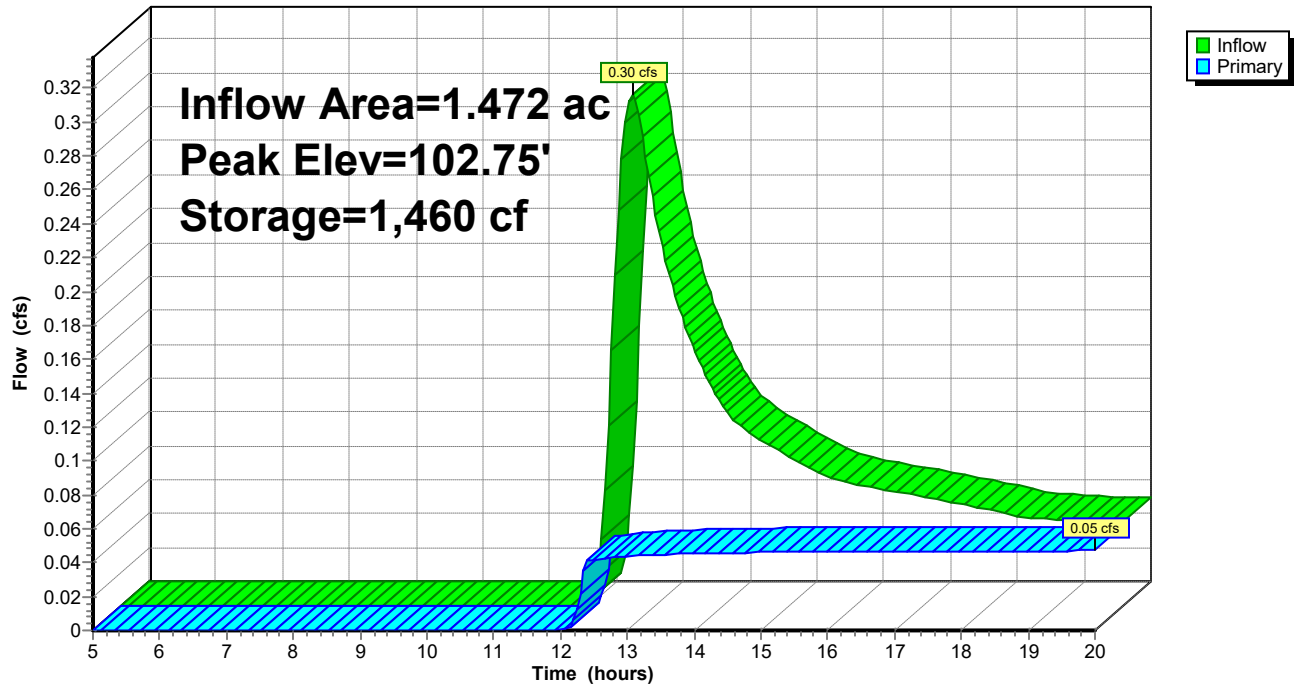
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Pond 2P: Soil Filter Pond

Hydrograph



Proposed Condition

NRCC 24-hr D 25-Year Rainfall=6.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>1.00"
Flow Length=105' Tc=37.5 min CN=51 Runoff=0.73 cfs 0.123 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=70' Slope=0.0420 '/' Tc=35.9 min CN=48 Runoff=0.11 cfs 0.021 af

Reach DP A: Design Point A

Inflow=0.16 cfs 0.057 af
Outflow=0.16 cfs 0.057 af

Pond 2P: Soil Filter Pond

Peak Elev=103.75' Storage=3,772 cf Inflow=0.73 cfs 0.123 af
Outflow=0.08 cfs 0.036 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.143 af Average Runoff Depth = 0.97"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

Proposed Condition

NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 0.73 cfs @ 12.58 hrs, Volume= 0.123 af, Depth> 1.00"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Sheet, smooth, 40' 2.5% Tc=0.5
5.0					Direct Entry, Shal Conc,grass, 100' 2.5% Tc=1.5
5.0					Direct Entry, Shal Conc woods 45' 9% Tc=0.5
5.0					Direct Entry, Ditch 140 7.8% Tc=0.2
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
37.5	105	Total			

Proposed Condition

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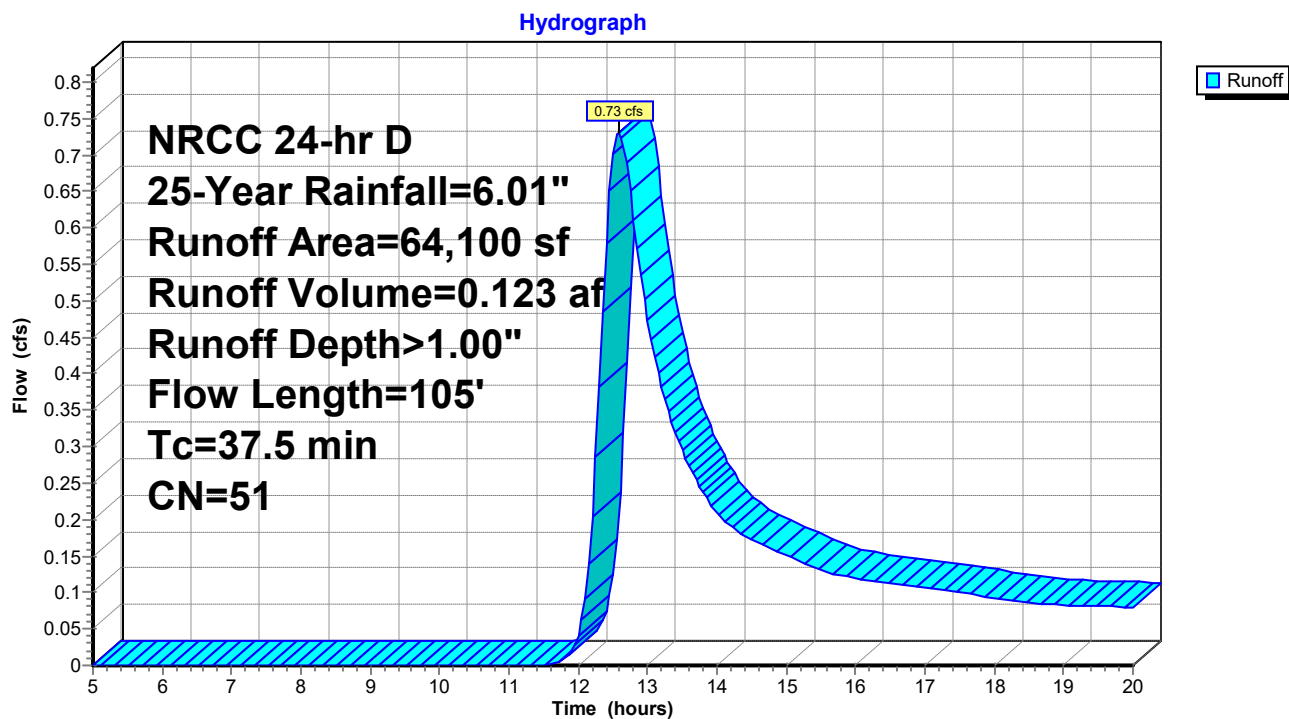
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Subcatchment 1A: Watershed 1A



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NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.11 cfs @ 12.58 hrs, Volume= 0.021 af, Depth> 0.81"

Routed to Reach DP A : Design Point A

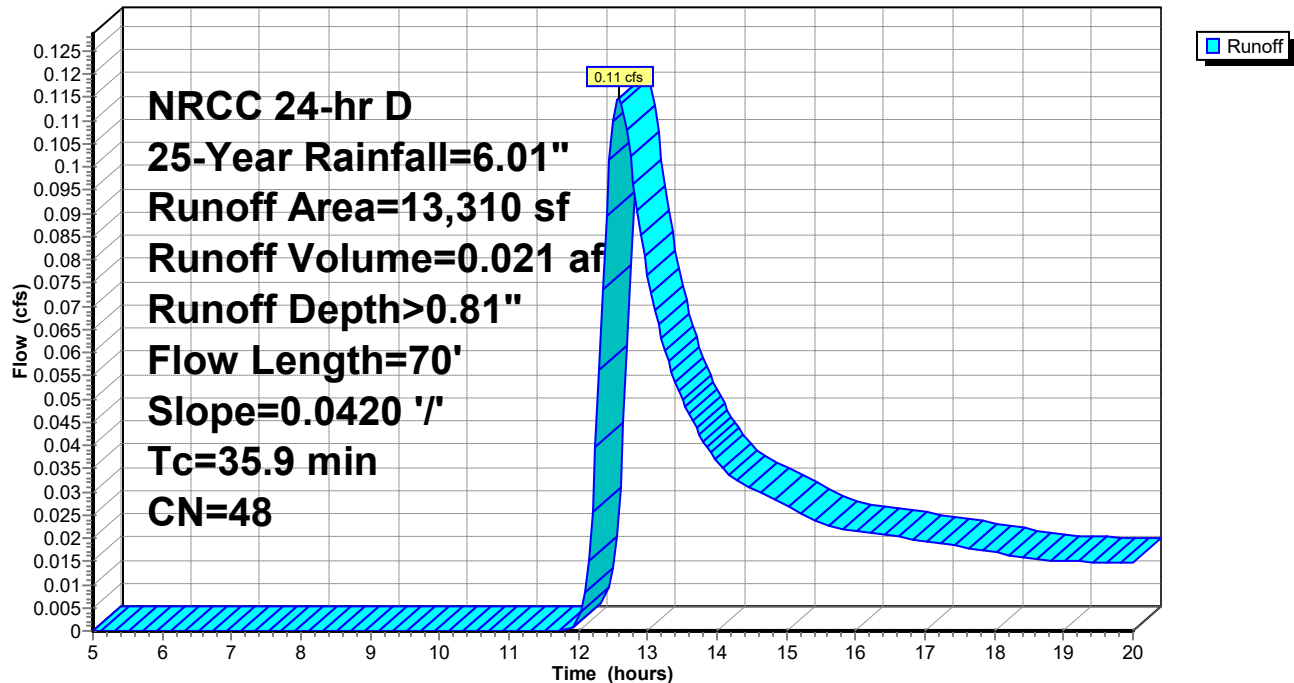
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
5.0					Direct Entry, Shal Conc, Forest, 90' 7% Tc=2.3
5.0					Direct Entry, 15" Culvert 36' 1% Tc=0.1
5.0					Direct Entry, Ditch 80' 1% Tc=0.3
35.9	70	Total			

Subcatchment 1B: Watershed 1B

Hydrograph



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NRCC 24-hr D 25-Year Rainfall=6.01"

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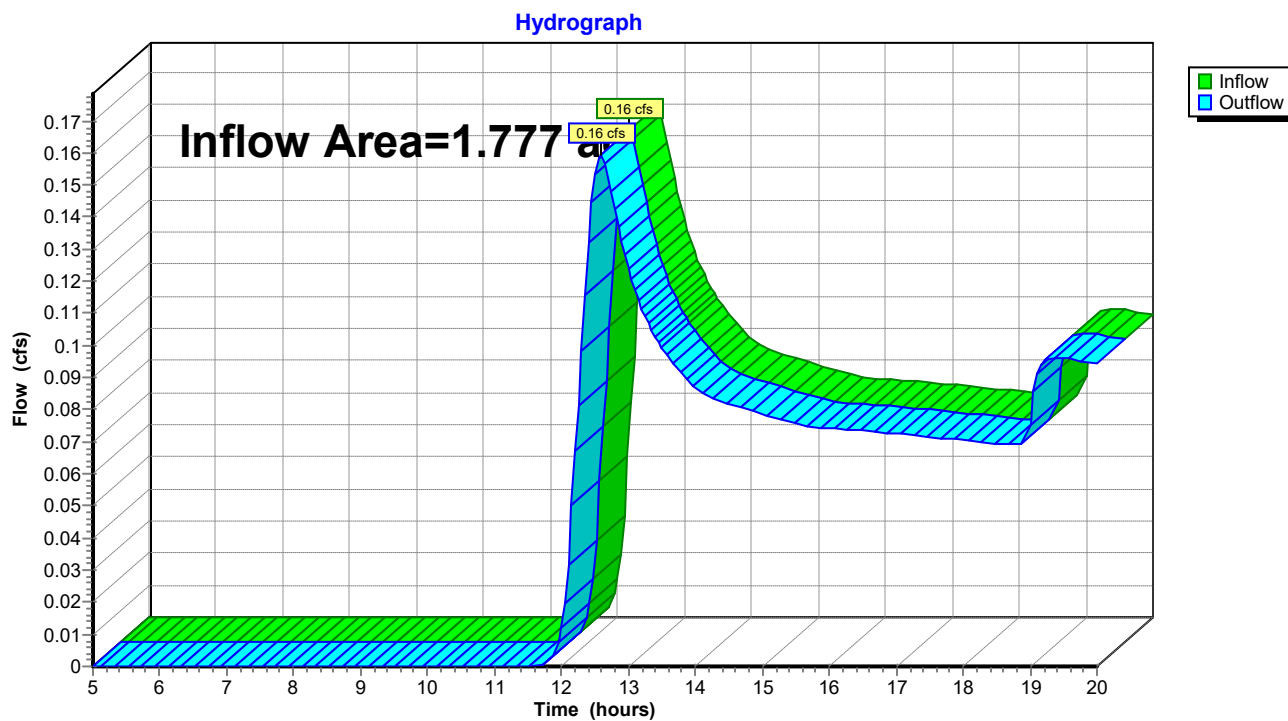
Page 25

Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 0.38" for 25-Year event
Inflow = 0.16 cfs @ 12.59 hrs, Volume= 0.057 af
Outflow = 0.16 cfs @ 12.59 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



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NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 1.00" for 25-Year event
Inflow = 0.73 cfs @ 12.58 hrs, Volume= 0.123 af
Outflow = 0.08 cfs @ 19.36 hrs, Volume= 0.036 af, Atten= 89%, Lag= 406.7 min
Primary = 0.08 cfs @ 19.36 hrs, Volume= 0.036 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 103.75' @ 19.36 hrs Surf.Area= 2,539 sf Storage= 3,772 cf

Plug-Flow detention time= 228.5 min calculated for 0.036 af (29% of inflow)
Center-of-Mass det. time= 105.3 min (981.8 - 876.4)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.07 cfs @ 19.36 hrs HW=103.75' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 2.01 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.05 cfs @ 9.88 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 0.01 cfs @ 0.14 fps)

Proposed Condition

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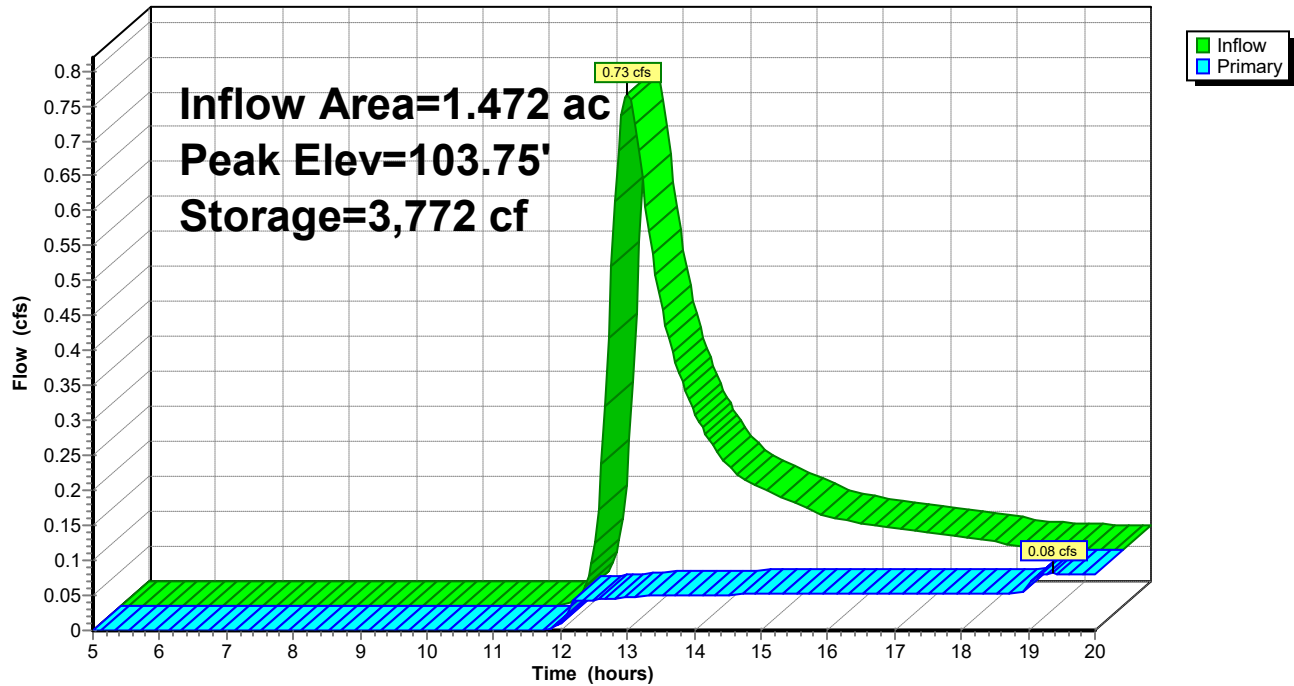
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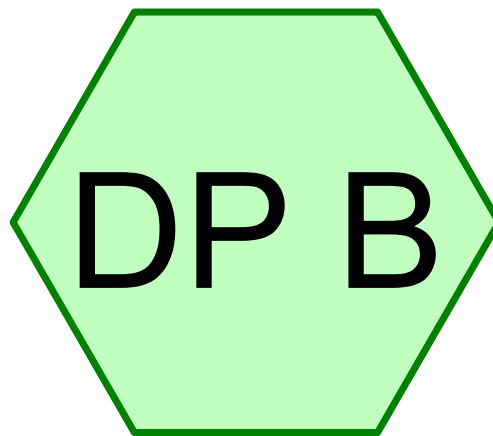
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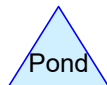
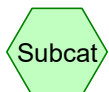
Pond 2P: Soil Filter Pond

Hydrograph





Design Point B



Routing Diagram for Proposed Condition DP B 02032023
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Proposed Condition DP B 02032023

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NRCC 24-hr	D	Default	24.00	1	3.19	2
2	10-Year	NRCC 24-hr	D	Default	24.00	1	4.77	2
3	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2

Proposed Condition DP B 02032023

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.091	39	>75% Grass cover, Good, HSG A (DP B)
0.284	80	>75% Grass cover, Good, HSG D (DP B)
0.157	98	Paved parking, (DP B)
0.203	30	Woods, Good, HSG A (DP B)
0.272	77	Woods, Good, HSG D (DP B)
1.007	68	TOTAL AREA

Proposed Condition DP B 02032023

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.294	HSG A	DP B
0.000	HSG B	
0.000	HSG C	
0.556	HSG D	DP B
0.157	Other	DP B
1.007		TOTAL AREA

Proposed Condition DP B 02032023

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.091	0.000	0.000	0.284	0.000	0.375	>75% Grass cover, Good	DP B
0.000	0.000	0.000	0.000	0.157	0.157	Paved parking,	DP B
0.203	0.000	0.000	0.272	0.000	0.475	Woods, Good	DP B
0.294	0.000	0.000	0.556	0.157	1.007	TOTAL AREA	

Proposed Condition DP B 02032023

NRCC 24-hr D 2-Year Rainfall=3.19"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=43,884 sf 15.61% Impervious Runoff Depth>0.60"
Flow Length=180' Tc=48.1 min CN=68 Runoff=0.27 cfs 0.050 af

Total Runoff Area = 1.007 ac Runoff Volume = 0.050 af Average Runoff Depth = 0.60"
84.39% Pervious = 0.850 ac 15.61% Impervious = 0.157 ac

Proposed Condition DP B 02032023

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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Subcatchment DP B: Design Point B

Runoff = 0.27 cfs @ 12.73 hrs, Volume= 0.050 af, Depth> 0.60"

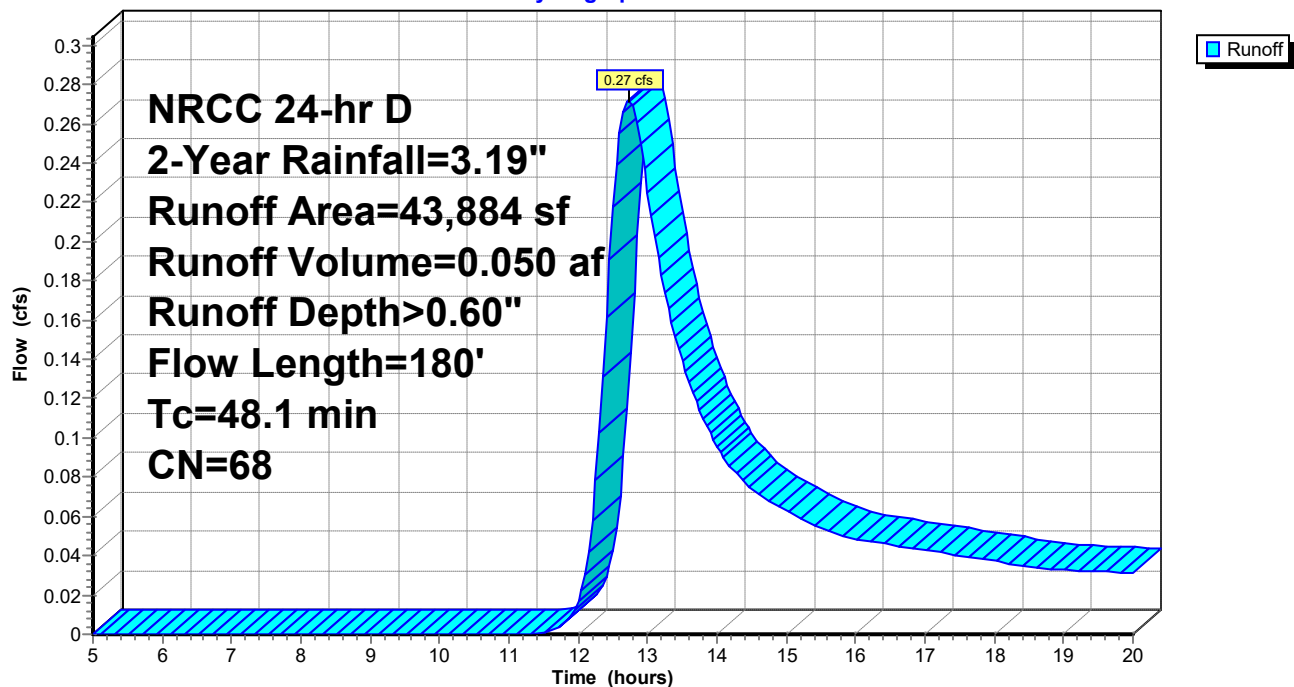
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.19"

	Area (sf)	CN	Description
*	6,849	98	Paved parking,
	3,980	39	>75% Grass cover, Good, HSG A
	8,843	30	Woods, Good, HSG A
	12,350	80	>75% Grass cover, Good, HSG D
	11,862	77	Woods, Good, HSG D
	43,884	68	Weighted Average
	37,035		84.39% Pervious Area
	6,849		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shall Conc Grass 100' 1.4% Tc=2.8
23.7	80	0.0100	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Swale woods 90' 1.0% Tc=0.3
48.1	180	Total			

Subcatchment DP B: Design Point B

Hydrograph



Proposed Condition DP B 02032023

NRCC 24-hr D 10-Year Rainfall=4.77"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=43,884 sf 15.61% Impervious Runoff Depth>1.46"
Flow Length=180' Tc=48.1 min CN=68 Runoff=0.73 cfs 0.123 af

Total Runoff Area = 1.007 ac Runoff Volume = 0.123 af Average Runoff Depth = 1.46"
84.39% Pervious = 0.850 ac 15.61% Impervious = 0.157 ac

Proposed Condition DP B 02032023

NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment DP B: Design Point B

Runoff = 0.73 cfs @ 12.68 hrs, Volume= 0.123 af, Depth> 1.46"

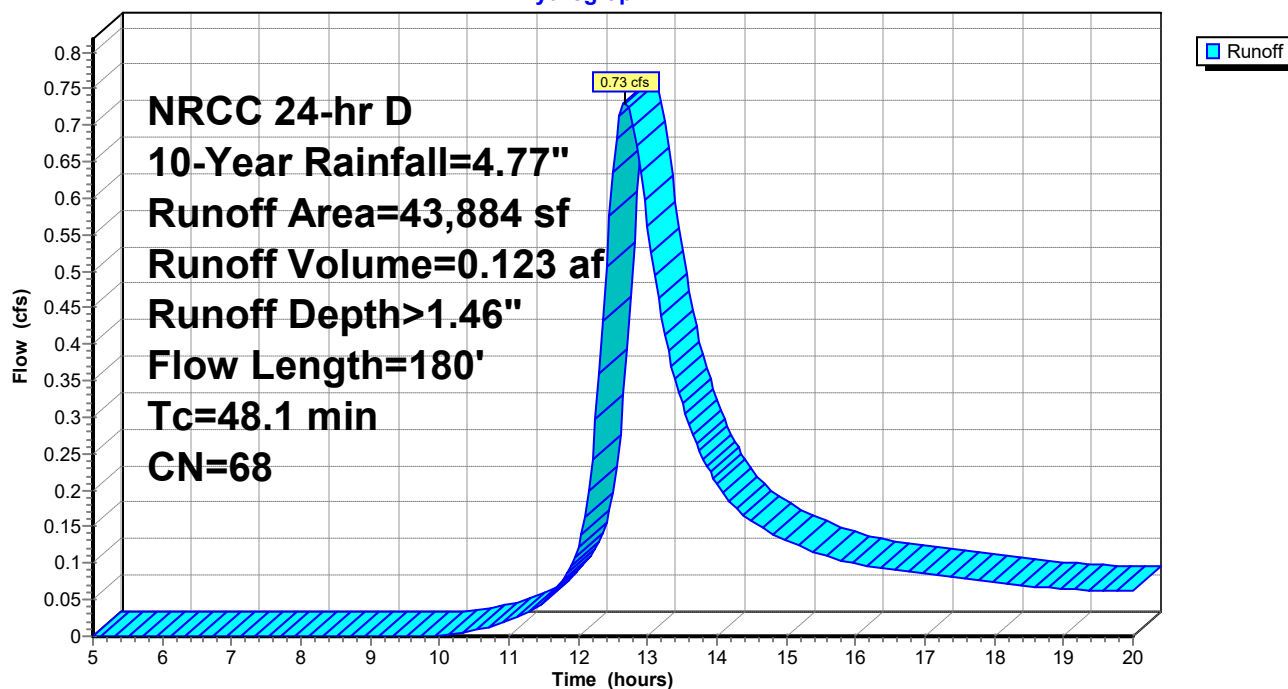
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
* 6,849	98	Paved parking,
3,980	39	>75% Grass cover, Good, HSG A
8,843	30	Woods, Good, HSG A
12,350	80	>75% Grass cover, Good, HSG D
11,862	77	Woods, Good, HSG D
43,884	68	Weighted Average
37,035		84.39% Pervious Area
6,849		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shall Conc Grass 100' 1.4% Tc=2.8
23.7	80	0.0100	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Swale woods 90' 1.0% Tc=0.3
48.1	180	Total			

Subcatchment DP B: Design Point B

Hydrograph



Proposed Condition DP B 02032023

NRCC 24-hr D 25-Year Rainfall=6.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DP B: Design Point B

Runoff Area=43,884 sf 15.61% Impervious Runoff Depth>2.27"
Flow Length=180' Tc=48.1 min CN=68 Runoff=1.15 cfs 0.191 af

Total Runoff Area = 1.007 ac Runoff Volume = 0.191 af Average Runoff Depth = 2.27"
84.39% Pervious = 0.850 ac 15.61% Impervious = 0.157 ac

Proposed Condition DP B 02032023

NRCC 24-hr D 25-Year Rainfall=6.01"

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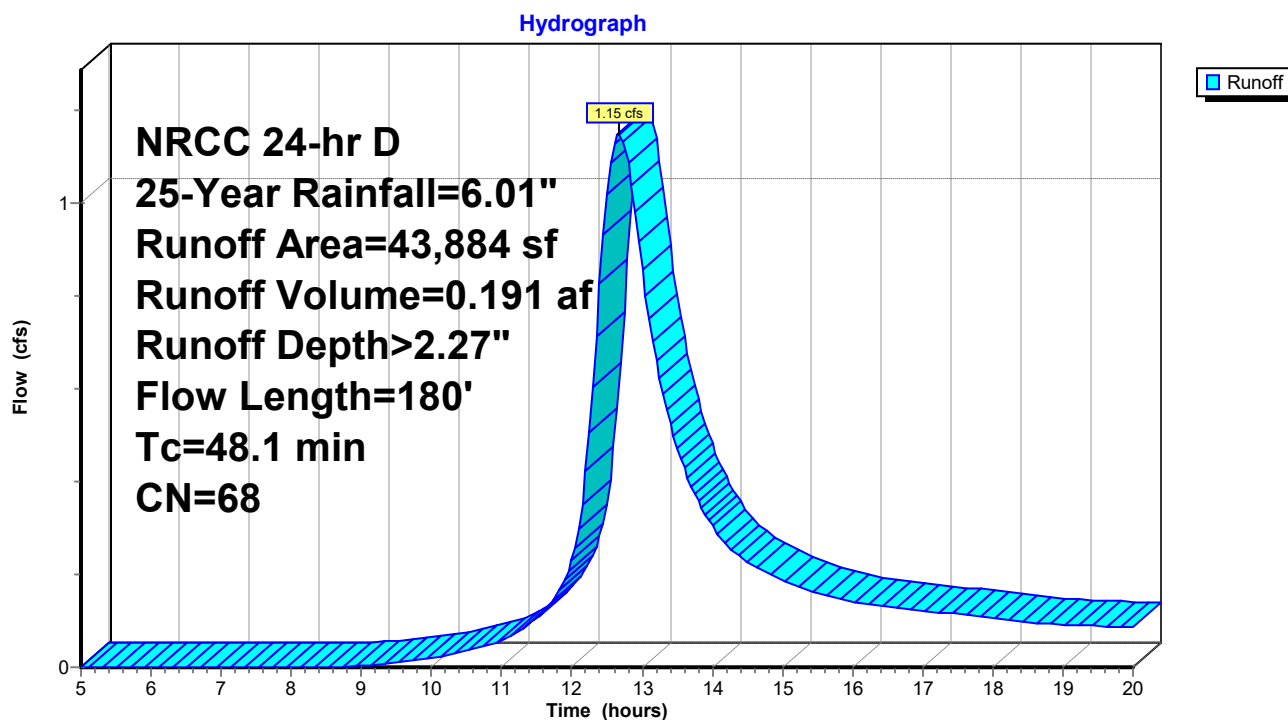
Summary for Subcatchment DP B: Design Point B

Runoff = 1.15 cfs @ 12.67 hrs, Volume= 0.191 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
* 6,849	98	Paved parking,
3,980	39	>75% Grass cover, Good, HSG A
8,843	30	Woods, Good, HSG A
12,350	80	>75% Grass cover, Good, HSG D
11,862	77	Woods, Good, HSG D
43,884	68	Weighted Average
37,035		84.39% Pervious Area
6,849		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Shall Conc Grass 100' 1.4% Tc=2.8
23.7	80	0.0100	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
5.0					Direct Entry, Swale woods 90' 1.0% Tc=0.3
48.1	180	Total			

Subcatchment DP B: Design Point B

Proposed Condition

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Page 1

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	100-Year	NRCC 24-hr	D	Default	24.00	1	8.54	2

Proposed Condition

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Page 2

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2P	99.00	98.50	20.0	0.0250	0.012	0.0	6.0	0.0

Proposed Condition

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NRCC 24-hr D 100-Year Rainfall=8.54"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 2.29" for 100-Year event
Inflow = 1.89 cfs @ 12.55 hrs, Volume= 0.281 af
Outflow = 1.30 cfs @ 12.88 hrs, Volume= 0.194 af, Atten= 31%, Lag= 20.1 min
Primary = 1.30 cfs @ 12.88 hrs, Volume= 0.194 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 103.83' @ 12.88 hrs Surf.Area= 2,573 sf Storage= 3,956 cf

Plug-Flow detention time= 126.2 min calculated for 0.194 af (69% of inflow)
Center-of-Mass det. time= 50.8 min (904.9 - 854.1)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.27 cfs @ 12.88 hrs HW=103.82' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 2.02 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.05 cfs @ 9.97 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.22 cfs @ 0.65 fps)

Proposed Condition

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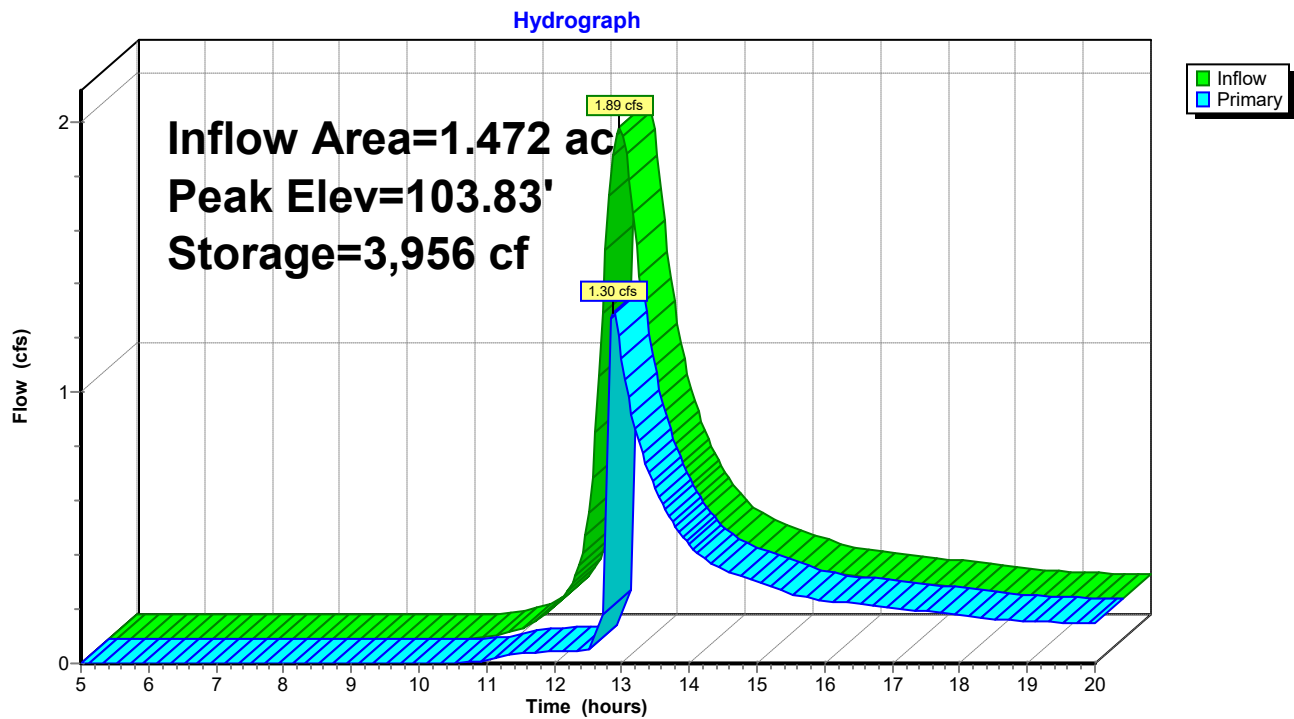
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NRCC 24-hr D 100-Year Rainfall=8.54"

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Pond 2P: Soil Filter Pond



emergency spillway only

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Page 1

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2

emergency spillway only

NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 1.00" for 25-Year event
 Inflow = 0.73 cfs @ 12.58 hrs, Volume= 0.123 af
 Outflow = 0.12 cfs @ 15.93 hrs, Volume= 0.036 af, Atten= 83%, Lag= 200.5 min
 Primary = 0.12 cfs @ 15.93 hrs, Volume= 0.036 af
 Routed to nonexistent node DP A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 103.76' @ 15.93 hrs Surf.Area= 2,544 sf Storage= 3,800 cf

Plug-Flow detention time= 304.7 min calculated for 0.036 af (29% of inflow)
 Center-of-Mass det. time= 182.1 min (1,058.5 - 876.4)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

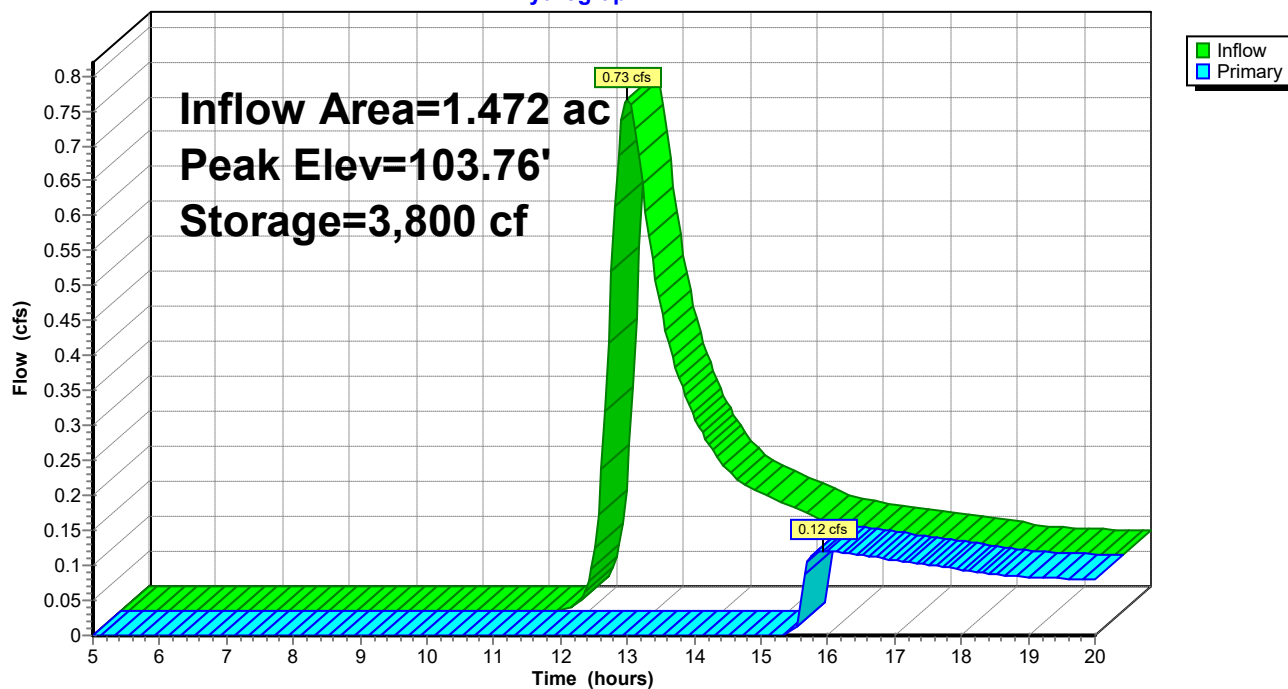
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

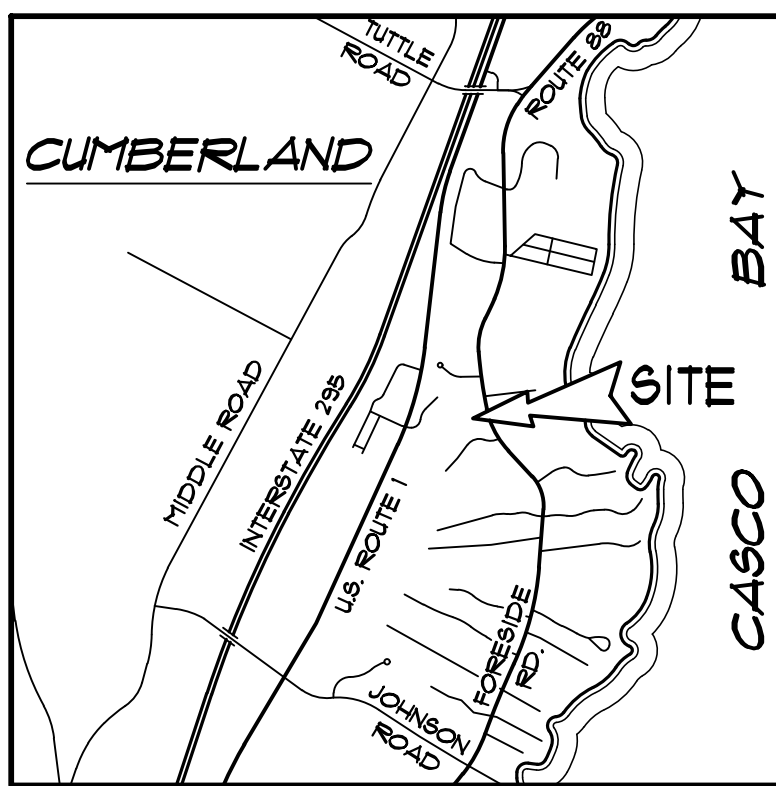
Device	Routing	Invert	Outlet Devices
#1	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 15.93 hrs HW=103.76' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.10 cfs @ 0.29 fps)

Pond 2P: Soil Filter Pond

Hydrograph

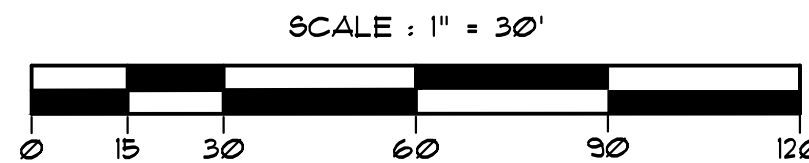




LOCATION MAP

LOT A AREAS

NORTH FORESTED BUFFER	= 4,991 sf
SOUTH FORESTED BUFFER	= 11,961 sf
RIGHT OF WAY (TAMBOUR WAY)	= 3,925 sf
REMAINING LAND	= 50,666 sf
TOTAL PARCEL AREA	= 71,543 sf



LOT B AREAS

NORTH FORESTED BUFFER	= 8,960 sf
SOUTH FORESTED BUFFER *	= 5,916 sf
RIGHT OF WAY (TAMBOUR WAY)	= 13,880 sf
STORMWATER EASEMENT *	= 1,488 sf
REMAINING LAND *	= 43,911 sf
TOTAL PARCEL AREA	= 80,215 sf

* AREA INCLUDES 5' UTILITY EASEMENT ADJACENT TO RIGHT OF WAY

NOTES

- ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTRY REGISTRY OF DEEDS.
- OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
- PARCEL AREA = 151,758 SQUARE FEET / 3.48 ACRES
- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD, ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
- THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
- THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT. MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER). MINIMUM LOT FRONTAGE = 150'. SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 230162 0018C, DATED OCTOBER 15, 1985.
- ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

NEW SEWER MANHOLES

MANHOLE #	RIM EL.	INVERT IN	INVERT OUT
SMH-1	102.33	96.43	96.33
SMH-2	105.50	99.60	99.50
SMH-3	112.50	107.10	107.00
SMH-4	116.30	111.40	111.30
SMH-5	118.40	113.50	113.40
SMH-6	122.80	117.40	117.30
SMH-7	118.50	113.60	113.50

LINE AND CURVE TABLE

LINE	BEARING	DISTANCE
L-1	N 88°39'40" W	46.66'
L-2	N 88°39'40" W	39.51'
L-3	S 12°20'00" W	10.92'
L-4	N 65°49'18" W	15.25'
L-5	N 24°10'42" E	41.00'
L-6	N 24°10'42" E	35.95'
L-7	N 24°10'42" E	31.00'
L-8	N 65°49'18" E	5.00'
CURVE	RADIUS	LENGTH
C-1	198.00'	125.33'
C-2	162.00'	102.55'
C-3	162.00'	16.11'
C-4	198.00'	121.99'

LEGEND

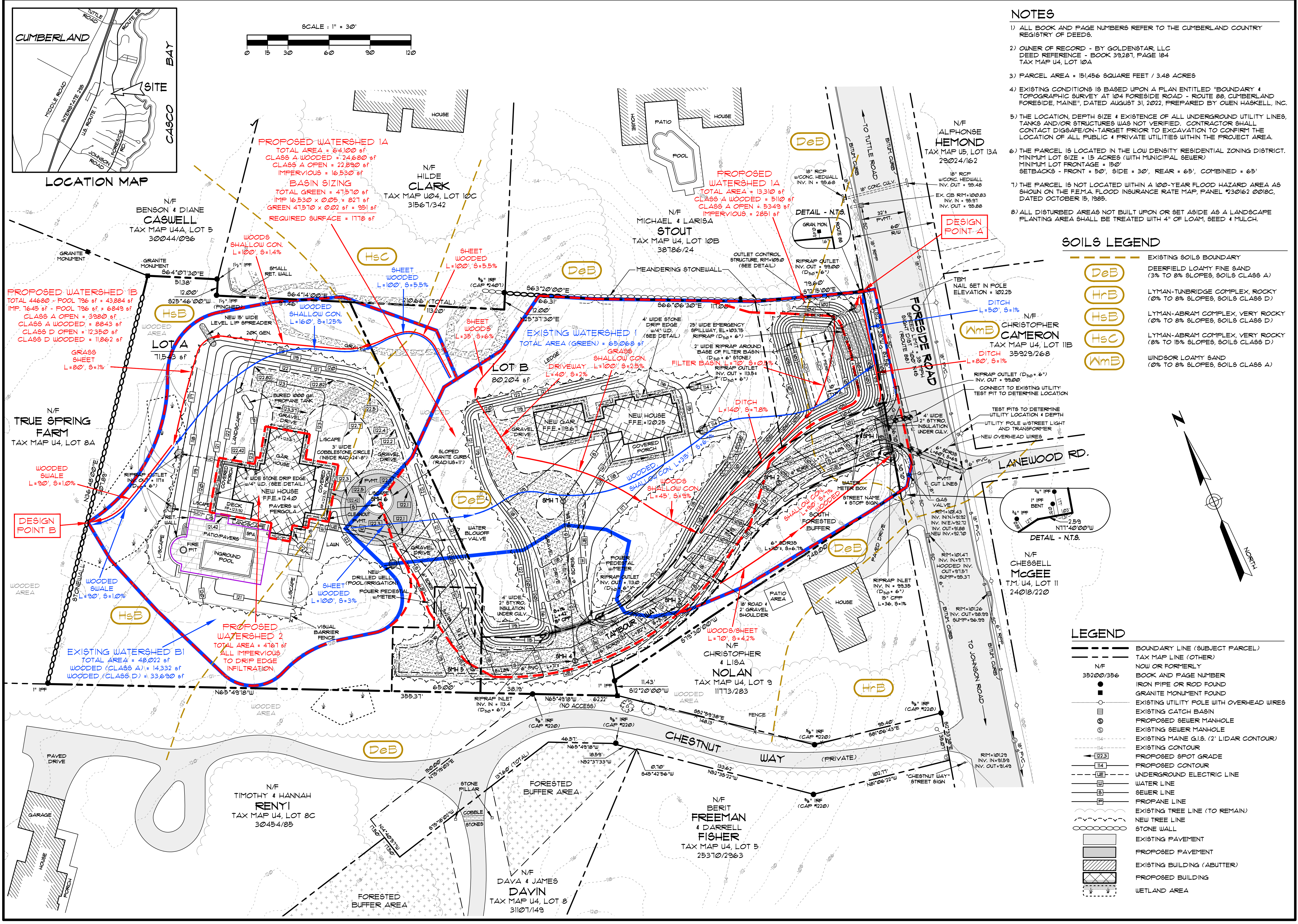
---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
N/F	NOW OR FORMERLY
35200/356	BOOK AND PAGE NUMBER
●	IRON PIPE OR ROD FOUND
■	GRANITE MONUMENT FOUND
○	EXISTING UTILITY POLE WITH OVERHEAD WIRES
□	EXISTING CATCH BASIN
○	PROPOSED OUTLET CONTROL STRUCTURE
○	PROPOSED SEWER MANHOLE
○	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	EXISTING STORM DRAIN LINE
---	EXISTING GAS LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	NEW 6" PERFORATED UNDERDRAIN LINE
---	NEW UNDERGROUND ELECTRIC LINE
---	NEW 1/2" WATER SERVICE
---	NEW SEWER LINE
---	NEW PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	INSTALL SILT FENCE
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	PROPOSED GRAVEL DRIVE
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA
---	INSTALL EROSION CONTROL BLANKET

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6243
steve@sje.com

SITE CONSTRUCTION & STORMWATER MANAGEMENT PLAN
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

DATE	PROJECT
12-11-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET C1



- ### NOTES
- 1) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTRY REGISTRY OF DEEDS.
 - 2) OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
 - 3) PARCEL AREA = 151,456 SQUARE FEET / 3.48 ACRES
 - 4) EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD - ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
 - 5) THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
 - 6) THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT. MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER)
MINIMUM LOT FRONTAGE = 150'
SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'
 - 7) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL #230162 0010C, DATED OCTOBER 15, 1985.
 - 8) ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

SOILS LEGEND

DeB	EXISTING SOILS BOUNDARY
HrB	DEERFIELD LOAMY FINE SAND (3% TO 8% SLOPES, SOILS CLASS A)
HsB	LYMAN-TUNBRIDGE COMPLEX, ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsC	LYMAN-ABRAM COMPLEX, VERY ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsD	LYMAN-ABRAM COMPLEX, VERY ROCKY (8% TO 15% SLOPES, SOILS CLASS D)
WmB	WINDSOR LOAMY SAND (0% TO 8% SLOPES, SOILS CLASS A)

LEGEND

---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
N/F	NOW OR FORMERLY
35200/356	BOOK AND PAGE NUMBER
●	IRON PIPE OR ROD FOUND
○	GRANITE MONUMENT FOUND
○	EXISTING UTILITY POLE WITH OVERHEAD WIRES
○	EXISTING CATCH BASIN
○	PROPOSED SEWER MANHOLE
○	EXISTING SEWER MANHOLE
○	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
○	EXISTING CONTOUR
○	PROPOSED SPOT GRADE
○	PROPOSED CONTOUR
---	UNDERGROUND ELECTRIC LINE
---	WATER LINE
---	SEWER LINE
---	PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA

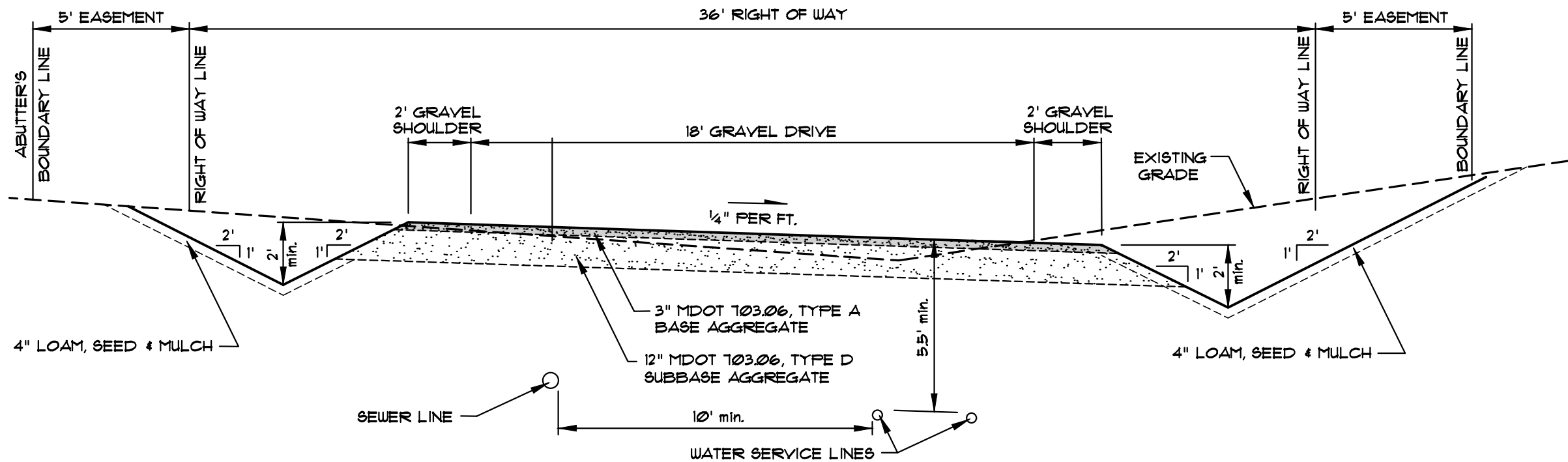
FOR APPROVALS ONLY

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6248
steve@sjreng.com

WATERSHED & SOILS PLAN
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

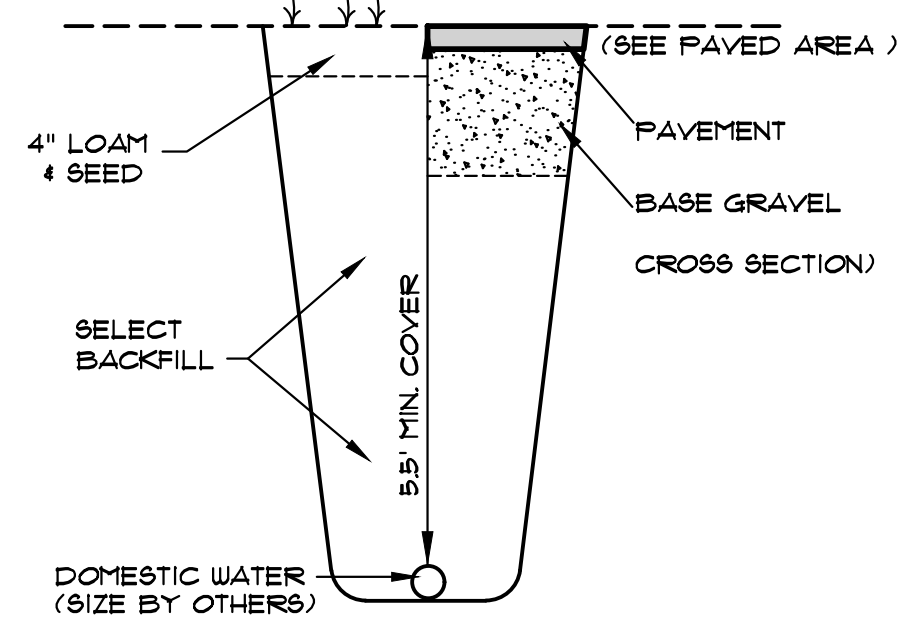
DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET C8



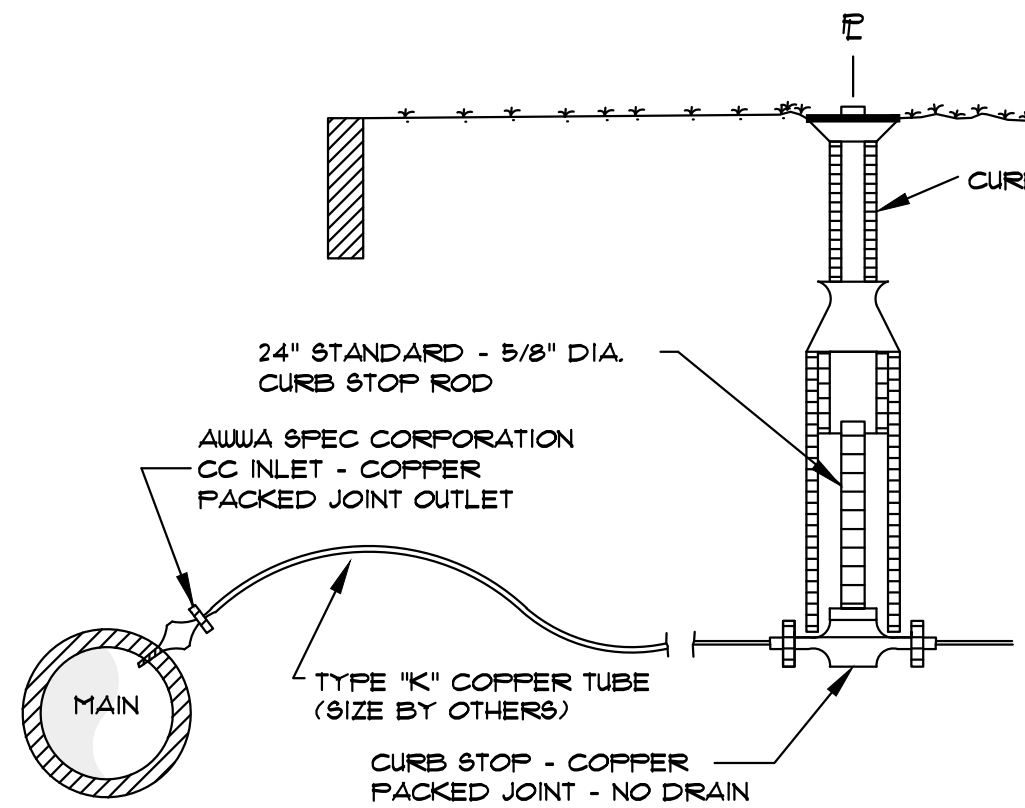
TYPICAL DRIVEWAY CROSS SECTION

SCALE : 1" = 4'



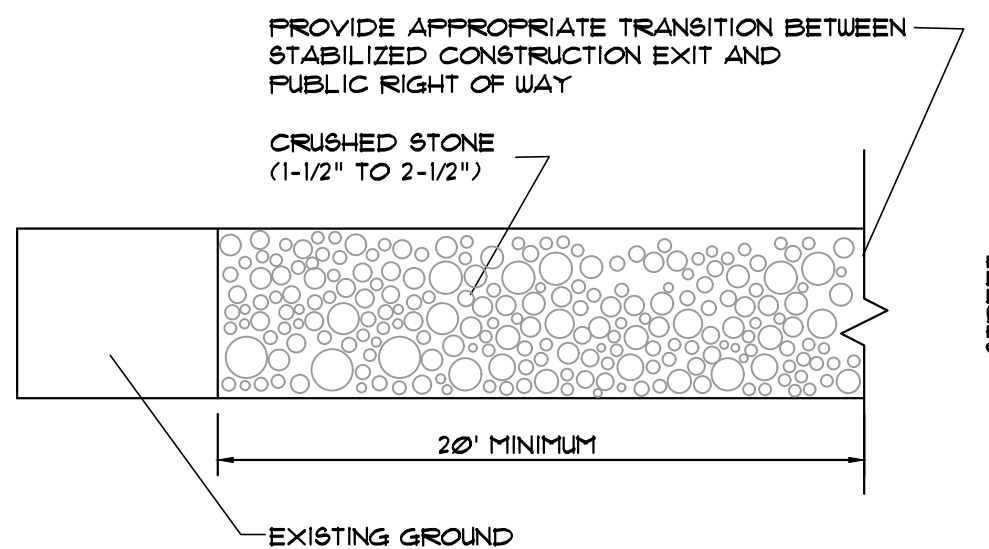
WATER SERVICE TRENCH DETAIL

NOT TO SCALE



TYPICAL DOMESTIC WATER SERVICE

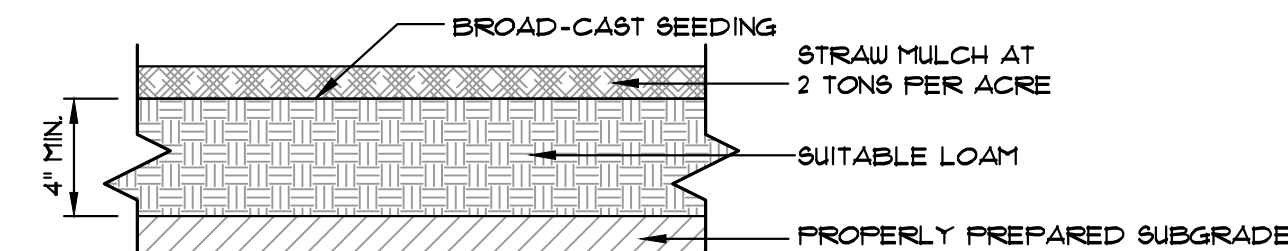
NOT TO SCALE



- STONE SIZE - AASHTO DESIGNATION M 43, SIZE 2 (2 1/2" - 1 1/2") USE CRUSHED STONE
- LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
- THICKNESS - NOT LESS THAN 6"
- WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
- WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY WHEN WASHING IS REQUIRED. IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
- MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURED USBS TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE

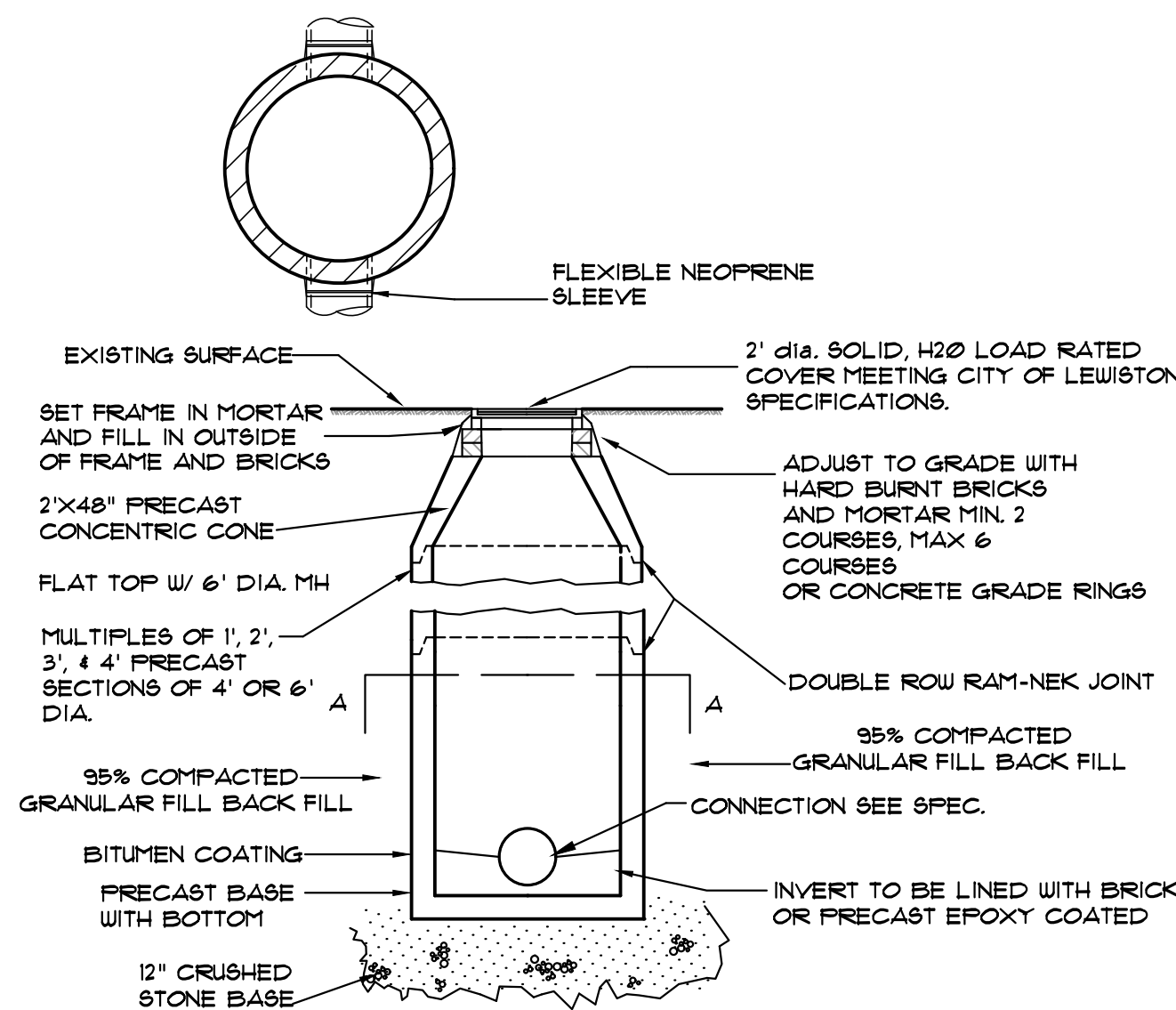


PERSISTENT SEED MIX	APPLICATION RATE
KENTUCKY BLUEGRASS	100/10000 #/T
CREeping RED FESCUE	.46
PERENNIAL RYEGRASS	.11
TOTAL SEED RATE	1.63

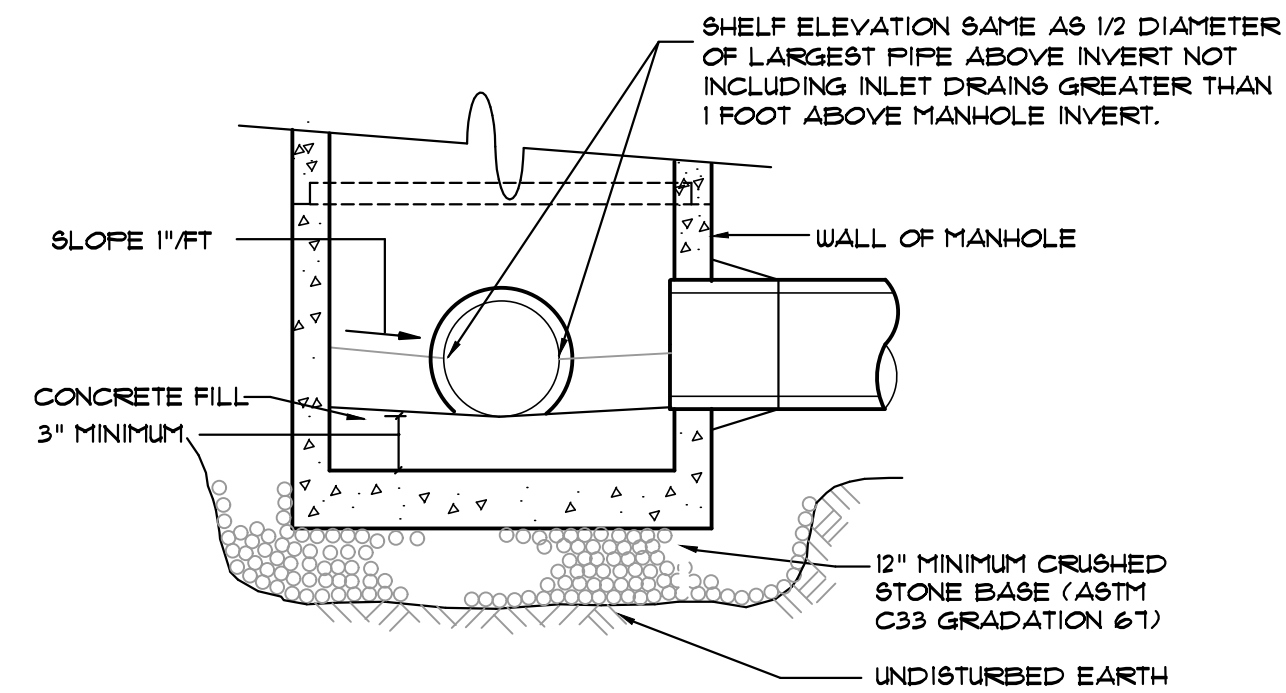
PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

LOAM & SEED DETAIL

NOT TO SCALE

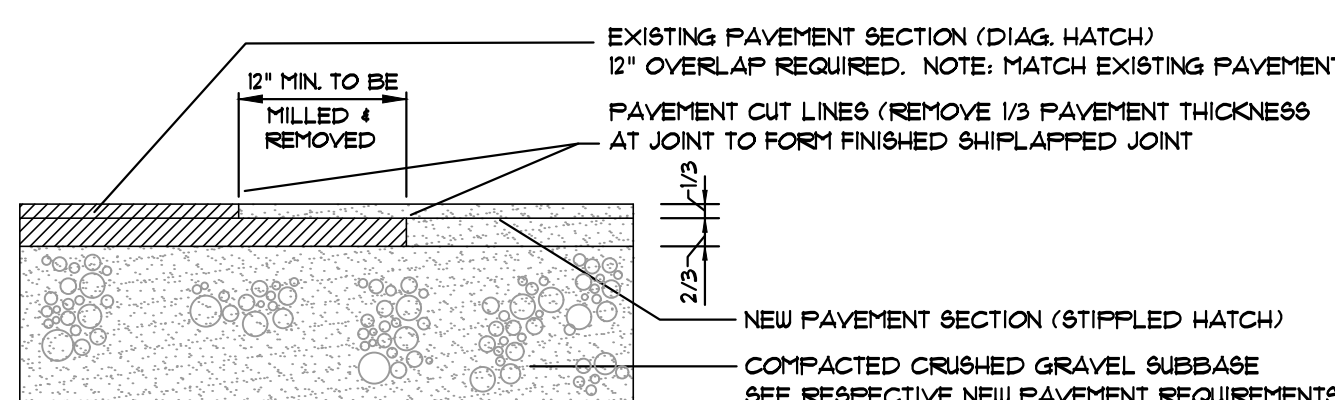


SECTION B-B



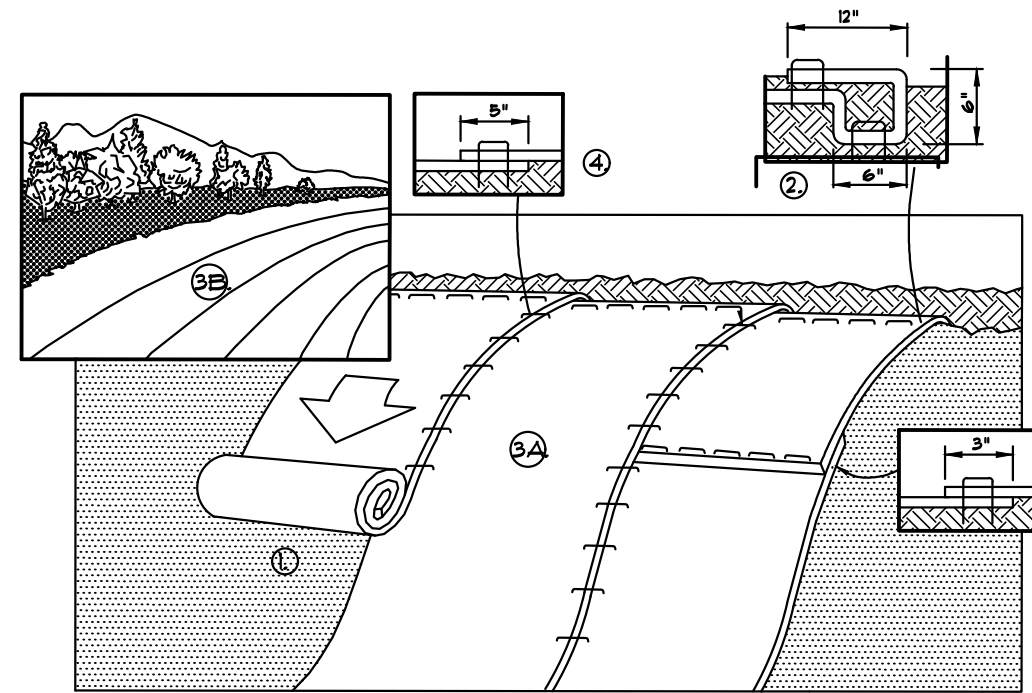
SECTION A-A
PRECAST CONCRETE SEWER MANHOLE

NOT TO SCALE



PAVEMENT SAWCUT JOINT DETAIL

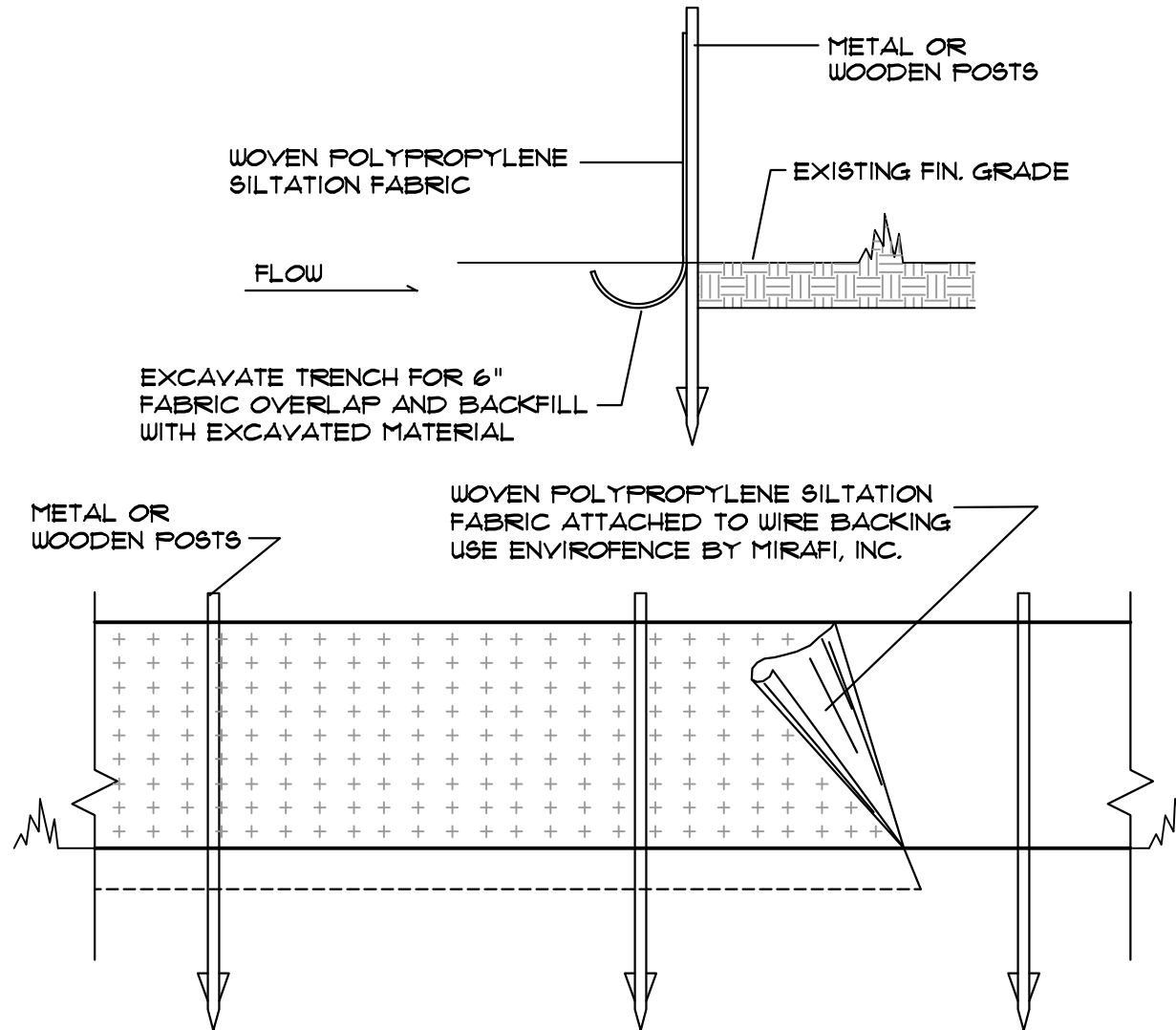
NOT TO SCALE



- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEAN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP 1/4" X 1/4" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND HOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2'-3" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER BEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET BEING INSTALLED ON TOP, EVEN WITH THE COLORED BEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROX. 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



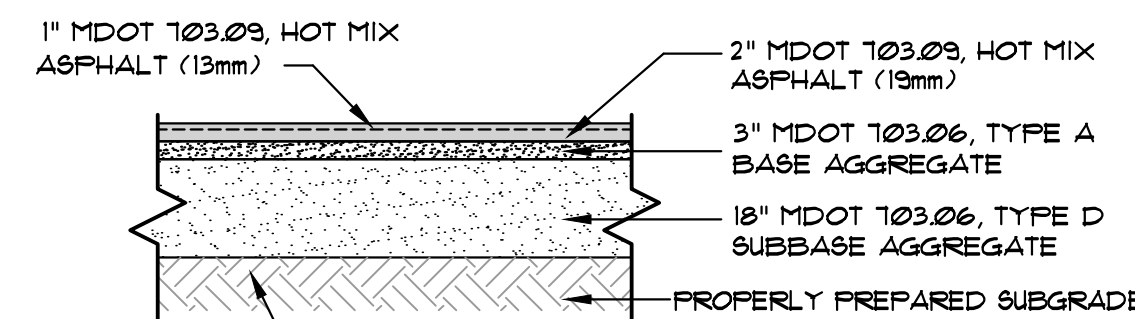
NOTES

REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL. B-1 SEDIMENT BARRIERS.

SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED. EROSION CONTROL FILTER BERM IS AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.

SILT FENCE DETAIL

NOT TO SCALE



NOTES

- COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF THEIR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- HOT MIX ASPHALT PAVEMENT MUST BE COMPACTED TO 92%-97% OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2924.
- A TACK COAT MUST BE USED BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.
- PROVIDE NON-FROST SUSCEPTIBLE COMPACTED FILL GRANULAR BORROW (MDOT 103.19) BELOW PAVEMENT IN FILL AREAS.
- CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

PAVED AREA CROSS SECTION

NOT TO SCALE

GENERAL NOTES

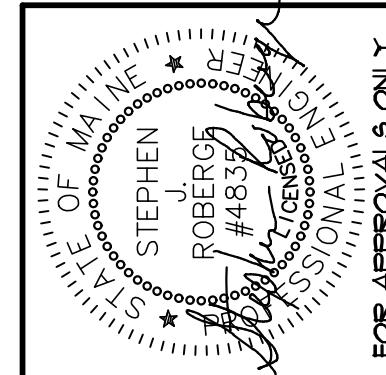
- SEE SHEET 1 FOR SITE SPECIFIC NOTES.
- THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.
- THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.
- ALL CONSTRUCTION WITHIN THE TOWN OF CUMBERLAND RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN OF CUMBERLAND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN AND/OR MDOT, REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED BY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (811) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.
- THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.
- OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCRDACHING ON THIS REQUIREMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEING DISTURBED AS DETERMINED BY THE CITY OF AUGUSTA CEO. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- TRAFFIC CONTROL MEASURES SHALL BE UTILIZED IN ACCORDANCE WITH MAINE DOT STANDARDS. THE CONTRACTOR SHALL PROVIDE, MAINTAIN AND PROTECT TRAFFIC CONTROL DEVICES TO THE EXTENT REQUIRED BY LAW FOR THE PROTECTION OF THE PUBLIC CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROL PERSONNEL AS REQUIRED OR ORDERED BY THE DESIGN ENGINEER OR CODE ENFORCEMENT PERSONNEL. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE TOWN. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH MDOT SPECIFICATIONS. TWELVE INCH (12") WIDE STOP BAR AND FOUR INCH (4") WIDE STRIPES SHALL BE LOCATED AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PRODUCT, MATERIALS AND PLANT SPECIFICATIONS TO THE OWNER AND DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR SOIL AND PAVEMENT MATERIALS AND CONFAPCTION TESTING AT NO COST TO THE OWNER. RESULTS OF THE TESTING ARE TO BE SUPPLIED TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH ANY RECONSTRUCTION AND RE-TESTING OF UNSATISFACTORY SOILS.
- ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.
- THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.
- WORK MAY PROGRESS MONDAY THROUGH SATURDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE TOWN OF CUMBERLAND. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM WITH ALL RULES AND REGULATIONS SET FORTH IN THE TOWN LAND USE ORDINANCE REGULATIONS.
- THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION, THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.
- PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.
- ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEW. SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING THE WORK. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS, LATEST REVISION.

GRADING AND DRAINAGE NOTES

- UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS. LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.
- HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.
- TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO DESIGNATED BY THE CONTRACTOR. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.
- ALL EXISTING STRUCTURES, FENCING, TREES, ETC. WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.
- THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.
- SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
- BASED ON FEMA MAPPING, NO AREA WITHIN THE SITE BOUNDARIES IS IN THE 100 YEAR FLOOD PLAIN.

LAYOUT NOTES

- ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.



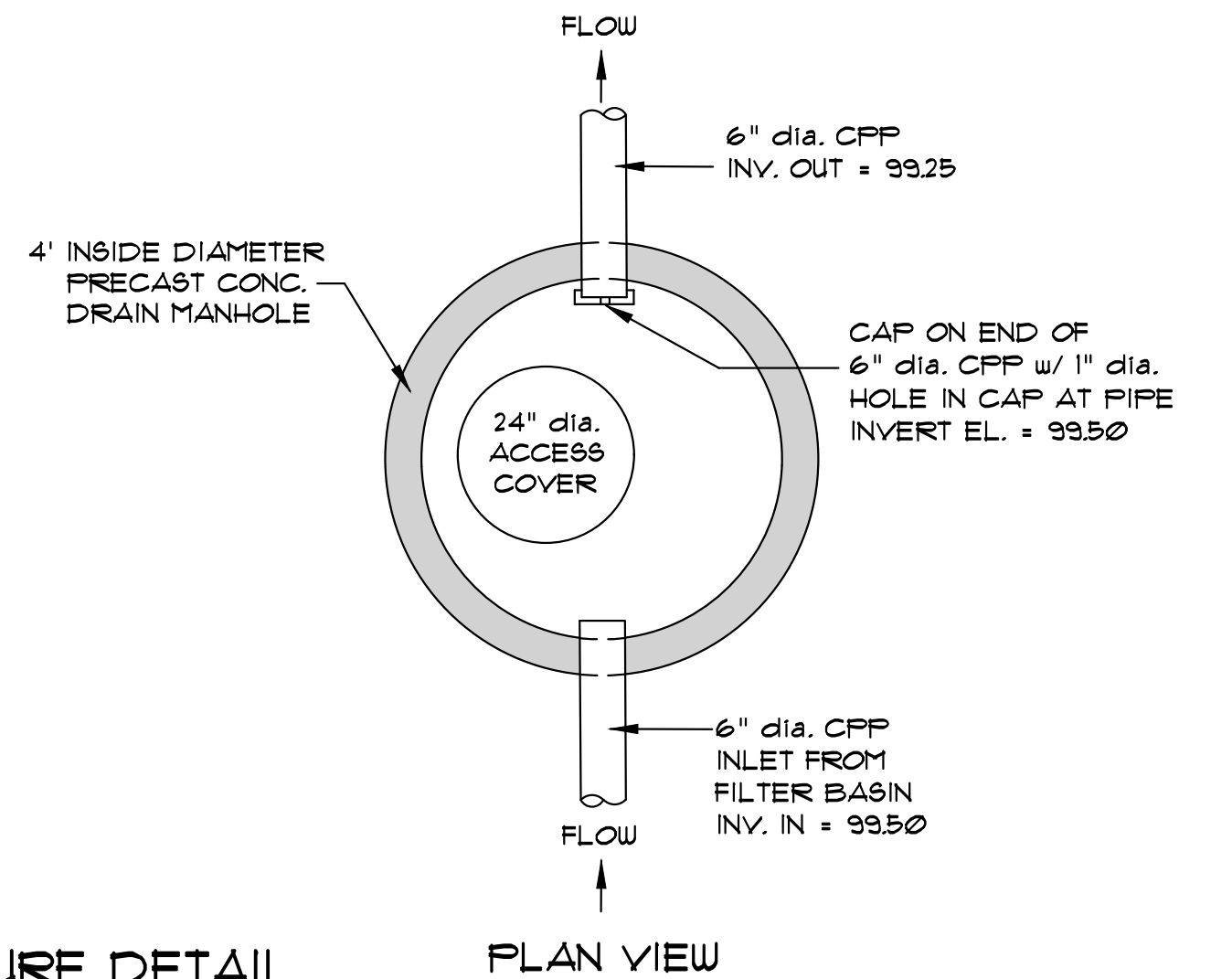
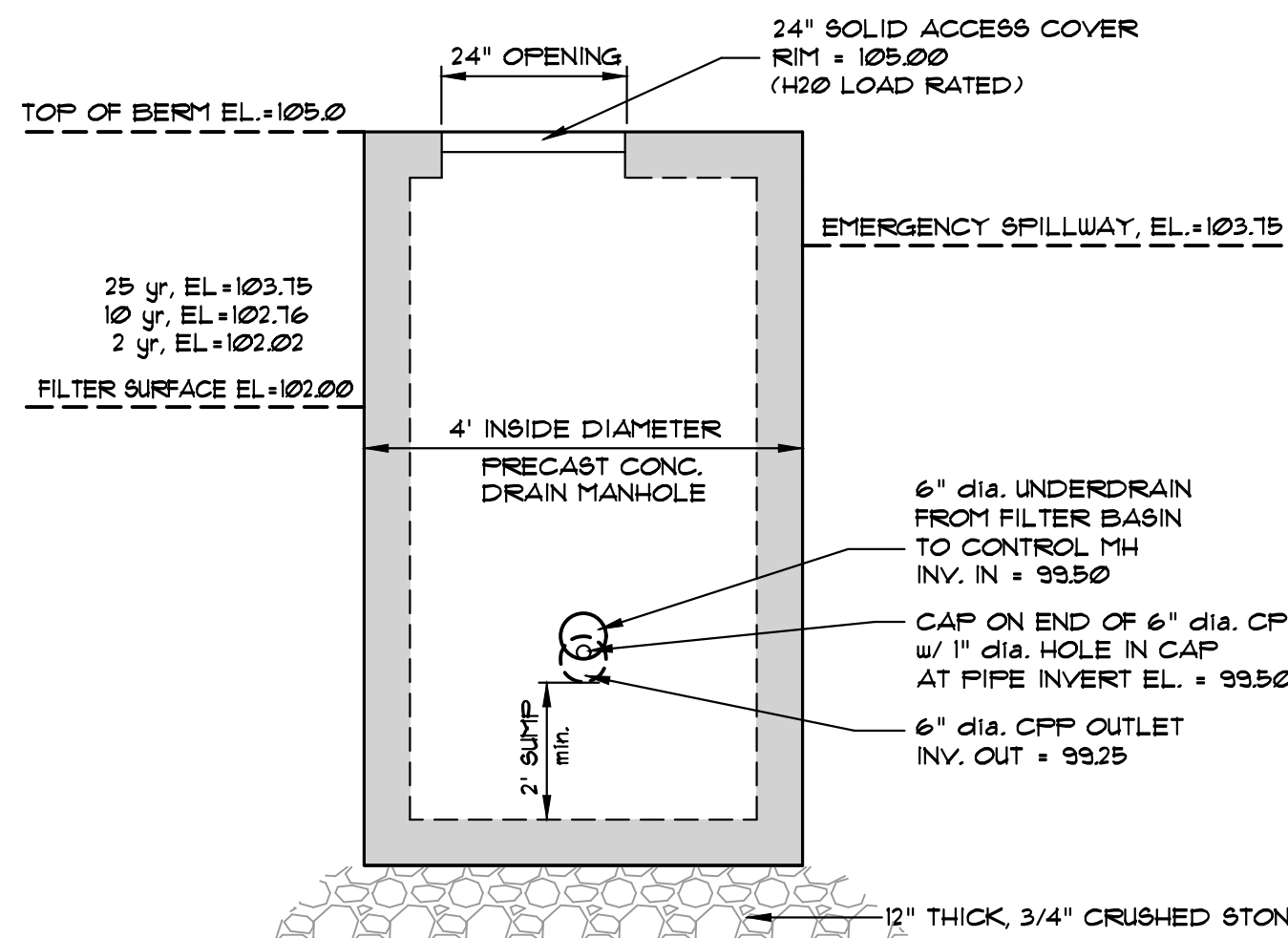
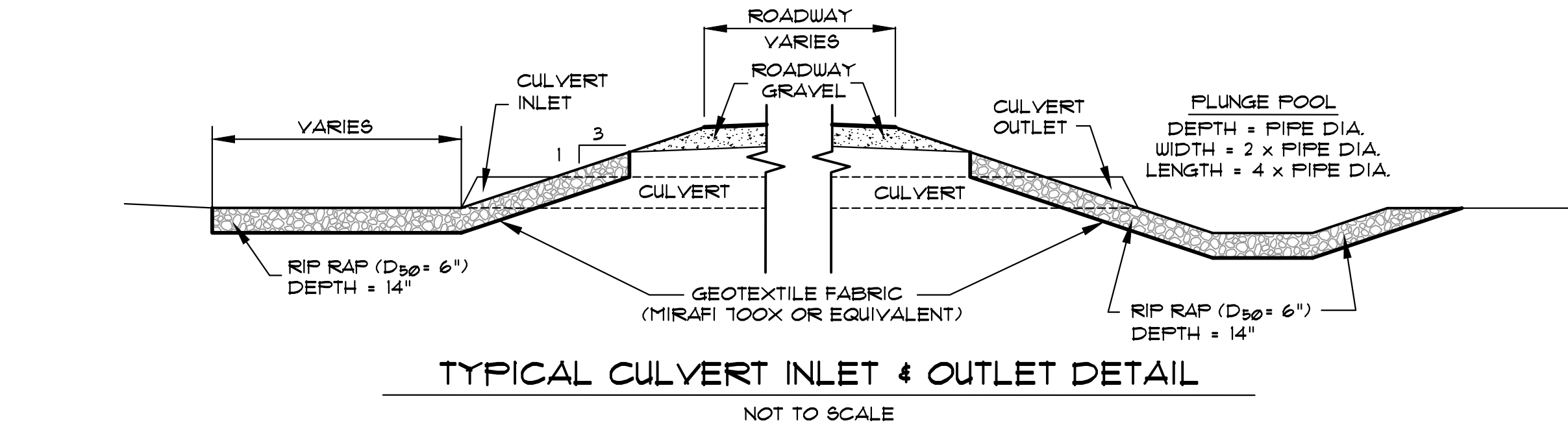
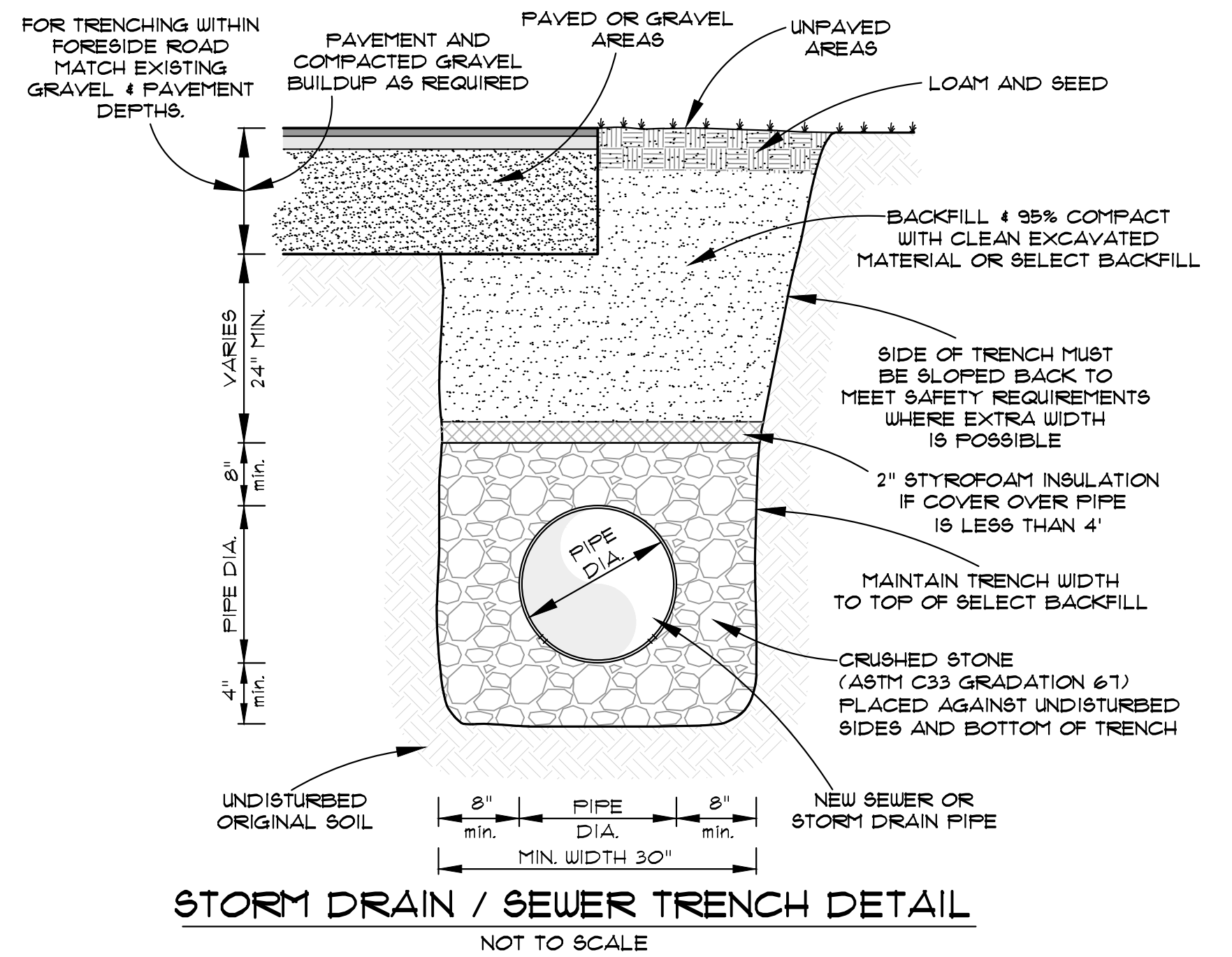
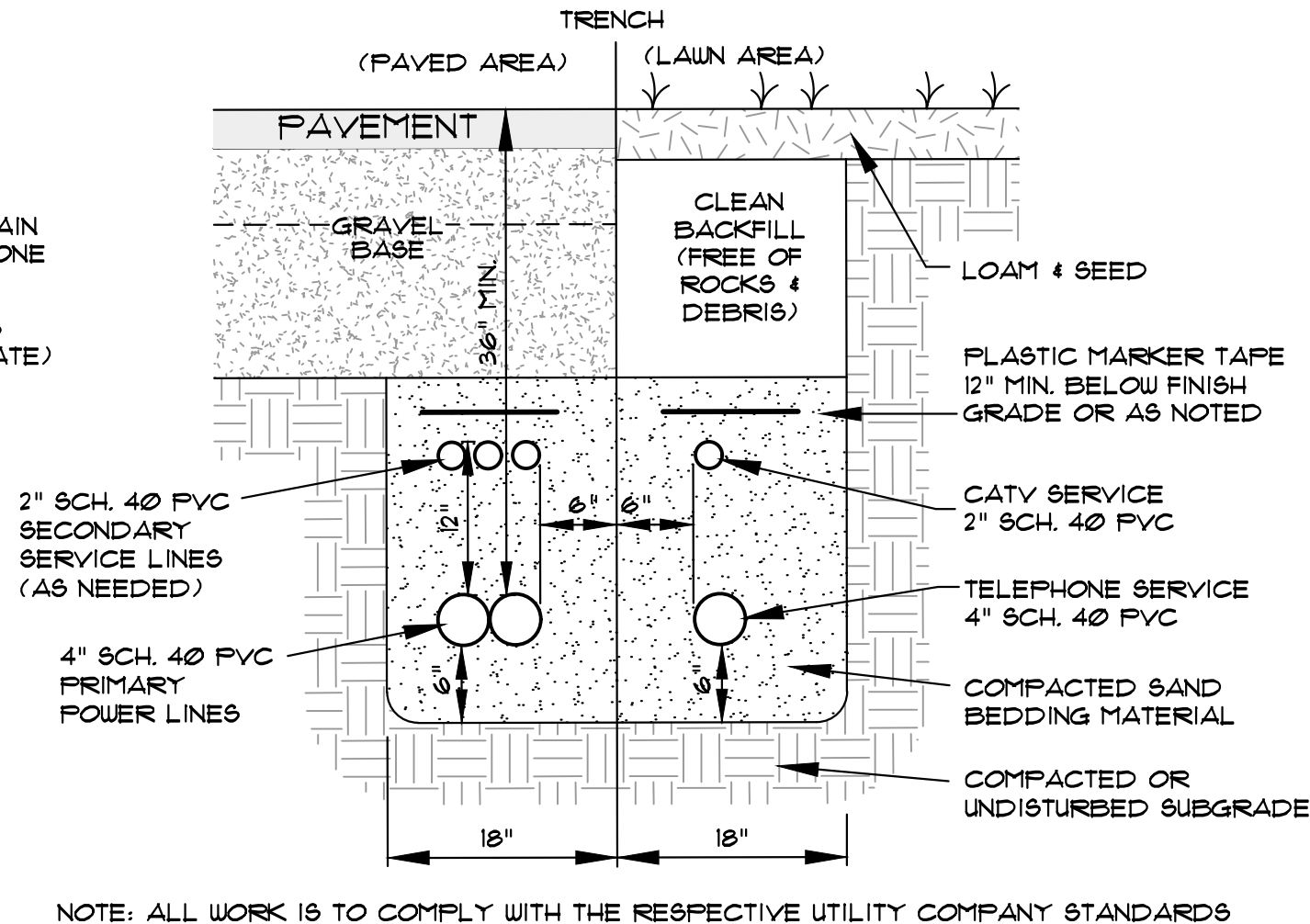
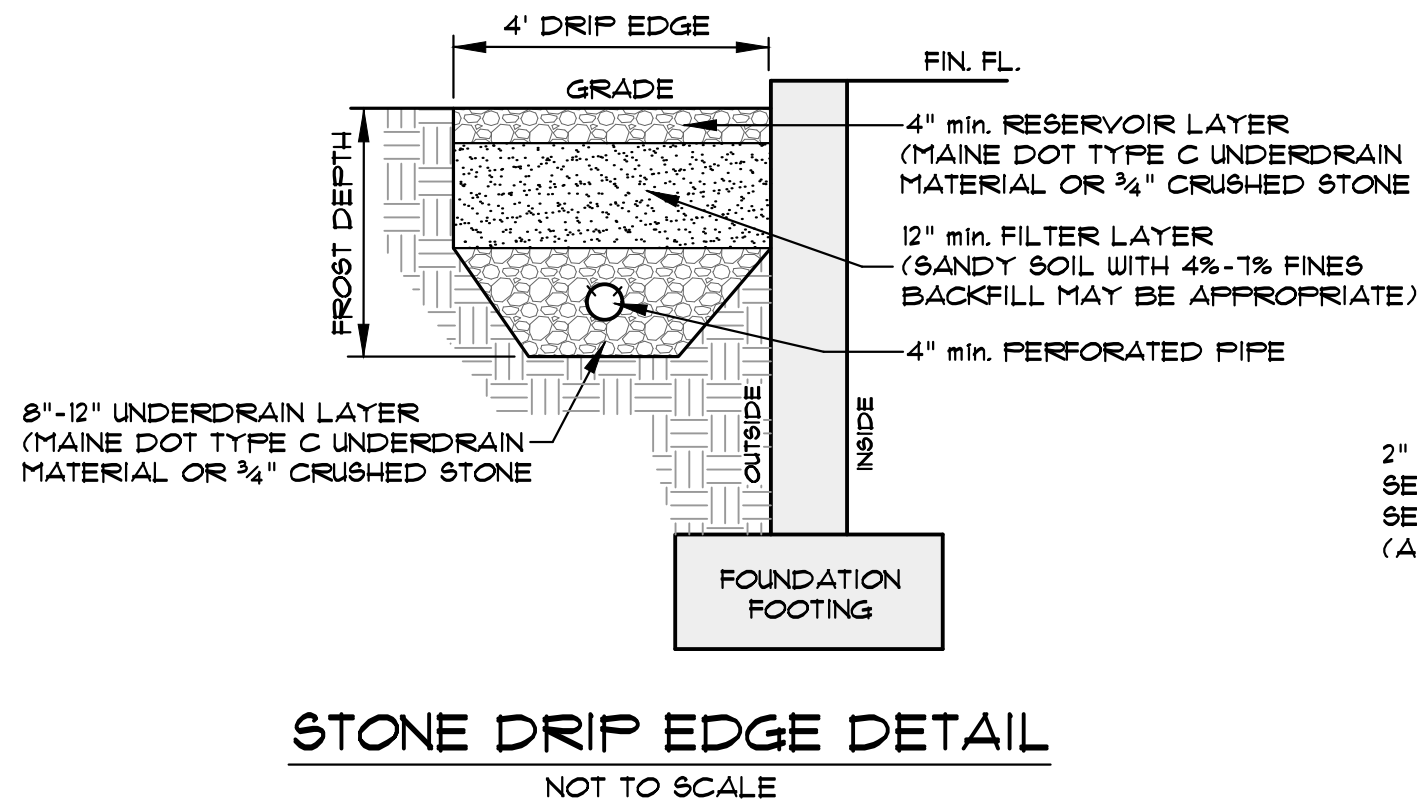
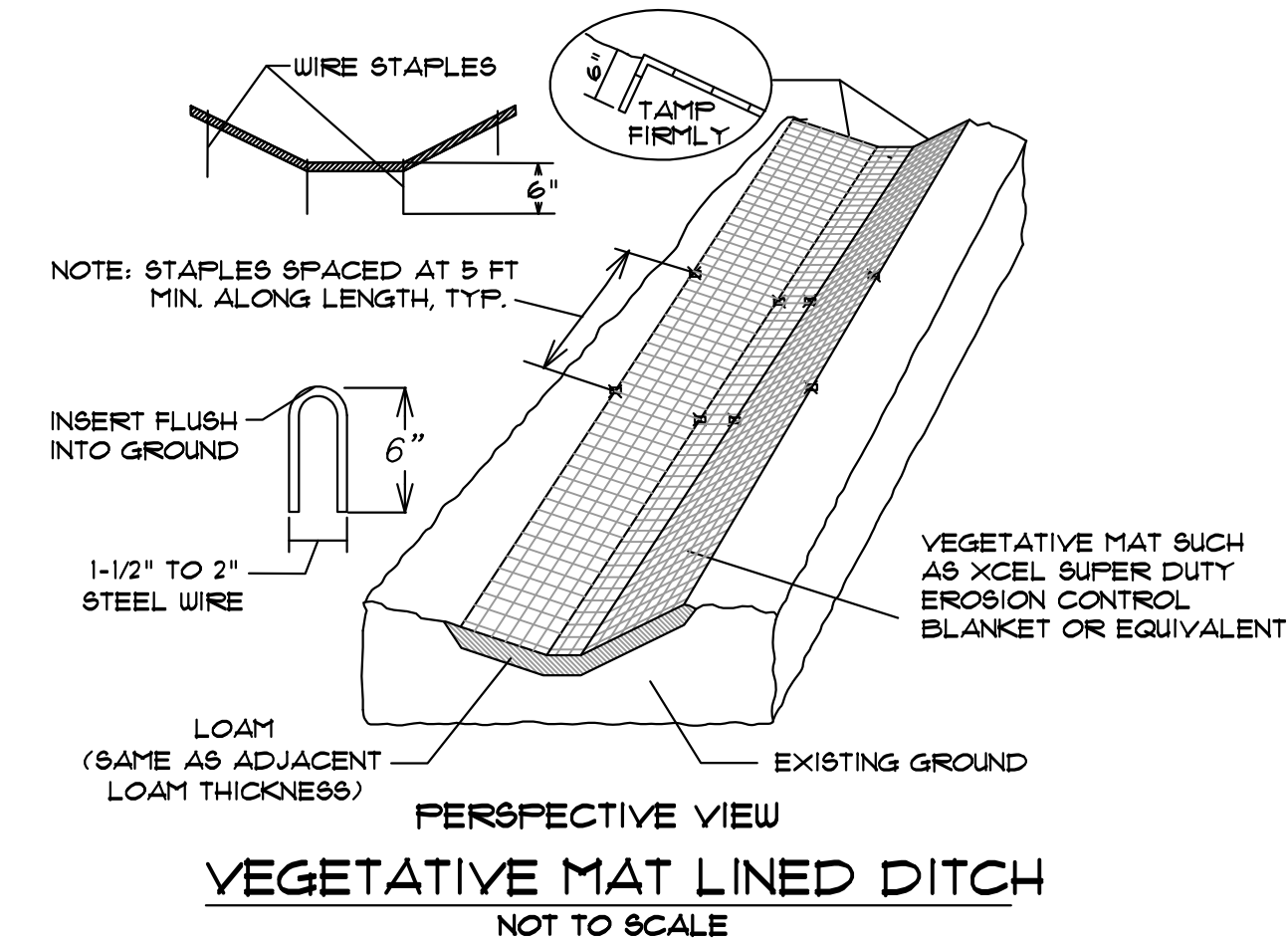
DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 602-1676 tel & fax
steve@sjreng.com

SJR ENGINEERING

SITE CONSTRUCTION NOTES & DETAILS
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04100

DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.



