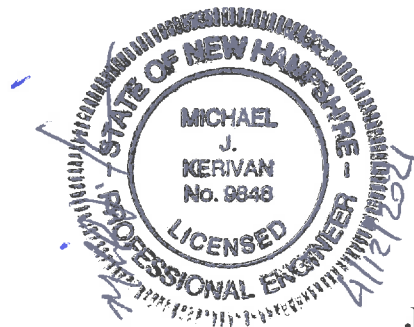


DRAINAGE ANALYSIS
SEDIMENT AND EROSION CONTROL PLAN

**7 Tolend Road
Barrington, NH 03842
Tax Map 220, Lot 50**

Prepared for:

**PEH And Son, LLC
ATTN: Megan Kirichenko
17 Dudley Road
Brentwood, NH 03833**



**Prepared by:
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February 9, 2021
REVISED March 26, 2021
REVISED April 12, 2021
JBE Project No. 20656.1**

EXECUTIVE SUMMARY

PEH And Son, LLC proposes to construct a vested, previously designed and approved 5,000 S.F. addition to the existing building on the subject site and construct a new 5,000 S.F. cold storage building on a 2-acre parcel of land located at 7 Tolend Road in Barrington, NH. The vested addition is under construction and was previously approved and grandfathered under outdated regulations, so it is being included in the existing conditions model. However, the newly proposed building warrants a new design.

A drainage analysis of the entire site was conducted for the purpose of estimating the peak rate of stormwater runoff and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-construction) condition, and a second for its proposed (post-construction) condition. The analysis was conducted using data for the 2 Year – 24 Hour (3.08”), 10 Year – 24 Hour (4.64”), 25 Year – 24 Hour (5.85”), and 50 Year – 24 Hour (6.99”) storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. This data was taken from the Extreme Precipitation Tables developed by the Northeast Regional Climate Center (NRCC). A summary of the existing and proposed conditions peak rates of runoff is as follows:

Analysis Point	2 Year		10 Year		25 Year		50 Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Analysis Point #1	0.01	0.01	0.09	0.09	0.18	0.18	0.28	0.28
Analysis Point #2	0.02	0.02	0.27	0.21	0.62	0.47	1.02	0.77
Analysis Point #3	0.63	0.63	1.29	1.29	1.83	1.83	2.34	2.34
Analysis Point #4	0.18	0.18	0.58	0.58	0.96	0.96	1.35	1.35

The project site is located in the Regional Commercial Zoning District. The septic mound divides most of the site into three subcatchments:

- Subcatchment 1S - The eastern corner of the site from which runoff sheet flows into an abutting lot (Analysis Point #1),
- Subcatchment 2S - The southern quarter of the site, bounded also by the crest of the building roof and another inflection of the site topography next to the building. Runoff from here sheet flows into the shoulder ditch of Tolend Road (Analysis Point #2),
- Subcatchment 3S – The northern section of the site, from which runoff sheet flows directly into a wetland (Analysis Point #3).

Finally, Subcatchment 4S represents the western corner of the site and is bounded by the crest of the building roofs and a sharp inflection in the site topography. Runoff from here sheet flows into a shallow depression at the intersection of Tolend Road and Route 125 (Analysis Point #4).

The post-construction peak rate of runoff is equal to or less than the pre-construction peak rate of runoff for all four Analysis Points in all analyzed storm events.

The proposed site development consists of the construction of the aforementioned buildings, the designation of outdoor display areas, and the addition of several parking spaces to existing gravel area. The same 4 Analysis Points were used in the Post Development Analysis. Runoff from the roof of the newly proposed building will be infiltrated through a stone drip edge, as will runoff from the southeast

half of the previously approved building. Runoff from the remainder of the site will maintain its existing flow pattern.

The use of Best Management Practices per the NHDES Stormwater Manual have been applied to the design of this drainage system and will be observed during all stages of construction. All land disturbed during construction will be stabilized within thirty days of groundbreaking and abutting property owners will suffer minimal adversity resultant of this development.

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USGS Quadrangle

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

Appendix II Proposed Conditions Analysis

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

Appendix III Charts, Graphs, and Calculations

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

1.0 RAINFALL CHARACTERISTICS

This drainage report includes an existing conditions analysis of the area involved in the proposed development, as well as a proposed condition, or post-construction analysis, of the same location. These analyses were accomplished using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. The curve numbers were developed using the SCS TR-55 Runoff Curve numbers for Urban Areas. A Type III SCS 24-hour rainfall distribution was utilized in analyzing the data for the 2 Year – 24 Hour (3.08"), 10 Year – 24 Hour (4.64"), 25 Year – 24 Hour (5.85"), and 50 Year – 24 Hour (6.99") storm events. This data was taken from the Extreme Precipitation Tables developed by the Northeast Regional Climate Center (NRCC).

The proposed peak rates of runoff will be reduced from the existing condition, thereby minimizing any potential for a negative impact on abutting properties or erosion of the wetland system. This is accomplished through infiltration of new stormwater runoff which results in a decrease in offsite peak flow rates.

2.0 EXISTING CONDITIONS ANALYSIS

The subject parcel consists an existing commercial building with associated parking and two driveways; one gravel and one paved; as well as a leach field and other utilities. Additionally, a grandfathered building addition, approved under outdated regulations, is included in the existing conditions model. The existing topography of the site is largely dictated by the septic mound, which separates the site into three subcatchments, as well as an inflection in topography in the middle of the site which creates a fourth subcatchment as previously described.

Existing soil types were determined via NRCS Web Soil Survey. These soils are categorized into Hydrologic Soil Groups (HSG) A and B. Deerfield loamy fine sand has a standard hydraulic conductivity (Ksat) of 100 micrometers per second per the attached NRCS Web Soil Survey printout, which is equal to 14.17 in/hr after unit conversion, so a Ksat of 7.08 in/hr was used for design with a factor of safety of 2 applied.

3.0 PROPOSED CONDITIONS ANALYSIS

The addition of the new 5,000 S.F. cold storage building causes an increase in the curve number (C_n), the result being a potential increase in peak rates of runoff from the site. Because of this, a study was performed to appropriately design a drainage system that would result in equal or lesser peak rates of runoff than in the existing condition. The described construction divides the site into seven (7) subcatchments. Runoff from all of the newly proposed roof as well as the south-east half of the previously approved building addition will be infiltrated with stone drip edges. The remainder of the site will maintain its existing flow pattern. With the addition of the drip edges, peak rates of runoff directed toward Analysis Point #2 will decrease in the proposed condition, and peak rates of runoff directed toward the other three Analysis Points will remain the same, as the watersheds draining toward the other three Analysis Points will not be impacted in construction.

4.0 CONCLUSION

This proposed site development located at 7 Tolend Road in Barrington, NH will have minimal adverse effect on abutting infrastructures, properties, and wetlands by way of stormwater runoff or siltation. Appropriate steps will be taken to eliminate erosion and sedimentation; these will be accomplished through the construction of a drainage system consisting of site grading and the addition of stone drip edges for infiltration of roof runoff. Temporary measures to mitigate the potential for erosion and siltation during construction include silt fence and a stabilized construction entrance. Best Management Practices developed by the State of New Hampshire have been utilized in the design of this system and their application will be enforced throughout the construction process.

A site specific, terrain alteration permit (RSA 485:A-17) is not required for this site plan due to the area of disturbance being less than 100,000 square-feet.

Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

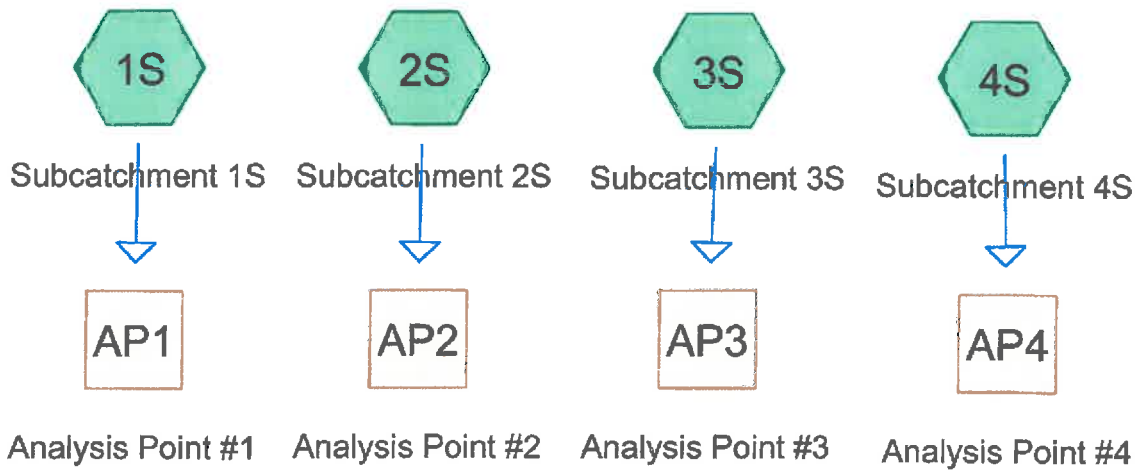
A handwritten signature in black ink that reads "Daniel Meditz". The signature is written in a cursive, flowing style.

Daniel Meditz, E.I.T
Project Engineer

APPENDIX I

EXISTING CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR
Complete 10 YEAR
Summary 25 YEAR
Complete 50 YEAR



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.533	39	>75% Grass cover, Good, HSG A (2S, 4S)
0.350	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S, 4S)
0.056	76	Gravel roads, HSG A (2S)
0.081	85	Gravel roads, HSG B (2S, 3S)
0.128	98	Paved parking, HSG A (2S, 4S)
0.197	98	Paved parking, HSG B (3S, 4S)
0.123	98	Roofs, HSG A (2S, 3S, 4S)
0.070	98	Roofs, HSG B (2S, 3S)
0.251	30	Woods, Good, HSG A (2S)
0.199	55	Woods, Good, HSG B (1S, 2S, 3S)
1.988	62	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.090	HSG A	2S, 3S, 4S
0.898	HSG B	1S, 2S, 3S, 4S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.988		TOTAL AREA

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Type III 24-hr 2-Year 24-Hour Rainfall=3.08"

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

Subcatchment 1S: Subcatchment 1S

Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>0.24"
Flow Length=121' Tc=19.5 min CN=56 Runoff=0.01 cfs 0.003 af

Subcatchment 2S: Subcatchment 2S

Runoff Area=38,352 sf 12.60% Impervious Runoff Depth>0.14"
Flow Length=294' Tc=26.5 min CN=52 Runoff=0.02 cfs 0.011 af

Subcatchment 3S: Subcatchment 3S

Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>1.25"
Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=0.63 cfs 0.049 af

Subcatchment 4S: Subcatchment 4S

Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>0.54"
Flow Length=204' Tc=12.5 min CN=65 Runoff=0.18 cfs 0.021 af

Reach AP1: Analysis Point #1

Inflow=0.01 cfs 0.003 af
Outflow=0.01 cfs 0.003 af

Reach AP2: Analysis Point #2

Inflow=0.02 cfs 0.011 af
Outflow=0.02 cfs 0.011 af

Reach AP3: Analysis Point #3

Inflow=0.63 cfs 0.049 af
Outflow=0.63 cfs 0.049 af

Reach AP4: Analysis Point #4

Inflow=0.18 cfs 0.021 af
Outflow=0.18 cfs 0.021 af

Total Runoff Area = 1.988 ac Runoff Volume = 0.084 af Average Runoff Depth = 0.51"
73.93% Pervious = 1.470 ac 26.07% Impervious = 0.518 ac

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Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

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

Subcatchment 1S: Subcatchment 1S Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>0.86"
Flow Length=121' Tc=19.5 min CN=56 Runoff=0.09 cfs 0.012 af

Subcatchment 2S: Subcatchment 2S Runoff Area=38,352 sf 12.60% Impervious Runoff Depth>0.64"
Flow Length=294' Tc=26.5 min CN=52 Runoff=0.27 cfs 0.047 af

Subcatchment 3S: Subcatchment 3S Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>2.49"
Flow Length=82' Slope=0.1000 1' Tc=7.5 min CN=79 Runoff=1.29 cfs 0.097 af

Subcatchment 4S: Subcatchment 4S Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>1.41"
Flow Length=204' Tc=12.5 min CN=65 Runoff=0.58 cfs 0.056 af

Reach AP1: Analysis Point #1 Inflow=0.09 cfs 0.012 af
Outflow=0.09 cfs 0.012 af

Reach AP2: Analysis Point #2 Inflow=0.27 cfs 0.047 af
Outflow=0.27 cfs 0.047 af

Reach AP3: Analysis Point #3 Inflow=1.29 cfs 0.097 af
Outflow=1.29 cfs 0.097 af

Reach AP4: Analysis Point #4 Inflow=0.58 cfs 0.056 af
Outflow=0.58 cfs 0.056 af

Total Runoff Area = 1.988 ac Runoff Volume = 0.212 af Average Runoff Depth = 1.28"
73.93% Pervious = 1.470 ac 26.07% Impervious = 0.518 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 0.09 cfs @ 12.34 hrs, Volume= 0.012 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
6,124	55	Woods, Good, HSG B
1,185	61	>75% Grass cover, Good, HSG B
7,309	56	Weighted Average
7,309		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	39	0.1670	0.32		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
19.5	121	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.27 cfs @ 12.51 hrs, Volume= 0.047 af, Depth> 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
1,227	98	Roofs, HSG B
2,634	98	Roofs, HSG A
2,085	85	Gravel roads, HSG B
2,426	76	Gravel roads, HSG A
973	98	Paved parking, HSG A
4,141	61	>75% Grass cover, Good, HSG B
12,425	39	>75% Grass cover, Good, HSG A
10,915	30	Woods, Good, HSG A
1,526	55	Woods, Good, HSG B
38,352	52	Weighted Average
33,518		87.40% Pervious Area
4,834		12.60% Impervious Area

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Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
26.5	294	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.097 af, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
1,036	55	Woods, Good, HSG B
8,704	61	>75% Grass cover, Good, HSG B
1,449	85	Gravel roads, HSG B
1,843	98	Roofs, HSG B
209	98	Roofs, HSG A
7,189	98	Paved parking, HSG B
20,430	79	Weighted Average
11,189		54.77% Pervious Area
9,241		45.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	52	0.1000	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
7.5	82	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 0.58 cfs @ 12.19 hrs, Volume= 0.056 af, Depth> 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
1,216	61	>75% Grass cover, Good, HSG B
10,794	39	>75% Grass cover, Good, HSG A
1,383	98	Paved parking, HSG B
4,622	98	Paved parking, HSG A
20,515	65	Weighted Average
12,010		58.54% Pervious Area
8,505		41.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0050	0.59		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	204	Total			