STORMWATER CONSTRUCTION OVERSIGHT NOTES

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THIS PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERFERE WITH THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER SHALL NOTIFY THE TOWN OF CUMBERLAND AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IN WRITING WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION AND THE TIME INSPECTED ON EACH VISIT.

VEGETATED UNDERDRAINED SOIL FILTER BASINS
CONSTRUCTION INSPECTIONS - AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION SHALL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL. AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED, AFTER THE PIPE BEDDING IS PLACED BUT PRIOR TO THE PLACEMENT OF THE FILTER MEDIA, AND AFTER THE FILTER MEDIA HAS BEEN PLACED AND THE FILTER SURFACE SEEDED.

TESTING AND SUBMITTALS - ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN SHALL BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FROM EACH MATERIAL FOR TESTING. ALL TESTING SHALL BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN'S CONSTRUCTION.

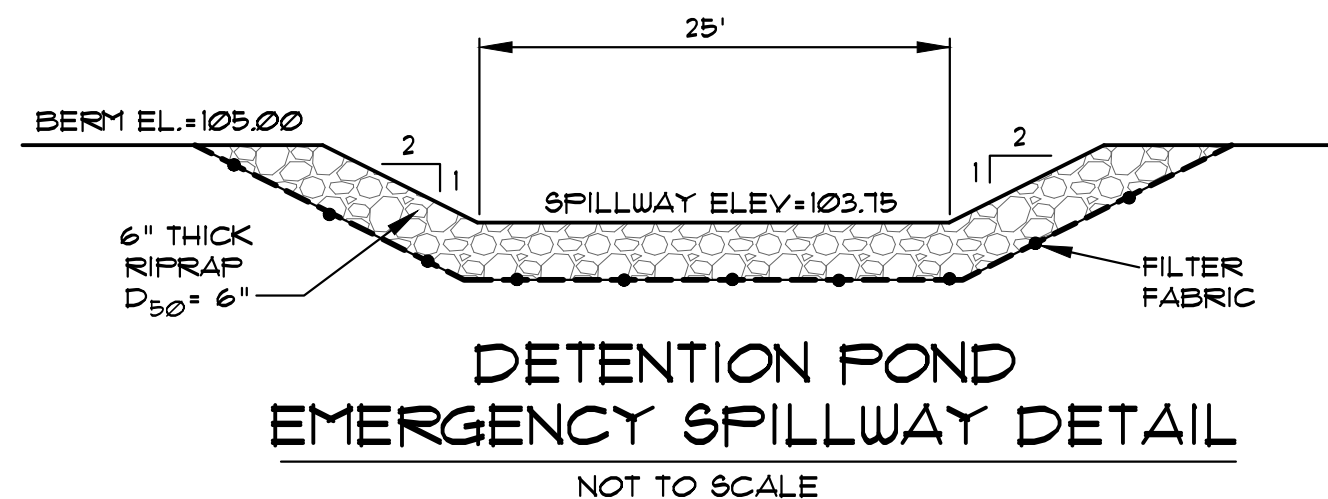
OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF A BLEND OF SAND, TOPSOIL AND WOOD FIBER MULCH (OR OTHER APPROVED) THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE AS DETERMINED BY ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A), HAS A CLAY CONTENT OF LESS THAN 2% AND HAS AN ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT.

IF THE UNDERDRAIN PIPES WILL BE BEDDED IN GRAVEL, OBTAIN A SAMPLE OF THE GRAVEL FILL TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE GRAVEL TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE GRAVEL FILL MUST CONFORM TO MEDOT SPECIFICATION 103.22 UNDERDRAIN TYPE B.

IF THE UNDERDRAIN PIPE WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 103.22 UNDERDRAIN TYPE C.

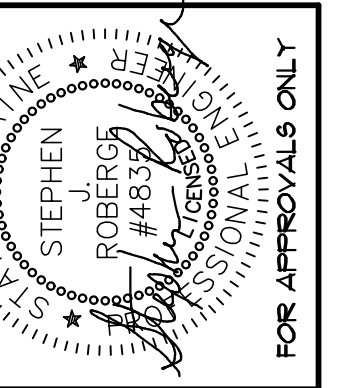
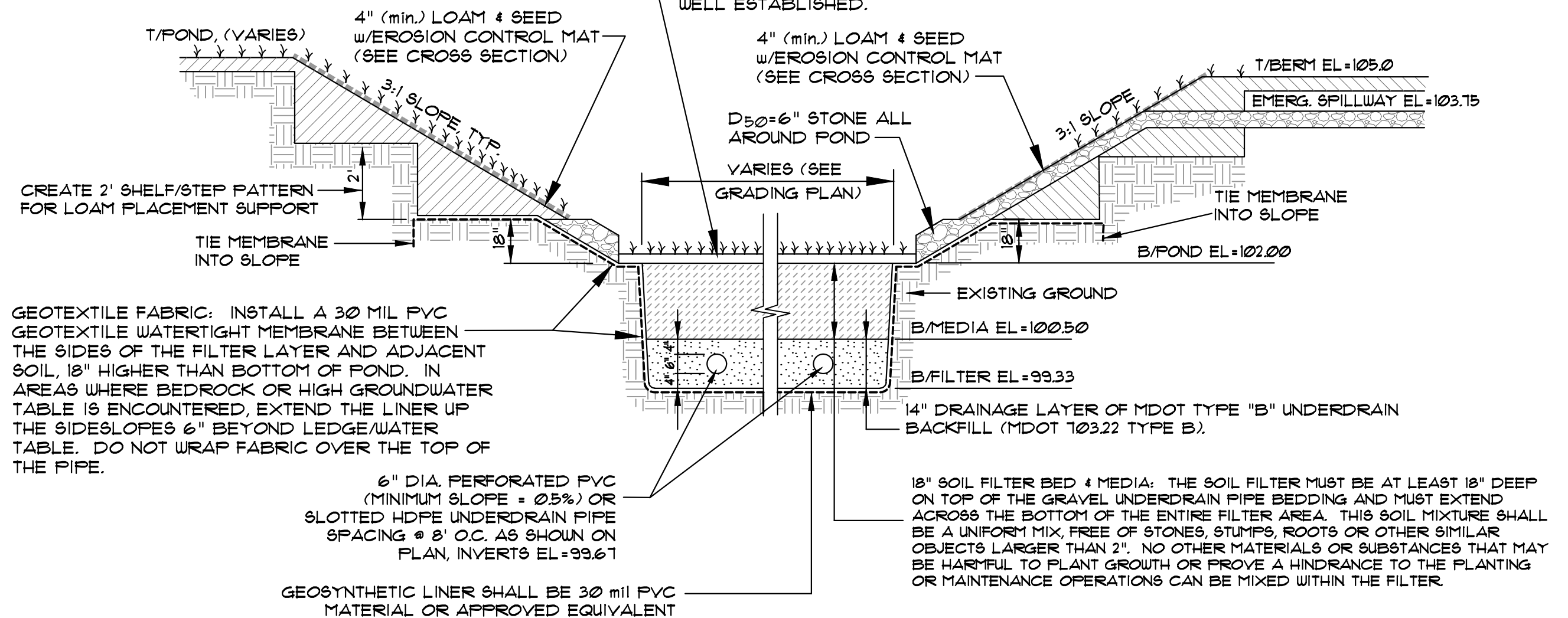
SOIL FILTER NOTES

- THE SOIL FILTER IS PART OF A TOWN OF CUMBERLAND PERMIT. CONSTRUCTION SHALL FOLLOW CURRENT MAINE DEP GUIDELINES WHICH INCLUDE APPROVAL OF MATERIAL PRIOR TO PLACEMENT AND CONSTRUCTION OVERSIGHT BY THE DESIGN ENGINEER.
- SUBMIT SAMPLES AND GRADATIONS FOR EACH MATERIAL TO BE USED. PROVIDE EXPECTED DESIGN MIX. PERFORM AND PROVIDE STANDARD PROCTOR ON COMBINED MIXTURE AS WELL AS A PERMEABILITY TEST.
- SCARIFY TO LOOSEN EXISTING SOIL AT LEAST 8" PRIOR TO LAYING FIRST LAYER OF THE SOIL FILTER SECTION.
- MAXIMUM SPACING OF UNDERDRAIN PIPING IS 10' O.C. END CAPS SHALL BE INSTALLED ON ALL UNDER DRAIN PIPES.
- AFTER APPROVAL OF MATERIAL, PLACE FILTER MEDIA IN TWO LIFTS WITH LOW WEIGHT VEHICLES TO 90-92% STANDARD PROCTOR.
- PROVIDE 2" OF BARK MULCH OR EROSION CONTROL MIX ON TOP OF THE FILTER BED UNTIL THE SITE HAS PROPOSED HARDSCAPE PLACED AND HAS VEGETATION WELL ESTABLISHED EVERYWHERE ELSE. ONCE THE SITE IS STABILIZED, REMOVE THE MULCH AND ACCUMULATED SEDIMENT FROM THE FILTER AND ESTABLISH VEGETATION PER THE FILTER BED SEEDING PLAN.
- PRIOR TO TURNING OVER TO OWNER, REMOVE SEDIMENT AND DEBRIS FROM FILTER SURFACE, OVERFLOW WEIR, INSIDE OVERFLOW STRUCTURE AND DISCHARGE PIPE.



SOIL FILTER MEDIA SPECIFICATIONS *			
FILTER MEDIA	SAND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (+5%)	25% (+5%)	25% (+5%)
SPECIFICATION	MEDOT SPEC. #103.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE, SHREDDED BARK SUPERMULCH OR EQUAL ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
	GRADATION		
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
3/8"	100	-	-
4	90-100	75-95	-
8	80-100	-	-
10	-	60-90	-
16	50-85	-	-
30	25-60	-	-
40	-	35-85	-
60	10-30	-	-
100	2-10	-	-
200	0-5	15-25	-
200 CLAY	< 2% **	< 2% **	< 2% **
* FOR GRASSED UNDERDRAINED SOIL FILTER BMP, PER THE MAINE DEP VOLUME III : BMP'S TECHNICAL DESIGN MANUAL, MAY 2014			
** COMBINED MIXTURE CLAY CONTENT SHALL NOT EXCEED 2%			
NOTE: THE SOIL FILTER SHALL DRAIN IN NO LESS THAN 24 hrs BUT NOT MORE THAN 48 hrs			

NOTE:
FILTER POND SOIL FILTER DETAILS DEPICTS ELEVATIONS AT THE BOTTOM PERIMETER OF THE POND AND NOT THE LOW POINT OF THE POND. SEE SITE PLAN GRADING AND SECTION FOR LOW POINT OF ELEVATION (TYPICALLY NEAR THE CONTROL STRUCTURE)



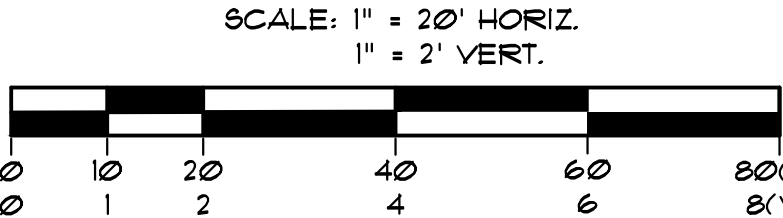
DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 602-1616 tel & fax
steve@sjreng.com

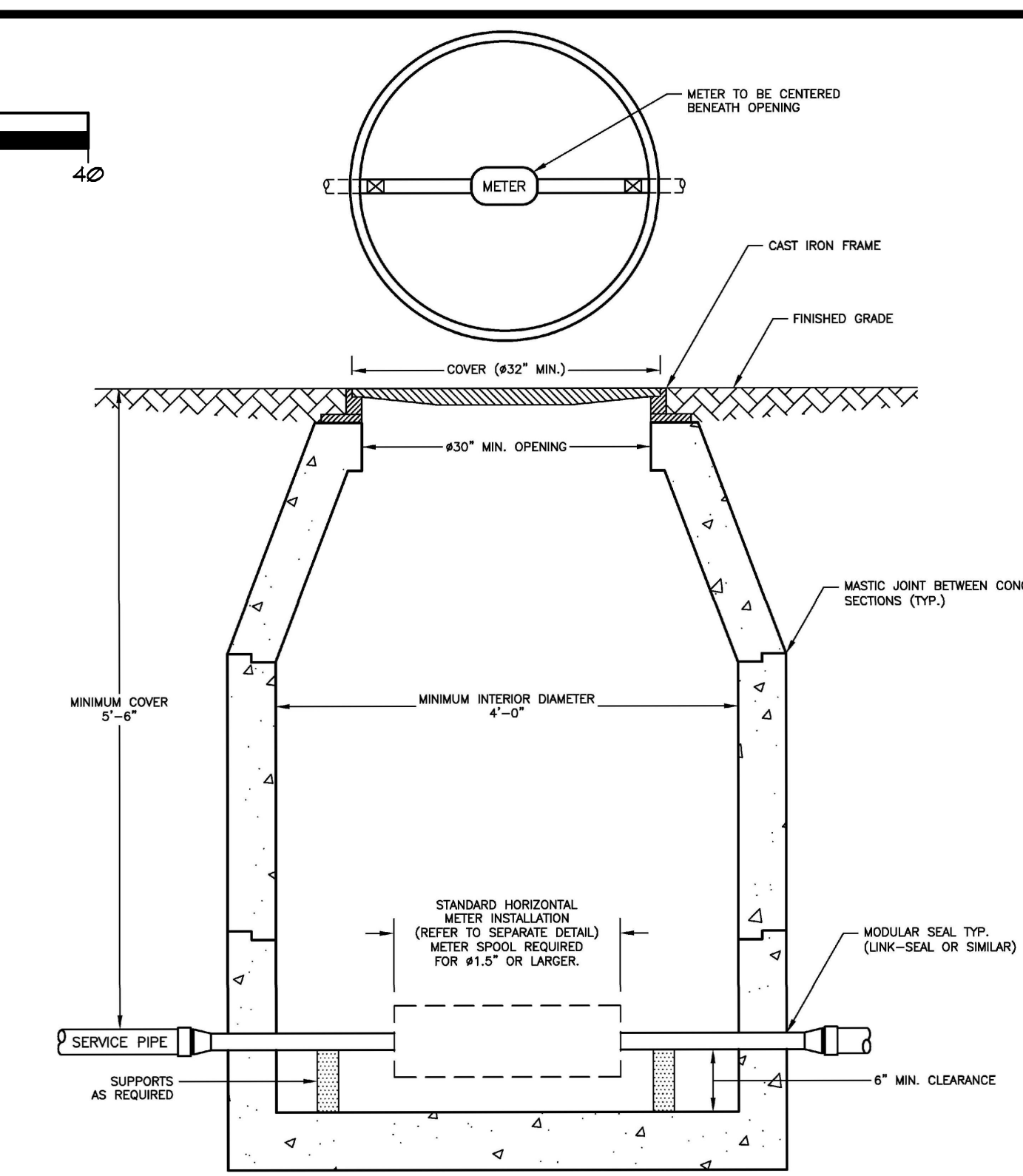
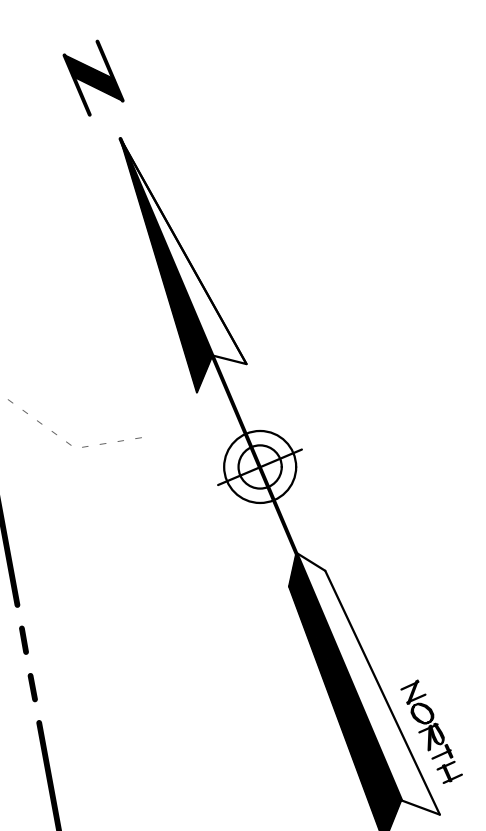
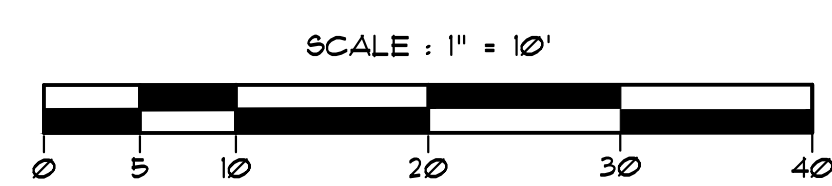
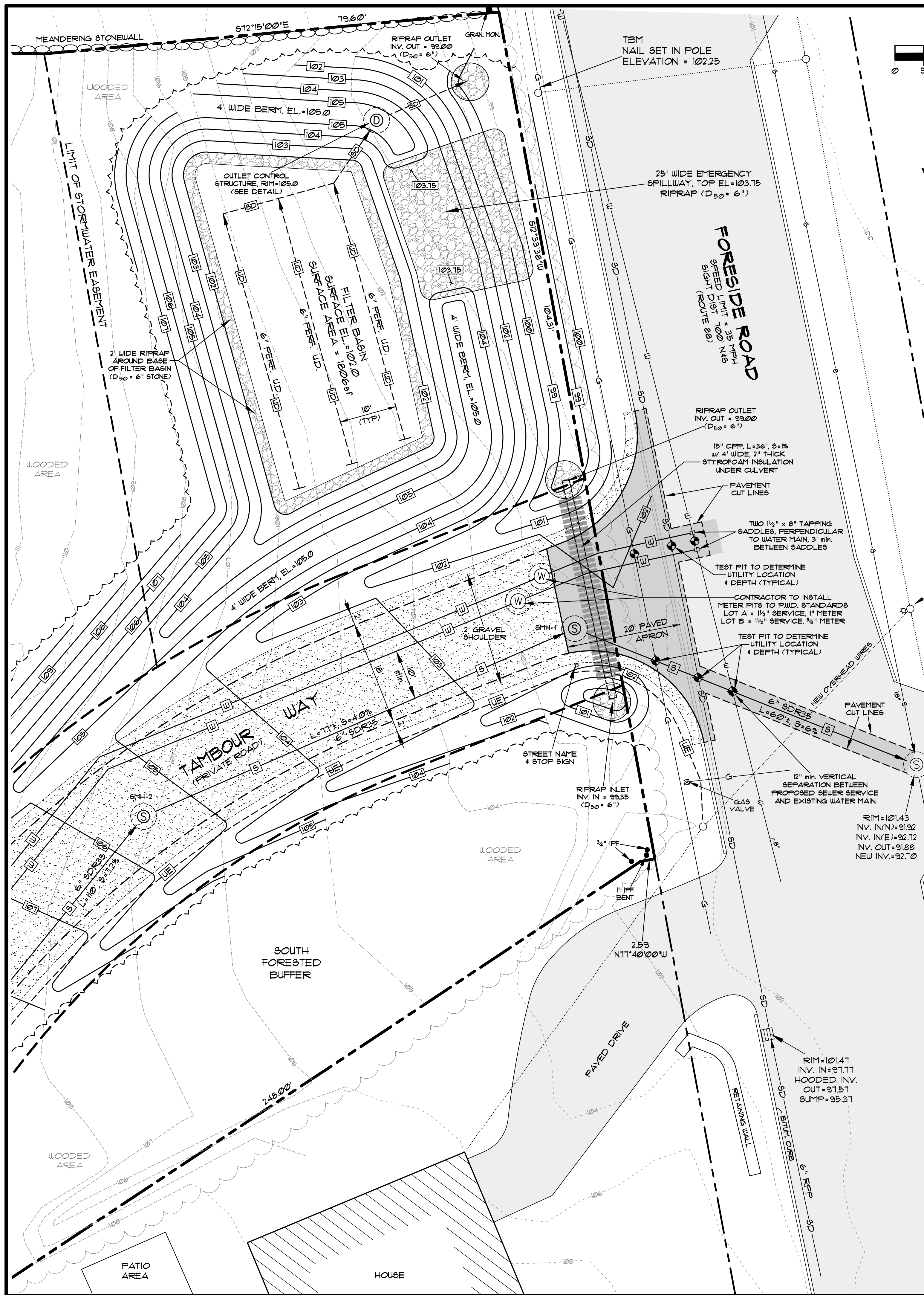
SJR ENGINEERING

SITE CONSTRUCTION NOTES & DETAILS
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04110

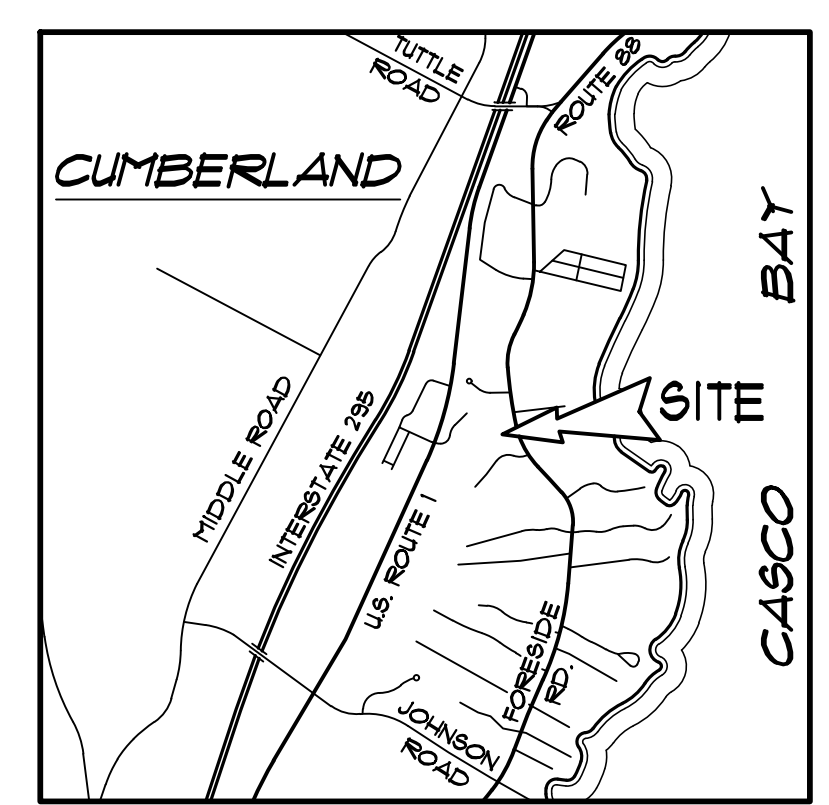
DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.



SHEET C11



WATER METER BOX DETAIL
NOT TO SCALE



LOCATION MAP

NEW SEWER MANHOLES

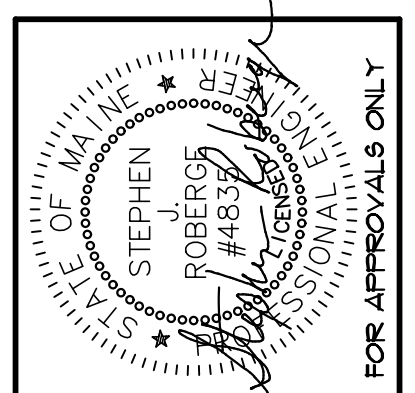
MANHOLE #	RIM EL.	INVERT IN	INVERT OUT
SMH-1	102.33	96.43	96.33
SMH-2	105.50	99.60	99.50

NOTES

- ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTRY REGISTRY OF DEEDS.
- OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
- PARCEL AREA = 151456 SQUARE FEET / 3.48 ACRES
- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD - ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
- THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
- THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT.
MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER)
MINIMUM LOT FRONTAGE = 150'
SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 230162 0018C, DATED OCTOBER 15, 1985.
- ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- TAX MAP LINE (OTHER)
- NOW OR FORMERLY
- BOOK AND PAGE NUMBER
- IRON PIPE OR ROD FOUND
- GRANITE MONUMENT FOUND
- EXISTING UTILITY POLE WITH OVERHEAD WIRES
- EXISTING CATCH BASIN
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SEWER MANHOLE
- EXISTING SEWER MANHOLE
- EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
- EXISTING CONTOUR
- PROPOSED SPOT GRADE
- PROPOSED CONTOUR
- EXISTING SEWER LINE
- EXISTING WATER LINE
- NEW 6" PERFORATED UNDERDRAIN LINE
- NEW UNDERGROUND ELECTRIC LINE
- NEW 1/2" WATER SERVICE
- NEW SEWER LINE
- EXISTING TREE LINE
- NEW TREE LINE
- STONE WALL
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED GRAVEL DRIVE
- EXISTING BUILDING (ABUTTER)



DATE	PROJECT
12-29-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 10'

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248
steve@sjreng.com

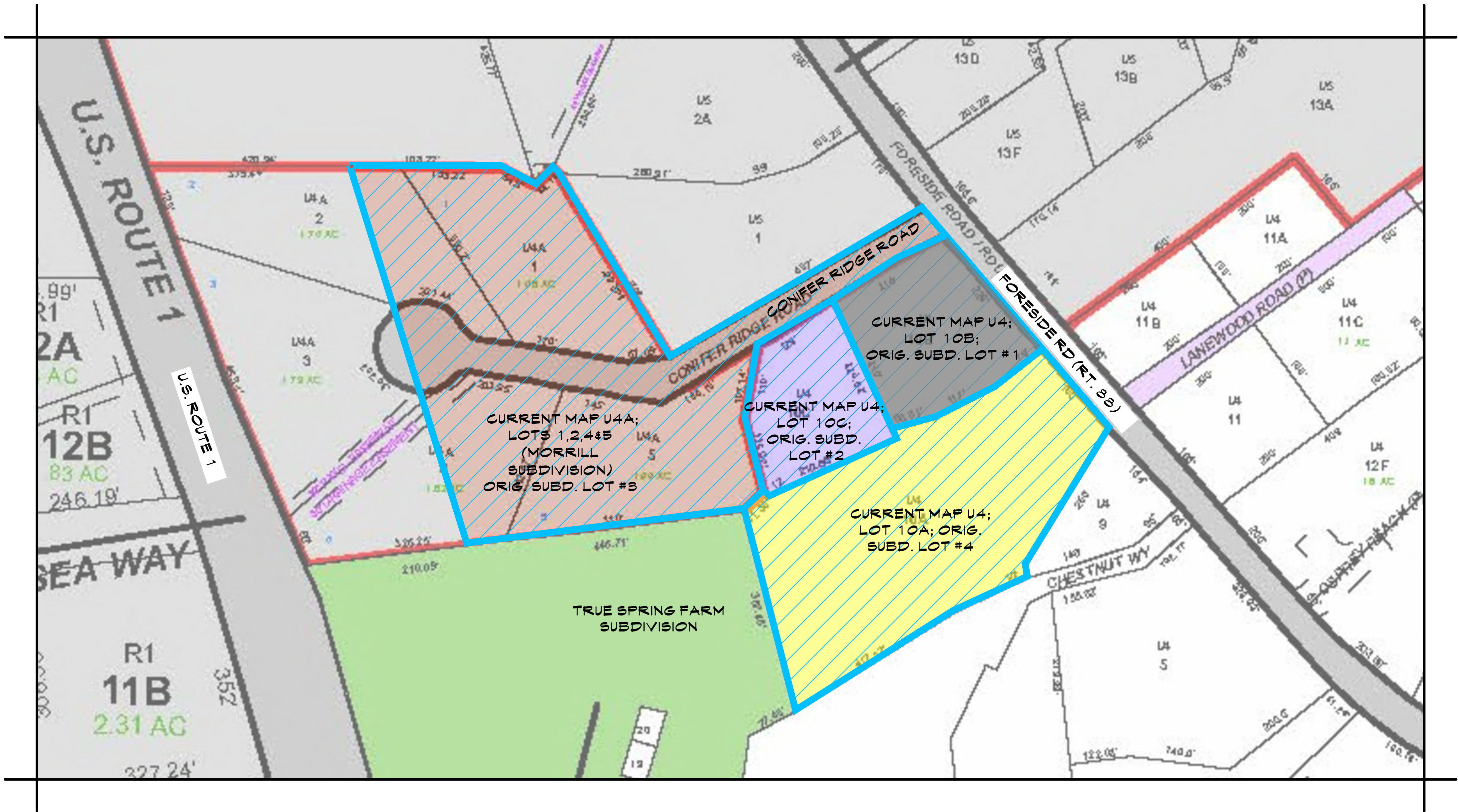
CONSTRUCTION & UTILITY DETAIL
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

DATE	PROJECT
12-29-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 10'

SHEET C12

104 FORESIDE RD.

CUMBERLAND-FORESIDE MAINE



CURRENT LAND OWNER

COVE DEVELOPMENT COMPANY LLC
PO BOX 142
BOOTHBAY, MAINE 04537

207-633-3818

ARCHITECT & INTERIORS

KNICKERBOCKER GROUP
3 BUILDERS SQUARE
PO BOX 142
BOOTHBAY, MAINE 04537
&
82 HANOVER STREET, SUITE 3
PORTLAND, MAINE 04101

TEL: 207.633.3818

FAX: 207.633.3963

PROFESSIONAL LAND SURVEYOR

OWEN HASKELL, INC
309 US-1 UNIT 10
FALMOUTH, MAINE 04105

207-774-0424

GENERAL CONTRACTOR

KNICKERBOCKER GROUP
3 BUILDERS SQUARE
PO BOX 142
BOOTHBAY, MAINE 04537
&
82 HANOVER STREET, SUITE 3
PORTLAND, MAINE 04101

TEL: 207.633.3818

FAX: 207.633.3963

CIVIL ENGINEER

SJR ENGINEERING - STEVE ROBERGE
16 THURSTON DRIVE
MONMOUTH, MAINE 04259

207-242-6248

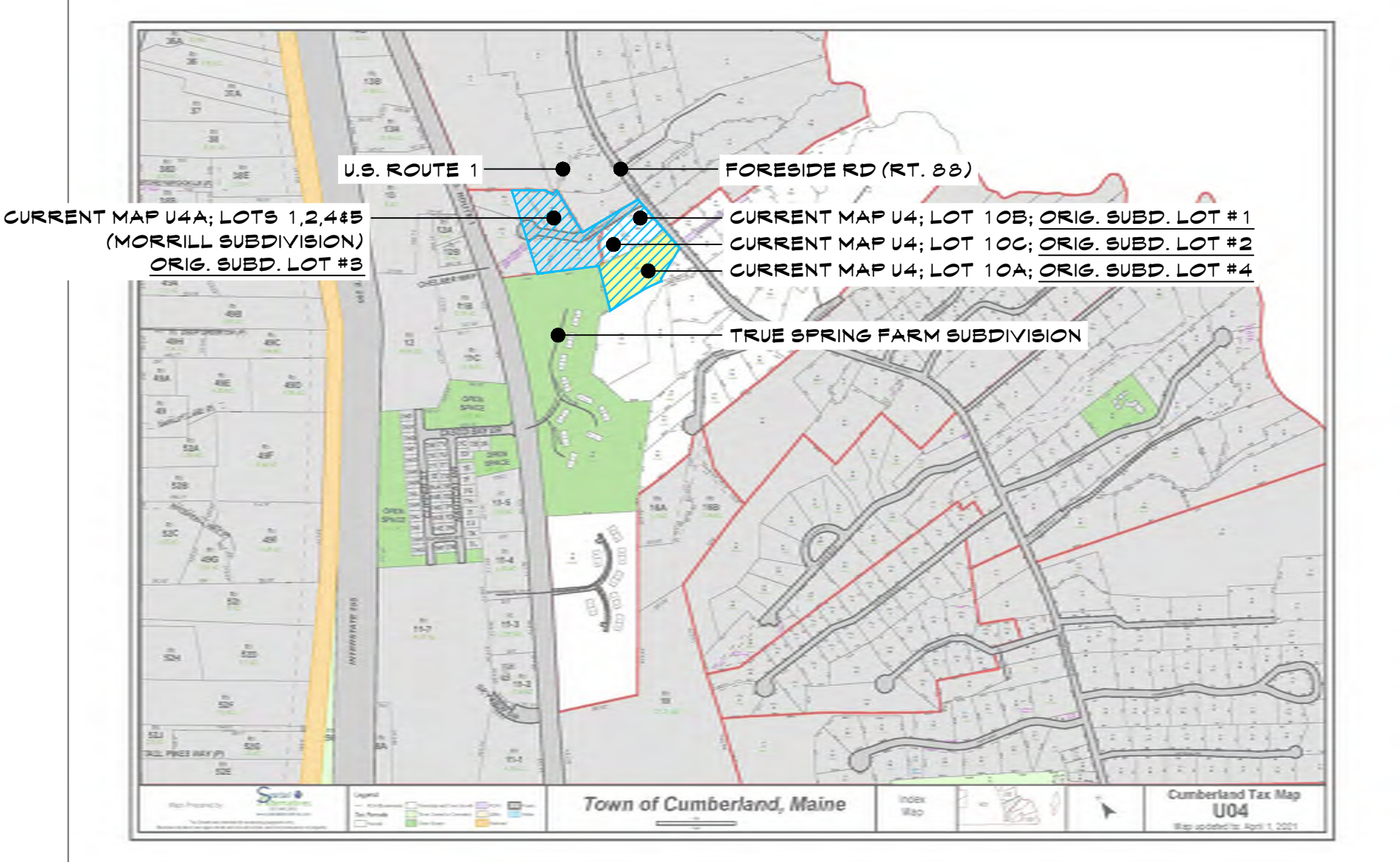
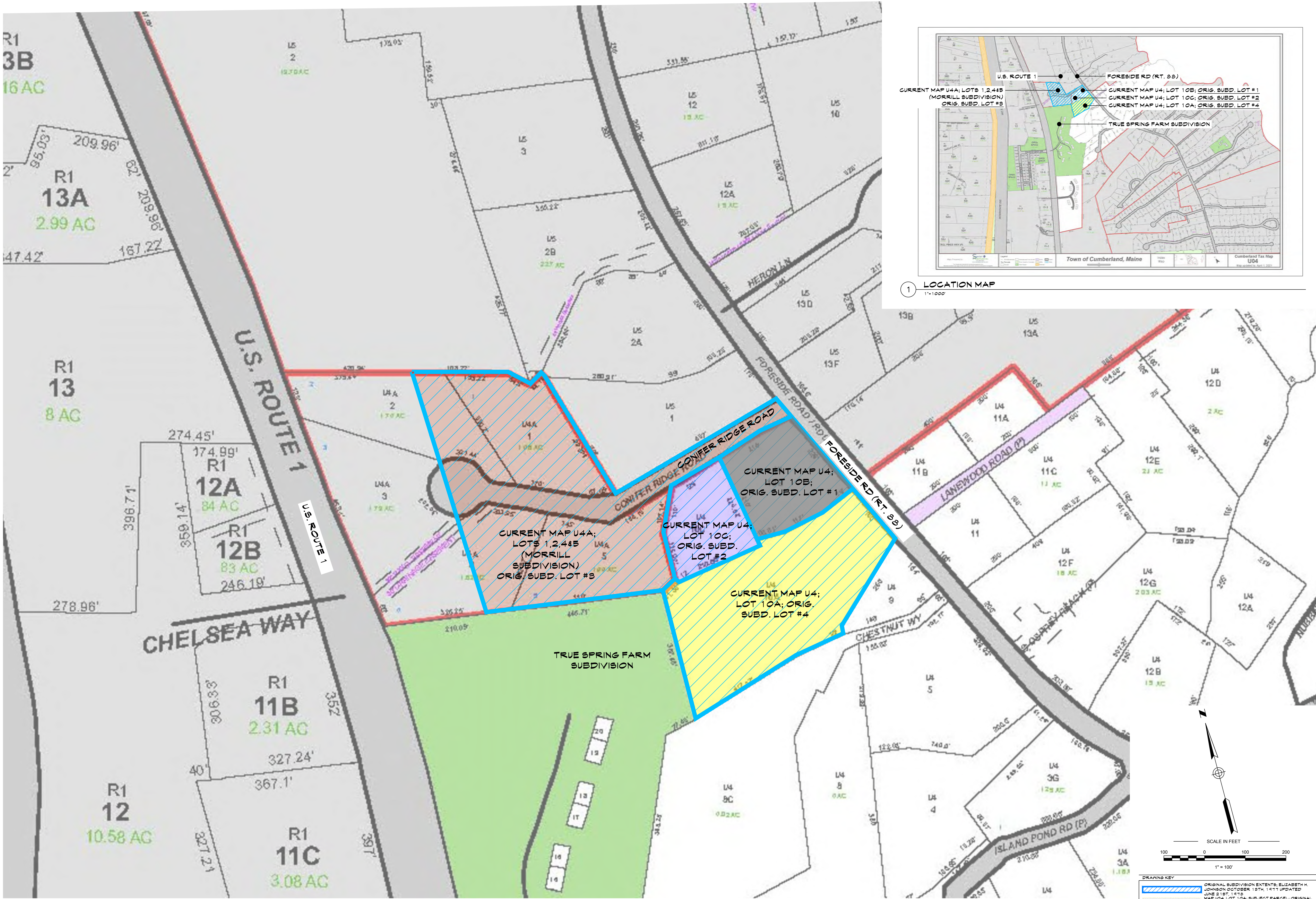
DRAWING LIST		ORIGINAL ISSUE DATE	REVISED ISSUE DATE
SHEET #	DRAWING TITLE		
C0	COVER SHEET	01/31/2023	02/14/2023
C1	LOCATION MAP	01/31/2023	N/A
C2	SUBDIVISION PLAN FOR ELIZABETH H. JOHNSON	01/31/2023	N/A
C3	AMENDED SUBDIVISION PLAN FOR ELIZABETH M. JOHNSON	01/31/2023	N/A
C4	SUBDIVISION PLAN FOR MORRILL PROPERTIES	01/31/2023	OMITTED
C5	SUBDIVISION AMENDMENT PLAN, MORRILL PROPERTIES	01/31/2023	OMITTED
C6	EXISTING CONDITIONS AND BOUNDARIES PLAN	01/31/2023	N/A
C6	AMENDED SUBDIVISION PLAN	01/31/2023	02/14/2023
C6A	FORRESTED BUFFER & LANDSCAPING PLAN	01/31/2023	02/14/2023
C7	SITE CONSTRUCTION & STORMWATER MANAGEMENT PLAN	01/31/2023	02/14/2023
C8	WATERSHED & SOILS PLAN	01/31/2023	02/14/2023
C9	SITE CONSTRUCTION NOTES & DETAILS	01/31/2023	02/14/2023
C10	SITE CONSTRUCTION NOTES & DETAILS	01/31/2023	02/14/2023
C11	PROPOSED ROAD PROFILE	01/31/2023	02/14/2023
C12	UTILITY PLAN & DETAILS	01/31/2023	02/14/2023



KNICKERBOCKER GROUP

SUBDIVISION AMENDMENT
FEBRUARY 2023
PLANNING BOARD MEETING
SUBMITTED: 01/31/2023
REVISED: 02/14/2023

CO



1 LOCATION MAP
1" = 1,000'

2 OVERVIEW MAP
1" = 100'

DRAWING KEY	
	ORIGINAL SUBDIVISION EXTENTS; ELIZABETH H. JOHNSON OCTOBER 15TH 1977 UPDATED JUNE 21ST, 1978
	MAP U4A, LOT 10A; SUBJECT PARCEL; ORIGINAL SUBDIVISION LOT #4
	CURRENT MAP U4A, LOT 10C; ORIGINAL SUBDIVISION LOT #2
	CURRENT MAP U4A, LOT 10B; ORIGINAL SUBDIVISION LOT #1
	CURRENT MAP U4A, LOTS 1, 2, 4&5; ORIGINAL SUBDIVISION LOT #3

COVE
— by KNICKERBOCKER GROUP —
BOOTHBAY ♦ PORTLAND ♦ (207) 633-3888
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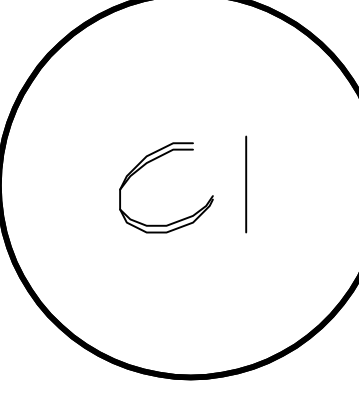


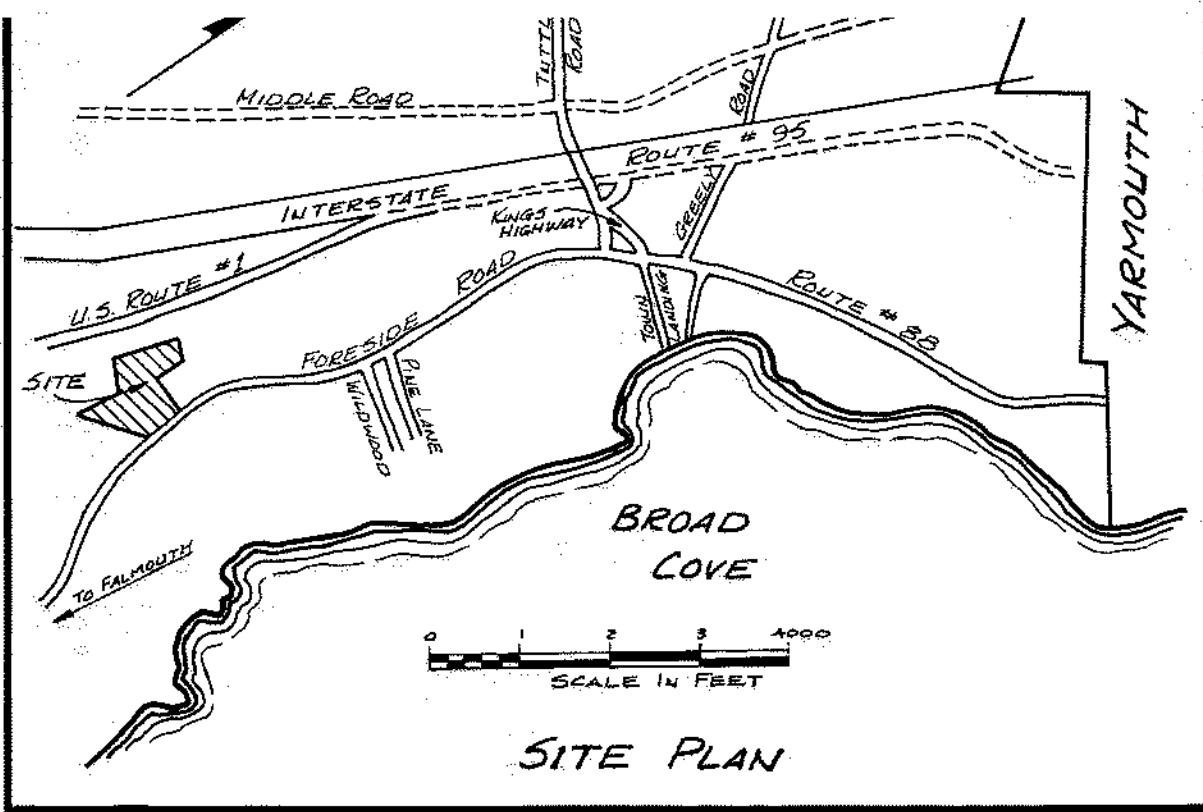
CONSULTANTS

104 FORESIDE ROAD
CUMBERLAND, MAINE
LOCATION PLAN/MAP

REVISIONS	
10/24/2022	ISSUED AS SUPPLEMENTAL DOCUMENTATION FOR PLANNING BOARD SUBMISSION
11/29/2022	RE-ISSUED FOR PLANNING BOARD REVIEW
1/31/2023	RE-ISSUED FOR PLANNING BOARD REVIEW; ADDED FORESTED BUFFERS AND UPDATED R.O.W. EXTENTS

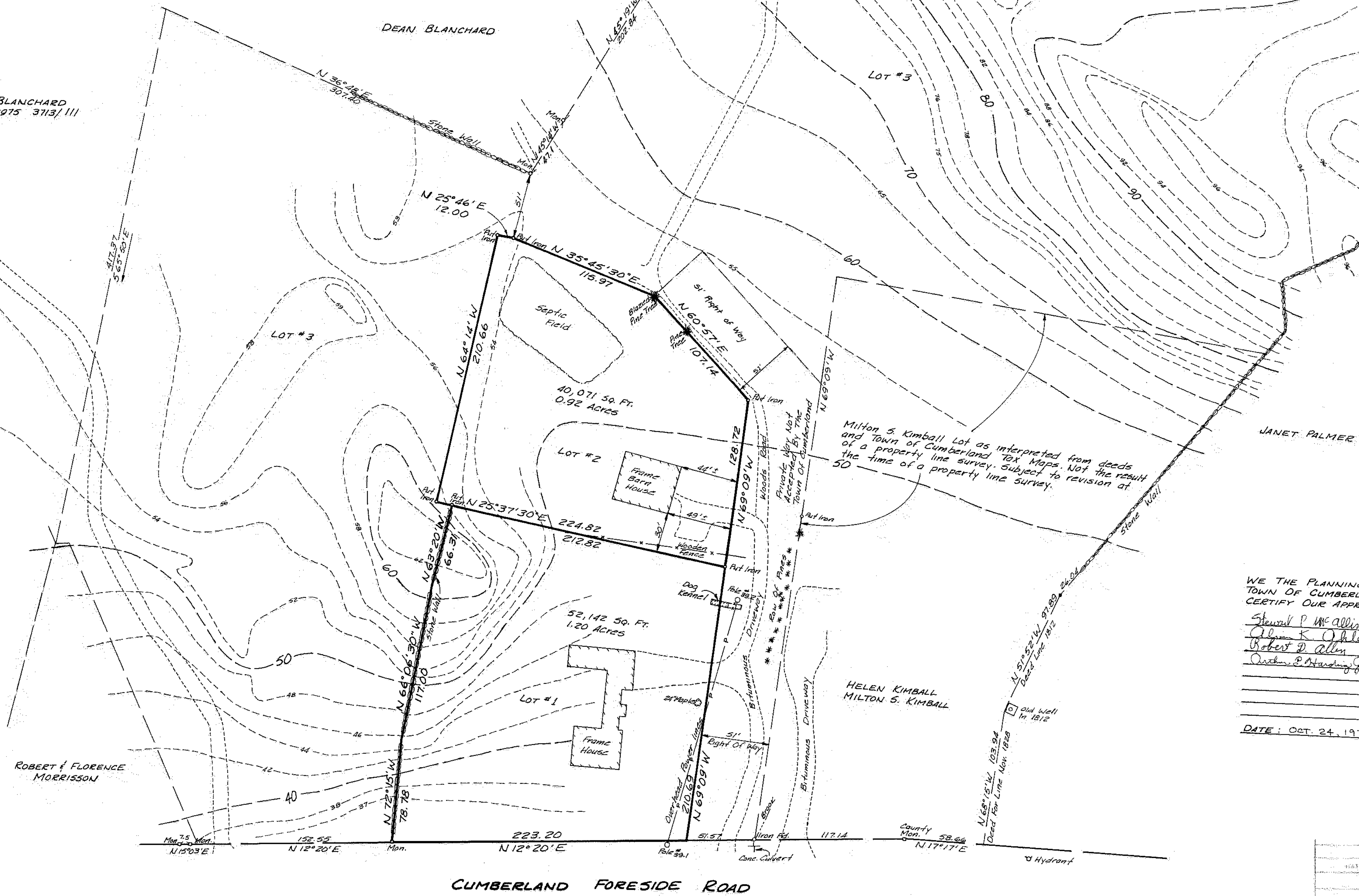
JOB No.	SCALE
DATE	AS NOTED
01-31-2023	





NOTES:
This plan is a composite of a plan entitled "Topographic Plan of Land in Cumberland, Maine, Owned by William D. Ireland, made May, 1930 by E.C. Jordan Company, Scale 40 feet equals 1 inch." Survey in February, 1976 for the "Frame House" Lot #1 and survey in September, 1977 for the "Barn" Lot #2. The Dean Blanchard Lot, The Morrison Lot and The Milton S. Kimball Lot have been plotted from dead information and from reference to Town of Cumberland Tax Maps. Each of these three deed plots as well as the dimensions of the overall Elizabeth H. Johnson Lot are subject to revision at the time of a property line survey. This is a Town of Cumberland Low Density Residential District and area and setback requirements within Lots 1 and 2, with the exception of the front yard setback of the "Frame Barn" house, have been satisfied. See approximate dimensions on lot. All contour lines are from the 1930 survey. No verification of them has been accomplished at this time. Public water supply to the property is from the Foreside Road. Location of the private line serving the lots is unknown.
In compliance with the requirements of the Town of Cumberland Planning Board the following conditions or restrictions are noted:
1. The private way leading from the Cumberland Foreside Road does not extend beyond Lot #2.
2. None of the remaining land, within the overall figure indicated on this plan, being retained by Elizabeth H. Johnson, her heirs or assigns, may be developed without prior approval of the Town of Cumberland Planning Board.
3. Three (3) lots have at this time been indicated on this plan:
Lot #1 contains the original house. This lot was created in February, 1976.
Lot #2 contains the "Barn House". This lot is being created at this time.
Lot #3 The designation of which is indicated in two places on this plan is the remainder of the Elizabeth H. Johnson's property, this lot contains approximately 5 acres.

DEAN BLANCHARD
July 16, 1975 3713/111

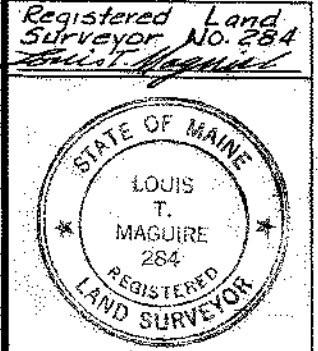


WE THE PLANNING BOARD OF THE TOWN OF CUMBERLAND, MAINE HEREBY CERTIFY OUR APPROVAL OF THIS PLAN.

Shirley P. McAllister
Robert D. Allen
Robert D. Allen
Robert D. Allen

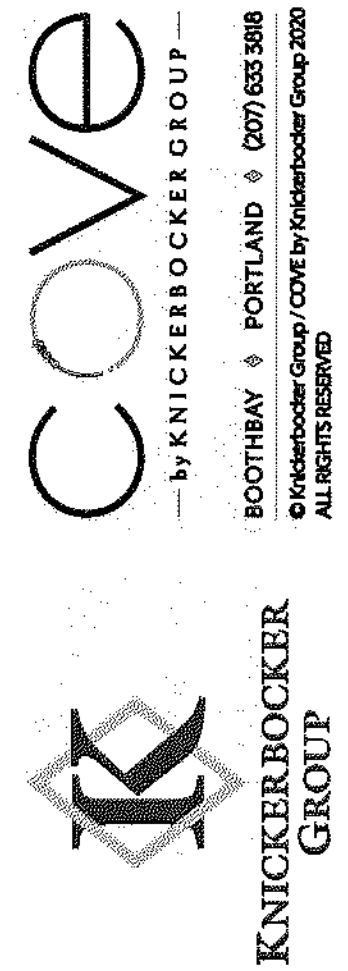
DATE: OCT. 24, 1977

State of Maine, Cumberland Co.
Registry of Deeds
Records October 26, 1977 at
12:45 PM and recorded
in Plan Book 113, Page 19.
Attest: *Margaret L. Fisher*
Registrar



1 ORIGINAL SUBDIVISION PLAN
1"=40'

STATE OF MAINE	
CUMBERLAND FORESIDE, MAINE	
ELIZABETH H. JOHNSON	
104 FORESIDE ROAD	
CUMBERLAND, MAINE	
OCT. 13, 1977	
LTM LTM RDC 700/16 905 905	

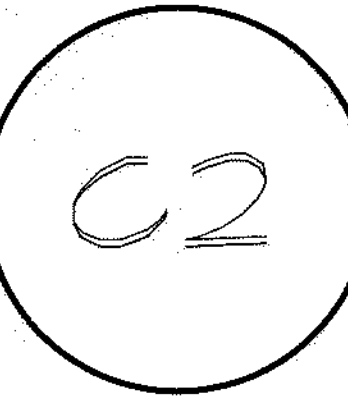


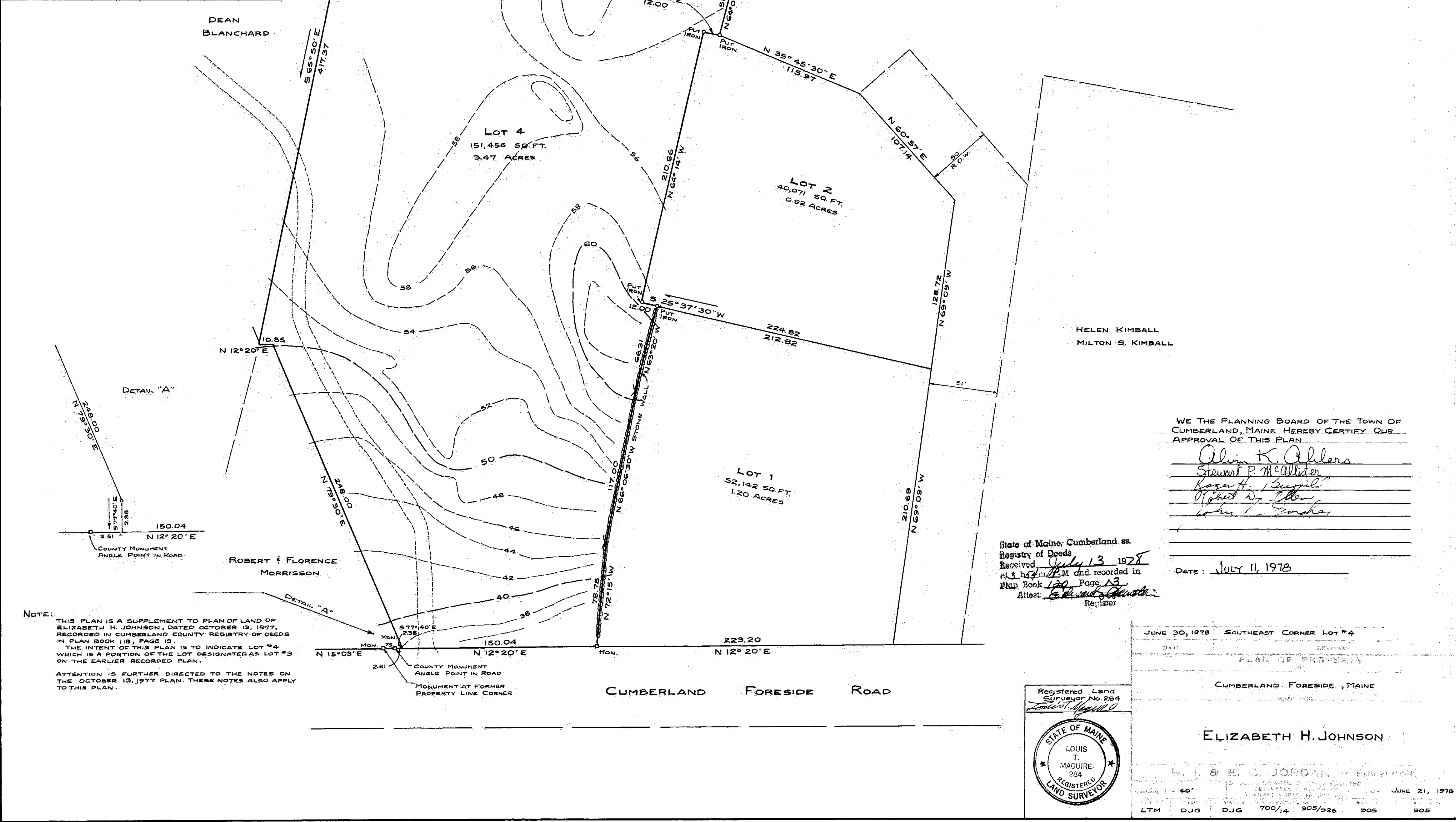
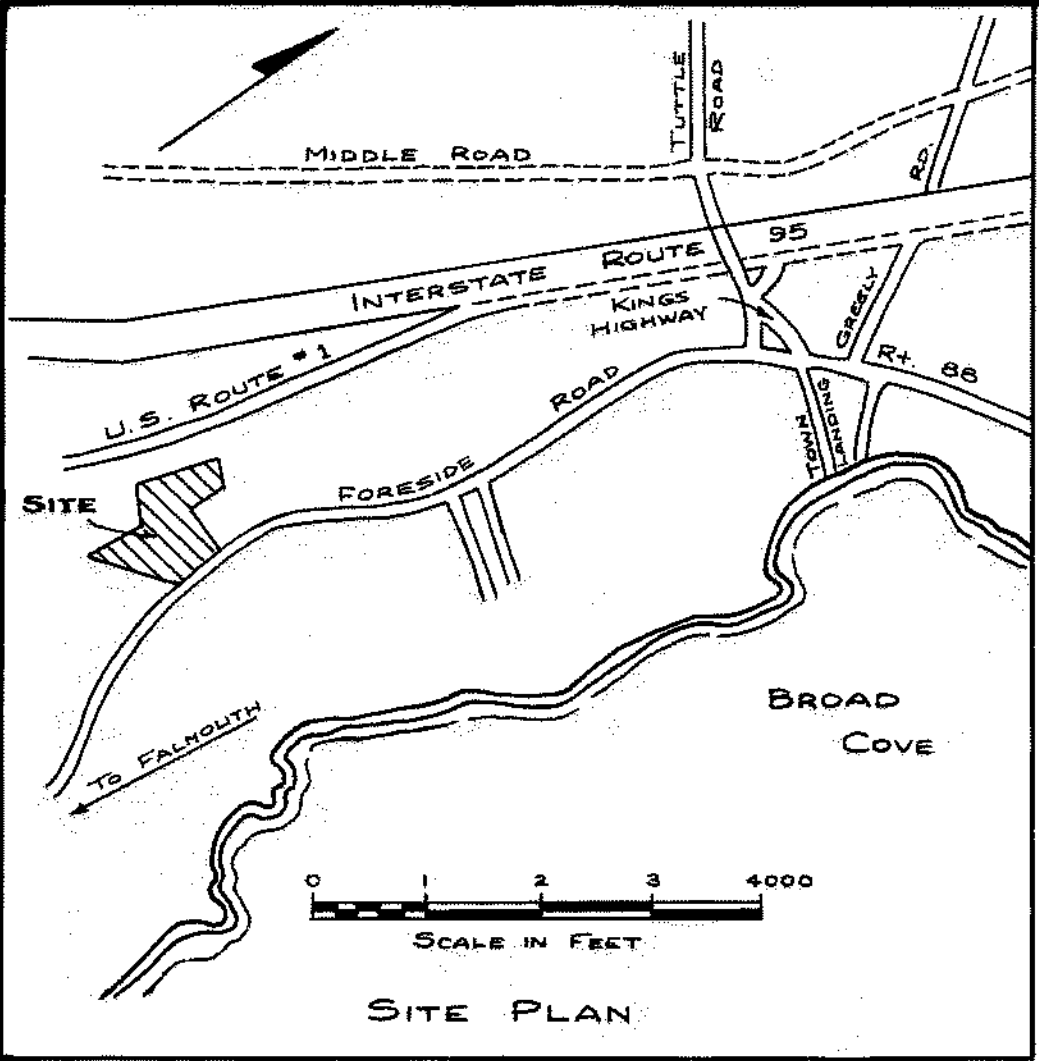
CONSULTANTS

104 FORESIDE ROAD
CUMBERLAND, MAINE
ORIGINAL SUBDIVISION PLAN

REVISIONS
10/24/2022: ISSUED AS SUPPLEMENTAL DOCUMENTATION FOR PLANNING BOARD SUBMISSION
11/24/2022: RE-ISSUED FOR PLANNING BOARD REVIEW
1/31/2023: RE-ISSUED FOR PLANNING BOARD REVIEW. ADDED FORESTED BUFFERS AND UPDATED R.O.W. EXTENTS
1/14/2023: UPDATED GRAPHICS

JOB No. SCALE
AS NOTED
DATE
01-31-2023





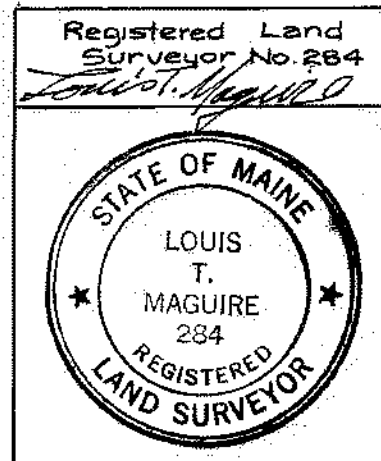
NOTE: THIS PLAN IS A SUPPLEMENT TO PLAN OF LAND OF ELIZABETH H. JOHNSON, DATED OCTOBER 13, 1977, RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 118, PAGE 19. THE INTENT OF THIS PLAN IS TO INDICATE LOT #4 WHICH IS A PORTION OF THE LOT DESIGNATED AS LOT #3 ON THE EARLIER RECORDED PLAN. ATTENTION IS FURTHER DIRECTED TO THE NOTES ON THE OCTOBER 13, 1977 PLAN. THESE NOTES ALSO APPLY TO THIS PLAN.

State of Maine, Cumberland ss.
Registry of Deeds
Received July 13 1978
at 3:44 P.M. and recorded in
Plan Book 118 Page 19
Attest: Edward J. Maguire
Register

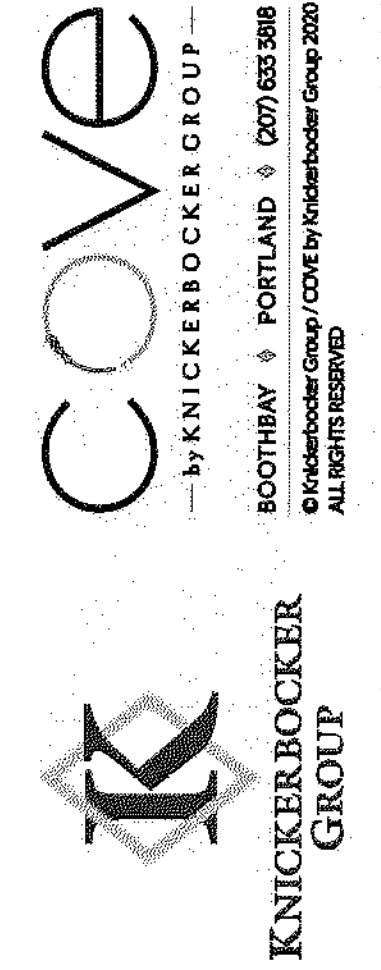
WE THE PLANNING BOARD OF THE TOWN OF CUMBERLAND, MAINE, HEREBY CERTIFY OUR APPROVAL OF THIS PLAN.

Alvin K. Ahlers
Stewart P. McAllister
Roger H. Surin
Robert D. Allen
John L. Parker

DATE: JULY 11, 1978



JUNE 30, 1978	SOUTHEAST CORNER LOT #4
DATE	REVISIONS
	PLAN OF PROPERTY
	CUMBERLAND FORESIDE, MAINE
	ELIZABETH H. JOHNSON
	H. B. E. C. JORDAN - SURVEYOR
	EDWARD J. MAGUIRE
	REGISTERED LAND SURVEYOR
	JUNE 21, 1978
LTM	DJG
DJG	700/14
905/926	905
905	905

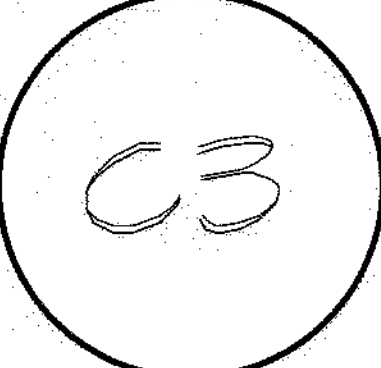


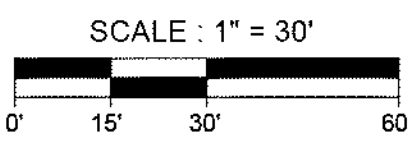
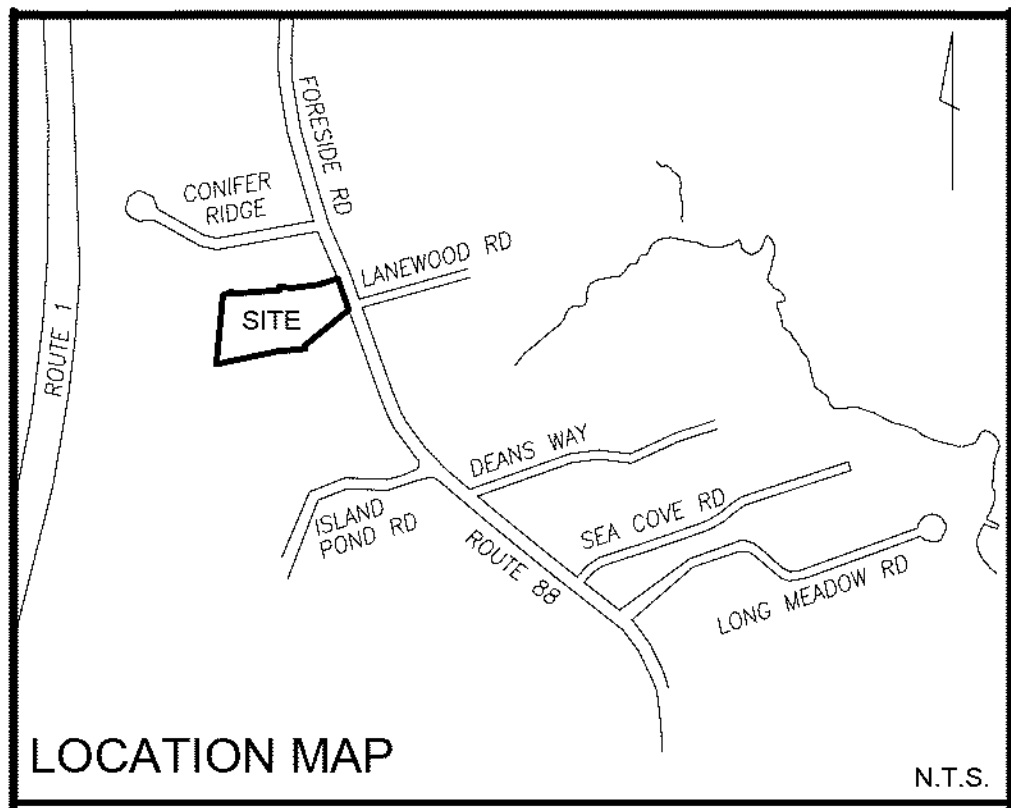
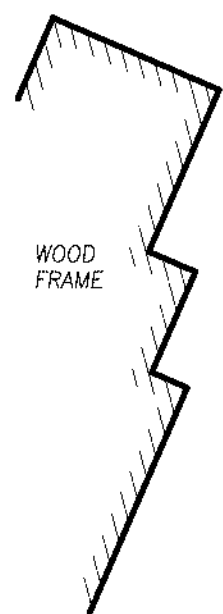
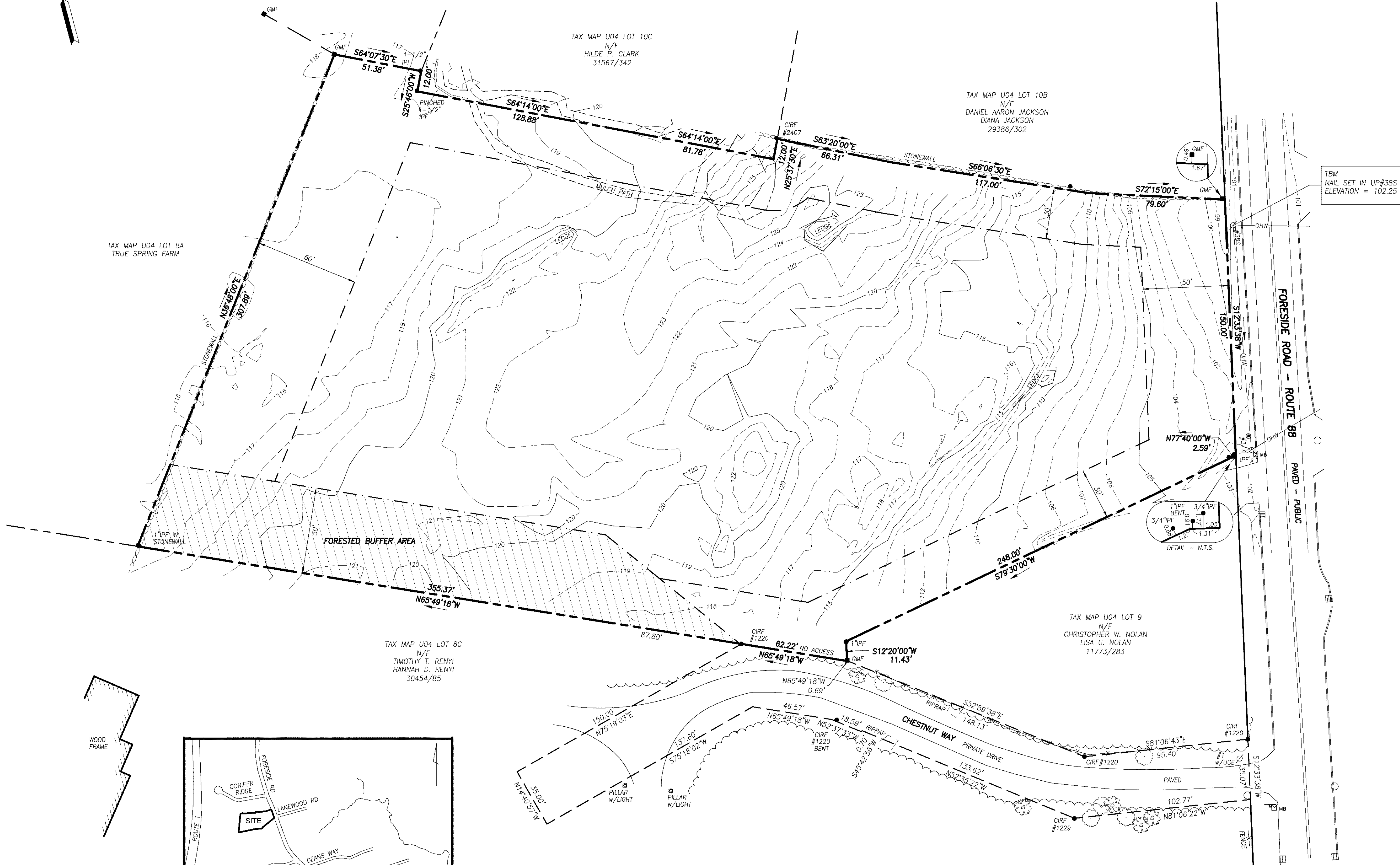
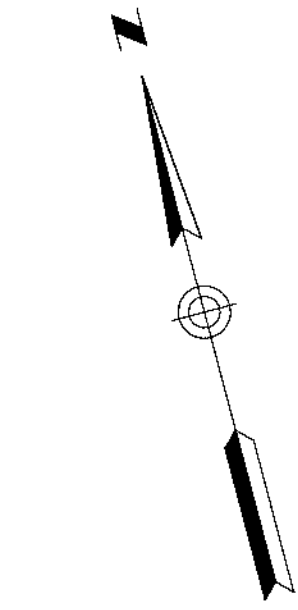
CONSULTANTS

104 FORESIDE ROAD
CUMBERLAND, MAINE
SUPPLEMENTAL SUBDIVISION PLAN 1978

REVISIONS
10/24/2022: ISSUED AS SUPPLEMENTAL DOCUMENTATION FOR PLANNING BOARD SUBMISSION
11/29/2022: RE-ISSUED FOR PLANNING BOARD REVIEW
1/31/2023: RE-ISSUED FOR PLANNING BOARD REVIEW
ADDED FORESTED BUFFERS AND UPDATED ROW EXTENTS
1/14/2023: UPDATED GRAPHICS

JOB No. SCALE
AS NOTED
DATE
01-31-2023





LEGEND	
●	IRON PIPE OR ROD FOUND
■	MONUMENT FOUND
○	UTILITY POLE
○	MANHOLE
□	SIGN
■	CATCH BASIN
⊙	LIGHT POLE
⊙	DECIDUOUS TREE
⊙	CONIFEROUS TREE
—X—X—	FENCE
—X—X—X—X—	STONEWALL
—	CURB
—	SETBACK LINE
IPF/IRF	IRON PIPE OR ROD FOUND
GMF	GRANITE MONUMENT FOUND
N/F	NOW OR FORMERLY
000/000	DEED BOOK / PAGE
—OHW—	OVERHEAD WIRES

- PLAN REFERENCES**
1. "SUBDIVISION RECORDING PLAN, ROUTE 88 - CUMBERLAND, MAINE, OWNER: MORRILL PROPERTIES" JULY 5, 1988 REVISED THRU JULY 13, 1993 BY SEA CONSULTANTS, INC. RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 193, PAGE 198.
 2. "PRIVATE RIGHT OF WAY AND LOT PLAN OF: RENYI PROPERTY, FORESIDE ROAD - ROUTE 88, CUMBERLAND, MAINE FOR RECORD OWNER: TIMOTHY AND HANNAH RENYI" MAY 2, 2013 REVISED THRU SEPT. 12, 2013 BY SEBAGO TECHNICS RECORDED IN PLAN BOOK 213, PAGE 383.
 3. "PLAN OF PROPERTY IN CUMBERLAND FORESIDE, MAINE MADE FOR ELIZABETH H. JOHNSON" JUNE 21, 1978 REVISED THRU JULY 17, 1978 BY H.I. & E.C. JORDAN RECORDED IN PLAN BOOK 120, PAGE 13.
 4. "PLAN OF A PORTION OF ROUTE #88 IN THE TOWN OF CUMBERLAND AS REDEFINED BY THE COMMISSIONERS OF CUMBERLAND COUNTY FOLLOWING HEARING ON SAME APRIL 21, 1961, DECEMBER 18, 1962.
 5. "OVERALL SUBDIVISION PLAN OF: TRUE SPRING FARM, U.S. ROUTE ONE, CUMBERLAND, ME FOR: TERRY BRAGG, INC." AUGUST 3, 1999 REVISED THRU DEC. 7, 1999 BY SEBAGO TECHNICS RECORDED IN PLAN BOOK 200, PAGE 12.
 6. "CHESTNUT WAY SITE DEVELOPMENT PLAN" DATED 4/29/22 BY KNICKERBOCKER GROUP.

- GENERAL NOTES**
1. OWNER OF RECORD: BY GOLDEN STAR, LLC
21 CHESTNUT WAY, CUMBERLAND FORESIDE, ME
TAX MAP U4 LOT 10A
C.C.R.D. BOOK 39287 PAGE 184
 2. BEARINGS ARE BASED ON MAGNETIC 1930 PER PLAN REFERENCE 3.
 3. THE SURVEYED PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT WITH THE FOLLOWING SPACE AND BULK REQUIREMENTS:

MIN. LOT SIZE	2 ACRES, 1.5 ACRES WITH SEWER
LOT FRONTAGE	150 FEET
FRONT SETBACK	50 FEET
REAR SETBACK	65 FEET
SIDE SETBACK	30 FEET
COMBINED SETBACK	65 FEET
 4. ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD 88 DATUM.

CERTIFICATE
OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

RANDY R. LOUBIER, PLS #2407
DATE

Boundary & Topographic Survey
At
104 Foreside Road - Route 88
Cumberland Foreside, Maine
Made for Record Owner
By Golden Star, LLC
21 Chestnut Way
Cumberland Foreside, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424
DRAWN BY: RS/JLW DATE: AUGUST 31, 2022 JOB NO. 2022-068 C
CHECKED BY: RRL SCALE: 1" = 30' DRWG. NO. 1-topo

EXISTING
CONDITIONS
C5

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DISSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

LEGEND

IRON PIPE OR ROD FOUND	—X—X— FENCE
MONUMENT FOUND	—WETLAND LINE
UTILITY POLE	—STONEWALL
MANHOLE	—CURB
SIGN	—SETBACK LINE
CATCH BASIN	IPF/IRF IRON PIPE OR ROD FOUND
LIGHT POLE	GMF GRANITE MONUMENT FOUND
DECIDUOUS TREE	N/F NOW OR FORMERLY
CONIFEROUS TREE	000/000 DEED BOOK / PAGE
	11/4 OVERHEAD WIRES
	o CAPPED IRON ROD SET

PLAN REFERENCES

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- "PRIVATE RIGHT OF WAY AND LOT PLAN OF: RENYI PROPERTY, FORESIDE ROAD - ROUTE 88, CUMBERLAND, MAINE FOR RECORD OWNER: TIMOTHY AND HANNAH RENYI" MAY 2, 2013 REVISED THRU SEPT. 12, 2013 BY SEBAGO TECHINCS RECORDED IN PLAN BOOK 213, PAGE 383.
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- "CHESTNUT WAY SITE DEVELOPMENT PLAN" DATED 4/29/22 BY KNICKERBOCKER GROUP.
- "PROPOSED LOT DIVISION PLAN" DATED 10/25/22 OF 104 FORESIDE ROAD CUMBERLAND, MAINE BY COVE KNICKERBOCKER GROUP.

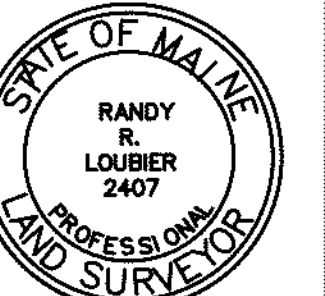
GENERAL NOTES

- OWNER OF RECORD: COVE DEVELOPMENT COMPANY LLC
21 CHESTNUT WAY, CUMBERLAND FORESIDE, ME
TAX MAP U4 LOT 10A
C.C.R.D. BOOK 39680 PAGE 207
- BEARINGS ARE BASED ON MAGNETIC 1930 PER PLAN REFERENCE 3.
- THE SURVEYED PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT WITH THE FOLLOWING SPACE AND BULK REQUIREMENTS:
MIN. LOT SIZE 2 ACRES, 1.5 ACRES WITH SEWER
LOT FRONTAGE 150 FEET
FRONT SETBACK 50 FEET
REAR SETBACK 65 FEET
SIDE SETBACK 30 FEET
COMBINED SETBACK 65 FEET
- ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD 88 DATUM.
- THE TOWN OF CUMBERLAND SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR, PLOWING, OR SIMILAR SERVICES FOR THE PRIVATE WAY SHOWN ON THIS PLAN.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

Randy R. Loubier
RANDY R. LOUBIER, PLS #2407



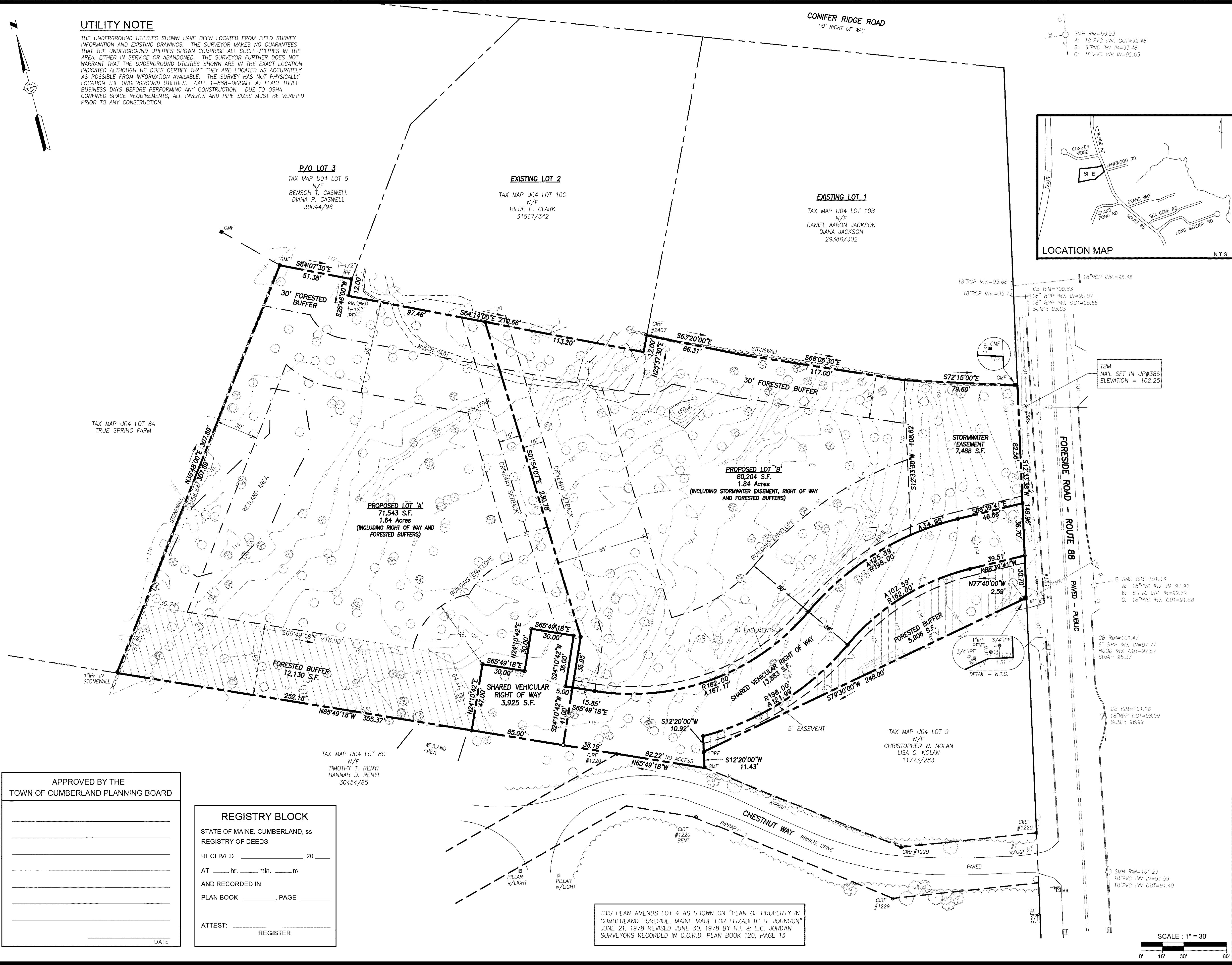
REV.	DATE	DESCRIPTION	BY
REV. 4	02/09/2023	MISC. REVISIONS PER TOWN REVIEW	RRL
REV. 3	01/30/2023	REVISED LOT AND RIGHT OF WAY CONFGS.	RJC
REV. 2	12/09/2022	REVISED LANGUAGE OF RIGHT OF WAY	RRL
REV. 1	12/02/2022	REVISED LOT AND RIGHT OF WAY CONFGS.	RJC

Amended Subdivision Plan
At
104 Foreside Road - Route 88
Cumberland Foreside, Maine
Made for Record Owner
Cove Development Company LLC
P.O. Box 142, Boothbay, ME 04537

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424
DRAWN BY: RS / JLW DATE: AUGUST 31, 2022 JOB NO. 2022-068 C
CHECKED BY: RRL SCALE: 1" = 30' SHEET C6

AMENDED SUBDIVISION PLAN

C6



APPROVED BY THE
TOWN OF CUMBERLAND PLANNING BOARD

DATE _____

REGISTRY BLOCK

STATE OF MAINE, CUMBERLAND, ss
REGISTRY OF DEEDS

RECEIVED _____, 20 _____

AT _____ hr. _____ min. _____ m

AND RECORDED IN

PLAN BOOK _____, PAGE _____

ATTEST: _____

REGISTER

THIS PLAN AMENDS LOT 4 AS SHOWN ON "PLAN OF PROPERTY IN CUMBERLAND FORESIDE, MAINE MADE FOR ELIZABETH H. JOHNSON" JUNE 21, 1978 REVISED JUNE 30, 1978 BY H.I. & E.C. JORDAN SURVEYORS RECORDED IN C.C.R.D. PLAN BOOK 120, PAGE 13

SCALE: 1" = 30'

0' 15' 30' 60'

DRAWING KEY

- PROPOSED LOT 'A' (INCLUDING R.O.W. EASEMENTS)
- PROPOSED LOT 'A' RIGHT OF WAY (R.O.W.)
- PROPOSED LOT 'B' (INCLUDING R.O.W. EASEMENTS)
- PROPOSED LOT 'B' RIGHT OF WAY (R.O.W.)
- FORESTED BUFFER (NO TREE CLEARING ALLOWED)
- FORESTED BUFFER EXTENTS
- TREE/VEGETATION TO REMAIN
- EXISTING BOUNDARY LINE
- PROPOSED LOT PARTITIONING/BOUNDARY LINE

- EXISTING HARDWOOD TREES TO REMAIN (10"Ø OR LARGER)
- EXISTING SOFTWOOD TREES TO REMAIN (10"Ø OR LARGER)
- EXISTING HARDWOOD TREES TO BE REMOVED (10"Ø OR LARGER)
- EXISTING SOFTWOOD TREES TO BE REMOVED (10"Ø OR LARGER)
- PROPOSED CONIFEROUS EVERGREENS; 10-12' H

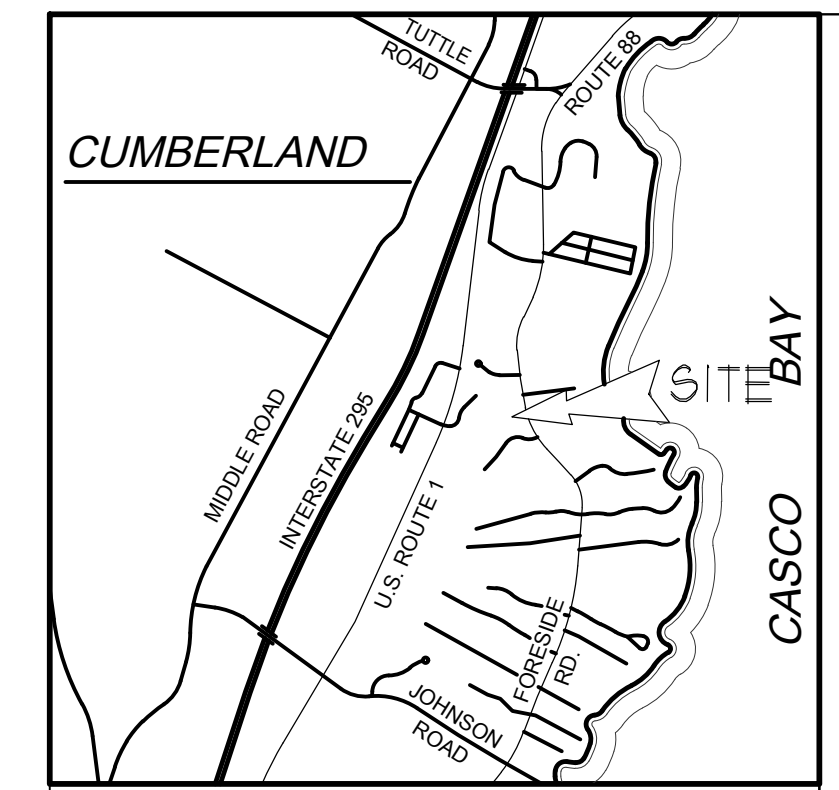
SITE ANALYSIS BY KERRY LEWIS, LICENSED LANDSCAPE ARCHITECT
PERFORMED ON 1/10/2023

THE EXISTING SITE AT 104 FORESIDE ROAD IS A FORESTED LOT WITH PRIMARILY OAK, WHITE PINE, BEECH, BIRCH, HEMLOCK, SPRUCE AND FIR TREES WITH A HEALTHY UNDERSTORY WHERE THE LOT HAS NOT BEEN CLEARED IN THE PAST.

A THIRTY FOOT NO-CUT BUFFER IS RECOMMENDED ALONG THE NORTHERN PROPERTY LINE TO PRESERVE THE EXISTING SCREENING, WHICH IS SUBSTANTIAL AND ADEQUATE. THIS NATURALLY OCCURRING BUFFER IS ENHANCED BY TOPOGRAPHY AND LEDGE OUTCROPPINGS ALONG THE EASTERN EXTENT OF THE PROPERTY. NATURAL LANDFORMS AND AN EXISTING STONE WALL SERVE TO FURTHER BOLSTER THE PRIVACY ALONG THE NORTHEAST CORNER OF THE LOT.

CLEARING WITHIN THE CENTER OF EACH LOT WILL ALLOW MORE SUNLIGHT TO REACH THE NORTHERN PERIMETER AND THE EXISTING UNDERGROWTH WILL REVEGETATE AND THICKEN OVER TIME. THE VEGETATION IS CURRENTLY THICK ENOUGH IN THE NORTHEASTERN QUADRANT THAT IT WOULD PROVE CHALLENGING TO FIND ADEQUATE LIGHT OR SOIL CONDITIONS TO SUPPORT NEW TREES.

THE NORTHEASTERN QUADRANT OF THE SITE HAS BEEN CLEARED ALONG THE NORTHERN PERIMETER BY AN ABUTTER. THE LACK OF VISIBLE UNDERSTORY GROWTH IS AN OBVIOUS RESULT OF THIS CLEARING. AS A RESULT, IT IS MY RECOMMENDATION THAT THE APPROVED PLAN INCLUDE A REQUIREMENT FOR REPLANTING ALONG THE NORTHERN EDGE OF THE NEW DRIVEWAY ADJACENT TO THE GARAGE DOORS TO SOFTEN THIS VIEW. IT IS RECOMMENDED THAT FIVE (5) CONIFEROUS EVERGREENS AT A PLANTING HEIGHT OF 10-12' BE INCLUDED IN THE PLAN. THE SPECIES RECOMMENDATION IS FIR (ABIES) OR SPRUCE (PICEA) BUT NOT HEMLOCK WHICH IS SUBJECT TO WOOLY ADELGID OR WHITE PINE WHICH DROPS ITS LOWER BRANCHES OVER TIME AND LOSES ITS SCREENING ATTRIBUTES. THESE SCREENING TREES WILL PROVIDE AN IMMEDIATE VISUAL BUFFER IN ADDITION TO THE THIRTY-FOOT WIDE NO-CUT BUFFER ALONG THE NORTHERN PERIMETER THAT WILL ENHANCE NATURALLY OVER TIME.