Summary for Reach AP1: Analysis Point #1

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

Inflow Area = 0.168 ac, 0.00% Impervious, Inflow Depth > 0.86" for 10-Year 24-Hour event
 Inflow = 0.09 cfs @ 12.34 hrs, Volume= 0.012 af
 Outflow = 0.09 cfs @ 12.34 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP2: Analysis Point #2

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

Inflow Area = 0.880 ac, 12.60% Impervious, Inflow Depth > 0.64" for 10-Year 24-Hour event
 Inflow = 0.27 cfs @ 12.51 hrs, Volume= 0.047 af
 Outflow = 0.27 cfs @ 12.51 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP3: Analysis Point #3

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

Inflow Area = 0.469 ac, 45.23% Impervious, Inflow Depth > 2.49" for 10-Year 24-Hour event
 Inflow = 1.29 cfs @ 12.11 hrs, Volume= 0.097 af
 Outflow = 1.29 cfs @ 12.11 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP4: Analysis Point #4

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

Inflow Area =	0.471 ac, 41.46% Impervious, Inflow Depth > 1.41"	for 10-Year 24-Hour event
Inflow =	0.58 cfs @ 12.19 hrs, Volume=	0.056 af
Outflow =	0.58 cfs @ 12.19 hrs, Volume=	0.056 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment1S: Subcatchment1S Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>1.50"
Flow Length=121' Tc=19.5 min CN=56 Runoff=0.18 cfs 0.021 af

Subcatchment2S: Subcatchment2S Runoff Area=38,352 sf 12.60% Impervious Runoff Depth>1.20"
Flow Length=294' Tc=26.5 min CN=52 Runoff=0.62 cfs 0.088 af

Subcatchment3S: Subcatchment3S Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>3.54"
Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=1.83 cfs 0.138 af

Subcatchment4S: Subcatchment4S Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>2.24"
Flow Length=204' Tc=12.5 min CN=65 Runoff=0.96 cfs 0.088 af

Reach AP1: Analysis Point #1 Inflow=0.18 cfs 0.021 af
Outflow=0.18 cfs 0.021 af

Reach AP2: Analysis Point #2 Inflow=0.62 cfs 0.088 af
Outflow=0.62 cfs 0.088 af

Reach AP3: Analysis Point #3 Inflow=1.83 cfs 0.138 af
Outflow=1.83 cfs 0.138 af

Reach AP4: Analysis Point #4 Inflow=0.96 cfs 0.088 af
Outflow=0.96 cfs 0.088 af

Total Runoff Area = 1.988 ac Runoff Volume = 0.335 af Average Runoff Depth = 2.02"
73.93% Pervious = 1.470 ac 26.07% Impervious = 0.518 ac

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

Subcatchment1S: Subcatchment1S Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>2.20"
Flow Length=121' Tc=19.5 min CN=56 Runoff=0.28 cfs 0.031 af

Subcatchment2S: Subcatchment2S Runoff Area=38,352 sf 12.60% Impervious Runoff Depth>1.83"
Flow Length=294' Tc=26.5 min CN=52 Runoff=1.02 cfs 0.134 af

Subcatchment3S: Subcatchment3S Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>4.57"
Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=2.34 cfs 0.179 af

Subcatchment4S: Subcatchment4S Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>3.09"
Flow Length=204' Tc=12.5 min CN=65 Runoff=1.35 cfs 0.121 af

Reach AP1: Analysis Point #1 Inflow=0.28 cfs 0.031 af
Outflow=0.28 cfs 0.031 af

Reach AP2: Analysis Point #2 Inflow=1.02 cfs 0.134 af
Outflow=1.02 cfs 0.134 af

Reach AP3: Analysis Point #3 Inflow=2.34 cfs 0.179 af
Outflow=2.34 cfs 0.179 af

Reach AP4: Analysis Point #4 Inflow=1.35 cfs 0.121 af
Outflow=1.35 cfs 0.121 af

Total Runoff Area = 1.988 ac Runoff Volume = 0.465 af Average Runoff Depth = 2.80"
73.93% Pervious = 1.470 ac 26.07% Impervious = 0.518 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 0.28 cfs @ 12.30 hrs, Volume= 0.031 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
6,124	55	Woods, Good, HSG B
1,185	61	>75% Grass cover, Good, HSG B
7,309	56	Weighted Average
7,309		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	39	0.1670	0.32		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
19.5	121	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 1.02 cfs @ 12.42 hrs, Volume= 0.134 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
1,227	98	Roofs, HSG B
2,634	98	Roofs, HSG A
2,085	85	Gravel roads, HSG B
2,426	76	Gravel roads, HSG A
973	98	Paved parking, HSG A
4,141	61	>75% Grass cover, Good, HSG B
12,425	39	>75% Grass cover, Good, HSG A
10,915	30	Woods, Good, HSG A
1,526	55	Woods, Good, HSG B
38,352	52	Weighted Average
33,518		87.40% Pervious Area
4,834		12.60% Impervious Area

20656-EX

Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Prepared by {enter your company name here}

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
26.5	294	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 2.34 cfs @ 12.11 hrs, Volume= 0.179 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
1,036	55	Woods, Good, HSG B
8,704	61	>75% Grass cover, Good, HSG B
1,449	85	Gravel roads, HSG B
1,843	98	Roofs, HSG B
209	98	Roofs, HSG A
7,189	98	Paved parking, HSG B
20,430	79	Weighted Average
11,189		54.77% Pervious Area
9,241		45.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	52	0.1000	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
7.5	82	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 1.35 cfs @ 12.18 hrs, Volume= 0.121 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
1,216	61	>75% Grass cover, Good, HSG B
10,794	39	>75% Grass cover, Good, HSG A
1,383	98	Paved parking, HSG B
4,622	98	Paved parking, HSG A
20,515	65	Weighted Average
12,010		58.54% Pervious Area
8,505		41.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0050	0.59		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	204	Total			

Summary for Reach AP1: Analysis Point #1

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

Inflow Area = 0.168 ac, 0.00% Impervious, Inflow Depth > 2.20" for 50-Year 24-Hour event
 Inflow = 0.28 cfs @ 12.30 hrs, Volume= 0.031 af
 Outflow = 0.28 cfs @ 12.30 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP2: Analysis Point #2

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

Inflow Area = 0.880 ac, 12.60% Impervious, Inflow Depth > 1.83" for 50-Year 24-Hour event
 Inflow = 1.02 cfs @ 12.42 hrs, Volume= 0.134 af
 Outflow = 1.02 cfs @ 12.42 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP3: Analysis Point #3

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

Inflow Area = 0.469 ac, 45.23% Impervious, Inflow Depth > 4.57" for 50-Year 24-Hour event
 Inflow = 2.34 cfs @ 12.11 hrs, Volume= 0.179 af
 Outflow = 2.34 cfs @ 12.11 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min

20656-EX

Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Prepared by {enter your company name here}

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

Summary for Reach AP4: Analysis Point #4

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

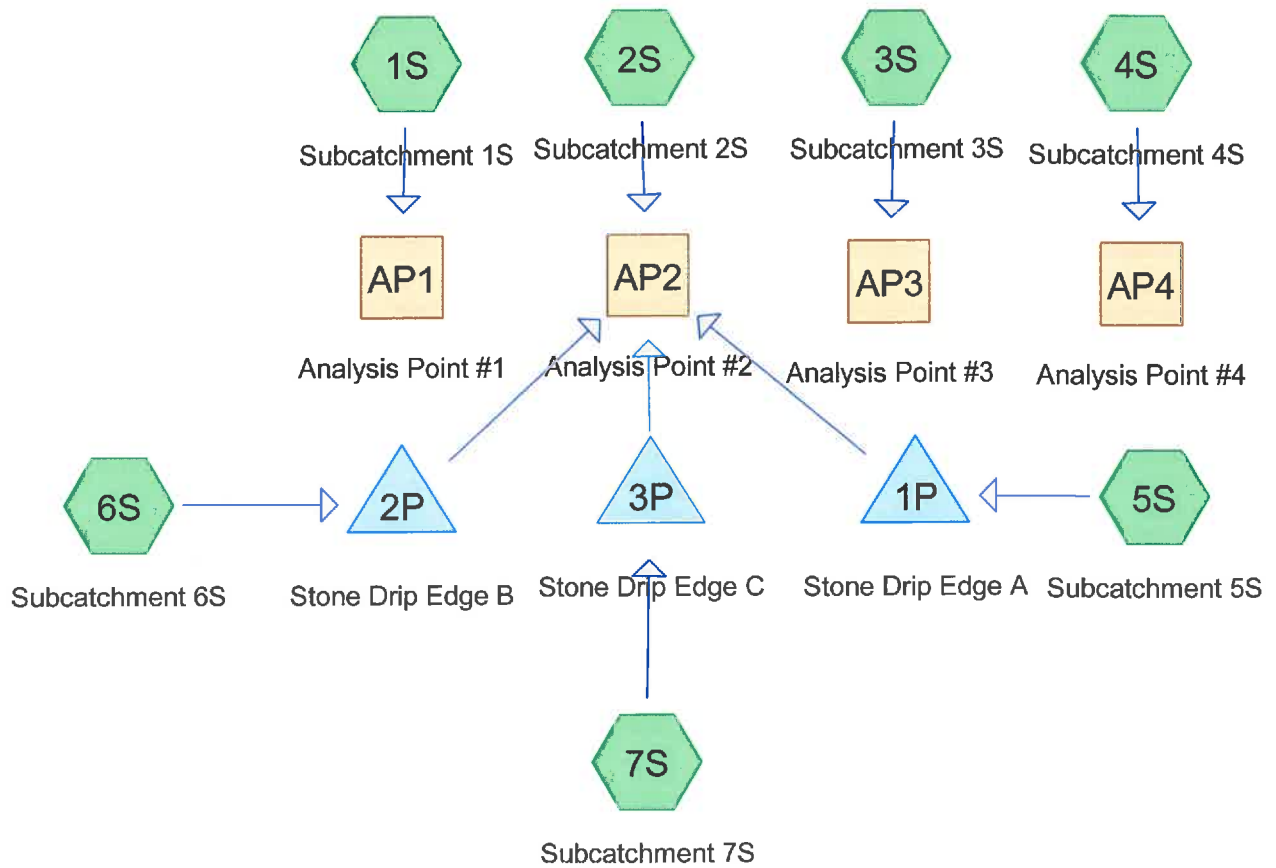
Inflow Area = 0.471 ac, 41.46% Impervious, Inflow Depth > 3.09" for 50-Year 24-Hour event
Inflow = 1.35 cfs @ 12.18 hrs, Volume= 0.121 af
Outflow = 1.35 cfs @ 12.18 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

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

APPENDIX II

PROPOSED CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR
Complete 10 YEAR
Summary 25 YEAR
Complete 50 YEAR



Routing Diagram for 20656-PR

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.460	39	>75% Grass cover, Good, HSG A (2S, 4S)
0.350	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S, 4S)
0.056	76	Gravel roads, HSG A (2S)
0.081	85	Gravel roads, HSG B (2S, 3S)
0.128	98	Paved parking, HSG A (2S, 4S)
0.197	98	Paved parking, HSG B (3S, 4S)
0.244	98	Roofs, HSG A (2S, 3S, 4S, 5S, 6S, 7S)
0.070	98	Roofs, HSG B (2S, 3S)
0.033	98	Water Surface, HSG A (5S, 6S, 7S)
0.168	30	Woods, Good, HSG A (2S)
0.199	55	Woods, Good, HSG B (1S, 2S, 3S)
1.988	67	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.091	HSG A	2S, 3S, 4S, 5S, 6S, 7S
0.898	HSG B	1S, 2S, 3S, 4S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.988		TOTAL AREA

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

Subcatchment 1S: Subcatchment 1S	Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>0.24" Flow Length=121' Tc=19.5 min CN=56 Runoff=0.01 cfs 0.003 af
Subcatchment 2S: Subcatchment 2S	Runoff Area=29,100 sf 8.02% Impervious Runoff Depth>0.14" Flow Length=294' Tc=26.5 min CN=52 Runoff=0.02 cfs 0.008 af
Subcatchment 3S: Subcatchment 3S	Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>1.25" Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=0.63 cfs 0.049 af
Subcatchment 4S: Subcatchment 4S	Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>0.54" Flow Length=204' Tc=12.5 min CN=65 Runoff=0.18 cfs 0.021 af
Subcatchment 5S: Subcatchment 5S	Runoff Area=3,060 sf 100.00% Impervious Runoff Depth>2.85" Tc=6.0 min CN=98 Runoff=0.20 cfs 0.017 af
Subcatchment 6S: Subcatchment 6S	Runoff Area=3,306 sf 100.00% Impervious Runoff Depth>2.85" Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af
Subcatchment 7S: Subcatchment 7S	Runoff Area=2,895 sf 100.00% Impervious Runoff Depth>2.85" Tc=6.0 min CN=98 Runoff=0.19 cfs 0.016 af
Reach AP1: Analysis Point #1	Inflow=0.01 cfs 0.003 af Outflow=0.01 cfs 0.003 af
Reach AP2: Analysis Point #2	Inflow=0.02 cfs 0.008 af Outflow=0.02 cfs 0.008 af
Reach AP3: Analysis Point #3	Inflow=0.63 cfs 0.049 af Outflow=0.63 cfs 0.049 af
Reach AP4: Analysis Point #4	Inflow=0.18 cfs 0.021 af Outflow=0.18 cfs 0.021 af
Pond 1P: Stone Drip Edge A	Peak Elev=196.91' Storage=73 cf Inflow=0.20 cfs 0.017 af Discarded=0.11 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.017 af
Pond 2P: Stone Drip Edge B	Peak Elev=199.33' Storage=37 cf Inflow=0.22 cfs 0.018 af Discarded=0.19 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.018 af
Pond 3P: Stone Drip Edge C	Peak Elev=199.44' Storage=40 cf Inflow=0.19 cfs 0.016 af Discarded=0.15 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.016 af
Total Runoff Area = 1.988 ac Runoff Volume = 0.132 af Average Runoff Depth = 0.79"	
66.12% Pervious = 1.315 ac 33.88% Impervious = 0.674 ac	