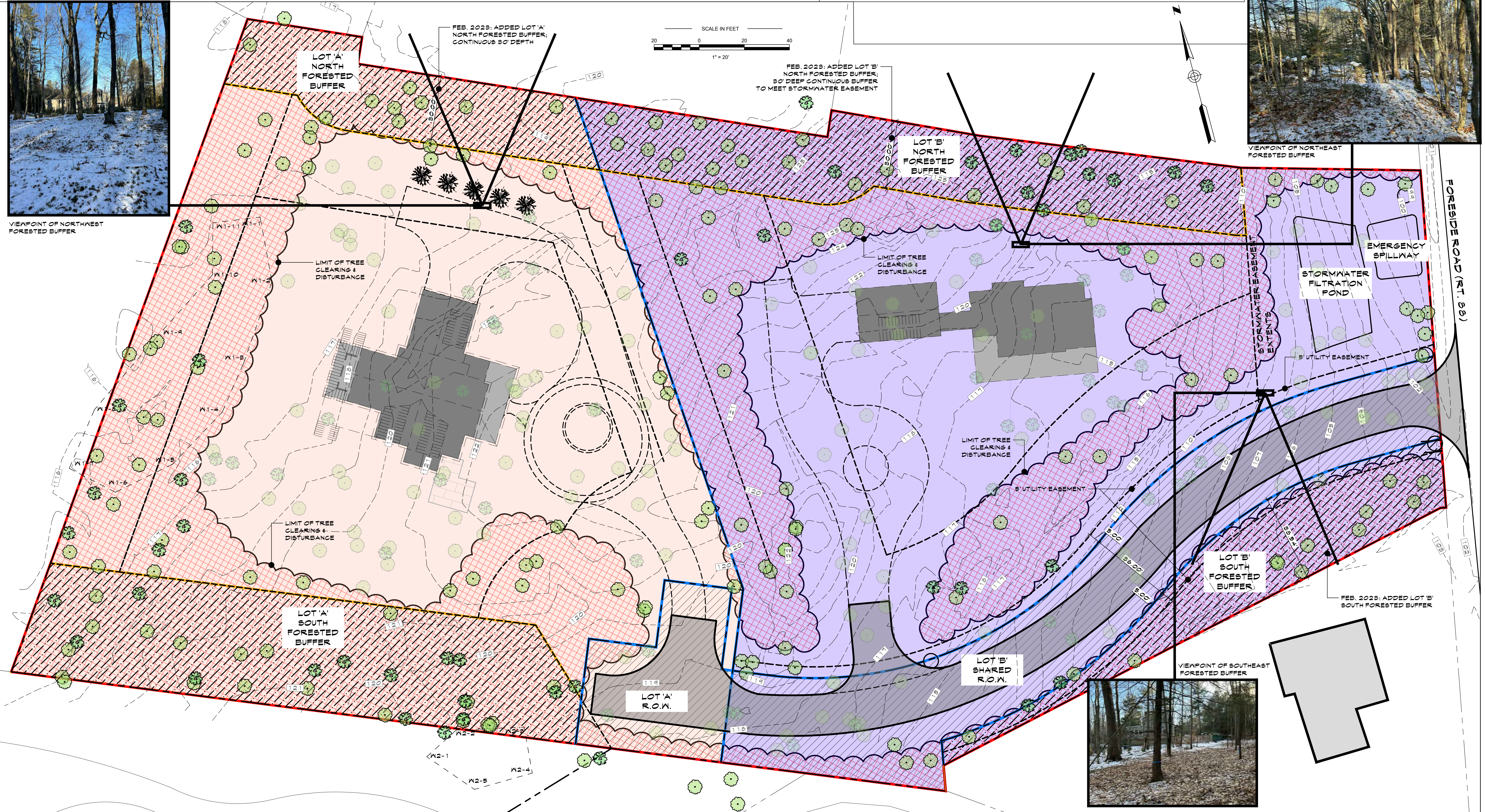
LOCATION MAP



VIEWPOINT OF NORTHEAST FORESTED BUFFER



VIEWPOINT OF NORTHEAST FORESTED BUFFER



COVE
— by KNICKERBOCKER GROUP —
BOOTHBAY ♦ PORTLAND ♦ (207) 633-3888
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ALL RIGHTS RESERVED

KNICKERBOCKER
GROUP

CONSULTANTS

104 FORESIDE ROAD

CUMBERLAND, MAINE
PROPOSED
FORESTED BUFFER AND LANDSCAPING PLAN

REVISIONS

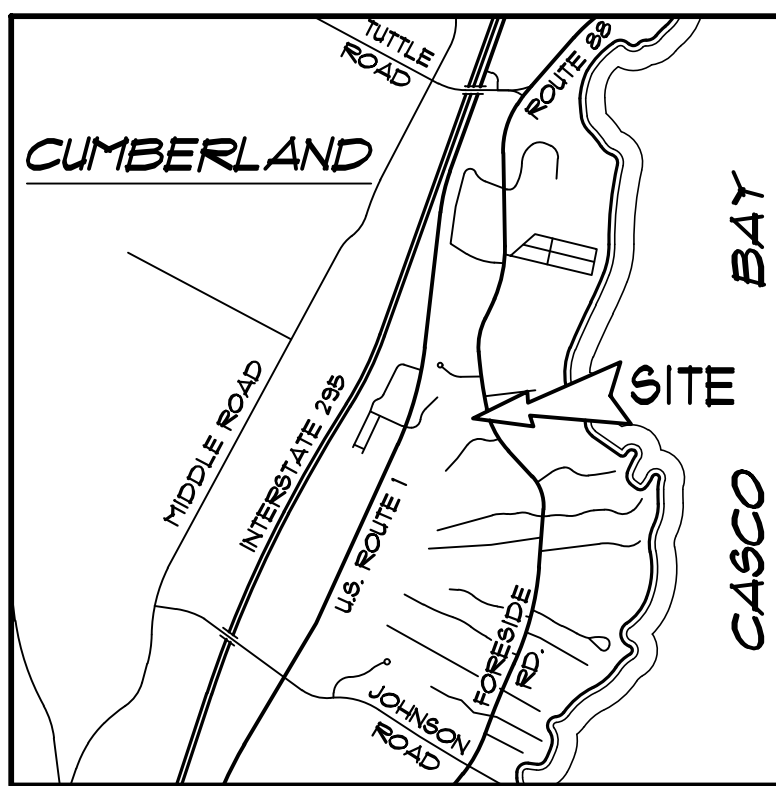
10/24/2022: ISSUED AS SUPPLEMENTAL DOCUMENTATION FOR PLANNING BOARD SUBMISSION
11/29/2022: RE-ISSUED FOR PLANNING BOARD REVIEW
1/31/2023: RE-ISSUED FOR PLANNING BOARD REVIEW: ADDED FORESTED BUFFERS AND UPDATED R.O.W. EXTENTS
1/14/2023: UPDATED GRAPHICS

JOB No. SCALE

DATE

01-31-2023

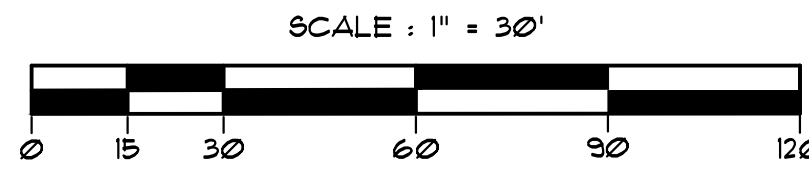
C6A



LOCATION MAP

LOT A AREAS

NORTH FORESTED BUFFER	= 4,991 sf
SOUTH FORESTED BUFFER	= 11,961 sf
RIGHT OF WAY (TAMBOUR WAY)	= 3,925 sf
REMAINING LAND	= 50,666 sf
TOTAL PARCEL AREA	= 71,543 sf



LOT B AREAS

NORTH FORESTED BUFFER	= 8,960 sf
SOUTH FORESTED BUFFER *	= 5,916 sf
RIGHT OF WAY (TAMBOUR WAY)	= 13,880 sf
STORMWATER EASEMENT *	= 1,488 sf
REMAINING LAND *	= 43,911 sf
TOTAL PARCEL AREA	= 80,215 sf

* AREA INCLUDES 5' UTILITY EASEMENT ADJACENT TO RIGHT OF WAY

NOTES

- ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTRY REGISTRY OF DEEDS.
- OWNER OF RECORD - COVE DEVELOPMENT COMPANY, LLC
DEED REFERENCE - BOOK 39,660, PAGE 201
TAX MAP U4, LOT 10A
- PARCEL AREA = 151,758 SQUARE FEET / 3.48 ACRES
- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD, ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
- THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
- THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT. MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER). MINIMUM LOT FRONTAGE = 150'. SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 230162 0018C, DATED OCTOBER 15, 1985.
- ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

NEW SEWER MANHOLES

MANHOLE #	RIM EL.	INVERT IN	INVERT OUT
SMH-1	102.33	96.43	96.33
SMH-2	105.50	99.60	99.50
SMH-3	112.50	107.10	107.00
SMH-4	116.30	111.40	111.30
SMH-5	118.40	113.50	113.40
SMH-6	122.80	117.40	117.30
SMH-7	118.50	113.60	113.50

LINE AND CURVE TABLE

LINE	BEARING	DISTANCE
L-1	N 88°39'40" W	46.66'
L-2	N 88°39'40" W	39.51'
L-3	S 12°20'00" W	10.92'
L-4	N 65°49'18" W	15.25'
L-5	N 24°10'42" E	41.00'
L-6	N 24°10'42" E	35.95'
L-7	N 24°10'42" E	31.00'
L-8	N 65°49'18" E	5.00'
CURVE	RADIUS	LENGTH
C-1	198.00'	125.33'
C-2	162.00'	102.59'
C-3	162.00'	16.11'
C-4	198.00'	121.99'

LEGEND

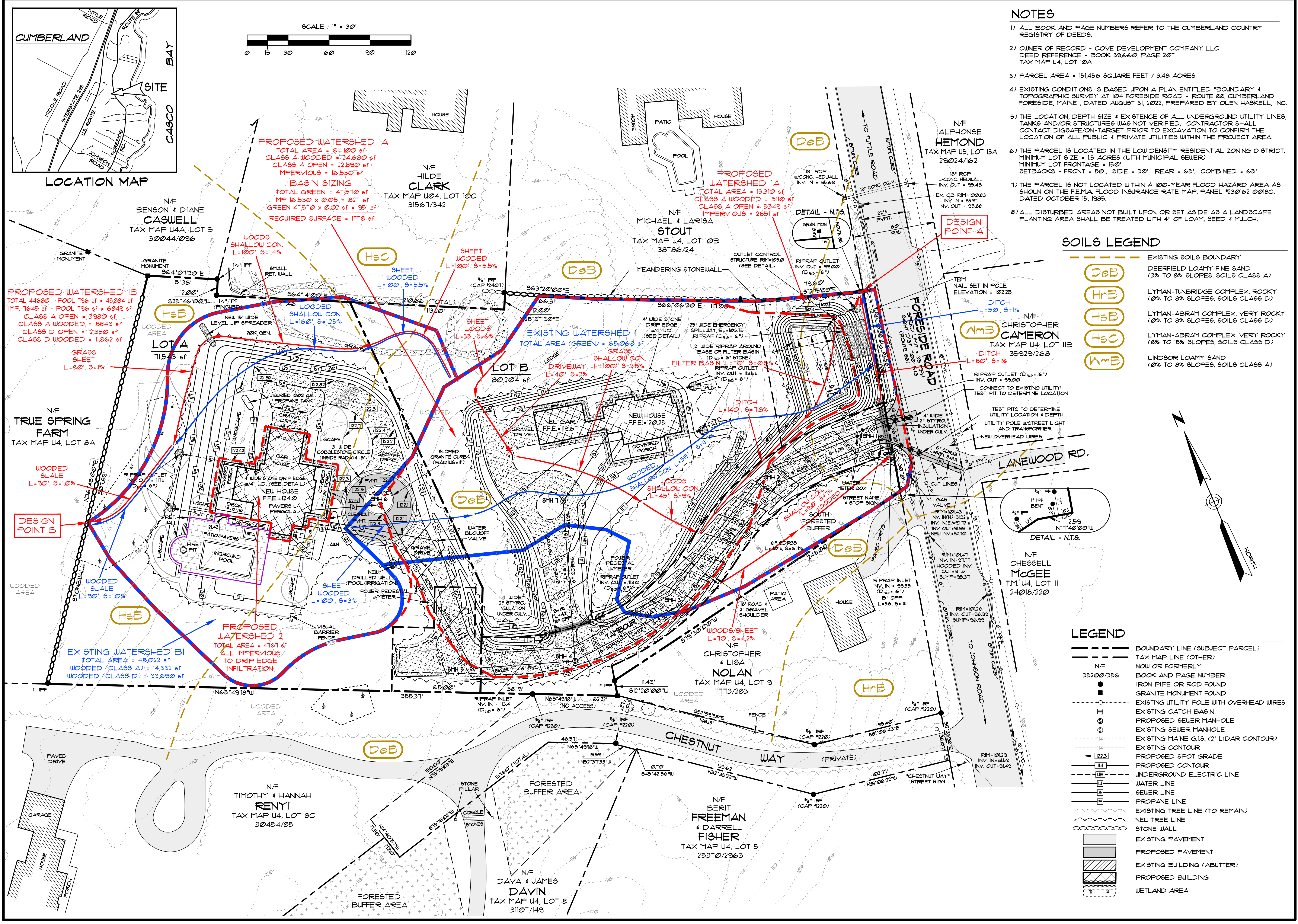
---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
N/F	NOW OR FORMERLY
35200/356	BOOK AND PAGE NUMBER
●	IRON PIPE OR ROD FOUND
■	GRANITE MONUMENT FOUND
○	EXISTING UTILITY POLE WITH OVERHEAD WIRES
□	EXISTING CATCH BASIN
○	PROPOSED OUTLET CONTROL STRUCTURE
○	PROPOSED SEWER MANHOLE
○	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	EXISTING STORM DRAIN LINE
---	EXISTING GAS LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	NEW 6" PERFORATED UNDERDRAIN LINE
---	NEW UNDERGROUND ELECTRIC LINE
---	NEW 1/2" WATER SERVICE
---	NEW SEWER LINE
---	NEW PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	INSTALL SILT FENCE
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	PROPOSED GRAVEL DRIVE
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA
---	INSTALL EROSION CONTROL BLANKET

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6243
steve@sjeengineering.com

SITE CONSTRUCTION & STORMWATER MANAGEMENT PLAN
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
COVE DEVELOPMENT COMPANY, LLC
PO BOX 142, BOOTHBAY, ME 04531

DATE	PROJECT
12-11-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET C1



- ### NOTES
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 - 8) ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

SOILS LEGEND

EXISTING SOILS BOUNDARY	
DeB	DEERFIELD LOAMY FINE SAND (3% TO 8% SLOPES, SOILS CLASS A)
HrB	LYMAN-TUNBRIDGE COMPLEX, ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsB	LYMAN-ABRAM COMPLEX, VERY ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsC	LYMAN-ABRAM COMPLEX, VERY ROCKY (8% TO 15% SLOPES, SOILS CLASS D)
WmB	WINDSOR LOAMY SAND (0% TO 8% SLOPES, SOILS CLASS A)

LEGEND

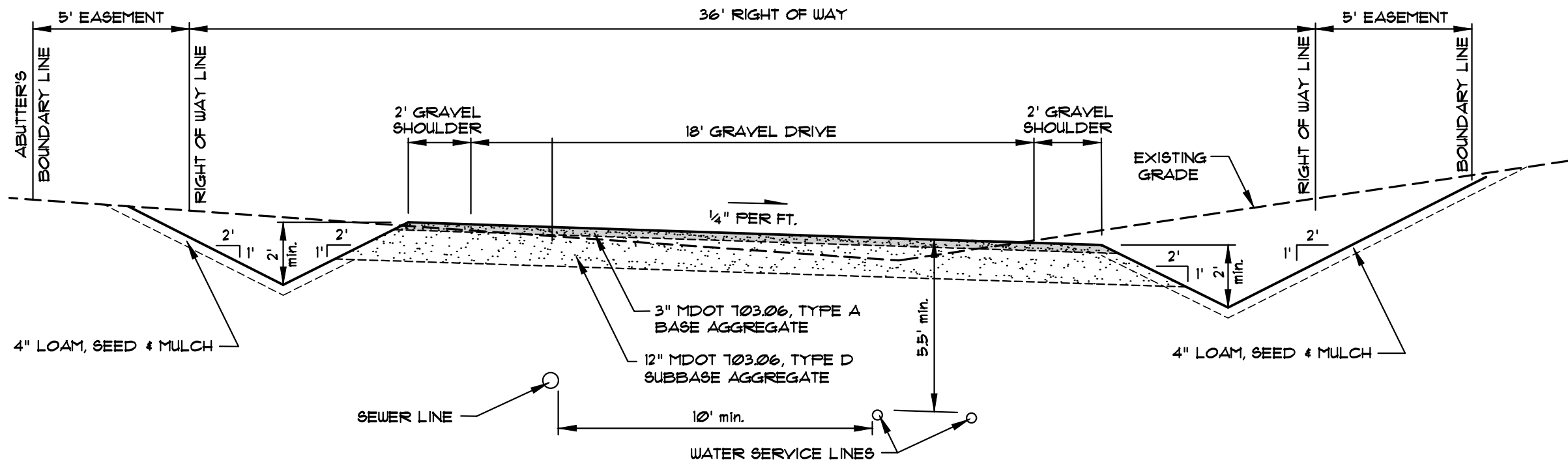
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⊞	EXISTING CATCH BASIN
⊙	PROPOSED SEWER MANHOLE
⊙	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	UNDERGROUND ELECTRIC LINE
---	WATER LINE
---	SEWER LINE
---	PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6243
sve@sjeinc.com

WATERSHED & SOILS PLAN
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
COVE DEVELOPMENT COMPANY, LLC
PO BOX 142, BOOTHBAY, ME 04531

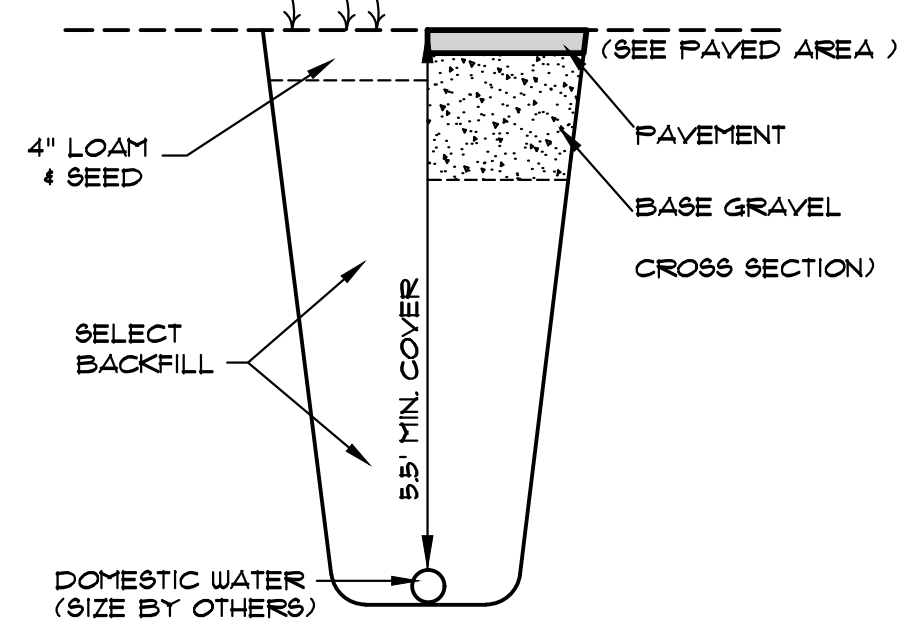
DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET C8



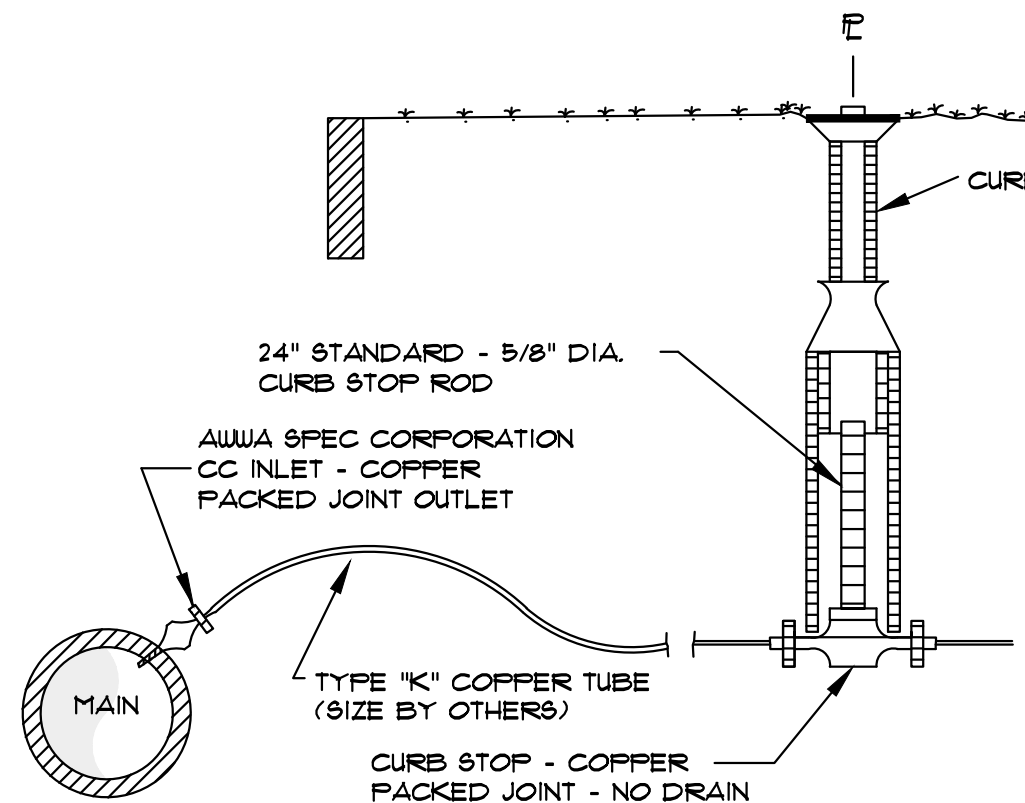
TYPICAL DRIVEWAY CROSS SECTION

SCALE : 1" = 4'



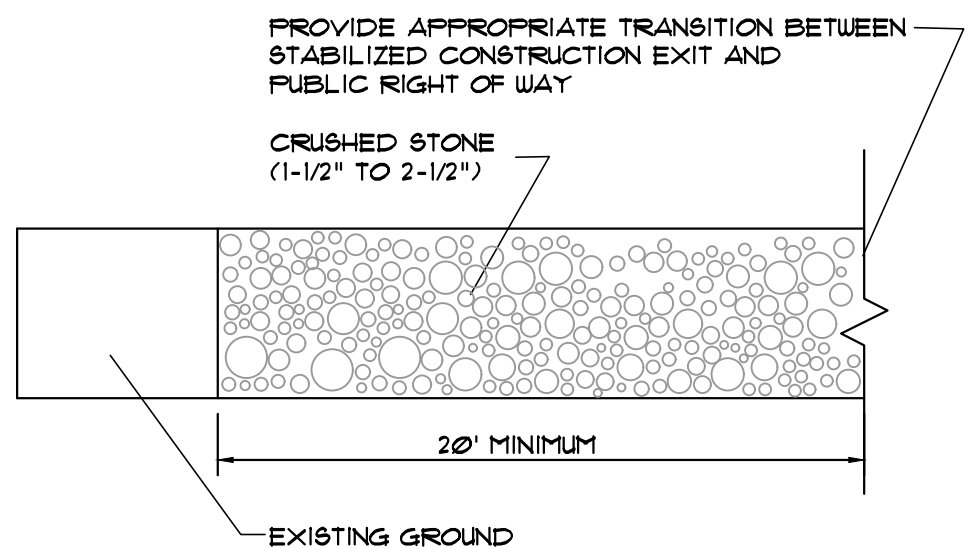
WATER SERVICE TRENCH DETAIL

NOT TO SCALE



TYPICAL DOMESTIC WATER SERVICE

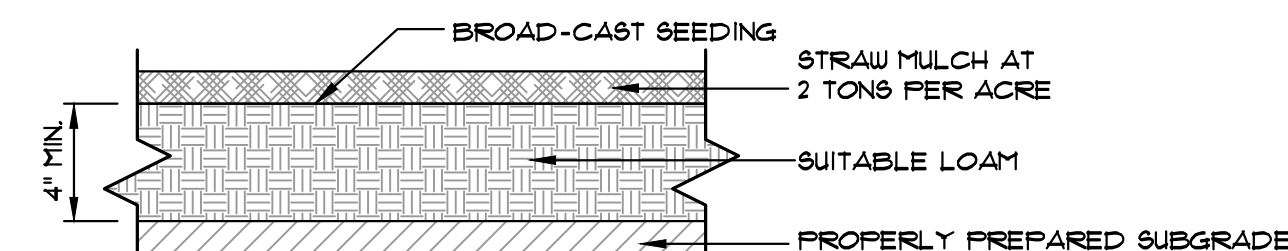
NOT TO SCALE



- STONE SIZE - AASHTO DESIGNATION M 43, SIZE 2 (2 1/2" - 1 1/2") USE CRUSHED STONE
- LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
- THICKNESS - NOT LESS THAN 6"
- WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
- WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
- MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURED USERS TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE

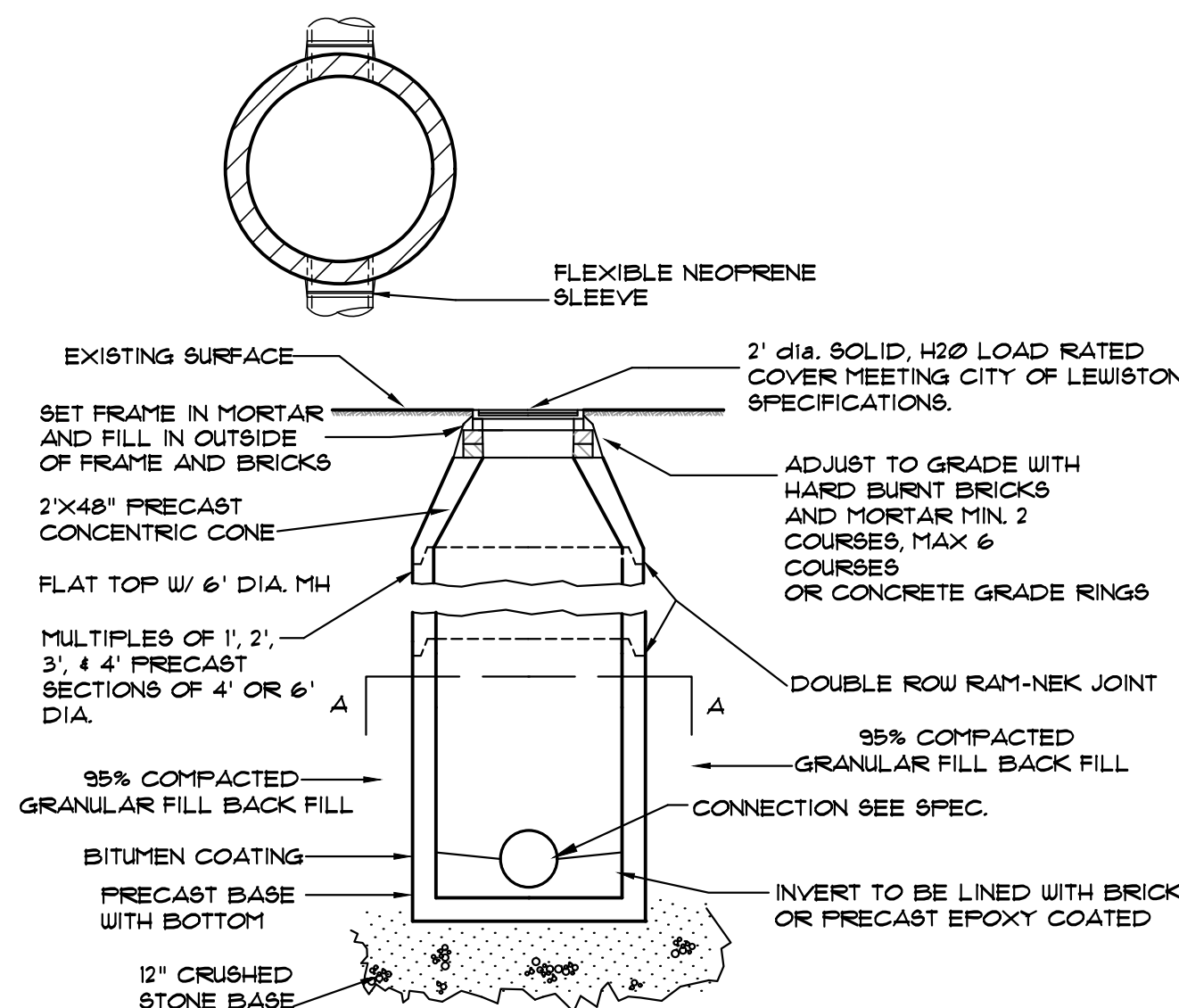


PERSISTENT SEED MIX	APPLICATION RATE
KENTUCKY BLUEGRASS	100/1000 #/T
CREeping RED FESCUE	.46
PERENNIAL RYEGRASS	.11
TOTAL SEED RATE	1.63

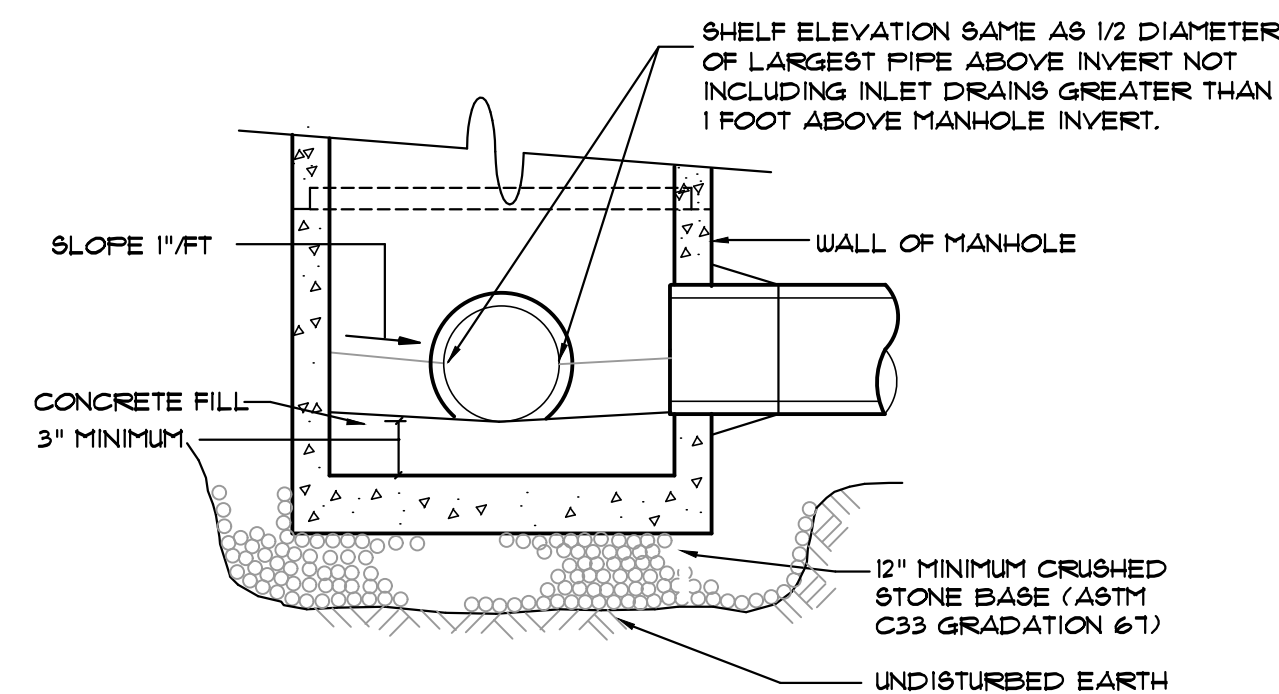
PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

LOAM & SEED DETAIL

NOT TO SCALE



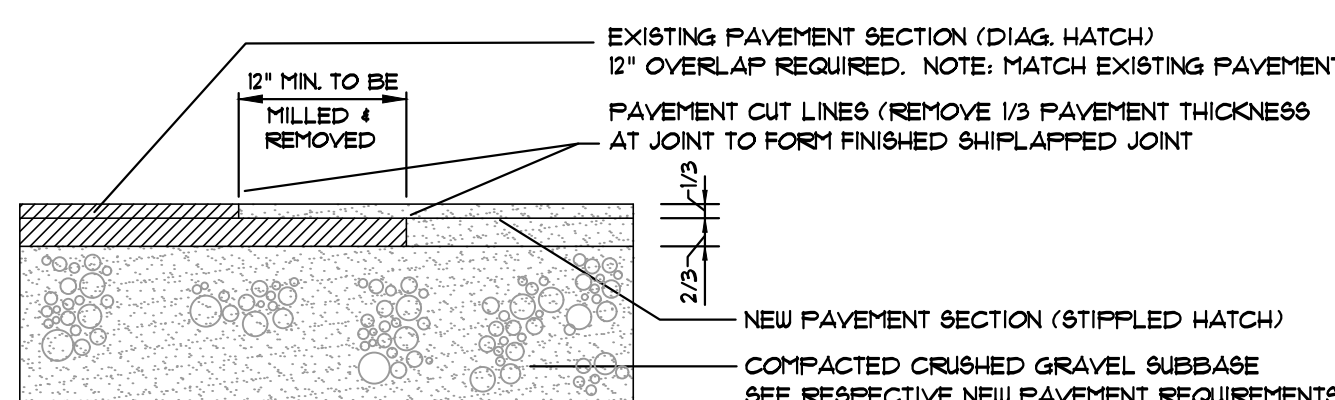
SECTION B-B



SECTION A-A

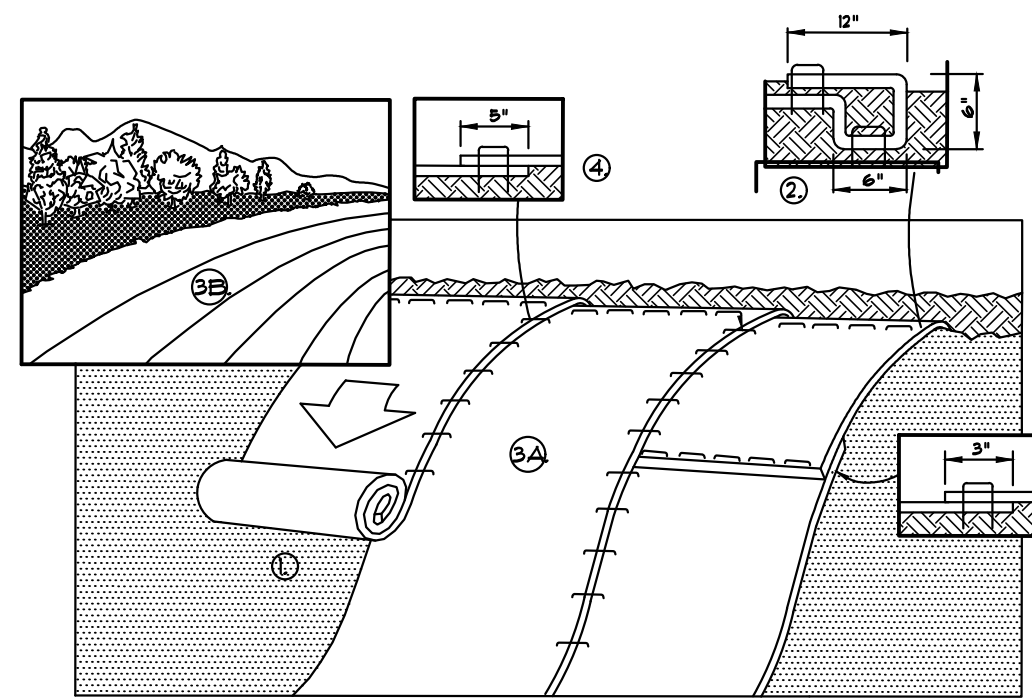
PRECAST CONCRETE SEWER MANHOLE

NOT TO SCALE



PAVEMENT SAWCUT JOINT DETAIL

NOT TO SCALE

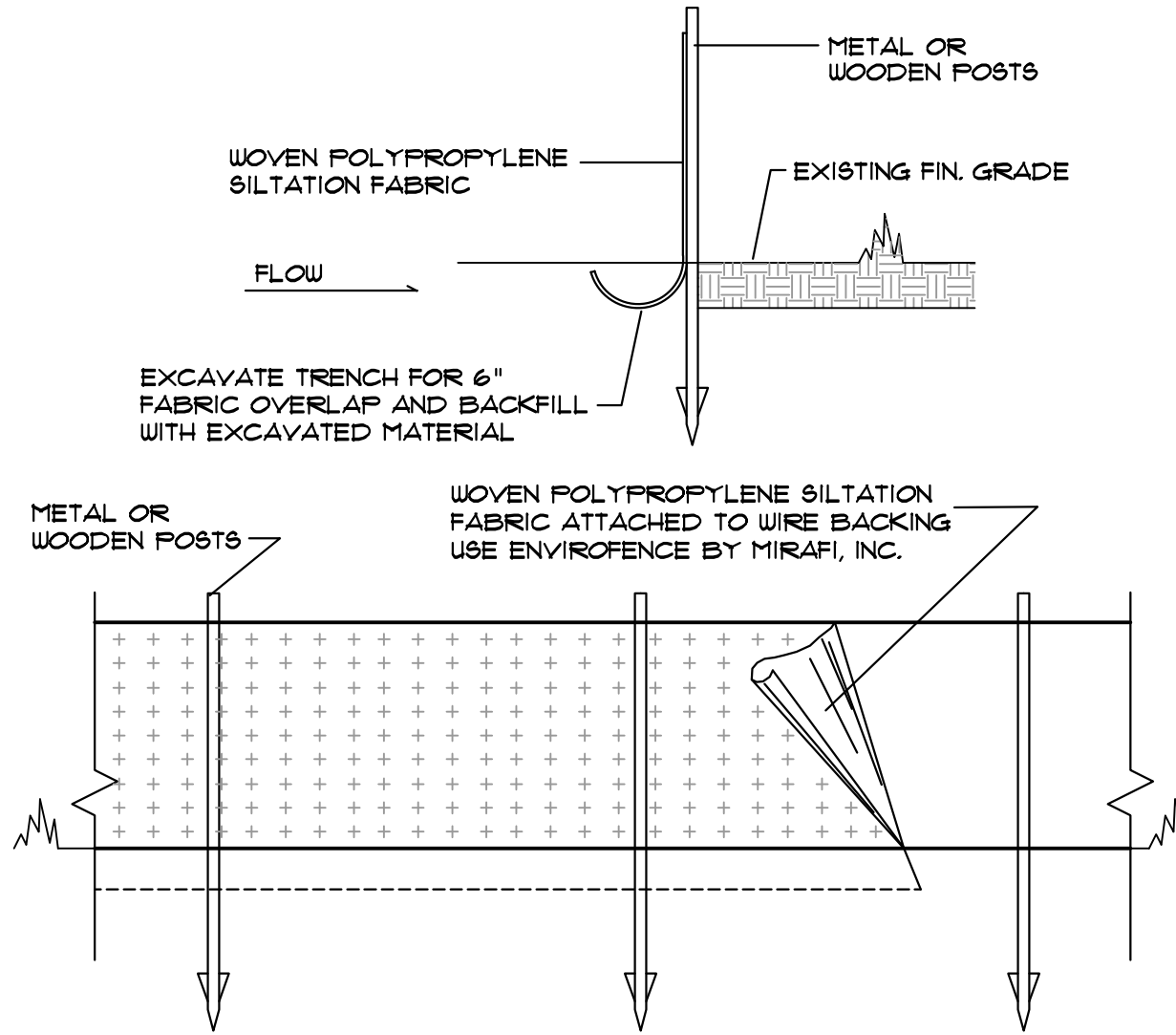


- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEAN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP 1/4" X 1/4" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND HOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2'-3" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROX. 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



NOTES

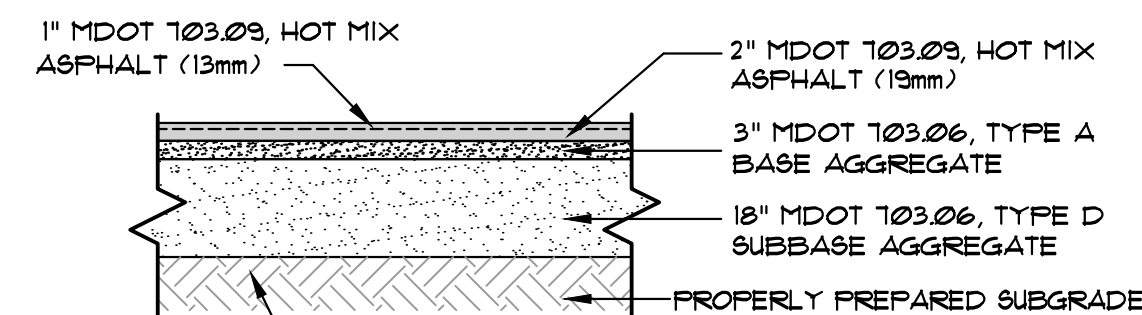
REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL. B-1 SEDIMENT BARRIERS.

SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED.

EROSION CONTROL FILTER BERM IS AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.

SILT FENCE DETAIL

NOT TO SCALE



NOTES

- COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF THEIR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- HOT MIX ASPHALT PAVEMENT MUST BE COMPACTED TO 92%-97% OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041.
- A TACK COAT MUST BE USED BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.
- PROVIDE NON-FROST SUSCEPTIBLE COMPACTED FILL GRANULAR BORROW (MDOT 103.19) BELOW PAVEMENT IN FILL AREAS.
- CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

PAVED AREA CROSS SECTION

NOT TO SCALE

GENERAL NOTES

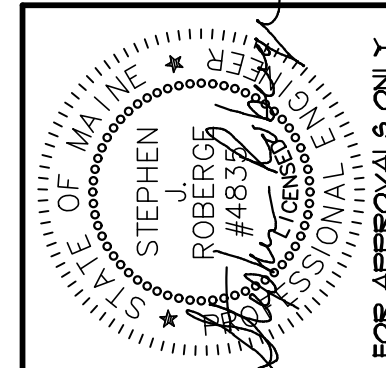
- SEE SHEET 1 FOR SITE SPECIFIC NOTES.
- THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.
- THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.
- ALL CONSTRUCTION WITHIN THE TOWN OF CUMBERLAND RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN OF CUMBERLAND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN AND/OR MDOT, REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED BY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (811) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.
- THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.
- OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCRDACHING ON THIS REQUIREMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEING DISTURBED AS DETERMINED BY THE CITY OF AUGUSTA CEO. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- TRAFFIC CONTROL MEASURES SHALL BE UTILIZED IN ACCORDANCE WITH MAINE DOT STANDARDS. THE CONTRACTOR SHALL PROVIDE, MAINTAIN AND PROTECT TRAFFIC CONTROL DEVICES TO THE EXTENT REQUIRED BY LAW FOR THE PROTECTION OF THE PUBLIC CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROL PERSONNEL AS REQUIRED OR ORDERED BY THE DESIGN ENGINEER OR CODE ENFORCEMENT PERSONNEL. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE TOWN. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH MDOT SPECIFICATIONS. TWELVE INCH (12") WIDE STOP BAR AND FOUR INCH (4") WIDE STRIPES SHALL BE LOCATED AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PRODUCT, MATERIALS AND PLANT SPECIFICATIONS TO THE OWNER AND DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR SOIL AND PAVEMENT MATERIALS AND CONFAPCTION TESTING AT NO COST TO THE OWNER. RESULTS OF THE TESTING ARE TO BE SUPPLIED TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH ANY RECONSTRUCTION AND RE-TESTING OF UNSATISFACTORY SOILS.
- ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.
- THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.
- WORK MAY PROGRESS MONDAY THROUGH SATURDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE TOWN OF CUMBERLAND. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM WITH ALL RULES AND REGULATIONS SET FORTH IN THE TOWN LAND USE ORDINANCE REGULATIONS.
- THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION, THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.
- PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.
- ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEW. SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING THE WORK. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS, LATEST REVISION.

GRADING AND DRAINAGE NOTES

- UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS. LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.
- HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.
- TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO DESIGNATED BY THE OWNER. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.
- ALL EXISTING STRUCTURES, FENCING, TREES, ETC. WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.
- THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.
- SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
- BASED ON FEMA MAPPING, NO AREA WITHIN THE SITE BOUNDARIES IS IN THE 100 YEAR FLOOD PLAIN.

LAYOUT NOTES

- ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.

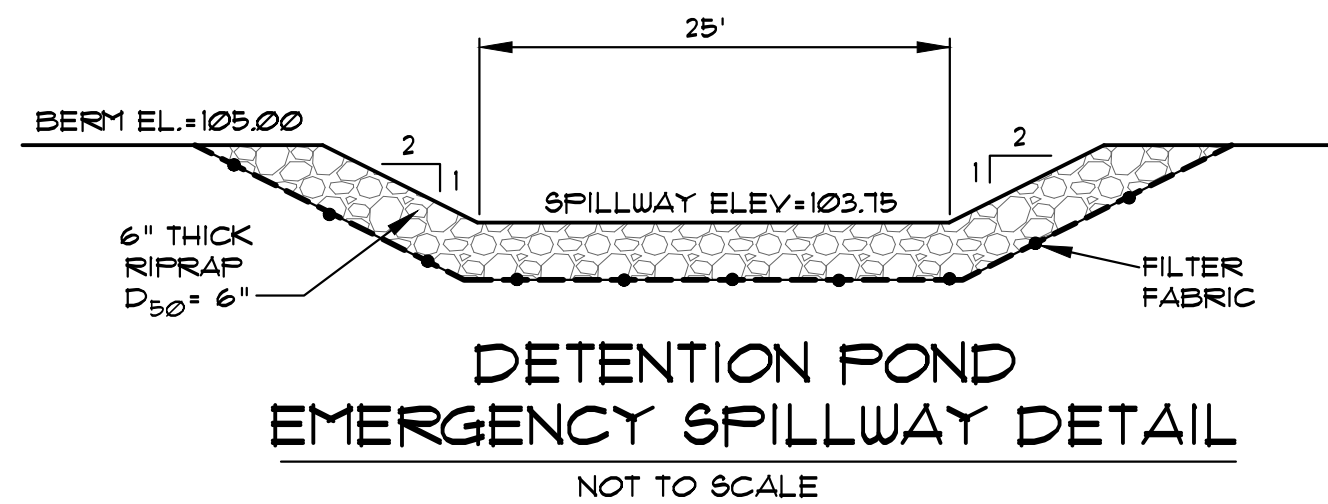
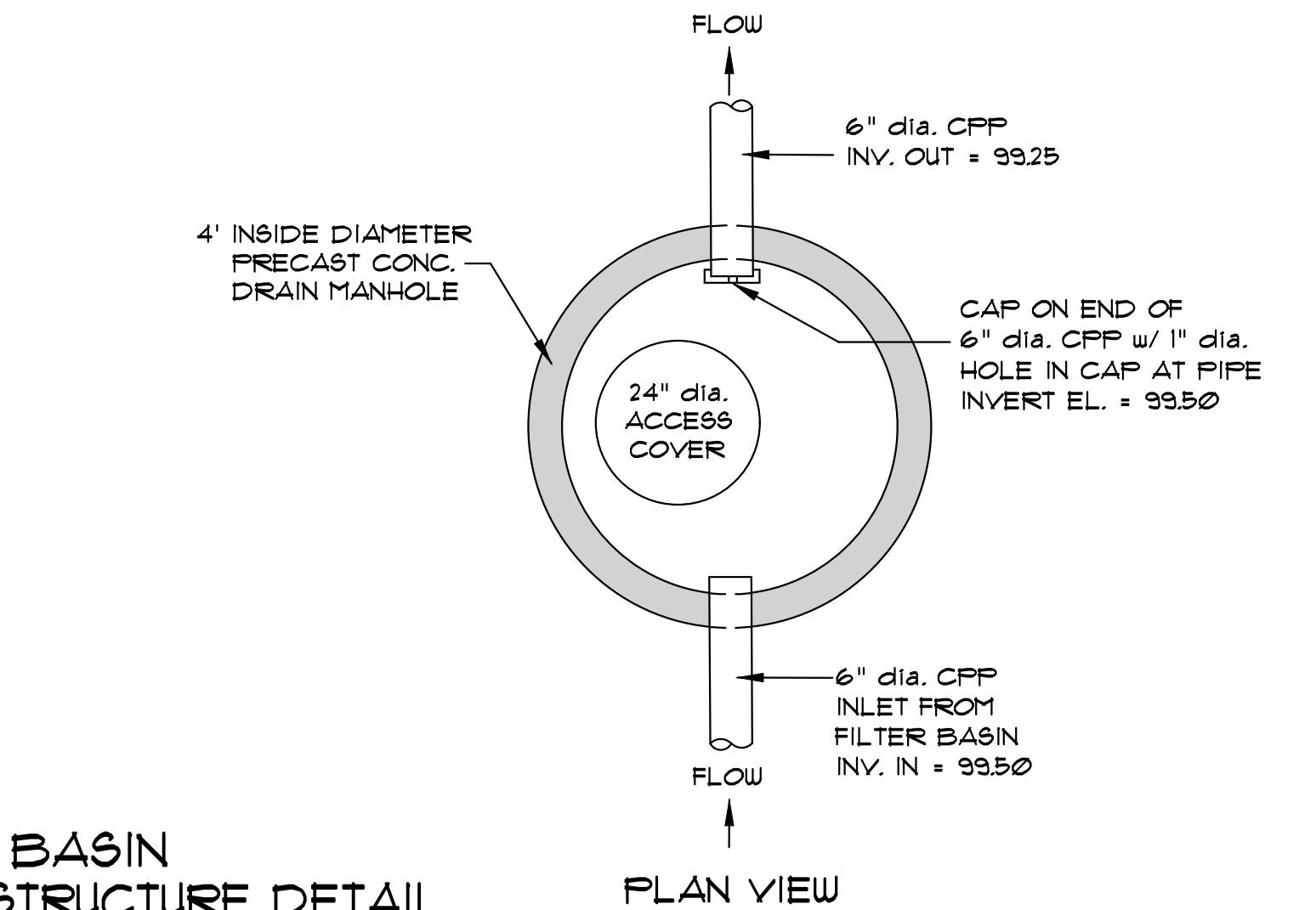
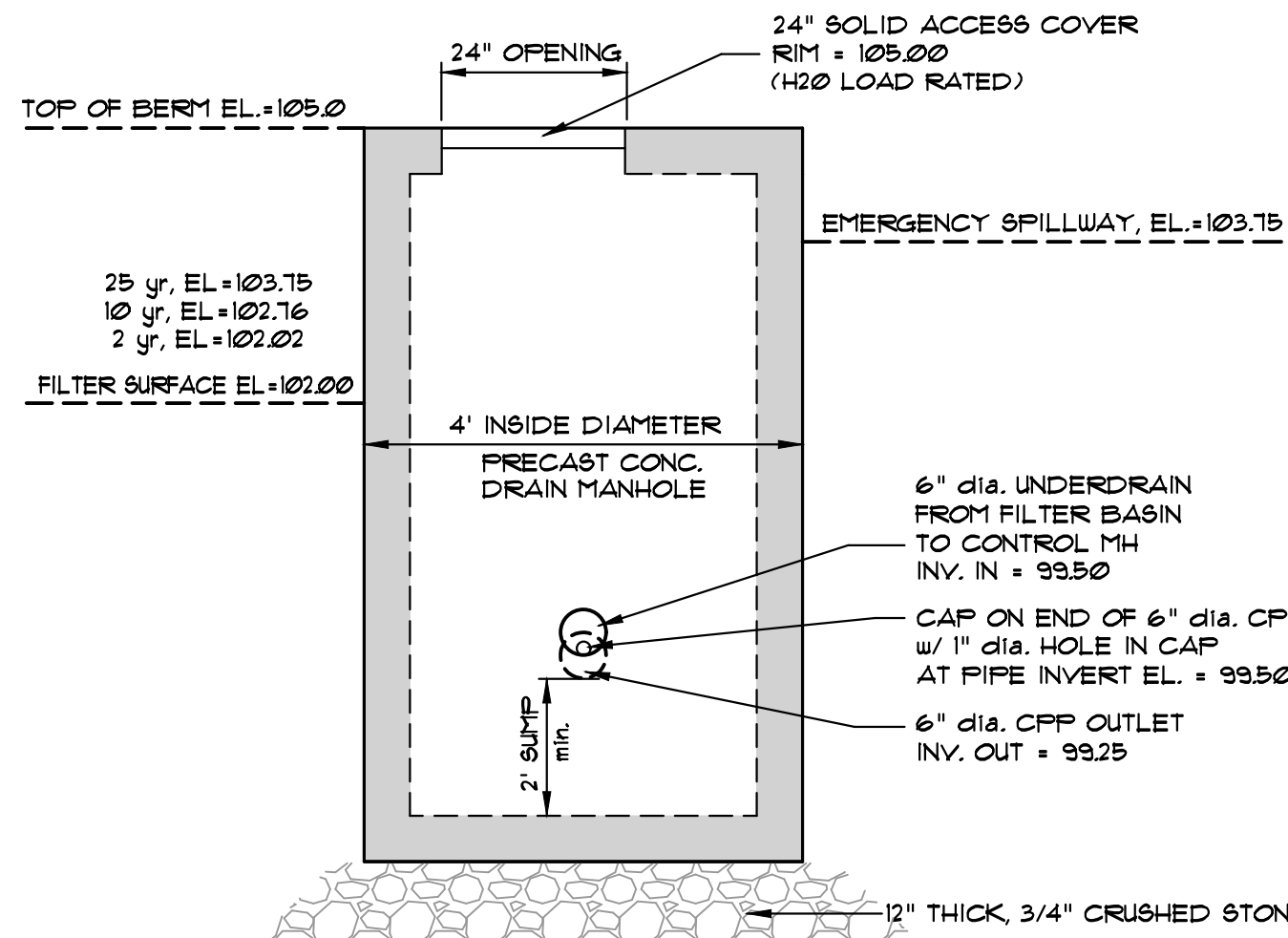
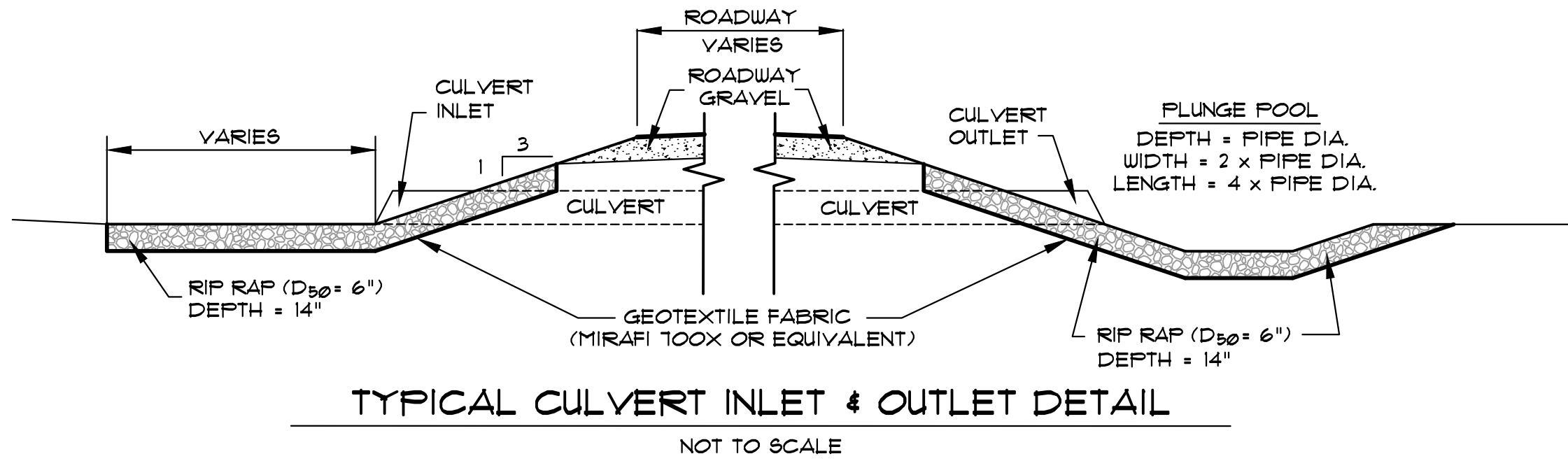
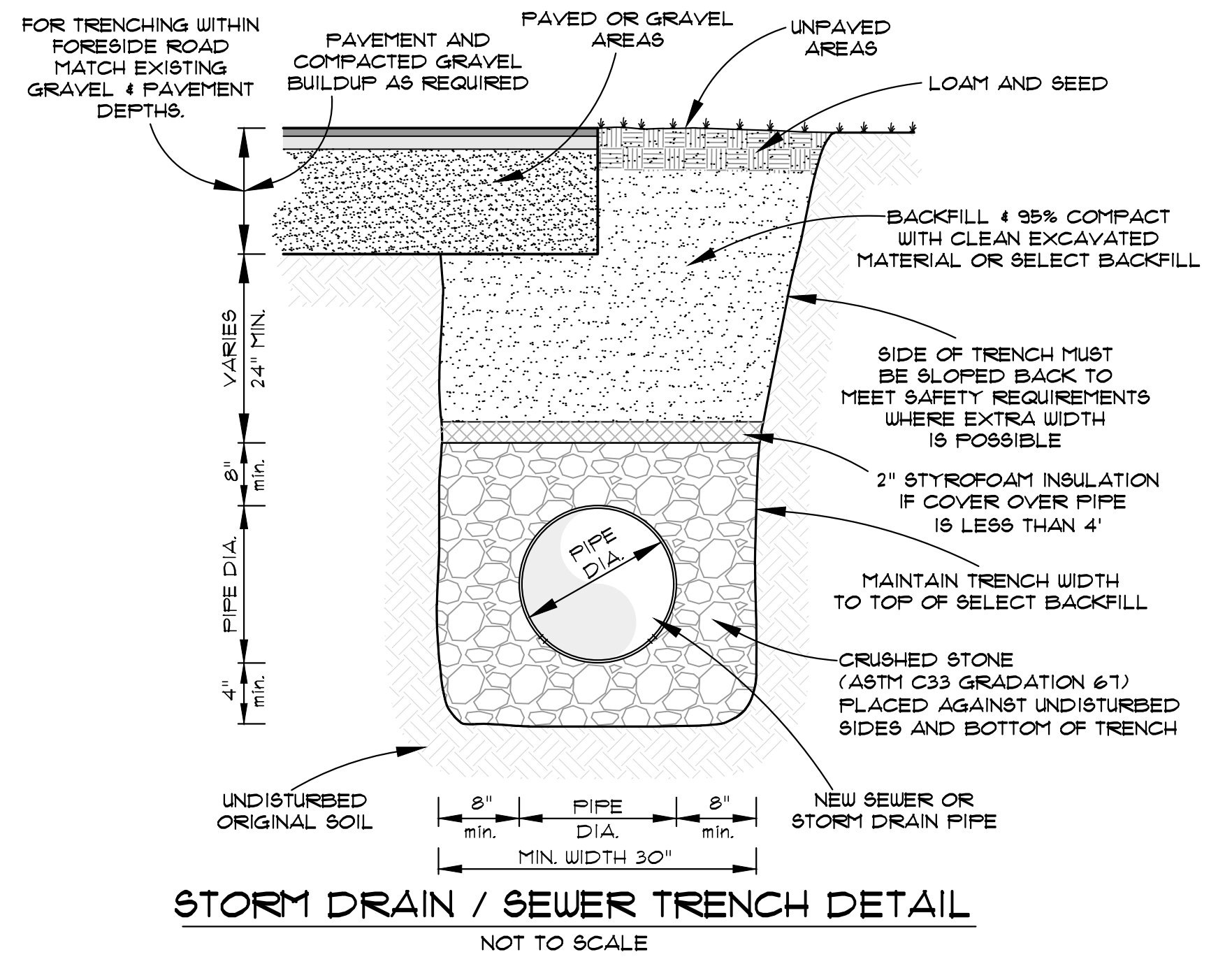
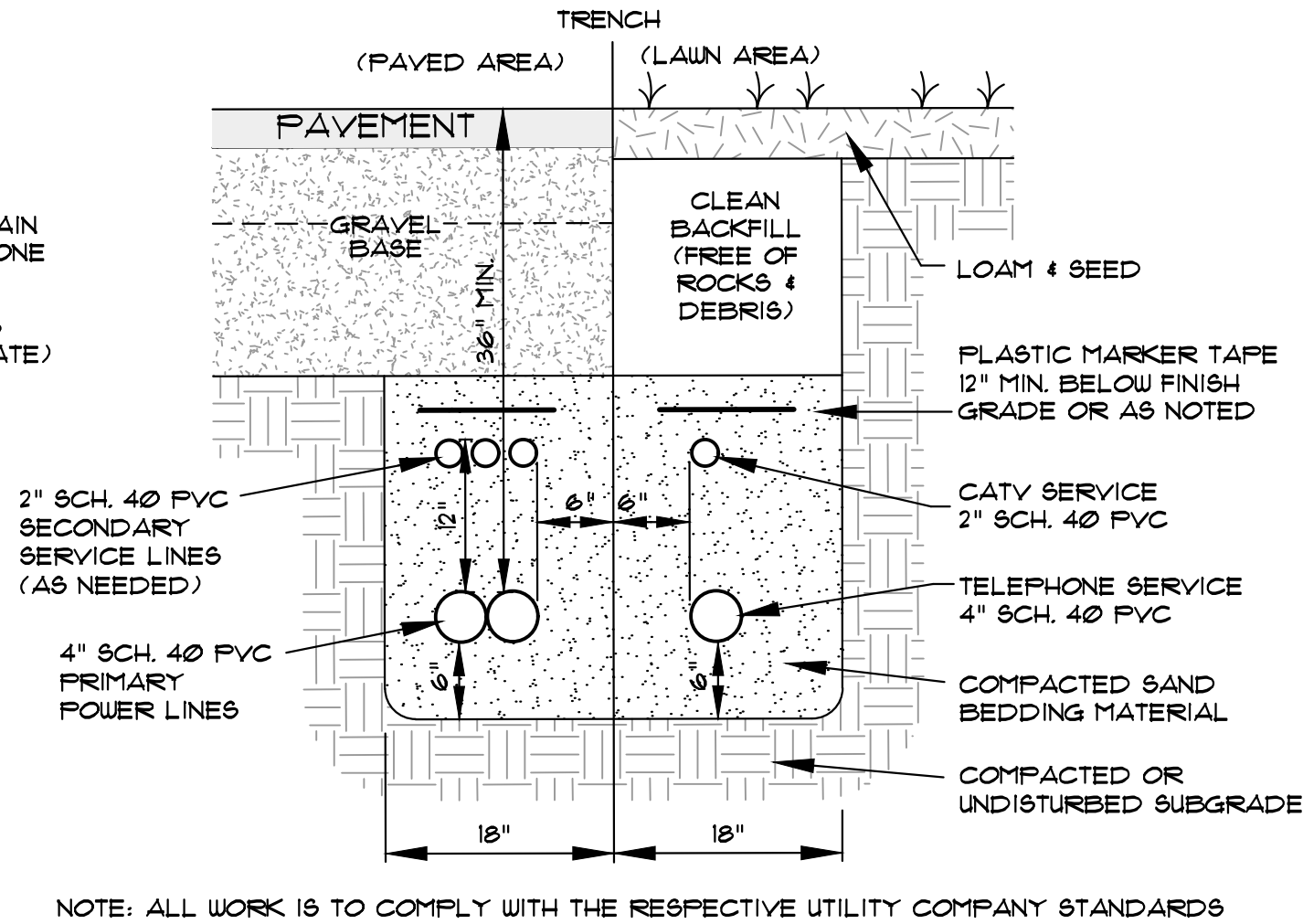
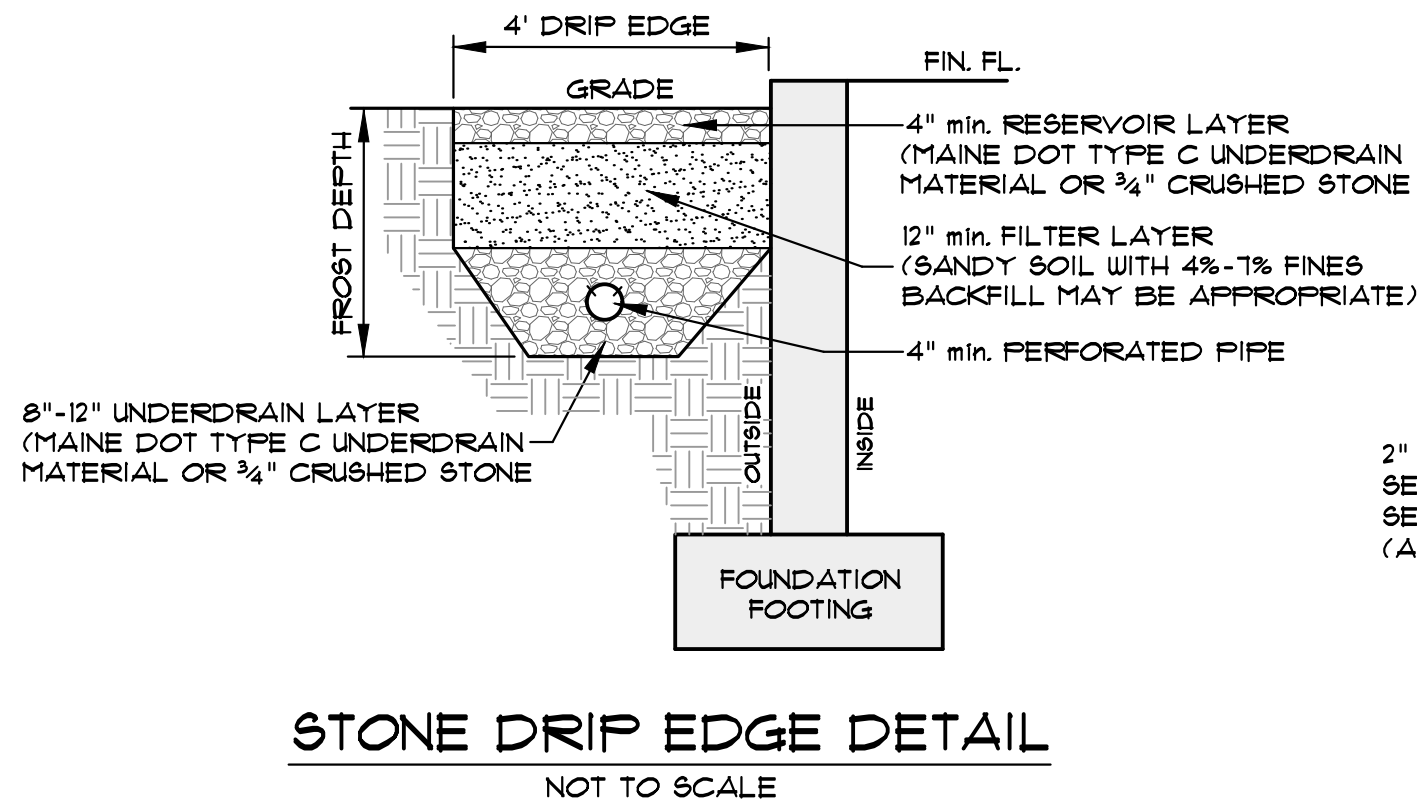
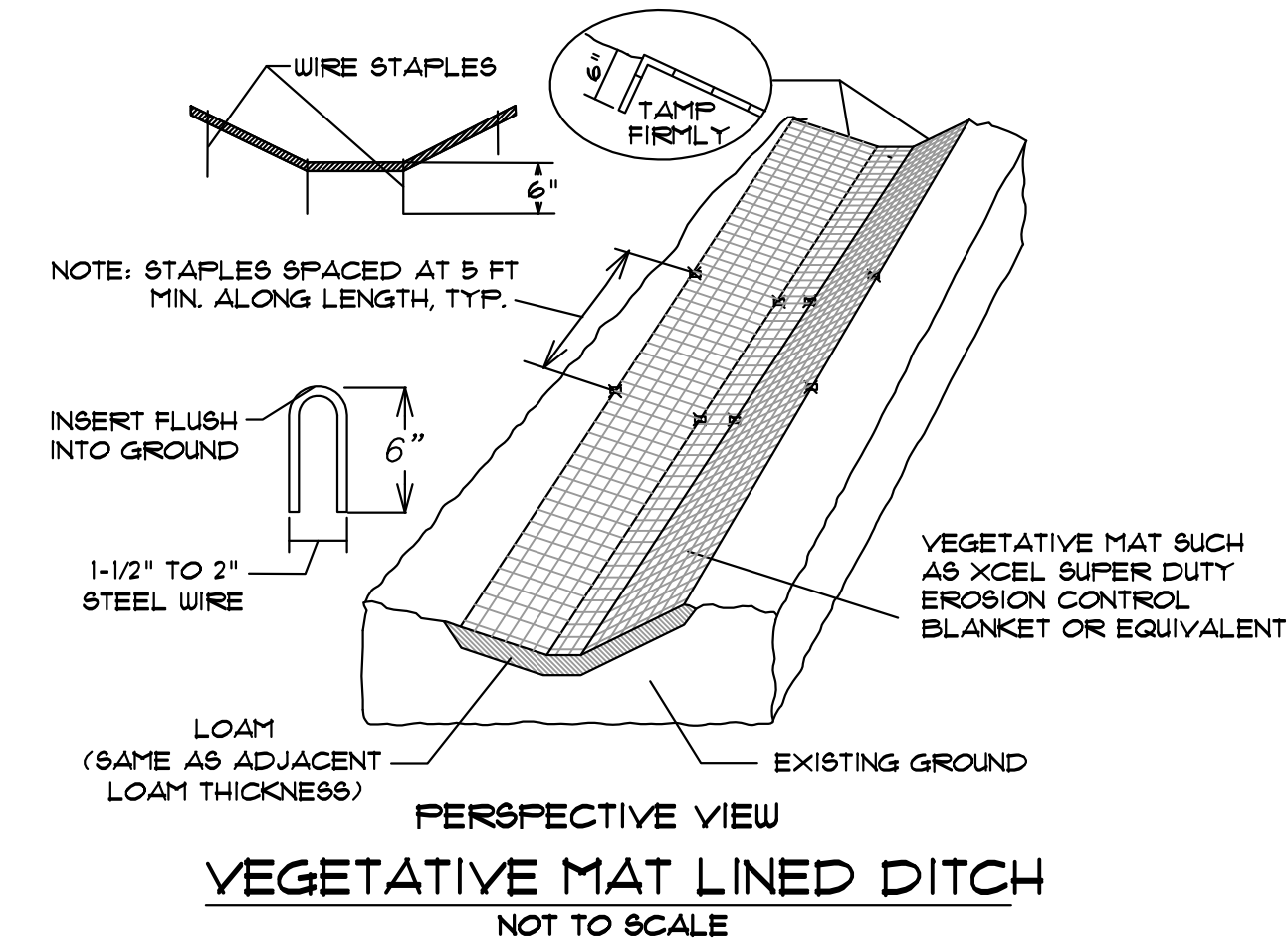


DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 602-1676 tel & fax
steve@sjeeng.com

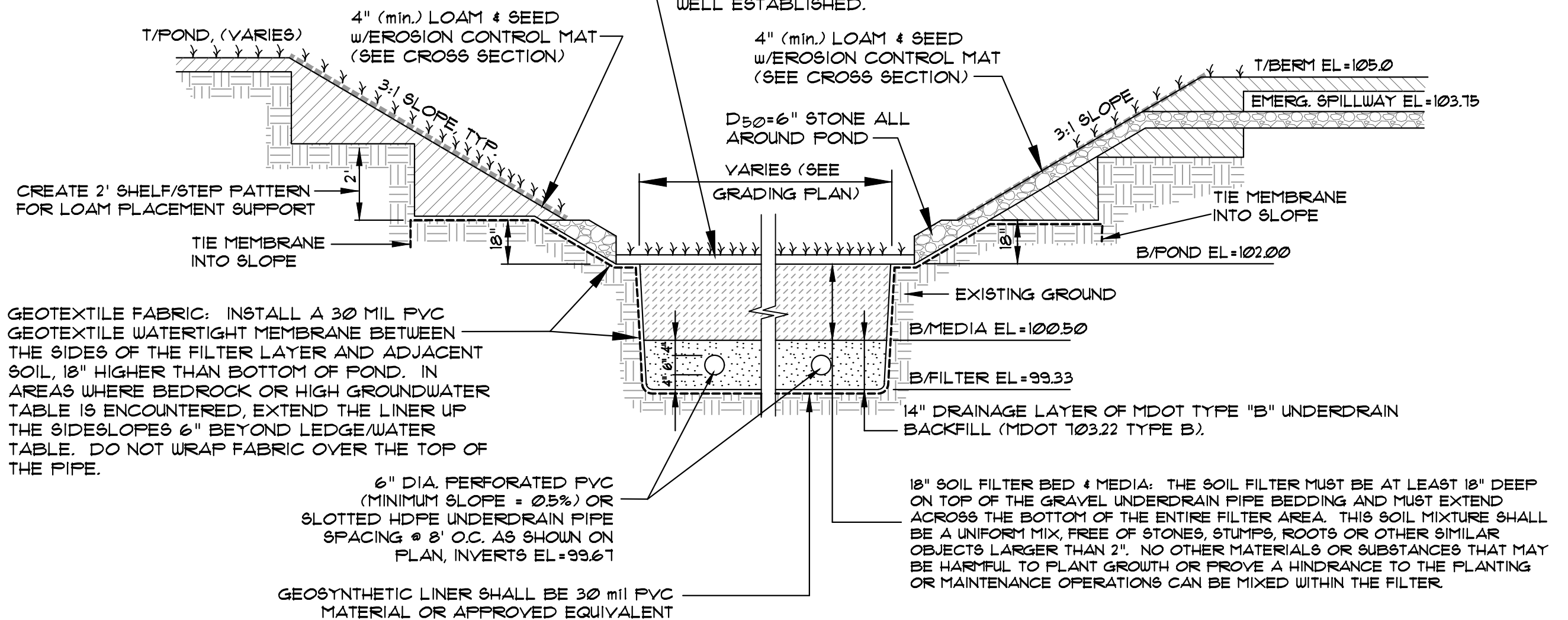
SITE CONSTRUCTION NOTES & DETAILS
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
COVE DEVELOPMENT COMPANY, LLC
PO BOX 142, BOOTHBAY, ME 04531

DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.



FILTER BASIN
 OUTLET CONTROL STRUCTURE DETAIL
 (NOT TO SCALE)

NOTE:
 FILTER POND SOIL FILTER DETAILS DEPICTS ELEVATIONS AT THE BOTTOM PERIMETER OF THE POND AND NOT THE LOW POINT OF THE POND. SEE SITE PLAN GRADING AND SECTION FOR LOW POINT OF ELEVATION (TYPICALLY NEAR THE CONTROL STRUCTURE)



SOIL FILTER POND DETAIL
 NOT TO SCALE

STORMWATER CONSTRUCTION OVERSIGHT NOTES

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THIS PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERFERE WITH THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER SHALL NOTIFY THE TOWN OF CUMBERLAND AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IN WRITING WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION AND THE TIME INSPECTED ON EACH VISIT.

VEGETATED UNDERDRAINED SOIL FILTER BASINS
 CONSTRUCTION INSPECTIONS - AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION SHALL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL. AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED, AFTER THE PIPE BEDDING IS PLACED BUT PRIOR TO THE PLACEMENT OF THE FILTER MEDIA, AND AFTER THE FILTER MEDIA HAS BEEN PLACED AND THE FILTER SURFACE SEEDED.

TESTING AND SUBMITTALS - ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN SHALL BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FROM EACH MATERIAL FOR TESTING. ALL TESTING SHALL BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN'S CONSTRUCTION.

OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF A BLEND OF SAND, TOPSOIL AND WOOD FIBER MULCH (OR OTHER APPROVED SOURCE). THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE AS DETERMINED BY ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A), HAS A CLAY CONTENT OF LESS THAN 2% AND HAS AN ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT.

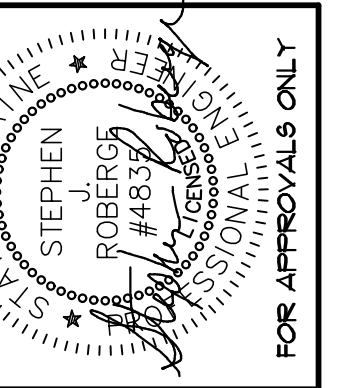
IF THE UNDERDRAIN PIPES WILL BE BEDDED IN GRAVEL, OBTAIN A SAMPLE OF THE GRAVEL FILL TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE GRAVEL TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE GRAVEL FILL MUST CONFORM TO MEDOT SPECIFICATION 103.22 UNDERDRAIN TYPE B.

IF THE UNDERDRAIN PIPE WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 103.22 UNDERDRAIN TYPE C.

SOIL FILTER NOTES

- THE SOIL FILTER IS PART OF A TOWN OF CUMBERLAND PERMIT. CONSTRUCTION SHALL FOLLOW CURRENT MAINE DEP GUIDELINES WHICH INCLUDE APPROVAL OF MATERIAL PRIOR TO PLACEMENT AND CONSTRUCTION OVERSIGHT BY THE DESIGN ENGINEER.
- SUBMIT SAMPLES AND GRADATIONS FOR EACH MATERIAL TO BE USED. PROVIDE EXPECTED DESIGN MIX. PERFORM AND PROVIDE STANDARD PROCTOR ON COMBINED MIXTURE AS WELL AS A PERMEABILITY TEST.
- SCARIFY TO LOOSEN EXISTING SOIL AT LEAST 8" PRIOR TO LAYING FIRST LAYER OF THE SOIL FILTER SECTION.
- MAXIMUM SPACING OF UNDERDRAIN PIPING IS 10' O.C. END CAPS SHALL BE INSTALLED ON ALL UNDER DRAIN PIPES.
- AFTER APPROVAL OF MATERIAL, PLACE FILTER MEDIA IN TWO LIFTS WITH LOW WEIGHT VEHICLES TO 90-92% STANDARD PROCTOR.
- PROVIDE 2" OF BARK MULCH OR EROSION CONTROL MIX ON TOP OF THE FILTER BED UNTIL THE SITE HAS PROPOSED HARDSCAPE PLACED AND HAS VEGETATION WELL ESTABLISHED EVERYWHERE ELSE. ONCE THE SITE IS STABILIZED, REMOVE THE MULCH AND ACCUMULATED SEDIMENT FROM THE FILTER AND ESTABLISH VEGETATION PER THE FILTER BED SEEDING PLAN.
- PRIOR TO TURNING OVER TO OWNER, REMOVE SEDIMENT AND DEBRIS FROM FILTER SURFACE, OVERFLOW WEIR, INSIDE OVERFLOW STRUCTURE AND DISCHARGE PIPE.

SOIL FILTER MEDIA SPECIFICATIONS *			
FILTER MEDIA	SAND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (+5%)	25% (+5%)	25% (+5%)
SPECIFICATION	MEDOT SPEC. #103.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE SHREDDED BARK SUPERMULCH OR EQUAL, ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
	GRADATION		
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
3/8"	100	-	-
4	90-100	75-95	-
8	80-100	-	-
10	-	60-90	-
16	50-85	-	-
30	25-60	-	-
40	-	35-85	-
60	10-30	-	-
100	2-10	-	-
200	0-5	15-25	-
200 CLAY	< 2% **	< 2% **	< 2% **
* FOR GRASSED UNDERDRAINED SOIL FILTER BMP, PER THE MAINE DEP VOLUME III : BMP'S TECHNICAL DESIGN MANUAL, MAY 2014			
** COMBINED MIXTURE CLAY CONTENT SHALL NOT EXCEED 2%			
NOTE: THE SOIL FILTER SHALL DRAIN IN NO LESS THAN 24 hrs BUT NOT MORE THAN 48 hrs.			

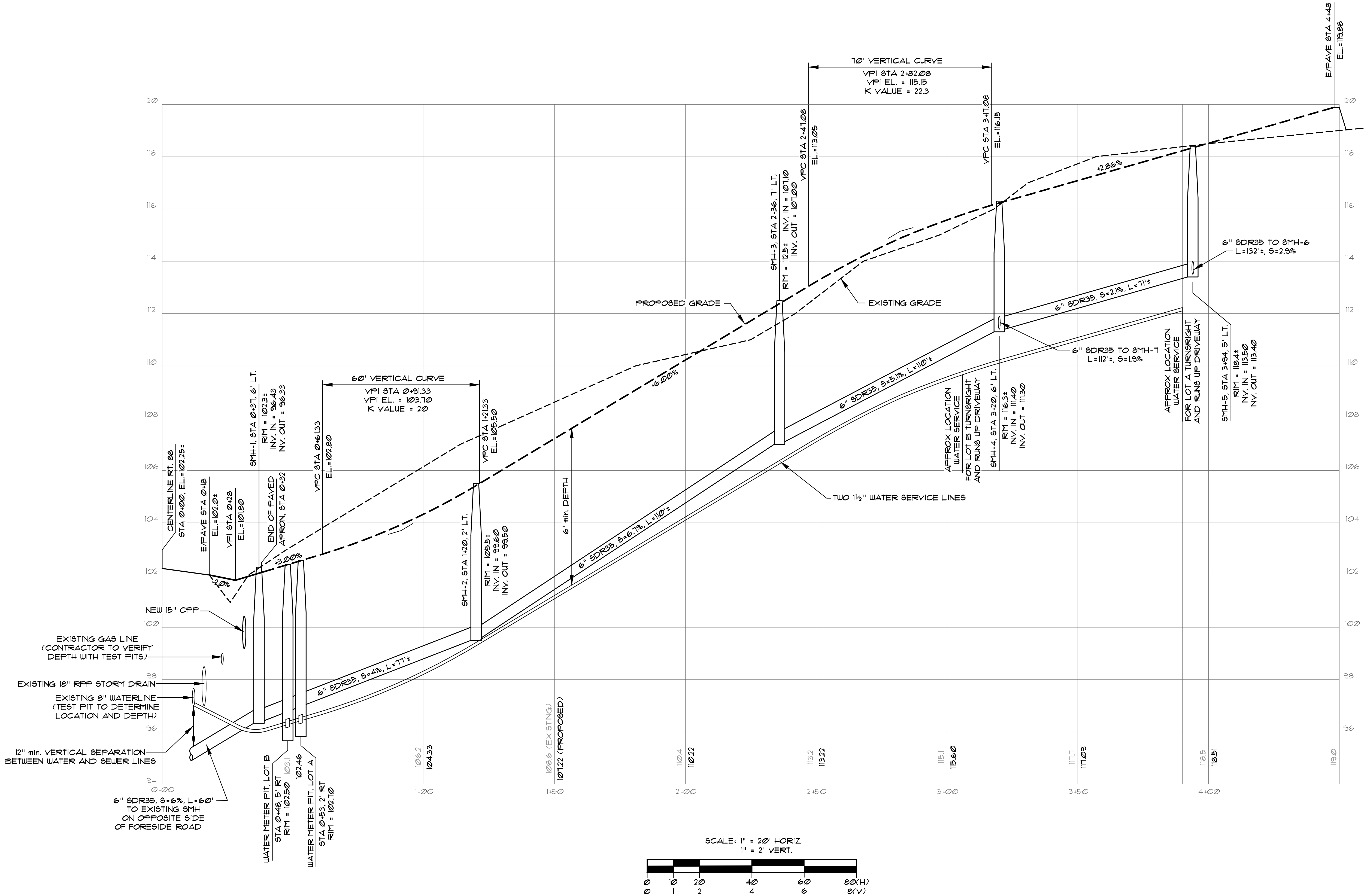


REV.	DATE	BY	CHANGE
3	2-9-2023	SJR	UPDATE OWNER INFORMATION
2	1-21-2023	SJR	EMERGENCY SPILLWAY ELEVATION
1	12-21-2022	SJR	CHANGE SHEET NUMBER AND NAME
			CHANGES:
			DATE:
			BY:

SJR ENGINEERING, INC.
 16 THURSTON DRIVE
 MONMOUTH, MAINE 04259
 (207) 622-1676 tel & fax
 steve@sjreng.com

SITE CONSTRUCTION NOTES & DETAILS
 LOT SPLIT
 104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
 PREPARED FOR
COVE DEVELOPMENT COMPANY, LLC
 PO BOX 142, BOOTHBAY, ME 04537

DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.



ROADWAY PROFILE
TAMBOUR WAY
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
COVE DEVELOPMENT COMPANY, LLC
PO BOX 142, BOOTHBAT, ME 04531

DATE	PROJECT
12-4-2022	2022-22
DRAWN BY	SCALE
SJR	AS NOTED

SHEET CII

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjeeng.com

4	SJR	2-9-2023	UPDATE OWNER INFORMATION
3	SJR	1-27-2023	ADD SEWER LINE
2	SJR	1-27-2023	RELOCATED ROADWAY, REDO PROFILE
1	SJR	12-21-2022	CHANGE SHEET NUMBER
REV:	BY:	DATE:	CHANGES:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.



FOR APPROVALS ONLY





KNICKERBOCKER
GROUP

Transmittal

Date: January 31st, 2023

To: Carla Nixon, Town Planner
Town of Cumberland
ME 290 Tuttle Road
Cumberland, Maine 04021

From: Randy Smith
Knickerbocker Group
207.633.3818
Cell: 571-581-5454
rsmith@knickerbockergroup.com
www.knickerbockergroup.com

Subject: Town of Cumberland; Tax Map U4/Lot 10A – Subdivision Amendment Updated 01/31/2023

The applicant previously submitted, for the December 2022 planning board meeting, a proposal for an amendment to the Elizabeth H. Johnson Subdivision, specifically for the creation of one additional lot from a single existing lot, Map U4, Lot 10a. The application was tabled to collect information and provide clarification on the following items:

1. **Tree Survey** – 10" diameter and larger – Owen Haskell, professional land surveyor, has provided the requested survey. Please see drawing sheets:
 - a. C6A – Forested Buffer and Landscaping Plan
2. **Forested Buffers** - At the December 2022 planning board meeting, several abutters spoke and shared their concerns related to privacy. As a result, we have added three (3) additional forested buffers. Additionally, we engaged a professional landscape architect, Kerry Lewis, to provide a site assessment related to existing conditions and recommendations related to the proposed forested buffers. Please see attached drawing sheets:
 - a. C6A – Forested Buffer and Landscaping Plan
 - b. Appendix Q – Site Assessment by Kerry Lewis, Licensed Landscape Architect
3. **Stormwater Management** - As a result of the added forested buffers and resulting driveway relocation, adjustments were made to the stormwater management plan. Additionally, it was noted by the southern abutter, the Nolan's, that they had concerns related to the stormwater management. Specifically, they wanted assurance that water would not be indirectly or directly directed towards their lot. As noted in the stormwater management

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narrative, all of the site's stormwater will be diverted, through a drainage ditch on the north side of the driveway, towards the filtration pond which is located in the northeast quadrant of the property. It should also be noted that the driveway profile is pitched to the north, towards the drainage ditch and away from the southern abutter. Please see attached:

- a. See drawing sheet C6 for an updated boundary survey
- b. See drawing sheet C6A for an updated Forested Buffer and Landscaping Plan
- c. See drawing sheets C7-C12 for updated engineering drawings
- d. C7 – Site Construction & Stormwater Management Plan
- e. C8 – Watershed & Soils Plan
- f. C9 – Site Construction Notes & Details
- g. C10 – Site Construction Notes & Details
- h. C11 – Proposed Road Profile
- i. C12 – Utility Plan & Details
- j. See Updated Appendix I – Stormwater Narrative
- k. See Updated Appendix I1 – Erosion control Narrative
- l. See Updated Appendix I2 – Stormwater Calculations - Existing
- m. See Updated Appendix I3 – Stormwater Calculations – Proposed
- n. See Updated Appendix I4 – Emergency Spillway Design
- o. See Updated Appendix I5 – Stormwater Quality Calculations

4. Additional updates

- a. **IF&W** – we received positive feedback from IF&W. Please see the following attachments:
 - i. Appendix M – Response from IF&W
 - ii. Appendix P – Letter from Basswood Environmental re: Vernal Pools
- b. **Portland Water District** – Ability to Serve – Received approval
 - i. Appendix B – PWD Ability to Serve
- c. **Cumberland Sewer District** – Ability to Serve – Received approval
 - i. Appendix N – Cumberland Sewer District - Ability to Serve

Please find attached, (2) copies of the material for review at the February 21st, 2023, planning board meeting:

- Permit Narrative w/Subdivision Amendment Checklist

Drawings:

- C0 – Cover Sheet
- C1 – Location Plan/Map
- C2 - Original Subdivision Plan for Elizabeth H Johnson, Dated October 13th, 1977
- C3 - Supplemental Land Plan for Elizabeth H Johnson, Dated June 21st, 1978
 - Designation and separation of Lot #4 (subject parcel) where it was previously indicated as a portion/extension of lot #3 on the 1977 plan
- C4 – Subdivision Plan for Morrill Properties – Recorded July 26th, 1993
- C5 – Existing Conditions and Boundaries Plan by Owen Haskell, PLS
- C6– Proposed Lot Division Plan (Preliminary Plan)
- C6A – Forested Buffer & Landscaping Plan
- C7 – Site Construction & Stormwater Management Plan

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- C8 – Watershed & Soils Plan
- C9 – Site Construction Notes & Details
- C10 – Site Construction Notes & Details
- C11 - Proposed Road Profile
- C12 – Utility Plan & Details

Appendices:

- Appendix A – MDOT Driveway Entrance Permit Application
- Appendix B – Capacity to Serve Submission
- Appendix C – Financial and Technical Capacity Letters
- Appendix D – Current Deed for Map U04, Lot 10A (Cove Development Company, LLC) Book 39660, Page 207
- Appendix E – Basswood Environmental Wetlands Report
- Appendix F – Application for a Major Subdivision Amendment
- Appendix G – Signed Agent Authorization
- Appendix H – Updated Metes & Bounds
- Appendix I – Stormwater Report
- Appendix J – EH Johnson Peer Review Comments
- Appendix K – Responses to Peer Review Engineer from SJR Engineering
- Appendix L – Responses to Peer Review Engineer from Cove Development Company LLC
- Appendix M – Letter to Inland Wildlife and Fisheries
- Appendix N – Application for sewer connection; Cumberland Sewer District
- Appendix O – Maintenance Agreement
- Appendix P – Basswood Environmental – Vernal Pools
- Appendix Q – Site Assessment – Forested Buffers – by Kerry Lewis, RLA
- Appendix R – Street Name Approval Form
- Appendix S – Updated Proposed Deed & Maintenance Agreement

1. Check for \$753.35
 - \$253.35 – Balance for Peer Reviewer
 - \$500 peer review escrow

Please contact us immediately should any additional information be required and/or for clarification.

Thank you,

Randy Smith



**Application Narrative for the proposed division of
104 Foreside, Cumberland ME – Tax Map U4/Lot 10A
Subdivision Amendment
Updated Submission for February 2023 Planning Board**

Project Location: 104 Foreside Rd, Cumberland-Foreside ME 04110

Tax Map/Lot(s): U4, 10A

Original Subdivision:

1. **Appendix A** - *Subdivision Plan of Land for Elizabeth Johnson*, Dated October 13th, 1977 (Lot 3)
2. **Appendix B** - *Supplemental Plan of Land for Elizabeth H. Johnson*, dated June 21st, 1978, for the purposes of designating and separating the subject lot as lot #4 whereas it was indicated as a portion of lot #3 on the 1977 plan

Existing Lot Size: 151,752 SqFt or 3.48 Acres

Proposed Division (see attached site plans):

- **Lot 'A':** 71,543 or 1.64 Acres
 - North Forested Buffer: 4,991 SF
 - South Forested Buffer: 11,961 SF
 - Lot 'A' ROW (Tambour Way): 3,925 SF
 - Remaining land: 50,666 SF
 - **Net Residential Acreage Lot 'A':**
 - 71,543 SF Lot Area – 5,904 SF Wetlands = 65,934 or 1.513 Acres Net Residential Area
- **Lot 'B':** 80,205 or 1.84 Acres
 - **North Forested Buffer:** 8,960 SF
 - **South Forested Buffer:** 5,906 SF*
 - **Lot 'B' Shared R.O.W.:** 13,883 SF or 0.318 Acres
 - **Stormwater Easement:** 7,488 SF*
 - **Remaining land:** 43,968 SF*
 - *Areas include 5' utility easement adjacent to ROW

District: Low-Density Residential

Existing Use: Residential

Proposed Use: Residential

Watershed Overlay Zone: No

Shoreland Zone Overlay: No

Setbacks & Space Standards:

Minimum lot size: 2 acres, or 1.5 acres with town sewer

Lot frontage: 150 feet

Front Setback: 50 feet



Rear setback: 65 feet
Side setback: 30 feet
Combined setback: 65 feet
Driveway setback: 15 feet from property line

Application Description: Cove Development Company LLC, the current owner of 104 Foreside, Tax Map U04/Lot 10, intends to divide 104 Foreside into two separate, conforming lots, for future development as shown in the attached drawings. The subject lot, Map U04, Lot 10A, is currently recorded as a lot within a previously approved subdivision (Appendices A & B), for which the applicant requests a subdivision amendment.

February 2023 Application Narrative:

The applicant previously submitted, for the December 2022 planning board meeting, a proposal for an amendment to the Elizabeth H. Johnson Subdivision, specifically for the creation of one additional lot from a single existing lot, Map U4, Lot 10a. The application was tabled to collect information and provide clarification on the following items:

1. **Tree Survey** – 10” diameter and above – the applicant initially requested a waiver, however, after further consideration, it was recommended that the applicant survey all trees of 10” diameter and larger
 - a. Owen Haskell, professional land surveyor, has provided the requested tree survey
 - b. Please see C6A for a drawing showing the proposed forested buffers with the proposed trees to be removed and to remain
2. **Forested Buffers** – At the December 2022 planning board meeting, several abutters spoke and shared their concerns related to privacy. As a result, we have added three (3) additional forested buffers. Additionally, we engaged a professional landscape architect, Kerry Lewis, to provide a site assessment related to existing conditions and recommendations related to the proposed forested buffers
 - a. See drawing sheet C6A for a Forested Buffer and Landscaping plan which also includes the limits of disturbance and tree survey (10” diameter and larger)
 - b. See Appendix Q – Site Assessment by Kerry Lewis, Licensed Landscape Architect
3. **Stormwater Management** – As a result of the added forested buffers and relocated driveway, adjustments were made to the proposed shared right of way, resulting in an updated stormwater management plan. Additionally, it was noted by the southern abutter, the Nolan’s, that they had concerns related to the stormwater management. Specifically, they wanted assurance that water would not be indirectly or directly directed towards their lot. As noted in the stormwater management narrative, all of the site’s stormwater will be diverted, through a drainage ditch on the north side of the driveway, towards the filtration pond which is located in the northeastern quadrant of the

property. It should also be noted that the driveway profile is pitched to the north, towards the drainage ditch and away from the southern abutter.

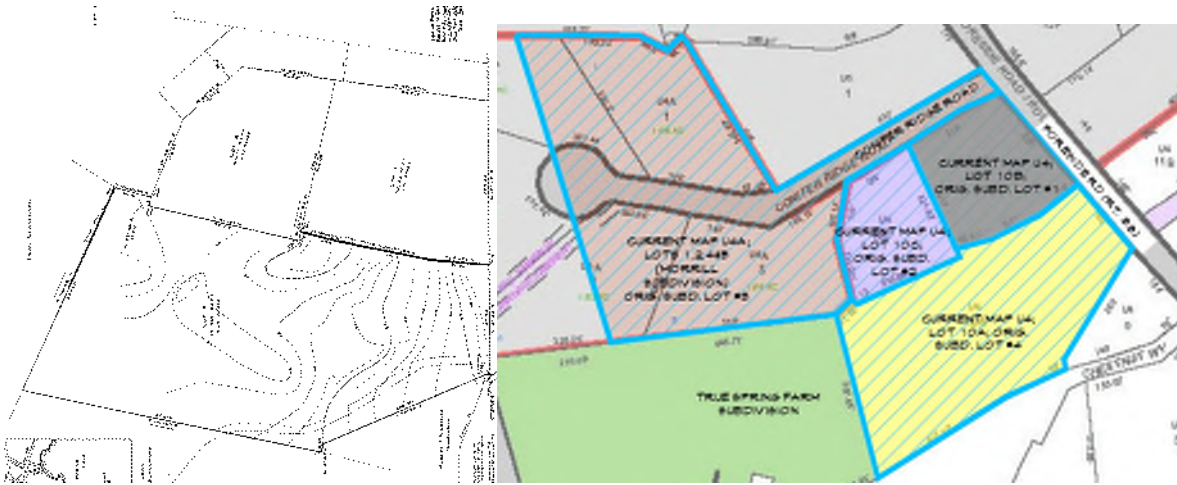
- a. See drawing sheet C6 for an updated boundary survey
- b. See drawing sheet C6A for an updated Forested Buffer and Landscaping Plan
- c. See drawing sheets C7-C12 for updated engineering drawings
 - i. C7 – Site Construction & Stormwater Management Plan
 - ii. C8 – Watershed & Soils Plan
 - iii. C9 – Site Construction Notes & Details
 - iv. C10 – Site Construction Notes & Details
 - v. C11 – Proposed Road Profile
 - vi. C12 – Utility Plan & Details
- d. See Updated Appendix I – Stormwater Narrative
- e. See Updated Appendix I1 – Erosion control Narrative
- f. See Updated Appendix I2 – Stormwater Calculations - Existing
- g. See Updated Appendix I3 – Stormwater Calculations – Proposed
- h. See Updated Appendix I4 – Emergency Spillway Design
- i. See Updated Appendix I5 – Stormwater Quality Calculations

4. Additional updates

- a. **IF&W** – we received positive feedback from IF&W. Please see the following attachments:
 - i. Appendix M – Response from IF&W
 - ii. Appendix P – Letter from Basswood Environmental re: Vernal Pools
- b. **Portland Water District** – Ability to Serve – Received approval
 - i. Appendix B – PWD Ability to Serve
- c. **Cumberland Sewer District** – Ability to Serve – Received approval
 - i. Appendix N – Cumberland Sewer District - Ability to Serve

Parcel Summary

104 Foreside, Tax Map U4, Lot 10a, is a 3.48-acre raw lot, accessed by Foreside Road/Route 88, in the low-density residential district within the Town of Cumberland and Cumberland County. There exist no structures buildings, driveways, or utilities. The subject lot is currently recorded as a lot within a previously approved subdivision - *Subdivision Plan of Land for Elizabeth Johnson, Dated October 13th, 1977 (Lot #3), Appendix A and the Supplemental Plan of Land for Elizabeth H. Johnson, dated June 21st, 1978, for the purposes of designating and separating the subject lot as lot #4 whereas it was indicated as a portion of lot #3 on the 1977 plan, Appendix B*



Parcel/Subdivision History & Timeline

1. **1977** - *Subdivision Plan of Land for Elizabeth Johnson, Dated October 13th, 1977 (Lot #3); Drawing Sheet C2*
2. **1978** - *Supplemental Plan of Land for Elizabeth H. Johnson, dated June 21st, 1978, for the purposes of designation and separation of the subject lot as lot #4 whereas it was indicated as a portion of lot #3 on the 1977 plan; Drawing Sheet C3*
3. **1988** - *"Subdivision recording plan, route 88 - Cumberland, Maine, owner: Morrill properties" July 5, 1988, revised thru July 13, 1993, by sea consultants, inc. Recorded in Cumberland County registry of deeds in plan book 193, page 198; Drawing Sheet C4 & C4A*

Completion Checklist Narrative Notes:

(Amendment to a major subdivision; Refer to the Completion Checklist attached below for related notes):

1. **Traffic Info:** the application proposes the creation of one (1) additional residential lot which will yield a negligible increase to existing traffic patterns. See attached Appendix A – MDOT Driveway Entrance Application.
2. **PWD Capacity to Serve:** See Appendix B
3. **Financial and Technical Capacity:** See attached Appendix "C" for a construction estimate with a corresponding financial capacity statement from Knickerbocker Group's financial institution.
4. **Deed restrictions:** A forested buffer designed for privacy between lots is shown on drawing Sheets C5 & C6 and described in the Deed, Appendix D, in which no tree clearing shall occur.

5. **Existing Conditions:** 104 Foreside is an existing wooded lot. There are no existing utilities or structures. There are remnants of an old road, as shown on the 1977 subdivision plan. There are also a few gravel paths and stone walls (utilized as property lines).
6. **Forested Wetland:** As noted on drawing sheets C6, C6A, C7 & C8, there exist two very small pockets of Forested Wetland as outlined by Basswood Environmental in the report dated June 14th, 2022. As noted in the report, *“The wetland does not meet the minimum criteria for designation as a Wetland of Special Significance under the Maine Natural Resources Protection Act (NRPA), and no setbacks to development are therefore required. Fill of up to 4,300 square-feet in wetlands which are not of Special Significance is allowable without a state permit.”* As stated, the wetlands have been determined to be a negligible constraint to development. The existence of wetlands, their extent, and any planned disturbance or removal should be noted on any proposed development plan as submitted for planning board review and/or building permits. Additionally, as requested by IF&W, an evaluation was conducted as to whether the site contains any vernal pools. It was confirmed by Basswood Environmental that neither of these wetlands showed signs of ponded water and do not provide breeding habitat for obligate vernal pool species
 - i. Document Appendix E, attached, Natural Resources Survey by Basswood Environmental on June 14th, 2022
 - ii. Appendix P – Basswood Environmental – Vernal Pools
7. **Fire Department Notes:** The proposed site development plan was emailed to the fire chief, Daniel Small, on 11/28/2022 for feedback and comment. Per drawing sheets C5 & C6, a turnaround will be installed per the Town of Cumberland’s road construction geometric standards
8. **Assessors’ approval of private street name:** The proposed site development plan was emailed to the assessor, John Brushwein, on 11/28/2022 for feedback and comment. The proposed private road name is, “Tambour Way”. A road name approval form was submitted to the assessor on 01/31/23 – see attached Appendix R – Street name approval form.

Drawing List:

- C0 – Cover Sheet
- C1 – Location Plan/Map
- C2 - Original Subdivision Plan for Elizabeth H Johnson, Dated October 13th, 1977
- C3 - Supplemental Land Plan for Elizabeth H Johnson, Dated June 21st, 1978
 - Designation and separation of Lot #4 (subject parcel) where it was previously indicated as a portion/extension of lot #3 on the 1977 plan
- C4 – Subdivision Plan for Morrill Properties – Recorded July 26th, 1993

- C5 – Existing Conditions and Boundaries Plan by Owen Haskell, PLS
- C6– Proposed Lot Division Plan (Preliminary Plan) by Owen Haskell, PLS
- C6A – Proposed Forested Buffer and Landscaping Plan by KG
- C7 – Site Construction & Stormwater Management Plan
- C8 – Watershed & Soils Plan
- C9 – Site Construction Notes & Details
- C10 – Site Construction Notes & Details
- C11 – Proposed Road Profile
- C12 – Utility Plan & Details

Appendices:

- Appendix A – MDOT Driveway Entrance Permit Application
- Appendix B – Portland Water District – Capacity to Serve
- Appendix C – Financial and Technical Capacity Letters
- Appendix D – Current Deed for Map U04, Lot 10A (Cove Development Company, LLC)
Book 39660, Page 207
- Appendix E – Basswood Environmental Wetlands Report
- Appendix F – Application for a Major Subdivision Amendment
- Appendix G – Signed Agent Authorization
- Appendix H – Updated Metes & Bounds
- Appendix I – Stormwater Report
- Appendix J – EH Johnson Peer Review Comments (in response to the December 2022 submission)
- Appendix K – Responses to Peer Review Engineer from SJR Engineering (in response to the December 2022 submission)
- Appendix L– Responses to Peer Review Engineer from Cove Development Company LLC (in response to the December 2022 submission)
- Appendix M – Response from Inland Wildlife and Fisheries
- Appendix N –Cumberland Sewer District – Ability to Serve
- Appendix O – Maintenance Agreement Plan
- Appendix P – Basswood Environmental – Vernal Pools
- Appendix Q – Site Assessment – Forested Buffers – by Kerry Lewis, RLA
- Appendix R – Street Name Approval Form – Tambour Way
- Appendix S – Updated Proposed Deed & Maintenance Agreement

APPENDIX D

MAJOR TRADITIONAL OR CLUSTERED SUBDIVISION SUBMISSION REQUIREMENTS AND CHECKLIST

The subdivision plan for a major traditional or clustered subdivision shall consist of an electronic submission and two (2) paper copies of all required application materials. Major subdivision review is a two-step process: 1) preliminary plan review and approval; 2) final plan review and approval. Occasionally, both preliminary and final approval may be granted by the Planning Board at the same meeting if all required information for both preliminary and final approval have been submitted, reviewed and approved by staff.

PRELIMINARY PLAN

- A.** Preliminary plan location map. The preliminary plan shall be accompanied by a location map drawn at a scale of not over 1,000 feet to the inch to show the relation of the proposed subdivision to the adjacent properties and to the general surrounding area. The preliminary plan shall show all the area within 1,000 feet of any property line of the proposed subdivision. Within such area the location map shall show:
 - 1. All existing subdivisions and approximate tract lines of adjacent parcels together with the names of the record owners of all adjacent parcels of land, those directly abutting or directly across any street adjoining the proposed subdivision.
 - 2. Locations, widths and names of existing, filed or proposed streets, easements, and building lines pertaining to the proposed subdivision and to the adjacent properties.
 - 3. The boundaries and designations of zoning districts, parks and other public spaces.
 - 4. An outline of the proposed subdivision together with its street system and an indication of the future probable street system of the remaining portion of the tract, if the preliminary plan submitted covers only part of the subdivider's entire holding.
- B.** Preliminary plan maps and information. The preliminary plan shall be submitted in 2 copies of one or more maps or drawings which may be printed or reproduced on paper with all dimensions shown in feet or decimals of a foot, drawn to a scale of one inch equals not more than 100 feet or, for plans describing construction of required improvements, a scale of one inch equals 40 feet; drawings are not to exceed 24 inches by 36 inches. All materials must also be provided in an electronic format. All plans shall be accompanied by the following information:
 - 1. Proposed subdivision name or identifying title and the name of the municipality.
 - 2. Name and address of record owner, subdivider and designer of preliminary plan.
 - 3. Date of plan submission, true North point and graphic scale.
 - 4. Number of acres within the proposed subdivision, location of property lines, existing easements, buildings, watercourses and other essential existing physical features.
 - 5. The names of all subdivisions immediately adjacent and the names of owners of record of adjacent acreage.