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

Subcatchment 1S: Subcatchment 1S	Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>0.86" Flow Length=121' Tc=19.5 min CN=56 Runoff=0.09 cfs 0.012 af
Subcatchment 2S: Subcatchment 2S	Runoff Area=29,100 sf 8.02% Impervious Runoff Depth>0.64" Flow Length=294' Tc=26.5 min CN=52 Runoff=0.21 cfs 0.036 af
Subcatchment 3S: Subcatchment 3S	Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>2.49" Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=1.29 cfs 0.097 af
Subcatchment 4S: Subcatchment 4S	Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>1.41" Flow Length=204' Tc=12.5 min CN=65 Runoff=0.58 cfs 0.056 af
Subcatchment 5S: Subcatchment 5S	Runoff Area=3,060 sf 100.00% Impervious Runoff Depth>4.40" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.026 af
Subcatchment 6S: Subcatchment 6S	Runoff Area=3,306 sf 100.00% Impervious Runoff Depth>4.40" Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af
Subcatchment 7S: Subcatchment 7S	Runoff Area=2,895 sf 100.00% Impervious Runoff Depth>4.40" Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af
Reach AP1: Analysis Point #1	Inflow=0.09 cfs 0.012 af Outflow=0.09 cfs 0.012 af
Reach AP2: Analysis Point #2	Inflow=0.21 cfs 0.036 af Outflow=0.21 cfs 0.036 af
Reach AP3: Analysis Point #3	Inflow=1.29 cfs 0.097 af Outflow=1.29 cfs 0.097 af
Reach AP4: Analysis Point #4	Inflow=0.58 cfs 0.056 af Outflow=0.58 cfs 0.056 af
Pond 1P: Stone Drip Edge A	Peak Elev=197.26' Storage=146 cf Inflow=0.31 cfs 0.026 af Discarded=0.15 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.026 af
Pond 2P: Stone Drip Edge B	Peak Elev=199.46' Storage=71 cf Inflow=0.34 cfs 0.028 af Discarded=0.26 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.028 af
Pond 3P: Stone Drip Edge C	Peak Elev=199.65' Storage=73 cf Inflow=0.29 cfs 0.024 af Discarded=0.22 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.024 af

Total Runoff Area = 1.988 ac Runoff Volume = 0.279 af Average Runoff Depth = 1.68"
66.12% Pervious = 1.315 ac 33.88% Impervious = 0.674 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 0.09 cfs @ 12.34 hrs, Volume= 0.012 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
6,124	55	Woods, Good, HSG B
1,185	61	>75% Grass cover, Good, HSG B
7,309	56	Weighted Average
7,309		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	39	0.1670	0.32		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
19.5	121	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.21 cfs @ 12.51 hrs, Volume= 0.036 af, Depth> 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
1,227	98	Roofs, HSG B
134	98	Roofs, HSG A
2,085	85	Gravel roads, HSG B
2,457	76	Gravel roads, HSG A
973	98	Paved parking, HSG A
4,141	61	>75% Grass cover, Good, HSG B
9,233	39	>75% Grass cover, Good, HSG A
7,324	30	Woods, Good, HSG A
1,526	55	Woods, Good, HSG B
29,100	52	Weighted Average
26,766		91.98% Pervious Area
2,334		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
26.5	294	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.097 af, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
1,036	55	Woods, Good, HSG B
8,704	61	>75% Grass cover, Good, HSG B
1,449	85	Gravel roads, HSG B
1,843	98	Roofs, HSG B
209	98	Roofs, HSG A
7,189	98	Paved parking, HSG B
20,430	79	Weighted Average
11,189		54.77% Pervious Area
9,241		45.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	52	0.1000	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
7.5	82	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 0.58 cfs @ 12.19 hrs, Volume= 0.056 af, Depth> 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
1,216	61	>75% Grass cover, Good, HSG B
10,794	39	>75% Grass cover, Good, HSG A
1,383	98	Paved parking, HSG B
4,622	98	Paved parking, HSG A
20,515	65	Weighted Average
12,010		58.54% Pervious Area
8,505		41.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0050	0.59		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	204	Total			

Summary for Subcatchment 5S: Subcatchment 5S

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
2,652	98	Roofs, HSG A
408	98	Water Surface, HSG A
3,060	98	Weighted Average
3,060		100.00% Impervious Area

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

Summary for Subcatchment 6S: Subcatchment 6S

Runoff = 0.34 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
2,652	98	Roofs, HSG A
654	98	Water Surface, HSG A
3,306	98	Weighted Average
3,306		100.00% Impervious Area

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

Summary for Subcatchment 7S: Subcatchment 7S

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year 24-Hour Rainfall=4.64"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
395	98	Water Surface, HSG A
2,895	98	Weighted Average
2,895		100.00% Impervious Area

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

Summary for Reach AP1: Analysis Point #1

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

Inflow Area = 0.168 ac, 0.00% Impervious, Inflow Depth > 0.86" for 10-Year 24-Hour event
Inflow = 0.09 cfs @ 12.34 hrs, Volume= 0.012 af
Outflow = 0.09 cfs @ 12.34 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP2: Analysis Point #2

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

Inflow Area = 0.881 ac, 30.23% Impervious, Inflow Depth > 0.49" for 10-Year 24-Hour event
Inflow = 0.21 cfs @ 12.51 hrs, Volume= 0.036 af
Outflow = 0.21 cfs @ 12.51 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP3: Analysis Point #3

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

Inflow Area = 0.469 ac, 45.23% Impervious, Inflow Depth > 2.49" for 10-Year 24-Hour event
 Inflow = 1.29 cfs @ 12.11 hrs, Volume= 0.097 af
 Outflow = 1.29 cfs @ 12.11 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP4: Analysis Point #4

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

Inflow Area = 0.471 ac, 41.46% Impervious, Inflow Depth > 1.41" for 10-Year 24-Hour event
 Inflow = 0.58 cfs @ 12.19 hrs, Volume= 0.056 af
 Outflow = 0.58 cfs @ 12.19 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Stone Drip Edge A

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.070 ac, 100.00% Impervious, Inflow Depth > 4.40" for 10-Year 24-Hour event
 Inflow = 0.31 cfs @ 12.09 hrs, Volume= 0.026 af
 Outflow = 0.15 cfs @ 12.25 hrs, Volume= 0.026 af, Atten= 52%, Lag= 9.8 min
 Discarded = 0.15 cfs @ 12.25 hrs, Volume= 0.026 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 197.26' @ 12.25 hrs Surf.Area= 561 sf Storage= 146 cf

Plug-Flow detention time= 5.9 min calculated for 0.026 af (100% of inflow)
 Center-of-Mass det. time= 5.7 min (754.6 - 748.9)

Volume	Invert	Avail.Storage	Storage Description
#1	196.50'	873 cf	4.00'W x 100.00'L x 3.01'H Prismaoid Z=1.0 2,183 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	196.50'	7.080 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	204.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.15 cfs @ 12.25 hrs HW=197.26' (Free Discharge)
 ↑1=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=196.50' (Free Discharge)
 ↑2=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond 2P: Stone Drip Edge B

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.076 ac, 100.00% Impervious, Inflow Depth > 4.40" for 10-Year 24-Hour event
 Inflow = 0.34 cfs @ 12.09 hrs, Volume= 0.028 af
 Outflow = 0.26 cfs @ 12.16 hrs, Volume= 0.028 af, Atten= 23%, Lag= 4.2 min
 Discarded = 0.26 cfs @ 12.16 hrs, Volume= 0.028 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.46' @ 12.16 hrs Surf.Area= 654 sf Storage= 71 cf

Plug-Flow detention time= 3.7 min calculated for 0.028 af (100% of inflow)
 Center-of-Mass det. time= 3.3 min (752.1 - 748.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	199.19'	349 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
199.19	654	0.0	0	0
199.20	654	40.0	3	3
200.50	654	40.0	340	343
200.51	654	100.0	7	349