6. The space standard and setback provisions of the Chapter 315, Zoning, applicable to the area to be subdivided and any zoning district boundaries affecting the subdivision.
7. The location and size of any existing or proposed sewers and water mains, culverts, hydrants, and drains on the property to be subdivided. This shall show the connections with existing sewer or water systems. Where public water and/or sewerage is not to be provided, alternative means of water supply and sewage treatment and disposal shall be shown, both horizontally and vertically. If on-site groundwater wells are proposed, the effect of withdrawal of groundwater may be required by the Board as set forth in this chapter.
8. If individual or collective private sewage disposal system(s) is (are) proposed, the location and results of tests to ascertain subsurface soils and groundwater conditions shall be signed and numbered by a licensed site evaluator. If a cluster system or collective private sewage disposal system(s) is (are) proposed, a hydrogeologic investigation shall be submitted meeting the sewage disposal standards as set forth in this chapter. A hydrogeologic investigation may be required by the Board for individual systems as set forth in this chapter.
9. Location, names and present and proposed widths of existing and proposed streets, highways, easements, building lines, alleys, parks and other public open spaces both within and abutting the subdivision. Grades and street profiles of all streets, sidewalks or other public ways proposed by the subdivider shall be shown.
10. Contour lines at intervals of two feet or at such intervals as the Planning Board may require, based on United States Geological Survey datum and referred to mean sea level.
11. A high-intensity soil survey shall be conducted by a certified soil scientist to identify soils within the proposed development in accordance with United States Department of Agriculture Natural Resources Conservation Service National Cooperative Soil Classification. The soil boundaries and names shall be superimposed on a plot plan of the proposed development.
12. Deed reference and map of survey of tract boundary made and certified by a registered land surveyor, tied into established reference points. Deed restrictions, if any, shall be described.
13. A surface drainage plan or stormwater management plan, with profiles and cross sections drawn by a professional engineer registered in the State of Maine, showing preliminary design of all facilities and conveyances necessary to meet the stormwater management standards as set forth in this chapter.
14. The proposed lot lines with dimensions and suggested locations of buildings.
15. The location of temporary markers adequate to enable the Board to locate readily and appraise the basic layout in the field.
16. All parcels of land proposed to be dedicated to public use and the conditions of such dedication.
17. The location of all natural features or site elements to be preserved.
18. A grading and landscaping plan, including natural features to be preserved.

19. Plans shall bear the seals or numbers of the registered professionals responsible for preparing appropriate sections of the plan. Surveys shall be stamped by registered professional engineers, soil surveys shall bear the numbers of a soil scientist, subsurface sewage disposal plans shall bear the number of the professional site evaluator responsible for those evaluations, geological evaluations shall bear a registered geologist's number and architectural work shall bear the architect's seal.

FINAL PLAN

- C. The final subdivision plan for a major traditional or clustered subdivision shall consist of an electronic submission and two (2) paper copies of all required application materials. All materials must also be provided in an electronic format.

The final plan shall show:

1. All of the information presented on the preliminary plan and location map and any amendments thereto required by the Board or otherwise added to the plan. Engineering plans submitted shall be final plans on which construction may be based.
2. The name, registration number and seal of the engineer, land surveyor, geologist, soil scientist, architect or planning consultant who prepared the plan.
3. Street names and lines, pedestrian ways, lanes, easements, rights-of-way and areas to be reserved for or dedicated to public use.
4. The length of all straight lines, the deflection angles, radii, length of curves and central angles of all curves, tangent distance and tangent bearings for each street.
5. An actual field survey of the boundary lines of the tract, giving complete descriptive data by bearings and distances, made and certified by a licensed land surveyor. The corners of the tract shall be located on the ground and marked by monuments as herein required and shall be referenced as shown on the plan.
6. Sufficient data acceptable to the municipal officials to determine readily the location, bearing and length of every lot line and boundary line and to reproduce such lines upon the ground. Where practical these should be tied to reference points previously established.
7. The survey of the outside boundaries of the tract and the computation of the lot lines shall be performed to an accuracy of one foot in 5,000 feet. If requested by the Planning Board, the surveyor shall furnish copies of computation sheets for outside boundaries showing.
 - a. Sketch of traverse lines.
 - b. Closures;
 - c. Adjustments;
 - d. Coordinates; and
 - e. Computation of outside boundaries.

8. By proper designation, all public open space for which offers of cession are made by the subdivider and those spaces to which the title is reserved by him.
9. Lots and blocks within the subdivision numbered in accordance with local practice.
10. Proposed homeowners' covenants and restrictions.
11. Required MDEP stormwater maintenance documents.

D. There shall be submitted to the Board with final plan:

1. Copies of declarations, agreements or other documents showing the manner in which open space or easements are to be held and maintained.
2. Where conveyance of public open space or easements to the Town is contemplated, a written offer to make such conveyance to the Town and written evidence that the municipal officers are willing to accept such conveyances and are satisfied with the terms and conditions of the proposed conveyance and with the legal sufficiency of the proposed transfer documents. Such written evidence shall not constitute an acceptance by the municipality of any such public open space.

**COMPLETION CHECKLIST FOR MAJOR TRADITIONAL OR CLUSTERED
SUBDIVISION SUBMISSION REQUIREMENTS**

Waivers: Please make a check in the *Waiver Request* column for any requested waivers. Attach a separate sheet citing the Subdivision Ordinance section number, description, and reason for the waiver request.

	Check if provided	Location of information in packet, e.g. plan #, page #	Waiver Request?
General Submissions:			
15 copies of plans and materials. All sheet sized to be 24" x 36"	X	Includes subdivision amendment application, narrative, appendices, and drawings	
1"=1000' scale for general plan	X	Drawing Sheet C1 – Location Map/Plan	
1"=40' scale for construction of required improvements	X	Drawing Sheets C6-C12	
Traffic Info?	X	Appendix A, See note #1	
Capacity to Serve letters?	X	Appendices B & N, See narrative checklist note #2	
Financial and Technical Capacity (Sec.14)	X	Appendix C, See narrative checklist note #3	
Sewer user permits required? Status?	X	Appendix N	

Deed restrictions, if any, describe on separate sheet	X	Appendix D, H &S, See narrative checklist note #4	
Cover Sheet:	X	Drawing Sheet C0	
Proposed subdivision name	N/A	NOT APPLICABLE; subdivision amendment	

	Check if provided	Location of information in packet, e.g. plan #, page #	Waiver Request
Name & address of record owner, subdivider, and designer of preliminary plan	X	Drawing Sheets C0, C5 & C6	
Location Map:	X	Drawing Sheet C1	
Scale 1"=1000'	X	Drawing Sheet C1	
Shows area 1000' from property lines	X	Drawing Sheet C1	
All existing subdivisions	X	Drawing Sheets C1, C2, C3, C4 & C4A	
Approximate tract lines of adjacent parcels	X	Drawing Sheets C5, C6 & C7	
Approximate tract lines of parcels directly across street	X	Drawing Sheet C1	
<i>Location</i> of existing & proposed streets, easements, lot lines & bldg. lines of proposed subdivision & adjacent properties.	X	Drawing Sheets C5, C6 & C7	
Existing Conditions Plan:	X	Drawing Sheets C5, see narrative checklist note #5	
Existing buildings	X	Drawing Sheets C5, C6 & C7, See narrative checklist note #5	
Watercourses	N/A	NOT APPLICABLE	
Legend	X	All drawing sheets	
Wetlands	X	Drawing Sheets C5, C6 & C7, Appendices E & P, See narrative checklist Note #6	
Existing physical features (trees 10" diameter or more. Stone walls	X	Drawing Sheets C6 & C6A	
Trail System?	N/A	NOT APPLICABLE	
Subdivision Plan (Division Plan):	X	Drawing Sheets C6, C6A & C7	
Date of plan submission, true north & graphic scale	X	Drawing Sheets C6, C6A & C7	
Net residential acreage calculations	X	Drawing Sheets C5, C7 and narrative	
Legend	X	Drawing Sheets C6, C6A & C7	

Trail (connecting?)	N/A	NOT APPLICABLE	
<i>Widths</i> of existing/proposed streets, easements & bldg. lines	X	Drawing Sheets C6 & C7	
<i>Names</i> of existing/ proposed streets, easements & bldg. lines	X	Drawing Sheets C6 & C7	
Boundaries & designations of zoning districts, parks, public spaces	X	Drawing Sheets C6 & C7	
Outline of proposed subdivision w/ street system	X	Drawing Sheets C6 & C7	
Future probable street system of remaining portion of tract.	N/A	NOT APPLICABLE	

	Check if provided	Location of information in packet, e.g. plan #, page #	Waiver Request
Opportunities for Connecting Road(s) (13.2D)	N/A	Not applicable	
Space and Setback of district	X	Drawing Sheets C6 & C7	
Classification of road	X	Drawing Sheets C6 & C7	
Width of road(s)	X	Drawing Sheets C6 & C7	
Drainage type (open, closed, mix)	X	Drawing Sheets C6 & C7	
Type of byway provided (8.4D)	X	Drawing Sheets C6 & C7	
Names of adjacent subdivisions	X	Drawing Sheets C6 & C7	
Names of owners of record of adjacent acreage	X	Drawing Sheets C6 & C7	
Any zoning district boundaries affecting subdivision	X	Drawing Sheets C6 & C7	
Location & size of existing or proposed sewers, water mains, culverts, hydrants and drains on property	X	Drawing Sheets C6 & C7	
Connections w/existing sewer or water systems	X	Drawing Sheets C6 & C7	
Private water supply shown	N/A	NOT APPLICABLE	
Private septic shown	N/A	NOT APPLICABLE	
Hydro-geologic study		WAIVER REQUEST	X
(option for Board)	N/A	NOT APPLICABLE	
Test pit locations	X	NOT APPLICABLE	
Well locations	X	Drilled well as located on C7 for potential irrigation. Utilizing PWD otherwise	
Signature & lic. # of site evaluator	N/A	NOT APPLICABLE	
Existing streets: location, name(s), widths w/in and abutting	X	Drawing Sheets C6 & C7	
Proposed streets: location, name(s), widths w/in and abutting	X	Drawing Sheets C6 & C7	

The above for any highways, easements, bldg. lines, alleys, parks, other open spaces w/in and abutting	X	Drawing Sheets C6 & C7	
Grades & street profiles of all streets, sidewalks or other public ways proposed	X	Drawing Sheets C6, C7 & C8	
2' contour lines	X	Drawing Sheets C6, C7 & C8	
High intensity soil survey by cert. soil scientist		Waiver	X
Soil boundaries & names superimposed on plot plan	X	Drawing Sheets C7 & C8	
Deed reference & map of survey of tract boundary by reg. land surveyor tied to established reference points	X	Drawing Sheets C6 & C7 Appendices D, H & S	

	Check if provided	Location of information in packet, e.g. plan #, page #	Waiver Request
Surface drainage or stormwater mgmt plan w/profiles & cross sections by a P.E. showing prelim. design and conveyances	X	Drawing Sheets C7-C12	
Proposed lot lines w/ dimensions and suggested bldg. locations.	X	Drawing Sheets C6 & C7	
Location of temp. markers in field	X	Drawing Sheets C6 & C7	
All parcels proposed to be dedicated to public use and conditions of such.	N/A	NOT APPLICABLE	
Location of all natural features or site elements to be preserved	X	Drawing Sheets C6 & C7	
Street lighting details	N/A	None proposed	
Landscaping and grading plan including natural features to be preserved	X	Drawing Sheets C6A, C7-C12	
Survey stamped by P.E.	X	Drawing Sheets C6-C12	
Soil surveys w/# of soil scientist		Waiver; C8	X
Septic plan w/ # of prof. site evaluator	N/A		
Geological evals w/ reg. geologists number	X	No on-site domestic water or septic systems	
Architect's seal	N/A	NOT APPLICABLE	
For Rt. One: 75' undisturbed buffer applicable to all buildings, structures, parking areas, drainage facilities and uses.	N/A	NOT APPLICABLE	
Open Space?	N/A	NOT APPLICABLE	
Any part of parcel in a shoreland zone?	N/A	NOT APPLICABLE	
Flood Map Number and rating?	N/A	NOT APPLICABLE	
Stormwater Report?	X	Drawing Sheets C7 & C8;	

		Appendices I-I5	
Rivers, ponds, wetlands?	X	Drawing Sheets C6 & C7, Appendix E, See narrative checklist Note #6	
Historic, archeological features?	N/A	NOT APPLICABLE	
Solid waste disposal?	N/A	NOT APPLICABLE	
Required Notes on Plan:			
Fire Department notes	X	Drawing Sheets C6 & C7, See Note #7	
Clearing limits note	X	Drawing Sheets C6A, C7 & C8	
Re: approval limit of 90 days before recording or null p. 10	X	Acknowledged	
Actual field survey of boundary lines w/ monumentation shown	X	Drawing Sheets C6 & C7	
Assessor's approval of street names and assignment of lot numbers.	X	See narrative checklist note #8 and appendix R	

	Check if provided	Location of information in packet, e.g. plan #, page #	Waiver Request
Designation of all open spaces w/ notes on ownership	N/A	NOT APPLICABLE	
Copies of declarations, agreements or other documents showing the manner in which open space or easements are to	X	ROW; See C6-C8 and appendix H	
Written offer for any conveyance to the Town of open space or easements along with written evidence that the Council is willing to accept such offer	N/A	NOT APPLICABLE	
Evidence of Outside Agency Approvals	N/A	NOT APPLICABLE	

As per Section 7.2 - REVIEW AND APPROVAL BY OTHER AGENCIES:

E. Where review and approval of any subdivisions or site plan by any other governmental agency is required, such approval shall be submitted to the Planning Board in writing prior to the submission of the Final Plan.

Please list below all outside agency approvals that are required for this subdivision.

- **Maine Department of Environmental Protection:** *List type of permit(s) required (e.g., SLODA, NRPA (tier type?), Maine Construction General Permit, etc.)*
- **US Army Corps of Engineers**

- **Maine Department of Transportation:** *List type of permit(s) required.*
- **Maine Department of Inland Fisheries and Wildlife**
- **Cumberland County Soils and Water Conservation Service:** Required by Town.



Appendices

BE IN TOUCH.

(207) 633-4995 / covebykg.com

COME VISIT.

8 Builders Square / Boothbay / Maine

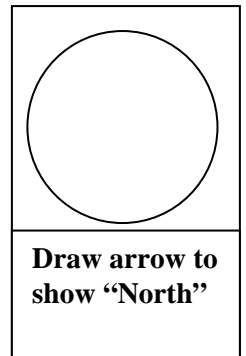
Restoring the character of today, in Maine's homes

Site Sketch or attach Site Plan

SEE ATTACHED

THE OWNER HEREBY AGREES

- 1) Provide, erect and maintain all necessary barricades, lights, warning signs and other devices to direct traffic safely while the work is in progress.
- 2) **At no time cause the highway to be closed to traffic.**
- 3) Where the drive/entrance is located within a curb, curb and gutter, and/or sidewalk section, completely remove the existing curb, curb and gutter, and/or sidewalk as may be required to create the drive/entrance and restore drainage. All driveways/entrances abutting sidewalk sections shall meet the requirements set forth in the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12132 et seq.
- 4) **Obtain, deliver to site and install any culverts and/or drainage structures necessary for drainage; the size, type and length of such culverts or structures shall be as specified in the permit pursuant to 23 M.R.S.A. § 705. All culverts and/or drainage structures shall be new.**
- 5) Complete construction of proposed driveway/entrance within twelve months of commencement of construction.
- 6) **COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND ORDINANCES.**
- 7) Not alter, without the express written consent of the MDOT, any culverts, drainage patterns or swales within MDOT right-of-way.
- 8) **File a copy of the approved driveway/entrance permit with the affected municipality or LURC, as appropriate, within 5 business days of receiving the MDOT approval.**
- 9) Shall construct and maintain the entrance side slopes to be no steeper than the adjacent roadway side slopes, but in no case to be steeper than 3 horizontal to 1 vertical, unless the side slope is behind existing roadway guardrail, in which case it shall be no steeper than 2 horizontal to 1 vertical.
- 10) **Notify the MeDOT(in writing) of a proposed change to use served by driveway/entrance when increase in traffic flow is expected to occur. This does not exempt the need for obtaining a Traffic Movement Permit (TMP) if trip generation meets or exceeds 100 passenger car equivalents (pce) during the peak hour of the day.**



FURTHER CONDITION OF THE PERMIT:

The owner shall assume the defense of, and pay all damages, fines, and penalties for which he/she shall become liable, and shall indemnify and safe harmless said Department, its representatives, agents and employees from liability, actions against all suite, claims, damages for wrongful death, personal injuries or property damage suffered by any person or association which results from the willful or negligent action or inaction of the owner/applicant/agent and in proceedings of every kind arising out of the construction and maintenance of said entrance(s), including snow removal. Nothing herein shall, nor is intended to, waive and defense, immunity or limitation of liability which may be available to the MDOT, their officers, agents or employees under the Maine Tort Claims Act or any other privileges and/or immunities provided by law.

The submission of false or misleading statements on or with this application, or the omission of information necessary to prevent statements submitted herein or herewith from being misleading, is a crime punishable under Chapter 19 of the Maine Criminal Code, and any permit issued in reliance thereon will be considered null and void without notice or further action by the Department.

Date Filed: 11/28/2022

Signature of Applicant Randy Smith

Signature of Owner

☒ By signing and checking this box I hereby certify that I have been granted permission from the property owner to act in their behalf.



January 24, 2023

Debra Wallace
Knickerbocker Group
82 Hanover Street, Suite 3
Portland, ME 04101

Re: 104 Foreside Road, Cumberland
Ability to Serve with PWD Water

Dear Ms. Wallace,

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on November 22, 2022. Based on the information provided per plans dated December 29, 2022, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed and is valid for eighteen (18) months after the date of issue. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- Lot A: A new 1.5-inch domestic service with a 1-inch meter may be installed from the water main in Foreside Road. The service should enter through the property's frontage on Foreside Road at least 10-feet from any side property lines.
- Lot B: A new 1.5-inch domestic service with a 3/4-inch meter may be installed from the water main in Foreside Road. The service should enter through the property's frontage on Foreside Road at least 10-feet from any side property lines.
- An approved nontestable dual check backflow prevention device must be installed on each service line directly after the meter prior to service activation. Please refer to the PWD website for more information on cross-connection control policies.
- Since the length of each service line will exceed 300-feet, a meter pit will be required for each service line. The meter pits shall be located on private property within 10-20 feet of the property line at Foreside Road unless otherwise approved by PWD. It is recommended that the service sizes on private after the meter pits be increased in order to avoid significant pressure loss due to pipe friction.
- Proper easement documentation must be obtained from any properties that the new service lines will cross. The easement(s) should specifically cite the right to install and maintain utilities. A copy of the deed for each of the proposed parcels must be provided to the District prior to completing new service applications. It is the District's understanding that the existing parcel will be split into Lot A and Lot B, the utilities for both lots will run along a shared driveway owned by Lot A, and Lot A will grant an easement to Lot B for the right to install and maintain utilities in that shared driveway.
- Please note that PWD's Terms and Conditions require that a service to one parcel cannot serve another parcel. If in the future either Lot A or Lot B are subdivided, a separate service will be required.



- The existing sewer collection system has the capacity and ability to serve this project. This flow will not cause the Town of Cumberland to exceed its allocated capacity at the Falmouth Wastewater Treatment Facility. Per a Sewer Capacity letter dated January 16, 2023, the Town of Cumberland has agreed to accept the sewer design flow of 2 house lot equivalents (12 HCF) 600 gallons per day of residential wastewater from this property.
- Since Foreside Road is under MDOT jurisdiction, the District will be responsible for the application of a Highway Opening permit for the project. An estimate of the application fee will be collected at the time of the service application. MDOT estimates four weeks of review time for highway opening permits.

Prior to construction, the owner or contractor will need to complete a Service Application and pay all necessary fees for each proposed service. When the project is ready for construction, an Application for each service can be requested by contacting the MEANS Group at MEANS@pwd.org or 207-774-5961 ext. 3199. Once a completed Application has been submitted with payment, please allow seven (7) days for processing.

Existing Site Service

According to District records, the project site does not currently have existing water service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main in Foreside Road and a public fire hydrant located approximately 400 feet from the site. The estimated static pressure in the area is 72 psi.

Public Fire Protection

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

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. As noted in the Conditions of Service, it is recommended that the service sizes on private after the meter pits be increased in order to avoid significant pressure loss due to pipe friction.

Private Fire Protection Water Needs

You have indicated that this project will not require water service to provide private fire protection to the site.

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

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

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer



**KNICKERBOCKER
GROUP**

November 29, 2022

TO:

Town of Cumberland
Planning Board
290 Tuttle Road
Cumberland, ME 04021

FROM:

COVE Development Company LLC
A Division of Knickerbocker Group
P.O. Box 142
Boothbay, ME 04537

RE: Financial & Technical Capacity

PROJECT: 104 Foreside Lot Division
Map U4, Lot 410A

Knickerbocker Group has been in the residential construction business for 45 years and is aligned with licensed professionals both as employees and as subcontracted consultants. Please accept this letter as defining our technical & financial capacity.

The 104 Foreside project team includes:

Owen Haskell, Inc., Licensed Surveyor

Randy Loubier
390 U.S. Route One
Falmouth, ME 04105
207-774-0424
rloubier@owenhaskell.com

SJR Engineering, Inc., Licensed Civil Engineer

Steve Roberge, PE
16 Thurston Drive
Monmouth, Maine 04259
207-242-6248
<http://www.sjreng.com>

Lincoln-Haney Structural Engineering Associates, Inc.

14 Maine Street #306a
Brunswick, ME 04011

ARCHITECTS INTERIOR DESIGNERS BUILDERS WOODWORKERS

BOOTHBAY ♦ PORTLAND ♦ knickerbockergroup.com



207-729-1061

Rick Nelson, Licensed AIA Architect
Knickerbocker Group
3 Builders Square
Boothbay, ME 04537
207-633-3818
rnelson@knickerbockergroup.com

Kerry Lewis, Licensed Landscape Architect
Knickerbocker Group
3 Builders Square
Boothbay, ME 04537
207-633-3818
klewis@knickerbockergroup.com

A preliminary opinion of costs has been prepared by Knickerbocker Group for construction of the infrastructure improvements (road and utilities) between Foreside Road and the proposed lots:

1. Clearing/grubbing/stumping/paving - \$160,960.00 Allowance
 2. Blasting/ trench blasting - \$25,000.00 Allowance
 3. Utilities stubbed to each lot \$127,000.00 Allowance
 4. Loam seed and mulch \$8,048.00 Allowance
- Total estimate \$321,008.00**

Please find attached a letter from Bangor Savings Bank providing proof of COVE Development Company's financial capacity to undertake the 104 Foreside Road project.

Respectfully submitted,

Randy Smith
Senior Project Designer
Knickerbocker Group



November 29, 2022

Town of Cumberland
Planning Board
290 Tuttle Road
Cumberland, ME 04021

RE: Cove Development Company, LLC

To Whom It May Concern:

Please accept this letter as confirmation that Cove Development Company, LLC has cash reserves at Bangor Savings Bank in excess of \$350,000. Cove Development Company, LLC is a valued customer of Bangor Savings Bank and is a relationship that is held in high regard. All accounts have been handled as agreed.

Sincerely,

A handwritten signature in black ink that reads "James Gehrke". The signature is written in a cursive, flowing style.

James Gehrke
Vice President, Sr. Relationship Manager

MAINE REAL ESTATE TAX-Paid

DLN: 1002240206612

WARRANTY DEED

KNOW ALL BY THESE PRESENTS, THAT IT, By Goldenstar, LLC, a Maine limited liability company whose mailing address is 21 Chestnut Way, Cumberland Foreside, ME 04110, for consideration paid, grants to COVE Development Company LLC, a Maine limited liability company whose mailing address is PO Box 142, Boothbay, ME 04537, with Warranty Covenants, the land in the Town of Cumberland Foresaid, County of Cumberland and State of Maine, described as follows:

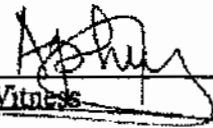
See Exhibit A attached hereto and made a part hereof.

Being the same premises described in a deed of Katherine K. White to By Goldenstar, LLC dated March 22, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39287, Page 184.

Witness my hand and seal this 18th day of August, 2022.

SIGNED, SEALED and DELIVERED
in presence of:

By Goldenstar, LLC



Witness

By: 

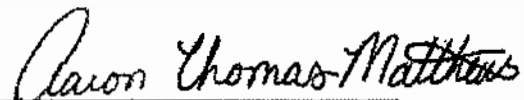
Hannah D. Renyi, Manager

STATE OF MAINE
County of Cumberland

August 18th, 2022

Personally appeared the above-named Hannah D. Renyi, Manager of By Goldenstar, LLC and acknowledged the foregoing instrument to be her free act and deed, in her said capacity, and that of said limited liability company.

Before me,



Notary Public/Attorney at Law
Print Name: Aaron Thomas Matthews
Commission Expiration Date: 02-23-2028

Aaron Thomas Matthews
Notary Public, State of Maine
My Commission Expires February 23, 2028

Exhibit A

A certain lot or parcel of land situated on the westerly side of the Foreside Road (Route 88) in the Town of Cumberland, County of Cumberland and State of Maine and being Lot No. 4 on the Plan of Property made for Elizabeth H. Johnson dated July 11, 1978 by H.I. & E.C. Jordan and recorded in the Cumberland County Registry of Deeds in Plan Book 120, Page 13, together with all rights, privileges and appurtenances thereto (the "Property").

Subject to and for the benefit of adjacent land owned by Grantor, the following covenants and restrictions which shall run with the land:

1. The division of the Property shall be restricted to no more than two (2) lots, provided that all regulatory conditions are met with regards to each lot so divided:
and
2. The use of the "Forested Buffer Area" shown on the Preliminary Plan attached hereto as Schedule B (the "Plan") shall be restricted as follows:
 - a) No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, pollutants or other fill materials will be placed, stored or dumped on the Forested Buffer Area, nor shall the topography of the area be altered or manipulated in any way:
 - b) No trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees;
 - c) No building or other temporary or permanent structure may be constructed, placed or permitted to remain in the Forested Buffer Area;
and
 - d) No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes or other motorized vehicles or mechanical equipment may be permitted on or within the Forested Buffer Area.

In addition, the Property shall be benefitted by an option right, to acquire for the benefit of the Property an appurtenant and perpetual easement and right-of-way for the access and egress and utilities through, under, over and across the private way shown on the Plan and known as "Chestnut Way" on the terms provided for by the Agreement for Sale of Real Estate for the Property entered into by Grantor and Grantee.





June 14, 2022

Debra Wallace
Project Facilitator
Knickerbocker Group
82 Hanover St, Suite 3
Portland, Maine 04101

Re: Natural Resources Survey – 104 Foreside Road, Cumberland Foreside

Ms. Wallace,

The following summary concerns the natural resource survey performed on June 7th, 2022 at the approximately 3.3-acre parcel located at 104 Foreside Road in the Town of Cumberland, Maine (Tax Map U04, Lot 10A). Erik Lema, owner and principal scientist at Basswood Environmental, Inc. (Basswood) conducted the survey in support of the proposed project. This included a wetland and stream delineation, and walkover to determine any other resources of particular regulatory importance including potential vernal pools. Spatial data of the resource boundaries as identified by Basswood has been submitted to Knickerbocker Group for inclusion onto site plans.

The site is entirely forested and shows little signs of significant past disturbance. The eastern boundary is formed by frontage along Foreside Road, and the majority of the southern boundary is parallel to the private Chestnut Way. Residential lots border the north and west boundaries, as well as a small portion of the southern boundary adjacent to Foreside Road.

Two wetland areas were identified during the course of the surveys. The larger wetland, approximately 4,700 square-feet, is near the western boundary. This wetland is entirely forested, dominated by red maple (*Acer rubrum*), and hemlock (*Tsuga canadensis*) with cinnamon fern (*Osmundastrum cinnamomeum*) in the understory. The smaller wetland is adjacent to Chestnut Way and partially impounded by the roadway itself. It is dominated by cinnamon fern, highbush blueberry (*Vaccinium corymbosum*) and common winterberry (*Ilex verticillata*).

Regulatory Implications

The wetland does not meet the minimum criteria for designation as a Wetland of Special Significance under the Maine Natural Resources Protection Act (NRPA), and no setbacks to development are therefore required. Fill of up to 4,300 square-feet in wetlands which are not of Special Significance is allowable without a state permit. Fill or impact of up to 15,000 square-feet requires a Tier 1 permit under NRPA, which involves the preparation of a permit application, but does not require wetland impact compensation or additional conservation measures. Such A permit type would however require sufficient justification for the proposed impact as well as a discussion detailing the steps that will be taken to avoid and minimize the impact by any practical means.

If there is additional detail or clarity that Basswood can provide regarding the above report, please do not hesitate to contact Erik Lema at 207-518-8442 or by email at erik@basswoodenv.com.

Best regards,



Erik Lema, Owner/Principal
Basswood Environmental LLC

Attachment: Site resource photos



Figure 1: Forested Wetland



Figure 2: Small Wetland Pocket

APPENDIX B

APPLICATION FOR MAJOR OR MINOR SUBDIVISIONS

Amendment to previously approved subdivision

Applicant's Contact Information

Name: Cove Development Company, LLC c/o Peter Dusseault

Mailing Address: PO BOX 142 Boothbay, ME 04537

Email Address: pdusseault@knickerbockergroup.com

Phone#: Office: 207-633-3818 Cell: 207-315-3955 Fax: _____

Interest in property: Owner

Interest in abutting properties, if any: _____

Property Owner's Contact Information

Name: Cove Development Company, LLC

Mailing Address: PO BOX 142 Boothbay, ME 04537

Email Address: pdusseault@knickerbockergroup.com

Phone#: Office: 207-633-3818 Cell: 207-315-3955 Fax: _____

Applicant's Architect, Landscape Architect, Engineer, Planner or Surveyor Contact Information (If more than one, please attach contact info for each one.)

Name: Knickerbocker Group; Randy Smith

Mailing Address: PO BOX 142 Boothbay, ME 04537

Email Address: rsmith@knickerbockergroup.com

Phone#: Office: 207-633-3818 Cell: 571-581-5454 Fax: _____

Project Information

Name of Project: Subdivision amendment; division of Map U04/Lot 10a into two, conforming lots

Address of site: 104 Foreside Road (rt. 88) Cumberland-Foreside ME 04110

CCRD Book/Page #: Book 39660, Page 207 Tax Map/Lot #: Map U04/Lot 10a

Zoning District: Low Density Residential Overlay District (If any): _____

Site size (acres): 3.48 # of Lots: 2 # Buildings: 0 # Dwellings: 2

____ Minor Subdivision X Major Subdivision _____ Conservation Subdivision

AMENDMENT TO PREVIOUSLY APPROVED SUBDIVISION

OTHER INFORMATION

1. Is Board of Adjustment and Appeals approval required? NOT APPLICABLE

2. Are any ordinance waivers requested? X Yes _____ No (If yes, attach a list of waivers requested and reason for the request.)

3. Application fee per Town ordinance: \$ \$100 app. fee, \$150 per revised lot, \$350 peer review escrow: \$600 total fee

4. This application form and all accompanying materials must be submitted to the Town Planner at least 21 days prior to the meeting at which it is to be considered by the Planning Board.

The undersigned, being the applicant, owner or legally authorized representative, states that all information contained in this application is true and correct to the best of his/her knowledge and hereby does submit the information for review by the Town and in accordance with applicable ordinances, statutes and regulations of the Town, state and federal governments.

Randy Smith 1/30/2023
Signature of Applicant/Owner/Representative Date



KNICKERBOCKER
GROUP

Agent Authorization Form for property located at:
104 Foreside Cumberland-Foreside, ME 04110

I hereby authorize Knickerbocker Group to act on behalf of **Cove Development Company LLC** as agent in the processing of any required local, State or Federal permit applications and to furnish, upon request, supplemental information in support of these applications.

Signed: 

Title: Peter Dusseault, Director

Date: 9/13/2022

January 31, 2023

Proposed Legal Description

Proposed Lot A

104 Foreside Road

Cumberland, Maine

A certain parcel or lot of land located westerly of, but not adjacent to, Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a granite monument at the southwesterly corner of land now or formerly of Benson T. Caswell and Diana P. Caswell as described in a deed recorded in the Cumberland County Registry of Deeds in Book 30044, Page 96. Thence:

- 1) S 64°07'30" E by said land of Caswell a distance of Fifty-One and 38/100 (51.38) feet to a 1-1/2" iron pipe at land now or formerly of Hilde P. Clark as described in a deed recorded in said Registry in Book 31567, Page 342;
- 2) S 25°46'00" W by said land of Clark a distance of Twelve and 00/100 (12.00) feet to a 1-1/2" iron pipe;
- 3) S 64°14'00" E by said land of Clark a distance of Ninety-Seven and 46/100 (97.46) feet to a capped iron rod "PLS 2407" at the northwesterly corner of land designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023;
- 4) S 01°54'07" E by said Proposed Lot B a distance of Two Hundred Thirty and 78/100 (230.78) feet to a capped iron rod "PLS 2407";
- 5) S 24°10'42" W by said Proposed Lot B a distance of Thirty-Five and 95/100 (35.95) feet to a capped iron rod "PLS 2407" at the northerly side of land designated as "Shared Vehicular Right of Way" as delineated on said Plan;
- 6) S 24°10'42" W across said Shared Vehicular Right of Way a distance of Forty-One and 00/100 (41.00) feet to a capped iron rod "PLS 2407" at land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85;
- 7) N 65°49'18" W by said land of Renyi a distance of Three Hundred Seventeen and 18/100 (317.18) feet to land now or formerly of True Spring Farm;
- 8) N 36°48'00" E by said land of True Spring Farm a distance of Three Hundred Seven and 89/100 (307.89) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above described parcel contains 1.64 acres being a portion of land now or formerly of By Golden Star, LLC as described in a deed recorded in the Cumberland County Registry of Deeds in Book 39287, Page 184. The above described parcel is designated as "Proposed Lot A" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023.

January 31, 2023

Proposed Legal Description

Proposed Lot B

104 Foreside Road

Cumberland, Maine

A certain parcel or lot of land located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the westerly side of Foreside Road at the southeasterly corner of land now or formerly of Daniel Aaron Jackson and Diana Jackson as described in a deed recorded in the Cumberland County Registry of Deeds in Book 29386, Page 302. Thence:

- 1) S 12°33'38" W by said Foreside Road a distance of One Hundred Forty-Nine and 96/100 (149.96) feet to land now or formerly of Christopher W. Nolan and Lisa G. Nolan as described in a deed recorded in said Registry in Book 1173, Page 283;
- 2) N 77°40'00" W by said land of Nolan a distance of Two and 59/100 (2.59) feet to a point;
- 3) S 79°30'00" W by said land of Nolan a distance of Two Hundred Forty-Eight and 00/100 (248.00) feet to a 1" iron pipe;
- 4) S 12°20'00" W by said land of Nolan a distance of Eleven and 45/100 (11.45) feet to a granite monument found on the northerly side of a private way known as Chestnut Way;
- 5) N 65°49'18" W by said Chestnut Way and land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85 a distance of One Hundred and 41/100 (100.41) feet to a capped iron rod "PLS 2407" at land designated as "Proposed Lot A" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023;
- 6) N 24°10'42" E by said Proposed Lot A and across land designated as "Shared Vehicular Right of Way" as delineated on said Plan a distance of Forty-One and 00/100 (41.00) feet to a capped iron rod "PLS 2407";
- 7) N 24°10'42" E by said Proposed Lot A a distance of Thirty-Five and 95/100 (35.95) feet to a capped iron rod "PLS 2407";
- 8) N 01°54'07" W by said Proposed Lot A a distance of Two Hundred Thirty and 78/100 (230.78) feet to a capped iron rod "PLS 2407" at land now or formerly of Hilde P. Clark as described in a deed recorded in said Registry in Book 31567, Page 342;

- 9) S 64°14'00" E by said land of Clark a distance of One Hundred Thirteen and 20/100 (113.20) feet to a point;
- 10) N 25°37'30" E by said land of Clark a distance of Twelve and 00/100 (12.00) feet to a capped iron rod "PLS 2407" at the southwesterly corner of said land of Jackson;
- 11) S 63°20'00" E by said land of Jackson a distance of Sixty-Six and 31/100 (66.31) feet to a point;
- 12) S 66°06'30" E by said land of Jackson a distance of One Hundred Seventeen and 00/100 (117.00) to a point;
- 13) S 72°15'00" E by said land of Jackson a distance of Seventy-Nine and 60/100 (79.60) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above described parcel contains 1.84 acres being a portion of land now or formerly of By Golden Star, LLC as described in a deed recorded in the Cumberland County Registry of Deeds in Book 39287, Page 184. The above described parcel is designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 31, 2023.

January 31, 2023

Proposed Legal Description
Shared Vehicular Right of Way
104 Foreside Road
Cumberland, Maine

A certain easement located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a capped iron rod "PLS 2407" on the westerly side of Foreside Road, said point of beginning being located S 12°33'38" W by said Foreside Road a distance of Eighty-Two and 56/100 (82.56) feet from land now or formerly of Daniel Aaron Jackson and Diana Jackson as described in a deed recorded in the Cumberland County Registry of Deeds in Book 29386, Page 302. Thence:

- 1) S 12°33'38" W by said Foreside Road a distance of Thirty-Six and 70/100 (36.70) feet to a capped iron rod "PLS 2407";
- 2) S 88°39'41" E through land designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023 a distance of Thirty-nine and 51/100 (39.51) feet to a capped iron rod "PLS 2407";
- 3) Southwesterly through said Proposed Lot B, following a curve to the left having a radius of One Hundred Sixty-Two and 00/100 (162.00) feet, an arc distance of One Hundred Two and 59/100 (120.59) feet to a capped iron rod "PLS 2407";
- 4) Southwesterly through said Proposed Lot B, following a curve to the right having a radius of One Hundred Ninety-Eight and 00/100 (198.00) feet, an arc distance of One Hundred Twenty-One and 99/100 (121.99) feet to a capped iron rod "PLS 2407";
- 5) S 12°20'00" W through said Proposed Lot B and by land now or formerly of Christopher W. Nolan and Lisa G. Nolan as described in a deed recorded in said Registry in Book 11773, Page 283 a distance of Twenty-Two and 35/100 (22.35) feet to a granite monument on the northerly side of a private way known as Chestnut Way;
- 6) N 65°49'18" W by said Chestnut Way and land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85 a distance of One Hundred Sixty-Five and 41/100 (165.41) feet to a capped iron rod "PLS 2407";
- 7) N 24°10'42" E through land designated as "Proposed Lot A" as delineated on said Plan a distance of Forty-Seven and 0/100 (47.00) feet to a capped iron rod "PLS 2407";

- 8) S 65°49'18" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 9) N 24°10'42" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 10) S 65°49'18" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 11) S 24°10'42" W through said Proposed Lot A a distance of Thirty-Six and 00/100 (36.00) feet to a capped iron rod "PLS 2407";
- 12) S 65°49'18" E through Proposed Lot A a distance of Five and 00/100 (5.00) feet to a capped iron rod "PLS 2407" at said Proposed Lot B;
- 13) S 65°49'18" E through said Proposed Lot B a distance of Fifteen and 85/100 (15.85) feet to a capped iron rod "PLS 2407";
- 14) Northeasterly through said Proposed Lot B, following a curve to the left having a radius of One Hundred Sixty-Two and 00/100 (162.00) feet, an arc distance of One Hundred Sixty-Seven and 17/100 (167.17) feet to a capped iron rod "PLS 2407";
- 15) Northeasterly through said Proposed Lot B, following a curve to the right having a radius of One Hundred Ninety-Eight and 00/100 (198.00) feet, an arc distance of One Hundred Twenty-Five and 39/100 (125.39) feet to a capped iron rod "PLS 2407";
- 16) N 88°39'41" E through said Proposed Lot b a distance of Forty-Six and 66/100 (46.66) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above described easement contains 13,883 square feet lying over a portion of land now or formerly of By Golden Star, LLC as described in a deed recorded in the Cumberland County Registry of Deeds in Book 39287, Page 184. The above described parcel is designated as "Shared Vehicular Right of Way" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 31, 2023.

Stormwater Narrative

January 22, 2023

Randy Smith
Knickerbocker Group
3 Builders Square
Boothbay, ME 04537



Re: Revised Stormwater Quantity/Quality Narrative, 104 Foreside Road, Cumberland, Me

Dear Randy,

Golden Star, LLC owns a parcel of land at 104 Foreside Road in Cumberland, Maine. The parcel is part of a previous subdivision requiring this proposed lot split to fall under an amended subdivision criterion. This project is to create 2 new lots for residential buildings. Proposed Lot A is to have 71,543 sf of land area and proposed Lot B is to have 80,215 sf of land area. A new private shared 18' wide gravel driveway (road) is to be created along the southerly sideline. The driveway road slope is to be tipped to drain to one side ditch that leads to a proposed soil filter pond and then to the existing ditch along the Route 88 frontage. Each of the buildings will be served with public water, public sewer, and underground electricity. It is anticipated that this projects site infrastructure (shared driveway) will be started in March of 2023 once all approvals have been obtained.

The site is identified as Tax Map U4 Lot 10A of the Town's Tax Map. The parcel is approximately 3.48 acres in size and lies within the Low Density Residential Zoning District.

Existing Site Conditions

The existing site consists of woods/brush areas. An old former driveway access has previously been cut on the parcel in the general location of the proposed road. No other improvements are located on the existing parcel. Existing conditions have been taken from plans prepared by Owen Haskell Boundary and Topographic Survey dated 11/09/2022. The topography of the proposed developed site is shown at a one-foot contour interval in the areas of proposed development. The slope of the property varies from 10% along the flatter areas to 30% along the banks of the steeper slopes of the property.

Adjacent Areas

Adjacent areas and land uses are similar in nature to that being proposed (residential housing). Runoff from the property is generally sheet flow to the existing drainage ditch to the front property line corner.

Soils

Soils delineation was taken from the medium intensity soils maps of the Cumberland County Soil Survey. I have overlaid the proposed developed site onto this map. Onsite soils are identified as being Deerfield and Windsor sands (hydro group "A").

Summary Overview

We have prepared an erosion/sedimentation narrative under separate cover. This narrative is to address stormwater quantity/quality during (and after) the construction of the project.

We have prepared stormwater quantity and quality analysis in order to properly evaluate existing and proposed stormwater quantity impacts from the development. The Maine DEP Chapter 500 rules of the Maine DEP stormwater rules require proposed flow rates for 2/10/25 year storm events to be the same or less than existing flows at the property line of the parcel. We have designed this project to generally meet these standards by use of a combined soil filter pond/detention pond to be constructed within the project infrastructure.

Runoff from the developed portions of the parcel B is directed to the proposed soil filter pond adjacent to the Route 88 frontage area. Site drainage eventually enters an 18" diameter culvert (Concrete) that crosses Route 88.

We have designed the soil filter/detention pond to provide water quantity/quality enhancement. The pond will function as a detention pond to limit flows to almost pre-construction flow rates. Proposed soil filter/detention ponds are necessary to control flows to pre-existing conditions and to treat the stormwater quality within the pond.

Stormwater flows will be attenuated by diverting and capturing stormwater flows from the new construction on Lot B into the new soil filter/detention pond with the stormwater control outlet being utilized to control runoff water discharges to pre-existing conditions as well as providing stormwater quality

treatment for the developed runoff water. In summary, the proposed stormwater flows will be approximately equal to the existing condition. No significant downstream impacts from stormwater flows are expected with this proposal.

Approximately 16,530 sf of new impervious surface (access driveway, parking/storage, and building) will be treated during proposed construction improvements. Proposed impervious surfaces will be treated through the soil filter pond located along the parcel frontage with Route 88. A portion of the building's roof water will be infiltrated into 4' wide stone drip edges for water quantity/quality treatment.

Stormwater Quantity

We have prepared the plans and details in order to properly evaluate existing and proposed stormwater impacts from the development. Topography of the existing site is shown at two-foot contour intervals. The slope of the property varies from 1% along the flatter areas to 30% along the existing slopes in the rear of the developed site.

Soils mapping was taken from Natural Resources Conservation Service "Web Soil Survey" medium intensity mapping. These soils have been overlaid onto the proposed site development plan.

Soils have been identified as:

- Windsor loamy sand (hydro group "A", K= 0.17)
- Deerfield loamy fine sand (hydro group "A", K= 0.17)

I have reviewed the drainage characteristics of the watershed area which includes impervious areas, lawn areas, and woods, as well upslope watershed areas. The analysis requires post construction stormwater flow rates to be approximately equal to or less than the existing stormwater rates.

I have used the SCS TR-20 (HydroCad 10.0 computer model) method of computing stormwater runoff peak flow rates. This method accounts for soil types, existing land uses, topography, vegetative cover, and proposed land use for the parcel to be developed. The proposed conditions were analyzed using data for Cumberland County type III, 24-hour storm distribution (Northeast Regional Climate Center June 2014) with a design frequency of occurrence of 2/10/25 years. One day precipitation values of 3.19"/4.77"/6.01" have been

used for each respective event. All supporting calculations and data are submitted with this report.

The existing and proposed site conditions were analyzed using information taken from existing/proposed topographic plan of the parcel to be developed. Impervious areas, lawns, meadows, and woods areas for each hydrological soil condition were measured within AutoCad in order to calculate a weighted curve number that typifies the drainage condition of the site.

Watershed calculations (pre and post construction)

Please see the attached stormwater plans for both the existing and proposed conditions to help determine location of each watershed and drainage flow path.

The project has two watershed areas within the parcel to be split. We have assumed Lot A was approved as part of the original subdivision requirements and has its own approved watershed area. We have performed analysis on Lot B development including the access road to the two lots. We have designated the Design Point of interest on the plan as being the northeast corner of parcel B. Stormwater from this design point downslope flows to a 15" culvert crossing Route 88 onto land of others.

Soil Filter Ponds:

In the proposed development condition, the watershed has somewhat significant increases in impervious and developed areas. The increased flows are captured in the combined soil filter/detention pond (along the front of the proposed developed Lot B) within the parcel. Runoff water within the soil filter pond will be detained and treated in the pond. Discharges from the pond will then be directed to the existing ditching along Route 88.

The soil filter pond has been sized to accommodate and store flows for stormwater quantity and quality functions and to control flows to pre-development runoff conditions. We have calculated increases in flow rates in the developed portion of the project for the 2/10/25 year storm events. By constructing the soil filter/detention ponds and sizing the inlets within the stormwater control structure, stormwater flows are captured and contained. These increased flows are then stored (detained and treatment provided) within the pond area for short periods of time allowing existing peak flow rates to be approximately the same.

Design Point A – Northeast corner of Parcel B

The stormwater existing/proposed Design Point A is located at the northeast corner of Parcel B. We have calculated the existing flows with the proper land surface cover and soils hydrological group in order to compare these flows with the proposed flows. Existing flows at this location have been calculated to be 0.00/0.00/0.01 cfs for the 2/10/25 year storm events due to the wooded condition of the site and very pervious soils.

Soil Filter Pond: Our analysis indicates that the incoming flow rates to the Soil Filter Pond are 0.18/0.35/0.59 cfs and are reduced to 0.04/0.05/0.05 cfs for the 2/10/25 year storm events at the outlet from the soil filter pond control structure. The soil filter ground elevation is set at elevation 102.0. The water elevation within the pond is expected to peak at elevations 102.02/102.76/103.75 for the 2/10/25 year storm events.

When these flows from the pond are hydraulically added together (with respect to time) with the uncontrolled watershed areas (Watershed 1B), the flows are approximately the same as the existing condition at the inlet to the existing culvert under Walnut Hill Road

Stormwater Summary at Design Point A culvert entrance

	2 year storm (cfs)	10 year storm (cfs)	25 year storm (cfs)
Existing flows	0.00	0.00	0.01
Proposed flows	0.03	0.09	0.19

Pond construction Control structures

The soil filter pond will need to be configured with a control manhole structure that has a 6" diameter outlet pipe at invert 99.25. The control structure has inlet connection to the two 4" diameter underdrain pipes within the pond filter area. The 6" diameter outlet is capped at the inlet end and a 1" diameter hole cut in the cap at elevation 99.5. The top of the control manhole has an access rim elevation of 105.0. A 25' wide emergency spillway is to be constructed at elevation 103.75. The top of the 4' wide berm is elevation 105.0. No water will flow from the pond (except filtered water within the filter media underdrain). We have checked the spillway design with the control structure plugged (ie all flows through the spillway) and have calculated 25 year flows within the pond

reach elevation 103.76. The top of berm is at least 12" higher than this water surface (elev 105.0).

Water quality - Soil Filter Pond

Soil Filter Pond: We have designed the project to redirect impervious and lawn area runoff into a soil filter pond along the front of the developed site. The total area draining to this pond is 64,100 sf. We have calculated 16,530 sf of the new impervious area (portion of driveways, access road, and building roof) and 47,570 sf of the landscaped area of the project would be treated through the proposed soil filter pond.

The soil filter/detention pond is designed to act such that initial and ending runoff flows are captured and infiltrated through the soil filter media within the pond. The higher flows will be bypassed through the pond and dispersed through the riprap spillway.

The soil filter pond is to be constructed that has a ground elevation at 102.0 (top of ground surface for filtering system). The pond is to be sized such that the surface area meets (or exceeds) 5% of the impervious area plus 2% of the landscape area that drains to the pond. We have calculated 16,530 sf of impervious area runoff and 47,570 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 1,778 sf of surface filter area. We have provided 1,806 sf of available area within contour 102.0.

In addition, a minimum treatment volume must be contained such that the required volume contained is less than 18" deep over the surface filter area. The channel protection volume is based on 1" of impervious surface area and .4" of vegetative area entering the pond. Using the same impervious and landscape areas noted above, we are required to have 2,964 cf of pond storage above the soil filter surface area. Our design has provided 3,024 cf of storage area at elevation 103.45 (17" deep).

The soil filter pond is controlled by a stormwater control manhole that has specific holes cut into the control panel to limit flows leaving the ponds and provide adequate holding time to be treated by the filter media. The holes have been sized using the DEP orifice sizing equation for both filter area and quality area sizing requirements. Water quality enhancement flows are detained within the soil filter pond by restricting the discharge flow through

a small 1" orifice control that is located within the stormwater control capped discharge pipe (elevation 99.5).

Summary

The proposed development of the parcel can be constructed utilizing a soil filter pond as designed to the berm height and control structure in the pond as noted above.

Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project. It is important to note that proper erosion control and revegetation of disturbed areas are essential for the proper operation of the stormwater facilities. Maintenance of the yard impervious areas, careful attention to the pavement/seeded interface, and continued maintenance to the pond system must be a top priority in order for the system to function properly. Thank you for involving this firm on your project.

Sincerely yours,

Stephen Roberge

Stephen Roberge, PE
for SJR Engineering Inc.

Erosion Control Narrative

January 22, 2022

Randy Smith
Knickerbocker Group
3 Builders Square
Boothbay, ME 04537



Re: Erosion Control for 104 Foreside Road Cumberland, Me

Dear Randy,

Golden Star, LLC owns a parcel of land at 104 Foreside Road in Cumberland, Maine. The parcel is part of a previous subdivision requiring this proposed lot split to fall under an amended subdivision criterion. This project is to create 2 new lots for residential buildings. Proposed Lot A is to have 71,543 sf of land area and proposed Lot B is to have 80,215 sf of land area. A new private shared 18' wide gravel driveway (road) is to be created near the southerly sideline. The driveway road slope is to be tipped to drain to one side ditch that leads to a proposed soil filter pond and then to an existing ditch along the Route 88 frontage. Each of the buildings will be served with public water, public sewer, and underground electricity. It is anticipated that this projects site infrastructure (shared driveway) will be started in March of 2023 once all approvals have been obtained.

The site is identified as Tax Map U4 Lot 10A of the Town's Tax Map. The parcel is approximately 3.48 acres in size and lies within the Low Density Residential Zoning District.

Existing Site Conditions

The existing site consists of woods/brush areas. An old former driveway access has previously been cut on the parcel in the general location of the proposed road. No other improvements are located on the existing parcel. Existing conditions have been taken from plans prepared by Owen Haskell Boundary and Topographic Survey dated 11/09/2022. The topography of the proposed developed site is shown at a one-foot contour interval in the areas of proposed development. The slope of the property varies from 10% along the flatter areas to 30% along the banks of the steeper slopes of the property.

Adjacent Areas

Adjacent areas and land uses are similar in nature to that being proposed (residential housing). Runoff from the property is generally sheet flow to the existing drainage ditch to the front property line corner.

Soils

Soils delineation was taken from the medium intensity soils maps of the Cumberland County Soil Survey. I have overlaid the proposed developed site onto this map. Onsite soils are identified as being Windsor loamy sand soil (hydro group "A", K=.17) and Deerfield soil (hydro group "A", K=.17).

The K number is an erodibility index number which is a value assigned to the soil based on a no erosion potential of .10 to a high erosion potential of .64. An index number greater than .32 indicates a high level of erosion control measures must be taken in order to control erosion of this soil. The hydrological group rating is a rating system of the relative permeability of the soil with Group "A" being extremely permeable such as a beach sand, to Group "D" being slow draining such as a wetland area.

Erosion and Sediment Control Practices

This plan has been developed to provide a strategy for dealing with soil erosion during and after the construction of the project. This plan is based on the standards and specifications for erosion prevention as contained in the "2016 Best Management Practices Manual for Designers and Engineers" by the Soil and Water Conservation District and Maine DEP. The Contractor is also required to meet the Town of Cumberland "Contractor Handbook" and the Erosion and Sediment control section 409 of the Zoning Ordinance.

The Contractor shall limit construction disturbance to (ie disturbed unstable ground surface) to no more than 10 acres at any one time. An area considered "opened" includes any area not stabilized with pavement, vegetation, mulch, mats, riprap, or gravel base on road/pavement locations. Open areas must have temporary erosion control installed within 14 days of disturbance (and prior to a $\frac{1}{2}$ " or more rain event). Areas opened within 100' of environmental resources (wetlands, stream) must have temporary erosion controls installed within 7 days. While the erosion control plan is comprehensive, additional measures may be necessary to control erosion from the site.

Site Erosion Control

Lot Split, Cumberland, Maine

It shall be the Contractors responsibility to be aware of weather conditions at any time during the construction of the project, and to make appropriate erosion control decisions regarding the current condition of the site for the anticipated rainfall event. The site erosion controls must be able to prevent significant erosion during the expected event.

A pre-construction meeting with the Town, Owner, and Contractor shall be required to specifically discuss how the erosion control plan will be constructed and monitored.

Construction is expected to begin following obtaining permits for approval. It is possible that construction activities may be started in January of 2023. Special attention should be given to the sections pertaining to Fall and Winter seeding, as the project starts in the winter construction season.

The principal erosion control devices will be silt fences (or erosion control mulch berms), hay mulch, stabilized construction entrance (eventually pavement), and seed to protect existing trees and drainage paths from the regions undergoing construction. Features such as vegetated ditches and erosion control material will be constructed as permanent erosion controls.

Prior to construction, the Contractor will install the stabilized construction entrance to minimize potential tracking of soils from the project construction onto paved public roads.

Structural Measures

1. Silt fencing/erosion control mix berm shall be installed along the contour and perpendicular to the predominant slope of the land just beyond the downslope limits of clearing and grubbing and/or just above any adjacent property line and streams where indicated on the plan to protect against construction related erosion. Installation shall be as shown on the plans or approved equal.
2. Riprap materials shall be placed in all inlets/outlets of pipe culverts. These aprons will prevent scour at stormwater outlets and minimize the potential for

downstream erosion by reducing the velocity of concentrated stormwater flows. Average design size stone, D50, shall be as called out in the detail on the plans. Largest size of stone in the riprap is to be 1.5 times the D50 size.

3. Protective mats on steep slopes will aid in controlling erosion on critical areas during the establishment period of vegetation.
4. Naturally vegetated buffers and grass filter strips remove sediment and other pollutants from runoff by infiltration, deposition, absorption and decomposition. Filters are effective only if used to remove sediment from sheet (overland) flow.
5. Stabilized construction entrance is to be placed during construction, where traffic is entering or leaving construction site. This will reduce or eliminate the tracking or flowing of sediment onto public rights of way. An 8" thick layer of 3"-4" crushed stone 50' in length has been designed and shown on the plan. If soil tracking does occur, the Contractor shall vacuum sweep the paved surface of the roadway by the close of business that day.
6. Temporary storm drain inlet protection (crushed stone, silt sack in the catch basin, waddles, etc.) will prevent sediment from entering the storm drain system during construction and also stop erosion at its' source. The idea is to provide a filtering device at the entrance to the storm drain system such that sediments become trapped.
7. A stone check dam is a filtering and energy dissipation device that limits the erosion process. These dams are 2"-3" crushed stone, 24" in height and are placed in drainage ditches as a temporary erosion control

measure. The dams are to be removed prior to final acceptance of the project and riprap installed in its' place.

8. Soil stockpiles shall be hay mulched within 24 hours of stockpiling. The downslope side of the stockpile shall have a ring of erosion control barrier placed (silt fence, erosion control berm mix, waddles). Stockpiles are not to be located within 100' of environmental resources where possible.
9. Trench dewatering shall be pumped to filter bags prior to discharge from the site. They shall be located in upland areas greater than 100' from environmental resources.
10. Dust control will be addressed through the use of water trucks spraying the ground with water and/or applying calcium chloride to the surface to minimize dust creation.

Vegetative Measures

1. Topsoil on site shall be stockpiled at a stable location on site and covered with anchored mulch for temporary erosion control.
2. If any disturbed area of soil will be left bare for more than two weeks, or if construction is to be completed in phases over an extended duration, temporary seeding and mulching shall commence immediately following initial fine grading of site. **In sensitive areas (within 100' of wetlands) temporary mulch must applied within 7 days or prior to any storm event on all disturbed surfaces.** It shall be maintained and reseeded as necessary to insure good vegetative cover for the entire duration of construction. Seed will be selected from the following table, according to the time of the year:

Temporary Seed Mixture

Seed Type	lbs acre	lbs 1000 sf	Seeding Depth	Recommended Seeding Date
Winter Rye	112	2.6	1"-1.5"	8/15 - 10/1
Oats	80	1.8	1"-1.5"	4/1 - 7/1
or Annual Ryegrass	40	0.9	.25"	and 8/15 - 9/15
Sudangrass	40	0.9	.5"-1"	5/15 - 8/15
Perennial Ryegrass	40	0.9	.25"	8/15 - 9/15
Temporary Mulch with or without dormant seeding				10/1 - 4/1

Mulch will be applied with seeding according to mulch table. If it is not possible to seed 45 days or more prior to frost, than dormant seeding and anchored mulch shall be applied. The application of mulch shall be such that the bare ground is barely visible.

3. Permanent seedings of grass cover shall be applied to all disturbed areas. All surface water control measures and final land grading in the vicinity should be completed. Ground preparation shall include tilling to a minimum 3" depth of fine but friable soil free of clods or stones. Permanent seed shall be selected according to its final destination. (See permanent seed mixture table)
4. All seeding will require mulch. Mulch provides several benefits: conserves moisture, prevents surface compaction, improves water quality, reduces runoff and erosion, controls weeds, and helps establish plant cover.

Mulch shall be applied according to the following tables:

Permanent Seed Mix

Application Rate

	Parks & Lawns lbs/1000 sf	Roadside Areas
		ditches, basins lbs/1000 sf
Kentucky Bluegrass	.46	
Creeping Red Fescue	.46	.46
Perennial Ryegrass	.11	
Redtop		.05
Tall Fescue		.46
Total Seed Rate	1.03	0.97

- Note:
1. The contractor may wish to final seed from 10/1 to 11/1 with the same soil preparations, seeding mixes (doubling the seed rate) and mulching, but it may result in winter kill. Vegetation must be inspected and reseeded as necessary in the following spring to assure good vegetative cover.
 2. No seeding shall be permitted on the snow.
 3. Mulch shall be applied after all seed applications (see mulch) and in enough quantity to cover all bare spots such that bare ground is not visible. Any site grading performed in winter conditions shall be covered with mulch on a daily basis. Mulch rate shall be twice the normal rate.
 4. Permanent seedings should be made 45 days or more prior to the first killing frost (Seed by September 15th) or as a temporary and dormant seeding after the first killing frost.

Maintenance

During the period of construction and/or until long term vegetation is established:

1. Seeded areas will be fertilized and reseeded as necessary to insure 90% vegetative establishment.
2. At a minimum, the hay bale/silt fence barriers shall be inspected and repaired once a week and immediately following all significant rainfall or snow melt. Sediment trapped behind these barriers shall be excavated when it reaches a depth of 6 six inches and regraded onto the site.
3. Diversion ditches and swales will be checked weekly and repaired, when necessary, until adequate vegetation is established.
4. The Owner and contractor shall be responsible for the construction and maintenance of all proposed temporary and permanent erosion control measures including vegetation. The contractor must install or construct all required improvements shown on the plans. The contractor must incorporate all other site improvements, restrictions, construction limits, drainage improvements, natural vegetated buffers, proposed landscaping, etc. The contractor must obtain a complete set of plans, reports, permit approvals, and documents pertaining to the project before beginning construction.
5. The contractor shall remove all temporary erosion control devices from the site after construction is complete and the site is permanently stabilized.

WINTER CONSTRUCTION

The winter construction period is from November 1 through April 15. If the construction site is not stabilized with pavement, a road gravel base, 75 % mature vegetation cover or riprap by November 15, then the site needs to be protected with over-winter stabilization. An area considered open is any

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area not stabilized with pavement; vegetation, mulching, erosion control mats, riprap or gravel base on a road. Winter excavation and earthwork shall be completed such that no more than 1 acres of the site is without stabilization at any one time. Limit the exposed area to those areas in which work is expected to be undertaken during the preceding 15 days and that can be mulched in one day prior to any snow event.

All areas shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150 lbs./1,000 s.f. (3 tons/acre) and shall be properly anchored.

The contractor must install any added measures which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized, in order to minimize areas without erosion control protection.

SOIL STOCKPILES

Stockpiles of soil or subsoil will be mulched for over winter protection with hay or straw at twice the normal rate or at 150 lbs/1,000 s.f. (3 tons per acre) or with a four-inch (4") 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 stockpile will not be placed (even covered with hay or straw) within 100 feet from any natural resources.

NATURAL RESOURCES PROTECTION

Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75 % mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats. During winter construction, a double line 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 a natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.

SEDIMENT BARRIERS

During frozen conditions, sediment barriers shall consist of erosion control filter berms as frozen soil prevents the proper installation of hay bales and sediment silt fences.

MULCHING

All area shall be considered to be denuded until areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored.

Mulch shall not be spread on top of snow. The snow will be removed down to a one-inch depth or less prior to application.

After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting.

An area shall be considered to have been stabilized when exposed surfaces have been either mulched with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored so that the ground surface is not visible through the mulch.

Between the dates of November 1 and April 15, all mulch shall be anchored by either peg line, mulch netting, asphalt emulsion chemical, tracking into the surface or wood cellulose fiber. The mulch cover is sufficient when the ground surface is not visible. After November 1, mulch and anchoring of all bare soil shall occur at the end of each final grading workday.

MULCHING ON SLOPES AND DITCHES

Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with peg and netting or with erosion

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control blankets. Mulching shall be applied at a rate of 230 lbs/1,000 sf on all slopes greater than 8%.

Mulch netting shall be used to anchor mulch in all drainage ways with a slope greater than 3 % for slopes exposed to direct winds and for all other slopes greater than 8%.

Erosion control blankets shall be used in lieu of mulch in all drainage ways with slopes 8% or greater. Erosion control mix can be used to substitute erosion control blankets on all slopes except ditches.

SEEDING

Between the dates of October 15 and April 1, loam or seed will not be required. During periods of above freezing temperatures, finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until such time as the final treatment can be applied. If the date is after November 1 and the exposed area has been loamed and final graded with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be selected to be placed prior to the placement of mulch and fabric netting anchored with staples. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5lbs/1000 s.f. All areas seeded during the winter will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 % catch) shall be revegetated by removing the mulch and reseeding and remulching.

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

TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION

Water from construction trench dewatering or temporary stream diversion will pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing, and sediment discharges to a protected resource.

In no case shall the filter bag or containment structure be located within 100 feet of a protected natural resource.

INSPECTION AND MONITORING

Maintenance measures shall be applied as needed during the entire construction season. After each rainfall, snow storm or period of thawing and runoff, the site contractor shall perform a visual inspection of all installed erosion control measures and perform repairs as needed to insure their continuous function. Following the temporary and/or final seeding and mulching, the contractor shall inspect and repair any damages and unvegetated spots. Established vegetative cover means a minimum of 85 to 90 % of areas vegetated with vigorous growth.

STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

1. Standard for the timely stabilization of ditches and channels: The contractor will construct and stabilize all stone-lined ditches and channels on the site by November 15. The contractor will construct and stabilize all grass-lined ditches and channels on the site by September 15. If the contractor fails to stabilize a ditch or channel to be grass-lined by September 15, then the contractor will take one of the following actions to stabilize the ditch for late fall and winter.

Install a sod lining in the ditch: The contractor will line the ditch with properly installed sod by October 1. Proper installation includes the contractor pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

Install a stone lining in the ditch: The contractor will line the ditch with stone riprap by November 15. The contractor will hire a registered professional engineer to determine the stone size and lining thickness needed to withstand the anticipated flow velocities and flow depths within the ditch. If necessary, the contractor will regrade the ditch prior to placing the stone lining so to prevent the stone lining, from reducing the ditch's cross-sectional area.

2. Standard for the timely stabilization of disturbed slopes: The contractor will construct and stabilize stone-covered slopes by November 15. The contractor will seed and mulch all slopes to be vegetated by September 15. The department will consider any area having a grade greater than 15% to be a slope. If the contractor fails to stabilize any slope to be vegetated by September 15, then the contractor will take one of the following actions to stabilize the slope for late fall and winter.

Stabilize the soil with temporary vegetation and erosion control mats: By October 1, the contractor will seed the disturbed slope with winter rye at a seeding rate of 3 pounds per 1000 square feet and apply erosion control mats (or mulch with jute netting) over the mulched slope. The contractor will monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or cover at least 75% of the disturbed slope by November 1, then the contractor will cover the slope with an additional layer of winter mulch application, stone riprap, or erosion control mix as described below.

Stabilize the slope with sod: The contractor will stabilize the disturbed slope with properly installed sod by October 1. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor will not use late-season sod installation to stabilize slopes having a grade greater than 33%.

Stabilize the slope with erosion control mix: The contractor will place a six-inch layer of erosion control mix on the slope by November 15. Prior to placing the erosion control mix, the contractor will remove any snow accumulation on the disturbed slope. The contractor will not use erosion control mix to stabilize slopes having grades greater than 50% or having groundwater seeps on the slope face.

Stabilize the slope with stone riprap: The contractor will place a layer of stone riprap on the slope by November 15. The contractor

will hire a registered professional engineer to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

3. Standard for the timely stabilization of disturbed soils: By September 15 the contractor will seed and mulch all disturbed soils on areas having a slope less than 15%. If the contractor fails to stabilize these soils by this date, then the contractor will take one of the following actions to stabilize the soil for late fall and winter.

Stabilize the soil with temporary vegetation: By October 1, the contractor will seed the disturbed soil with winter rye at a seeding rate of 3 pounds per 1000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per 1000 square feet, and anchor the mulch with plastic or jute netting. The contractor will monitor growth of the rye over the next 30 days. If the rye fails grow at least three inches or cover at least 75% of the disturbed soil before November 15, then the contractor will mulch the area for over-winter protection as described in one of the items below of this standard.

Stabilize the soil with sod: The contractor will stabilize the disturbed soil with properly installed sod by October 1. Proper installation includes the contractor pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

Stabilize the soil with mulch: By November 15, the contractor will mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Prior to applying the mulch, the contractor will remove any snow accumulation on the disturbed area. Immediately after applying the mulch, the contractor will anchor the mulch with plastic or jute netting to prevent wind from moving the mulch off the disturbed soil.

Site Erosion Control
Lot Split, Cumberland, Maine

Please feel free to contact me if you have any questions concerning the use of these measures. We feel that these measures if properly constructed and maintained will be sufficient to control erosion on your project without any adverse impact to the area. Thank you for involving this firm on your project.

Sincerely yours,

Stephen Roberge, PE
for SJR Engineering Inc.

INSPECTION AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT STRUCTURES (BMPS)

	INSPECTION SCHEDULE	CORRECTIVE ACTIONS
VEGETATED AREAS	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas of bare soil or with sparse growth Armor all erosion areas with riprap or divert the runoff to a stable area Inspect and repair down-slope of all spreaders and turn-outs for erosion Mow vegetation as specified for the area
DITCHES, SWALES AND OPEN STORMWATER CHANNELS	Annually spring and late fall and after heavy rains	Remove obstructions, sediments or debris from ditches, swales and other open channels Repair any erosion of the ditch lining Mow vegetated ditches Remove woody vegetation growing through riprap Repair any slumping side slopes Repair riprap where underlying filter fabric or gravel is showing or if stones have dislodge
CULVERTS	Spring and late fall and after heavy rains	Remove accumulated sediments and debris at the inlet, outlet, or within the conduit Remove any obstruction to flow Repair any erosion damage at the culvert's inlet and outlet
CATCHBASINS	Annually in the spring	Remove sediments and debris from the bottom of the basin and inlet grates Remove floating debris and oils (using oil absorptive pads) from any trap
ROADWAYS AND PARKING AREAS	Annually in the spring or as needed	Clear and remove accumulated winter sand in parking lots and along roadways Sweep pavement to remove sediment Grade road shoulders and remove accumulated winter sand Grade gravel roads and gravel shoulders Clean-out the sediment within water bars or open-top culverts Ensure that stormwater runoff is not impeded by false ditches of sediment in the shoulder
RESOURCE AND TREATMENT BUFFERS	Annually in the spring	Inspect buffers for evidence of erosion, concentrated flow, or encroachment by development Manage the buffer's vegetation with the requirements in any deed restrictions Repair any sign of erosion within a buffer Inspect and repair down-slope of all spreaders and turn-outs for erosion Install more level spreaders, or ditch turn-outs if needed for a better distribution of flow Clean-out any accumulation of sediment within the spreader bays or turnout pools Mow non-wooded buffers no shorter than six inches and less than three times per year
WETPONDS AND DETENTION BASINS	Annually in fall and after heavy rains	Inspect the embankments for settlement, slope erosion, piping, and slumping Mow the embankment to control woody vegetation Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash racks Remove and dispose of sediments and debris within the control structure Repair any damage to trash racks or debris guards Replace any dislodged stone in riprap spillways Remove and dispose of accumulated sediments within the impoundment and forebay
FILTRATION AND INFILTRATION BASINS	Annually in the spring and late fall	Clean the basin of debris, sediment and hydrocarbons Provide for the removal and disposal of accumulated sediments within the basin Renew the basin media if it fails to drain within 72 hours after a one inch rainfall event Till, seed and mulch the basin if vegetation is sparse Repair riprap where underlying filter fabric or gravel is showing or where stones have dislodged
PROPRIETARY DEVICES	As specified by manufacturer	Contract with a third-party for inspection and maintenance Follow the manufacturer's plan for cleaning of devices
OTHER PRACTICES	As specified for devices	Contact the department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.

Cove Development Company, LLC

Lot Split - 104 Foreside Road, Cumberland

Inspection and Maintenance Plan

Date: November 2022

The Earthwork Contractor will be responsible for inspection, maintenance, and operations of the stormwater system during construction. Upon approval of the final construction by the Owner, the Owner will be responsible for the inspection, maintenance, and operation of the stormwater system. We have attached the "Maine ESC BMPs (10/2016)" at the end of the narrative that more fully identifies the Party's E+S responsibilities.

INSPECTIONS - Contractor During Construction

Areas of proposed construction that will require inspections/maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities/Roof Drip Edge**
 - Soil Filter media inspection and maintenance
 - Outlet Control Structure inspection and maintenance
 - Sediment removal and disposal
- **Ditches, Swales, or other open stormwater channels**
 - Embankment inspection and maintenance
 - Channel inspection
 - Sediment removal and disposal
- **Culverts, catch basins, stormwater control structures**
 - Structure inspection and maintenance
 - Inlet and Outlet inspection
 - Debris removal and disposal
- **Buffers/Landscaping**
 - Landscaping inspection and maintenance
 - Landscaping turf inspection and maintenance
 - Debris removal and disposal
- **General Site Erosion Controls**
 - Sediment barriers (silt fence, erosion control berm material)
 - Stabilized Construction Exit
 - Riprap slopes
 - Level Lip Spreaders
 - Erosion Control Blankets

Temporary/Permanent Seed and Mulch Hay mulch

There may be other areas of inspection/maintenance specific to the project during construction that may not be identified above. The Contractor is directed to utilize the 2014 Revision to the Maine Erosion and Sediment Control Field Guide for Contractors, the Town of Cumberland "Handbook for Contractors" and the Erosion and Sedimentation Section 409 of the Cumberland Zoning Ordinance.

The Contractors representative will inspect the general erosion control items identified above including the drainage system, swales, channels, and stormwater structures to determine if a soil blockage or impaired capacity to pass flow exists. During construction, the inspection will be done prior to and within 24 hours after a storm event greater than $\frac{1}{2}$ " in 24 hours. A record of inspections and maintenance or corrective measures shall be kept by the Contractor.

MAINTENANCE AND CLEANING

The earthwork contractor will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance of stormwater including the detention system. Immediate action shall be taken to remedy detrimental obstructions.

The Contractor will regularly inspect the infiltration rate of the soil filter ponds after every major storm event (1/2" rain event in 24 hours) in the first few months to ensure proper function. Sediment shall be removed from the sediment forebay when sediment is greater than 12" from the forebay bottom. The removed sediment shall be hauled off site and disposed in an approved location. Ongoing maintenance will be required as necessary.

All sand, salt, etc. accumulated when sweeping the paved parking, access road, and snow stockpile areas, shall be trucked off-site for disposal.

RECORD KEEPING

The Contractor will maintain inspection records, with recordings of condition of items identified above and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trends to develop for anticipated future preventive maintenance schedule.

INSPECTIONS - Owner Post-Construction

Areas of the completed construction that will require ongoing inspections and maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities/Roof Drip Edge**
 - Soil Filter media inspection and maintenance
 - Outlet Control Structure inspection and maintenance
 - Sediment removal and disposal
- **Ditches, Swales, or other open stormwater channels**
 - Embankment inspection and maintenance
 - Channel inspection
 - Sediment removal and disposal
- **Culverts, catch basins, stormwater control structures**
 - Structure inspection and maintenance
 - Inlet and Outlet inspection
 - Debris removal and disposal
- **Buffers/Landscaping**
 - Landscaping inspection and maintenance
 - Landscaping turf inspection and maintenance
 - Debris removal and disposal
- **General Site Erosion Controls**
 - Sediment barriers (silt fence, erosion control berm material)
 - Stabilized Construction Exit
 - Riprap slopes
 - Level Lip Spreaders
 - Erosion Control Blankets
 - Temporary/Permanent Seed and Mulch
 - Hay mulch

There may be other areas of inspection/maintenance specific to the project identified after construction that may not be identified above. The Owner is directed to utilize the 2014 Revision to the Maine Erosion and Sediment Control Field Guide for Contractors, the Town of Cumberland "Handbook for Contractors" and the Erosion and Sedimentation Section 409 of the Cumberland Zoning Ordinance for these situations.

The Owners representative will inspect the general erosion control items identified above including the drainage system, swales, channels, and stormwater structures to

determine if a soil blockage or impaired capacity to pass flow exists. Post construction, the inspection will be done within 24 hours after a storm event greater than $\frac{1}{2}$ " in 24 hours. General post-construction inspections will be performed on a monthly basis from March to November, and quarterly during the remainder of the year. A record of inspections and maintenance or corrective measures shall be kept by the owner.

MAINTENANCE AND CLEANING

The Owner will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance and detention system. Immediate action shall be taken to remedy detrimental obstructions.

The Owner will regularly inspect the infiltration rate of the soil filter ponds after every major storm event ($\frac{1}{2}$ " rain event in 24 hours) in the first few months to ensure proper function. Thereafter, the soil filter basin should be inspected bi-annually to ensure that they draining within 24-48 hours. Sediment shall be removed from the sediment forebay when sediment is greater than 12" within the forebay. The removed sediment shall be hauled off site and disposed in an approved location.

A mandatory scheduled maintenance will be performed every four weeks for a period of one hundred and twenty (120) days and will begin after satisfactory completion and acceptance of project construction. Ongoing maintenance may be required as necessary.

All sand, salt, etc. accumulated when vacuuming the paved parking, access road, and snow stockpile areas, shall be trucked off-site for disposal.

RECORD KEEPING

The Owner will maintain inspection records, with recordings of condition of items identified above and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trends to develop the future preventive maintenance schedule.

Maintenance Log Sheet

<u>Inspector Name</u>	<u>Date</u>	<u>Maintenance Task Completed</u>
<u>Roof Drip Edge</u>		
<u>Soil Filter Media</u>		
<u>Pavement Sweeping</u>		
<u>Plunge Pools</u>		
<u>Snowplow sand/ground surface</u>		
<u>Ditches/Swales</u>		
<u>Vegetated Ditches</u>		
<u>Stone Lined Channels</u>		
<u>Stone Check Dams</u>		
<u>Level Lip Spreader</u>		
<u>Culverts</u>		
<u>Lawn area</u>		
<u>Other</u>		

Housekeeping

These performance standards apply to all projects.

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.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

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.

NOTE: An example of the use of BMPs to control fugitive sediment and dust is as follows: Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.

NOTE: Dewatering a stream without a permit from the department violates state water quality standards and the Natural Resources Protection Act.

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

NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

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 (or pumping water through a sediment dirtbag). Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

NOTE: For guidance on de-watering controls, consult the latest edition of the Maine Erosion and Sediment Control BMPs", Maine Department of Environmental Protection."

6. Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges.

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

Maintenance Plan & Best Management Practices

Site Inspection & Maintenance During Construction: Weekly inspections, as well as routine inspections following rainfalls, shall be conducted by the General Site Contractor of all temporary and permanent erosion control devices until final acceptance of the project (90% grass catch) by the Owner. Necessary repairs shall be made to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned, and repaired by the General Contractor as required. Disposal of all temporary erosion control devices shall be the responsibility of the General Contractor.

It is recommended that the Owner hire the services of the design engineer, or other qualified individual, to provide compliance inspections (during active construction) relative to implementation of the Stormwater and Erosion Control Plans. Such inspections should be limited to once a week or as necessary based on weather patterns, and be reportable to the Owner for record keeping purposes.

Maintenance Agreement: Short-term sedimentation maintenance shall be the responsibility of the Contractor to clean out all swales, structures, and soil filter basins prior to turning project over to the Owners. After project turnover, the Owner shall be the responsible party for inspecting and maintaining proper functioning of all stormwater conveyance practices and measures. The Owner may assign an environmental manager to carry out specific tasks identified below.

Structures and Other Measures

Stabilized Construction Entrance: A stabilized construction entrance is required at all locations that utilize vehicle access points from the project onto public or private paved roadways during construction operations. Tracked sediment onto public road systems shall be vacuum swept prior to the next significant rain event (1/2" rain/24 hours). Sweeping of sediment into ditches, storm drains or waterways is not acceptable

Winter Sanding/Sweeping: Post construction, paved parking lots, streets, and access driveways shall be vacuum swept a minimum of twice per year. The first shall take place in the Fall. The second vacuum sweeping shall take place after winter sanding operations terminate, prior to May 1.

Ditches/Swales: Open swales and ditches need to be inspected on a monthly basis and after a major rainfall event to assure that debris or sediments do not reduce the

effectiveness of the system. Debris needs to be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth to vegetation for the stability of the structure and proper functioning.

Vegetated Ditches: Vegetative should be mowed at least monthly during the growing season to a height of not less than 3 inches. Larger brush or trees must not be allowed to become established in the channel. Unless finely mulched, clippings should be removed to minimize the amount of organic material accumulating in the swales. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Sediment should be removed when the ditch cross section is 33% full of sediment.

Stone Lined Channels: Where stone is displaced from constructed riprap areas, it should be replaced and chinked to assure stability. With time, riprap may need to be added. Vegetation growing through riprap should be removed on a yearly schedule.

Stone Check Dams: Observe the center of the check dam to make sure it is lower than the edges. Sediment trapped behind the dams should be removed once it reaches half the height of the dam. Check to insure erosion around the sides of the dam has not occurred.

Level Lip Spreaders: Sediment/debris buildup should be removed when the pool volume is reduced by 33%. Observation of the front side of the level spreader is necessary to determine erosion along the existing vegetation/spreader interface.

Culverts: If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by mechanical means or hydraulic flushing. Care should be taken to prevent the release of the sediments into the downstream receiving areas. All pipes should be inspected on an annual basis.

Trench Dewatering: Water is to be pumped to a soil filter bag prior to discharge from the area. Placement of the filter bag is to be greater than 100' from an environmental resource. Careful monitoring of the discharge water must be taken to insure sediment laden water does not enter downslope resources.

Catch Basin/Field Inlets: All catch basins, and any other field inlets throughout the collection system, need to be inspected on a monthly basis to assure that the inlet entry point is clear of debris and will allow the intended water entry. In many cases, a silt sack has been installed within the rim of the CB and should be emptied/replaced after each storm event in a disturbed soil area as necessary. On a yearly basis, or when sediment reaches two thirds of the total sump volume, catch basins will be vacuumed and cleaned of all accumulated sediment. Work must be done by a vacuum truck. The removed material must be disposed of in accordance with State of Maine Solid Waste Disposal Rules.

Soil Filter, Infiltration, and Wet Ponds

Clearing Inlets and Outlets of Ponds (where applicable): The inlet and outlet of a pond shall be checked periodically to ensure that flow structures are not blocked by debris. All ditches and pipes connecting ponds in series shall be checked for debris that may obstruct flow. Inspections shall be conducted monthly during wet weather conditions from March to November.

Basin Inspections: Ponds shall be inspected on an annual basis for erosion, destabilization of side slopes, embankment settling, and other signs of structural failure. Brief inspections shall be conducted following major storms. Corrective action shall be taken immediately upon identification of problem area. Records shall be kept of all maintenance operations at jobsite to help plan future work and identify problem areas.

Maintenance Dredging: Wet ponds typically lose 1% of their volume annually due to sediment accumulation. Dredging is required when accumulated volume loss reaches 15% or approximately every 15-20 years.

Drainage Area Inspections: The owners' environmental manager shall inspect the basin's drainage area semi-annually for eroding soil and other sediment sources. Repair eroding areas using appropriate erosion control BMP's immediately. Control sediment sources, such as stockpiles of winter sand, by removing them from the basin's drainage area or surrounding them with sediment control BMP's.

Mowing: A basin with a turf lining shall have its side-slopes and top of berm mowed at least twice a year to prevent woody growth. Clippings shall be removed to minimize the amount of organic material accumulating in the basin.

Sediment Removal: Remove accumulated debris and sediments from the sediment forebays, inlet plunge pools, and pre-treatment BMP's at least annually.

Snow Storage: The ponds are not to be used for snow storage. Snow storage shall be sited so that snowmelt flows to a pre-treatment BMP before reaching the infiltration basin.

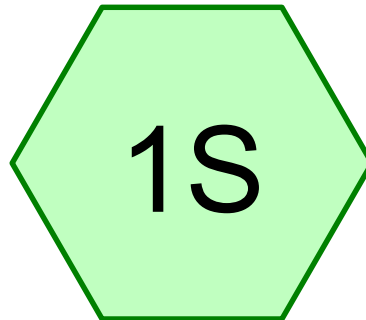
Pedestrian Access: Limit access to ponds to passive recreational use.

Vehicle Access: Prohibit vehicle access to all ponds, except that authorized for maintenance.

Stormwater Calculations

Existing Condition

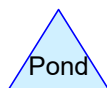
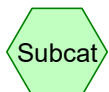
2/10/25 year storm events



Subcatchment 1



Design Point A



Routing Diagram for Existing Condition

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Existing Condition

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.494	30	Woods, Good, HSG A (1S)
1.494	30	TOTAL AREA

Existing Condition

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Page 3

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.494	0.000	0.000	0.000	0.000	1.494	Woods, Good	1S
1.494	0.000	0.000	0.000	0.000	1.494	TOTAL AREA	

Existing Condition

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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Subcatchment 1S: Subcatchment 1

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Reach DP A : Design Point A

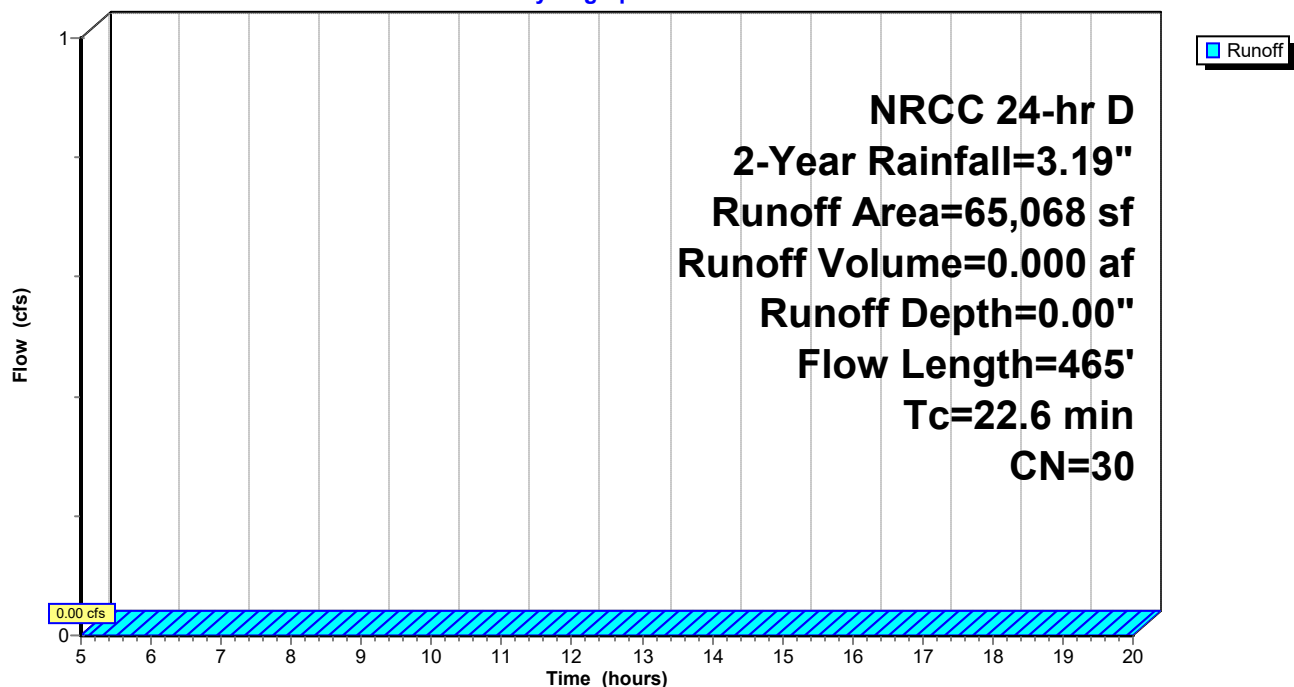
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
65,068	30	Woods, Good, HSG A
65,068		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
4.1	315	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	50	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
22.6	465	Total			

Subcatchment 1S: Subcatchment 1

Hydrograph



Existing Condition

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NRCC 24-hr D 2-Year Rainfall=3.19"

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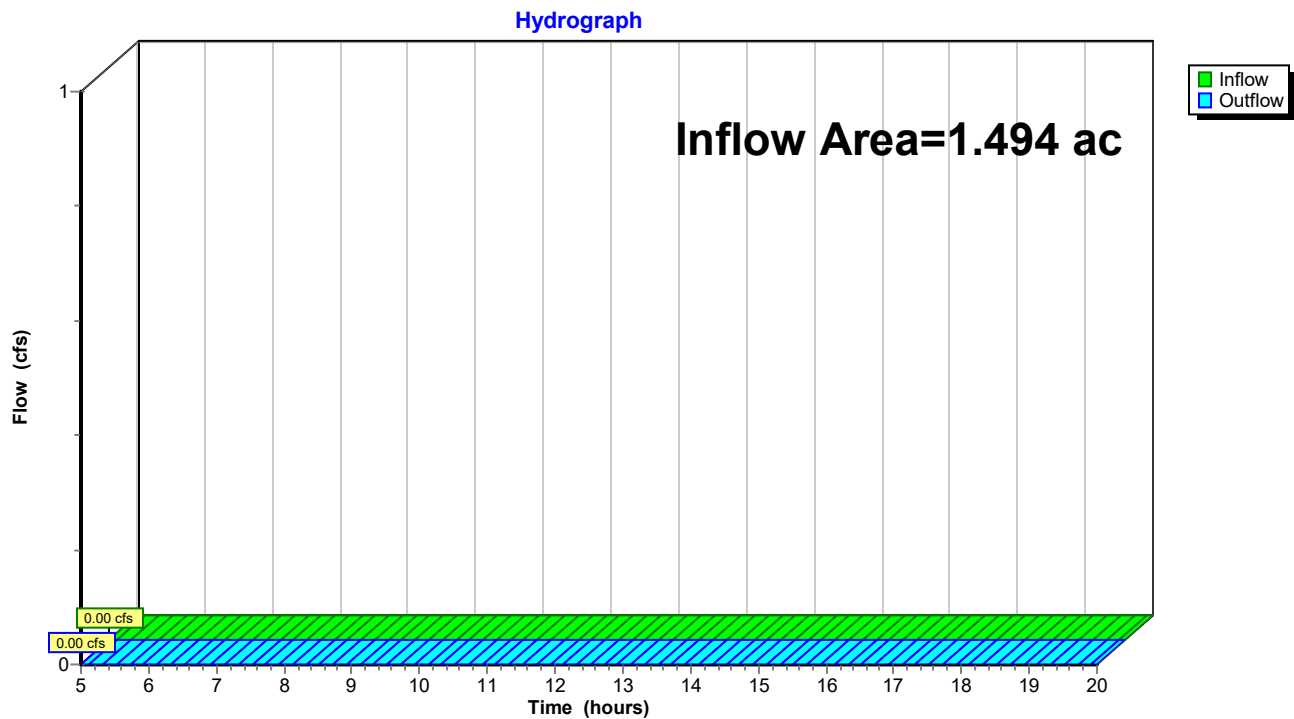
Page 5

Summary for Reach DP A: Design Point A

Inflow Area = 1.494 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



Existing Condition

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NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment 1S: Subcatchment 1

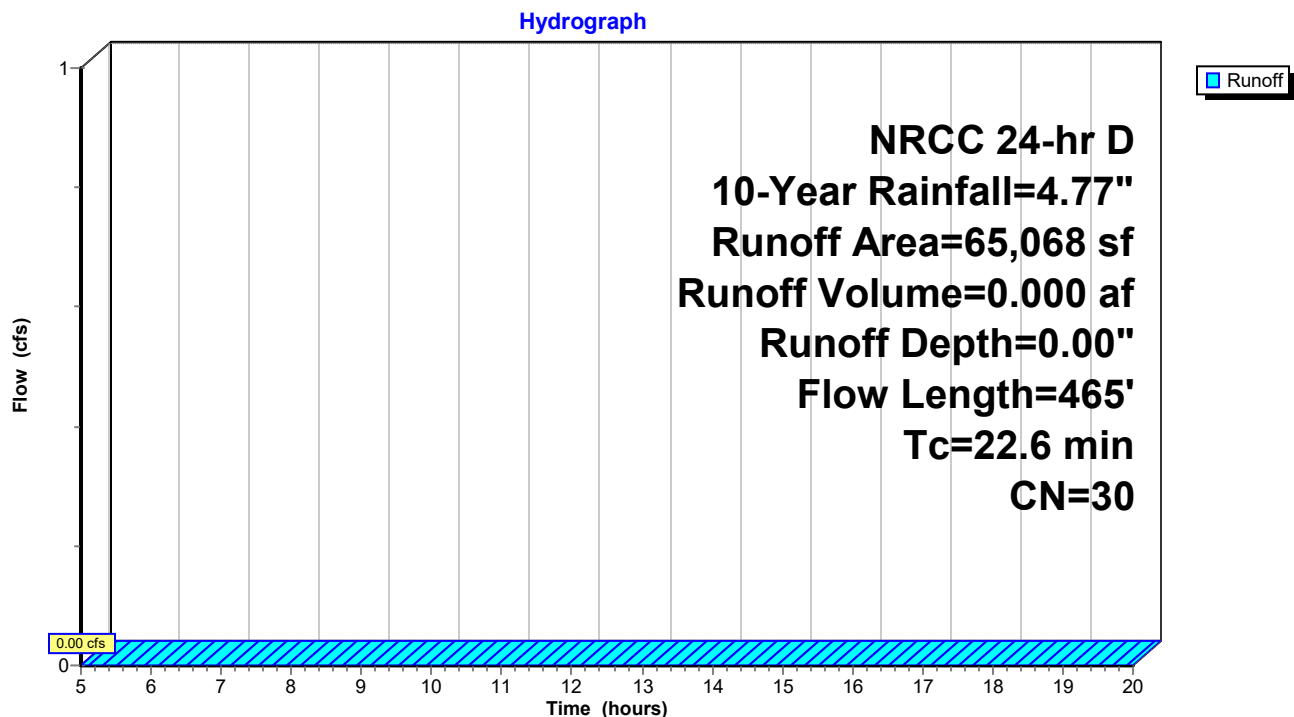
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Reach DP A : Design Point A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
65,068	30	Woods, Good, HSG A
65,068		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
4.1	315	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	50	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
22.6	465	Total			

Subcatchment 1S: Subcatchment 1

Existing Condition

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NRCC 24-hr D 10-Year Rainfall=4.77"

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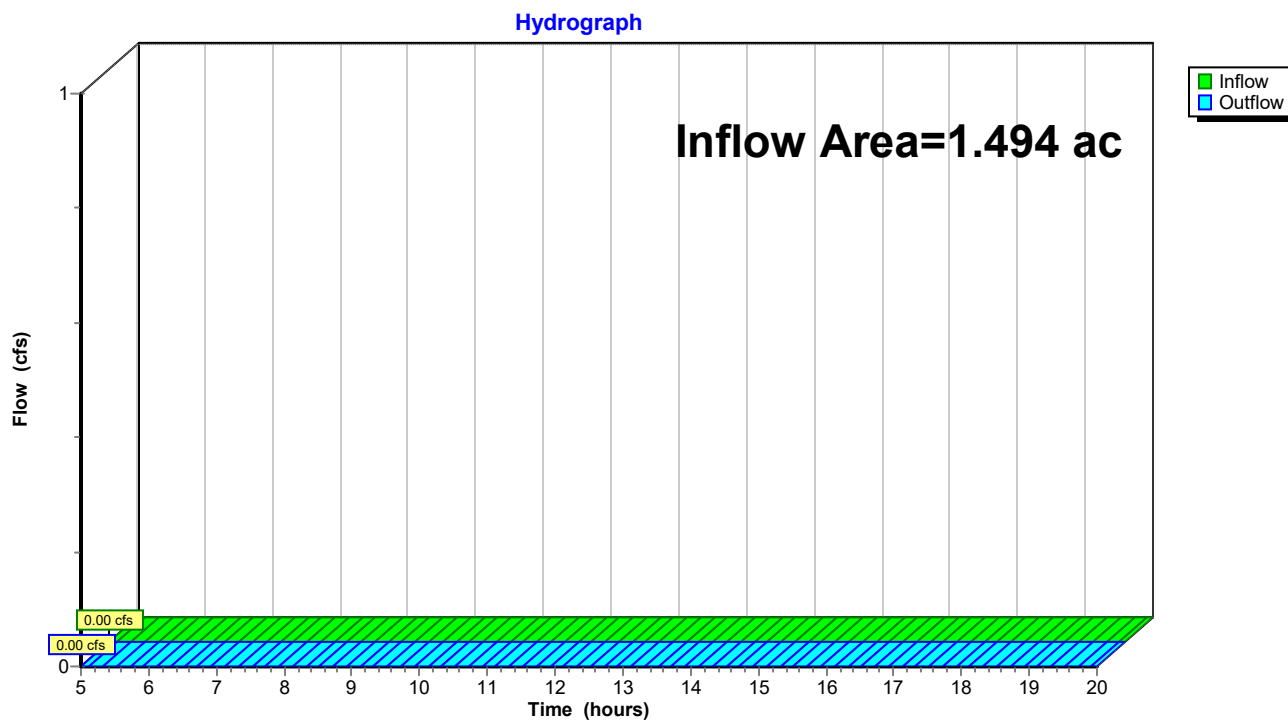
Page 7

Summary for Reach DP A: Design Point A

Inflow Area = 1.494 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



Existing Condition

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NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Subcatchment 1S: Subcatchment 1

Runoff = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Depth> 0.03"

Routed to Reach DP A : Design Point A

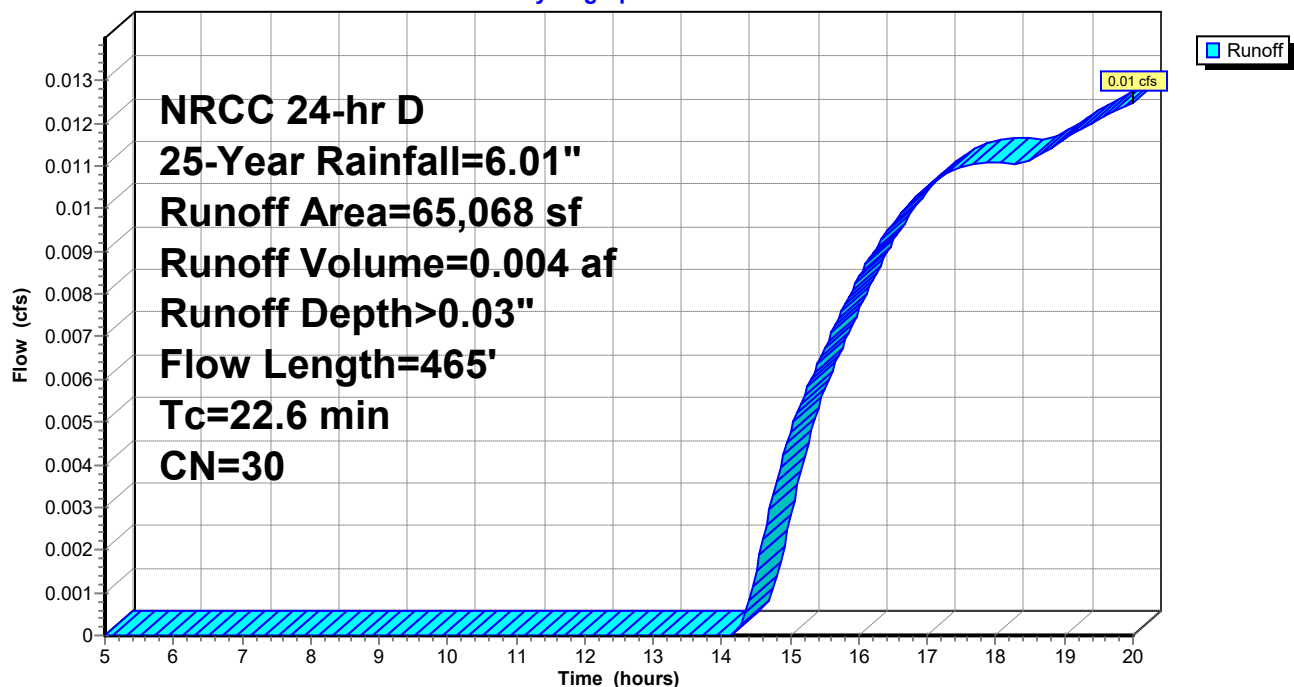
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
65,068	30	Woods, Good, HSG A
65,068		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
4.1	315	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	50	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
22.6	465	Total			

Subcatchment 1S: Subcatchment 1

Hydrograph



Existing Condition

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NRCC 24-hr D 25-Year Rainfall=6.01"

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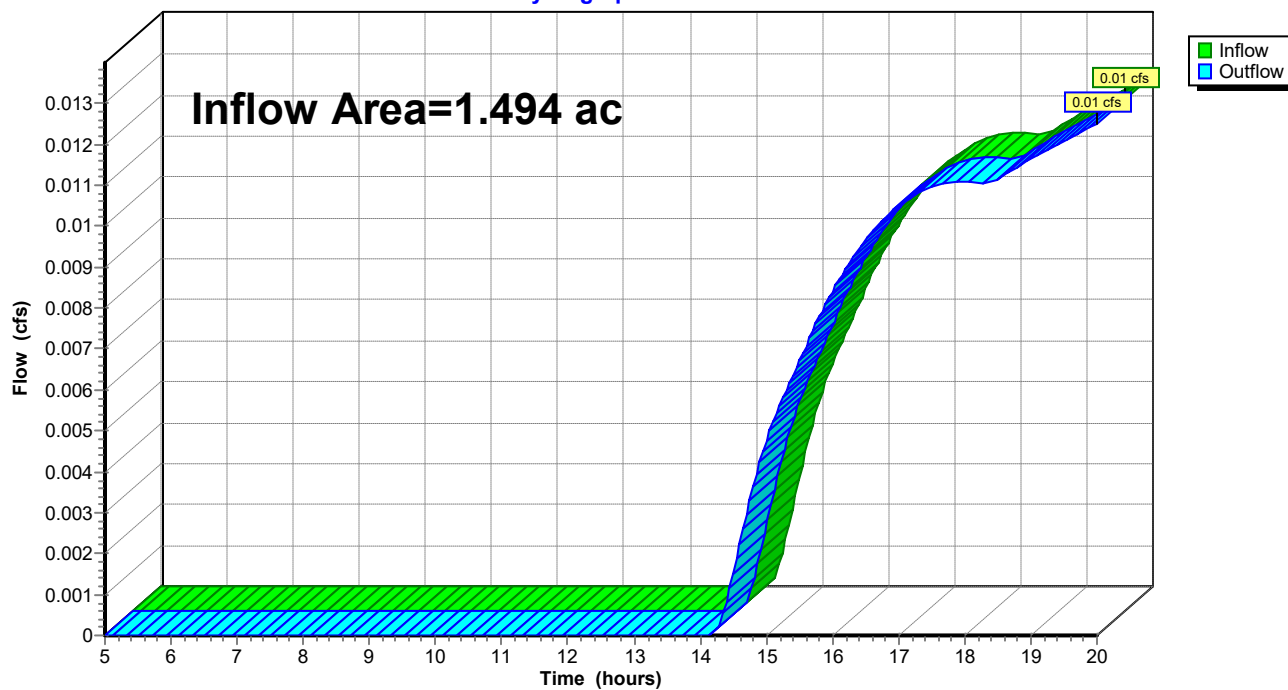
Summary for Reach DP A: Design Point A