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.19'	7.080 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10'
#2	Primary	200.70'	204.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.26 cfs @ 12.16 hrs HW=199.46' (Free Discharge)
 ↑1=Exfiltration (Controls 0.26 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=199.19' (Free Discharge)
 ↑2=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond 3P: Stone Drip Edge C

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.066 ac, 100.00% Impervious, Inflow Depth > 4.40" for 10-Year 24-Hour event
 Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.024 af
 Outflow = 0.22 cfs @ 12.16 hrs, Volume= 0.024 af, Atten= 25%, Lag= 4.5 min
 Discarded = 0.22 cfs @ 12.16 hrs, Volume= 0.024 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.65' @ 12.16 hrs Surf.Area= 395 sf Storage= 73 cf

Plug-Flow detention time= 3.9 min calculated for 0.024 af (100% of inflow)

Center-of-Mass det. time= 3.5 min (752.3 - 748.9)

Volume	Invert	Avail.Storage	Storage Description
#1	199.19'	211 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
199.19	395	0.0	0	0
199.20	395	40.0	2	2
200.50	395	40.0	205	207
200.51	395	100.0	4	211

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.19'	7.080 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10'
#2	Primary	200.70'	204.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.22 cfs @ 12.16 hrs HW=199.64' (Free Discharge)

↑1=Exfiltration (Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=199.19' (Free Discharge)

↑2=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

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

Subcatchment 1S: Subcatchment 1S	Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>1.50" Flow Length=121' Tc=19.5 min CN=56 Runoff=0.18 cfs 0.021 af
Subcatchment 2S: Subcatchment 2S	Runoff Area=29,100 sf 8.02% Impervious Runoff Depth>1.20" Flow Length=294' Tc=26.5 min CN=52 Runoff=0.47 cfs 0.067 af
Subcatchment 3S: Subcatchment 3S	Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>3.54" Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=1.83 cfs 0.138 af
Subcatchment 4S: Subcatchment 4S	Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>2.24" Flow Length=204' Tc=12.5 min CN=65 Runoff=0.96 cfs 0.088 af
Subcatchment 5S: Subcatchment 5S	Runoff Area=3,060 sf 100.00% Impervious Runoff Depth>5.61" Tc=6.0 min CN=98 Runoff=0.39 cfs 0.033 af
Subcatchment 6S: Subcatchment 6S	Runoff Area=3,306 sf 100.00% Impervious Runoff Depth>5.61" Tc=6.0 min CN=98 Runoff=0.42 cfs 0.035 af
Subcatchment 7S: Subcatchment 7S	Runoff Area=2,895 sf 100.00% Impervious Runoff Depth>5.61" Tc=6.0 min CN=98 Runoff=0.37 cfs 0.031 af
Reach AP1: Analysis Point #1	Inflow=0.18 cfs 0.021 af Outflow=0.18 cfs 0.021 af
Reach AP2: Analysis Point #2	Inflow=0.47 cfs 0.067 af Outflow=0.47 cfs 0.067 af
Reach AP3: Analysis Point #3	Inflow=1.83 cfs 0.138 af Outflow=1.83 cfs 0.138 af
Reach AP4: Analysis Point #4	Inflow=0.96 cfs 0.088 af Outflow=0.96 cfs 0.088 af
Pond 1P: Stone Drip Edge A	Peak Elev=197.52' Storage=207 cf Inflow=0.39 cfs 0.033 af Discarded=0.18 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.033 af
Pond 2P: Stone Drip Edge B	Peak Elev=199.57' Storage=99 cf Inflow=0.42 cfs 0.035 af Discarded=0.32 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.32 cfs 0.035 af
Pond 3P: Stone Drip Edge C	Peak Elev=199.82' Storage=99 cf Inflow=0.37 cfs 0.031 af Discarded=0.28 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.031 af

Total Runoff Area = 1.988 ac Runoff Volume = 0.413 af Average Runoff Depth = 2.50"
66.12% Pervious = 1.315 ac 33.88% Impervious = 0.674 ac

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

Subcatchment 1S: Subcatchment 1S	Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>2.20" Flow Length=121' Tc=19.5 min CN=56 Runoff=0.28 cfs 0.031 af
Subcatchment 2S: Subcatchment 2S	Runoff Area=29,100 sf 8.02% Impervious Runoff Depth>1.83" Flow Length=294' Tc=26.5 min CN=52 Runoff=0.77 cfs 0.102 af
Subcatchment 3S: Subcatchment 3S	Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>4.57" Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=2.34 cfs 0.179 af
Subcatchment 4S: Subcatchment 4S	Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>3.09" Flow Length=204' Tc=12.5 min CN=65 Runoff=1.35 cfs 0.121 af
Subcatchment 5S: Subcatchment 5S	Runoff Area=3,060 sf 100.00% Impervious Runoff Depth>6.75" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af
Subcatchment 6S: Subcatchment 6S	Runoff Area=3,306 sf 100.00% Impervious Runoff Depth>6.75" Tc=6.0 min CN=98 Runoff=0.51 cfs 0.043 af
Subcatchment 7S: Subcatchment 7S	Runoff Area=2,895 sf 100.00% Impervious Runoff Depth>6.75" Tc=6.0 min CN=98 Runoff=0.45 cfs 0.037 af
Reach AP1: Analysis Point #1	Inflow=0.28 cfs 0.031 af Outflow=0.28 cfs 0.031 af
Reach AP2: Analysis Point #2	Inflow=0.77 cfs 0.102 af Outflow=0.77 cfs 0.102 af
Reach AP3: Analysis Point #3	Inflow=2.34 cfs 0.179 af Outflow=2.34 cfs 0.179 af
Reach AP4: Analysis Point #4	Inflow=1.35 cfs 0.121 af Outflow=1.35 cfs 0.121 af
Pond 1P: Stone Drip Edge A	Peak Elev=197.75' Storage=266 cf Inflow=0.47 cfs 0.039 af Discarded=0.21 cfs 0.039 af Primary=0.00 cfs 0.000 af Outflow=0.21 cfs 0.039 af
Pond 2P: Stone Drip Edge B	Peak Elev=199.68' Storage=127 cf Inflow=0.51 cfs 0.043 af Discarded=0.38 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.38 cfs 0.043 af
Pond 3P: Stone Drip Edge C	Peak Elev=199.98' Storage=124 cf Inflow=0.45 cfs 0.037 af Discarded=0.33 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.037 af
Total Runoff Area = 1.988 ac Runoff Volume = 0.552 af Average Runoff Depth = 3.33"	
66.12% Pervious = 1.315 ac 33.88% Impervious = 0.674 ac	

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 0.28 cfs @ 12.30 hrs, Volume= 0.031 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
6,124	55	Woods, Good, HSG B
1,185	61	>75% Grass cover, Good, HSG B
7,309	56	Weighted Average
7,309		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	39	0.1670	0.32		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
19.5	121	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.77 cfs @ 12.42 hrs, Volume= 0.102 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
1,227	98	Roofs, HSG B
134	98	Roofs, HSG A
2,085	85	Gravel roads, HSG B
2,457	76	Gravel roads, HSG A
973	98	Paved parking, HSG A
4,141	61	>75% Grass cover, Good, HSG B
9,233	39	>75% Grass cover, Good, HSG A
7,324	30	Woods, Good, HSG A
1,526	55	Woods, Good, HSG B
29,100	52	Weighted Average
26,766		91.98% Pervious Area
2,334		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
26.5	294	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 2.34 cfs @ 12.11 hrs, Volume= 0.179 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
1,036	55	Woods, Good, HSG B
8,704	61	>75% Grass cover, Good, HSG B
1,449	85	Gravel roads, HSG B
1,843	98	Roofs, HSG B
209	98	Roofs, HSG A
7,189	98	Paved parking, HSG B
20,430	79	Weighted Average
11,189		54.77% Pervious Area
9,241		45.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	52	0.1000	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.08"
7.5	82	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 1.35 cfs @ 12.18 hrs, Volume= 0.121 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
1,216	61	>75% Grass cover, Good, HSG B
10,794	39	>75% Grass cover, Good, HSG A
1,383	98	Paved parking, HSG B
4,622	98	Paved parking, HSG A
20,515	65	Weighted Average
12,010		58.54% Pervious Area
8,505		41.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0050	0.59		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	204	Total			