Inflow Area = 1.494 ac, 0.00% Impervious, Inflow Depth > 0.03" for 25-Year event
Inflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A

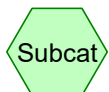
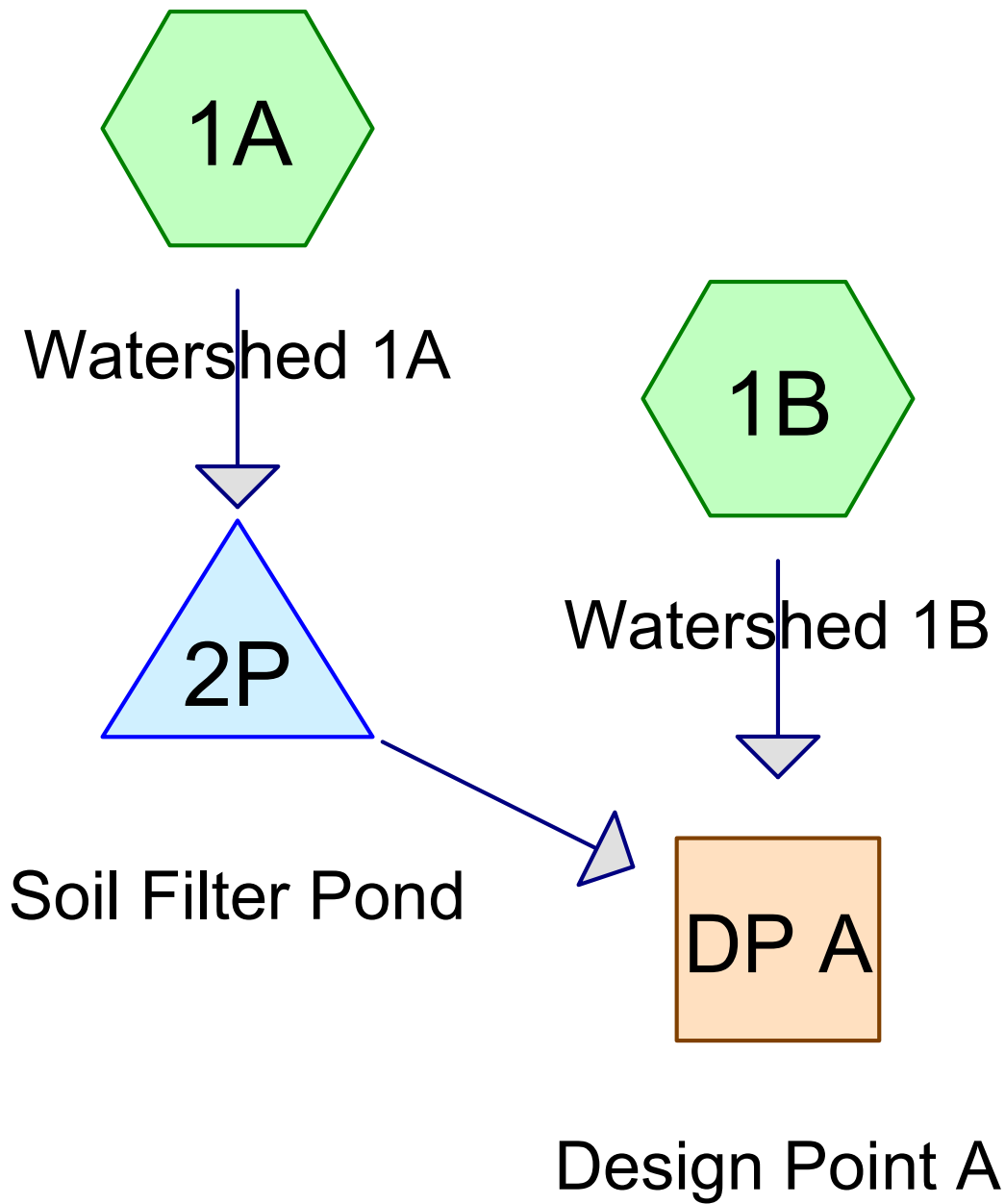
Hydrograph



Stormwater Calculations

Proposed Condition Design Point A

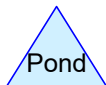
2/10/25 year storm events



Subcat



Reach



Pond



Link

Routing Diagram for Proposed Condition

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Proposed Condition

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NRCC 24-hr	D	Default	24.00	1	3.19	2
2	10-Year	NRCC 24-hr	D	Default	24.00	1	4.77	2
3	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2
4	100-Year	NRCC 24-hr	D	Default	24.00	1	8.54	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.648	39	>75% Grass cover, Good, HSG A (1A, 1B)
0.379	98	Building/Pavement surface, HSG A (1A)
0.065	96	Gravel surface, HSG A (1B)
0.684	30	Woods, Good, HSG A (1A, 1B)
1.777	50	TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.648	0.000	0.000	0.000	0.000	0.648	>75% Grass cover, Good	1A, 1B
0.379	0.000	0.000	0.000	0.000	0.379	Building/Pavement surface	1A
0.065	0.000	0.000	0.000	0.000	0.065	Gravel surface	1B
0.684	0.000	0.000	0.000	0.000	0.684	Woods, Good	1A, 1B
1.777	0.000	0.000	0.000	0.000	1.777	TOTAL AREA	

Proposed Condition*NRCC 24-hr D 2-Year Rainfall=3.19"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>0.10"
Flow Length=430' Tc=20.2 min CN=51 Runoff=0.03 cfs 0.013 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>0.05"
Flow Length=276' Tc=23.6 min CN=48 Runoff=0.00 cfs 0.001 af

Reach DP A: Design Point A

Inflow=0.03 cfs 0.013 af
Outflow=0.03 cfs 0.013 af

Pond 2P: Soil Filter Pond

Peak Elev=102.02' Storage=33 cf Inflow=0.03 cfs 0.013 af
Outflow=0.03 cfs 0.012 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.014 af Average Runoff Depth = 0.09"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

Proposed Condition

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NRCC 24-hr D 2-Year Rainfall=3.19"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 0.03 cfs @ 13.22 hrs, Volume= 0.013 af, Depth> 0.10"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
0.5	40	0.0250	1.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.19"
1.5	100	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	45	0.0900	1.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	140	0.0780	12.58	201.21	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
20.2	430	Total			

Proposed Condition

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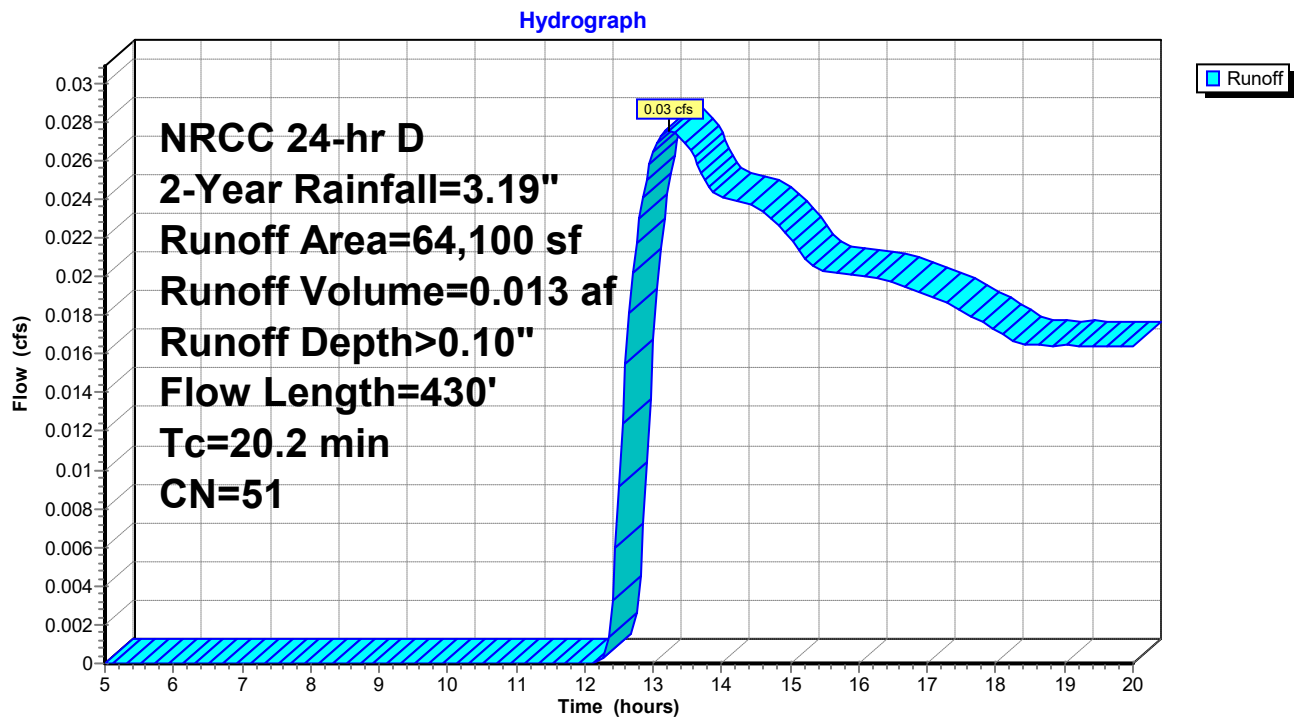
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Subcatchment 1A: Watershed 1A



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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.00 cfs @ 14.83 hrs, Volume= 0.001 af, Depth> 0.05"
 Routed to Reach DP A : Design Point A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 2-Year Rainfall=3.19"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
2.3	90	0.0700	0.66		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
0.1	36	0.0100	5.70	7.00	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	80	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
23.6	276	Total			

Proposed Condition

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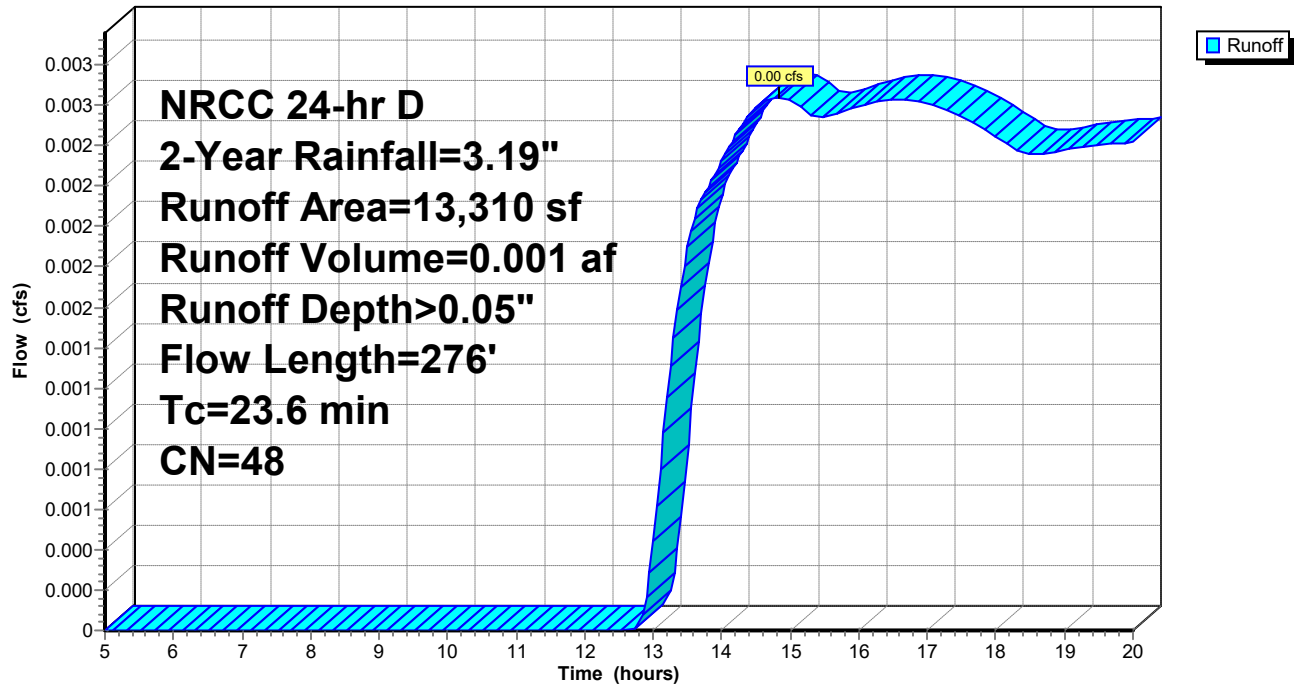
NRCC 24-hr D 2-Year Rainfall=3.19"

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Subcatchment 1B: Watershed 1B

Hydrograph



Proposed Condition

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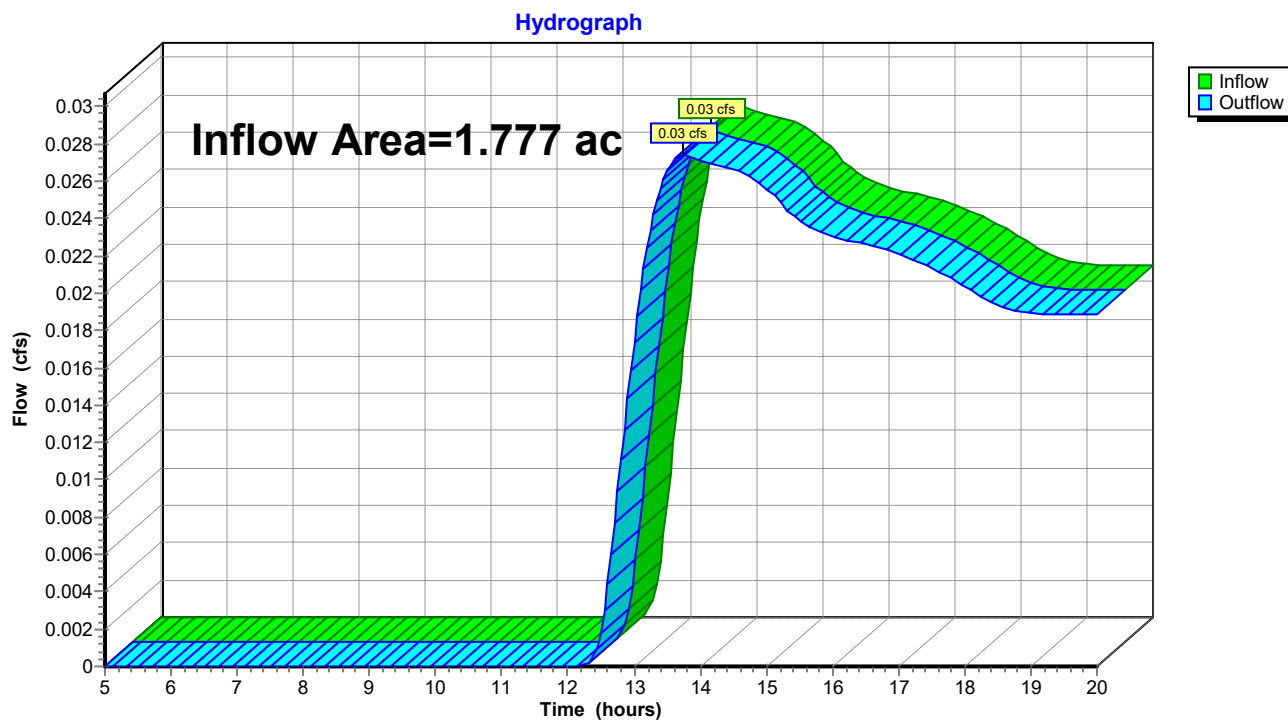
Page 10

Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 0.09" for 2-Year event
Inflow = 0.03 cfs @ 13.75 hrs, Volume= 0.013 af
Outflow = 0.03 cfs @ 13.75 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



Proposed Condition

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 0.10" for 2-Year event
Inflow = 0.03 cfs @ 13.22 hrs, Volume= 0.013 af
Outflow = 0.03 cfs @ 13.72 hrs, Volume= 0.012 af, Atten= 8%, Lag= 30.1 min
Primary = 0.03 cfs @ 13.72 hrs, Volume= 0.012 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 102.02' @ 13.72 hrs Surf.Area= 1,813 sf Storage= 33 cf

Plug-Flow detention time= 21.4 min calculated for 0.012 af (96% of inflow)
Center-of-Mass det. time= 11.8 min (968.1 - 956.2)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.04 cfs @ 13.72 hrs HW=102.02' (Free Discharge)

1=Culvert (Passes 0.04 cfs of 1.57 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.04 cfs @ 7.58 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Proposed Condition

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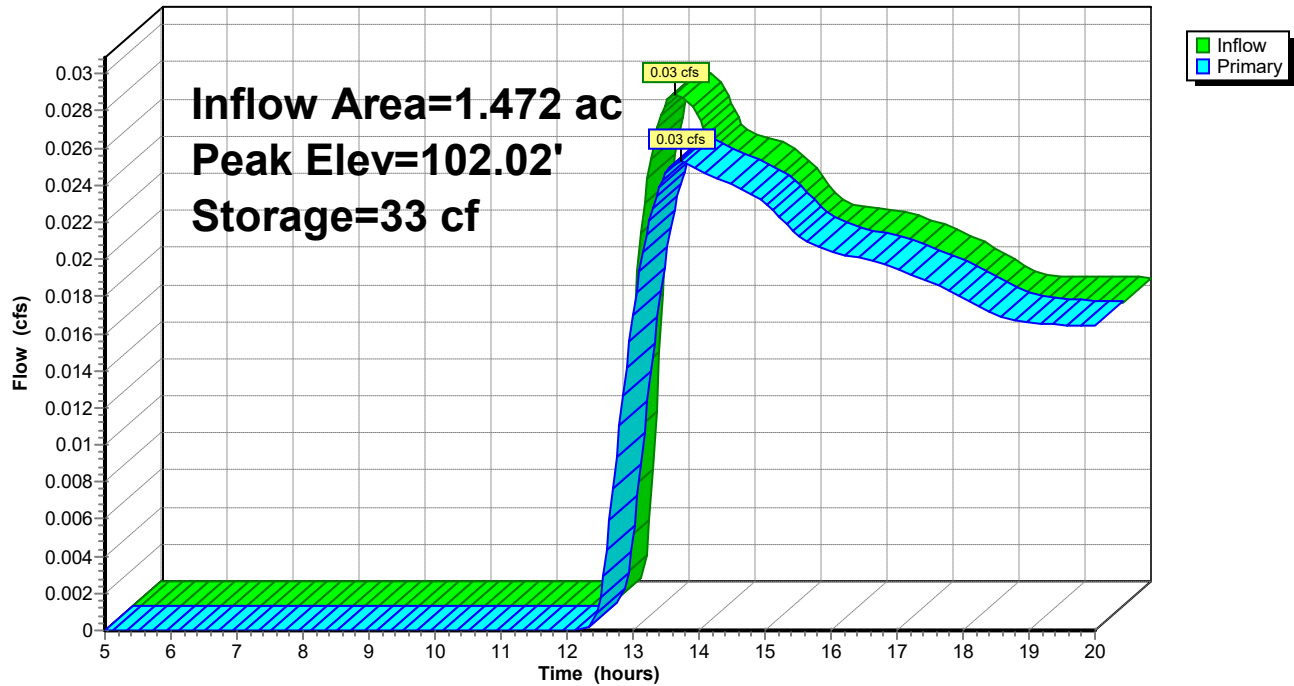
NRCC 24-hr D 2-Year Rainfall=3.19"

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Pond 2P: Soil Filter Pond

Hydrograph



Proposed Condition

NRCC 24-hr D 10-Year Rainfall=4.77"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>0.52"
Flow Length=430' Tc=20.2 min CN=51 Runoff=0.41 cfs 0.064 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>0.39"
Flow Length=276' Tc=23.6 min CN=48 Runoff=0.05 cfs 0.010 af

Reach DP A: Design Point A

Inflow=0.09 cfs 0.040 af
Outflow=0.09 cfs 0.040 af

Pond 2P: Soil Filter Pond

Peak Elev=102.76' Storage=1,481 cf Inflow=0.41 cfs 0.064 af
Outflow=0.05 cfs 0.030 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.074 af Average Runoff Depth = 0.50"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

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NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 0.41 cfs @ 12.37 hrs, Volume= 0.064 af, Depth> 0.52"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
0.5	40	0.0250	1.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.19"
1.5	100	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	45	0.0900	1.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	140	0.0780	12.58	201.21	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
20.2	430	Total			

Proposed Condition

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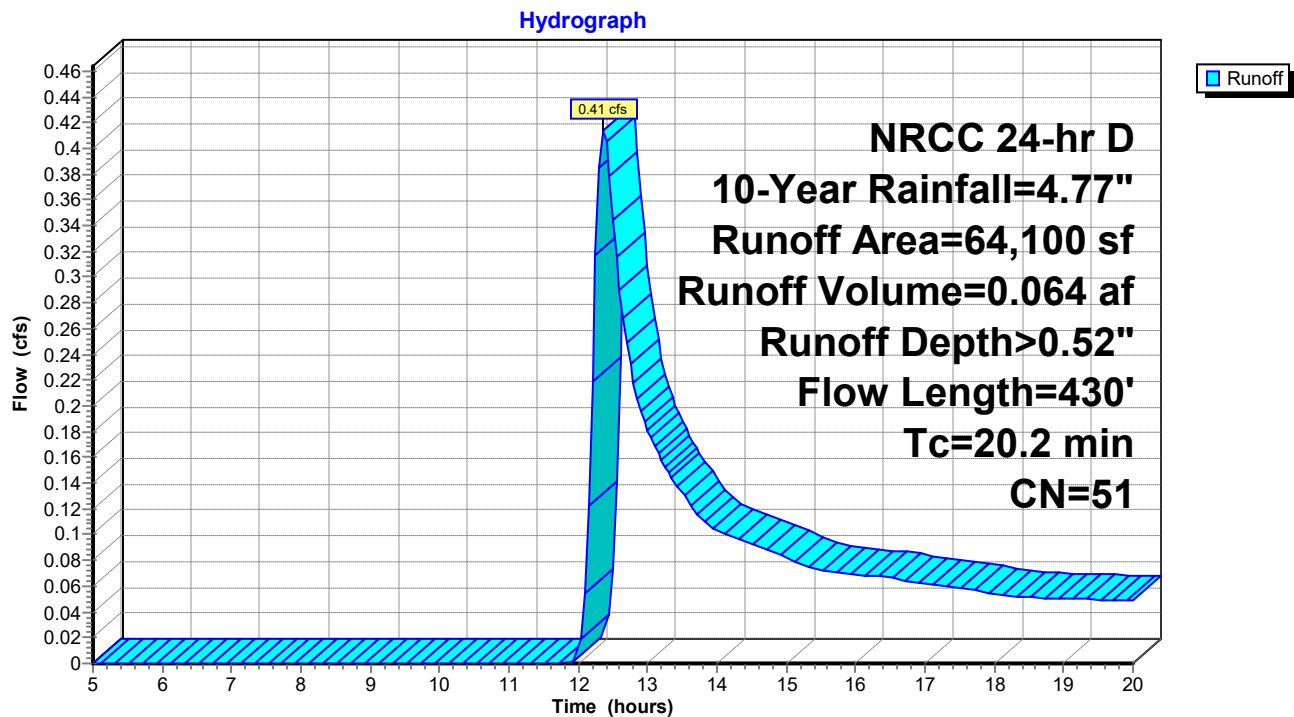
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NRCC 24-hr D 10-Year Rainfall=4.77"

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Subcatchment 1A: Watershed 1A



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NRCC 24-hr D 10-Year Rainfall=4.77"

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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.05 cfs @ 12.46 hrs, Volume= 0.010 af, Depth> 0.39"
 Routed to Reach DP A : Design Point A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 10-Year Rainfall=4.77"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
2.3	90	0.0700	0.66		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
0.1	36	0.0100	5.70	7.00	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	80	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
23.6	276	Total			

Proposed Condition

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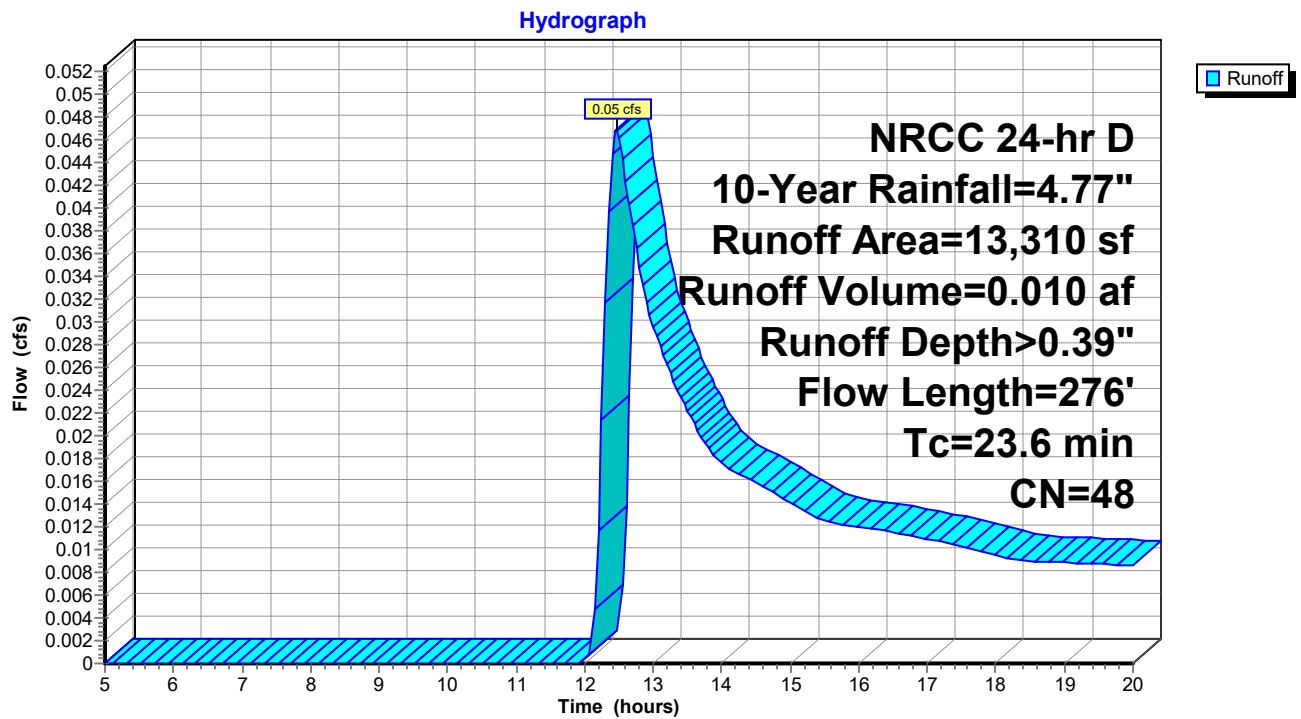
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NRCC 24-hr D 10-Year Rainfall=4.77"

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Subcatchment 1B: Watershed 1B



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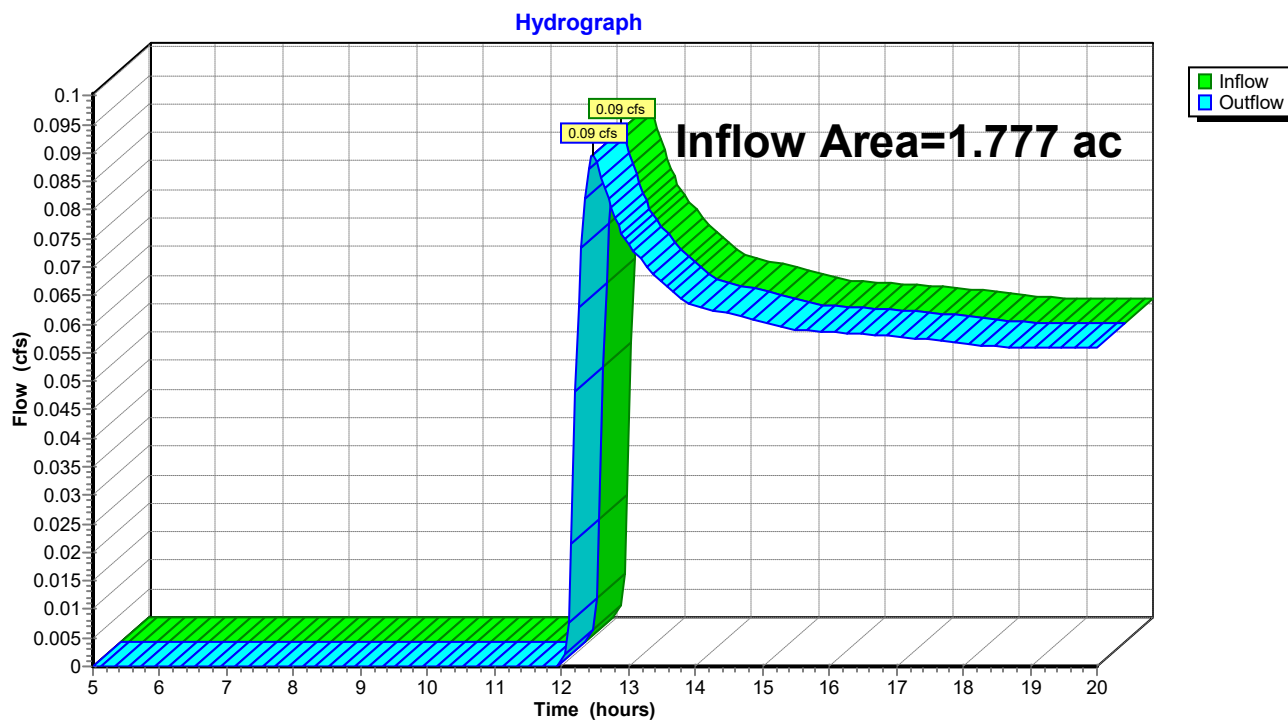
Page 18

Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 0.27" for 10-Year event
Inflow = 0.09 cfs @ 12.47 hrs, Volume= 0.040 af
Outflow = 0.09 cfs @ 12.47 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 0.52" for 10-Year event
Inflow = 0.41 cfs @ 12.37 hrs, Volume= 0.064 af
Outflow = 0.05 cfs @ 20.00 hrs, Volume= 0.030 af, Atten= 89%, Lag= 458.1 min
Primary = 0.05 cfs @ 20.00 hrs, Volume= 0.030 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 102.76' @ 20.00 hrs Surf.Area= 2,092 sf Storage= 1,481 cf

Plug-Flow detention time= 200.3 min calculated for 0.030 af (47% of inflow)
Center-of-Mass det. time= 82.1 min (968.4 - 886.3)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.05 cfs @ 20.00 hrs HW=102.76' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 1.77 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.05 cfs @ 8.64 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Proposed Condition

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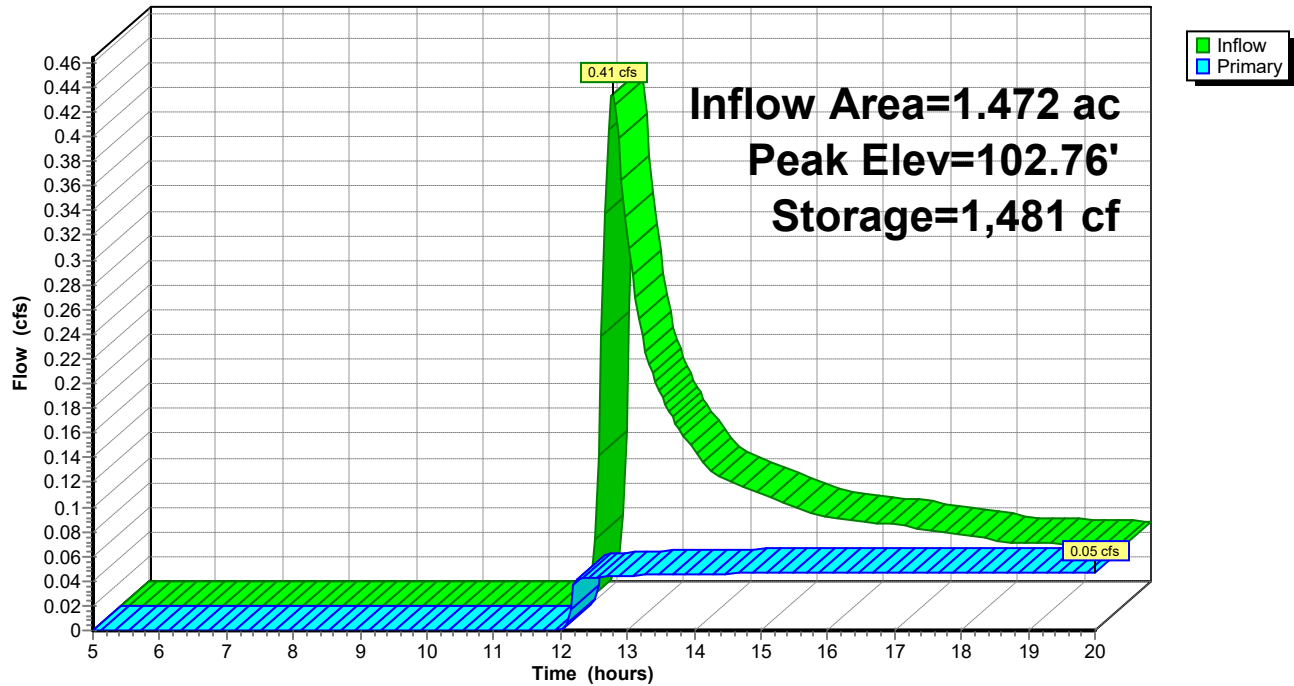
NRCC 24-hr D 10-Year Rainfall=4.77"

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Pond 2P: Soil Filter Pond

Hydrograph



Proposed Condition

NRCC 24-hr D 25-Year Rainfall=6.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>1.01"
Flow Length=430' Tc=20.2 min CN=51 Runoff=1.02 cfs 0.124 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>0.82"
Flow Length=276' Tc=23.6 min CN=48 Runoff=0.14 cfs 0.021 af

Reach DP A: Design Point A

Inflow=0.19 cfs 0.059 af
Outflow=0.19 cfs 0.059 af

Pond 2P: Soil Filter Pond

Peak Elev=103.75' Storage=3,772 cf Inflow=1.02 cfs 0.124 af
Outflow=0.08 cfs 0.038 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.145 af Average Runoff Depth = 0.98"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

Proposed Condition

NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 1.02 cfs @ 12.33 hrs, Volume= 0.124 af, Depth> 1.01"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
0.5	40	0.0250	1.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.19"
1.5	100	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	45	0.0900	1.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	140	0.0780	12.58	201.21	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
20.2	430	Total			

Proposed Condition

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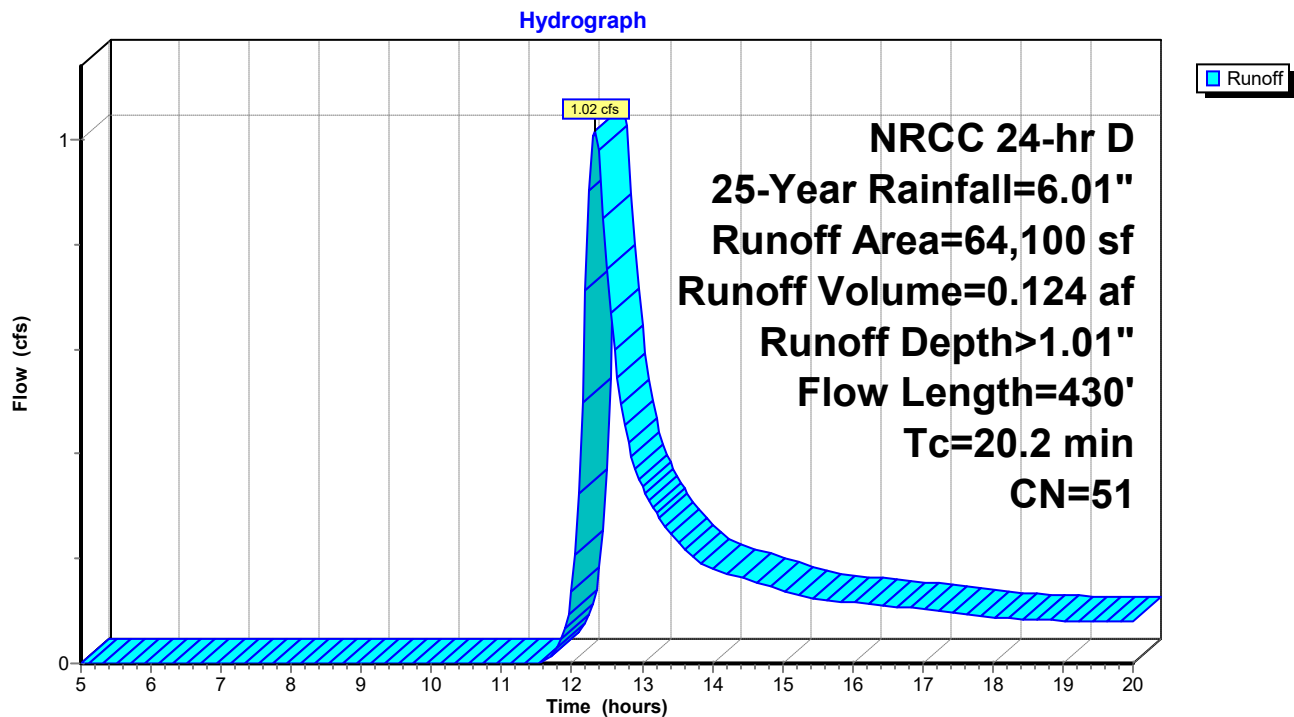
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Subcatchment 1A: Watershed 1A



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NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.14 cfs @ 12.40 hrs, Volume= 0.021 af, Depth> 0.82"
 Routed to Reach DP A : Design Point A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 25-Year Rainfall=6.01"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
2.3	90	0.0700	0.66		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
0.1	36	0.0100	5.70	7.00	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	80	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
23.6	276	Total			

Proposed Condition

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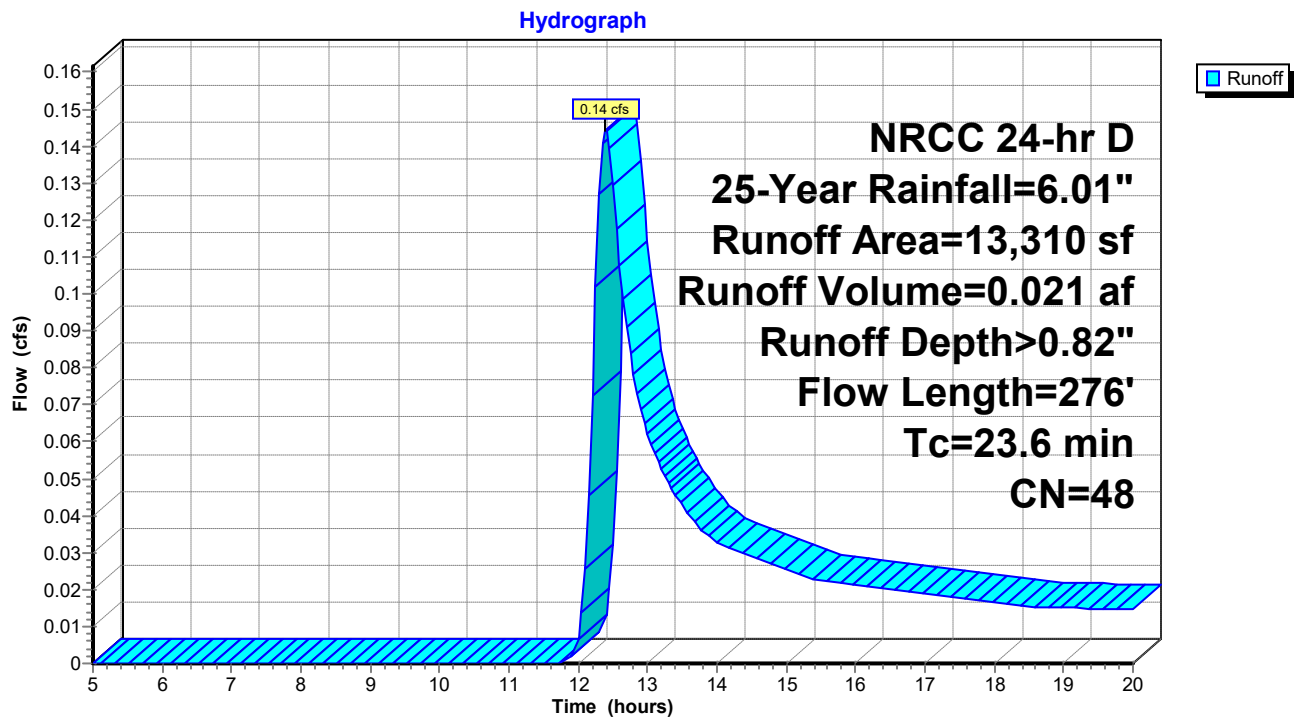
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Subcatchment 1B: Watershed 1B



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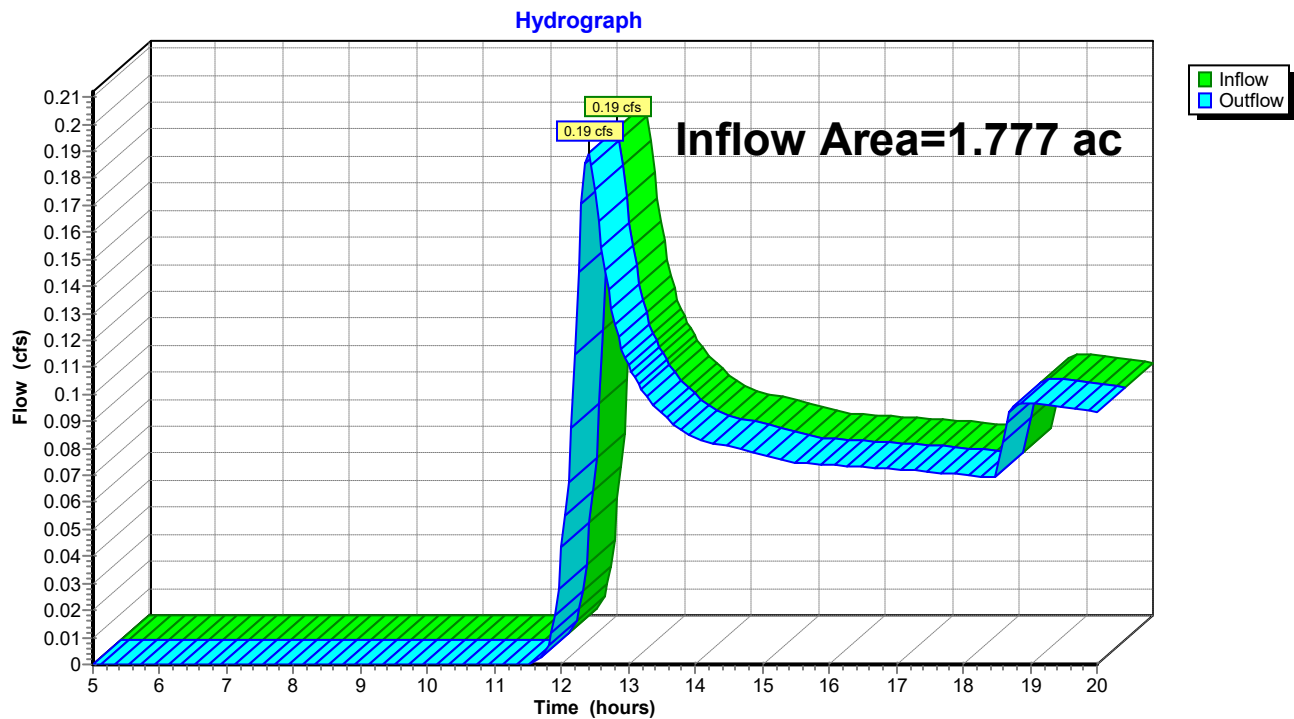
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Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 0.40" for 25-Year event
Inflow = 0.19 cfs @ 12.40 hrs, Volume= 0.059 af
Outflow = 0.19 cfs @ 12.40 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



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NRCC 24-hr D 25-Year Rainfall=6.01"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 1.01" for 25-Year event
Inflow = 1.02 cfs @ 12.33 hrs, Volume= 0.124 af
Outflow = 0.08 cfs @ 18.96 hrs, Volume= 0.038 af, Atten= 92%, Lag= 397.5 min
Primary = 0.08 cfs @ 18.96 hrs, Volume= 0.038 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 103.75' @ 18.96 hrs Surf.Area= 2,539 sf Storage= 3,772 cf

Plug-Flow detention time= 240.0 min calculated for 0.038 af (30% of inflow)
Center-of-Mass det. time= 115.3 min (980.4 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.07 cfs @ 18.96 hrs HW=103.75' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 2.01 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.05 cfs @ 9.88 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 0.01 cfs @ 0.14 fps)

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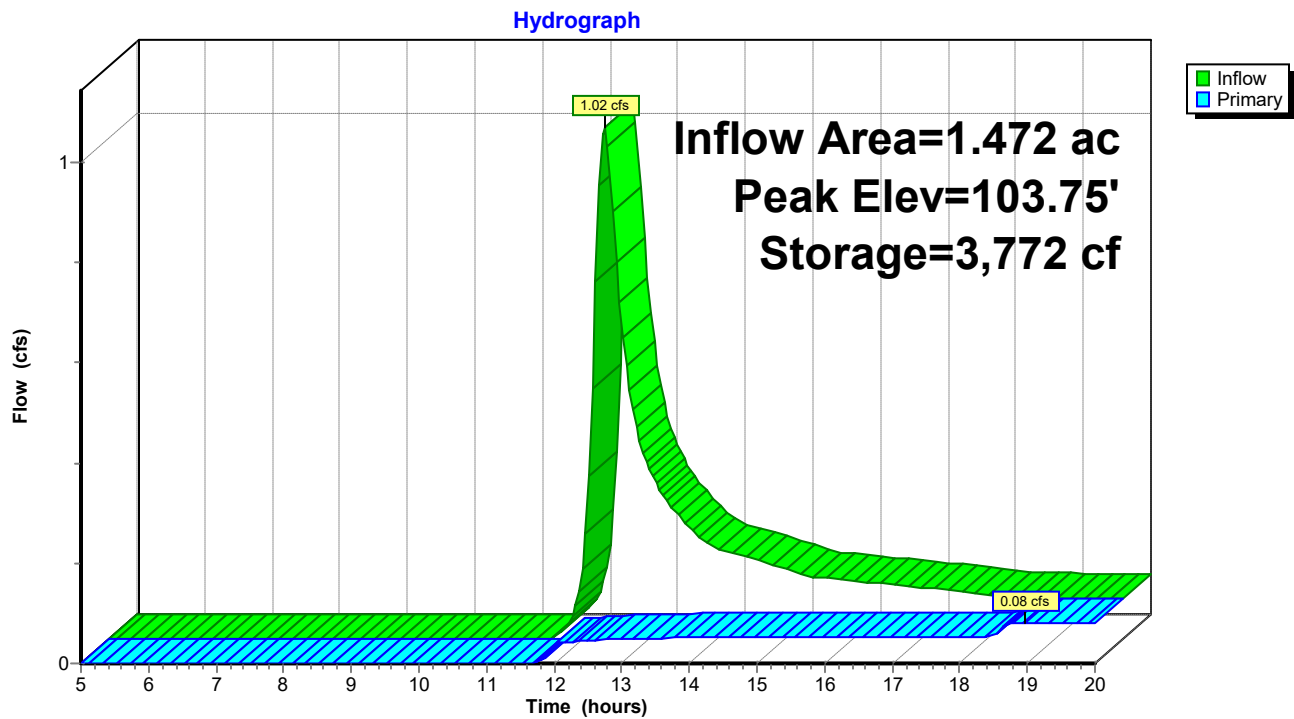
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Pond 2P: Soil Filter Pond



Proposed Condition

NRCC 24-hr D 100-Year Rainfall=8.54"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Watershed 1A

Runoff Area=64,100 sf 25.79% Impervious Runoff Depth>2.32"
Flow Length=430' Tc=20.2 min CN=51 Runoff=2.62 cfs 0.285 af

Subcatchment 1B: Watershed 1B

Runoff Area=13,310 sf 0.00% Impervious Runoff Depth>2.00"
Flow Length=276' Tc=23.6 min CN=48 Runoff=0.43 cfs 0.051 af

Reach DP A: Design Point A

Inflow=1.89 cfs 0.249 af
Outflow=1.89 cfs 0.249 af

Pond 2P: Soil Filter Pond

Peak Elev=103.83' Storage=3,976 cf Inflow=2.62 cfs 0.285 af
Outflow=1.60 cfs 0.198 af

Total Runoff Area = 1.777 ac Runoff Volume = 0.336 af Average Runoff Depth = 2.27"
78.65% Pervious = 1.398 ac 21.35% Impervious = 0.379 ac

Proposed Condition

NRCC 24-hr D 100-Year Rainfall=8.54"

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Summary for Subcatchment 1A: Watershed 1A

Runoff = 2.62 cfs @ 12.31 hrs, Volume= 0.285 af, Depth> 2.32"
 Routed to Pond 2P : Soil Filter Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 100-Year Rainfall=8.54"

Area (sf)	CN	Description
24,680	30	Woods, Good, HSG A
22,890	39	>75% Grass cover, Good, HSG A
* 16,530	98	Building/Pavement surface, HSG A
64,100	51	Weighted Average
47,570		74.21% Pervious Area
16,530		25.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	35	0.0600	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.19"
0.5	40	0.0250	1.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.19"
1.5	100	0.0250	1.11		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	45	0.0900	1.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	140	0.0780	12.58	201.21	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
11.5	70	0.0050	0.10		Sheet Flow, Range n= 0.130 P2= 3.19"
20.2	430	Total			

Proposed Condition

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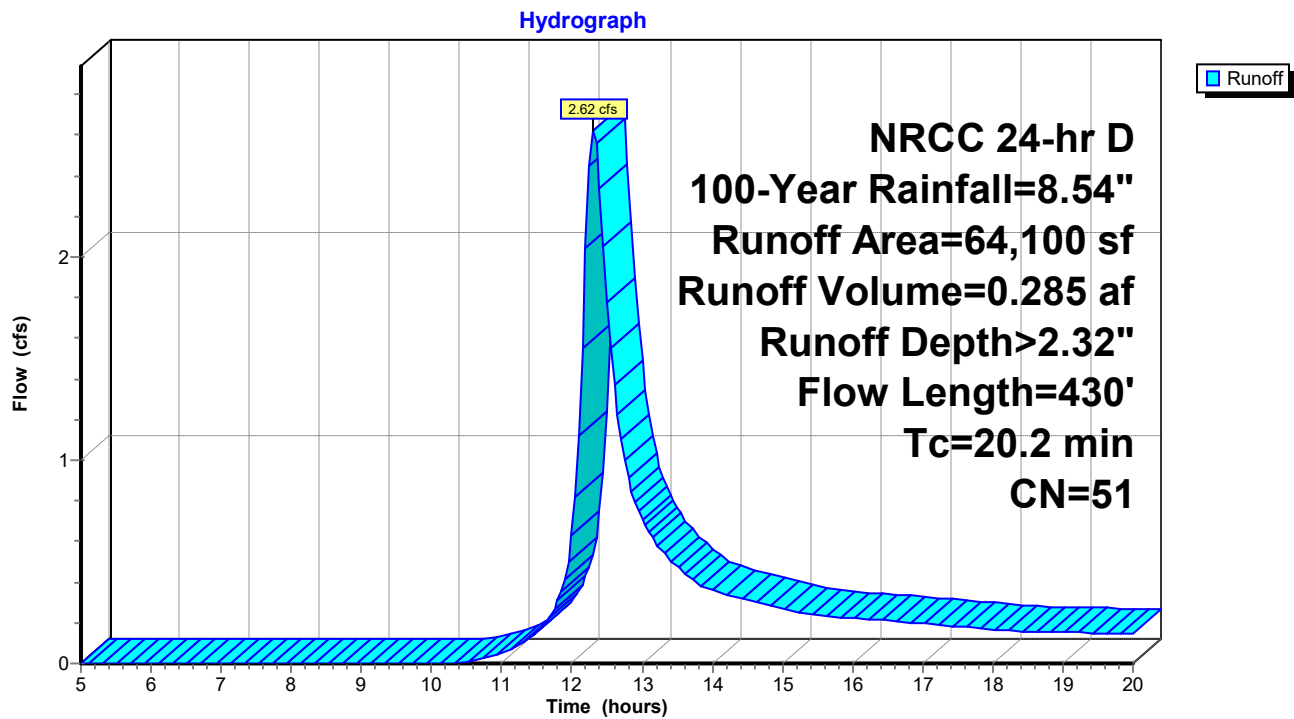
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NRCC 24-hr D 100-Year Rainfall=8.54"

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Subcatchment 1A: Watershed 1A



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NRCC 24-hr D 100-Year Rainfall=8.54"

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Summary for Subcatchment 1B: Watershed 1B

Runoff = 0.43 cfs @ 12.36 hrs, Volume= 0.051 af, Depth> 2.00"

Routed to Reach DP A : Design Point A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 100-Year Rainfall=8.54"

Area (sf)	CN	Description
5,110	30	Woods, Good, HSG A
5,349	39	>75% Grass cover, Good, HSG A
2,851	96	Gravel surface, HSG A
13,310	48	Weighted Average
13,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	70	0.0420	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.19"
2.3	90	0.0700	0.66		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
0.1	36	0.0100	5.70	7.00	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	80	0.0100	4.50	72.05	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
23.6	276	Total			

Proposed Condition

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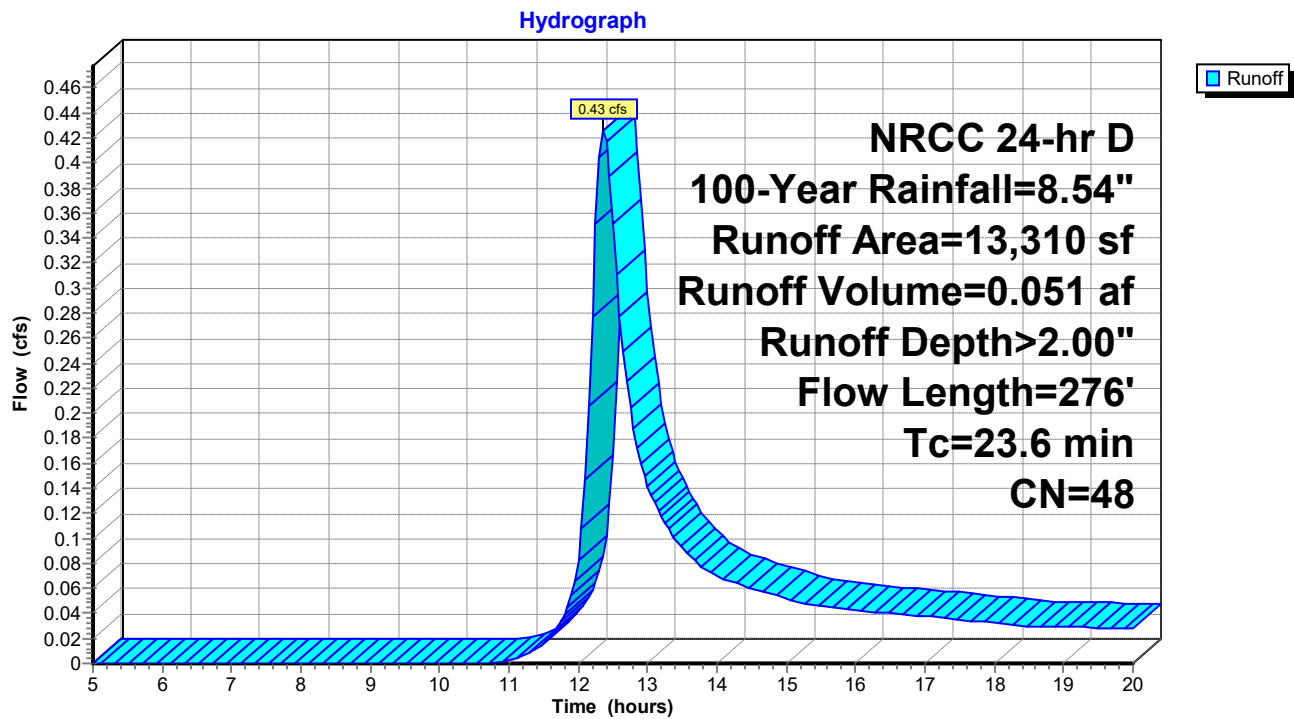
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NRCC 24-hr D 100-Year Rainfall=8.54"

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Subcatchment 1B: Watershed 1B



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NRCC 24-hr D 100-Year Rainfall=8.54"

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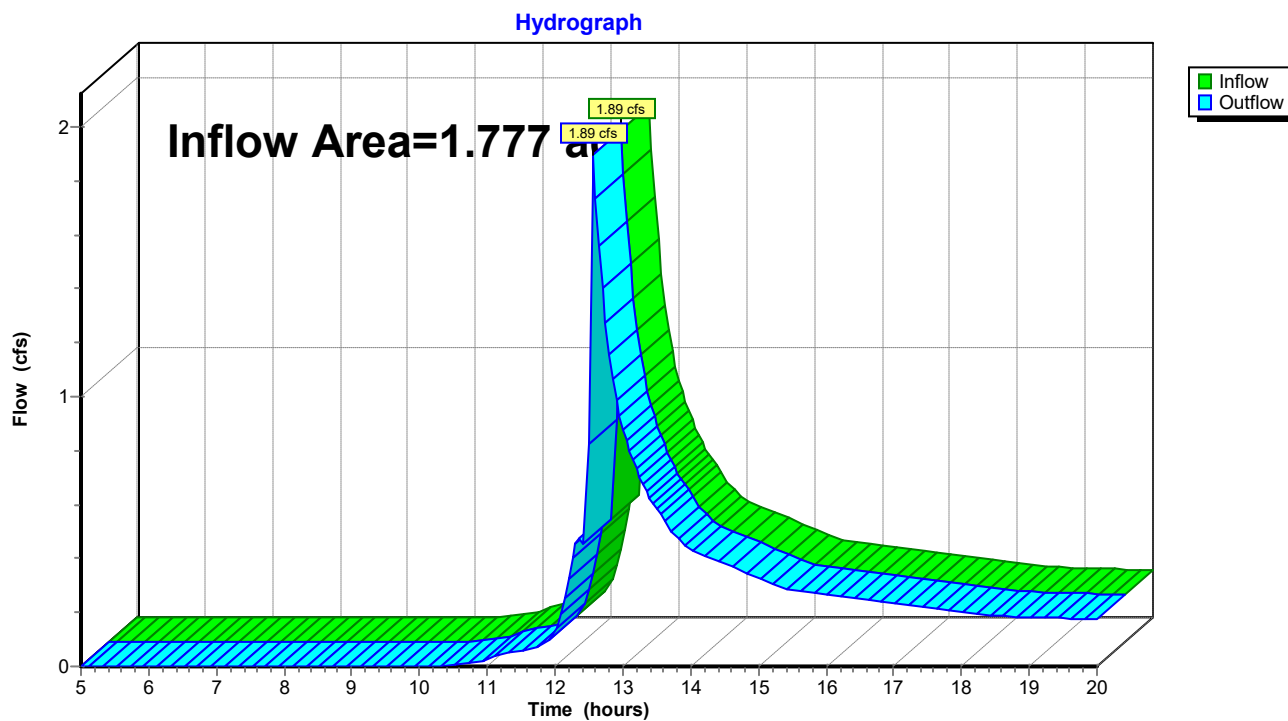
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Summary for Reach DP A: Design Point A

Inflow Area = 1.777 ac, 21.35% Impervious, Inflow Depth > 1.68" for 100-Year event
Inflow = 1.89 cfs @ 12.57 hrs, Volume= 0.249 af
Outflow = 1.89 cfs @ 12.57 hrs, Volume= 0.249 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP A: Design Point A



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NRCC 24-hr D 100-Year Rainfall=8.54"

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 2.32" for 100-Year event
Inflow = 2.62 cfs @ 12.31 hrs, Volume= 0.285 af
Outflow = 1.60 cfs @ 12.57 hrs, Volume= 0.198 af, Atten= 39%, Lag= 15.7 min
Primary = 1.60 cfs @ 12.57 hrs, Volume= 0.198 af
Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 103.83' @ 12.55 hrs Surf.Area= 2,577 sf Storage= 3,976 cf

Plug-Flow detention time= 128.2 min calculated for 0.197 af (69% of inflow)
Center-of-Mass det. time= 50.7 min (892.9 - 842.2)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250 ' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.47 cfs @ 12.57 hrs HW=103.83' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 2.02 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.05 cfs @ 9.97 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.41 cfs @ 0.68 fps)

Proposed Condition

Prepared by SJR Engineering Inc

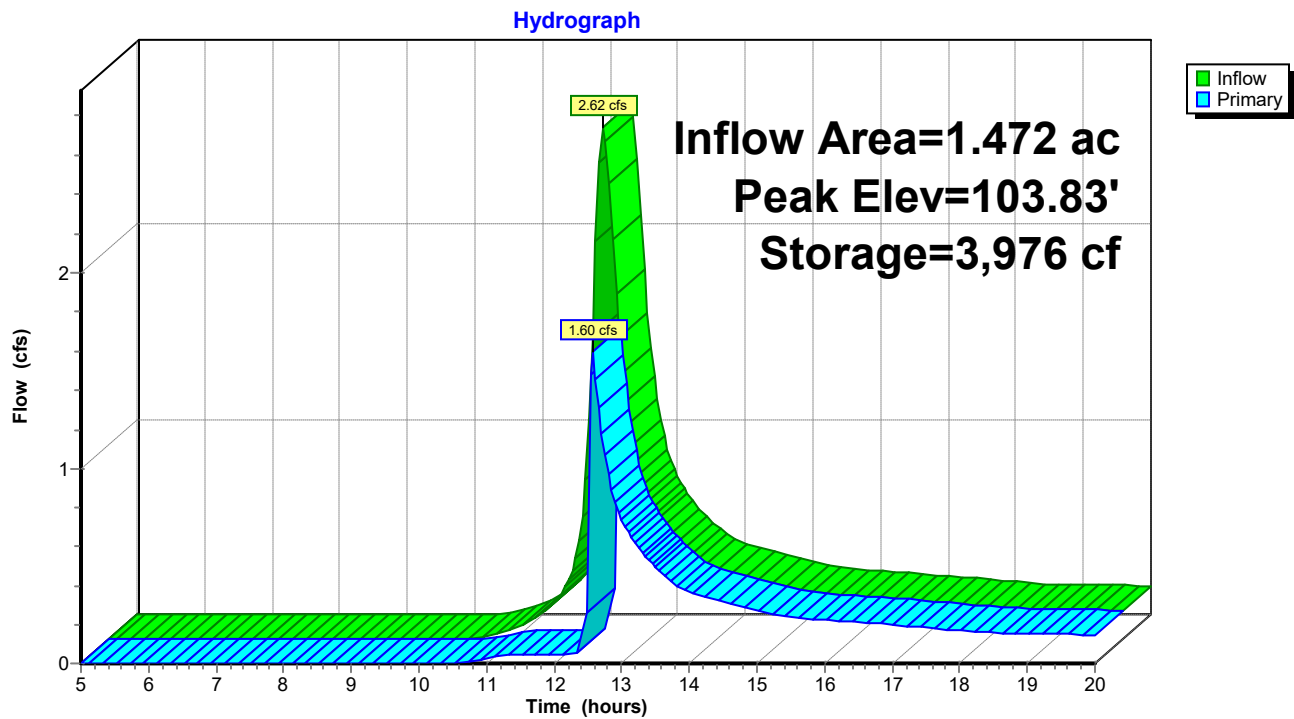
HydroCAD® 10.10-7a s/n 00591 © 2021 HydroCAD Software Solutions LLC

NRCC 24-hr D 100-Year Rainfall=8.54"

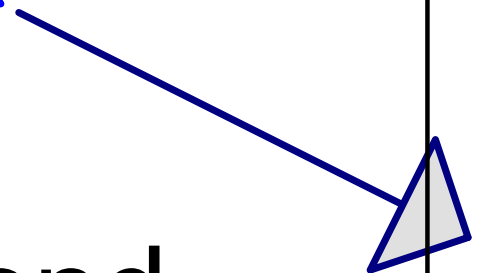
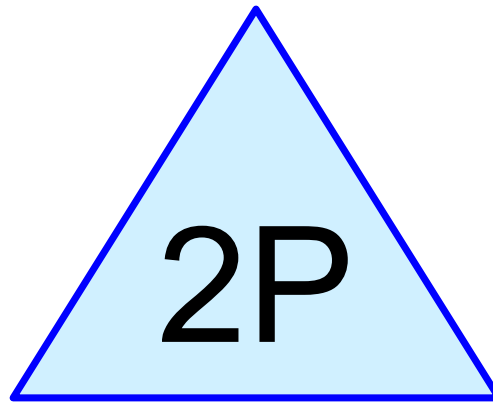
Printed 1/22/2023

Page 36

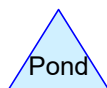
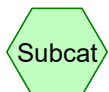
Pond 2P: Soil Filter Pond



Emergency Spillway Design



Soil Filter Pond



Routing Diagram for emergency spillway only
Prepared by SJR Engineering Inc, Printed 1/22/2023
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emergency spillway only

Prepared by SJR Engineering Inc

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	25-Year	NRCC 24-hr	D	Default	24.00	1	6.01	2

emergency spillway only

NRCC 24-hr D 25-Year Rainfall=6.01"

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Page 3

Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 1.01" for 25-Year event
 Inflow = 1.02 cfs @ 12.33 hrs, Volume= 0.124 af
 Outflow = 0.12 cfs @ 15.67 hrs, Volume= 0.037 af, Atten= 88%, Lag= 200.3 min
 Primary = 0.12 cfs @ 15.67 hrs, Volume= 0.037 af
 Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 103.76' @ 15.67 hrs Surf.Area= 2,544 sf Storage= 3,800 cf

Plug-Flow detention time= 308.8 min calculated for 0.037 af (30% of inflow)
 Center-of-Mass det. time= 184.2 min (1,049.4 - 865.2)

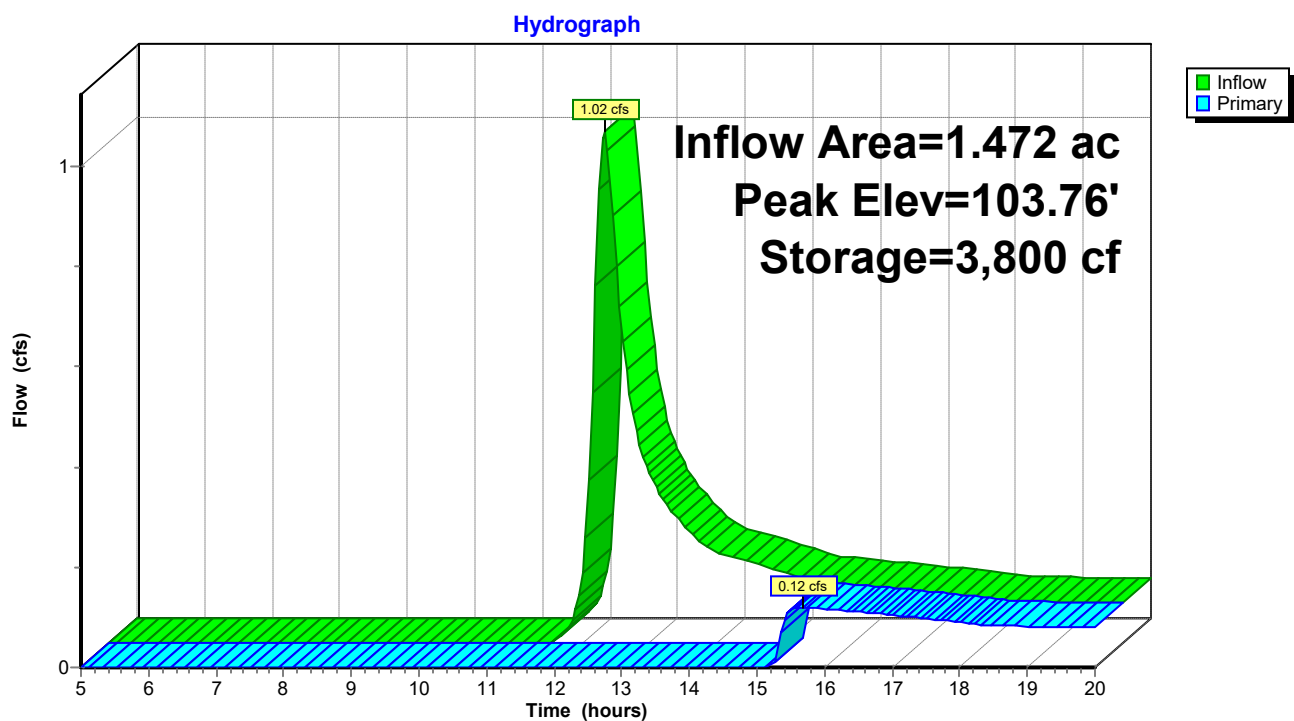
Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 15.67 hrs HW=103.76' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.10 cfs @ 0.28 fps)

Pond 2P: Soil Filter Pond



Proposed Condition

Prepared by SJR Engineering Inc

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NRCC 24-hr D 100-Year Rainfall=8.54"

Printed 1/20/2023

Summary for Pond 2P: Soil Filter Pond

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 2.32" for 100-Year event
 Inflow = 2.62 cfs @ 12.31 hrs, Volume= 0.285 af
 Outflow = 1.60 cfs @ 12.57 hrs, Volume= 0.198 af, Atten= 39%, Lag= 15.7 min
 Primary = 1.60 cfs @ 12.57 hrs, Volume= 0.198 af
 Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 103.83' @ 12.55 hrs Surf Area= 2,577 sf Storage= 3,976 cf

Plug-Flow detention time= 128.2 min calculated for 0.197 af (69% of inflow)
 Center-of-Mass det. time= 50.7 min (892.9 - 842.2)

Volume	Invert	Avail. Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	6.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.00' / 98.50' S= 0.0250' / Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	99.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	103.75'	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.88 2.67 2.67 2.65 2.66 2.68 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.47 cfs @ 12.57 hrs HW=103.83' (Free Discharge)

1=Culvert (Passes 0.05 cfs of 2.02 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.05 cfs @ 9.97 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.41 cfs @ 0.68 fps)

100 YEAR STORM EVENT DOES NOT TOP BERM EL 105.00

emergency spillway onlyNRCC 24-hr D **25-Year Rainfall=6.01"**

Prepared by SJR Engineering Inc

Printed 1/20/2023

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Summary for Pond 2P: Soil Filter Pond

Inflow Area = 1.472 ac, 25.79% Impervious, Inflow Depth > 1.01" for 25-Year event
 Inflow = 1.02 cfs @ 12.33 hrs, Volume= 0.124 af
 Outflow = 0.12 cfs @ 15.67 hrs, Volume= 0.037 af, Atten= 88%, Lag= 200.3 min
 Primary = 0.12 cfs @ 15.67 hrs, Volume= 0.037 af
 Routed to Reach DP A : Design Point A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 103.76 @ 15.67 hrs Surf.Area= 2,544 sf Storage= 3,800 cf

Plug-Flow detention time= 308.8 min calculated for 0.037 af (30% of inflow)
 Center-of-Mass det. time= 184.2 min (1,049.4 - 865.2)

Volume	Invert	Avail. Storage	Storage Description
#1	102.00'	7,389 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
102.00	1,806	0	0
103.00	2,182	1,994	1,994
104.00	2,656	2,419	4,413
105.00	3,296	2,976	7,389

Device	Routing	Invert	Outlet Devices
#1	Primary	103.75	25.0' long x 4.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.38 2.54 2.69 2.88 2.67 2.67 2.65 2.66 2.66			
2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32			

EMERGENCY SPILLWAY ONLY

Primary Outflow Max=0.10 cfs @ 15.67 hrs H_W=103.76' (Free Discharge)
 1=Broad-Crested Rectangular Weir (Weir Controls 0.10 cfs @ 0.28 fps)

POND ELEVATION CM AWG6ED = 103.76

FREEBOARD = 1.00

TOP OF BEAM = 104.76

USE 105.0

OK

Stormwater Quality Calculations

Proposed Condition

Prepared by SJR Engineering Inc

HydroCAD® 10.10-7a s/n 00591 © 2021 HydroCAD Software Solutions LLC

NRCC 24-hr D 2-Year Rainfall=3.19"

Printed 1/20/2023

Stage-Area-Storage for Pond 2P: Soil Filter Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
102.00	1,806	0	104.60	3,040	6,122
102.05	1,825	91	104.65	3,072	6,275
102.10	1,844	182	104.70	3,104	6,429
102.15	1,862	275	104.75	3,136	6,585
102.20	1,881	389	104.80	3,168	6,743
102.25	1,900	463	104.85	3,200	6,902
102.30	1,919	559	104.90	3,232	7,063
102.35	1,938	655	104.95	3,264	7,225
102.40	1,956	752	105.00	3,296	7,389
102.45	1,975	851			
102.50	1,994	950			
102.55	2,013	1,050			
102.60	2,032	1,151			
102.65	2,050	1,253			
102.70	2,069	1,356			
102.75	2,088	1,460			
102.80	2,107	1,565			
102.85	2,126	1,671			
102.90	2,144	1,778			
102.95	2,163	1,885			
103.00	2,182	1,994			
103.05	2,206	2,104			
103.10	2,229	2,215			
103.15	2,253	2,327			
103.20	2,277	2,440			
103.25	2,301	2,554			
103.30	2,324	2,670			
103.35	2,348	2,787			
103.40	2,372	2,905			
103.45	2,395	3,024			
103.50	2,419	3,144			
103.55	2,443	3,266			
103.60	2,466	3,389			
103.65	2,490	3,512			
103.70	2,514	3,638			
103.75	2,538	3,764			
103.80	2,561	3,891			
103.85	2,585	4,020			
103.90	2,609	4,150			
103.95	2,632	4,281			
104.00	2,656	4,413			
104.05	2,688	4,547			
104.10	2,720	4,682			
104.15	2,752	4,819			
104.20	2,784	4,957			
104.25	2,816	5,097			
104.30	2,848	5,239			
104.35	2,880	5,382			
104.40	2,912	5,527			
104.45	2,944	5,673			
104.50	2,976	5,821			
104.55	3,008	5,971			

Ponds
Bottom
Surface →

← TREATMENT VOLUME

December 12, 2022

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

Subject: Peer Review for Preliminary Major Subdivision Amendment Application
Land for Elizabeth Johnson,
104 Foreside Rd, Cumberland-Foreside ME 04110

Dear Ms. Nixon:

As requested, Sevee & Maher Engineers, Inc. (SME) has conducted a peer review of the Preliminary Major Subdivision Amendment Application for the proposed amendment to an existing subdivision to further subdivide Lot 10A for the Elizabeth H. Johnson Development on Foreside Road in Cumberland, Maine. The application materials received by SME were prepared by the Knickerbocker Group, and consist of the following:

- Application package; and
- Progress Print of project plan set.

PROJECT DESCRIPTION

The applicant proposes to construct an approximately 410-linear-foot paved road off of Foreside Road within a new Right-of-Way to split the Lot 10A into Lot 10A and Lot 10B. The road will have a new hammerhead turnaround, a roadside ditch, and be served by underground utilities.

This project is being reviewed as a Major Subdivision as outlined in Chapter 250 – Subdivision of Land of the Town of Cumberland Ordinances, most recently amended and adopted on January 12, 2011, and Site Plan Review as outlined in Chapter 229 Sections 8 to 10 Site Plan Review of the Town of Cumberland Ordinances, most recently amended and adopted on October 13, 2020.

Chapter 250: Subdivision of Land

SME has reviewed the applicable sections of Chapter 250 and has provided comments for those sections not found to be addressed by the Application. The remaining sections have been reviewed and found to comply with Chapter 250 requirements.

Section 250-4(N) – Stormwater

1. The Stormwater Narrative provided appears to include 2-, 10-, and 25-year rainfall events based on Kennebec County. Please update based on the requirements of Appendix H of Chapter 500 for Cumberland County.
2. The plans provided do not depict the pre-existing or post-development areas for the full development. Please provide plans outlining the pre and post development watershed boundaries for the site and make sure that the total pre-developed area matches the post-developed area in the HydroCAD model
3. Stormwater routing in HydroCAD should not be completed with TC path shorter than 5 minutes. Please revise and resubmit the stormwater narrative.
4. Please clarify if this project requires review by the Maine DEP for stormwater quality under Chapter 500.

Section 250-29 – Review and approval by other agencies

5. The project will require review by the Inland Fisheries & Wildlife in accordance with the Subdivision requirements and prior to of the final plan application.

Section 250-34 – Water Supply

6. The development will use public water and has submitted an ability to serve letter to Portland Water District. Please provide the Portland Water District approval as part of the final plan application.

Section 250-35 – Sewage Disposal

7. The apartment building will use public sewer; therefore, the project will need approval from the Town of Cumberland Sewer Department. Please provide the Cumberland Sewer approval as part of the final plan application.

Section 250-37 – Design and Construction Standards

8. Please label the slope of the entrance road on the plans and confirm that the minimum 3% slope for the first 25-feet is provided.

Section 250-45 – Waivers and Modifications.

9. Waiver Request 1 – Hydrogeological Study – SME recommends approval of this waiver.
10. Waiver Request 2 – High Intensity Soils Survey – SME recommends approval of this waiver.
11. Waiver Request 3 – Identification of 10-inch trees on Existing Conditions Plan – This was not requested by the Applicant, but should be included in the review with the Planning Board. SME recommends approval of this waiver.

General Comments

12. Plan Sheet C-6 – Lot Division Plan – The Lot Division Plan should be prepared and stamped by the appropriate professionals in accordance with the standard Subdivision Plan requirements from the Cumberland County Registry of Deeds.

13. Plan Sheet C-20 – Please confirm that a transformer is on the pole or provide a pad-mounted transformer to service the two new lots.
14. Plan Sheet C-7 – Grading and Drainage Plan – Please replace the 12-inch culvert at the driveway entrance with a minimum 15-inch culvert to minimize clogging and per the Town's Street Construction Standards. Please confirm cover and clearances with the sewer line in your response.
15. Plan Sheet C-7 – Grading and Drainage Plan – Please provide sizing and invert in and out elevations on the culvert at the roadway entrance with a minimum 15-inch culvert. Please confirm cover and clearances with the sewer line and water line in your response.

SURVEY ISN'T STAMPED

Please feel free to call me at 207.829.5016 or email me at dpd@smemaine.com with any questions, or if you would like, I could meet with you to discuss our comments.

Sincerely,

SEVEE & MAHER ENGINEERS, INC.



Daniel P. Diffin, P.E., LEED AP BD+C
Vice President

December 15, 2022

Dan Diffin
Sevee + Maher Engineers
4 Blanchard Road
Cumberland, Me. 04021



Re: Review letter comments for 104 Foreside Road, Cumberland, Me

Dear Dan,

Thank you for your review comments for the 104 Foreside Road, Cumberland Foreside project that involves a lot split from a previous subdivision. I have provided a response (bold text) to address your concerns in the same formats as your letter.

1: The Stormwater Narrative provided appears to include 2-, 10-, and 25-year rainfall events based on Kennebec County. Please update based on the requirements of Appendix H of Chapter 500 for Cumberland County.

Reply: I have performed the calculations using the updated NRCS rainfall data for Cumberland County South. This updated rainfall is the latest generation of rainfall data and supersedes the DEP Chapter 500 Appendix H data. It actually has a greater rainfall amount than the Appendix H data. I do apologize for an error in my stormwater narrative by calling this rainfall data as Kennebec County rather than Cumberland County data.

2: The plans provided do not depict the pre-existing or post-development areas for the full development. Please provide plans outlining the pre and post development watershed boundaries for the site and make sure that the total pre-developed area matches the post- developed area in the HydroCAD model.

Reply: The current large lot is an approved buildable lot from a previous subdivision. We have assumed in the splitting of the larger lot that Lot A remains the buildable lot with no necessary stormwater improvements from the previous subdivision approval. That stated, we have provided a roof drip edge around the buildings for wall splash protection as well as stormwater infiltration to underdrains. This provides stormwater quantity and quality enhancements to the runoff.

We have provided a stormwater plan showing existing/proposed watersheds for runoff water flowing towards Route 88 (Lot B). The pre-development watershed area is not the same as the post development watershed area at the design point. Existing watershed boundaries are contained within

the blue solid line on the watershed plan. Proposed watershed boundaries are contained within the red solid line on the watershed plan. The proposed stormwater watershed is larger as it captures the new road runoff (diverting runoff from the road by tipping the road to one side) that was not part of the existing watershed. All other developed areas within the lot (lawn, landscaping, woods, other) flow through the existing woods into the soil filter pond. A small portion of the lot between the front of the pond and Route 88 are uncontrolled watershed and are added to the Pond discharge in the HydroCad model to determine flow quantity. Like Lot A above, building roof runoff is captured by roof drip edges around the building and filtered to the underdrain. Discharge from the underdrains is directed to the soil filter pond for further treatment and detention.

3. Stormwater routing in HydroCAD should not be completed with TC path shorter than 5 minutes. Please revise and resubmit the stormwater narrative

Reply: I disagree with this statement as the time of concentration (TC) is dependent upon the flow path material (pipe?), and slope of conveyance. A TC shorter than 5 minutes makes the stormwater analysis computations more conservative. I have attached the same narrative with the word "Kennebec" removed and replaced with "Cumberland".

4. Please clarify if this project requires review by the Maine DEP for stormwater quality under Chapter 500.

Reply: It is my understanding the project is too small for a Chapter 500 DEP review. That stated, we have provided for 100% water quality surface treatment for Lot B and the new road.

8: Please label the slope of the entrance road on the plans and confirm that the minimum 3% slope for the first 25-feet is provided.

Reply: We have attached a profile plan of the road showing a -2% slope from Route 88 and then a 3% slope for the next 63'.

13: Plan Sheet C-2 - Please confirm that a transformer is on the pole or provide a pad-mounted transformer to service the two new lots.

Reply: The transformer is located on the pole adjacent to Lane Avenue. Wired utilities will be aerial from this location to the pole adjacent to the new road and go underground from this location. We have added this information to the plan.

14: Plan Sheet C-7 - Grading and Drainage Plan - Please replace the 12-inch culvert at the driveway entrance with a minimum 15-inch culvert to minimize clogging and per the Town's Street Construction Standards. Please confirm cover and clearances with the sewer line in your response.

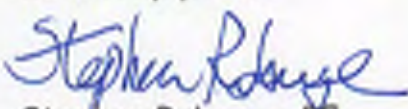
Reply: We have edited the size of the driveway culvert to 15". Cover over the top of pipe varies is 2' minimum. We are waiting for survey information of the sewer manhole inverts in Route 88 for sewer design and clearances.

15: Plan Sheet C-7 - Grading and Drainage Plan - Please provide sizing and invert in and out elevations on the culvert at the roadway entrance with a minimum 15-inch culvert. Please confirm cover and clearances with the sewer line and water line in your response.

Reply: We have already provided for an 18" diameter culvert (L=30, Slope=1%, Inv in=99.35, Inv out=99.0) at this location. Cover over the top of pipe is 1.5'. We have added 2" Styrofoam insulation under the culvert to help minimize frost heaving. We are waiting for survey information of the sewer manhole inverts in Route 88 for sewer design and clearances. We have added test pit symbols to determine depth/location for the gas and waterline.

I hope my replies have answered your comments adequately. Please contact me if you have any other comments.

Sincerely yours,


Stephen Roberge, PE
for SJR Engineering Inc.



attachments: Stormwater narrative, updated plan-set

November 25, 2022

Randy Smith
Knickerbocker Group
3 Builders Square
Boothbay, ME 04537



Re: Stormwater Quantity/Quality Narrative, 104 Foreside Road,
Cumberland, Me

Dear Randy,

Golden Star, LLC owns a parcel of land at 104 Foreside Road in Cumberland, Maine. The parcel is part of a previous subdivision requiring this proposed lot split to fall under an amended subdivision criterion. This project is to create 2 new lots for residential buildings. Proposed Lot A is to have 67,651 sf of land area and proposed Lot B is to have 65,788 sf of land area. A new private shared 18' wide gravel driveway (road) is to be created along the southerly sideline. The driveway road slope is to be tipped to drain to one side ditch that leads to an existing ditch along the Route 88 frontage. Each of the buildings will be served with public water, public sewer, and underground electricity. It is anticipated that this projects site infrastructure (shared driveway) will be started in January of 2023 once all approvals have been obtained.

The site is identified as Tax Map U4 Lot 10A of the Town's Tax Map. The parcel is approximately 3.48 acres in size and lies within the Low Density Residential Zoning District.

Existing Site Conditions

The existing site consists of woods/brush areas. An old former driveway access has previously been cut on the parcel in the general location of the proposed road. No other improvements are located on the existing parcel. Existing conditions have been taken from plans prepared by Owen Haskell Boundary and Topographic Survey dated 11/09/2022. The topography of the proposed developed site is shown at a one-foot contour interval in the areas of proposed development. The slope of the property varies from 10% along the flatter areas to 30% along the banks of the steeper slopes of the property.

Adjacent Areas

Adjacent areas and land uses are similar in nature to that being proposed (residential housing). Runoff from the property is generally sheet flow to the existing drainage ditch to the front property line corner.

Soils

Soils delineation was taken from the medium intensity soils maps of the Cumberland County Soil Survey. I have overlaid the proposed developed site onto this map. Onsite soils are identified as being Deerfield and Windsor sands (hydro group "A").

Summary Overview

We have prepared an erosion/sedimentation narrative under separate cover. This narrative is to address stormwater quantity/quality during (and after) the construction of the project.

We have prepared stormwater quantity and quality analysis in order to properly evaluate existing and proposed stormwater quantity impacts from the development. The Maine DEP Chapter 500 rules of the Maine DEP stormwater rules require proposed flow rates for 2/10/25 year storm events to be the same or less than existing flows at the property line of the parcel. We have designed this project to generally meet these standards by use of a combined soil filter pond/detention pond to be constructed with the project infrastructure.

Runoff from the developed portions of the parcel B is directed to the proposed soil filter pond adjacent to the Route 88 frontage area. Site drainage eventually enters an 18" diameter culvert (Concrete) that crosses Route 88.

We have designed the soil filter/detention pond to provide water quantity/quality enhancement. The pond will function as a detention pond to limit flows to almost pre-construction flow rates. Proposed soil filter/detention ponds are necessary to control flows to pre-existing conditions and to treat the stormwater quality within the pond.

Stormwater flows will be attenuated by diverting and capturing stormwater flows from the new construction on Lot B into the new soil filter/detention pond with the stormwater control outlet being utilized to control runoff water discharges to pre-existing conditions as well as providing stormwater quality

treatment for the developed runoff water. In summary, the proposed stormwater flows will be approximately equal to the existing condition. No significant downstream impacts from stormwater flows are expected with this proposal.

Approximately 15,245 sf of new impervious surface (access driveway, parking/storage, and building) will be treated during proposed construction improvements. Proposed impervious surfaces will be treated through the soil filter pond located along the parcel frontage with Route 88. A portion of the building's roof water will be infiltrated into 4' wide stone drip edges for water quantity/quality treatment.

Stormwater Quantity

We have prepared the plans and details in order to properly evaluate existing and proposed stormwater impacts from the development. Topography of the existing site is shown at two-foot contour intervals. The slope of the property varies from 1% along the flatter areas to 30% along the existing slopes in the rear of the developed site.

Soils mapping was taken from Natural Resources Conservation Service "Web Soil Survey" medium intensity mapping. These soils have been overlaid onto the proposed site development plan.

Soils have been identified as:

- Windsor loamy sand (hydro group "A", K= 0.17)
- Deerfield loamy fine sand (hydro group "A", K= 0.17)

I have reviewed the drainage characteristics of the watershed area which includes impervious areas, lawn areas, and woods, as well upslope watershed areas. The analysis requires post construction stormwater flow rates to be approximately equal to or less than the existing stormwater rates.

I have used the SCS TR-20 (HydroCad 10.0 computer model) method of computing stormwater runoff peak flow rates. This method accounts for soil types, existing land uses, topography, vegetative cover, and proposed land use for the parcel to be developed. The proposed conditions were analyzed using data for Cumberland County type III, 24-hour storm distribution (Northeast Regional Climate Center June 2014) with a design frequency of occurrence of 2/10/25 years. One day precipitation values of 3.19"/4.77"/6.01" have been

used for each respective event. All supporting calculations and data are submitted with this report.

The existing and proposed site conditions were analyzed using information taken from existing/proposed topographic plan of the parcel to be developed. Impervious areas, lawns, meadows, and woods areas for each hydrological soil condition were measured within AutoCad in order to calculate a weighted curve number that typifies the drainage condition of the site.

Watershed calculations (pre and post construction)

Please see the attached stormwater plans for both the existing and proposed conditions to help determine location of each watershed and drainage flow path.

The project has two watershed areas within the parcel to be split. We have assumed Lot A was approved as part of the original subdivision requirements and has its own approved watershed area. We have performed analysis on Lot B development including the access road to the two lots. We have designated the Design Point of interest on the plan as being the northeast corner of parcel B. Stormwater from this design point downslope flows to a 15" culvert crossing Route 88 onto land of others.

Soil Filter Ponds:

In the proposed development condition, the watershed has somewhat significant increases in impervious and developed areas. The increased flows are captured in the combined soil filter/detention pond (along the front of the proposed developed Lot B) within the parcel. Runoff water within the soil filter pond will be detained and treated in the pond. Discharges from the pond will then be directed to the existing ditching along Route 88.

The soil filter pond has been sized to accommodate and store flows for stormwater quantity and quality functions and to control flows to pre-development runoff conditions. We have calculated increases in flow rates in the developed portion of the project for the 2/10/25 year storm events. By constructing the soil filter/detention ponds and sizing the inlets within the stormwater control structure, stormwater flows are captured and contained. These increased flows are then stored (detained and treatment provided) within the pond area for short periods of time allowing existing peak flow rates to be approximately the same.

Design Point A – Northeast corner of Parcel B

The stormwater existing/proposed Design Point A is located at the northeast corner of Parcel B. We have calculated the existing flows with the proper land surface cover and soils hydrological group in order to compare these flows with the proposed flows. Existing flows at this location have been calculated to be 0.00/0.00/0.01 cfs for the 2/10/25 year storm events due to the wooded condition of the site and very pervious soils.

Soil Filter Pond: Our analysis indicates that the incoming flow rates to the Soil Filter Pond are 0.18/0.35/0.59 cfs and are reduced to 0.04/0.05/0.05 cfs for the 2/10/25 year storm events at the outlet from the soil filter pond control structure. The soil filter ground elevation is set at elevation 102.0. The water elevation within the pond is expected to peak at elevations 102.06/102.61/103.55 for the 2/10/25 year storm events.

When these flows from the pond are hydraulically added together (with respect to time) with the uncontrolled watershed areas (Watershed 1B), the flows are approximately the same as the existing condition at the inlet to the existing culvert under Walnut Hill Road

Stormwater Summary at Design Point A culvert entrance

	2 year storm (cfs)	10 year storm (cfs)	25 year storm (cfs)
Existing flows	0.00	0.00	0.01
Proposed flows	0.04	0.07	0.16

Pond construction Control structures

The soil filter pond will need to be configured with a control manhole structure that has a 6" diameter outlet pipe at invert 99.0. The control structure has inlet connection to the two 4" diameter underdrain pipes within the pond filter area. The 6" diameter outlet is capped at the inlet end and a 1" diameter hole cut in the cap at elevation 99.0. The top of the control manhole has an access rim elevation of 105.0. A 25' wide emergency spillway is to be constructed at elevation 103.55. The top of the 4' wide berm is elevation 105.0. No water will flow from the pond (except filtered water within the filter media underdrain). We have checked the spillway design with the control structure plugged (ie all flows through the spillway) and have calculated 25 year flows within the pond

reach elevation 103.56. The top of berm is at least 12" higher than this water surface.

Water quality - Soil Filter Pond

Soil Filter Pond: We have designed the project to redirect impervious and lawn area runoff into a soil filter pond along the front of the developed site. The total area draining to this pond is 62,495 sf. We have calculated 15,245 sf of the new impervious area (portion of driveways, access road, and building roof) and 47,250 sf of the landscaped area of the project would be treated through the proposed soil filter pond.

The soil filter/detention pond is designed to act such that initial and ending runoff flows are captured and infiltrated through the soil filter media within the pond. The higher flows will be bypassed through the pond and dispersed through the riprap spillway.

The soil filter pond is to be constructed that has a ground elevation at 102.0 (top of ground surface for filtering system). The pond is to be sized such that the surface area meets (or exceeds) 5% of the impervious area plus 2% of the landscape area that drains to the pond. We have calculated 15,245 sf of impervious area runoff and 47,250 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 1707 sf of surface filter area. We have provided 1753 sf of available area within contour 102.0.

In addition, a minimum treatment volume must be contained such that the required volume contained is less than 18" deep over the surface filter area. The channel protection volume is based on 1" of impervious surface area and .4" of vegetative area entering the pond. Using the same impervious and landscape areas noted above, we are required to have 2,845 cf of pond storage above the soil filter surface area. Our design has provided 2,891 cf of storage area at elevation 103.4 (17" deep).

The soil filter pond is controlled by a stormwater control manhole that has specific holes cut into the control panel to limit flows leaving the ponds and provide adequate holding time to be treated by the filter media. The holes have been sized using the DEP orifice sizing equation for both filter area and quality area sizing requirements. Water quality enhancement flows are detained within the soil filter pond by restricting the discharge flow through

a small 1" orifice control that is located within the stormwater control capped discharge pipe (elevation 99.5).

Summary

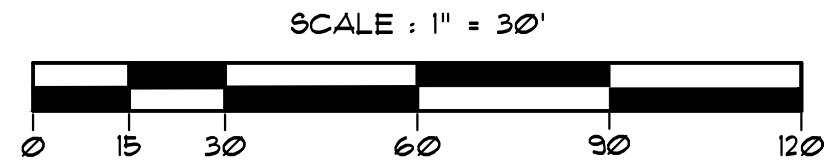
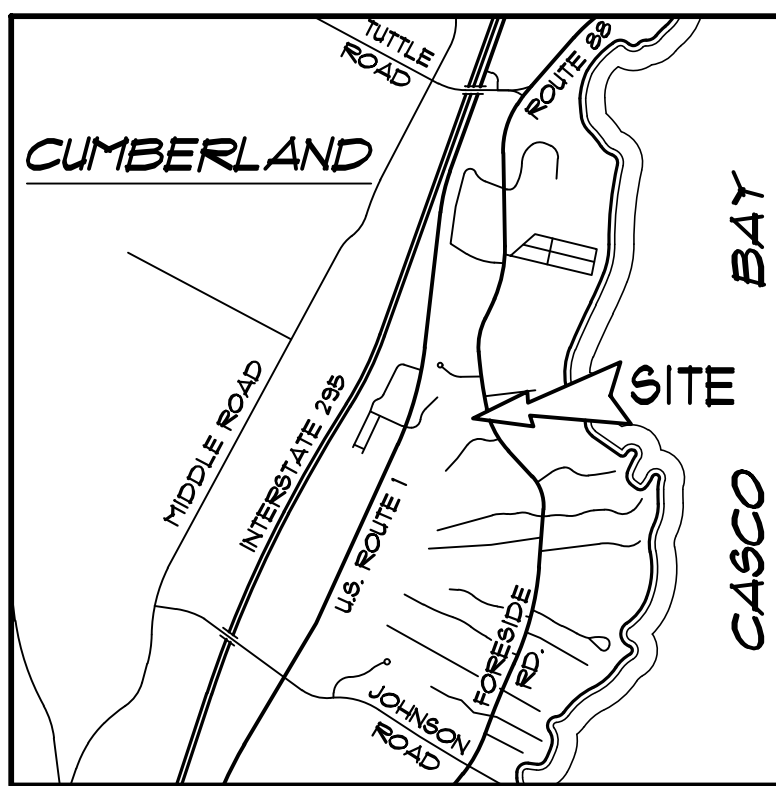
The proposed development of the parcel can be constructed utilizing a soil filter pond as designed to the berm height and control structure in the pond as noted above.

Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project. It is important to note that proper erosion control and revegetation of disturbed areas are essential for the proper operation of the stormwater facilities. Maintenance of the yard impervious areas, careful attention to the pavement/seeded interface, and continued maintenance to the pond system must be a top priority in order for the system to function properly. Thank you for involving this firm on your project.

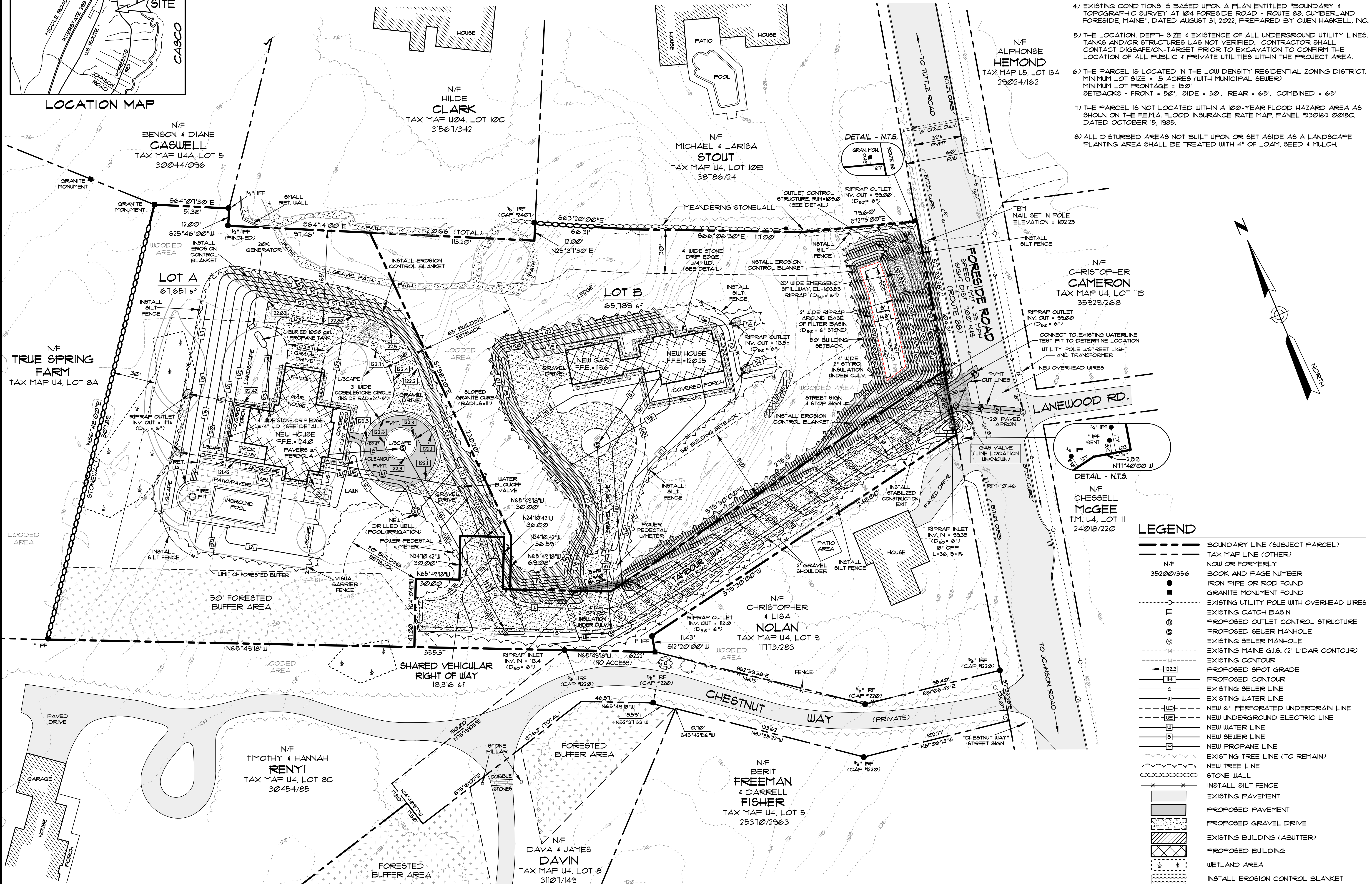
Sincerely yours,

Stephen Roberge

Stephen Roberge, PE
for SJR Engineering Inc.