Summary for Subcatchment 5S: Subcatchment 5S

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.039 af, Depth> 6.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
2,652	98	Roofs, HSG A
408	98	Water Surface, HSG A
3,060	98	Weighted Average
3,060		100.00% Impervious Area

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

Summary for Subcatchment 6S: Subcatchment 6S

Runoff = 0.51 cfs @ 12.09 hrs, Volume= 0.043 af, Depth> 6.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
2,652	98	Roofs, HSG A
654	98	Water Surface, HSG A
3,306	98	Weighted Average
3,306		100.00% Impervious Area

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

Summary for Subcatchment 7S: Subcatchment 7S

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 6.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year 24-Hour Rainfall=6.99"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
395	98	Water Surface, HSG A
2,895	98	Weighted Average
2,895		100.00% Impervious Area

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

Summary for Reach AP1: Analysis Point #1

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

Inflow Area = 0.168 ac, 0.00% Impervious, Inflow Depth > 2.20" for 50-Year 24-Hour event
Inflow = 0.28 cfs @ 12.30 hrs, Volume= 0.031 af
Outflow = 0.28 cfs @ 12.30 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP2: Analysis Point #2

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

Inflow Area = 0.881 ac, 30.23% Impervious, Inflow Depth > 1.39" for 50-Year 24-Hour event
Inflow = 0.77 cfs @ 12.42 hrs, Volume= 0.102 af
Outflow = 0.77 cfs @ 12.42 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP3: Analysis Point #3

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

Inflow Area = 0.469 ac, 45.23% Impervious, Inflow Depth > 4.57" for 50-Year 24-Hour event
 Inflow = 2.34 cfs @ 12.11 hrs, Volume= 0.179 af
 Outflow = 2.34 cfs @ 12.11 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach AP4: Analysis Point #4

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

Inflow Area = 0.471 ac, 41.46% Impervious, Inflow Depth > 3.09" for 50-Year 24-Hour event
 Inflow = 1.35 cfs @ 12.18 hrs, Volume= 0.121 af
 Outflow = 1.35 cfs @ 12.18 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Stone Drip Edge A

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.070 ac, 100.00% Impervious, Inflow Depth > 6.75" for 50-Year 24-Hour event
 Inflow = 0.47 cfs @ 12.09 hrs, Volume= 0.039 af
 Outflow = 0.21 cfs @ 12.27 hrs, Volume= 0.039 af, Atten= 55%, Lag= 10.9 min
 Discarded = 0.21 cfs @ 12.27 hrs, Volume= 0.039 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 197.75' @ 12.27 hrs Surf.Area= 666 sf Storage= 266 cf

Plug-Flow detention time= 8.1 min calculated for 0.039 af (100% of inflow)
 Center-of-Mass det. time= 7.9 min (750.5 - 742.5)

Volume	Invert	Avail.Storage	Storage Description
#1	196.50'	873 cf	4.00'W x 100.00'L x 3.01'H Prismaoid Z=1.0 2,183 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	196.50'	7.080 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	204.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.21 cfs @ 12.27 hrs HW=197.75' (Free Discharge)
 ↑1=Exfiltration (Controls 0.21 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=196.50' (Free Discharge)
 ↑2=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond 2P: Stone Drip Edge B

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.076 ac, 100.00% Impervious, Inflow Depth > 6.75" for 50-Year 24-Hour event
 Inflow = 0.51 cfs @ 12.09 hrs, Volume= 0.043 af
 Outflow = 0.38 cfs @ 12.16 hrs, Volume= 0.043 af, Atten= 25%, Lag= 4.5 min
 Discarded = 0.38 cfs @ 12.16 hrs, Volume= 0.043 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.68' @ 12.16 hrs Surf.Area= 654 sf Storage= 127 cf

Plug-Flow detention time= 3.9 min calculated for 0.043 af (100% of inflow)
 Center-of-Mass det. time= 3.5 min (746.1 - 742.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	199.19'	349 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
199.19	654	0.0	0	0
199.20	654	40.0	3	3
200.50	654	40.0	340	343
200.51	654	100.0	7	349

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.19'	7.080 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10'
#2	Primary	200.70'	204.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.38 cfs @ 12.16 hrs HW=199.67' (Free Discharge)
 ↳1=Exfiltration (Controls 0.38 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=199.19' (Free Discharge)
 ↳2=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond 3P: Stone Drip Edge C

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.066 ac, 100.00% Impervious, Inflow Depth > 6.75" for 50-Year 24-Hour event
 Inflow = 0.45 cfs @ 12.09 hrs, Volume= 0.037 af
 Outflow = 0.33 cfs @ 12.16 hrs, Volume= 0.037 af, Atten= 25%, Lag= 4.6 min
 Discarded = 0.33 cfs @ 12.16 hrs, Volume= 0.037 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 199.98' @ 12.16 hrs Surf.Area= 395 sf Storage= 124 cf

Plug-Flow detention time= 4.2 min calculated for 0.037 af (100% of inflow)

Center-of-Mass det. time= 3.8 min (746.3 - 742.5)

Volume	Invert	Avail.Storage	Storage Description
#1	199.19'	211 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
199.19	395	0.0	0	0
199.20	395	40.0	2	2
200.50	395	40.0	205	207
200.51	395	100.0	4	211

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.19'	7.080 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10'
#2	Primary	200.70'	204.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.33 cfs @ 12.16 hrs HW=199.96' (Free Discharge)

↳ **1=Exfiltration** (Controls 0.33 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=199.19' (Free Discharge)

↳ **2=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

APPENDIX III

Charts, Graphs, and Calculations

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.988 degrees West
Latitude	43.240 degrees North
Elevation	0 feet
Date/Time	Tue, 26 Jan 2021 17:14:01 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.49	0.65	0.81	1.02	1yr	0.70	0.98	1.19	1.53	1.97	2.56	2.82	1yr	2.26	2.71	3.13	3.85	4.41	1yr
2yr	0.32	0.49	0.61	0.80	1.01	1.28	2yr	0.87	1.16	1.49	1.89	2.41	3.08	3.44	2yr	2.73	3.30	3.80	4.53	5.16	2yr
5yr	0.37	0.57	0.72	0.96	1.23	1.57	5yr	1.06	1.44	1.84	2.36	3.03	3.89	4.39	5yr	3.44	4.22	4.85	5.70	6.45	5yr
10yr	0.40	0.63	0.80	1.09	1.42	1.84	10yr	1.22	1.69	2.17	2.80	3.60	4.64	5.29	10yr	4.10	5.09	5.83	6.79	7.64	10yr
25yr	0.47	0.74	0.94	1.30	1.73	2.27	25yr	1.49	2.08	2.69	3.49	4.53	5.85	6.77	25yr	5.18	6.51	7.43	8.57	9.56	25yr
50yr	0.52	0.83	1.07	1.49	2.01	2.67	50yr	1.74	2.45	3.18	4.15	5.40	6.99	8.16	50yr	6.18	7.85	8.94	10.21	11.34	50yr
100yr	0.58	0.94	1.22	1.72	2.34	3.13	100yr	2.02	2.88	3.75	4.92	6.42	8.35	9.85	100yr	7.39	9.47	10.76	12.18	13.45	100yr
200yr	0.65	1.06	1.37	1.97	2.72	3.69	200yr	2.35	3.39	4.43	5.85	7.66	9.97	11.88	200yr	8.82	11.43	12.95	14.53	15.96	200yr
500yr	0.76	1.26	1.64	2.38	3.34	4.57	500yr	2.88	4.21	5.51	7.33	9.65	12.62	15.24	500yr	11.17	14.65	16.56	18.37	20.02	500yr