LOCATION MAP



NOTES

- 1) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
- 2) OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
- 3) PARCEL AREA = 151,456 SQUARE FEET / 3.48 ACRES
- 4) EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD - ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
- 5) THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
- 6) THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT. MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER)
MINIMUM LOT FRONTAGE = 150'
SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'
- 7) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL #230162 0018C, DATED OCTOBER 15, 1985.
- 8) ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- - - TAX MAP LINE (OTHER)
- NOW OR FORMERLY
- BOOK AND PAGE NUMBER
- IRON PIPE OR ROD FOUND
- GRANITE MONUMENT FOUND
- EXISTING UTILITY POLE WITH OVERHEAD WIRES
- EXISTING CATCH BASIN
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SEWER MANHOLE
- EXISTING SEWER MANHOLE
- EXISTING MAINE G.I.S. (2" LIDAR CONTOUR)
- EXISTING CONTOUR
- PROPOSED SPOT GRADE
- PROPOSED CONTOUR
- EXISTING SEWER LINE
- EXISTING WATER LINE
- NEW 6" PERFORATED UNDERDRAIN LINE
- NEW UNDERGROUND ELECTRIC LINE
- NEW WATER LINE
- NEW SEWER LINE
- NEW PROPANE LINE
- EXISTING TREE LINE (TO REMAIN)
- NEW TREE LINE
- STONE WALL
- INSTALL SILT FENCE
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED GRAVEL DRIVE
- EXISTING BUILDING (ABUTTER)
- PROPOSED BUILDING
- WETLAND AREA
- INSTALL EROSION CONTROL BLANKET

SJR ENGINEERING, INC.

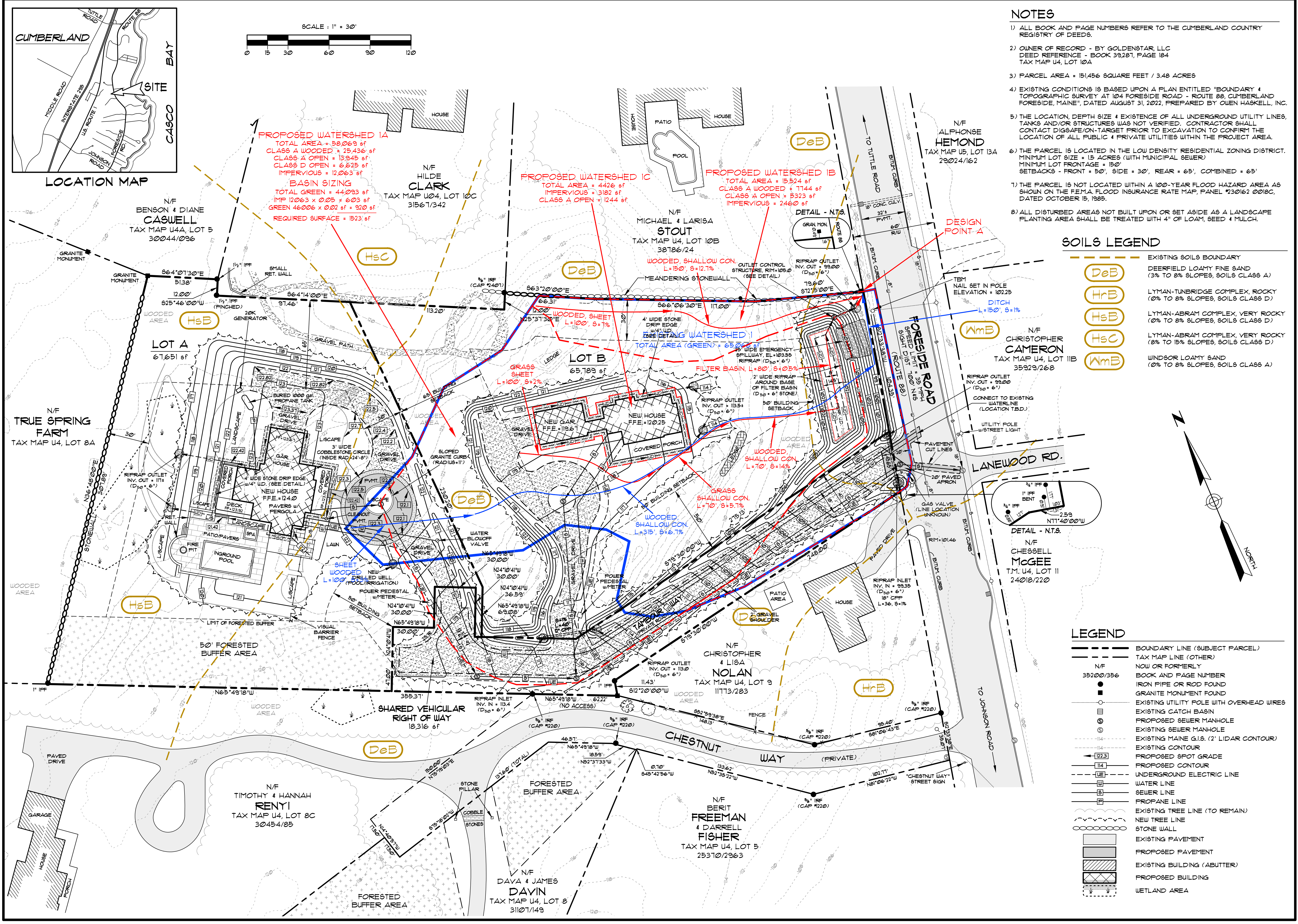
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6243
sve@sjr.org

TOPOGRAPHIC & UTILITY PLAN
LOT SPLIT

104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

DATE	PROJECT
12-11-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET 1



- ### NOTES
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 - ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

SOILS LEGEND

DeB	EXISTING SOILS BOUNDARY
HrB	DEERFIELD LOAMY FINE SAND (3% TO 8% SLOPES, SOILS CLASS A)
HsB	LYMAN-TUNBRIDGE COMPLEX, ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsC	LYMAN-ABRAM COMPLEX, VERY ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsC	LYMAN-ABRAM COMPLEX, VERY ROCKY (8% TO 15% SLOPES, SOILS CLASS D)
WmB	WINDSOR LOAMY SAND (0% TO 8% SLOPES, SOILS CLASS A)

LEGEND

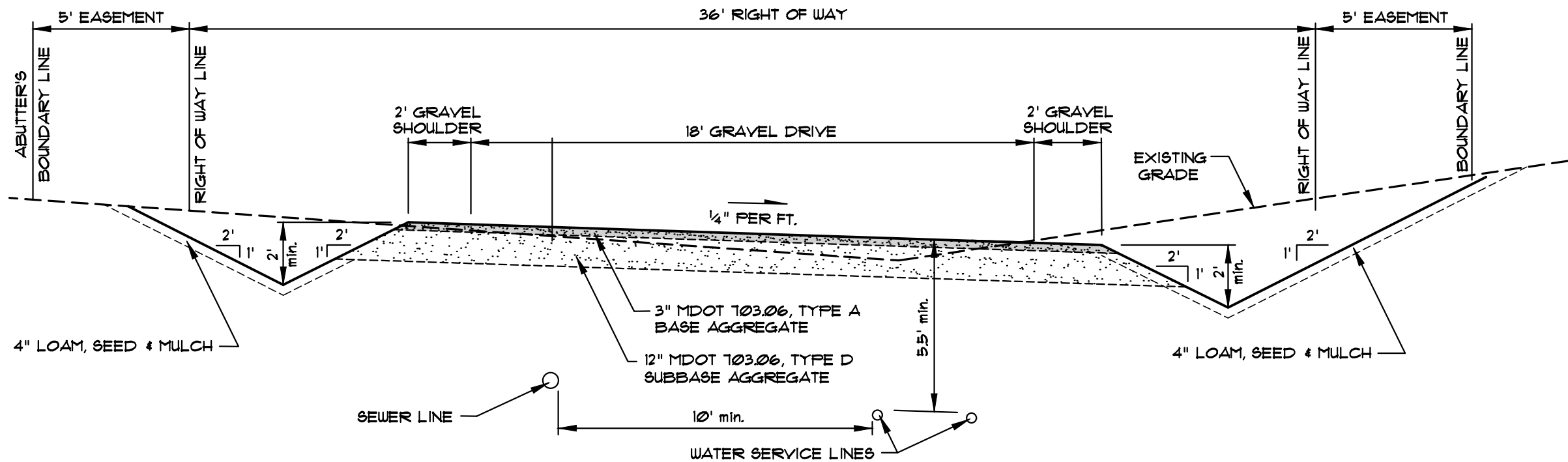
---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
N/F	NOW OR FORMERLY
35200/356	BOOK AND PAGE NUMBER
●	IRON PIPE OR ROD FOUND
■	GRANITE MONUMENT FOUND
○	EXISTING UTILITY POLE WITH OVERHEAD WIRES
⊞	EXISTING CATCH BASIN
⊙	PROPOSED SEWER MANHOLE
⊙	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	UNDERGROUND ELECTRIC LINE
---	WATER LINE
---	SEWER LINE
---	PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6243
sve@sjeinc.com

WATERSHED PLAN
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04110

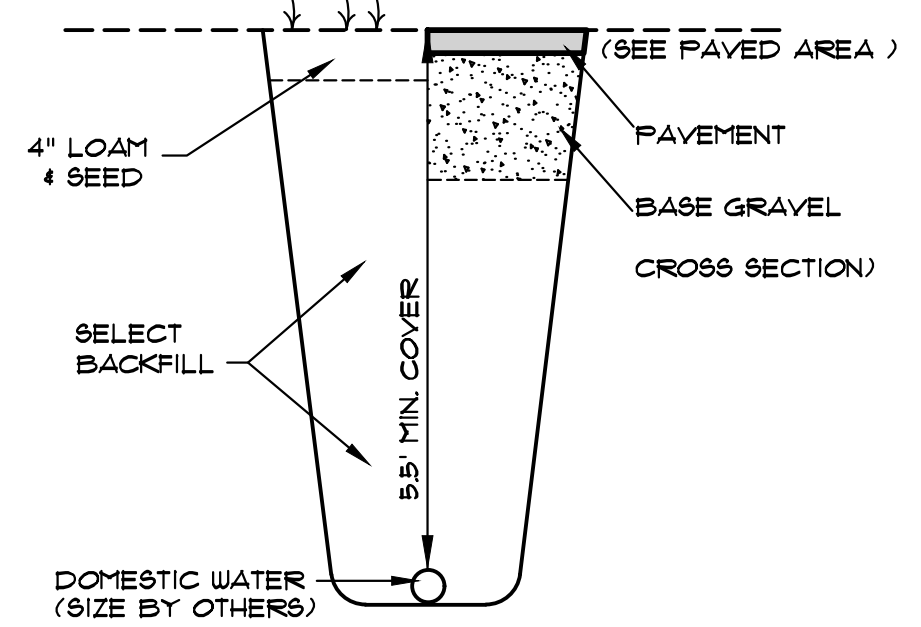
DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET 2

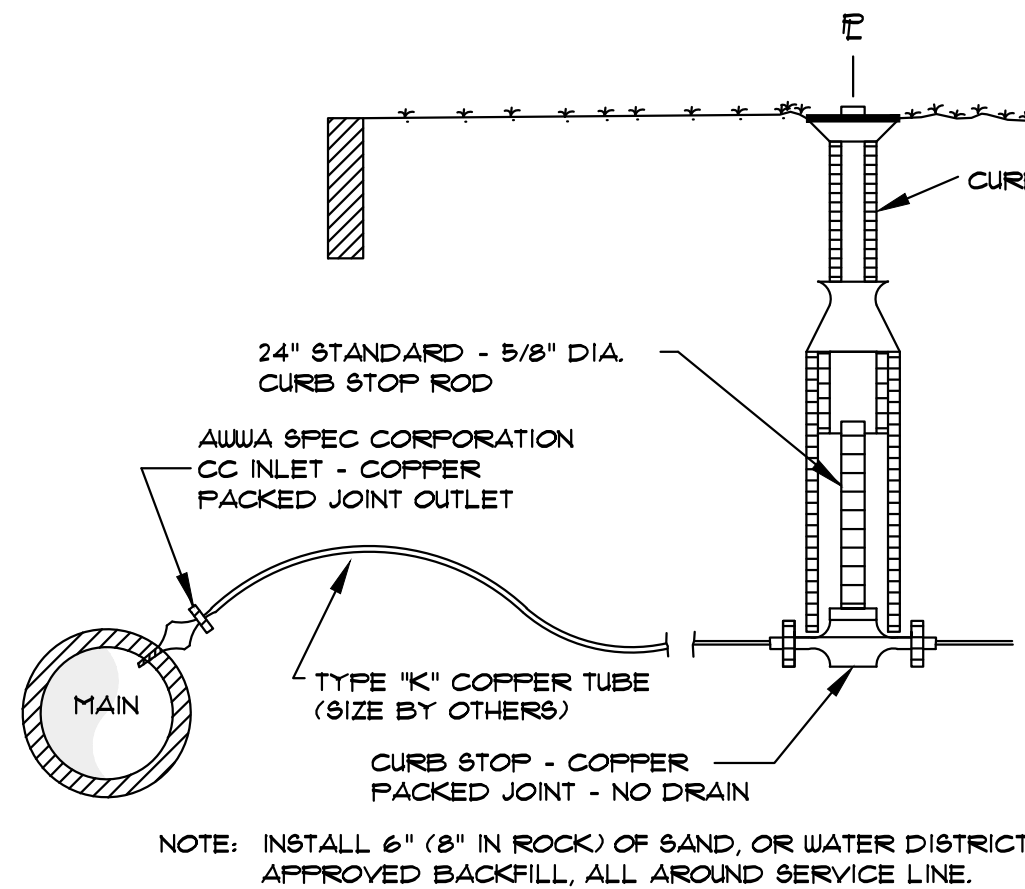


TYPICAL DRIVEWAY CROSS SECTION

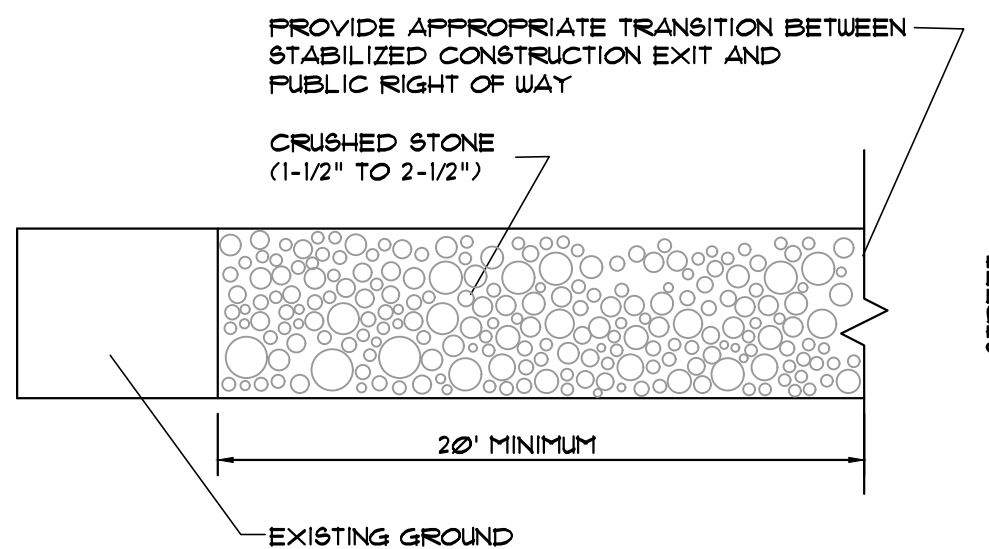
SCALE : 1" = 4'



WATER SERVICE TRENCH DETAIL
NOT TO SCALE



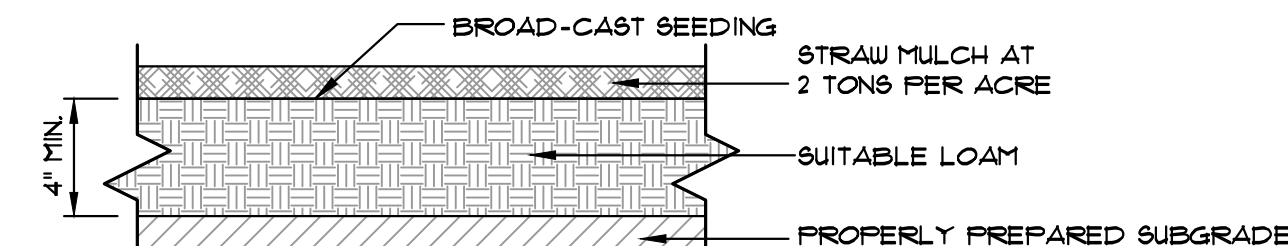
TYPICAL DOMESTIC WATER SERVICE
NOT TO SCALE



- STONE SIZE - AASHTO DESIGNATION M 43, SIZE 2 (2 1/2" - 1 1/2") USE CRUSHED STONE
- LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
- THICKNESS - NOT LESS THAN 6"
- WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
- WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
- MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURED USSES TO TRAP SEDIMENT. ALL SEDIMENT SKIPPED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION EXIT DETAIL

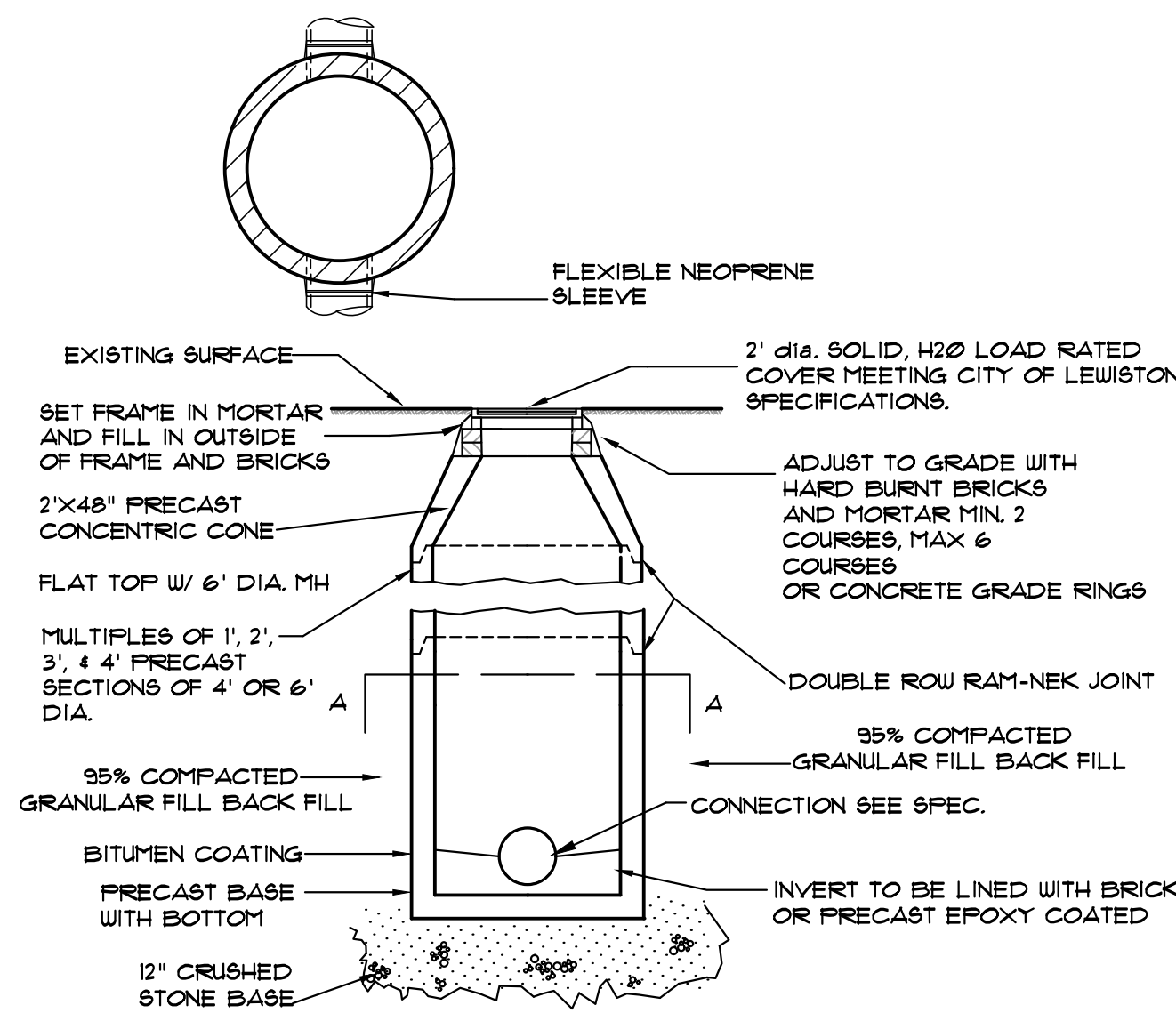
NOT TO SCALE



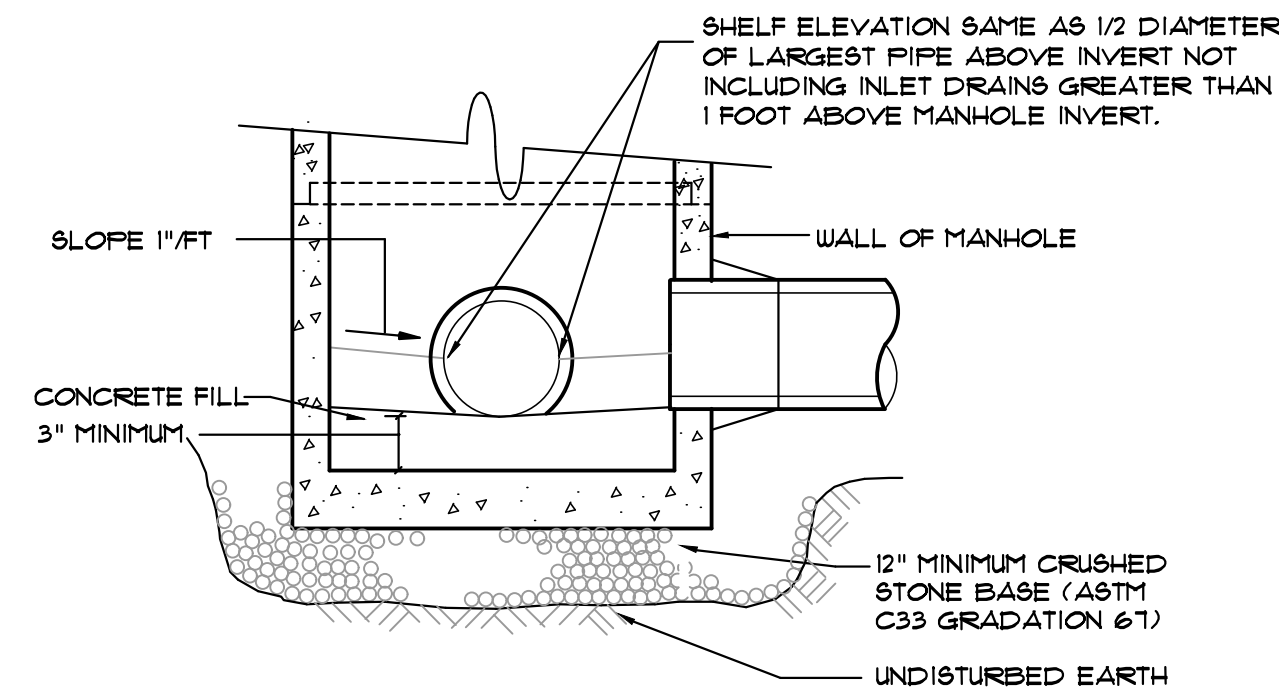
PERSISTENT SEED MIX	APPLICATION RATE
KENTUCKY BLUEGRASS	50/1000 #/A
CREeping RED FESCUE	.46
PERENNIAL RYEGRASS	.11
TOTAL SEED RATE	1.03

PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

LOAM & SEED DETAIL
NOT TO SCALE



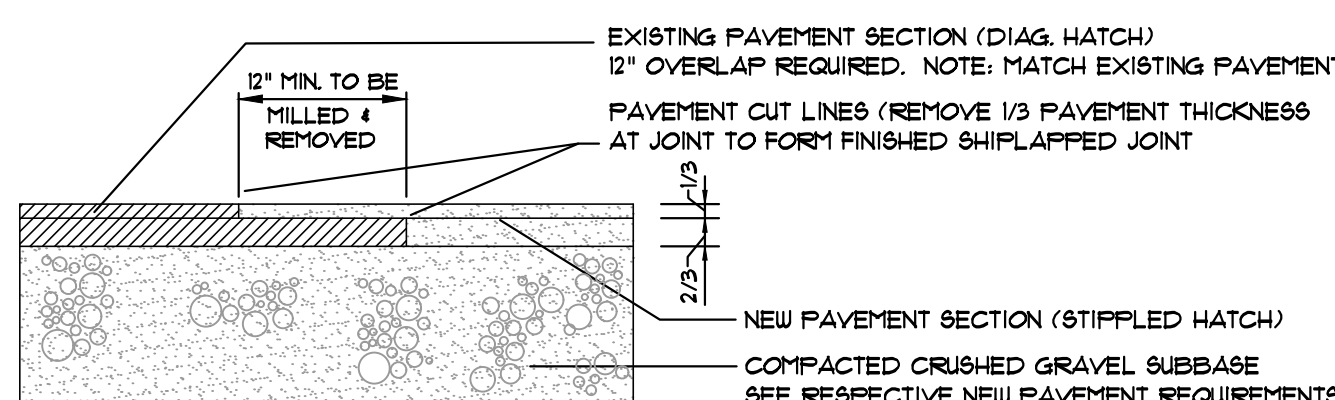
SECTION B-B



SECTION A-A

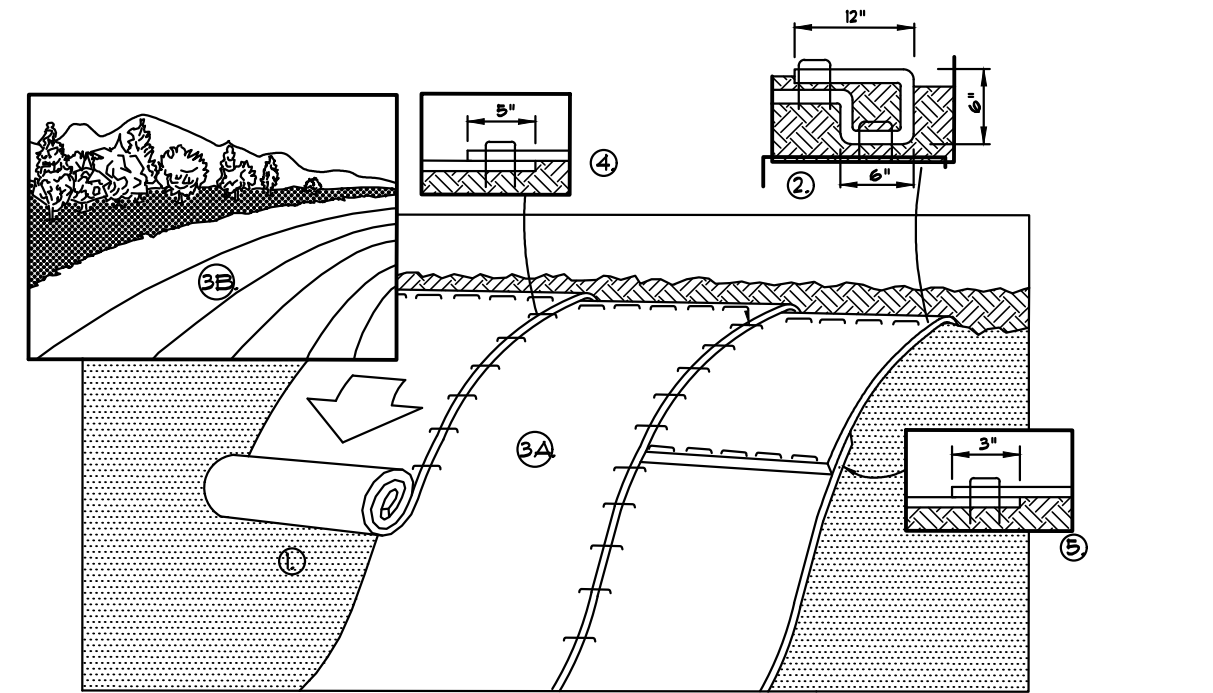
PRECAST CONCRETE SEWER MANHOLE

NOT TO SCALE



PAVEMENT SAWCUT JOINT DETAIL

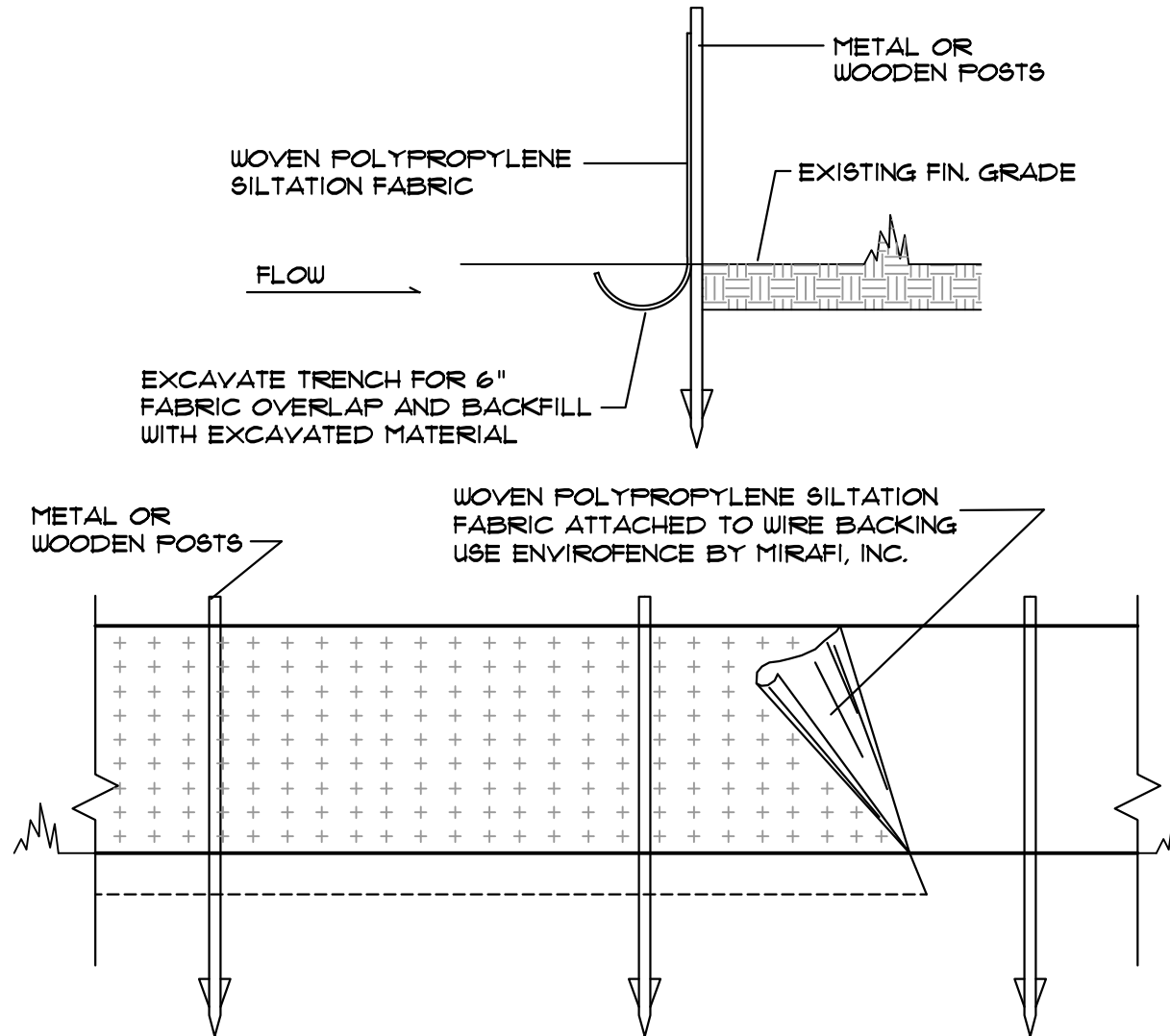
NOT TO SCALE



- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEAN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6\"/>

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



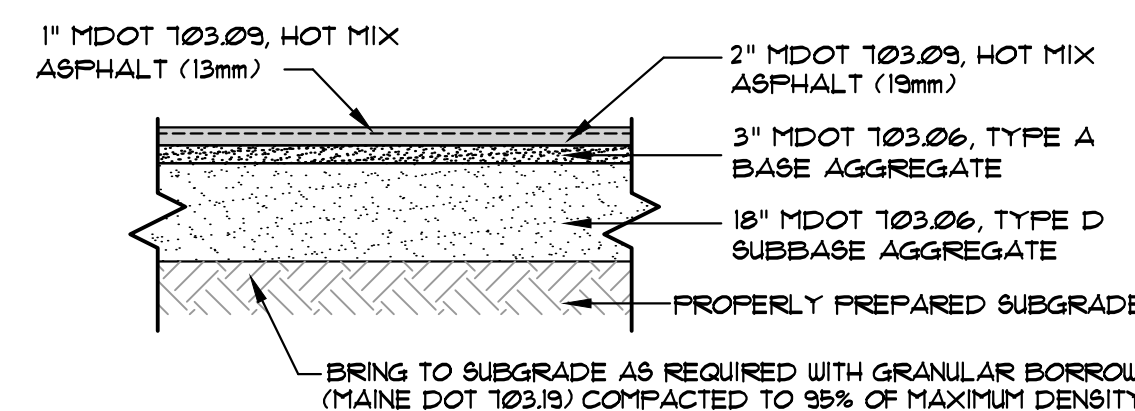
NOTES

REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL. B-1 SEDIMENT BARRIERS.

SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED. EROSION CONTROL FILTER BERM IS AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.

SILT FENCE DETAIL

NOT TO SCALE



NOTES

- COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF THEIR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- HOT MIX ASPHALT PAVEMENT MUST BE COMPACTED TO 92%-97% OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2924.
- A TACK COAT MUST BE USED BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.
- PROVIDE NON-FROST SUSCEPTIBLE COMPACTED FILL GRANULAR BORROW (MDOT 103.19) BELOW PAVEMENT IN FILL AREAS.
- CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

PAVED AREA CROSS SECTION

NOT TO SCALE

GENERAL NOTES

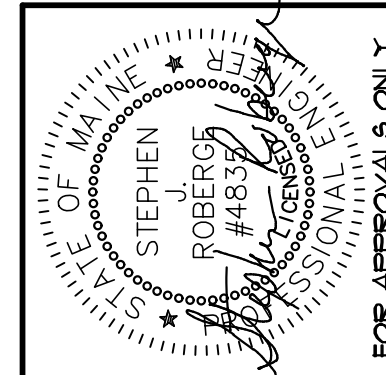
- SEE SHEET 1 FOR SITE SPECIFIC NOTES.
- THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.
- THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.
- ALL CONSTRUCTION WITHIN THE TOWN OF CUMBERLAND RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN OF CUMBERLAND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN AND/OR MDOT, REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED BY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (811) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.
- THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.
- OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCRoACHING ON THIS REQUIREMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEFORE BEING DISTURBED AS DETERMINED BY THE CITY OF AUGUSTA CEO. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- TRAFFIC CONTROL MEASURES SHALL BE UTILIZED IN ACCORDANCE WITH MAINE DOT STANDARDS. THE CONTRACTOR SHALL PROVIDE, MAINTAIN AND PROTECT TRAFFIC CONTROL DEVICES TO THE EXTENT REQUIRED BY LAW FOR THE PROTECTION OF THE PUBLIC CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROL PERSONNEL AS REQUIRED OR ORDERED BY THE DESIGN ENGINEER OR CODE ENFORCEMENT PERSONNEL. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE TOWN. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH MDOT SPECIFICATIONS. TWELVE INCH (12") WIDE STOP BAR AND FOUR INCH (4") WIDE STRIPES SHALL BE LOCATED AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PRODUCT, MATERIALS AND PLANT SPECIFICATIONS TO THE OWNER AND DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR SOIL AND PAVEMENT MATERIALS AND CONFAPCTION TESTING AT NO COST TO THE OWNER. RESULTS OF THE TESTING ARE TO BE SUPPLIED TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH ANY RECONSTRUCTION AND RE-TESTING OF UNSATISFACTORY SOILS.
- ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.
- THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.
- WORK MAY PROGRESS MONDAY THROUGH SATURDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE TOWN OF CUMBERLAND. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM WITH ALL RULES AND REGULATIONS SET FORTH IN THE TOWN LAND USE ORDINANCE REGULATIONS.
- THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION, THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.
- PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.
- ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEW. SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING THE WORK. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS, LATEST REVISION.

GRADING AND DRAINAGE NOTES

- UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS. LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.
- HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.
- TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO DESIGNATED BY THE CONTRACTOR. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.
- ALL EXISTING STRUCTURES, FENCING, TREES, ETC. WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.
- THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.
- SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
- BASED ON FEMA MAPPING, NO AREA WITHIN THE SITE BOUNDARIES IS IN THE 100 YEAR FLOOD PLAIN.

LAYOUT NOTES

- ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.



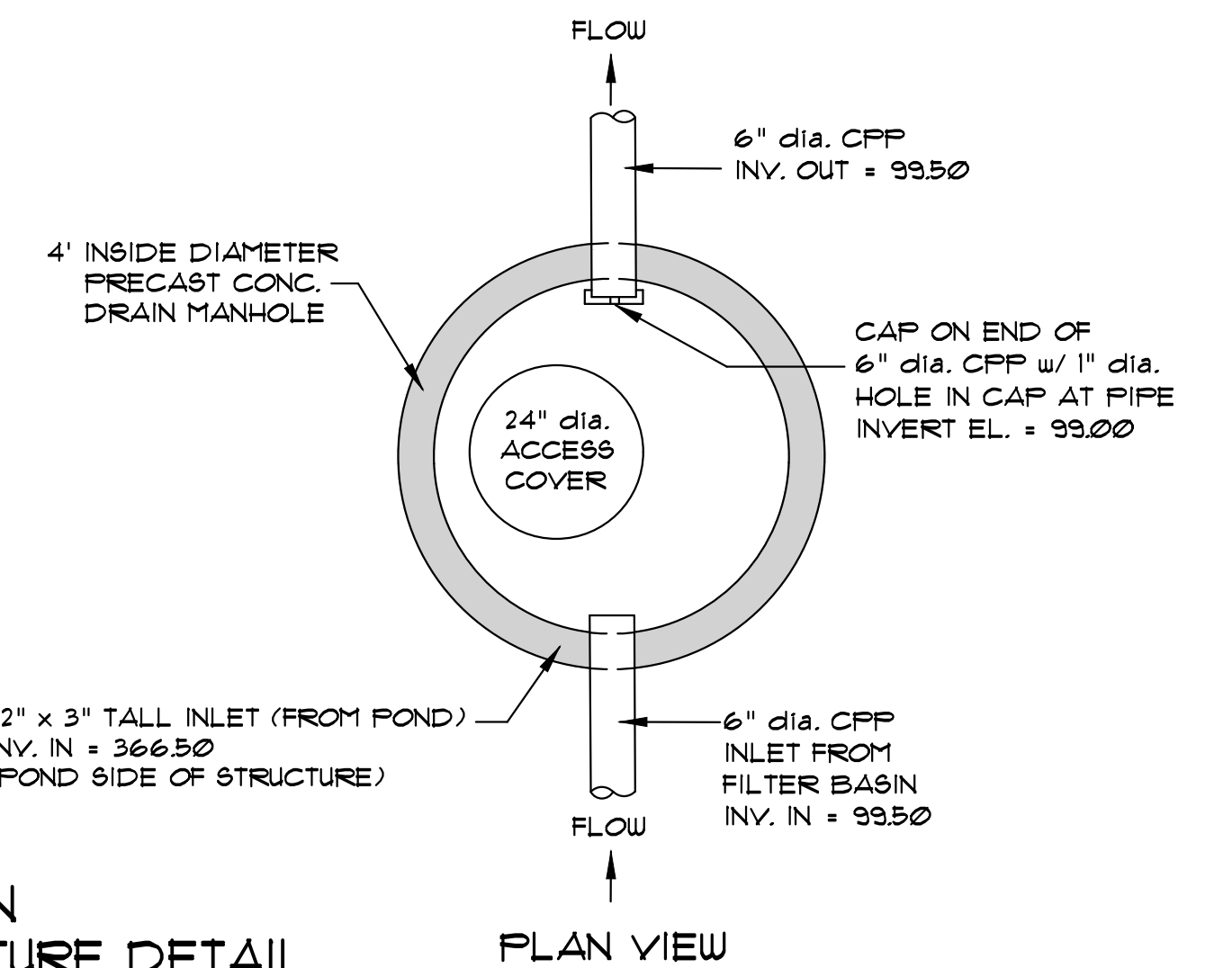
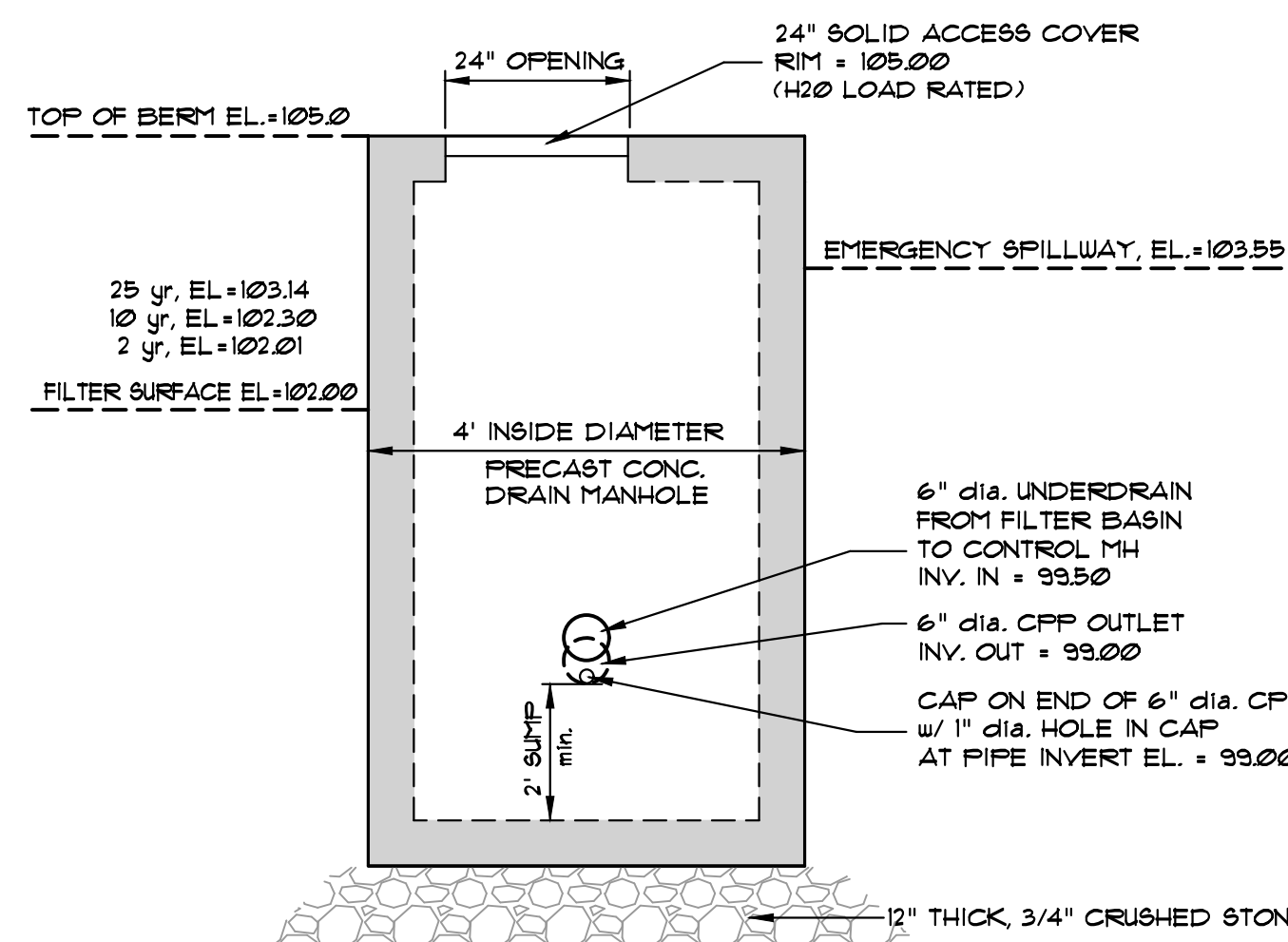
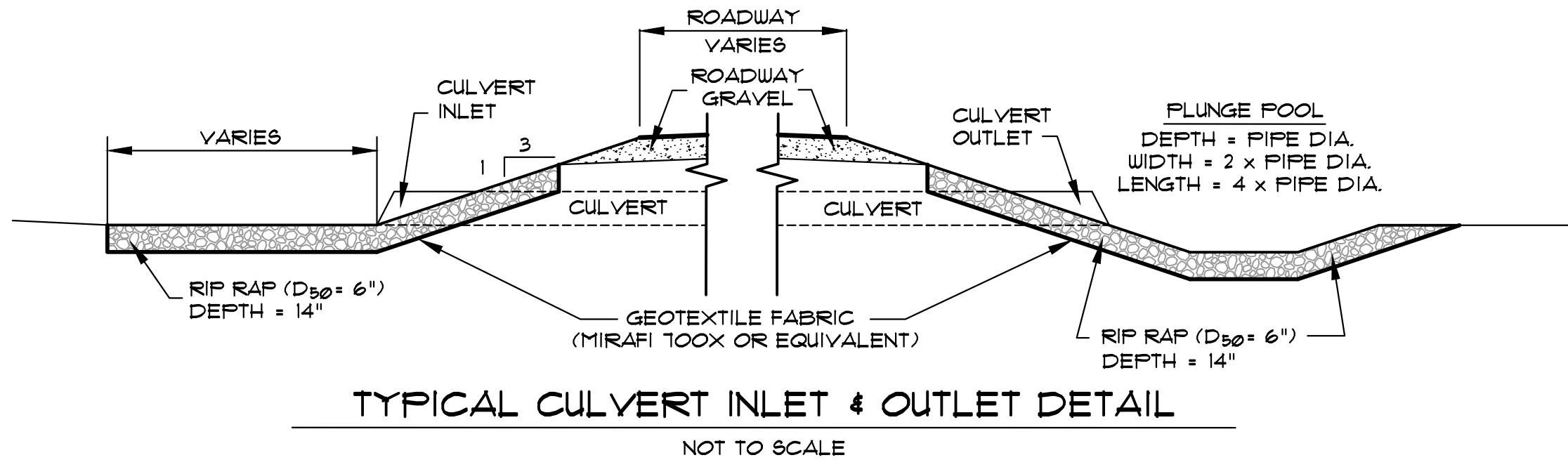
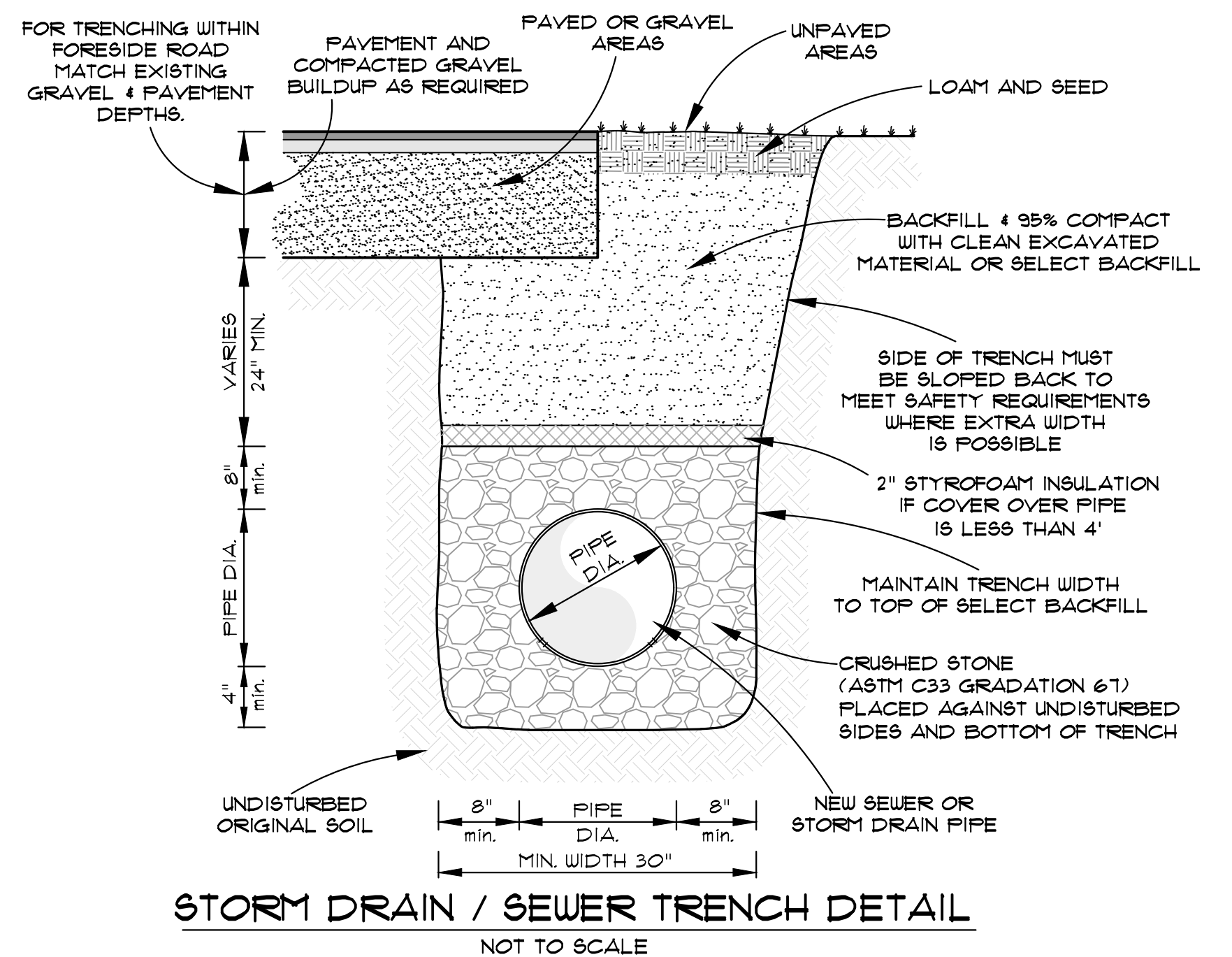
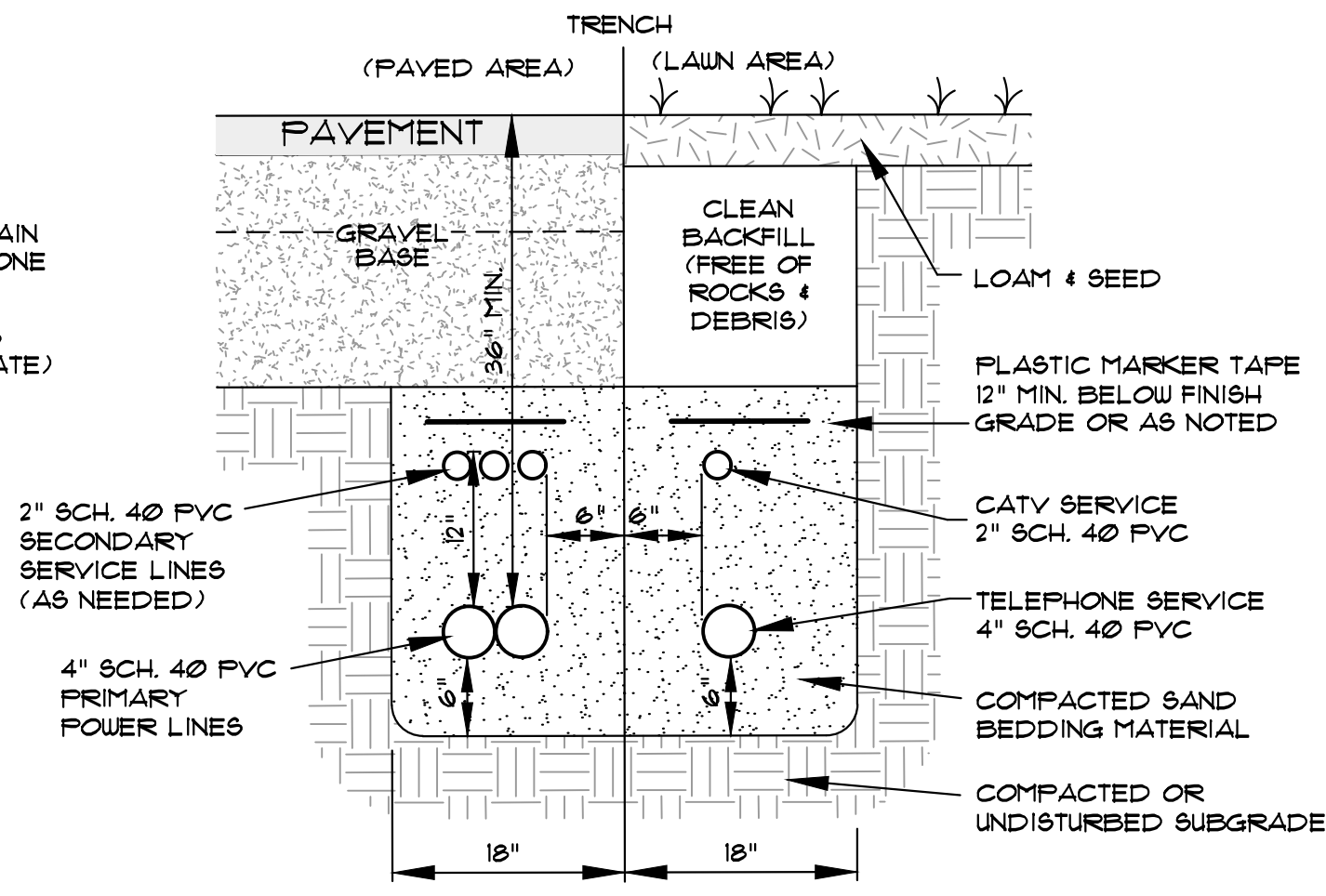
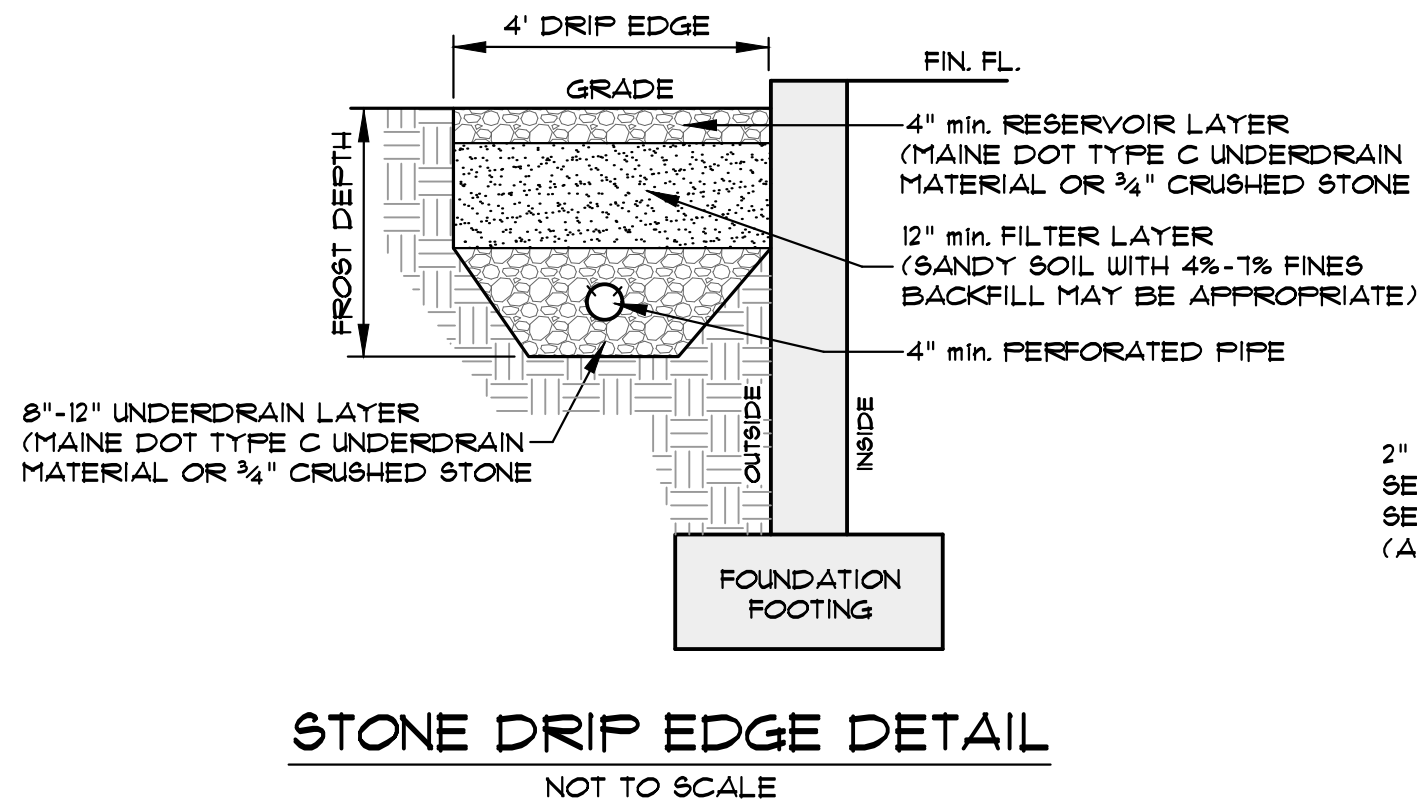
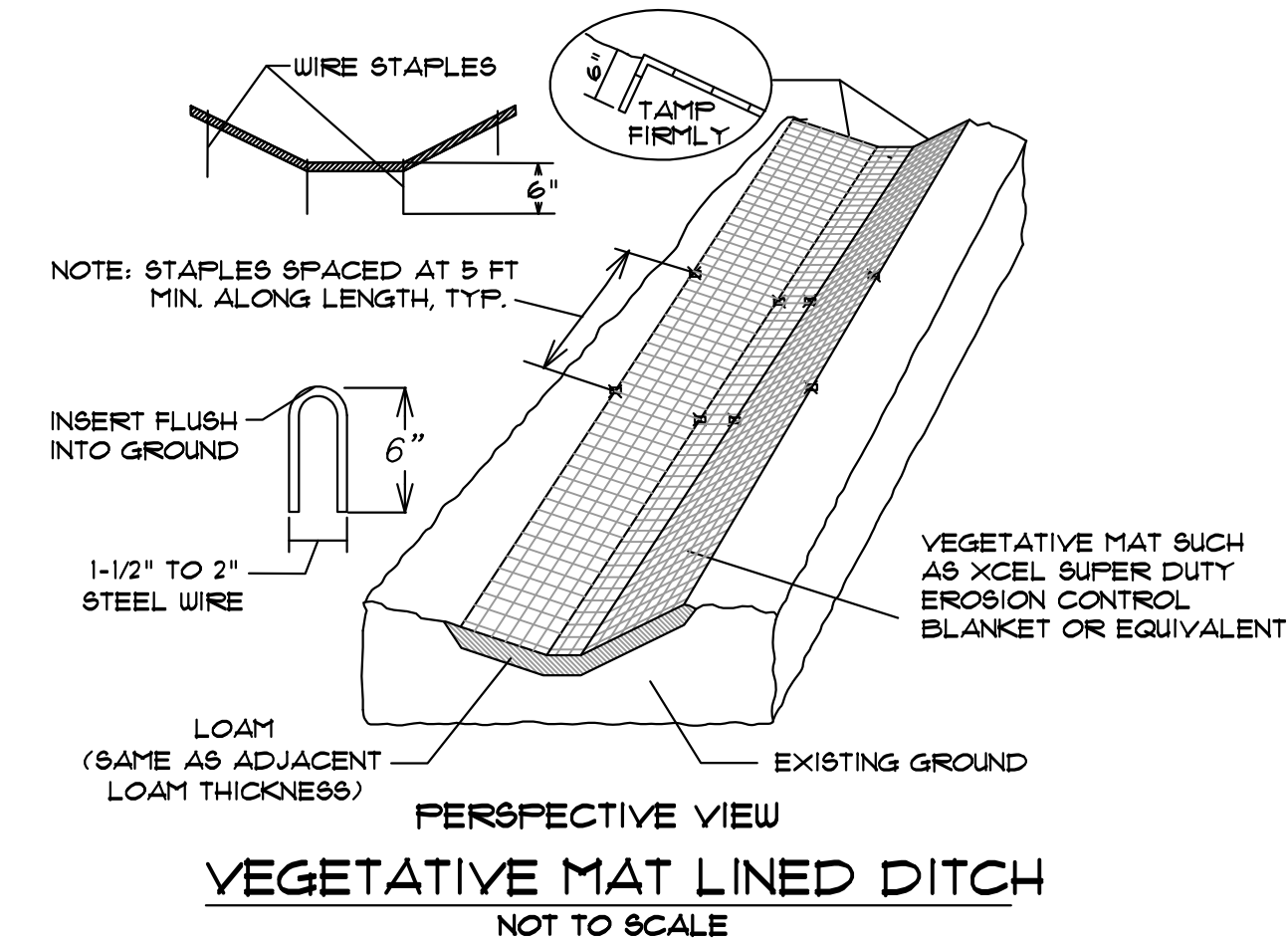
DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 602-1676 tel & fax
steve@sjreng.com

SJR ENGINEERING

CONSTRUCTION NOTES & DETAILS
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04100

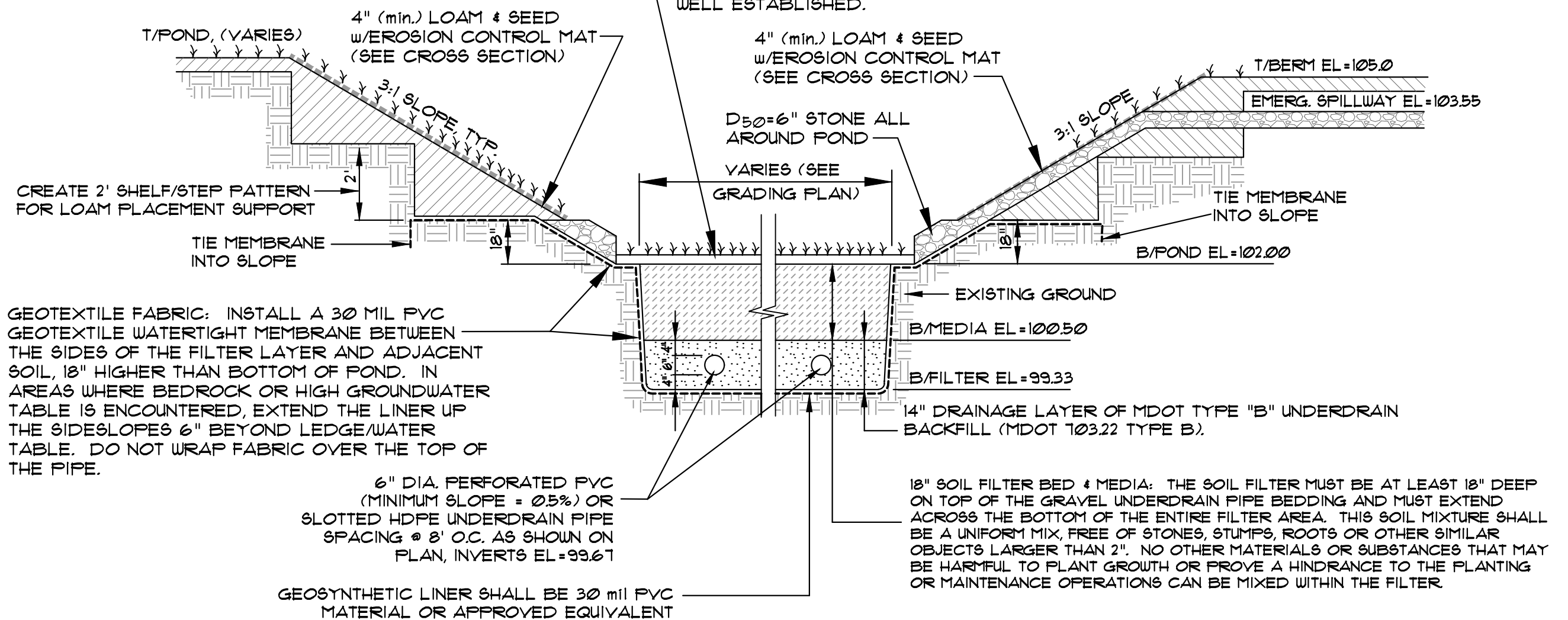
DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.



ELEVATION VIEW FROM INLET SIDE OF STRUCTURE

OUTLET CONTROL STRUCTURE DETAIL
(NOT TO SCALE)

NOTE:
FILTER POND SOIL FILTER DETAILS DEPICTS ELEVATIONS AT THE BOTTOM PERIMETER OF THE POND AND NOT THE LOW POINT OF THE POND. SEE SITE PLAN GRADING AND SECTION FOR LOW POINT OF ELEVATION (TYPICALLY NEAR THE CONTROL STRUCTURE)



STORMWATER CONSTRUCTION OVERSIGHT NOTES

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THIS PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERFERE WITH THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER SHALL NOTIFY THE TOWN OF CUMBERLAND AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IN WRITING WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION AND THE TIME INSPECTED ON EACH VISIT.

VEGETATED UNDERDRAINED SOIL FILTER BASINS
CONSTRUCTION INSPECTIONS - AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION SHALL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL. AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED, AFTER THE PIPE BEDDING IS PLACED BUT PRIOR TO THE PLACEMENT OF THE FILTER MEDIA, AND AFTER THE FILTER MEDIA HAS BEEN PLACED AND THE FILTER SURFACE SEEDS.

TESTING AND SUBMITTALS - ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN SHALL BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FROM EACH MATERIAL FOR TESTING. ALL TESTING SHALL BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN'S CONSTRUCTION.

OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF A BLEND OF SAND, TOPSOIL AND WOOD FIBER MULCH (OR OTHER APPROVED) THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE AS DETERMINED BY ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A), HAS A CLAY CONTENT OF LESS THAN 2% AND HAS AN ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT.

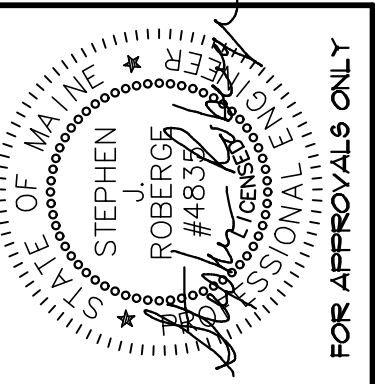
IF THE UNDERDRAIN PIPES WILL BE BEDDED IN GRAVEL, OBTAIN A SAMPLE OF THE GRAVEL FILL TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE GRAVEL TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE GRAVEL FILL MUST CONFORM TO MEDOT SPECIFICATION 10322 UNDERDRAIN TYPE B.

IF THE UNDERDRAIN PIPE WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 10322 UNDERDRAIN TYPE C.

SOIL FILTER NOTES

- THE SOIL FILTER IS PART OF A TOWN OF CUMBERLAND PERMIT. CONSTRUCTION SHALL FOLLOW CURRENT MAINE DEP GUIDELINES WHICH INCLUDE APPROVAL OF MATERIAL PRIOR TO PLACEMENT AND CONSTRUCTION OVERSIGHT BY THE DESIGN ENGINEER.
- SUBMIT SAMPLES AND GRADATIONS FOR EACH MATERIAL TO BE USED. PROVIDE EXPECTED DESIGN MIX. PERFORM AND PROVIDE STANDARD PROCTOR ON COMBINED MIXTURE AS WELL AS A PERMEABILITY TEST.
- SCARIFY TO LOOSEN EXISTING SOIL AT LEAST 8" PRIOR TO LAYING FIRST LAYER OF THE SOIL FILTER SECTION.
- MAXIMUM SPACING OF UNDERDRAIN PIPING IS 10' O.C. END CAPS SHALL BE INSTALLED ON ALL UNDER DRAIN PIPES.
- AFTER APPROVAL OF MATERIAL, PLACE FILTER MEDIA IN TWO LIFTS WITH LOW WEIGHT VEHICLES TO 90-92% STANDARD PROCTOR.
- PROVIDE 2" OF BARK MULCH OR EROSION CONTROL MIX ON TOP OF THE FILTER BED UNTIL THE SITE HAS PROPOSED HARDSCAPE PLACED AND HAS VEGETATION WELL ESTABLISHED EVERYWHERE ELSE. ONCE THE SITE IS STABILIZED, REMOVE THE MULCH AND ACCUMULATED SEDIMENT FROM THE FILTER AND ESTABLISH VEGETATION PER THE FILTER BED SEEDING PLAN.
- PRIOR TO TURNING OVER TO OWNER, REMOVE SEDIMENT AND DEBRIS FROM FILTER SURFACE, OVERFLOW WEIR, INSIDE OVERFLOW STRUCTURE AND DISCHARGE PIPE.

SOIL FILTER MEDIA SPECIFICATIONS *			
FILTER MEDIA	S&ND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (+5%)	25% (+5%)	25% (+5%)
SPECIFICATION	MEDOT SPEC. #103.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE, SHREDDED BARK SUPERMULCH OR EQUAL, ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
	GRADATION		
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
3/8"	100	-	-
4	90-100	75-95	-
8	80-100	-	-
10	-	60-90	-
16	50-85	-	-
30	25-60	-	-
40	-	35-85	-
60	10-30	-	-
100	2-10	-	-
200	0-5	15-25	-
200 CLAY	< 2% **	< 2% **	< 2% **
* FOR GRASSED UNDERDRAINED SOIL FILTER BMP, PER THE MAINE DEP VOLUME III : BMP'S TECHNICAL DESIGN MANUAL, MAY 2014			
** COMBINED MIXTURE CLAY CONTENT SHALL NOT EXCEED 2%			
NOTE: THE SOIL FILTER SHALL DRAIN IN NO LESS THAN 24 hrs BUT NOT MORE THAN 48 hrs.			

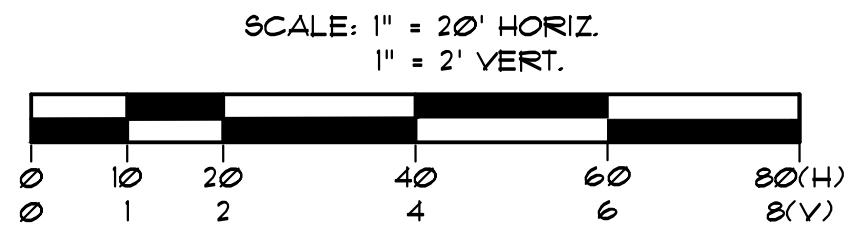


DATE:	11-28-2022
BY:	SJR
REV:	01
DATE:	11-28-2022
BY:	SJR
REV:	01



CONSTRUCTION DETAILS
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04100

DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.





**KNICKERBOCKER
GROUP**

December 20, 2022

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

Subject: COVE Development Company LLC - Peer Review Responses to SME Letter Dated
December 12, 2022

Topics not addressed in SJR Engineering narrative.

#5. The project will require review by the Inland Fisheries & Wildlife in accordance with the Subdivision requirements and prior to of the final plan application.

Response: KG has submitted a review request to IF&W and awaits their feedback.

#6. The development will use public water and has submitted an ability to serve letter to Portland Water District. Please provide the Portland Water District approval as part of the final plan application.

Response: KG has submitted a review request to Portland Water District. We have received comments and responded in full to their questions. We expect to receive their ability to serve letter.

#7. The ~~apartment~~ buildings will use public sewer; therefore, the project will need approval from the Town of Cumberland Sewer Department. Please provide the Cumberland Sewer approval as part of the final plan application.

Response: KG has submitted a review request to both the Portland Water District (PWD) and the Cumberland Sewer District. We have received comments from the PWD and responded in full to their questions. We expect to receive their ability to serve letter. We await feedback from the Cumberland Sewer District but expect their approval.

#11. Waiver Request 3 – Identification of 10-inch trees on Existing Conditions Plan – This was not requested by the Applicant but should be included in the review with the Planning Board. SME recommends approval of this waiver.

Response: KG supports the recommendation by SME reviewer to approve the waiver.



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



January 18, 2023

Debra Wallace
Knickerbocker Group

RE: Information Request – EH Johnson Subdivision Project, Cumberland

Dear Debra:

Per your request received on December 20, 2022, 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 *EH Johnson Subdivision* 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.

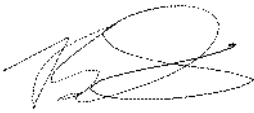
Significant Wildlife Habitat

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,

A handwritten signature in black ink, appearing to read 'Becca Settele', with a stylized, flowing script.

Becca Settele
Wildlife Biologist

402000

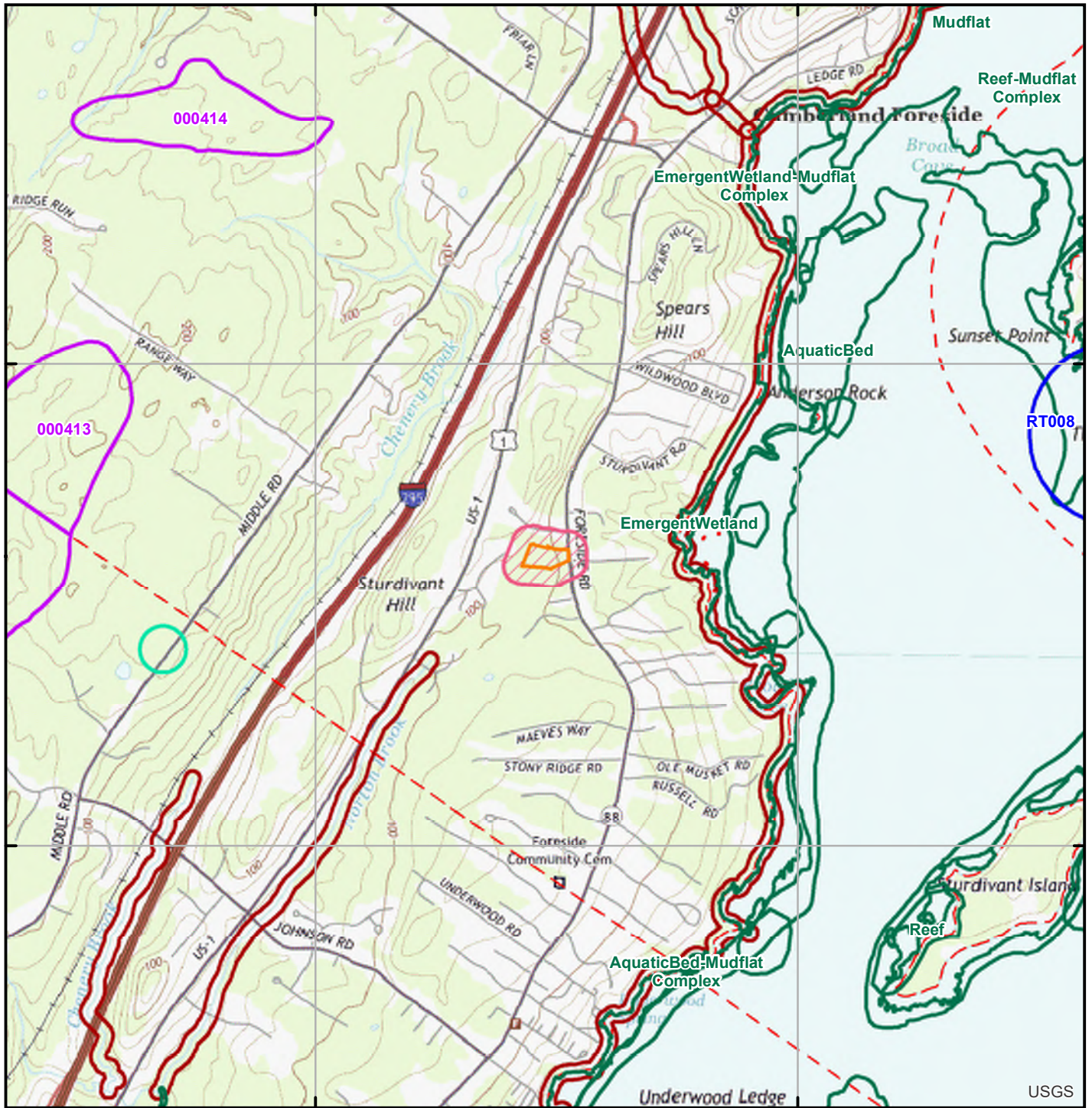
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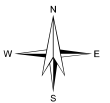
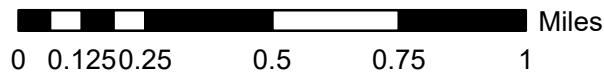
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Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name:

EH Johnson Subdivision, Cumberland
(Version 1)Maine Department of
Inland Fisheries and Wildlife

Projection: UTM, NAD83, Zone 19N

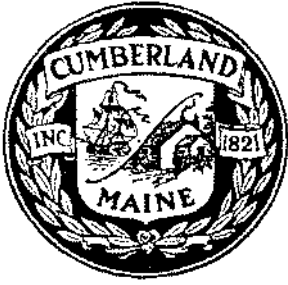
Date: 12/22/2022

- ProjectSearchAreas - All Versions
- Maine Cliff and Talus Areas

- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 lwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons

- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats





TOWN OF CUMBERLAND, MAINE
290 TUTTLE ROAD
CUMBERLAND, MAINE 04021
TEL: 207-829-2205 FAX: 829-2224

January 16, 2023

Portland Water District
225 Douglass Street
PO Box 3553
Portland, ME 04104

Re: Sewer Capacity Letter for 104 Foreside Road

To Whom It May Concern:

The Town of Cumberland has agreed to accept the sewer design flow of 2 house lot equivalents (12 HCF) 600 gallons per day of residential wastewater.

Cumberland is a relatively new sewer system and we have been fortunate to have limited inflow and infiltration in our system. We presently own 30% of the Falmouth Treatment Plant. This new flow would travel via our Route 88 distribution system.

Please let me know if you have any additional questions regarding this request.

Sincerely,

William R. Shane, P.E.
Town Manager

cc: Chris Bolduc, Assistant Manager
Bill Longley, Code Officer
Christina Silberman

QUITCLAIM DEED WITH COVENANT
Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **COVE DEVELOPMENT COMPANY LLC** a Maine limited liability company, having a place of business in Boothbay, County of Lincoln, State of Maine for consideration paid, grants to _____ of _____, County of _____, State of _____, whose mailing address is _____ with QUITCLAIM COVENANT, the land in Portland, County of Cumberland, and State of Maine more particularly described in Exhibit A attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Cove Development Company LLC has caused this instrument to be signed and sealed this _____ day of _____, 2023.

WITNESS:

COVE DEVELOPMENT COMPANY LLC

By:

Its:

STATE OF MAINE

COUNTY OF CUMBERLAND

_____, 2023

Then personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of said company, before me.

Attorney at Law/Notary Public

Printed Name

QUITCLAIM DEED WITH COVENANT
Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **COVE DEVELOPMENT COMPANY LLC** a Maine limited liability company, having a place of business in Boothbay, County of Lincoln, State of Maine for consideration paid, grants to _____ of _____, County of _____, State of _____, whose mailing address is _____ with QUITCLAIM COVENANT, the land in Portland, County of Cumberland, and State of Maine more particularly described in Exhibit A attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Cove Development Company LLC has caused this instrument to be signed and sealed this _____ day of _____, 2023.

WITNESS:

COVE DEVELOPMENT COMPANY LLC

By:

Its:

STATE OF MAINE

COUNTY OF CUMBERLAND

_____, 2023

Then personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of said company, before me.

Attorney at Law/Notary Public

Printed Name

Exhibit A

A certain parcel or lot of land located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the westerly side of Foreside Road at the southeasterly corner of land now or formerly of Daniel Aaron Jackson and Diana Jackson as described in a deed recorded in the Cumberland County Registry of Deeds in Book 29386, Page 302. Thence:

S 12°33'38" W by said Foreside Road a distance of One Hundred Four and 36/100 (104.36) feet to a capped iron rod "PLS 2407" at land designated as "Shared Vehicular Right of Way" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. (the "Plan");

S 79°30'46" W by said Shared Vehicular Right of Way a distance of Two Hundred Seventy-Five and 13/100 (275.13) feet to a capped iron rod "PLS 2407";

N 65°49'14" W by said Shared Vehicular Right of Way a distance of Sixty-Nine and 08/100 (69.08) feet to a capped iron rod "PLS 2407" at the southeasterly corner of land designated as "Proposed Lot A" as delineated on said Plan;

N 24°10'36" E by said Proposed Parcel A a distance of Thirty-Six and 59/100 (36.59) feet to a capped iron rod "PLS 2407";

N 01°05'58"20" W by said Proposed Parcel A a distance of Two Hundred Thirty and 20/100 (230.20) feet to a capped iron rod "PLS 2407" at land now or formerly of Hilde P. Clark as described in a deed recorded in said Registry in Book 31567, Page 342;

S 64°14'00" E by said land of Clark a distance of One Hundred Thirteen and 20/100 (113.20) feet to a point;

N 25°37'30" E by said land of Clark a distance of Twelve and 00/100 (12.00) feet to a capped iron rod "PLS 2407" at the southwesterly corner of said land of Jackson;

S 63°20'00" E by said land of Jackson a distance of Sixty-Six and 31/100 (66.31) feet to a point;

S 66°06'30" E by said land of Jackson a distance of One Hundred Seventeen and 00/100 (117.00) to a point;

S 72°15'00" E by said land of Jackson a distance of Seventy-Nine and 60/100 (79.60) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 1.51 acres and is designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022.

Reference may be made to Subdivision Plan of _____ dated _____, 2023 and recorded in said Registry of Deeds in Plan Book _____, Page _____.

The Option Right as referenced in the deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207 has been extinguished.

Meaning and intending to convey and hereby conveying a portion of the same premises as described in a deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207.

These premises, being Lot B on the Plan are conveyed subject to the following Covenants and Restrictions and Driveway Maintenance Agreement which shall be for the benefit of adjacent land, being Lot A on the Plan, shall burden the premises being conveyed by this deed and shall run with the land. These premises are also conveyed together with the benefit of the Driveway Easement which shall run with the land.

COVENANTS AND RESTRICTIONS

1. No Lot may be further subdivided.
2. By acceptance of this deed, the Grantee hereby agrees and acknowledges that these covenants and restrictions shall bind the Grantee, their heirs, successors and assigns and shall run with the land.
3. The use of the "Forested Buffer Area" shown on the Plan shall be restricted as follows:
 - (a) No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, pollutants, or other fill materials will be placed, stored or dumped on the Forested Buffer Area, nor shall the topography of the area be altered or manipulated in any way:

- (b) No trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees;
- (c) No building or other temporary or permanent structure may be constructed, placed or permitted to remain in the Forested Buffer Area; and
- (d) No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes or other motorized vehicles or mechanical equipment may be permitted on or within the Forested Buffer Area.

DRIVEWAY EASEMENT

TOGETHER with the benefit of a Right-of-Way Easement over the following described parcel:

A certain parcel or lot of land located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the westerly side of Foreside Road at the northeast corner of land now or formerly of Christopher W. Nolan and Lisa C. Nolan as described in a deed recorded in the Cumberland County Registry of Deeds in Book 11773, Page 283. Thence:

N 77°40'00" W by said land of Nolan a distance of Two and 59/100 (2.59) feet to a point;

S 79°30'00" W by said land of Nolan a distance of Two Hundred Forty-Eight and 00/100 (248.00) feet to a 1" iron pipe;

S 12°20'00" W by said land of Nolan a distance of Eleven and 43/100 (11.43) feet to a granite monument on the northeasterly side of a private way known as Chestnut Way;

N 65°49'18" W by said Chestnut Way a distance of Sixty-Two and 22/100 (62.22) feet to a capped iron rod "PLS 1220" at land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85;

N 65°49'18" W by said land of Renyi a distance of One Hundred Three and 19/100 (103.19) feet to a capped iron rod "PLS 2407" at land designated as "Proposed Lot A" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022;

N 24°10'46" E by said Proposed Lot A a distance of Forty-Seven and 00/100 (47.00) feet to a capped iron rod "PLS 2407";

S 65°49'19" E by said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

N 24°10'46" E by said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

S 65°49'19" E by said Proposed Lot A a distance of Thirty and 0/100 (30.00) feet to a capped iron rod "PLS 2407";

S 24°10'36" W by said Proposed Lot A a distance of Thirty-Six and 00/100 (36.00) feet to a capped iron rod "PLS 2407";

S 65°49'14" E by said Proposed Lot A a distance of Five and 00/100 (5.00) feet to a capped iron rod "PLS 2407" at the southwesterly corner of land designated as "Proposed Lot B" as delineated on said Plan;

S 65°49'14" E by said Proposed Lot B a distance of Sixty-Nine and 08/100 (69.08) feet to a capped iron rod "PLS 2407";

N 79°30'46" E by said Proposed Lot B a distance of Two Hundred Seventy-Five and 13/100 (275.13) feet to a capped iron rod "PLS 2407" on the westerly side of Foreside Road;

S 12°33'38" W by said Foreside Road a distance of Forty-Five and 60/100 (45.60) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 18,306 square feet being a portion of land now or formerly of By Golden Star, LLC as described in a deed recorded in the Cumberland County Registry of Deeds in Book 39287, Page 184. The above-described parcel is designated as "Shared Vehicular Right of Way" as delineated on the Plan.

Subject to the restrictions set forth below, said shared vehicular right of way as defined above, as currently maintained or as may be improved by the Grantor or Grantee, shall be for all purposes now or hereafter customary of a road or way, including the right to pass and repass, in common with others, by foot or by vehicle, (including emergency and rescue vehicles), together with the right to install, maintain, repair and replace all underground utilities, including without limitation electricity, cable, telephone, gas, water, and sewer. Together with the right to construct, repair, improve and maintain said right of way and easement for such purposes and to construct, repair, and maintain thereunder such wires, cables, lines, pipes, poles, drains, braces, meters, gauges, relaying, amplifying and connecting equipment, supporting, retaining, and stabilizing structures,

and landscaping as may be useful in connection with the foregoing, the preceding enumeration being descriptive and not in limitation of the Grantee's rights for the purposes herein mentioned, subject to the limitations set forth below. The Grantee, its successors and assigns, shall have no right to erect or construct a building of any kind, or any other permanent structure in the easement area.

Reserving to the Grantor, its successors and assigns, the use and enjoyment of the easement area for such purposes as will not unreasonably interfere with the perpetual use thereof by the Grantee, their heirs and assigns, for the purposes therein mentioned.

This granted right of way and easement shall be appurtenant to the Grantee's premises more particularly described above, and shall run with the land.

The Grantee, by the acceptance of this Deed, shall be subject to, the following restrictions, covenants and requirements, which restrictions, covenants and requirements shall run with the land and shall be binding upon the owner of the premises defined above:

1. Any utilities installed after the date hereof by or for the benefit of Grantee shall be located underground and shall be for the sole benefit of the Benefited Property, unless otherwise agreed in writing by Grantor.
2. Grantee shall not park or permit the parking of vehicles or storage of any kind within the Easement Area.
3. Grantee shall restore the surface of the Easement Area wherever disturbed by Grantee, in the exercise of their rights hereunder, as closely as reasonably practicable to the condition of such surface before being disturbed, including the restoration of any landscaping and trees.
4. Grantee shall enter upon the Easement Area and shall exercise their rights hereunder at their sole risk and hereby releases Grantor, its successors and assigns from, and jointly and severally agree to indemnify, defend and hold Grantor, and its successors and assigns harmless against any and all losses, costs, claims, expenses and liabilities suffered by Grantor, its successors or assigns, on account of any injury to persons or damage to property (i) arising out of the exercise by Grantee of their rights hereunder; or (ii) caused by Grantee, or any agents, employees, invitees or contractors of Grantee while Grantee, or any agents, employees, invitees or contractors of Grantee, are on the Easement Area pursuant to, or are exercising the rights granted by, this easement; or (iii) on account of any breach by Grantee of the agreements, covenants, and warranties of Grantee set forth herein.
5. As a condition to the exercise by Grantee of their rights hereunder, Grantee shall obtain and keep in force general liability insurance with respect to the Easement Area and activities related thereto in such amounts as Grantor shall reasonably request from time to

time, which insurance shall name Grantor, their mortgagee, and their respective successors and assigns, as additional insured and which shall provide for not less than 20 days notice to Grantor, its successors and assigns, prior to any termination, expiration or modification of such coverage. Grantee shall deliver evidence of such insurance to Grantor upon request.

6. Grantee shall keep the Easement Area free of any mechanics lien arising out of or relating to any work done in connection with or relating to Grantee's use of the easement. If any mechanics lien is filed as a result of any work done by or for the benefit of Grantee, and such lien is not released within 10 days after written demand by Grantor, its successors and assigns, Grantor, its successors and assigns, shall have the right, but not the obligation, to pay the claim giving rise to such lien, and any other amounts necessary to cause such lien to be released, whereupon Grantee shall reimburse Grantor upon demand.
7. Grantee shall not erect or construct any building of any kind or other permanent structure and shall not otherwise unreasonably interfere with the Grantor's use of the right of way and easement conveyed hereby without the express written consent of the Grantor.

DRIVEWAY MAINTENANCE AGREEMENT

Scope of Agreement: For purposes of this agreement, "*driveway*" as used herein shall mean the "Shared Vehicular Right of Way" as shown on the aforementioned Plan and running from Foreside Road, so-called. Unless specifically granted herein or in another document, nothing in this agreement shall be construed to expand the rights of access or any other rights of the parties to use the common access road.

Allocation of Costs: Costs of maintenance, repair and snowplowing of the driveway which is used in common shall be allocated and shared as follows:

One half by the owners of Lot A.
One half by the owners of Lot B.

Budget. Annually, prior to March 1 of each calendar year, the lot owners shall meet and establish a budget for road maintenance, repair, snowplowing and any necessary capital expenditures or improvements for the next 12-month period (March 1 to February 28).

Voting. Each lot shall have one vote, regardless of the number of owners. Any decisions as to capital improvement or upgrading the driveway, the cost of which exceeds \$3,000.00 annually shall be by unanimous vote. By signing this agreement, the parties agree that the amount of \$3,000.00 to be expended annually for repair, maintenance and snow plowing is reasonable and they agree to share equally up to that amount, notwithstanding that there may be disagreement as to the adoption of an annual

budget or in the absence of an adopted annual budget. Nothing herein shall prevent the owner of any lot using the driveway for access from improving, repairing or maintaining the driveway at their own expense and without contribution from the other lot owners. The driveway shall not be paved without unanimous written consent of all lot owners using the driveway.

Damage. In the event that damage to the driveway occurs as a result of the use by any lot owner (for example, the use of heavy construction equipment during frost-out time), that lot owner shall expeditiously return the condition of the driveway to the condition existing prior to the damage at their cost.

Arbitration. If there shall arise any dispute between the lot owners as to (i) the need to undertake any maintenance or repair; (ii) the need to incur or pay any maintenance costs; (iii) the reasonableness of any maintenance costs; or (iv) any other matter respecting the rights and/or obligations of the parties hereto and if the issue cannot be resolved within 60 days after such a dispute shall arise, the issue shall be resolved by arbitration in accordance with the rules of the American Arbitration Association and the result thereof shall be binding and conclusive upon the parties.

Effect. This agreement shall be binding upon the parties, their heirs, successors and assigns and shall run with the land. This agreement shall be interpreted under the laws of the State of Maine.

Exhibit A

Two certain lots or parcels of land located in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

PARCEL ONE (Primary Lot):

A certain parcel or lot of land located westerly of, but not adjacent to, Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a granite monument at the southwesterly corner of land now or formerly of Benson T. Caswell and Diana P. Caswell as described in a deed recorded in the Cumberland County Registry of Deeds in Book 30044, Page 96. Thence:

S 64°07'30" E by said land of Caswell a distance of Fifty-One and 38/100 (51.38) feet to a 1-1/2" iron pipe at land now or formerly of Hilde P. Clark as described in a deed recorded in said Registry in Book 31567, Page 342;

S 25°46'00" W by said land of Clark a distance of Twelve and 00/100 (12.00) feet to a 1-1/2" iron pipe;

S 64°14'00" E by said land of Clark a distance of Ninety-Seven and 46/100 (97.46) feet to a capped iron rod "PLS 2407" at the northwesterly corner of land designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 (the "Plan");

S 01°58'20" E by said Proposed Lot B a distance of Two Hundred Thirty and 20/100 (230.20) feet to a capped iron rod "PLS 2407";

S 24°10'36" W by said Proposed Lot B a distance of Thirty-Six and 59/100 (36.59) feet to a capped iron rod "PLS 2407" at land designated as "Shared Vehicular Right of Way";

N 65°49'14" W by said Shared Vehicular Right of Way a distance of Five and 00/100 (5.00) feet to a capped iron rod "PLS 2407";

N 24°10'36" E by said Shared Vehicular Right of Way a distance of Thirty-Six and 00/100 (36.00) feet to a capped iron rod "PLS 2407";

N 65°49'19" W by said Shared Vehicular Right of Way a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

S 24°10'46" W by said Shared Vehicular Right of Way a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

N 65°49'19" W by said Shared Vehicular Right of Way a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

S 24°10'46" W by said shared Vehicular Right of Way a distance of Forty-Seven and 00/100 (47.00) feet to a capped iron rod "PLS 2407" at land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85;

N 65°49'18" W by said land of Renyi a distance of Two Hundred Fifty-Two and 18/100 (252.18) feet to a 1" iron pipe at land now or formerly of True Spring Farm;

N 36°48'00" E by said land of True Spring Farm a distance of Three Hundred Seven and 89/100 (307.89) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 1.55 acres and is designated as "Proposed Lot A" as delineated on the Plan.

PARCEL TWO (Shared Vehicular Right of Way):

A certain parcel or lot of land located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the westerly side of Foreside Road at the northeast corner of land now or formerly of Christopher W. Nolan and Lisa C. Nolan as described in a deed recorded in the Cumberland County Registry of Deeds in Book 11773, Page 283. Thence:

N 77°40'00" W by said land of Nolan a distance of Two and 59/100 (2.59) feet to a point;

S 79°30'00" W by said land of Nolan a distance of Two Hundred Forty-Eight and 00/100 (248.00) feet to a 1" iron pipe;

S 12°20'00" W by said land of Nolan a distance of Eleven and 43/100 (11.43) feet to a granite monument on the northeasterly side of a private way known as Chestnut Way;

N 65°49'18" W by said Chestnut Way a distance of Sixty-Two and 22/100 (62.22) feet to a capped iron rod "PLS 1220" at land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85;

N 65°49'18" W by said land of Renyi a distance of One Hundred Three and 19/100 (103.19) feet to a capped iron rod "PLS 2407" at land designated as "Proposed Lot A" as delineated on the Plan;

N 24°10'46" E by said Proposed Lot A a distance of Forty-Seven and 00/100 (47.00) feet to a capped iron rod "PLS 2407";

S 65°49'19" E by said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

N 24°10'46" E by said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";

S 65°49'19" E by said Proposed Lot A a distance of Thirty and 0/100 (30.00) feet to a capped iron rod "PLS 2407";

S 24°10'36" W by said Proposed Lot A a distance of Thirty-Six and 00/100 (36.00) feet to a capped iron rod "PLS 2407";

S 65°49'14" E by said Proposed Lot A a distance of Five and 00/100 (5.00) feet to a capped iron rod "PLS 2407" at the southwesterly corner of land designated as "Proposed Lot B" as delineated on said Plan;

S 65°49'14" E by said Proposed Lot B a distance of Sixty-Nine and 08/100 (69.08) feet to a capped iron rod "PLS 2407";

N 79°30'46" E by said Proposed Lot B a distance of Two Hundred Seventy-Five and 13/100 (275.13) feet to a capped iron rod "PLS 2407" on the westerly side of Foreside Road;

S 12°33'38" W by said Foreside Road a distance of Forty-Five and 60/100 (45.60) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 18,306 square feet and is designated as "Shared Vehicular Right of Way" on the Plan.

Reference may be made to Subdivision Plan of _____ dated _____, 2023 and recorded in said Registry of Deeds in Plan Book _____, Page _ _____.

The Option Right as referenced in the deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207 has been extinguished.

Meaning and intending to convey and hereby conveying a portion of the same premises as described in a deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207.

These premises, being Lot A on the Plan are conveyed subject to the following Covenants and Restrictions, Driveway Easement and Driveway Maintenance Agreement which shall be for the benefit of adjacent land of the Grantor, being Lot B on the Plan, shall burden the premises being conveyed by this deed and they shall run with the land.

COVENANTS AND RESTRICTIONS

1. No Lot may be further subdivided.
2. By acceptance of this deed, the Grantee hereby agrees and acknowledges that these covenants and restrictions shall bind the Grantee, their heirs, successors and assigns and shall run with the land.
3. The use of the "Forested Buffer Area" shown on the Plan shall be restricted as follows:
 - (a) No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, pollutants, or other fill materials will be placed, stored or dumped on the Forested Buffer Area, nor shall the topography of the area be altered or manipulated in any way:
 - (b) No trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees;
 - (c) No building or other temporary or permanent structure may be constructed, placed or permitted to remain in the Forested Buffer Area; and
 - (d) No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes or other motorized vehicles or mechanical equipment may be permitted on or within the Forested Buffer Area.

DRIVEWAY EASEMENT

Subject to the restrictions set forth below, said shared vehicular right of way defined as "Parcel Two" above, as currently maintained or as may be improved by the Grantor or Grantee, shall be for all purposes now or hereafter customary of a road or way, including the right to pass and repass, in common with others, by foot or by vehicle, (including emergency and rescue vehicles), together with the right to install, maintain, repair and replace all underground utilities, including without limitation electricity, cable, telephone, gas, water, and sewer. Together with the right to construct, repair, improve and maintain said right of way and easement for such purposes and to construct, repair, and maintain thereunder such wires, cables, lines, pipes, poles, drains, braces, meters, gauges, relaying, amplifying and connecting equipment, supporting, retaining, and stabilizing structures, and landscaping as may be useful in connection with the foregoing, the

preceding enumeration being descriptive and not in limitation of the Grantor's rights for the purposes herein mentioned, subject to the limitations set forth below. The Grantor, its successors and assigns, shall have no right to erect or construct a building of any kind, or any other permanent structure in the easement area.

Reserving to the Grantor, its successors and assigns, the use and enjoyment of the easement area for such purposes as will not unreasonably interfere with the perpetual use thereof by the Grantee, their heirs and assigns, for the purposes herein mentioned.

This reserved right of way and easement shall be appurtenant to the Grantor's remaining premises being a portion of that land more particularly described in a Deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207 (the "Benefited Property").

The Grantee, by the acceptance of this Deed, shall be subject to, the following restrictions, covenants and requirements, which restrictions, covenants and requirements shall run with the land and shall be binding upon the owner of the Benefited Property:

1. Any utilities installed after the date hereof by or for the benefit of Grantee shall be located underground and shall be for the sole benefit of the Benefited Property, unless otherwise agreed in writing by Grantor.
2. Grantee shall not park or permit the parking of vehicles or storage of any kind within the Easement Area.
3. Grantee shall restore the surface of the Easement Area wherever disturbed by Grantee, in the exercise of their rights hereunder, as closely as reasonably practicable to the condition of such surface before being disturbed, including the restoration of any landscaping and trees.
4. Grantee shall enter upon the Easement Area and shall exercise their rights hereunder at their sole risk and hereby releases Grantor, its successors and assigns from, and jointly and severally agree to indemnify, defend and hold Grantor, and its successors and assigns harmless against any and all losses, costs, claims, expenses and liabilities suffered by Grantor, its successors or assigns, on account of any injury to persons or damage to property (i) arising out of the exercise by Grantee of their rights hereunder; or (ii) caused by Grantee, or any agents, employees, invitees or contractors of Grantee while Grantee, or any agents, employees, invitees or contractors of Grantee, are on the Easement Area pursuant to, or are exercising the rights granted by, this easement; or (iii) on account of any breach by Grantee of the agreements, covenants, and warranties of Grantee set forth herein.
5. As a condition to the exercise by Grantee of their rights hereunder, Grantee shall obtain and keep in force general liability insurance with respect to the Easement Area and

activities related thereto in such amounts as Grantor shall reasonably request from time to time, which insurance shall name Grantor, their mortgagee, and their respective successors and assigns, as additional insured and which shall provide for not less than 20 days notice to Grantor, its successors and assigns, prior to any termination, expiration or modification of such coverage. Grantee shall deliver evidence of such insurance to Grantor upon request.

6. Grantee shall keep the Easement Area free of any mechanics lien arising out of or relating to any work done in connection with or relating to Grantee's use of the easement. If any mechanics lien is filed as a result of any work done by or for the benefit of Grantee, and such lien is not released within 10 days after written demand by Grantor, its successors and assigns, Grantor, its successors and assigns, shall have the right, but not the obligation, to pay the claim giving rise to such lien, and any other amounts necessary to cause such lien to be released, whereupon Grantee shall reimburse Grantor upon demand.
7. Grantee shall not erect or construct any building of any kind or other permanent structure and shall not otherwise unreasonably interfere with the Grantor's use of the right of way and easement conveyed hereby without the express written consent of the Grantor.

DRIVEWAY MAINTENANCE AGREEMENT

Scope of Agreement: For purposes of this agreement, "*driveway*" as used herein shall mean the "Shared Vehicular Right of Way" as shown on the aforementioned Plan and defined above running from Foreside Road, so-called. Unless specifically granted herein or in another document, nothing in this agreement shall be construed to expand the rights of access or any other rights of the parties to use the common access road.

Allocation of Costs: Costs of maintenance, repair and snowplowing of the driveway which is used in common shall be allocated and shared as follows:

One half by the owners of Lot A.
One half by the owners of Lot B.

Budget. Annually, prior to March 1 of each calendar year, the lot owners shall meet and establish a budget for road maintenance, repair, snowplowing and any necessary capital expenditures or improvements for the next 12-month period (March 1 to February 28).

Voting. Each lot shall have one vote, regardless of the number of owners. Any decisions as to capital improvement or upgrading the driveway, the cost of which exceeds \$3,000.00 annually shall be by unanimous vote. By signing this agreement, the parties agree that the amount of \$3,000.00 to be expended annually for repair, maintenance and snow plowing is reasonable and they agree to share equally up to that amount, notwithstanding that there may be disagreement as to the adoption of an annual

budget or in the absence of an adopted annual budget. Nothing herein shall prevent the owner of any lot using the driveway for access from improving, repairing or maintaining the driveway at their own expense and without contribution from the other lot owners. The driveway shall not be paved without unanimous written consent of all lot owners using the driveway.

Damage. In the event that damage to the driveway occurs as a result of the use by any lot owner (for example, the use of heavy construction equipment during frost-out time), that lot owner shall expeditiously return the condition of the driveway to the condition existing prior to the damage at their cost.

Arbitration. If there shall arise any dispute between the lot owners as to (i) the need to undertake any maintenance or repair; (ii) the need to incur or pay any maintenance costs; (iii) the reasonableness of any maintenance costs; or (iv) any other matter respecting the rights and/or obligations of the parties hereto and if the issue cannot be resolved within 60 days after such a dispute shall arise, the issue shall be resolved by arbitration in accordance with the rules of the American Arbitration Association and the result thereof shall be binding and conclusive upon the parties.

Effect. This agreement shall be binding upon the parties, their heirs, successors and assigns and shall run with the land. This agreement shall be interpreted under the laws of the State of Maine.



January 31, 2023

Debra Wallace
Project Facilitator
Knickerbocker Group
82 Hanover St, Suite 3
Portland, Maine 04101

Re: Vernal Pool Findings – 104 Foreside Road, Cumberland Foreside

Ms. Wallace,

A natural resource survey was performed on June 7th, 2022 at the approximately 3.3-acre parcel located at 104 Foreside Road in the Town of Cumberland, Maine (Tax Map U04, Lot 10A) by Erik Lema, the Owner/Principal Scientist of Basswood Environmental LLC. During this survey, two wetland areas were identified on site. Neither of these wetlands showed signs of ponded water and do not provide breeding habitat for obligate vernal pool species. Additionally, upland areas of the site are bedrock controlled and also do not support the development of seasonal waterbodies that can provide such habitat. It is the position of Basswood Environmental that no further vernal pool investigation is necessary on this site.

If there is additional detail or clarity that Basswood can provide regarding the above, please do not hesitate to contact Erik Lema at 207-518-8442 or by email at erik@basswoodenv.com.

Best regards,

Erik Lema, Owner/Principal
Basswood Environmental LLC



KNICKERBOCKER GROUP

Site Assessment

104 Foreside, Cumberland-Foreside, Maine

January 10, 2023

The existing site at 104 Foreside Road is a forested lot with primarily oak, white pine, beech, birch, hemlock, spruce and fir trees with a healthy understory where the lot has not been cleared in the past.

A thirty foot no-cut buffer is recommended along the northern property line to preserve the existing screening, which is substantial and adequate. This naturally occurring buffer is enhanced by topography and ledge outcroppings along the eastern extent of the property. Natural landforms and an existing stone wall serve to further bolster the privacy along the northeast corner of the lot.

Clearing within the center of each lot will allow more sunlight to reach the northern perimeter and the existing undergrowth will revegetate and thicken over time. The vegetation is currently thick enough in the northeastern quadrant that it would prove challenging to find adequate light or soil conditions to support new trees.

The northwestern quadrant of the site has been cleared along the northern perimeter by an abutter. The lack of visible understory growth is an obvious result of this clearing. As a result, it is my recommendation that the approved plan include a requirement for replanting along the northern edge of the new driveway adjacent to the garage doors to soften this view. It is recommended that five (5) coniferous evergreens at a planting height of 10-12' be included in the plan. The species recommendation is Fir (*Abies*) or spruce (*Picea*) but not Hemlock which is subject to Woolly Adelgid or White Pine which drops its lower branches over time and loses its screening attributes. These screening trees will provide an immediate visual buffer in addition to the thirty-foot wide no-cut buffer along the northern perimeter that will enhance naturally over time.

Prepared by Kerry Lewis, Maine Registered Landscape Architect



ROAD NAME APPROVAL APPLICATION TOWN OF CUMBERLAND

For Office Use Only

Date Received: _____

Received by: _____

APPLICANT CONTACT INFORMATION

Name	COVE Development Company LLC	E-Mail Address	dwallace@knickerbockergroup.com
Street Address	3 Builders Square	City/State/Zip	Boothbay, ME 04537
Mailing Address	P.O. Box 142	Mailing City/St/Zip	Boothbay, ME 04537
Phone Number	207-633-3818	Work Phone	

ROAD INFORMATION

Owner of Road (if private)	COVE Development Company LLC
Location/Length of road (left or right off existing road)	450' off 104 Foreside Road
Proposed Name of Road	Tambour Way
Second Choice Name of Road	
Third Choice Name of Road	
Applicant Signature	<i>[Signature]</i>

Submission of this Form does NOT constitute approval of Road Name. See Applicant note on reverse side.

MUNICIPAL USE ONLY

Map:	Lot:	Sub:	Odd:
Number Range	High:	Low:	Even:

MUNICIPAL OFFICIALS APPROVAL

Assessor Approval

Signature/Title:	Date:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------	-------	------------------------------	-----------------------------

Comments:

Fire Chief Approval

Signature/Title:	Date:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------	-------	------------------------------	-----------------------------

Comments:

Code Enforcement Approval

Signature/Title:	Date:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------	-------	------------------------------	-----------------------------

Comments:

Police Chief Approval

Signature/Title:	Date:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------	-------	------------------------------	-----------------------------

Comments:

Town Planner Approval

Signature/Title:	Date:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------	-------	------------------------------	-----------------------------

Comments:

Town Manager Approval

Signature/Title:	Date:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------	-------	------------------------------	-----------------------------

Comments:

From: [John Brushwein](#)
To: [Debra Wallace](#)
Subject: RE: 104 Foreside - Tambour Way
Date: Tuesday, January 31, 2023 11:06:10 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

Ms. Wallace,

I have submitted your proposed road name to the review committee. I will let you know as soon as I have a decision.



John Brushwein, CMA

Tax Assessor, Town of Cumberland

207-829-2204

www.cumberlandmaine.com

290 Tuttle Road, Cumberland, Maine 04021



Please be advised that pursuant to Title 1 M.R.S.A. Section 402(3), a public record includes any written, printed or graphic matter or any mechanical or electronic data in the possession or custody of an agency or public official that has been received or prepared for use in connection with the transaction of public or governmental business and contains information relating to the transaction of said business; therefore, the public is advised that any correspondence whether by traditional method or e-mail with Town offices or Town officials, with certain limited exceptions, is a public record and is available for review by any interested party.

From: Debra Wallace <dwallace@knickerbockergroup.com>
Sent: Tuesday, January 31, 2023 10:53 AM
To: John Brushwein <jbrushwein@cumberlandmaine.com>
Cc: Christina Silberman <csilberman@cumberlandmaine.com>; Carla Nixon <cnixon@cumberlandmaine.com>; Randy Smith <rsmith@knickerbockergroup.com>; Danielle Betts <dbetts@knickerbockergroup.com>
Subject: 104 Foreside - Tambour Way

WARNING: This is an external email that originated outside of our email system. DO NOT CLICK links or open attachments unless you recognize the sender and know that the content is safe!

Good morning John,

As a quick follow-up to my phone message, I wanted to verify a road name availability & approval for the proposed lot division of 104 Foreside. Attached is the street name approval form for your review and consideration.

I look forward to your response, many thanks!

Kind regards,
Debra Wallace
Project Facilitator

KNICKERBOCKER GROUP
+ COVE BY KNICKERBOCKER GROUP®
Boothbay | Portland
O 207.633.3818
D 207.200.2030
knickerbockergroup.com
covebykg.com

APPLICATION PROCEDURE

1. Return Completed Application to Assessor. Copy Made.
2. Entrance permit is required from the Public Works Department.
3. Assessor working with Public Safety verifies Road Name availability and authority of applicant to change name.
4. Assessor circulates form to departments responsible for approval.
5. After final approval original is then returned to the Assessor for Road Numbering purposes, & file.
6. A road sign must be installed after approval. (Available through the Public Works Department)
7. Assessor then gives a copy to the following:
 - a. Public Safety
 - b. Registrar of Voters
 - c. Public Works
 - d. C.E.O.
 - e. Applicant

APPLICANT NOTE: After this application is approved, the applicant is responsible for changing some or all of the following:

- Miscellaneous Licenses (i.e. Driver's License, Dog License, Hunting & Fishing license, etc.)
- Motor Vehicle Registration
- Voter Registration
- Tax Bill Address
- Postal Address
- ETC... Any other items affected by a change of Address.

QUITCLAIM DEED WITH COVENANT
Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **COVE DEVELOPMENT COMPANY LLC** a Maine limited liability company, having a place of business in Boothbay, County of Lincoln, State of Maine for consideration paid, grants to _____ of _____, County of _____, State of _____, whose mailing address is _____ with QUITCLAIM COVENANT, the land in Portland, County of Cumberland, and State of Maine more particularly described in Exhibit A attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Cove Development Company LLC has caused this instrument to be signed and sealed this _____ day of _____, 2023.

WITNESS:

COVE DEVELOPMENT COMPANY LLC

By:

Its:

STATE OF MAINE

COUNTY OF CUMBERLAND

_____, 2023

Then personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of said company, before me.

Attorney at Law/Notary Public

Printed Name

Exhibit A

Two certain lots or parcels of land located in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

PARCEL ONE (Primary Lot):

A certain parcel or lot of land located westerly of, but not adjacent to, Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a granite monument at the southwesterly corner of land now or formerly of Benson T. Caswell and Diana P. Caswell as described in a deed recorded in the Cumberland County Registry of Deeds in Book 30044, Page 96. Thence:

- 1) S 64°07'30" E by said land of Caswell a distance of Fifty-One and 38/100 (51.38) feet to a 1-1/2" iron pipe at land now or formerly of Hilde P. Clark as described in a deed recorded in said Registry in Book 31567, Page 342;
- 2) S 25°46'00" W by said land of Clark a distance of Twelve and 00/100 (12.00) feet to a 1-1/2" iron pipe;
- 3) S 64°14'00" E by said land of Clark a distance of Ninety-Seven and 46/100 (97.46) feet to a capped iron rod "PLS 2407" at the northwesterly corner of land designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023;
- 4) S 01°54'07" E by said Proposed Lot B a distance of Two Hundred Thirty and 78/100 (230.78) feet to a capped iron rod "PLS 2407";
- 5) S 24°10'42" W by said Proposed Lot B a distance of Thirty-Five and 95/100 (35.95) feet to a capped iron rod "PLS 2407" at the northerly side of land designated as "Shared Vehicular Right of Way" as delineated on said Plan;
- 6) S 24°10'42" W across said Shared Vehicular Right of Way a distance of Forty-One and 00/100 (41.00) feet to a capped iron rod "PLS 2407" at land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85;
- 7) N 65°49'18" W by said land of Renyi a distance of Three Hundred Seventeen and 18/100 (317.18) feet to land now or formerly of True Spring Farm;

- 8) N 36°48'00" E by said land of True Spring Farm a distance of Three Hundred Seven and 89/100 (307.89) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 1.55 acres and is designated as "Proposed Lot A" as delineated on the Plan.

PARCEL TWO (Shared Vehicular Right of Way):

A certain easement located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a capped iron rod "PLS 2407" on the westerly side of Foreside Road, said point of beginning being located S 12°33'38" W by said Foreside Road a distance of Eighty-Two and 56/100 (82.56) feet from land now or formerly of Daniel Aaron Jackson and Diana Jackson as described in a deed recorded in the Cumberland County Registry of Deeds in Book 29386, Page 302. Thence:

- 1) S 12°33'38" W by said Foreside Road a distance of Thirty-Six and 70/100 (36.70) feet to a capped iron rod "PLS 2407";
- 2) S 88°39'41" E through land designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023 a distance of Thirty-nine and 51/100 (39.51) feet to a capped iron rod "PLS 2407";
- 3) Southwesterly through said Proposed Lot B, following a curve to the left having a radius of One Hundred Sixty-Two and 00/100 (162.00) feet, an arc distance of One Hundred Two and 59/100 (120.59) feet to a capped iron rod "PLS 2407";
- 4) Southwesterly through said Proposed Lot B, following a curve to the right having a radius of One Hundred Ninety-Eight and 00/100 (198.00) feet, an arc distance of One Hundred Twenty-One and 99/100 (121.99) feet to a capped iron rod "PLS 2407";
- 5) S 12°20'00" W through said Proposed Lot B and by land now or formerly of Christopher W. Nolan and Lisa G. Nolan as described in a deed recorded in said Registry in Book 11773, Page 283 a distance of Twenty-Two and 35/100 (22.35) feet to a granite monument on the northerly side of a private way known as Chestnut Way;

- 6) N 65°49'18" W by said Chestnut Way and land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85 a distance of One Hundred Sixty-Five and 41/100 (165.41) feet to a capped iron rod "PLS 2407";
- 7) N 24°10'42" E through land designated as "Proposed Lot A" as delineated on said Plan a distance of Forty-Seven and 0/100 (47.00) feet to a capped iron rod "PLS 2407";
- 8) S 65°49'18" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 9) N 24°10'42" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 10) S 65°49'18" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 11) S 24°10'42" W through said Proposed Lot A a distance of Thirty-Six and 00/100 (36.00) feet to a capped iron rod "PLS 2407";
- 12) S 65°49'18" E through Proposed Lot A a distance of Five and 00/100 (5.00) feet to a capped iron rod "PLS 2407" at said Proposed Lot B;
- 13) S 65°49'18" E through said Proposed Lot B a distance of Fifteen and 85/100 (15.85) feet to a capped iron rod "PLS 2407";
- 14) Northeasterly through said Proposed Lot B, following a curve to the left having a radius of One Hundred Sixty-Two and 00/100 (162.00) feet, an arc distance of One Hundred Sixty-Seven and 17/100 (167.17) feet to a capped iron rod "PLS 2407";
- 15) Northeasterly through said Proposed Lot B, following a curve to the right having a radius of One Hundred Ninety-Eight and 00/100 (198.00) feet, an arc distance of One Hundred Twenty-Five and 39/100 (125.39) feet to a capped iron rod "PLS 2407";
- 16) N 88°39'41" E through said Proposed Lot b a distance of Forty-Six and 66/100 (46.66) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 13,883 square feet and is designated as "Shared Vehicular Right of Way" on the Plan.

Reference may be made to Subdivision Plan of _____ dated _____, 2023 and recorded in said Registry of Deeds in Plan Book _____, Page _____.

The Option Right as referenced in the deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207 has been extinguished.

Meaning and intending to convey and hereby conveying a portion of the same premises as described in a deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207.

These premises, being Lot A on the Plan are conveyed subject to the following Covenants and Restrictions, Driveway Easement and Driveway Maintenance Agreement which shall be for the benefit of adjacent land of the Grantor, being Lot B on the Plan, shall burden the premises being conveyed by this deed and they shall run with the land.

COVENANTS AND RESTRICTIONS

1. No Lot may be further subdivided.
2. By acceptance of this deed, the Grantee hereby agrees and acknowledges that these covenants and restrictions shall bind the Grantee, their heirs, successors and assigns and shall run with the land.
3. The use of the "Forested Buffer Area" shown on the Plan shall be restricted as follows:
 - (a) No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, pollutants, or other fill materials will be placed, stored or dumped on the Forested Buffer Area, nor shall the topography of the area be altered or manipulated in any way:
 - (b) No trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees;
 - (c) No building or other temporary or permanent structure may be constructed, placed or permitted to remain in the Forested Buffer Area; and
 - (d) No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes or other motorized vehicles or mechanical equipment may be permitted on or within the Forested Buffer Area.

DRIVEWAY EASEMENT

Subject to the restrictions set forth below, said shared vehicular right of way defined as “Parcel Two” above, as currently maintained or as may be improved by the Grantor or Grantee, shall be for all purposes now or hereafter customary of a road or way, including the right to pass and repass, in common with others, by foot or by vehicle, (including emergency and rescue vehicles), together with the right to install, maintain, repair and replace all underground utilities, including without limitation electricity, cable, telephone, gas, water, and sewer. Together with the right to construct, repair, improve and maintain said right of way and easement for such purposes and to construct, repair, and maintain thereunder such wires, cables, lines, pipes, poles, drains, braces, meters, gauges, relaying, amplifying and connecting equipment, supporting, retaining, and stabilizing structures, and landscaping as may be useful in connection with the foregoing, the preceding enumeration being descriptive and not in limitation of the Grantor’s rights for the purposes herein mentioned, subject to the limitations set forth below. The Grantor, its successors and assigns, shall have no right to erect or construct a building of any kind, or any other permanent structure in the easement area.

Reserving to the Grantor, its successors and assigns, the use and enjoyment of the easement area for such purposes as will not unreasonably interfere with the perpetual use thereof by the Grantee, their heirs and assigns, for the purposes herein mentioned.

This reserved right of way and easement shall be appurtenant to the Grantor’s remaining premises being a portion of that land more particularly described in a Deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207 (the “Benefited Property”).

The Grantee, by the acceptance of this Deed, shall be subject to, the following restrictions, covenants and requirements, which restrictions, covenants and requirements shall run with the land and shall be binding upon the owner of the Benefited Property:

1. Any utilities installed after the date hereof by or for the benefit of Grantee shall be located underground and shall be for the sole benefit of the Benefited Property, unless otherwise agreed in writing by Grantor.
2. Grantee shall not park or permit the parking of vehicles or storage of any kind within the Easement Area.
3. Grantee shall restore the surface of the Easement Area wherever disturbed by Grantee, in the exercise of their rights hereunder, as closely as reasonably practicable to the condition of such surface before being disturbed, including the restoration of any landscaping and trees.
4. Grantee shall enter upon the Easement Area and shall exercise their rights hereunder at their sole risk and hereby releases Grantor, its successors and assigns from, and jointly

and severally agree to indemnify, defend and hold Grantor, and its successors and assigns harmless against any and all losses, costs, claims, expenses and liabilities suffered by Grantor, its successors or assigns, on account of any injury to persons or damage to property (i) arising out of the exercise by Grantee of their rights hereunder; or (ii) caused by Grantee, or any agents, employees, invitees or contractors of Grantee while Grantee, or any agents, employees, invitees or contractors of Grantee, are on the Easement Area pursuant to, or are exercising the rights granted by, this easement; or (iii) on account of any breach by Grantee of the agreements, covenants, and warranties of Grantee set forth herein.

5. As a condition to the exercise by Grantee of their rights hereunder, Grantee shall obtain and keep in force general liability insurance with respect to the Easement Area and activities related thereto in such amounts as Grantor shall reasonably request from time to time, which insurance shall name Grantor, their mortgagee, and their respective successors and assigns, as additional insured and which shall provide for not less than 20 days notice to Grantor, its successors and assigns, prior to any termination, expiration or modification of such coverage. Grantee shall deliver evidence of such insurance to Grantor upon request.
6. Grantee shall keep the Easement Area free of any mechanics lien arising out of or relating to any work done in connection with or relating to Grantee's use of the easement. If any mechanics lien is filed as a result of any work done by or for the benefit of Grantee, and such lien is not released within 10 days after written demand by Grantor, its successors and assigns, Grantor, its successors and assigns, shall have the right, but not the obligation, to pay the claim giving rise to such lien, and any other amounts necessary to cause such lien to be released, whereupon Grantee shall reimburse Grantor upon demand.
7. Grantee shall not erect or construct any building of any kind or other permanent structure and shall not otherwise unreasonably interfere with the Grantor's use of the right of way and easement conveyed hereby without the express written consent of the Grantor.

DRIVEWAY MAINTENANCE AGREEMENT

Scope of Agreement: For purposes of this agreement, "*driveway*" as used herein shall mean the "Shared Vehicular Right of Way" as shown on the aforementioned Plan and defined above running from Foreside Road, so-called. Unless specifically granted herein or in another document, nothing in this agreement shall be construed to expand the rights of access or any other rights of the parties to use the common access road.

Allocation of Costs: Costs of maintenance, repair and snowplowing of the driveway which is used in common shall be allocated and shared as follows:

One half by the owners of Lot A.
One half by the owners of Lot B.

Budget. Annually, prior to March 1 of each calendar year, the lot owners shall meet and establish a budget for road maintenance, repair, snowplowing and any necessary capital expenditures or improvements for the next 12-month period (March 1 to February 28).

Voting. Each lot shall have one vote, regardless of the number of owners. Any decisions as to capital improvement or upgrading the driveway, the cost of which exceeds \$3,000.00 annually shall be by unanimous vote. By signing this agreement, the parties agree that the amount of \$3,000.00 to be expended annually for repair, maintenance and snow plowing is reasonable and they agree to share equally up to that amount, notwithstanding that there may be disagreement as to the adoption of an annual budget or in the absence of an adopted annual budget. Nothing herein shall prevent the owner of any lot using the driveway for access from improving, repairing or maintaining the driveway at their own expense and without contribution from the other lot owners. The driveway shall not be paved without unanimous written consent of all lot owners using the driveway.

Damage. In the event that damage to the driveway occurs as a result of the use by any lot owner (for example, the use of heavy construction equipment during frost-out time), that lot owner shall expeditiously return the condition of the driveway to the condition existing prior to the damage at their cost.

Arbitration. If there shall arise any dispute between the lot owners as to (i) the need to undertake any maintenance or repair; (ii) the need to incur or pay any maintenance costs; (iii) the reasonableness of any maintenance costs; or (iv) any other matter respecting the rights and/or obligations of the parties hereto and if the issue cannot be resolved within 60 days after such a dispute shall arise, the issue shall be resolved by arbitration in accordance with the rules of the American Arbitration Association and the result thereof shall be binding and conclusive upon the parties.

Effect. This agreement shall be binding upon the parties, their heirs, successors and assigns and shall run with the land. This agreement shall be interpreted under the laws of the State of Maine.

QUITCLAIM DEED WITH COVENANT
Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS THAT **COVE DEVELOPMENT COMPANY LLC** a Maine limited liability company, having a place of business in Boothbay, County of Lincoln, State of Maine for consideration paid, grants to _____ of _____, County of _____, State of _____, whose mailing address is _____ with QUITCLAIM COVENANT, the land in Portland, County of Cumberland, and State of Maine more particularly described in Exhibit A attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said Cove Development Company LLC has caused this instrument to be signed and sealed this _____ day of _____, 2023.

WITNESS:

COVE DEVELOPMENT COMPANY LLC

By:

Its:

STATE OF MAINE

COUNTY OF CUMBERLAND

_____, 2023

Then personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of said company, before me.

Attorney at Law/Notary Public

Printed Name

Exhibit A

A certain parcel or lot of land located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the westerly side of Foreside Road at the southeasterly corner of land now or formerly of Daniel Aaron Jackson and Diana Jackson as described in a deed recorded in the Cumberland County Registry of Deeds in Book 29386, Page 302. Thence:

- 1) S 12°33'38" W by said Foreside Road a distance of One Hundred Forty-Nine and 96/100 (149.96) feet to land now or formerly of Christopher W. Nolan and Lisa G. Nolan as described in a deed recorded in said Registry in Book 1173, Page 283;
- 2) N 77°40'00" W by said land of Nolan a distance of Two and 59/100 (2.59) feet to a point;
- 3) S 79°30'00" W by said land of Nolan a distance of Two Hundred Forty-Eight and 00/100 (248.00) feet to a 1" iron pipe;
- 4) S 12°20'00" W by said land of Nolan a distance of Eleven and 45/100 (11.45) feet to a granite monument found on the northerly side of a private way known as Chestnut Way;
- 5) N 65°49'18" W by said Chestnut Way and land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85 a distance of One Hundred and 41/100 (100.41) feet to a capped iron rod "PLS 2407" at land designated as "Proposed Lot A" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023;
- 6) N 24°10'42" E by said Proposed Lot A and across land designated as "Shared Vehicular Right of Way" as delineated on said Plan a distance of Forty-One and 00/100 (41.00) feet to a capped iron rod "PLS 2407";
- 7) N 24°10'42" E by said Proposed Lot A a distance of Thirty-Five and 95/100 (35.95) feet to a capped iron rod "PLS 2407";
- 8) N 01°54'07" W by said Proposed Lot A a distance of Two Hundred Thirty and 78/100 (230.78) feet to a capped iron rod "PLS 2407" at land now or formerly of Hilde P. Clark as described in a deed recorded in said Registry in Book 31567, Page 342;
- 9) S 64°14'00" E by said land of Clark a distance of One Hundred Thirteen and 20/100 (113.20) feet to a point;

- 10) N 25°37'30" E by said land of Clark a distance of Twelve and 00/100 (12.00) feet to a capped iron rod "PLS 2407" at the southwesterly corner of said land of Jackson;
- 11) S 63°20'00" E by said land of Jackson a distance of Sixty-Six and 31/100 (66.31) feet to a point;
- 12) S 66°06'30" E by said land of Jackson a distance of One Hundred Seventeen and 00/100 (117.00) to a point;
- 13) S 72°15'00" E by said land of Jackson a distance of Seventy-Nine and 60/100 (79.60) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 1.51 acres and is designated as "Proposed Lot B" as delineated on a plan entitled "Boundary & Topographic Survey" made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022.

Reference may be made to Subdivision Plan of _____ dated _____, 2023 and recorded in said Registry of Deeds in Plan Book _____, Page _ _____.

The Option Right as referenced in the deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207 has been extinguished.

Meaning and intending to convey and hereby conveying a portion of the same premises as described in a deed from By Goldenstar, LLC to Cove Development Company LLC dated August 18, 2022 and recorded in said Registry of Deeds in Book 39660, Page 207.

These premises, being Lot B on the Plan are conveyed subject to the following Covenants and Restrictions and Driveway Maintenance Agreement which shall be for the benefit of adjacent land, being Lot A on the Plan, shall burden the premises being conveyed by this deed and shall run with the land. These premises are also conveyed together with the benefit of the Driveway Easement which shall run with the land.

COVENANTS AND RESTRICTIONS

1. No Lot may be further subdivided.

2. By acceptance of this deed, the Grantee hereby agrees and acknowledges that these covenants and restrictions shall bind the Grantee, their heirs, successors and assigns and shall run with the land.
3. The use of the “Forested Buffer Area” shown on the Plan shall be restricted as follows:
 - (a) No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, pollutants, or other fill materials will be placed, stored or dumped on the Forested Buffer Area, nor shall the topography of the area be altered or manipulated in any way;
 - (b) No trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees;
 - (c) No building or other temporary or permanent structure may be constructed, placed or permitted to remain in the Forested Buffer Area; and
 - (d) No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes or other motorized vehicles or mechanical equipment may be permitted on or within the Forested Buffer Area.

DRIVEWAY EASEMENT

TOGETHER with the benefit of a Right-of-Way Easement over the following described parcel:

A certain easement located on the westerly side of Foreside Road in the Town of Cumberland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a capped iron rod “PLS 2407” on the westerly side of Foreside Road, said point of beginning being located S 12°33’38” W by said Foreside Road a distance of Eighty-Two and 56/100 (82.56) feet from land now or formerly of Daniel Aaron Jackson and Diana Jackson as described in a deed recorded in the Cumberland County Registry of Deeds in Book 29386, Page 302. Thence:

- 1) S 12°33’38” W by said Foreside Road a distance of Thirty-Six and 70/100 (36.70) feet to a capped iron rod “PLS 2407”;
- 2) S 88°39’41” E through land designated as “Proposed Lot B” as delineated on a plan entitled “Boundary & Topographic Survey” made for By Golden Star, LLC by Owen Haskell, Inc. dated August 31, 2022 as revised through January 30, 2023 a distance of Thirty-nine and 51/100 (39.51) feet to a capped iron rod “PLS 2407”;

- 3) Southwesterly through said Proposed Lot B, following a curve to the left having a radius of One Hundred Sixty-Two and 00/100 (162.00) feet, an arc distance of One Hundred Two and 59/100 (120.59) feet to a capped iron rod "PLS 2407";
- 4) Southwesterly through said Proposed Lot B, following a curve to the right having a radius of One Hundred Ninety-Eight and 00/100 (198.00) feet, an arc distance of One Hundred Twenty-One and 99/100 (121.99) feet to a capped iron rod "PLS 2407";
- 5) S 12°20'00" W through said Proposed Lot B and by land now or formerly of Christopher W. Nolan and Lisa G. Nolan as described in a deed recorded in said Registry in Book 11773, Page 283 a distance of Twenty-Two and 35/100 (22.35) feet to a granite monument on the northerly side of a private way known as Chestnut Way;
- 6) N 65°49'18" W by said Chestnut Way and land now or formerly of Timothy T. Renyi and Hannah D. Renyi as described in a deed recorded in said Registry in Book 30454, Page 85 a distance of One Hundred Sixty-Five and 41/100 (165.41) feet to a capped iron rod "PLS 2407";
- 7) N 24°10'42" E through land designated as "Proposed Lot A" as delineated on said Plan a distance of Forty-Seven and 0/100 (47.00) feet to a capped iron rod "PLS 2407";
- 8) S 65°49'18" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 9) N 24°10'42" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 10) S 65°49'18" E through said Proposed Lot A a distance of Thirty and 00/100 (30.00) feet to a capped iron rod "PLS 2407";
- 11) S 24°10'42" W through said Proposed Lot A a distance of Thirty-Six and 00/100 (36.00) feet to a capped iron rod "PLS 2407";
- 12) S 65°49'18" E through Proposed Lot A a distance of Five and 00/100 (5.00) feet to a capped iron rod "PLS 2407" at said Proposed Lot B;
- 13) S 65°49'18" E through said Proposed Lot B a distance of Fifteen and 85/100 (15.85) feet to a capped iron rod "PLS 2407";

14) Northeasterly through said Proposed Lot B, following a curve to the left having a radius of One Hundred Sixty-Two and 00/100 (162.00) feet, an arc distance of One Hundred Sixty-Seven and 17/100 (167.17) feet to a capped iron rod "PLS 2407";

15) Northeasterly through said Proposed Lot B, following a curve to the right having a radius of One Hundred Ninety-Eight and 00/100 (198.00) feet, an arc distance of One Hundred Twenty-Five and 39/100 (125.39) feet to a capped iron rod "PLS 2407";

16) N 88°39'41" E through said Proposed Lot b a distance of Forty-Six and 66/100 (46.66) feet to the point of beginning.

Bearings are based on Magnetic North 1978.

The above-described parcel contains 13,883 square feet being a portion of land now or formerly of By Golden Star, LLC as described in a deed recorded in the Cumberland County Registry of Deeds in Book 39287, Page 184. The above-described parcel is designated as "Shared Vehicular Right of Way" as delineated on the Plan.

Subject to the restrictions set forth below, said shared vehicular right of way as defined above, as currently maintained or as may be improved by the Grantor or Grantee, shall be for all purposes now or hereafter customary of a road or way, including the right to pass and repass, in common with others, by foot or by vehicle, (including emergency and rescue vehicles), together with the right to install, maintain, repair and replace all underground utilities, including without limitation electricity, cable, telephone, gas, water, and sewer. Together with the right to construct, repair, improve and maintain said right of way and easement for such purposes and to construct, repair, and maintain thereunder such wires, cables, lines, pipes, poles, drains, braces, meters, gauges, relaying, amplifying and connecting equipment, supporting, retaining, and stabilizing structures, and landscaping as may be useful in connection with the foregoing, the preceding enumeration being descriptive and not in limitation of the Grantee's rights for the purposes herein mentioned, subject to the limitations set forth below. The Grantee, its successors and assigns, shall have no right to erect or construct a building of any kind, or any other permanent structure in the easement area.

Reserving to the Grantor, its successors and assigns, the use and enjoyment of the easement area for such purposes as will not unreasonably interfere with the perpetual use thereof by the Grantee, their heirs and assigns, for the purposes therein mentioned.

This granted right of way and easement shall be appurtenant to the Grantee's premises more particularly described above, and shall run with the land.

The Grantee, by the acceptance of this Deed, shall be subject to, the following restrictions, covenants and requirements, which restrictions, covenants and requirements shall run with the land and shall be binding upon the owner of the premises defined above:

1. Any utilities installed after the date hereof by or for the benefit of Grantee shall be located underground and shall be for the sole benefit of the Benefited Property, unless otherwise agreed in writing by Grantor.
2. Grantee shall not park or permit the parking of vehicles or storage of any kind within the Easement Area.
3. Grantee shall restore the surface of the Easement Area wherever disturbed by Grantee, in the exercise of their rights hereunder, as closely as reasonably practicable to the condition of such surface before being disturbed, including the restoration of any landscaping and trees.
4. Grantee shall enter upon the Easement Area and shall exercise their rights hereunder at their sole risk and hereby releases Grantor, its successors and assigns from, and jointly and severally agree to indemnify, defend and hold Grantor, and its successors and assigns harmless against any and all losses, costs, claims, expenses and liabilities suffered by Grantor, its successors or assigns, on account of any injury to persons or damage to property (i) arising out of the exercise by Grantee of their rights hereunder; or (ii) caused by Grantee, or any agents, employees, invitees or contractors of Grantee while Grantee, or any agents, employees, invitees or contractors of Grantee, are on the Easement Area pursuant to, or are exercising the rights granted by, this easement; or (iii) on account of any breach by Grantee of the agreements, covenants, and warranties of Grantee set forth herein.
5. As a condition to the exercise by Grantee of their rights hereunder, Grantee shall obtain and keep in force general liability insurance with respect to the Easement Area and activities related thereto in such amounts as Grantor shall reasonably request from time to time, which insurance shall name Grantor, their mortgagee, and their respective successors and assigns, as additional insured and which shall provide for not less than 20 days notice to Grantor, its successors and assigns, prior to any termination, expiration or modification of such coverage. Grantee shall deliver evidence of such insurance to Grantor upon request.
6. Grantee shall keep the Easement Area free of any mechanics lien arising out of or relating to any work done in connection with or relating to Grantee's use of the easement. If any mechanics lien is filed as a result of any work done by or for the benefit of Grantee, and such lien is not released within 10 days after written demand by Grantor, its successors and assigns, Grantor, its successors and assigns, shall have the right, but not the obligation, to pay the claim giving rise to such lien, and any other amounts necessary to cause such lien to be released, whereupon Grantee shall reimburse Grantor upon demand.

7. Grantee shall not erect or construct any building of any kind or other permanent structure and shall not otherwise unreasonably interfere with the Grantor's use of the right of way and easement conveyed hereby without the express written consent of the Grantor.

DRIVEWAY MAINTENANCE AGREEMENT

Scope of Agreement: For purposes of this agreement, "*driveway*" as used herein shall mean the "Shared Vehicular Right of Way" as shown on the aforementioned Plan and running from Foreside Road, so-called. Unless specifically granted herein or in another document, nothing in this agreement shall be construed to expand the rights of access or any other rights of the parties to use the common access road.

Allocation of Costs: Costs of maintenance, repair and snowplowing of the driveway which is used in common shall be allocated and shared as follows:

One half by the owners of Lot A.

One half by the owners of Lot B.

Budget. Annually, prior to March 1 of each calendar year, the lot owners shall meet and establish a budget for road maintenance, repair, snowplowing and any necessary capital expenditures or improvements for the next 12-month period (March 1 to February 28).

Voting. Each lot shall have one vote, regardless of the number of owners. Any decisions as to capital improvement or upgrading the driveway, the cost of which exceeds \$3,000.00 annually shall be by unanimous vote. By signing this agreement, the parties agree that the amount of \$3,000.00 to be expended annually for repair, maintenance and snow plowing is reasonable and they agree to share equally up to that amount, notwithstanding that there may be disagreement as to the adoption of an annual budget or in the absence of an adopted annual budget. Nothing herein shall prevent the owner of any lot using the driveway for access from improving, repairing or maintaining the driveway at their own expense and without contribution from the other lot owners. The driveway shall not be paved without unanimous written consent of all lot owners using the driveway.

Damage. In the event that damage to the driveway occurs as a result of the use by any lot owner (for example, the use of heavy construction equipment during frost-out time), that lot owner shall expeditiously return the condition of the driveway to the condition existing prior to the damage at their cost.

Arbitration. If there shall arise any dispute between the lot owners as to (i) the need to undertake any maintenance or repair; (ii) the need to incur or pay any maintenance costs; (iii) the reasonableness of any maintenance costs; or (iv) any other matter respecting the rights and/or obligations of the parties hereto and if the issue cannot be resolved within

60 days after such a dispute shall arise, the issue shall be resolved by arbitration in accordance with the rules of the American Arbitration Association and the result thereof shall be binding and conclusive upon the parties.

Effect. This agreement shall be binding upon the parties, their heirs, successors and assigns and shall run with the land. This agreement shall be interpreted under the laws of the State of Maine.

Cove Development Company, LLC

Lot Split - 104 Foreside Road, Cumberland

Inspection and Maintenance Plan

Date: November 2022

The Earthwork Contractor will be responsible for inspection, maintenance, and operations of the stormwater system during construction. Upon approval of the final construction by the Owner, the Owner will be responsible for the inspection, maintenance, and operation of the stormwater system. We have attached the "Maine ESC BMPs (10/2016)" at the end of the narrative that more fully identifies the Party's E+S responsibilities.

INSPECTIONS - Contractor During Construction

Areas of proposed construction that will require inspections/maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities/Roof Drip Edge**
 - Soil Filter media inspection and maintenance
 - Outlet Control Structure inspection and maintenance
 - Sediment removal and disposal
- **Ditches, Swales, or other open stormwater channels**
 - Embankment inspection and maintenance
 - Channel inspection
 - Sediment removal and disposal
- **Culverts, catch basins, stormwater control structures**
 - Structure inspection and maintenance
 - Inlet and Outlet inspection
 - Debris removal and disposal
- **Buffers/Landscaping**
 - Landscaping inspection and maintenance
 - Landscaping turf inspection and maintenance
 - Debris removal and disposal
- **General Site Erosion Controls**
 - Sediment barriers (silt fence, erosion control berm material)
 - Stabilized Construction Exit
 - Riprap slopes
 - Level Lip Spreaders
 - Erosion Control Blankets

Temporary/Permanent Seed and Mulch Hay mulch

There may be other areas of inspection/maintenance specific to the project during construction that may not be identified above. The Contractor is directed to utilize the 2014 Revision to the Maine Erosion and Sediment Control Field Guide for Contractors, the Town of Cumberland "Handbook for Contractors" and the Erosion and Sedimentation Section 409 of the Cumberland Zoning Ordinance.

The Contractors representative will inspect the general erosion control items identified above including the drainage system, swales, channels, and stormwater structures to determine if a soil blockage or impaired capacity to pass flow exists. During construction, the inspection will be done prior to and within 24 hours after a storm event greater than $\frac{1}{2}$ " in 24 hours. A record of inspections and maintenance or corrective measures shall be kept by the Contractor.

MAINTENANCE AND CLEANING

The earthwork contractor will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance of stormwater including the detention system. Immediate action shall be taken to remedy detrimental obstructions.

The Contractor will regularly inspect the infiltration rate of the soil filter ponds after every major storm event (1/2" rain event in 24 hours) in the first few months to ensure proper function. Sediment shall be removed from the sediment forebay when sediment is greater than 12" from the forebay bottom. The removed sediment shall be hauled off site and disposed in an approved location. Ongoing maintenance will be required as necessary.

All sand, salt, etc. accumulated when sweeping the paved parking, access road, and snow stockpile areas, shall be trucked off-site for disposal.

RECORD KEEPING

The Contractor will maintain inspection records, with recordings of condition of items identified above and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trends to develop for anticipated future preventive maintenance schedule.

INSPECTIONS - Owner Post-Construction

Areas of the completed construction that will require ongoing inspections and maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities/Roof Drip Edge**
 - Soil Filter media inspection and maintenance
 - Outlet Control Structure inspection and maintenance
 - Sediment removal and disposal
- **Ditches, Swales, or other open stormwater channels**
 - Embankment inspection and maintenance
 - Channel inspection
 - Sediment removal and disposal
- **Culverts, catch basins, stormwater control structures**
 - Structure inspection and maintenance
 - Inlet and Outlet inspection
 - Debris removal and disposal
- **Buffers/Landscaping**
 - Landscaping inspection and maintenance
 - Landscaping turf inspection and maintenance
 - Debris removal and disposal
- **General Site Erosion Controls**
 - Sediment barriers (silt fence, erosion control berm material)
 - Stabilized Construction Exit
 - Riprap slopes
 - Level Lip Spreaders
 - Erosion Control Blankets
 - Temporary/Permanent Seed and Mulch
 - Hay mulch

There may be other areas of inspection/maintenance specific to the project identified after construction that may not be identified above. The Owner is directed to utilize the 2014 Revision to the Maine Erosion and Sediment Control Field Guide for Contractors, the Town of Cumberland "Handbook for Contractors" and the Erosion and Sedimentation Section 409 of the Cumberland Zoning Ordinance for these situations.

The Owners representative will inspect the general erosion control items identified above including the drainage system, swales, channels, and stormwater structures to

determine if a soil blockage or impaired capacity to pass flow exists. Post construction, the inspection will be done within 24 hours after a storm event greater than $\frac{1}{2}$ " in 24 hours. General post-construction inspections will be performed on a monthly basis from March to November, and quarterly during the remainder of the year. A record of inspections and maintenance or corrective measures shall be kept by the owner.

MAINTENANCE AND CLEANING

The Owner will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance and detention system. Immediate action shall be taken to remedy detrimental obstructions.

The Owner will regularly inspect the infiltration rate of the soil filter ponds after every major storm event ($\frac{1}{2}$ " rain event in 24 hours) in the first few months to ensure proper function. Thereafter, the soil filter basin should be inspected bi-annually to ensure that they draining within 24-48 hours. Sediment shall be removed from the sediment forebay when sediment is greater than 12" within the forebay. The removed sediment shall be hauled off site and disposed in an approved location.

A mandatory scheduled maintenance will be performed every four weeks for a period of one hundred and twenty (120) days and will begin after satisfactory completion and acceptance of project construction. Ongoing maintenance may be required as necessary.

All sand, salt, etc. accumulated when vacuuming the paved parking, access road, and snow stockpile areas, shall be trucked off-site for disposal.

RECORD KEEPING

The Owner will maintain inspection records, with recordings of condition of items identified above and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trends to develop the future preventive maintenance schedule.

Maintenance Log Sheet

<u>Inspector Name</u>	<u>Date</u>	<u>Maintenance Task Completed</u>
<u>Roof Drip Edge</u>		
<u>Soil Filter Media</u>		
<u>Pavement Sweeping</u>		
<u>Plunge Pools</u>		
<u>Snowplow sand/ground surface</u>		
<u>Ditches/Swales</u>		
<u>Vegetated Ditches</u>		
<u>Stone Lined Channels</u>		
<u>Stone Check Dams</u>		
<u>Level Lip Spreader</u>		
<u>Culverts</u>		
<u>Lawn area</u>		
<u>Other</u>		

Housekeeping

These performance standards apply to all projects.

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.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

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.

NOTE: An example of the use of BMPs to control fugitive sediment and dust is as follows: Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.

NOTE: Dewatering a stream without a permit from the department violates state water quality standards and the Natural Resources Protection Act.

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

NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

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 (or pumping water through a sediment dirtbag). Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

NOTE: For guidance on de-watering controls, consult the latest edition of the Maine Erosion and Sediment Control BMPs", Maine Department of Environmental Protection."

6. Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges.

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

Maintenance Plan & Best Management Practices

Site Inspection & Maintenance During Construction: Weekly inspections, as well as routine inspections following rainfalls, shall be conducted by the General Site Contractor of all temporary and permanent erosion control devices until final acceptance of the project (90% grass catch) by the Owner. Necessary repairs shall be made to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned, and repaired by the General Contractor as required. Disposal of all temporary erosion control devices shall be the responsibility of the General Contractor.

It is recommended that the Owner hire the services of the design engineer, or other qualified individual, to provide compliance inspections (during active construction) relative to implementation of the Stormwater and Erosion Control Plans. Such inspections should be limited to once a week or as necessary based on weather patterns, and be reportable to the Owner for record keeping purposes.

Maintenance Agreement: Short-term sedimentation maintenance shall be the responsibility of the Contractor to clean out all swales, structures, and soil filter basins prior to turning project over to the Owners. After project turnover, the Owner shall be the responsible party for inspecting and maintaining proper functioning of all stormwater conveyance practices and measures. The Owner may assign an environmental manager to carry out specific tasks identified below.

Structures and Other Measures

Stabilized Construction Entrance: A stabilized construction entrance is required at all locations that utilize vehicle access points from the project onto public or private paved roadways during construction operations. Tracked sediment onto public road systems shall be vacuum swept prior to the next significant rain event (1/2" rain/24 hours). Sweeping of sediment into ditches, storm drains or waterways is not acceptable

Winter Sanding/Sweeping: Post construction, paved parking lots, streets, and access driveways shall be vacuum swept a minimum of twice per year. The first shall take place in the Fall. The second vacuum sweeping shall take place after winter sanding operations terminate, prior to May 1.

Ditches/Swales: Open swales and ditches need to be inspected on a monthly basis and after a major rainfall event to assure that debris or sediments do not reduce the

effectiveness of the system. Debris needs to be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth to vegetation for the stability of the structure and proper functioning.

Vegetated Ditches: Vegetative should be mowed at least monthly during the growing season to a height of not less than 3 inches. Larger brush or trees must not be allowed to become established in the channel. Unless finely mulched, clippings should be removed to minimize the amount of organic material accumulating in the swales. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Sediment should be removed when the ditch cross section is 33% full of sediment.

Stone Lined Channels: Where stone is displaced from constructed riprap areas, it should be replaced and chinked to assure stability. With time, riprap may need to be added. Vegetation growing through riprap should be removed on a yearly schedule.

Stone Check Dams: Observe the center of the check dam to make sure it is lower than the edges. Sediment trapped behind the dams should be removed once it reaches half the height of the dam. Check to insure erosion around the sides of the dam has not occurred.

Level Lip Spreaders: Sediment/debris buildup should be removed when the pool volume is reduced by 33%. Observation of the front side of the level spreader is necessary to determine erosion along the existing vegetation/spreader interface.

Culverts: If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by mechanical means or hydraulic flushing. Care should be taken to prevent the release of the sediments into the downstream receiving areas. All pipes should be inspected on an annual basis.

Trench Dewatering: Water is to be pumped to a soil filter bag prior to discharge from the area. Placement of the filter bag is to be greater than 100' from an environmental resource. Careful monitoring of the discharge water must be taken to insure sediment laden water does not enter downslope resources.

Catch Basin/Field Inlets: All catch basins, and any other field inlets throughout the collection system, need to be inspected on a monthly basis to assure that the inlet entry point is clear of debris and will allow the intended water entry. In many cases, a silt sack has been installed within the rim of the CB and should be emptied/replaced after each storm event in a disturbed soil area as necessary. On a yearly basis, or when sediment reaches two thirds of the total sump volume, catch basins will be vacuumed and cleaned of all accumulated sediment. Work must be done by a vacuum truck. The removed material must be disposed of in accordance with State of Maine Solid Waste Disposal Rules.

Soil Filter, Infiltration, and Wet Ponds

Clearing Inlets and Outlets of Ponds (where applicable): The inlet and outlet of a pond shall be checked periodically to ensure that flow structures are not blocked by debris. All ditches and pipes connecting ponds in series shall be checked for debris that may obstruct flow. Inspections shall be conducted monthly during wet weather conditions from March to November.

Basin Inspections: Ponds shall be inspected on an annual basis for erosion, destabilization of side slopes, embankment settling, and other signs of structural failure. Brief inspections shall be conducted following major storms. Corrective action shall be taken immediately upon identification of problem area. Records shall be kept of all maintenance operations at jobsite to help plan future work and identify problem areas.

Maintenance Dredging: Wet ponds typically lose 1% of their volume annually due to sediment accumulation. Dredging is required when accumulated volume loss reaches 15% or approximately every 15-20 years.

Drainage Area Inspections: The owners' environmental manager shall inspect the basin's drainage area semi-annually for eroding soil and other sediment sources. Repair eroding areas using appropriate erosion control BMP's immediately. Control sediment sources, such as stockpiles of winter sand, by removing them from the basin's drainage area or surrounding them with sediment control BMP's.

Mowing: A basin with a turf lining shall have its side-slopes and top of berm mowed at least twice a year to prevent woody growth. Clippings shall be removed to minimize the amount of organic material accumulating in the basin.

Sediment Removal: Remove accumulated debris and sediments from the sediment forebays, inlet plunge pools, and pre-treatment BMP's at least annually.

Snow Storage: The ponds are not to be used for snow storage. Snow storage shall be sited so that snowmelt flows to a pre-treatment BMP before reaching the infiltration basin.

Pedestrian Access: Limit access to ponds to passive recreational use.

Vehicle Access: Prohibit vehicle access to all ponds, except that authorized for maintenance.



DRAWINGS

BE IN TOUCH.

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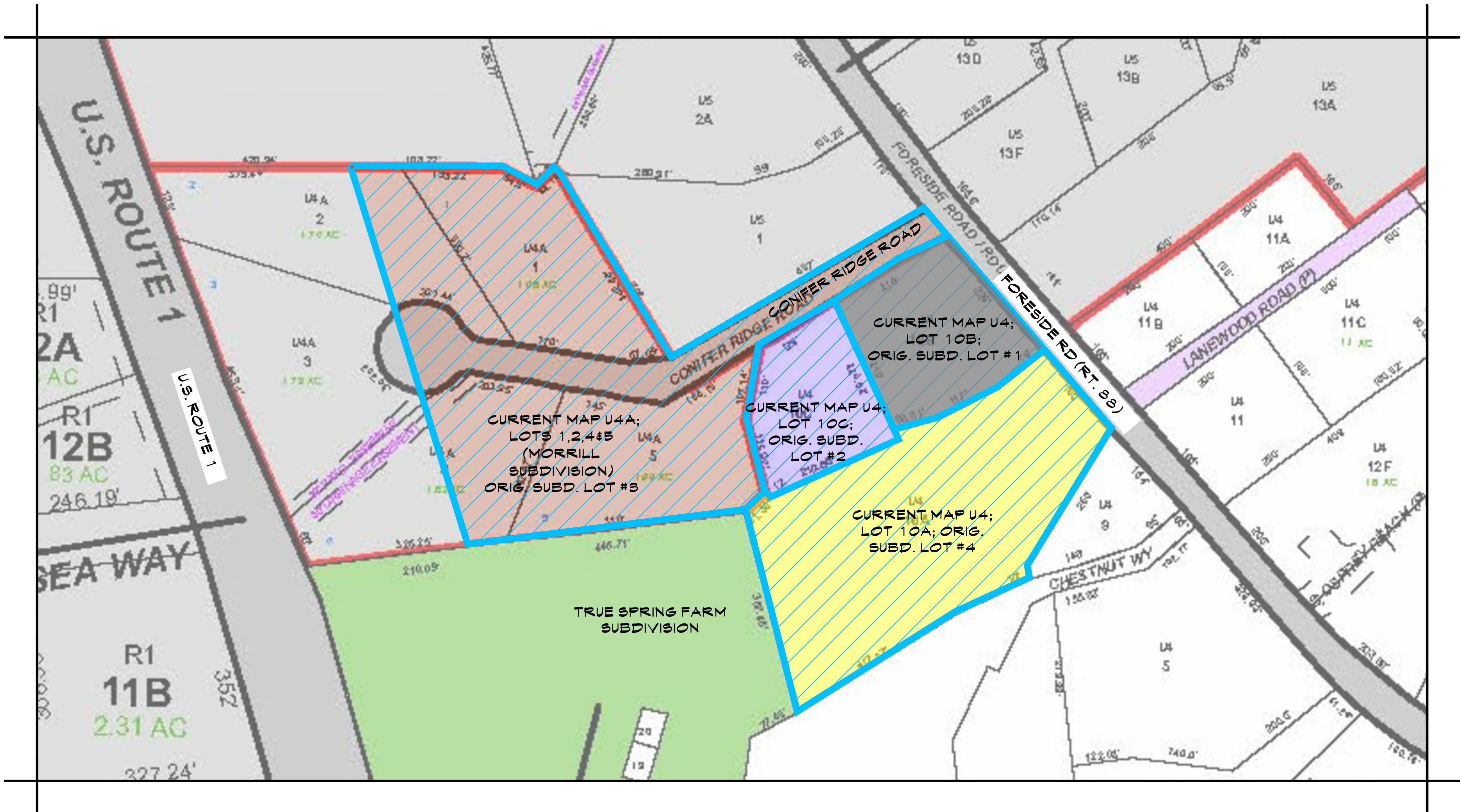
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Restoring the character of today, in Maine's homes

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CUMBERLAND-FORESIDE MAINE



CURRENT LAND OWNER

COVE DEVELOPMENT COMPANY LLC
PO BOX 142
BOOTHBAY, MAINE 04537

207-633-3818

GENERAL CONTRACTOR

KNICKERBOCKER GROUP
3 BUILDERS SQUARE
PO BOX 142
BOOTHBAY, MAINE 04537
&
82 HANOVER STREET, SUITE 3
PORTLAND, MAINE 04101

TEL: 207.633.3818

FAX: 207.633.3963

ARCHITECT & INTERIORS

KNICKERBOCKER GROUP
3 BUILDERS SQUARE
PO BOX 142
BOOTHBAY, MAINE 04537
&
82 HANOVER STREET, SUITE 3
PORTLAND, MAINE 04101

TEL: 207.633.3818

FAX: 207.633.3963

CIVIL ENGINEER

SJR ENGINEERING - STEVE ROBERGE
16 THURSTON DRIVE
MONMOUTH, MAINE 04259

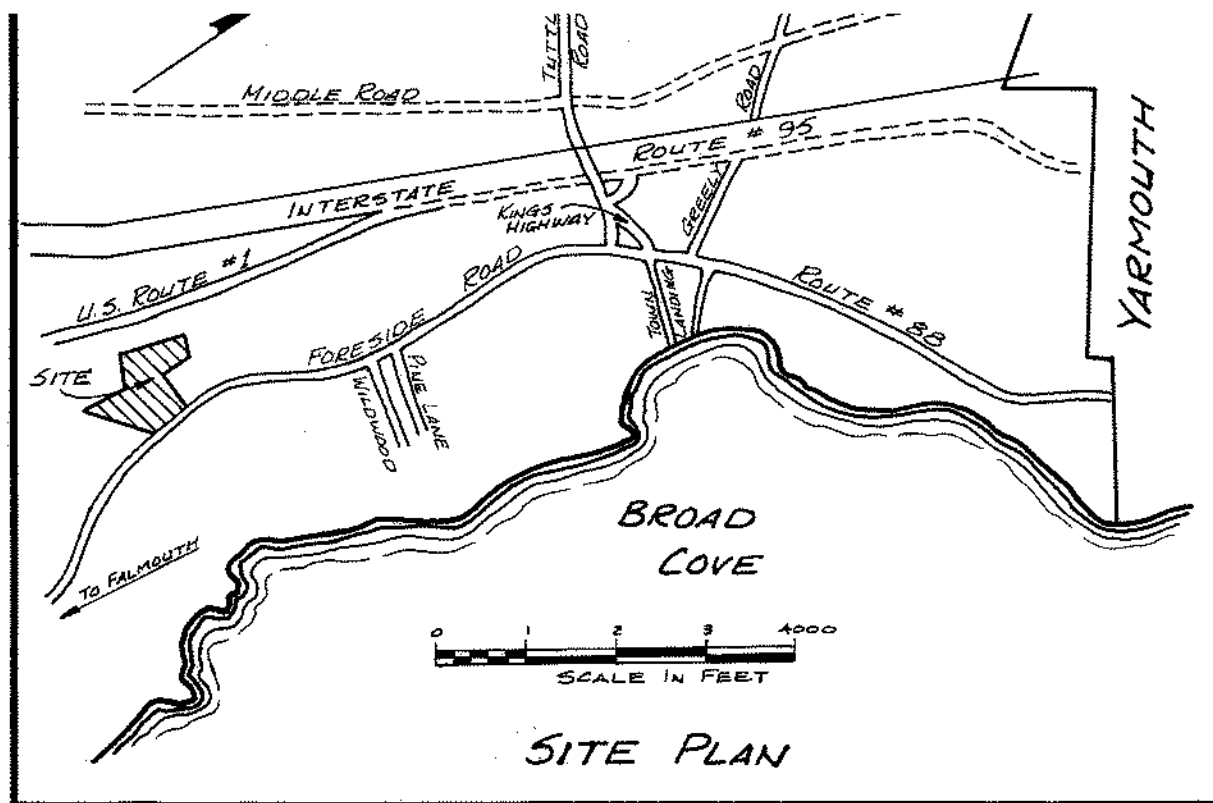
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DRAWING LIST		
SHEET #	DRAWING TITLE	ISSUE DATE
C0	COVER SHEET	01/31/2023
C1	LOCATION MAP	01/31/2023
C2	SUBDIVISION PLAN FOR ELIZABETH H. JOHNSON	01/31/2023
C3	UPDATED SUBDIVISION PLAN FOR ELIZABETH H. JOHNSON	01/31/2023
C4	SUBDIVISION PLAN FOR MORRILL PROPERTIES	01/31/2023
C4A	SUBDIVISION AMENDMENT PLAN; MORRILL PROPERTIES	01/31/2023
C5	EXISTING CONDITIONS AND BOUNDARIES PLAN	01/31/2023
C6	PROPOSED LOT DIVISION PLAN	01/31/2023
C7	SITE CONSTRUCTION & STORMWATER MANAGEMENT PLAN	01/31/2023
C8	WATERSHED & SOILS PLAN	01/31/2023
C9	SITE CONSTRUCTION NOTES & DETAILS	01/31/2023
C10	SITE CONSTRUCTION NOTES & DETAILS	01/31/2023
C11	PROPOSED ROAD PROFILE	01/31/2023
C12	UTILITY PLAN & DETAILS	01/31/2023

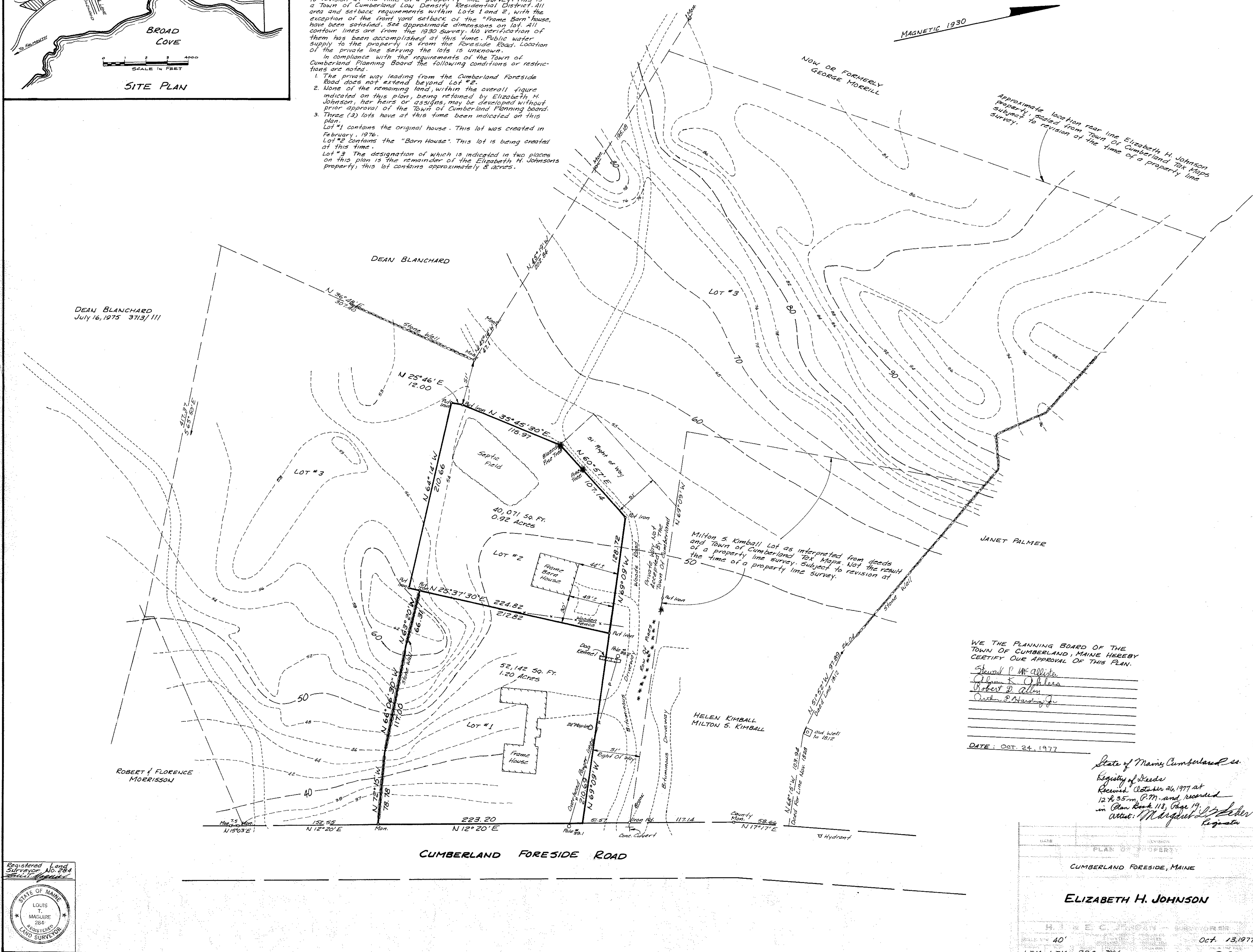


KNICKERBOCKER GROUP

SUBDIVISION AMENDMENT
FEBRUARY 2023
PLANNING BOARD MEETING
SUBMITTED: 01/31/2023



NOTES:
This plan is a composite of a plan entitled "Topographic Plan of Land in Cumberland, Maine, Owned by William D. Ireland, made May, 1930 by E.C. Jordan Company, Scale: 40 feet equals 1 inch." Survey in February, 1976 for the "Frame House" Lot #1 and survey in September, 1977 for the "Barn" Lot #2. The Dean Blanchard Lot, The Morrison Lot and The Milton S. Kimball Lot have been plotted from deed information and from reference to Town of Cumberland Tax Maps. Each of these three deed plots as well as the dimensions of the overall Elizabeth H. Johnson Lot are subject to revision at the time of a property line survey. This is a Town of Cumberland Low Density Residential District. All area and setback requirements within Lots 1 and 2, with the exception of the front yard setback of the "Frame Barn" house, have been satisfied. See approximate dimensions on lot. All contour lines are from the 1930 survey. No verification of them has been accomplished at this time. Public water supply to the property is from the Foreside Road. Location of the private line serving the lots is unknown.
In compliance with the requirements of the Town of Cumberland Planning Board the following conditions or restrictions are noted:
1. The private way leading from the Cumberland Foreside Road does not extend beyond Lot #2.
2. None of the remaining land within the overall figure indicated on this plan, being retained by Elizabeth H. Johnson, her heirs or assigns, may be developed without prior approval of the Town of Cumberland Planning Board.
3. Three (3) lots have at this time been indicated on this plan.
Lot #1 contains the original house. This lot was created in February, 1976.
Lot #2 contains the "Barn House". This lot is being created at this time.
Lot #3 The designation of which is indicated in two places on this plan is the remainder of the Elizabeth H. Johnsons property; this lot contains approximately 3 acres.

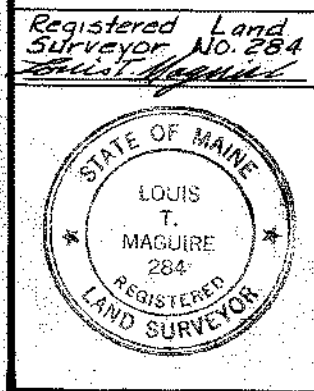


WE THE PLANNING BOARD OF THE TOWN OF CUMBERLAND, MAINE HEREBY CERTIFY OUR APPROVAL OF THIS PLAN.

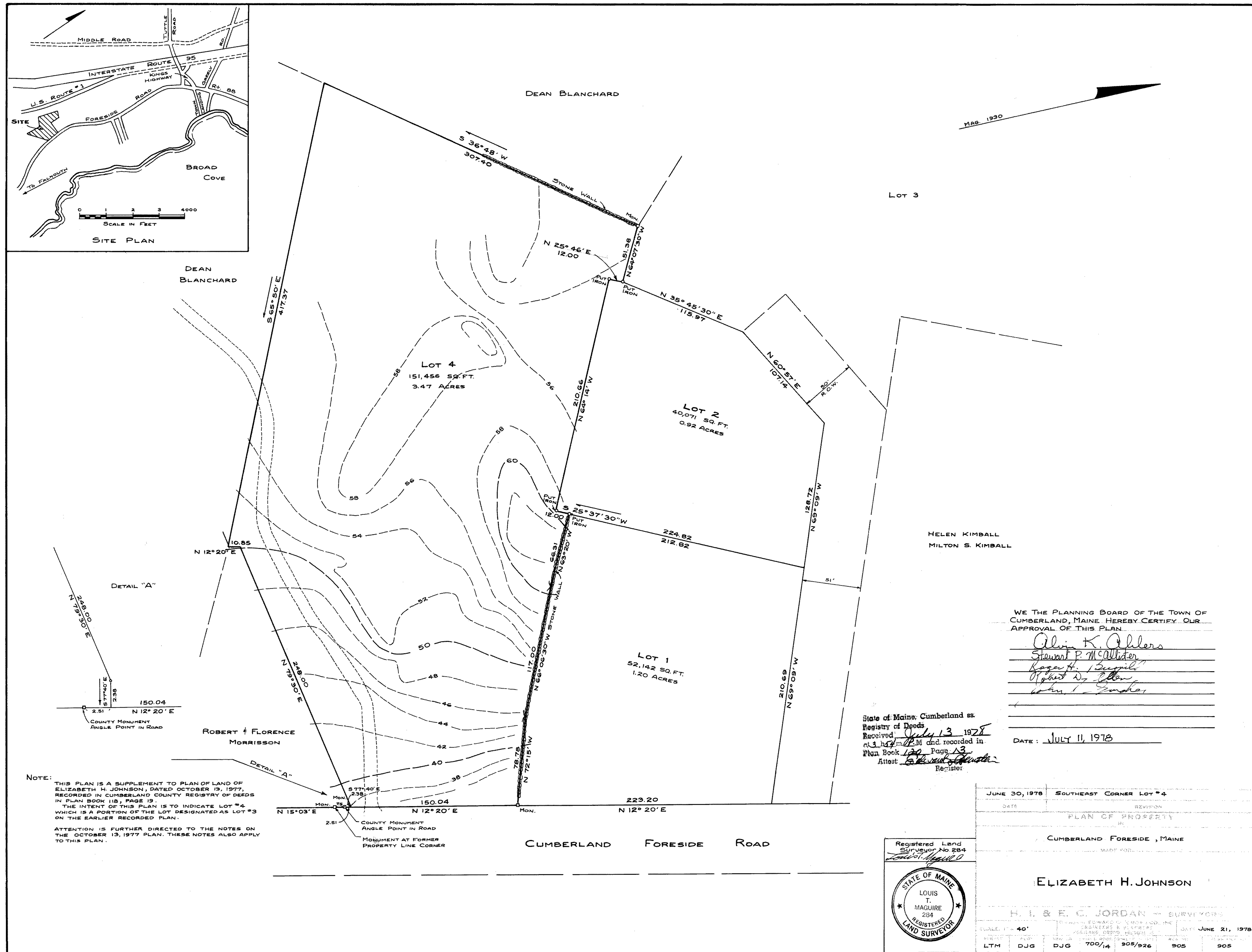
Shirley P. McAllister
Robert D. Allen
Cynthia B. Standish Jr.

DATE: OCT. 24, 1977

State of Maine, Cumberland Co.
Registry of Deeds
Received October 26, 1977 at
12:35 P.M. and recorded
in Plan Book 118, Page 19.
Attest: M. J. [Signature] Registrar



PLAN OF PROPERTY	
CUMBERLAND FORESIDE, MAINE	
ELIZABETH H. JOHNSON	
40'	Oct. 13, 1977
L.T.M. L.T.M. R.O.C. 200/14	905 205



120 027

120/13

LOW DENSITY RESIDENTIAL DISTRICT (LDR)

THE FOLLOWING USES ARE PERMITTED IN THE LDR DISTRICT:
SINGLE FAMILY DETACHED DWELLING
THE FOLLOWING LOT STANDARDS APPLY IN THE LDR DISTRICT:
60,000 SQUARE FEET MINIMUM LOT SIZE
IN THE CASE OF DEVELOPMENTS NOT REQUIRING THE
SUBDIVISION OF LAND, THERE SHALL BE NO LESS THAN
60,000 SQUARE FEET OF LOT AREA PER FAMILY;
CAMENDED, EFFECTIVE 5/26/87
THERE SHALL BE NO LESS THAN 150' OF LOT FRONTAGE
ON A PUBLIC RIGHT-OF-WAY
THE FOLLOWING MINIMUM SETBACKS ARE REQUIRED FOR ALL
STRUCTURES IN THE LDR DISTRICT, EXCEPT THAT SHEDS &
DRIVEWAYS ARE PERMITTED TO A MINIMUM SETBACK OF 15'
FROM THE SIDE & REAR LOT LINES.
FRONT: 50'
REAR: 65'
SIDE: 30' - COMBINED WIDTH AT LEAST 65'

GENERAL NOTES

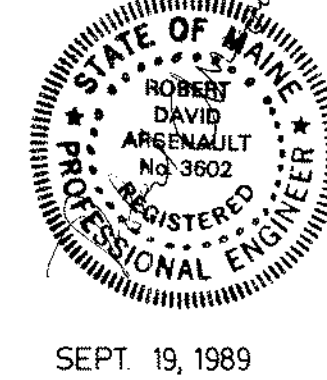
RECORD OWNERS: MORRILL PROPERTIES, BOX 305 SOUTH FREEPORT, MAINE
BOOK 118 PAGE 19 BOOK 2189 PAGE 141 BOOK 6374 PAGE 331
SUBDIVIDER: MORRILL PROPERTIES, BOX 305 SOUTH FREEPORT, MAINE
DESIGNER: S.E.A. CONSULTANTS INC. CITICORP PARK WEST, 100 FODEN ROAD
SOUTH PORTLAND, MAINE
OVERALL AREA: 9.30 ACRES, NO RECORD OF EASEMENTS FOUND CROSSING
THE PROPERTY.
PUBLIC WATER & SEWER WILL SERVE THE SUBDIVISION.
ELECTRIC, TELEPHONE & CABLE TELEVISION WILL BE INSTALLED UNDERGROUND.
ALL BUILDINGS WILL BE LOCATED WITHIN THE SETBACK REQUIREMENTS FOR
EACH LOT AS DEFINED BY THE TOWN OF CUMBERLAND ZONING ORDINANCE.
BOUNDARY LINE SURVEY PERFORMED BY H.I. & E.C. JORDAN CO. SURVEYORS
PORTLAND, MAINE
LOT CALCULATIONS HAVE BEEN PERFORMED BY S.E.A. CONSULTANTS INC.
SOUTH PORTLAND, MAINE
ACCESS FROM U.S. ROUTE ONE SHALL BE PROHIBITED.
THE CUMBERLAND CODE ENFORCEMENT OFFICER SHALL APPROVE THE EROSION
CONTROL OF ALL LOTS PRIOR TO ISSUING A BUILDING PERMIT
FOLLOWING WAIVERS WERE GRANTED BY THE TOWN OF CUMBERLAND PLANNING BOARD
-NO SIDEWALKS REQUIRED
-NO CURBING REQUIRED
-OPEN AND CLOSED DRAINAGE SYSTEM ALLOWED
-DESIGN OF CONIFER RIDGE ROAD/ROUTE 88 INTERSECTION
-MEDIUM INTENSITY SOIL MAP ALLOWED
-24 FOOT PAVEMENT WIDTH ALLOWED

PLAN MODIFICATION

ON SEPTEMBER 19, 1989, THE PLANNING BOARD OF CUMBERLAND, MAINE,
APPROVED THE FOLLOWING MODIFICATIONS TO THE RECORDED PLAN & THE
PROJECT DRAWINGS:
1. RELOCATE CONSTRUCTION CENTERLINE BETWEEN STA. 0+00 & STA. 4+32.82,
TWO (2) FEET TO THE SOUTH, PARALLEL TO THE PREVIOUSLY APPROVED CENTERLINE;
2. PAVEMENT WIDTH SHALL BE 22.00' (TWO - 11 FOOT TRAVEL LANES);
3. PROVIDE BITUMINOUS CONCRETE BERM CURB ON THE NORTHERLY SIDE OF
CONIFER RIDGE ROAD FROM STA. 0+15 RT. TO STA. 4+75 RT.;
4. ADD AN ENCLOSED STORM DRAINAGE SYSTEM ON THE NORTHERLY SIDE OF
CONIFER RIDGE ROAD FROM RTE. 88 WESTERLY TO STA. 4+75 RT.;
5. ESTABLISH LIMITS OF WORK 1900' NORTHERLY OF THE NEWLY CREATED
CENTERLINE FROM STA. 1+00 TO STA. 2+00, TO PROTECT A LINE OF
EXISTING PINE TREES; AND,
6. MODIFY SANITARY SEWER IN THE AREA OF STA. 4+00 TO STA. 5+00 TO
PROVIDE TEN (10) FEET OF CLEARANCE FROM A PROPOSED WATER MAIN, &
TO PROVIDE A MAXIMUM SPACING OF 300 LINEAR FEET BETWEEN MANHOLES.
THE CHANGES TO THE FINAL PLAN & ASSOCIATED CONSTRUCTION DRAWINGS
WERE MADE BY SQUAW BAY CORP. CUMBERLAND CENTER, MAINE & ARE
DENOTED ON THE APPROPRIATE DRAWINGS BY "SBC-1".

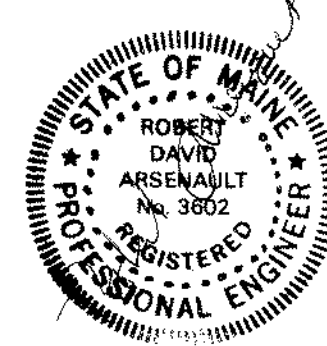
WE, THE PLANNING BOARD OF THE TOWN OF CUMBERLAND, MAINE,
HEREBY CERTIFY APPROVAL OF THIS PLAN.

Nancy L. Michalek
Philip C. Hunt
Robert A. Jordan
DATED: *Sept 19 1989*



SBC-2

JULY 13, 1993



PLAN MODIFICATION

ON JULY 20, 1993, THE PLANNING BOARD OF CUMBERLAND, MAINE,
APPROVED THE FOLLOWING MODIFICATIONS TO THE RECORDED PLAN IN
PLAN BOOK 176, PAGE 11, AND REAPPROVED THE MODIFICATIONS WHICH
HAD BEEN PREVIOUSLY APPROVED BY THE BOARD ON SEPTEMBER 19,
1989, SAID APPROVAL HAVING LAPSED AS A RESULT OF THE AMENDED
PLAN NOT BEING RECORDED.

- 1) PROVIDE A 30 FOOT DRAINAGE EASEMENT TO THE TOWN OF CUMBERLAND
ALONG THE COMMON LOT LINE OF LOTS 3 AND 4.
- 2) ADD A NOTE TO THE PLAN STATING THAT "THE DRAINAGE BERM A-
LONG THE EASTERLY BOUNDARY OF LOT 5 SHALL BE MAINTAINED IN ITS
APPROVED CONDITION BY THE OWNER OF LOT 5.
THE CHANGES TO THE PLAN WERE MADE BY SQUAW BAY CORP.,
CUMBERLAND CENTER, MAINE, AND ARE DENOTED ON THE DRAWING BY
"SBC-2", DATED JULY 13, 1993 (THE FINAL AMENDED PLAN").

WE, THE PLANNING BOARD OF THE TOWN OF CUMBERLAND, MAINE, HEREBY
CERTIFY APPROVAL OF THIS PLAN.

Nancy L. Michalek
Philip C. Hunt
Robert A. Jordan
DATED: *July 26, 1993*

STATE OF MAINE

CUMBERLAND COUNTY REGISTRY OF DEEDS
RECEIVED *July 26, 1993*
AT *9* HOUR *57* MIN. *A* M
AND RECORDED IN BOOK *193* PAGE *198*
ATTEST *John E. ...* REGISTRAR

Scale AS SHOWN	Date	Job no.	Drawn by	Checked by	Approved by
DATE: JUNE 1988	512-8815	512-8815	512-8815	512-8815	512-8815
PLAN MODIFICATIONS, CUMBERLAND PLANNING BOARD	PLAN MODIFICATIONS, CUMBERLAND PLANNING BOARD	PLAN MODIFICATIONS, CUMBERLAND PLANNING BOARD	PLAN MODIFICATIONS, CUMBERLAND PLANNING BOARD	PLAN MODIFICATIONS, CUMBERLAND PLANNING BOARD	PLAN MODIFICATIONS, CUMBERLAND PLANNING BOARD
FINAL APPROVAL, CUMBERLAND PLANNING BOARD	FINAL APPROVAL, CUMBERLAND PLANNING BOARD	FINAL APPROVAL, CUMBERLAND PLANNING BOARD	FINAL APPROVAL, CUMBERLAND PLANNING BOARD	FINAL APPROVAL, CUMBERLAND PLANNING BOARD	FINAL APPROVAL, CUMBERLAND PLANNING BOARD
PRELIMINARY APPROVAL, CUMBERLAND PLANNING BOARD	PRELIMINARY APPROVAL, CUMBERLAND PLANNING BOARD	PRELIMINARY APPROVAL, CUMBERLAND PLANNING BOARD	PRELIMINARY APPROVAL, CUMBERLAND PLANNING BOARD	PRELIMINARY APPROVAL, CUMBERLAND PLANNING BOARD	PRELIMINARY APPROVAL, CUMBERLAND PLANNING BOARD

OWNER	OWNER'S ADDRESS	PROJECT	ROUTE
MORRILL PROPERTIES	P.O. BOX 305 SOUTH FREEPORT, MAINE	SUBDIVISION RECORDING PLAN	ROUTE 88 - CUMBERLAND, MAINE
Sheet no.		File no.	

ROUTE 1 R.O.W. CURVE DATA:

R=7,231.97'
L=648.10'
T=324.27'
C=647.89'
Δ=5° 08' 05"
CHORD
DIRECTION = N 32° 09' 55" E

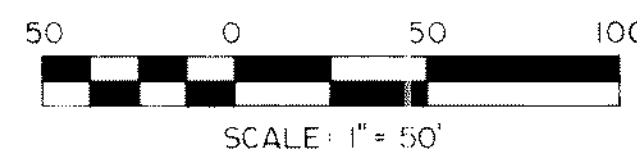
LEGEND:

- 5/8" REINFORCING BAR TO BE SET
- GRANITE MONUMENT TO BE SET
- STONE WALL
- BUILDING SETBACK LINE
- 5/8" REINFORCING BAR FOUND
- GRANITE MONUMENT FOUND

CURVE DATA

CURVE NO.	Δ	R	T	L	CH
1	40°-00'-00"	115	418566	802851	786646

DETAIL - B N.T.S.



CERTIFICATION NOTE:

WE HEREBY CERTIFY TO MORRILL PROPERTIES THAT THIS PLAN DEMICTS THE RESULTS OF FIELD SURVEYS
IN OCTOBER, 1977 AND JANUARY & FEBRUARY, 1988 AND IS CORRECT ACCORDING TO THE BEST OF OUR
KNOWLEDGE, INFORMATION AND BELIEF AND THAT THIS SURVEY AND PLAN CONFORMS TO A CATEGORY 1,
CONDITION II SURVEY ACCORDING TO THE STANDARDS OF THE MAINE BOARD OF REGISTRATION FOR LAND
SURVEYORS WITH THE FOLLOWING EXCEPTIONS:

- 1) THE STREET LINE OF ROUTE 1 IS, BECAUSE OF STRONGLY CONFLICTING EVIDENCE BETWEEN
SIDELINE AND BASELINE INFORMATION, AN ASSUMED LINE.
- 2) IRONS FOUND, NOT IDENTIFIED ON PLAN.

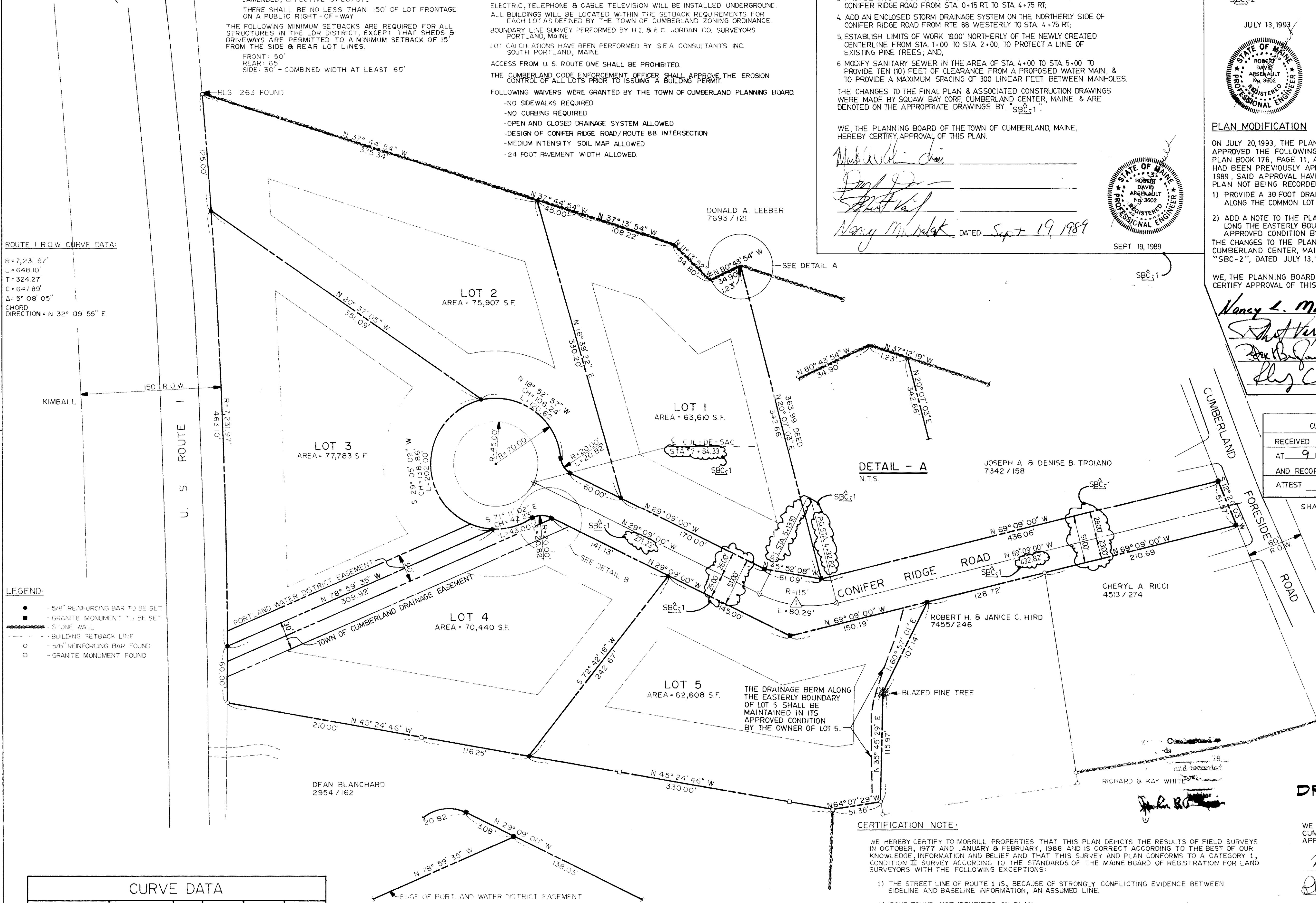
DATE: *Aug 15, 1988*

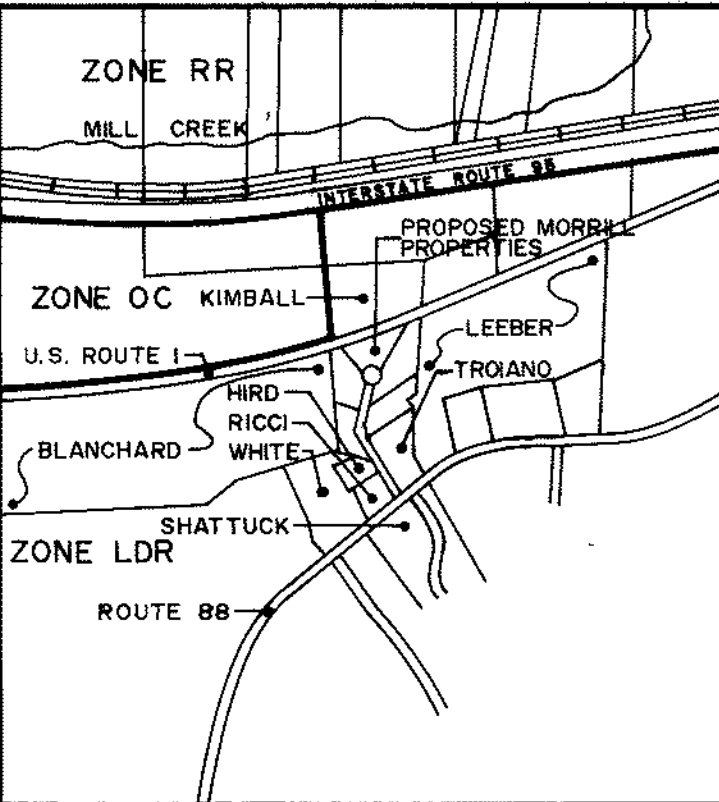
LOUIS T. MAGUIRE, R.L.S. 284
H.I. & E.C. JORDAN CO., SURVEYORS
562 CONGRESS STREET
PORTLAND, MAINE

DRAWING SHEET C4

WE, THE PLANNING BOARD OF THE TOWN OF CUMBERLAND, MAINE, HEREBY CERTIFY
APPROVAL OF THIS PLAN.

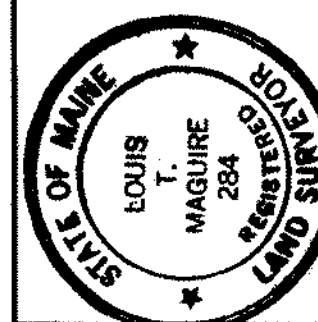
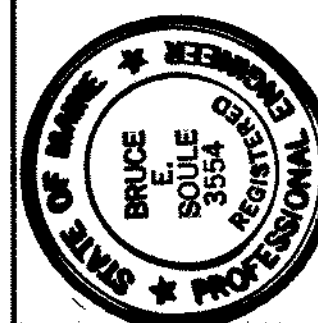
Nancy L. Michalek
Philip C. Hunt
Robert A. Jordan
DATED: *7/26/93*





LOCATION MAP
SCALE: 1" = 1,000'

SEA Consultants Inc.
Engineers/Architects
Wethersfield, Connecticut
South Portland, Maine
Cambridge, Massachusetts



Scale AS SHOWN	Date	Job no.	Drawn by	Checked by	Approved by
JUNE 1988	512-8815	512-8815	James A. Walsh	James A. Walsh	James A. Walsh
Final Approval, Cumberland Planning Board					
Preliminary Approval, Cumberland Planning Board					
Description	No.	Date			

MORRILL PROPERTIES	SUBDIVISION RECORDING PLAN	ROUTE 88 - CUMBERLAND, MAINE
Sheet no.		
File no.		

LOW DENSITY RESIDENTIAL DISTRICT (LDR)

THE FOLLOWING USES ARE PERMITTED IN THE LDR DISTRICT:
SINGLE FAMILY DETACHED DWELLING
THE FOLLOWING LOT STANDARDS APPLY IN THE LDR DISTRICT:
60,000 SQUARE FEET MINIMUM LOT SIZE
IN THE CASE OF DEVELOPMENTS NOT REQUIRING THE
SUBDIVISION OF LAND, THERE SHALL BE NO LESS THAN
60,000 SQUARE FEET OF LOT AREA PER FAMILY;
EFFECTIVE 5/26/87
THERE SHALL BE NO LESS THAN 150' OF LOT FRONTAGE
ON A PUBLIC RIGHT-OF-WAY
THE FOLLOWING MINIMUM SETBACKS ARE REQUIRED FOR ALL
STRUCTURES IN THE LDR DISTRICT, EXCEPT THAT SHEDS &
DRIVEWAYS ARE PERMITTED TO A MINIMUM SETBACK OF 15'
FROM THE SIDE & REAR LOT LINES.
FRONT: 50'
REAR: 65'
SIDE: 30' - COMBINED WIDTH AT LEAST 65'

GENERAL NOTES

RECORD OWNERS: MORRILL PROPERTIES, BOX 305 SOUTH FREEPORT, MAINE
BOOK 118 PAGE 19 BOOK 2189 PAGE 141 BOOK 6374 PAGE 331
SUBDIVIDER: MORRILL PROPERTIES, BOX 305 SOUTH FREEPORT, MAINE
DESIGNER: S E A CONSULTANTS INC. CITICORP PARK WEST, 100 FODEN ROAD
SOUTH PORTLAND, MAINE
OVERALL AREA: 9.30 ACRES; NO RECORD OF EASEMENTS FOUND CROSSING
THE PROPERTY
PUBLIC WATER & SEWER WILL SERVE THE SUBDIVISION.
ELECTRIC, TELEPHONE & CABLE TELEVISION WILL BE INSTALLED UNDERGROUND.
ALL BUILDINGS WILL BE LOCATED WITHIN THE SETBACK REQUIREMENTS FOR
EACH LOT AS DEFINED BY THE TOWN OF CUMBERLAND ZONING ORDINANCE.
BOUNDARY LINE SURVEY PERFORMED BY H.I. & E.C. JORDAN CO. SURVEYORS
PORTLAND, MAINE
LOT CALCULATIONS HAVE BEEN PERFORMED BY S E A CONSULTANTS INC.
SOUTH PORTLAND, MAINE
ACCESS FROM U. S. ROUTE ONE SHALL BE PROHIBITED.
THE CUMBERLAND CODE ENFORCEMENT OFFICER SHALL APPROVE THE EROSION
CONTROL OF ALL LOTS PRIOR TO ISSUING A BUILDING PERMIT.
FOLLOWING WAIVERS WERE GRANTED BY THE TOWN OF CUMBERLAND PLANNING BOARD:
-NO SIDEWALKS REQUIRED
-NO CURBING REQUIRED
-OPEN AND CLOSED DRAINAGE SYSTEM ALLOWED
-DESIGN OF CONIFER RIDGE ROAD/ROUTE 88 INTERSECTION
-MEDIUM INTENSITY SOIL MAP ALLOWED
-24 FOOT PAVEMENT WIDTH ALLOWED

ROUTE 1 R.O.W. CURVE DATA:

R=7,231.97'
L=648.10'
T=324.27'
C=647.89'
Δ=5° 08' 05"
CHORD
DIRECTION = N 32° 09' 55" E

LEGEND:

- 5/8" REINFORCING BAR TO BE SET
- GRANITE MONUMENT TO BE SET
- STONE WALL
- BUILDING SETBACK LINE
- 5/8" REINFORCING BAR FOUND
- GRANITE MONUMENT FOUND

CURVE DATA

CURVE NO.	Δ	R	T	L	CH
1	40°-00'-00"	115'	41.8566'	80.2851'	78.6646'

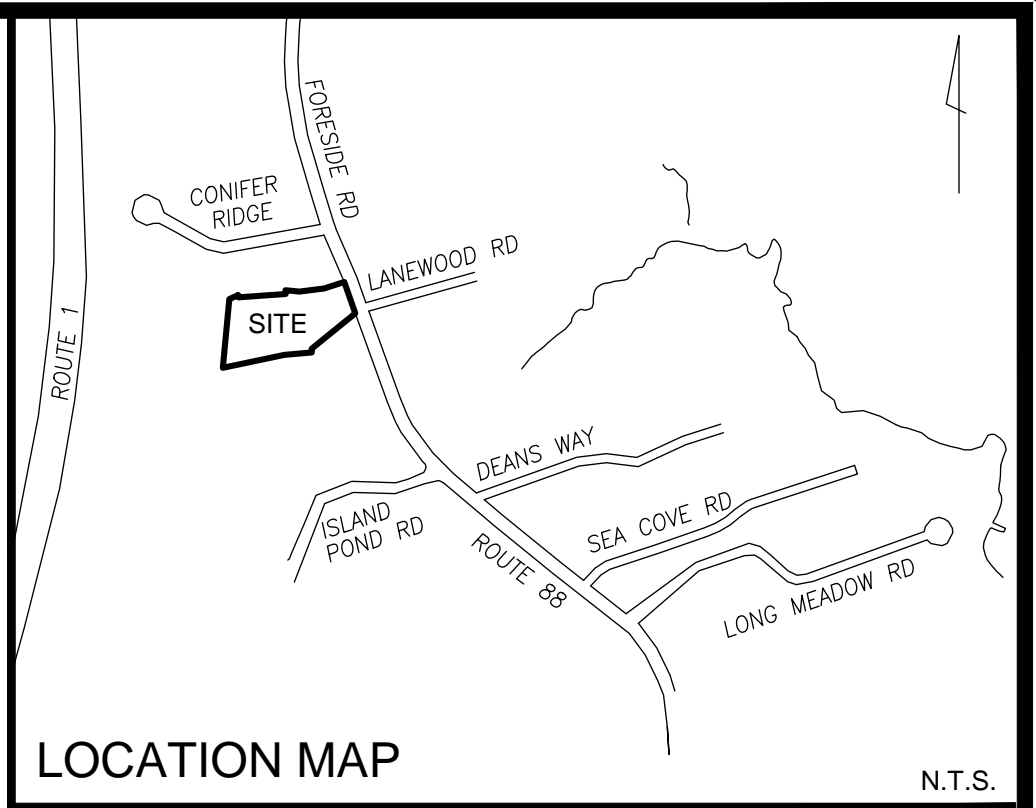
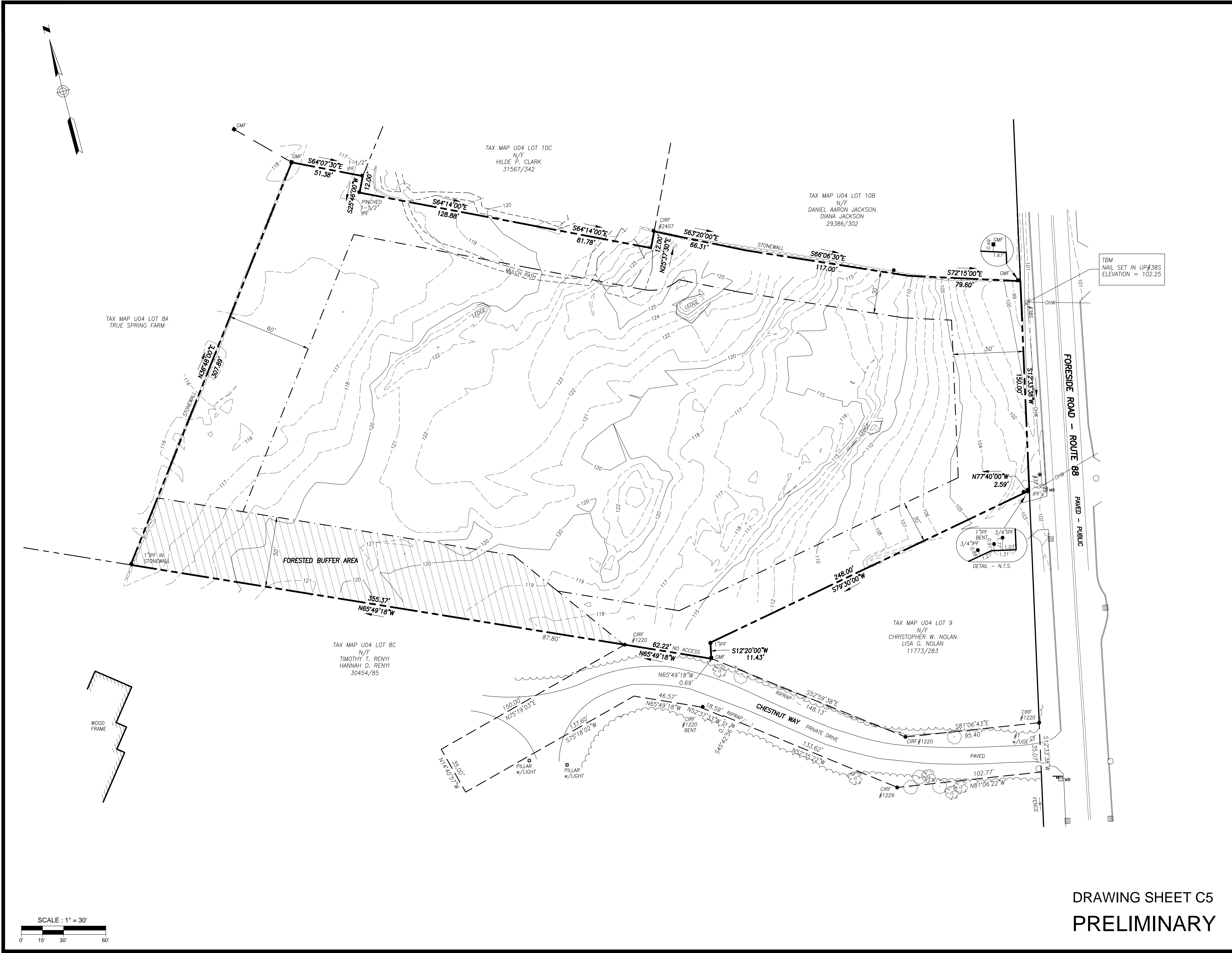
DETAIL - B
N.T.S.



CERTIFICATION NOTE:

WE HEREBY CERTIFY TO MORRILL PROPERTIES THAT THIS PLAN DEPICTS THE RESULTS OF FIELD SURVEYS
IN OCTOBER, 1977 AND JANUARY & FEBRUARY, 1988 AND IS CORRECT ACCORDING TO THE BEST OF OUR
KNOWLEDGE, INFORMATION AND BELIEF AND THAT THIS SURVEY AND PLAN CONFORMS TO A CATEGORY 1,
CONDITION II SURVEY ACCORDING TO THE STANDARDS OF THE MAINE BOARD OF REGISTRATION FOR LAND
SURVEYORS WITH THE FOLLOWING EXCEPTIONS:
1) THE STREET LINE OF ROUTE 1 IS, BECAUSE OF STRONGLY CONFLICTING EVIDENCE BETWEEN
SIDELINE AND BASELINE INFORMATION, AN ASSUMED LINE.
2) IRONS FOUND, NOT IDENTIFIED ON PLAN.
Aug 15, 1988
DATE
LOUIS T. MAGUIRE, R.L.S. 284
H.I. & E.C. JORDAN CO., SURVEYORS
562 CONGRESS STREET
PORTLAND, MAINE

WE THE PLANNING BOARD OF THE TOWN OF
CUMBERLAND, MAINE, HEREBY CERTIFY
APPROVAL OF THIS PLAN
James A. Walsh
Dwight C. Hunt
Shirley A. Walsh
Dated: 9/20/88



LEGEND

●	IRON PIPE OR ROD FOUND	—X—X—	FENCE
○	MONUMENT FOUND	—○—○—	STONEWALL
⊕	UTILITY POLE	—	CURB
○	MANHOLE	—	SETBACK LINE
⊕	SIGN	—	IRON PIPE OR ROD FOUND
⊕	CATCH BASIN	—	GRANITE MONUMENT FOUND
⊕	LIGHT POLE	—	NOW OR FORMERLY
⊕	DECIDUOUS TREE	—	DEED BOOK / PAGE
⊕	CONIFEROUS TREE	—	OVERHEAD WIRES

- PLAN REFERENCES**
- "SUBDIVISION RECORDING PLAN, ROUTE 88 - CUMBERLAND, MAINE, OWNER: MORRILL PROPERTIES" JULY 5, 1988 REVISED THRU JULY 13, 1993 BY SEA CONSULTANTS, INC. RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 193, PAGE 198.
 - "PRIVATE RIGHT OF WAY AND LOT PLAN OF: RENYI PROPERTY, FORESIDE ROAD - ROUTE 88, CUMBERLAND, MAINE FOR RECORD OWNER: TIMOTHY AND HANNAH RENYI" MAY 2, 2013 REVISED THRU SEPT. 12, 2013 BY SEBAGO TECHNICS RECORDED IN PLAN BOOK 213, PAGE 383.
 - "PLAN OF PROPERTY IN CUMBERLAND FORESIDE, MAINE MADE FOR ELIZABETH H. JOHNSON" JUNE 21, 1978 REVISED THRU JULY 17, 1978 BY H.L. & E.C. JORDAN RECORDED IN PLAN BOOK 120, PAGE 13.
 - "PLAN OF A PORTION OF ROUTE #88 IN THE TOWN OF CUMBERLAND AS REDEFINED BY THE COMMISSIONERS OF CUMBERLAND COUNTY FOLLOWING HEARING ON SAME APRIL 21, 1961, DECEMBER 18, 1962.
 - "OVERALL SUBDIVISION PLAN OF: TRUE SPRING FARM, U.S. ROUTE ONE, CUMBERLAND, ME FOR: TERRY BRAGG, INC." AUGUST 3, 1999 REVISED THRU DEC. 7, 1999 BY SEBAGO TECHNICS RECORDED IN PLAN BOOK 200, PAGE 12.
 - "CHESTNUT WAY SITE DEVELOPMENT PLAN" DATED 4/29/22 BY KNICKERBOCKER GROUP.

- GENERAL NOTES**
- OWNER OF RECORD: BY GOLDEN STAR, LLC
21 CHESTNUT WAY, CUMBERLAND FORESIDE, ME
TAX MAP U4 LOT 10A
C.C.R.D. BOOK 39287 PAGE 184
 - BEARINGS ARE BASED ON MAGNETIC 1930 PER PLAN REFERENCE 3.
 - THE SURVEYED PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT WITH THE FOLLOWING SPACE AND BULK REQUIREMENTS:

MIN. LOT SIZE	2 ACRES, 1.5 ACRES WITH SEWER
LOT FRONTAGE	150 FEET
FRONT SETBACK	50 FEET
REAR SETBACK	65 FEET
SIDE SETBACK	30 FEET
COMBINED SETBACK	65 FEET
 - ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD 88 DATUM.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

RANDY R. LOUBIER, PLS #2407

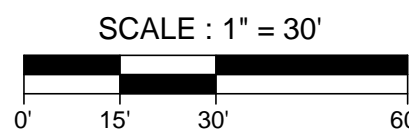
DATE

Boundary & Topographic Survey
At
104 Foreside Road - Route 88
Cumberland Foreside, Maine
Made for Record Owner
By Golden Star, LLC
21 Chestnut Way
Cumberland Foreside, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: RS / JLW DATE: AUGUST 31, 2022 JOB NO. 2022-068 C
CHECKED BY: RRL SCALE: 1" = 30' DRWG. NO. 1-topo

DRAWING SHEET C5
PRELIMINARY



STATE OF MAINE, CUMBERLAND, ss
REGISTRY OF DEEDS

RECEIVED _____, 20____

AT ____ hr. ____ min. ____ m

AND RECORDED IN

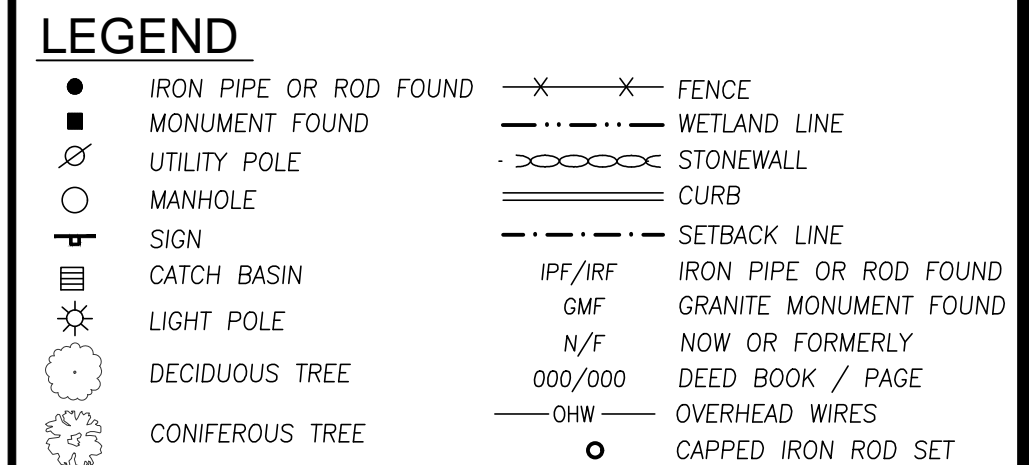
PLAN BOOK _____, PAGE _____

ATTEST: _____

REGISTER

DATE _____

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS BEEN NOT PHYSICALLY LOCATED TO UNDERGROUND UTILITIES. CALL 1-888-826-8848 AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.



1. "SUBDIVISION RECORDING PLAN, ROUTE 88 - CUMBERLAND, MAINE, OWNER: MORRILL PROPERTIES" JULY 5, 1988 REVISED THRU JULY 13, 1983 BY SEA CONSULTANTS, INC. RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 193, PAGE 198.
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6. "CHESTNUT WAY SITE DEVELOPMENT PLAN" DATED 4/29/22 BY KNICKERBOCKER GROUP.
7. "PROPOSED LOT DIVISION PLAN" DATED 10/25/22 OF 104 FORESIDE ROAD CUMBERLAND, MAINE BY COVE KNICKERBOCKER GROUP.

1. OWNER OF RECORD: BY GOLDEN STAR, LLC
21 CHESTNUT WAY, CUMBERLAND FORESIDE, ME
TAX MAP 04 LOT 10A
C.C.R.D. BOOK 39287 PAGE 184
2. BEARINGS ARE BASED ON MAGNETIC 1930 PER PLAN REFERENCE 3.
3. THE SURVEYED PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT WITH THE FOLLOWING SPACE AND BULK REQUIREMENTS:



MIN. LOT SIZE 2 ACRES, 1.5 ACRES WITH SEWER
LOT FRONTAGE 150 FEET
FRONT SETBACK 50 FEET
REAR SETBACK 60 FEET
SIDE SETBACK 30 FEET
COMBINED SETBACK 65 FEET
4. ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD 88 DATUM.

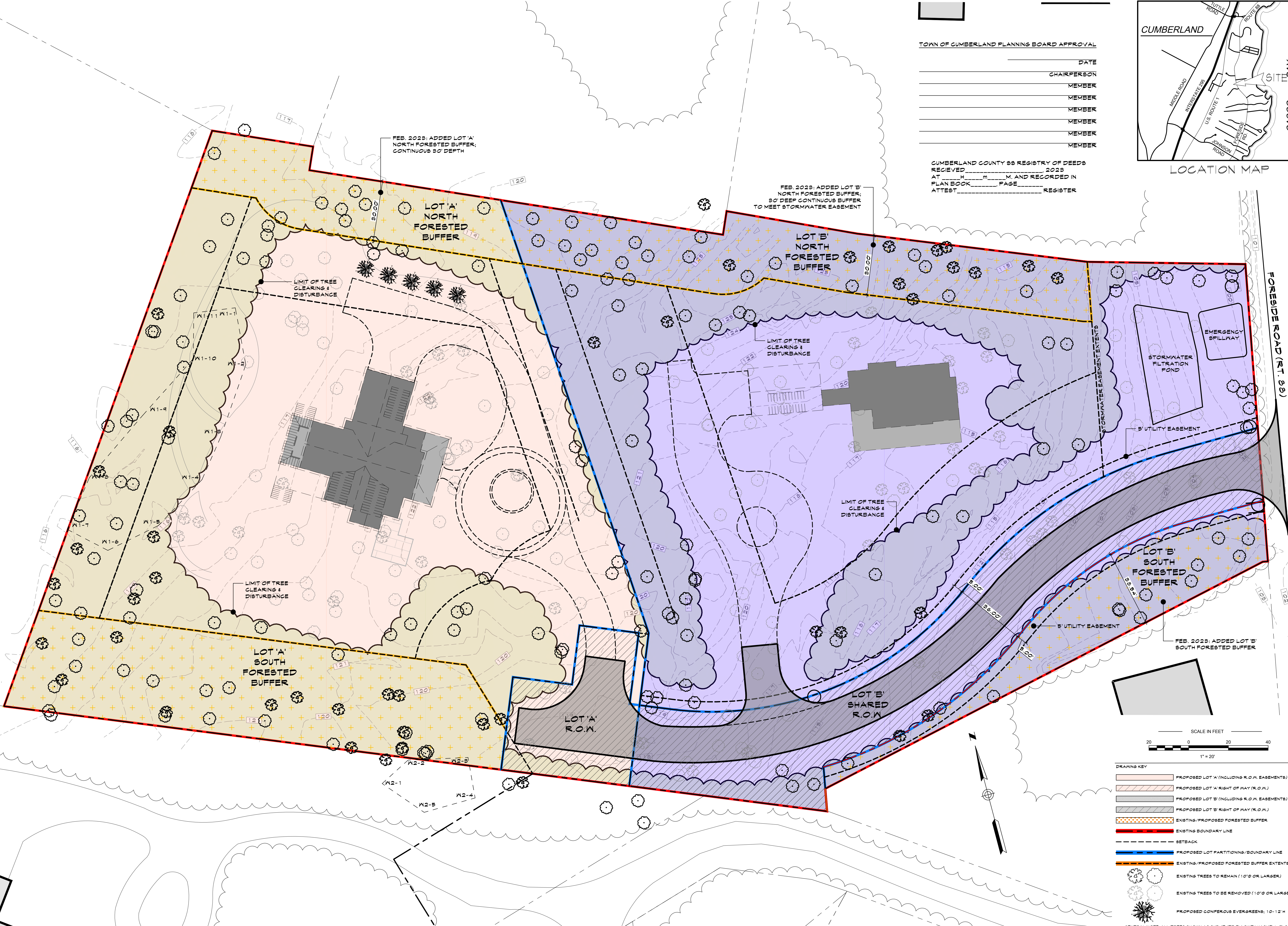
OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.



REV. 3	01/30/2023	REVISED LOT AND RIGHT OF WAY CONFIGS.	RJC
REV. 2	12/09/2022	REVISED LANGUAGE OF RIGHT OF WAY	RRL
REV. 1	12/02/2022	REVISED LOT AND RIGHT OF WAY CONFIGS.	RJC

104 Foreside Road - Route 88
Cumberland Foreside, Maine
Made for Record Owner
By Golden Star, LLC
21 Chestnut Way
Cumberland Foreside, Maine

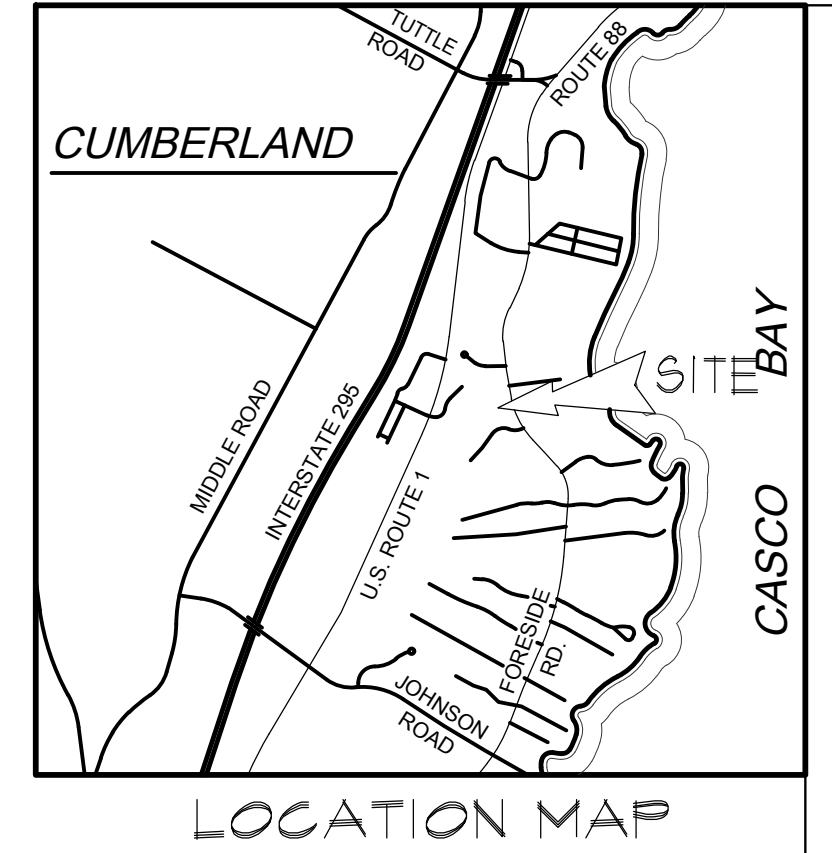

OWEN HASKELL, INC. 
PROFESSIONAL LAND SURVEYORS
 390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424



TOWN OF CUMBERLAND PLANNING BOARD APPROVAL

DATE	
CHAIRPERSON	
MEMBER	
MEMBER	
MEMBER	
MEMBER	
MEMBER	
MEMBER	

CUMBERLAND COUNTY SS REGISTRY OF DEEDS
RECIEVED _____ 2023
AT _____ H _____ M AND RECORDED IN
PLAN BOOK _____ PAGE _____
ATTEST _____ REGISTER



COVE

— by KNICKERBOCKER GROUP —

KNICKERBOCKER GROUP

BOOTHBAY ♦ PORTLAND ♦ (207) 633-3888
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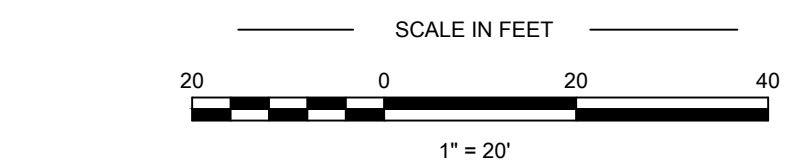
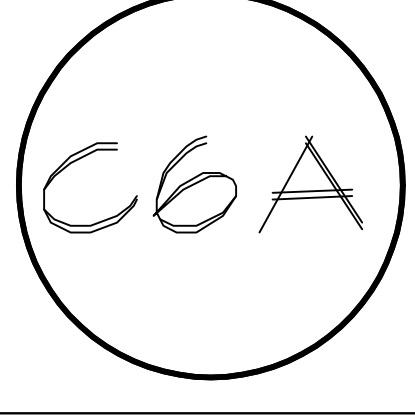
CONSULTANTS

104 FORESIDE ROAD
CUMBERLAND, MAINE
PROPOSED
FORESTED BUFFER AND LANDSCAPING PLAN

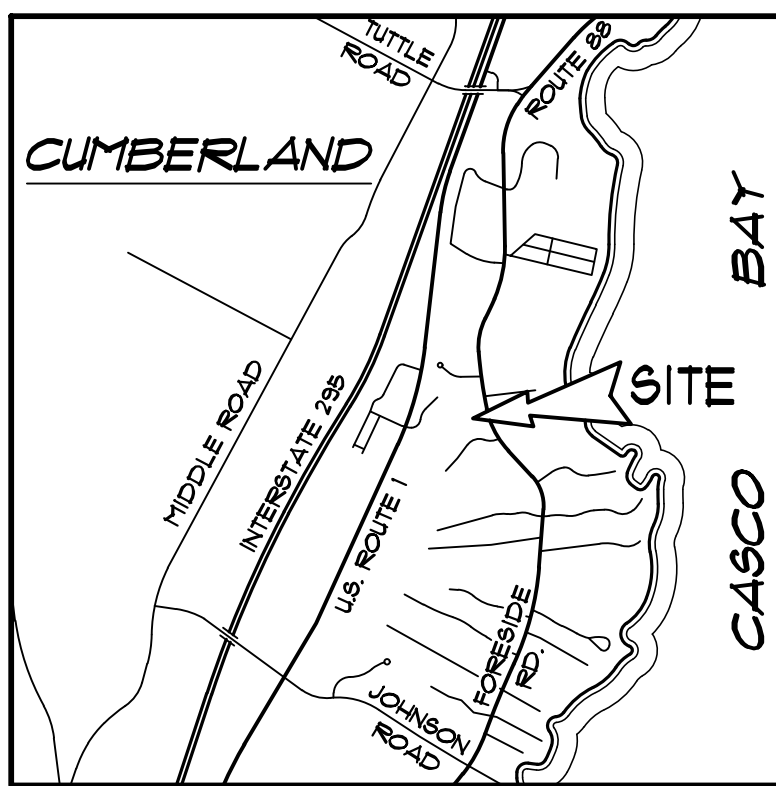
REVISIONS

10/24/2022:	ISSUED AS SUPPLEMENTAL DOCUMENTATION FOR PLANNING BOARD SUBMISSION
11/29/2022:	RE-ISSUED FOR PLANNING BOARD REVIEW
1/31/2023:	RE-ISSUED FOR PLANNING BOARD REVIEW: ADDED FORESTED BUFFERS AND UPDATED R.O.W. EXTENTS

JOB No.	SCALE
DATE	01-31-2023



- DRAWING KEY
- PROPOSED LOT 'A' (INCLUDING R.O.W. EASEMENTS)
 - PROPOSED LOT 'A' RIGHT OF WAY (R.O.W.)
 - PROPOSED LOT 'B' (INCLUDING R.O.W. EASEMENTS)
 - PROPOSED LOT 'B' RIGHT OF WAY (R.O.W.)
 - EXISTING/PROPOSED FORESTED BUFFER
 - EXISTING BOUNDARY LINE
 - SETBACK
 - PROPOSED LOT PARTITIONING/BOUNDARY LINE
 - EXISTING/PROPOSED FORESTED BUFFER EXTENTS
 - EXISTING TREES TO REMAIN (10'Ø OR LARGER)
 - EXISTING TREES TO BE REMOVED (10'Ø OR LARGER)
 - PROPOSED CONIFEROUS EVERGREENS: 10'-12'H
- GENERAL NOTE: ALL TREES SHOWN AS SURVEYED BY OWEN HASKELL, PLS



LOCATION MAP

LOT A AREAS

NORTH FORESTED BUFFER	= 4,991 sf
SOUTH FORESTED BUFFER	= 11,961 sf
RIGHT OF WAY (TAMBOUR WAY)	= 3,925 sf
REMAINING LAND	= 50,666 sf
TOTAL PARCEL AREA	= 71,543 sf



LOT B AREAS

NORTH FORESTED BUFFER	= 8,960 sf
SOUTH FORESTED BUFFER *	= 5,916 sf
RIGHT OF WAY (TAMBOUR WAY)	= 13,880 sf
STORMWATER EASEMENT *	= 1,488 sf
REMAINING LAND *	= 43,911 sf
TOTAL PARCEL AREA	= 80,215 sf

* AREA INCLUDES 5' UTILITY EASEMENT ADJACENT TO RIGHT OF WAY

NOTES

- ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTRY REGISTRY OF DEEDS.
- OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
- PARCEL AREA = 151,758 SQUARE FEET / 3.48 ACRES
- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD - ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
- THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
- THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT. MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER)
MINIMUM LOT FRONTAGE = 150'
SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL #230162 0018C, DATED OCTOBER 15, 1985.
- ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

LINE AND CURVE TABLE

LINE	BEARING	DISTANCE
L-1	N 88°39'40" W	46.63'
L-2	N 88°39'40" W	33.54'
L-3	S 12°20'00" W	10.96'
L-4	N 65°49'18" W	15.25'
L-5	N 24°10'42" E	46.00'
L-6	N 24°10'42" E	31.00'
L-7	N 24°10'42" E	31.00'
L-8	N 65°49'18" E	5.00'
CURVE	RADIUS	LENGTH
C-1	198.00'	125.33'
C-2	162.00'	102.53'
C-3	162.00'	161.71'
C-4	198.00'	121.96'

LEGEND

---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
---	NOW OR FORMERLY
---	BOOK AND PAGE NUMBER
---	IRON PIPE OR ROD FOUND
---	GRANITE MONUMENT FOUND
---	EXISTING UTILITY POLE WITH OVERHEAD WIRES
---	EXISTING CATCH BASIN
---	PROPOSED OUTLET CONTROL STRUCTURE
---	PROPOSED SEWER MANHOLE
---	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2" LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	NEW 6" PERFORATED UNDERDRAIN LINE
---	NEW UNDERGROUND ELECTRIC LINE
---	NEW 1/2" WATER SERVICE
---	NEW SEWER LINE
---	NEW PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	INSTALL SILT FENCE
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	PROPOSED GRAVEL DRIVE
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA
---	INSTALL EROSION CONTROL BLANKET

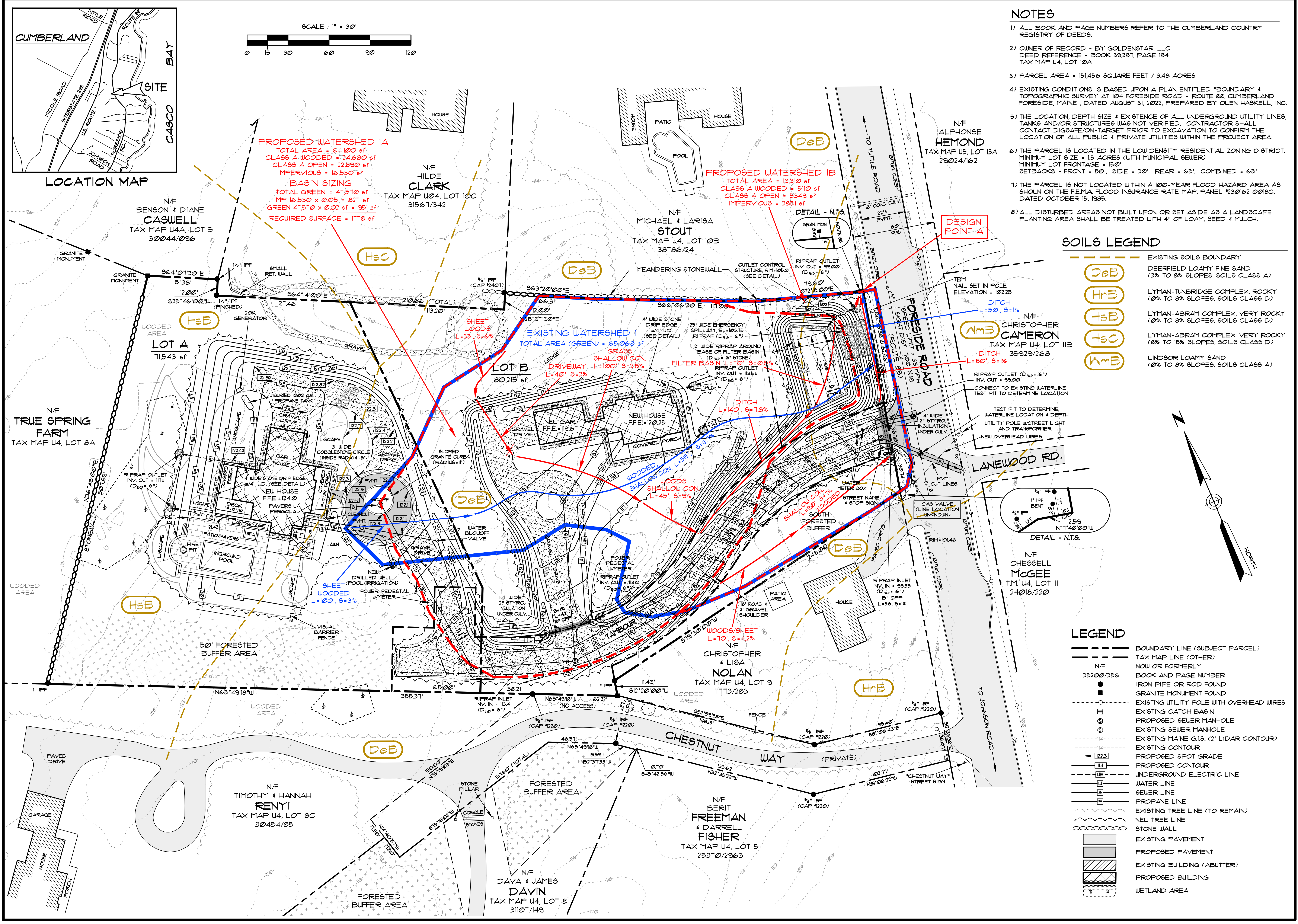
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6243
steve@sjrjeng.com

SJR ENGINEERING

SITE CONSTRUCTION & STORMWATER MANAGEMENT PLAN
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

DATE	PROJECT
12-11-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

SHEET C1



- NOTES**
- 1) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
 - 2) OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
 - 3) PARCEL AREA = 151,456 SQUARE FEET / 3.48 ACRES
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 - 5) THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
 - 6) THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT. MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER)
MINIMUM LOT FRONTAGE = 150'
SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'
 - 7) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL #20162 0010C, DATED OCTOBER 15, 1985.
 - 8) ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

SOILS LEGEND

DeB	EXISTING SOILS BOUNDARY
HrB	DEERFIELD LOAMY FINE SAND (3% TO 8% SLOPES, SOILS CLASS A)
HsB	LYMAN-TUNBRIDGE COMPLEX, ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsC	LYMAN-ABRAM COMPLEX, VERY ROCKY (0% TO 8% SLOPES, SOILS CLASS D)
HsC	LYMAN-ABRAM COMPLEX, VERY ROCKY (8% TO 15% SLOPES, SOILS CLASS D)
WmB	WINDSOR LOAMY SAND (0% TO 8% SLOPES, SOILS CLASS A)

LEGEND

---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
N/F	NOW OR FORMERLY
35200/356	BOOK AND PAGE NUMBER
●	IRON PIPE OR ROD FOUND
■	GRANITE MONUMENT FOUND
○	EXISTING UTILITY POLE WITH OVERHEAD WIRES
⊞	EXISTING CATCH BASIN
⊞	PROPOSED SEWER MANHOLE
⊞	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	UNDERGROUND ELECTRIC LINE
---	WATER LINE
---	SEWER LINE
---	PROPANE LINE
---	EXISTING TREE LINE (TO REMAIN)
---	NEW TREE LINE
---	STONE WALL
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	EXISTING BUILDING (ABUTTER)
---	PROPOSED BUILDING
---	WETLAND AREA

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04253
(207) 242-6243
sve@sjeinc.com

WATERSHED & SOILS PLAN
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 30'

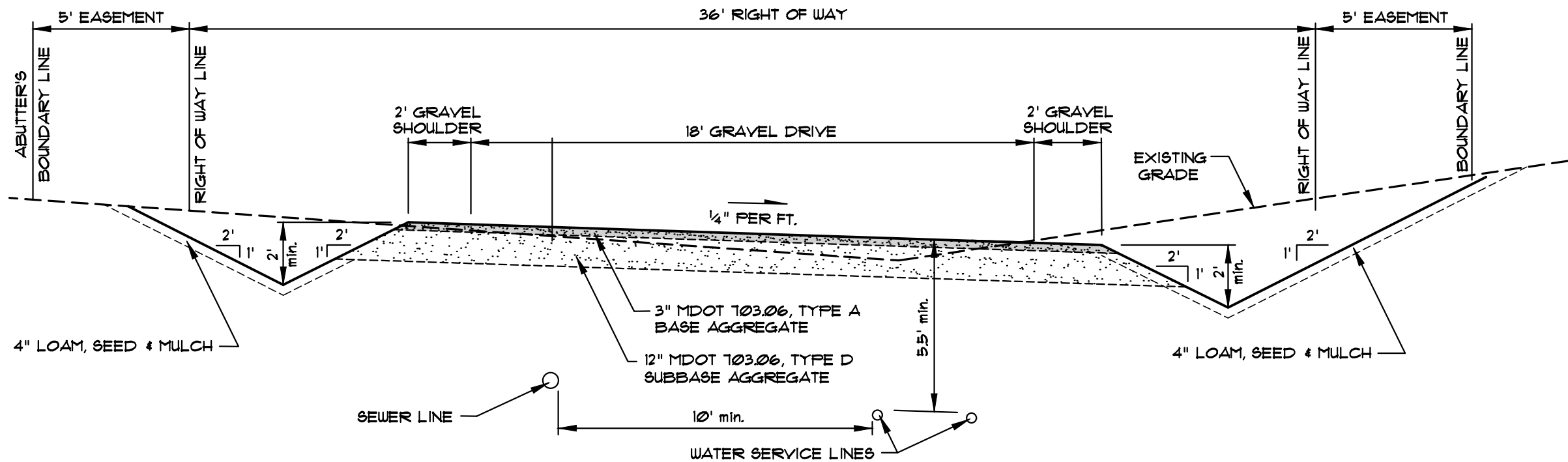
SHEET C8

FOR APPROVALS ONLY

STEPHEN J. ROBERTS
REGISTERED PROFESSIONAL ENGINEER
MAINE #18347

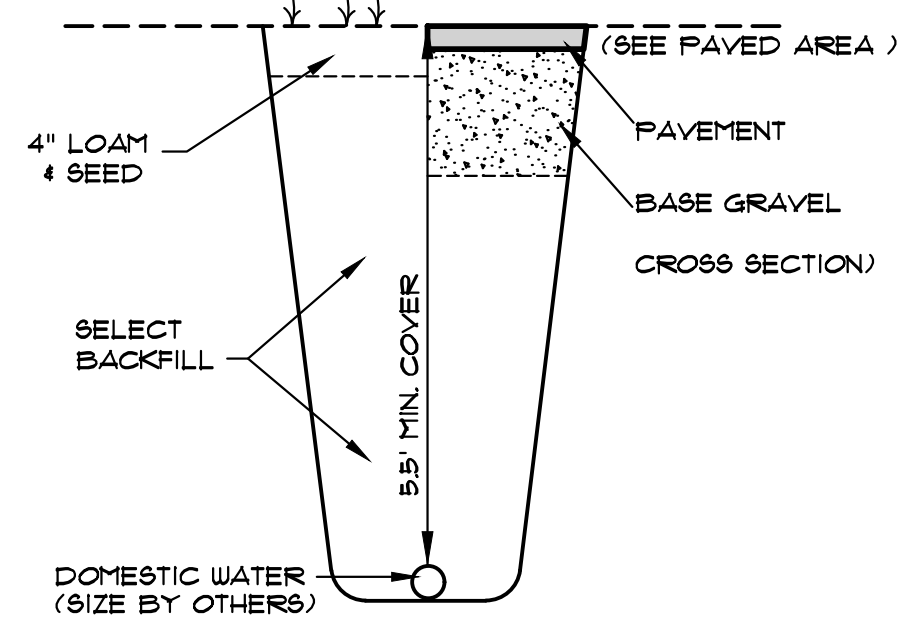
RELOCATE AND REDESIGN ROAD AND FILTER BASIN
1-21-22
12-21-22
DATE: 12-21-22
BY: SJR
REV: 1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

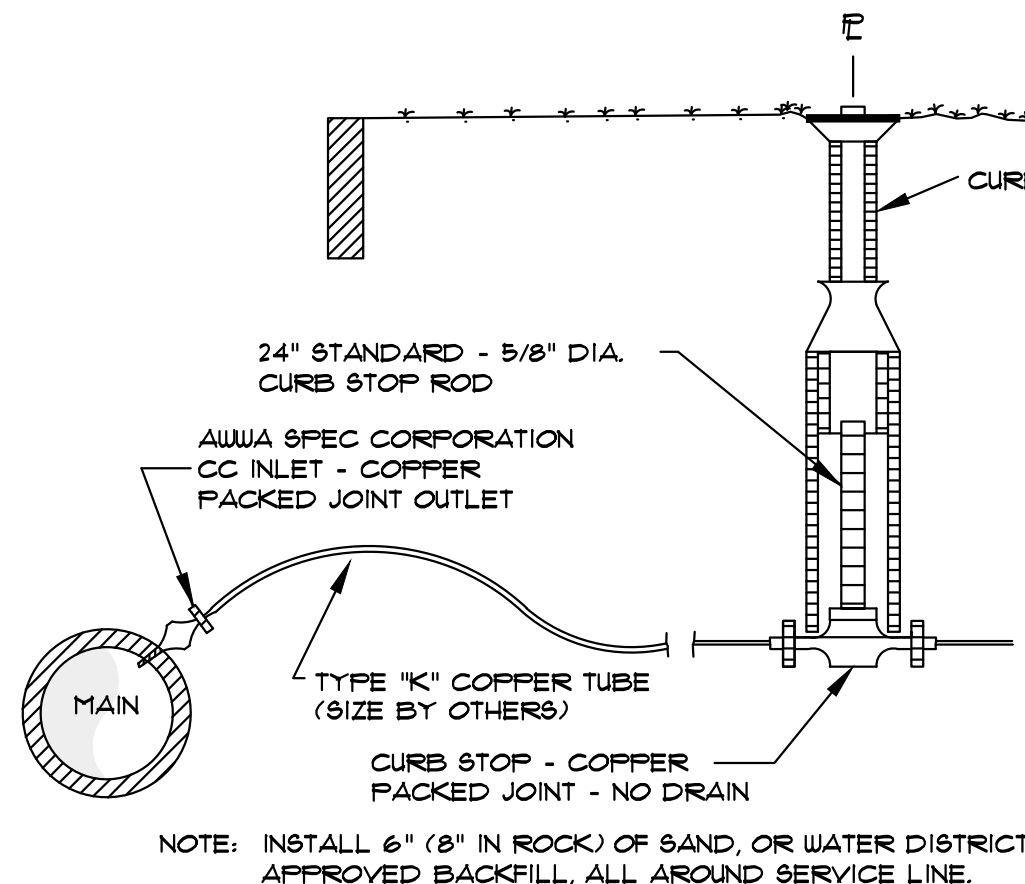


TYPICAL DRIVEWAY CROSS SECTION

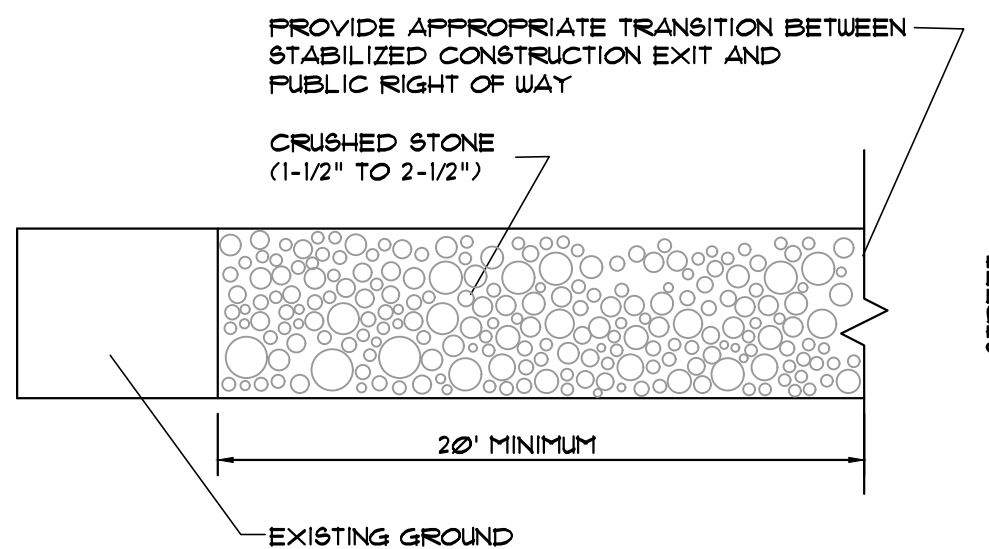
SCALE : 1" = 4'



WATER SERVICE TRENCH DETAIL
NOT TO SCALE



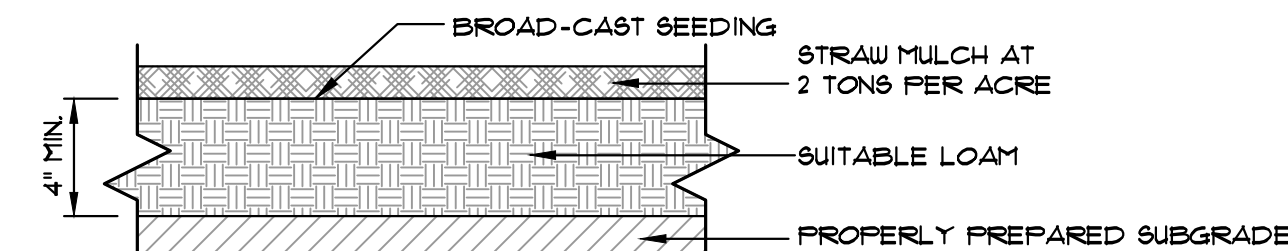
TYPICAL DOMESTIC WATER SERVICE
NOT TO SCALE



- STONE SIZE - AASHTO DESIGNATION M 43, SIZE 2 (2 1/2\" - 1 1/2\") USE CRUSHED STONE
- LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
- THICKNESS - NOT LESS THAN 6"
- WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
- WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY WHEN WASHING IS REQUIRED. IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
- MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURED USSES TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

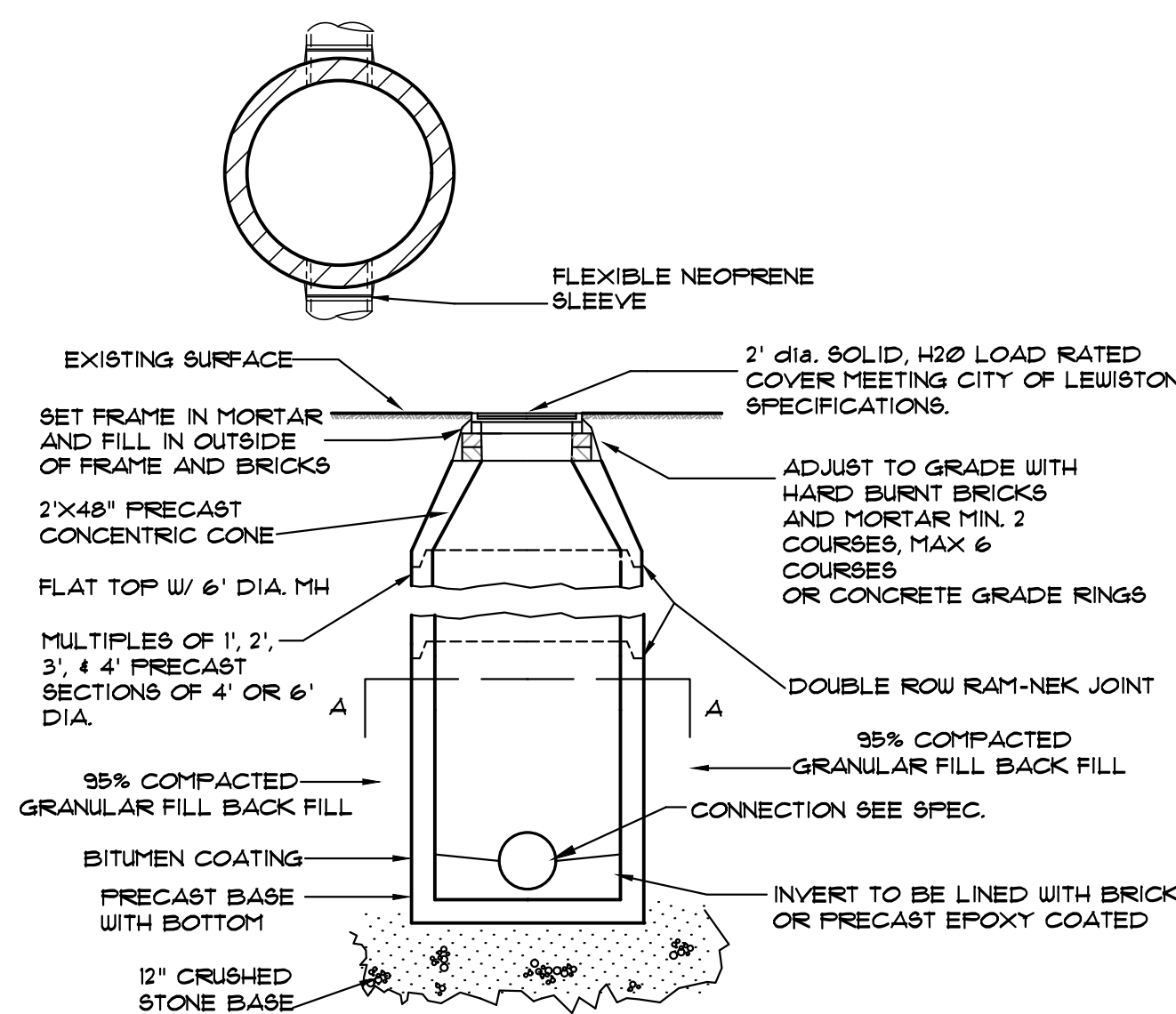
STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE

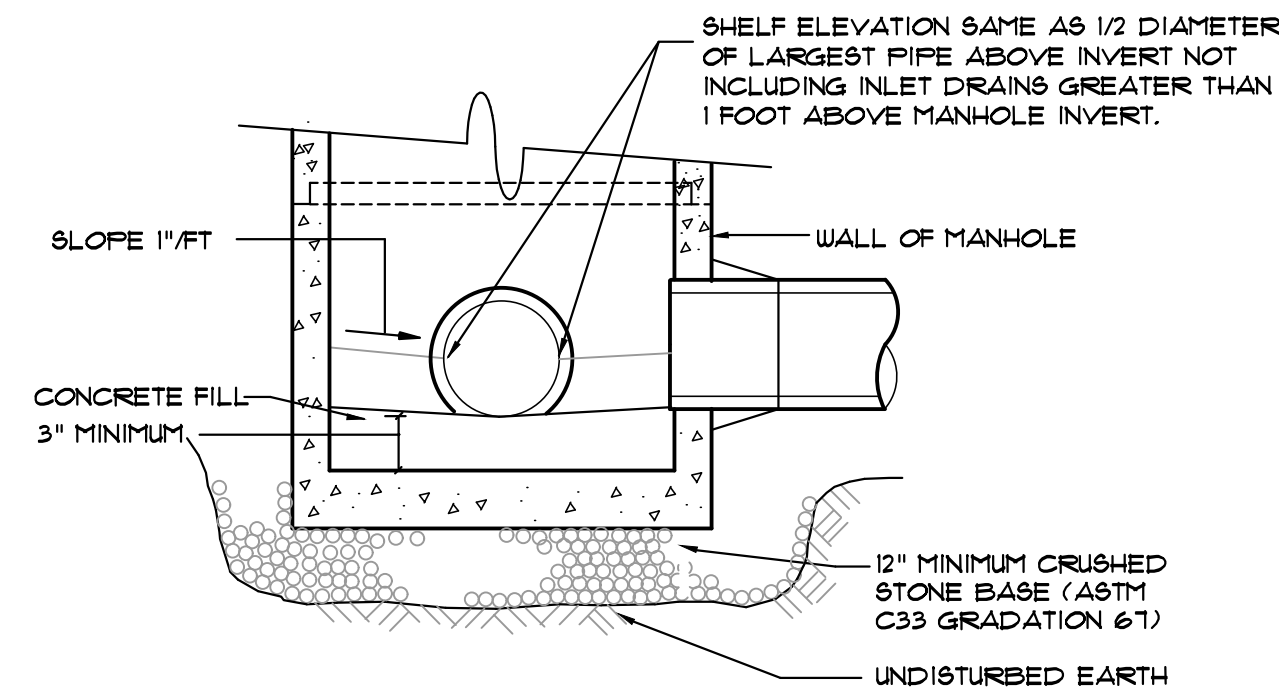


PERSISTENT SEED MIX	APPLICATION RATE	PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED
KENTUCKY BLUEGRASS	100/1000 #/T	
CREeping RED FESCUE	.46	
PERENNIAL RYEGRASS	.11	
TOTAL SEED RATE	1.63	

LOAM & SEED DETAIL
NOT TO SCALE



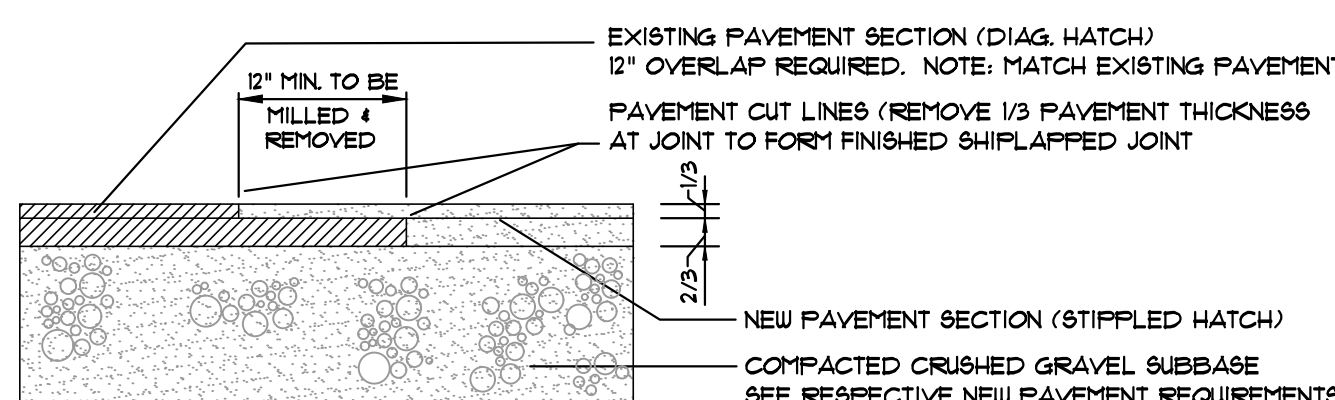
SECTION B-B



SECTION A-A

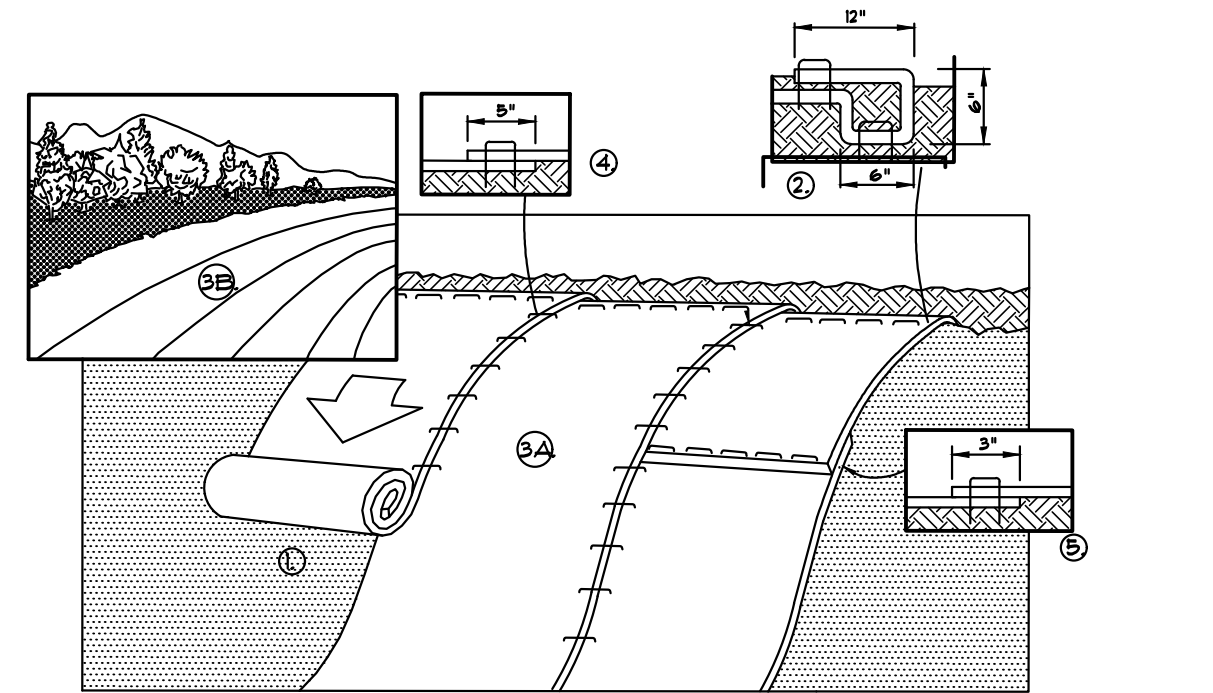
PRECAST CONCRETE SEWER MANHOLE

NOT TO SCALE



PAVEMENT SAWCUT JOINT DETAIL

NOT TO SCALE

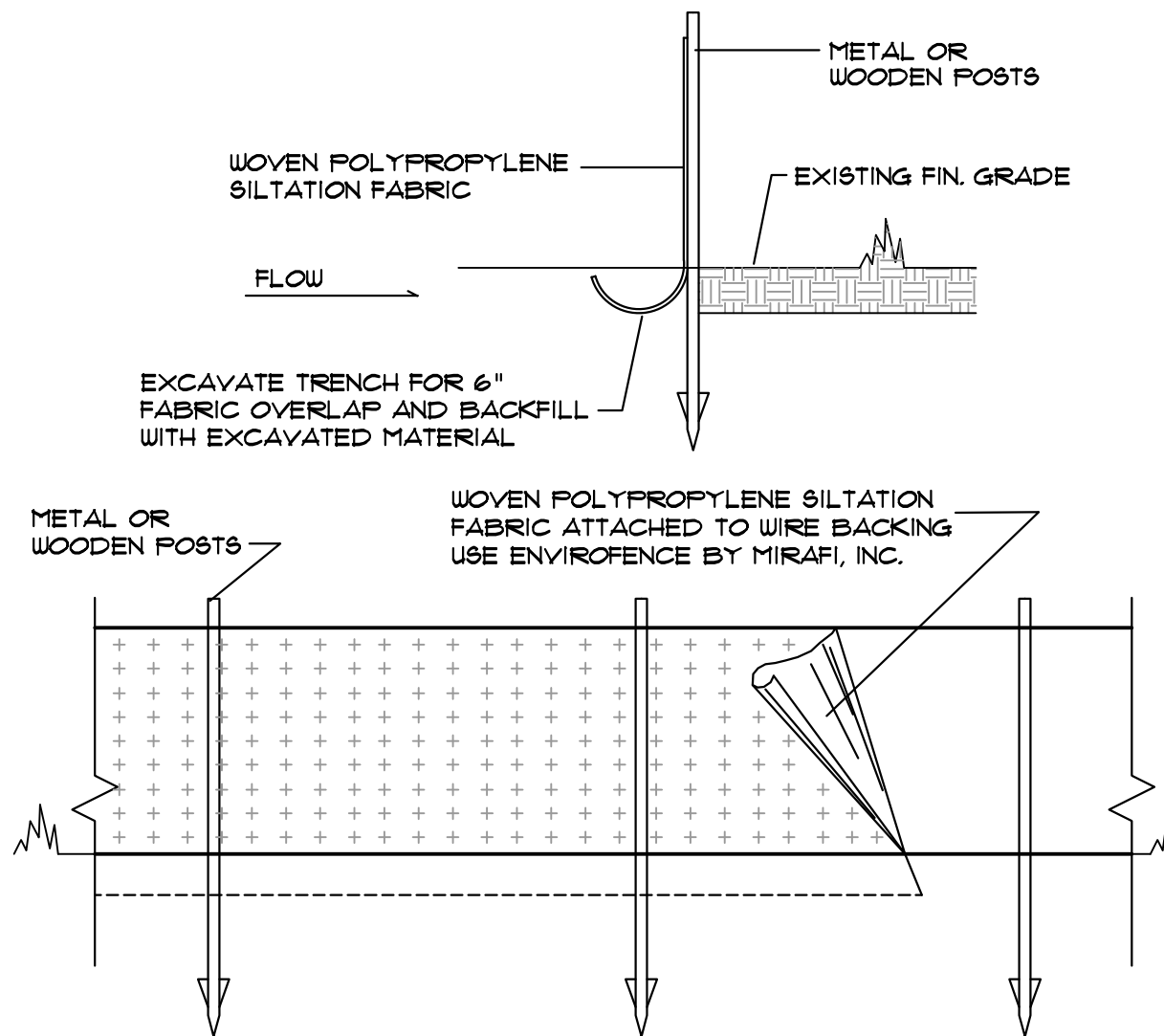


- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEAN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6\"
- ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2\"
- CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROX. 3\"

NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6\"

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



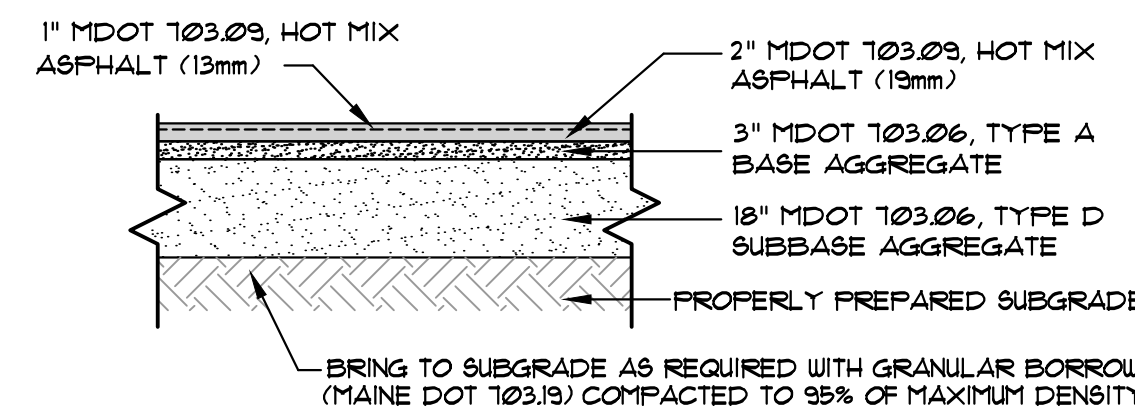
NOTES

REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL. B-1 SEDIMENT BARRIERS.

SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED. EROSION CONTROL FILTER BERM IS AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.

SILT FENCE DETAIL

NOT TO SCALE



NOTES

- COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF THEIR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- HOT MIX ASPHALT PAVEMENT MUST BE COMPACTED TO 92%-97% OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2924.
- A TACK COAT MUST BE USED BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.
- PROVIDE NON-FROST SUSCEPTIBLE COMPACTED FILL GRANULAR BORROW (MDOT 103.19) BELOW PAVEMENT IN FILL AREAS.
- CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

PAVED AREA CROSS SECTION

NOT TO SCALE

GENERAL NOTES

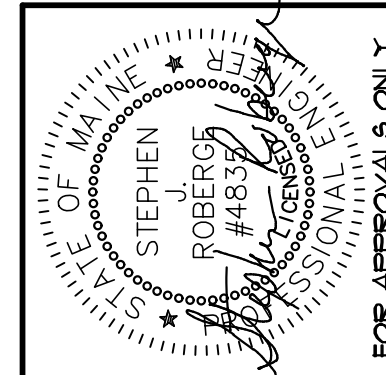
- SEE SHEET 1 FOR SITE SPECIFIC NOTES.
- THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.
- THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.
- ALL CONSTRUCTION WITHIN THE TOWN OF CUMBERLAND RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN OF CUMBERLAND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN AND/OR MDOT, REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED BY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (811) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.
- THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.
- OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCRoACHING ON THIS REQUIREMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEING DISTURBED AS DETERMINED BY THE CITY OF AUGUSTA CEO. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- TRAFFIC CONTROL MEASURES SHALL BE UTILIZED IN ACCORDANCE WITH MAINE DOT STANDARDS. THE CONTRACTOR SHALL PROVIDE, MAINTAIN AND PROTECT TRAFFIC CONTROL DEVICES TO THE EXTENT REQUIRED BY LAW FOR THE PROTECTION OF THE PUBLIC CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROL PERSONNEL AS REQUIRED OR ORDERED BY THE DESIGN ENGINEER OR CODE ENFORCEMENT PERSONNEL. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE TOWN. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH MDOT SPECIFICATIONS. TWELVE INCH (12") WIDE STOP BAR AND FOUR INCH (4") WIDE STRIPES SHALL BE LOCATED AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PRODUCT, MATERIALS AND PLANT SPECIFICATIONS TO THE OWNER AND DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR SOIL AND PAVEMENT MATERIALS AND CONFAPCTION TESTING AT NO COST TO THE OWNER. RESULTS OF THE TESTING ARE TO BE SUPPLIED TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH ANY RECONSTRUCTION AND RE-TESTING OF UNSATISFACTORY SOILS.
- ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.
- THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.
- WORK MAY PROGRESS MONDAY THROUGH SATURDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE TOWN OF CUMBERLAND. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM WITH ALL RULES AND REGULATIONS SET FORTH IN THE TOWN LAND USE ORDINANCE REGULATIONS.
- THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION, THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.
- PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.
- ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEW. SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING THE WORK. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS, LATEST REVISION.

GRADING AND DRAINAGE NOTES

- UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS. LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.
- HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.
- TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO DESIGNATED BY THE CONTRACTOR. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.
- ALL EXISTING STRUCTURES, FENCING, TREES, ETC. WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.
- THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.
- SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
- BASED ON FEMA MAPPING, NO AREA WITHIN THE SITE BOUNDARIES IS IN THE 100 YEAR FLOOD PLAIN.

LAYOUT NOTES

- ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.



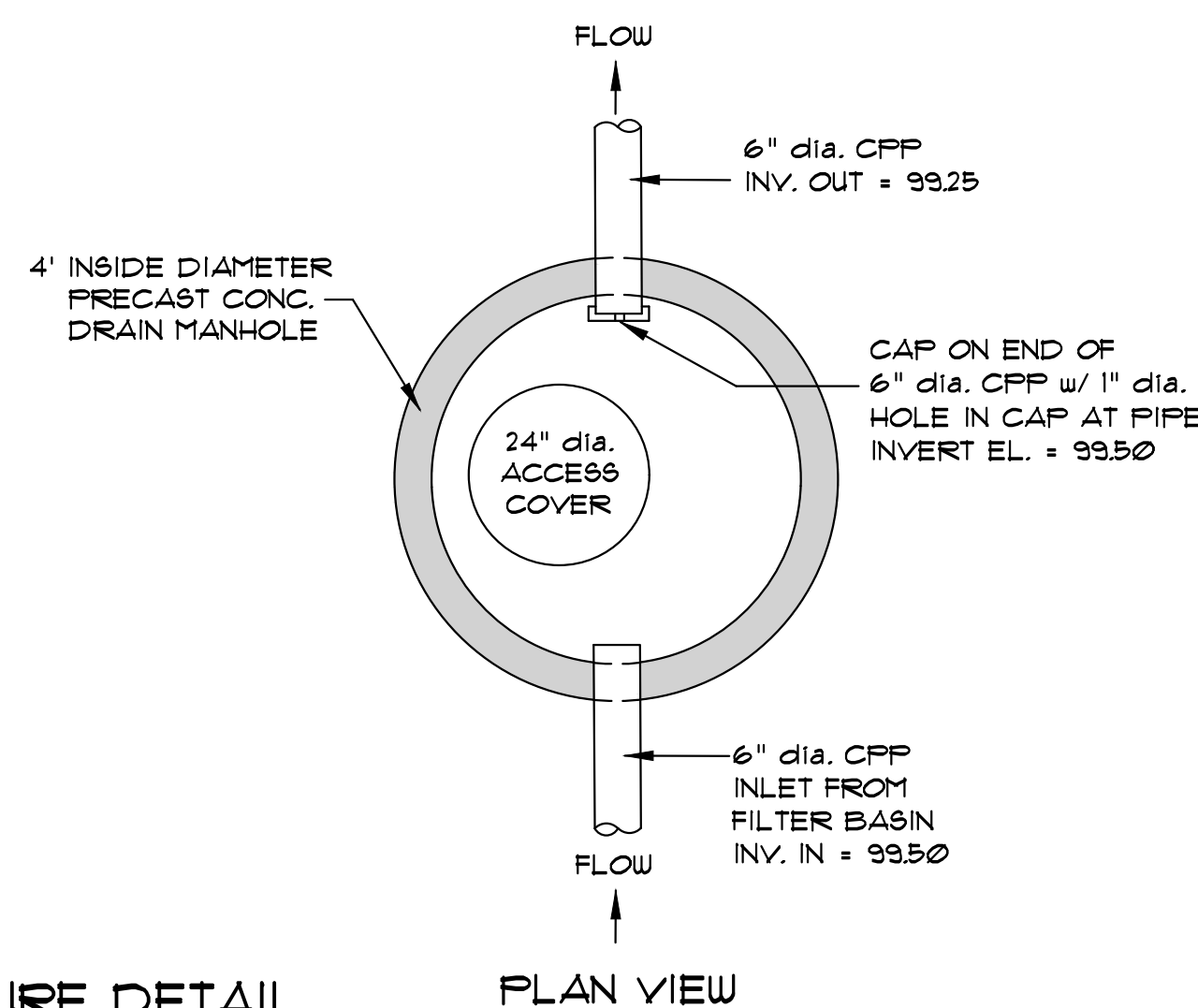
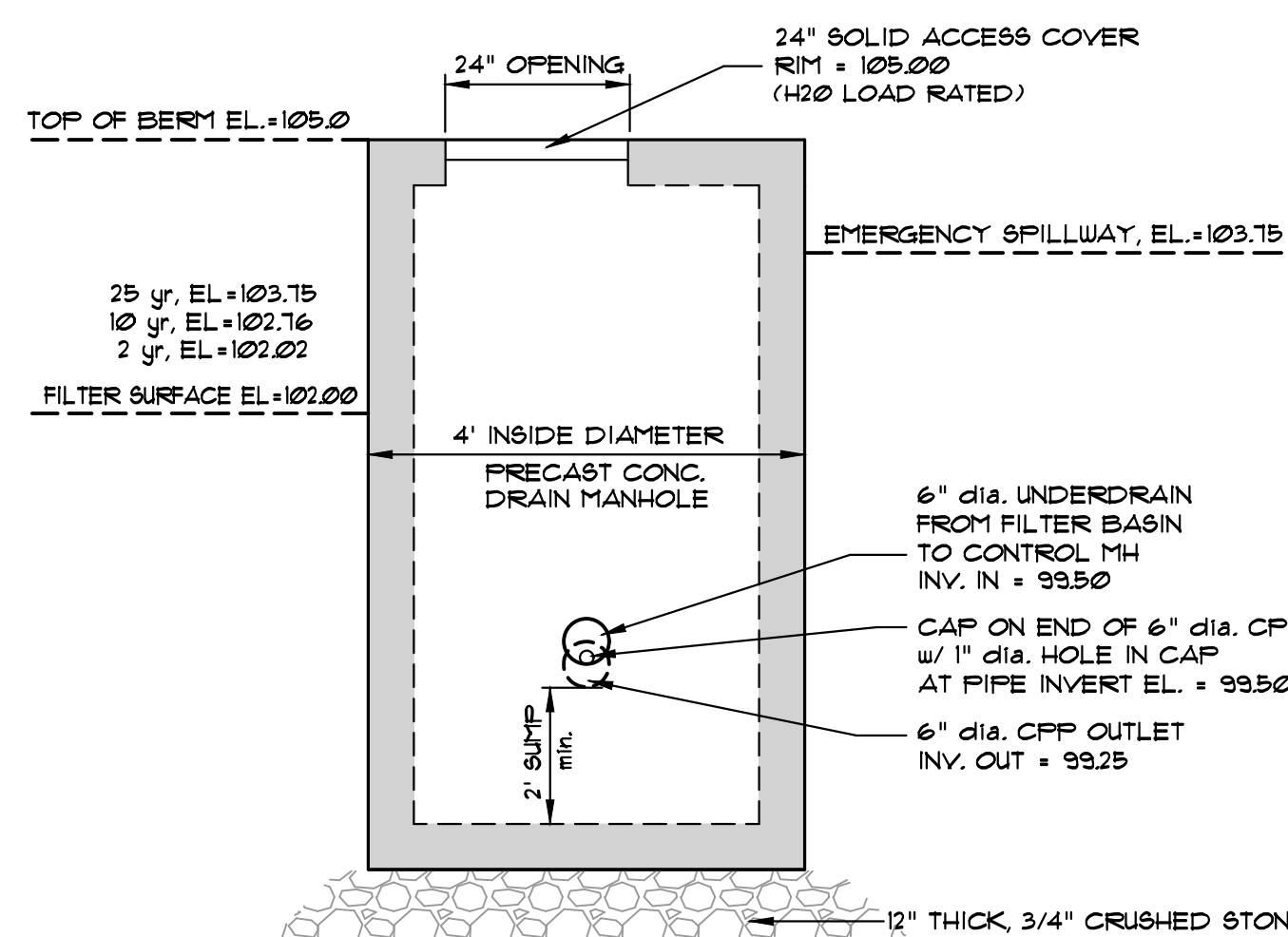
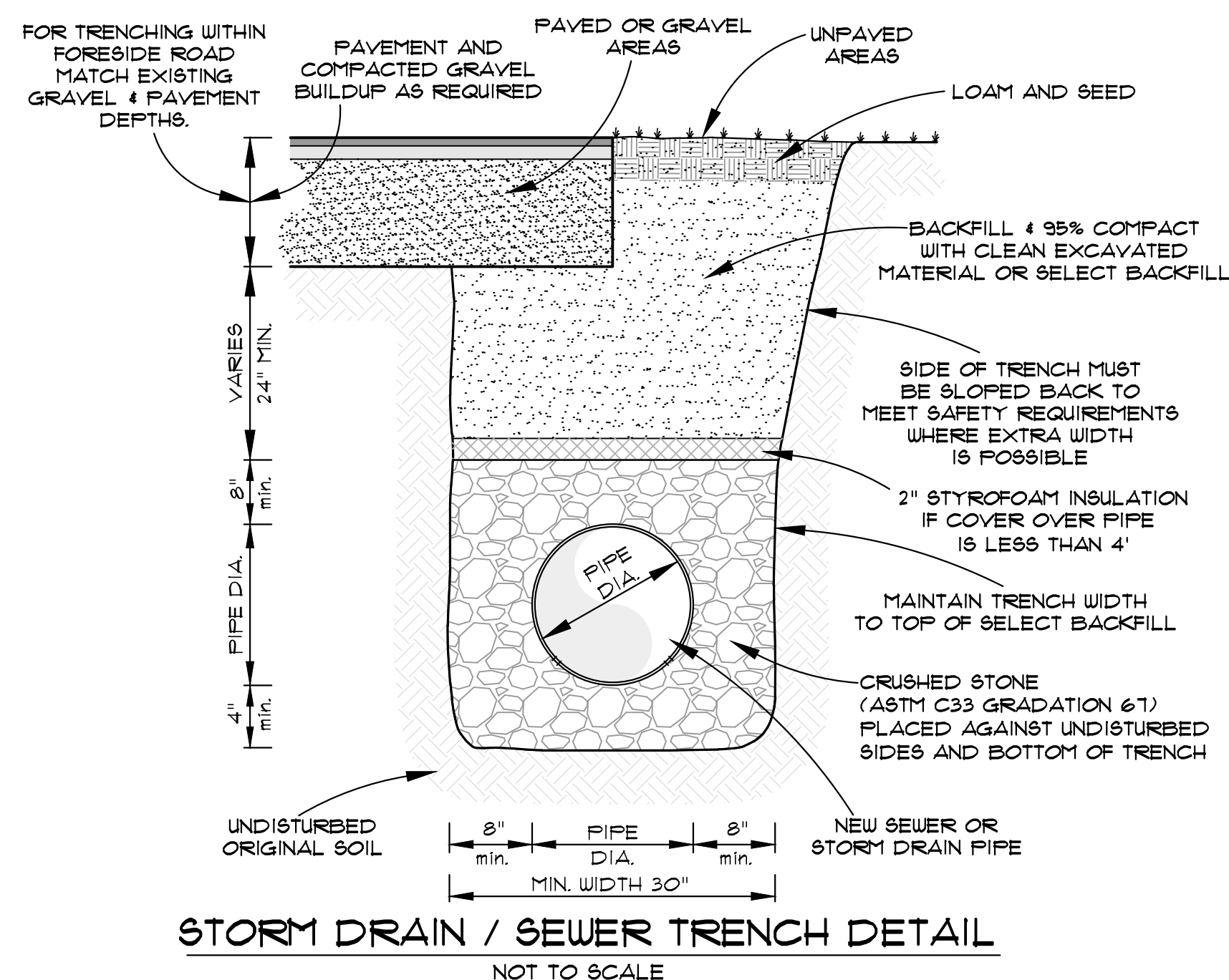
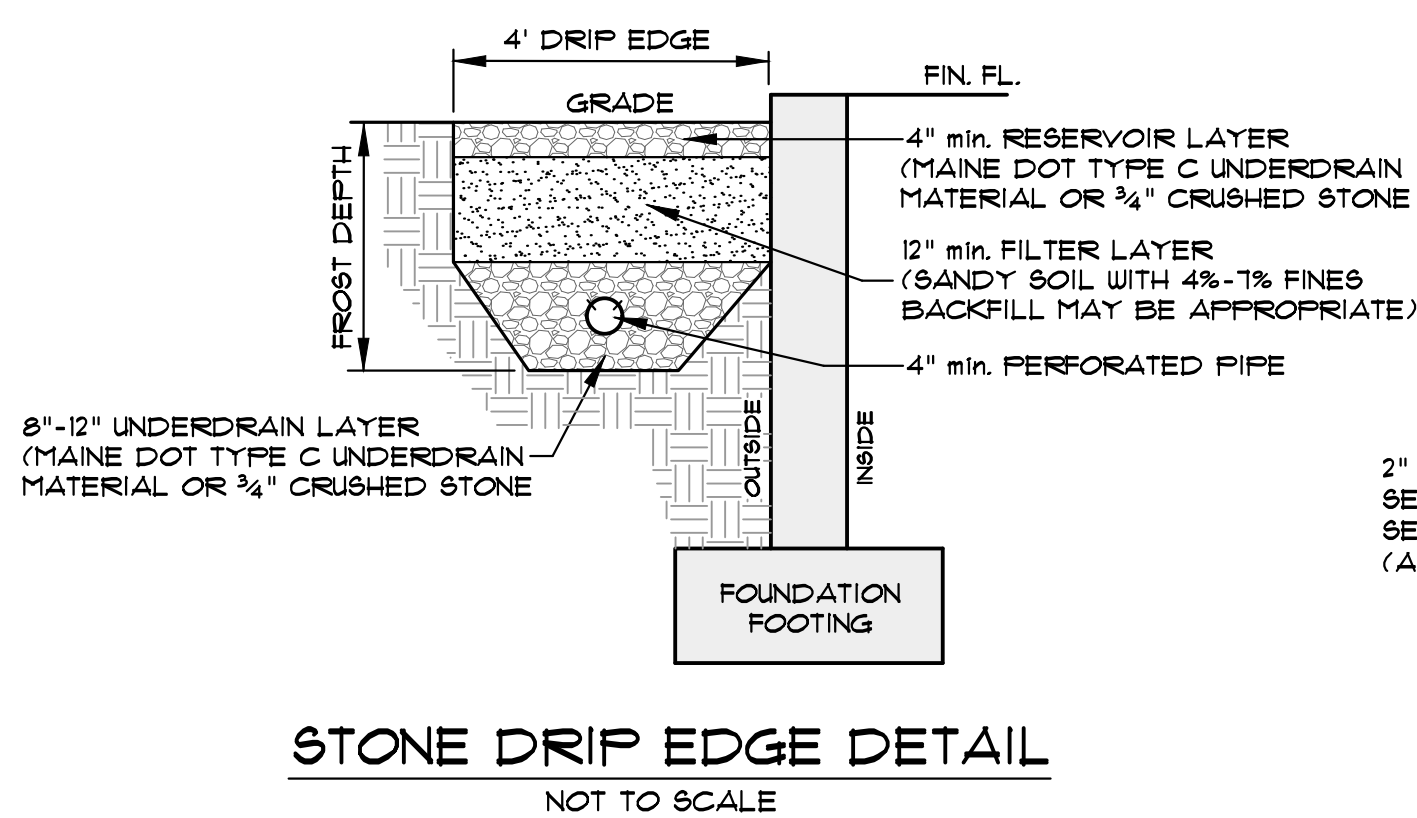
DATE	PROJECT
11-22-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 602-1676 tel & fax
steves@sjreng.com

SJR ENGINEERING

SITE CONSTRUCTION NOTES & DETAILS
LOT SPLIT
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04100

DATE	PROJECT
11-22-2022	2022-22
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THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THIS PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER SHALL SUBMIT A WRITTEN REPORT TO THE DISTRICT ENGINEER, WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED, ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS. THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION AND THE TIME INSPECTED ON EACH VISIT.

CONSTRUCTION INSPECTIONS AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION SHALL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL, AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED, AFTER THE PIPE BEDDING IS PLACED BUT PRIOR TO THE PLACEMENT OF THE FILTER MEDIA, AND AFTER THE FILTER MEDIA HAS BEEN PLACED AND THE FILTER SURFACE SEEDED.

TESTING AND SUBMITTALS: ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN SHALL BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FROM EACH MATERIAL FOR TESTING. ALL TESTING SHALL BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN'S CONSTRUCTION.

OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF BLEND OF SAND, TOPSOIL, AND WOOD FIBER MULCH (OR OTHER APPROVED ORGANIC SOURCE). THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #20 SIEVE AS DETERMINED BY ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE PARTICLES IN SOILS) AND 1936A (STANDARD TEST METHOD FOR DETERMINING THE ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT).

IF THE UNDERDRAIN PIPES WILL BE BEDDED IN GRAVEL, OBTAIN A SAMPLE OF THE GRAVEL FILL TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRAVEL FROM THE STOCKPILE OR PIT FACE). THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE GRAVEL TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE GRAVEL FILL MUST CONFORM TO MEDOT SPECIFICATION 10322 UNDERDRAIN TYPE B.

IF THE UNDERDRAIN PIPE WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (3 GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 102322 UNDERDRAIN TYPE C.

1) THE SOIL FILTER IS PART OF A TOWN OF CUMBERLAND PERMIT. CONSTRUCTION SHALL FOLLOW CURRENT MAINE DEP GUIDELINES WHICH INCLUDE APPROVAL OF MATERIAL PRIOR TO PLACEMENT AND CONSTRUCTION OVERSIGHT BY THE DESIGN ENGINEER.

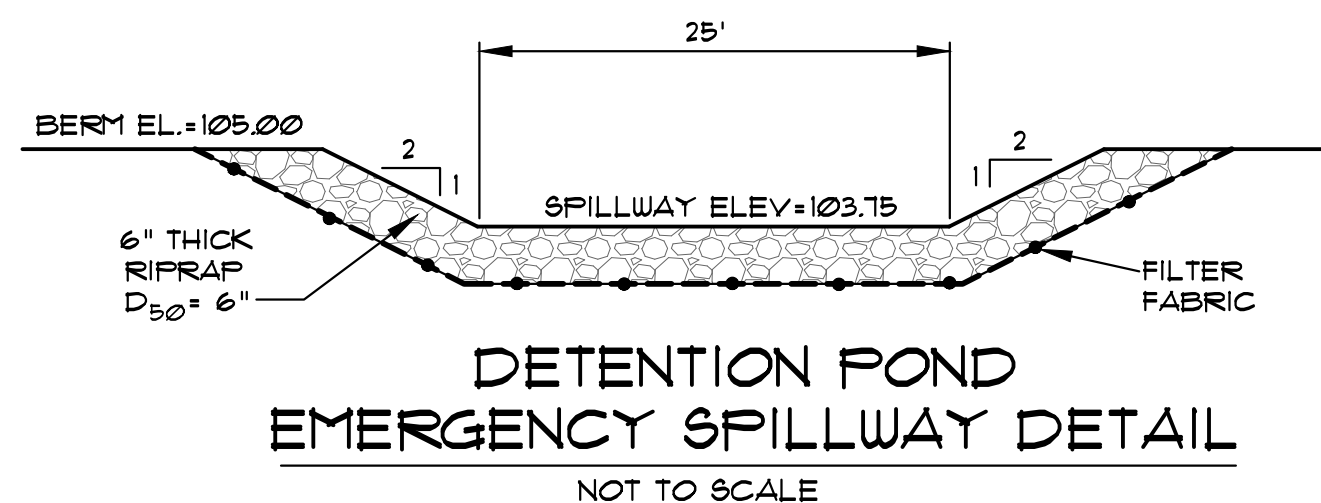
2) SUBMIT SAMPLES AND GRADATIONS FOR EACH MATERIAL TO BE USED. PROVIDE EXPECTED DESIGN MIX. PERFORM AND PROVIDE STANDARD PROCTOR ON COMBINED MIXTURE AS WELL AS A PERMEABILITY TEST

4) MAXIMUM SPACING OF UNDERDRAIN PIPING IS 10' O.C.. END CAPS SHALL BE INSTALLED ON ALL UNDER DRAIN PIPES.

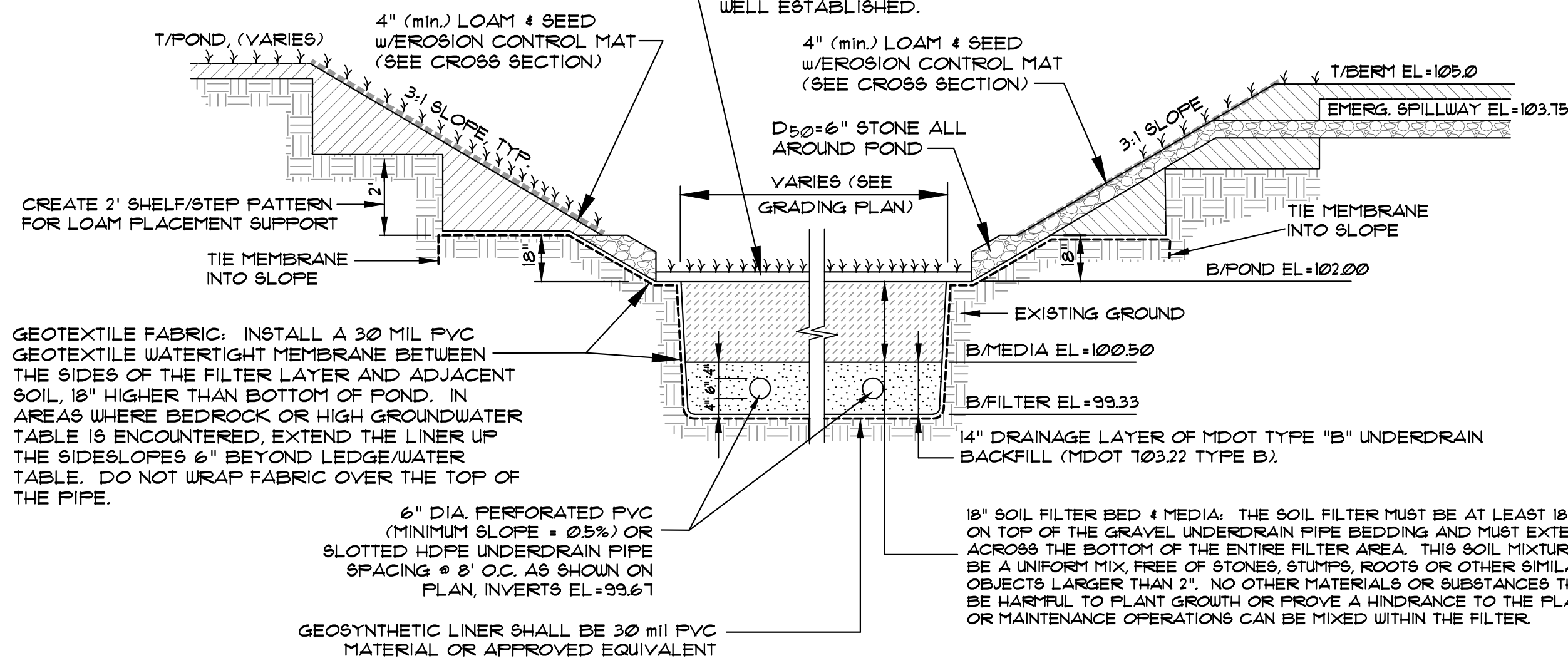
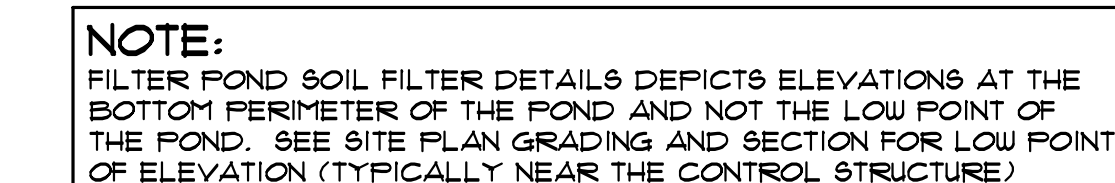
5) AFTER APPROVAL OF MATERIAL, PLACE FILTER MEDIA IN TWO LIFTS WITH LOW WEIGHT VEHICLES TO 90-92% STANDARD PROCTOR.

6) PROVIDE 2" OF BARK MULCH OR EROSION CONTROL MIX ON TOP OF THE FILTER BED UNTIL THE SITE HAS PROPOSED HARDSCAPE PLACED AND HAS VEGETATION WELL ESTABLISHED EVERYWHERE ELSE. ONCE THE SITE IS STABILIZED, REMOVE THE MULCH AND ACCUMULATED SEDIMENT FROM THE FILTER AND ESTABLISH VEGETATION PER THE FILTER BED SEEDING PLAN.

7) PRIOR TO TURNING OVER TO OWNER, REMOVE SEDIMENT AND DEBRIS FROM FILTER SURFACE, OVERFLOW WEIR, INSIDE OVERFLOW STRUCTURE AND DISCHARGE PIPE.



SOIL FILTER MEDIA SPECIFICATIONS *			
SPECIAL MEDIA	6AND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (±5%)	25% (±5%)	25% (±5%)
SPECIFICATION	MEDOT SPEC. #103.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE SHREDDED BARK SUPERHUMUS OR EQUAL ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
GRADATION			
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
3/8"	100	-	-
4	90-100	75-95	-
8	80-100	-	-
10	-	60-90	-
16	50-85	-	-
30	25-60	-	-
40	-	35-85	-
60	10-30	-	-
100	2-10	-	-
200	0-5	15-25	-
200 CLAY	< 2% * *	< 2% * *	< 2% * *
* FOR GRASSSED UNDERDRAINED SOIL FILTER BMP, PER THE MAINE DEP VOLUME III : BMP'S TECHNICAL DESIGN MANUAL, MAY 2014			
* * COMBINED MIXTURE CLAY CONTENT SHALL NOT EXCEED 2%			
NOTE: THE SOIL FILTER SHALL DRAIN IN NO LESS THAN 24 hrs BUT NOT MORE THAN 48 hrs.			

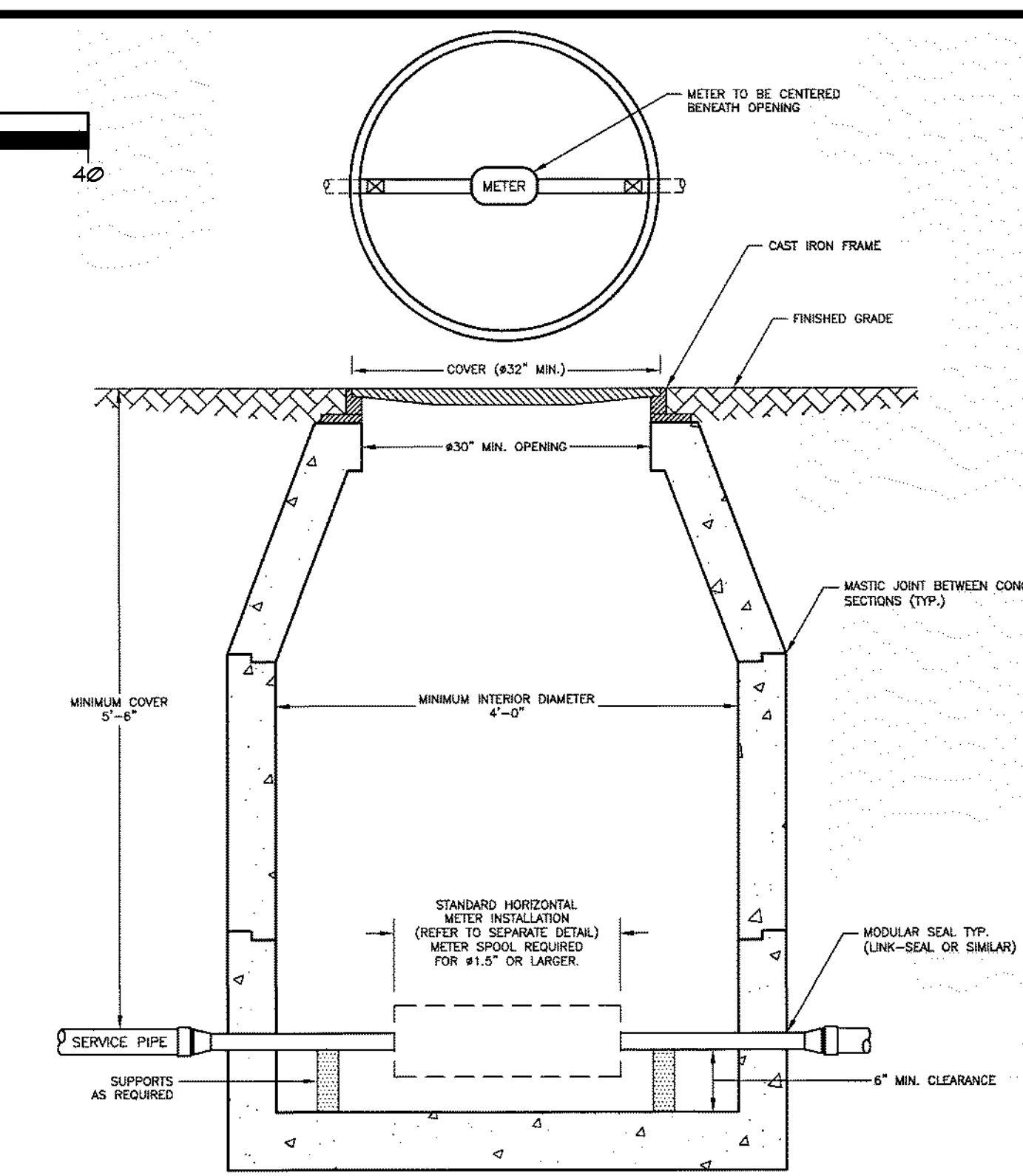
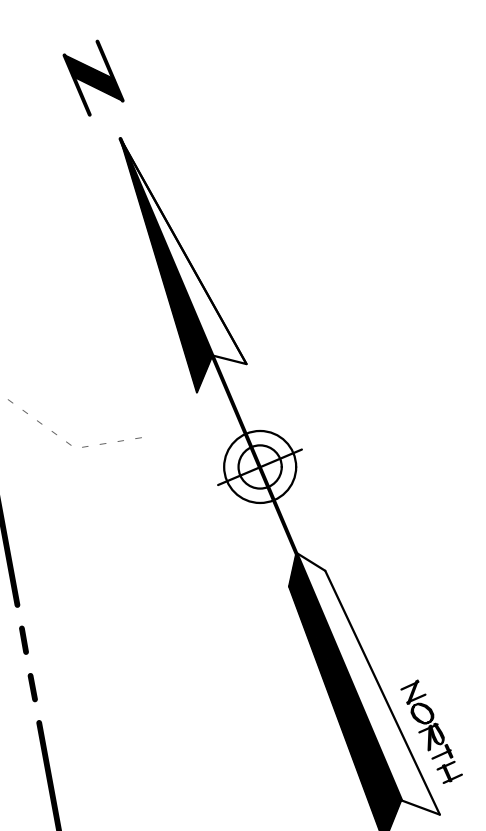
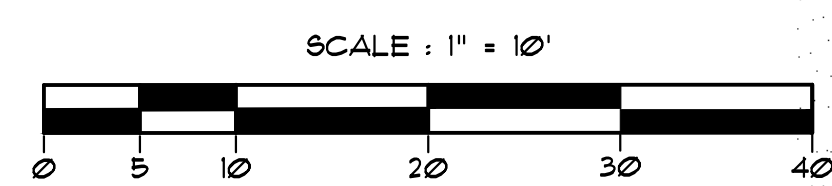
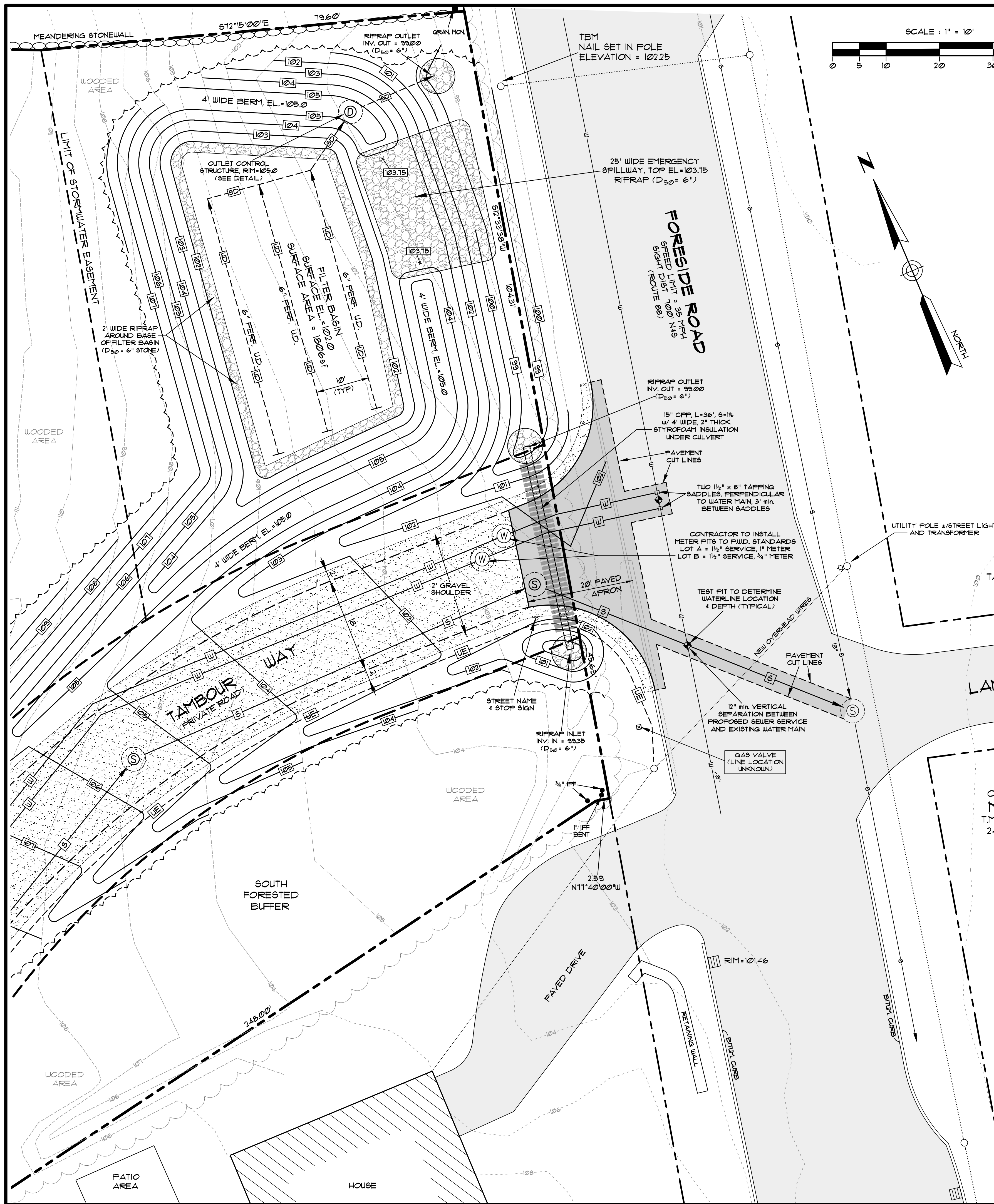


NOT TO SCALE

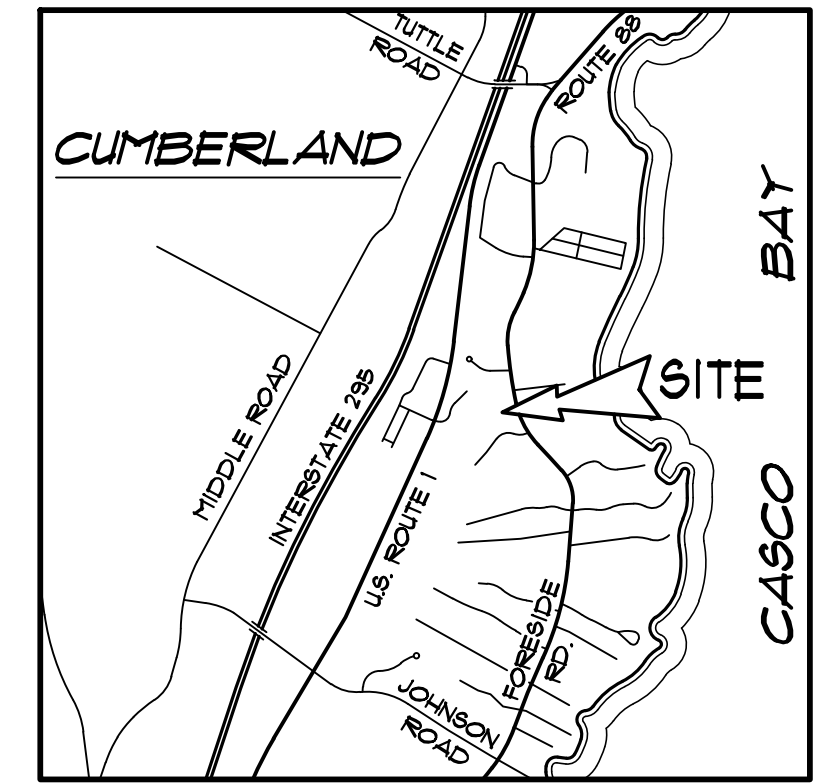
2	SUR	1-21-2023	EMERGENCY SPILLWAY ELEVATION
1	SUR	12-21-2022	CHANGE SHEET NUMBER AND NAME
	REV.	DATE:	CHANGES:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

DATE	PROJECT
11-28-2022	2022-22
DRAWN BY	SCALE
SJR	N.T.S.



- METER PIT AND COVER**
- SPECIAL APPROVAL BY PWD IS REQUIRED, PRIOR TO CONSTRUCTION, FOR ALL PROPOSED METER PIT INSTALLATIONS.
 - TESTABLE BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN SMALL METER PITS.
 - METER PIT SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
 - THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MINIMUM GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
 - ALL SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (LINK-SEAL OR SIMILAR).
 - METER PIT INTERIOR MUST BE AT LEAST 48" IN DIAMETER. THE OPENING MUST BE AT LEAST 30" IN DIAMETER, WITH A CAST IRON FRAME. THE COVER SHALL BE CAST IRON OR STEEL, 32" MINIMUM IN DIAMETER, AND BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
 - WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT.
 - ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT WILL BE MADE OF COPPER, WITH A MINIMUM OF 6" CLEARANCE FROM THE METER PIT FLOOR. USE BLOCKING AS NEEDED TO SUPPORT THE PIPE.
 - CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC FLOW, IF APPLICABLE.
- METER INSTALLATION**
- ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
 - PWD WILL SUPPLY THE WATER METER. ALL OTHER FITTINGS, INCLUDING A METER RESETTER FOR 1" OR SMALLER METERS, SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
 - FOR 1.5" AND 2" METERS, CUSTOMER WILL INSTALL A FLANGED METER SPOOL PIECE, SUPPLIED BY PWD AT NO ADDITIONAL CHARGE, PRIOR TO METER SET. THE METER SPOOL WILL BE MADE AVAILABLE FOR CUSTOMER PICKUP AT PWD CUSTOMER SERVICE, 225 DOUGLASS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.
 - CUSTOMER WILL INSTALL TWO BALL VALVES AT LEAST 24" APART FOR METER INSTALLATION, ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING. THE BALL VALVES SHALL BE SOLDERED IN PLACE.



LEGEND

---	BOUNDARY LINE (SUBJECT PARCEL)
---	TAX MAP LINE (OTHER)
N/F	NOW OR FORMERLY
35200/356	BOOK AND PAGE NUMBER
●	IRON PIPE OR ROD FOUND
■	GRANITE MONUMENT FOUND
○	EXISTING UTILITY POLE WITH OVERHEAD WIRES
□	EXISTING CATCH BASIN
⊙	PROPOSED OUTLET CONTROL STRUCTURE
⊙	PROPOSED SEWER MANHOLE
⊙	EXISTING SEWER MANHOLE
---	EXISTING MAINE G.I.S. (2' LIDAR CONTOUR)
---	EXISTING CONTOUR
---	PROPOSED SPOT GRADE
---	PROPOSED CONTOUR
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	NEW 6" PERFORATED UNDERDRAIN LINE
---	NEW UNDERGROUND ELECTRIC LINE
---	NEW 1/2" WATER SERVICE
---	NEW SEWER LINE
---	EXISTING TREE LINE
---	NEW TREE LINE
---	STONE WALL
---	EXISTING PAVEMENT
---	PROPOSED PAVEMENT
---	PROPOSED GRAVEL DRIVE
---	EXISTING BUILDING (ABUTTER)

- NOTES**
- ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTRY REGISTRY OF DEEDS.
 - OWNER OF RECORD - BY GOLDENSTAR, LLC
DEED REFERENCE - BOOK 39281, PAGE 184
TAX MAP U4, LOT 10A
 - PARCEL AREA = 151456 SQUARE FEET / 3.48 ACRES
 - EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY AT 104 FORESIDE ROAD - ROUTE 88, CUMBERLAND FORESIDE, MAINE", DATED AUGUST 31, 2022, PREPARED BY OWEN HASKELL, INC.
 - THE LOCATION, DEPTH SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.
 - THE PARCEL IS LOCATED IN THE LOW DENSITY RESIDENTIAL ZONING DISTRICT.
MINIMUM LOT SIZE = 15 ACRES (WITH MUNICIPAL SEWER)
 - MINIMUM LOT FRONTAGE = 150'
SETBACKS - FRONT = 50', SIDE = 30', REAR = 65', COMBINED = 65'
 - THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL #20162 0018C, DATED OCTOBER 15, 1985.
 - ALL DISTURBED AREAS NOT BUILT UPON OR SET ASIDE AS A LANDSCAPE PLANTING AREA SHALL BE TREATED WITH 4" OF LOAM, SEED & MULCH.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248
steve@sjeinc.com

CONSTRUCTION & UTILITY DETAIL
104 FORESIDE ROAD - CUMBERLAND FORESIDE, MAINE
PREPARED FOR
BY GOLDENSTAR, LLC
21 CHESTNUT WAY - CUMBERLAND FORESIDE, ME 04102

DATE	PROJECT
12-29-2022	2022-22
DRAWN BY	SCALE
SJR	1" = 10'

SHEET C12

FOR APPROVALS ONLY

RELOCATE & RESIGN ROAD AND POND, ADD PWD COMMENTS
DATE: CHANGES:
BY:

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