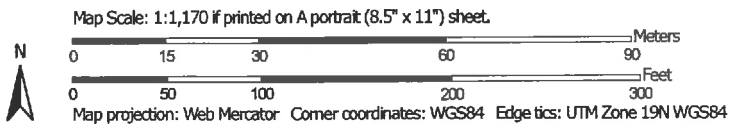
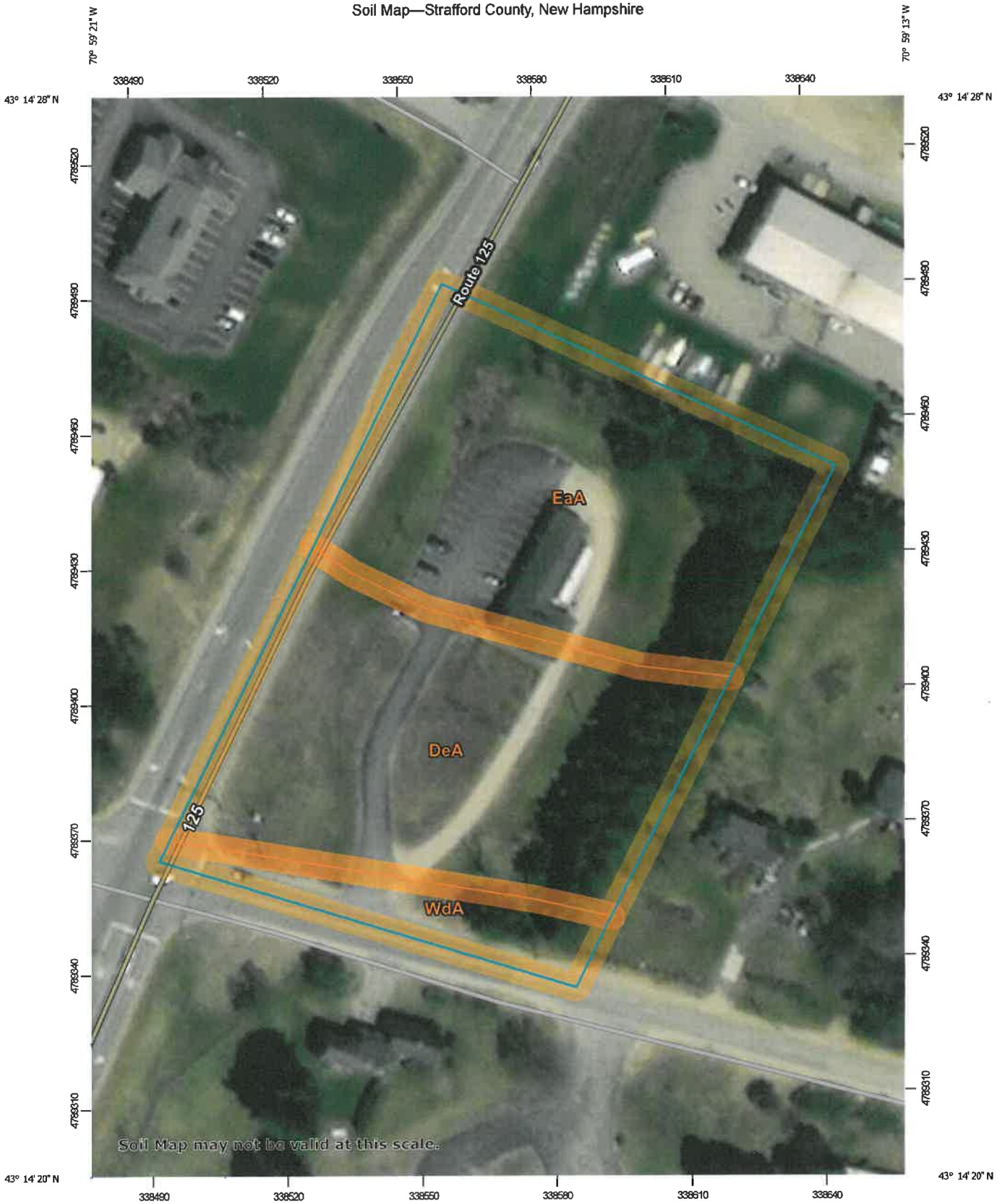
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.36	0.44	0.60	0.73	0.90	1yr	0.63	0.88	0.91	1.25	1.50	1.96	2.48	1yr	1.73	2.38	2.93	3.28	3.96	1yr
2yr	0.31	0.48	0.59	0.81	0.99	1.18	2yr	0.86	1.15	1.35	1.81	2.33	2.99	3.34	2yr	2.65	3.21	3.69	4.41	5.03	2yr
5yr	0.35	0.54	0.67	0.91	1.16	1.40	5yr	1.00	1.37	1.61	2.13	2.76	3.61	4.05	5yr	3.19	3.90	4.52	5.34	6.04	5yr
10yr	0.38	0.59	0.73	1.02	1.32	1.60	10yr	1.14	1.56	1.81	2.42	3.11	4.13	4.70	10yr	3.66	4.52	5.25	6.16	6.91	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.91	25yr	1.35	1.87	2.12	2.83	3.62	4.93	5.68	25yr	4.37	5.47	6.40	7.42	8.19	25yr
50yr	0.49	0.74	0.92	1.33	1.78	2.19	50yr	1.54	2.14	2.37	3.19	4.04	5.64	6.56	50yr	4.99	6.31	7.44	8.55	9.44	50yr
100yr	0.55	0.82	1.03	1.49	2.04	2.52	100yr	1.76	2.46	2.67	3.59	4.50	6.43	7.57	100yr	5.69	7.28	8.67	9.85	10.77	100yr
200yr	0.61	0.91	1.16	1.68	2.34	2.89	200yr	2.02	2.82	3.00	4.03	5.01	7.33	8.74	200yr	6.49	8.40	10.10	11.35	12.31	200yr
500yr	0.71	1.06	1.36	1.98	2.82	3.49	500yr	2.43	3.42	3.51	4.71	5.79	8.66	10.55	500yr	7.67	10.15	12.36	13.70	14.63	500yr






































Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.07	1yr	0.75	1.05	1.23	1.72	2.17	2.77	3.02	1yr	2.45	2.90	3.35	4.14	4.74	1yr
2yr	0.33	0.50	0.62	0.84	1.03	1.24	2yr	0.89	1.21	1.46	1.94	2.50	3.19	3.55	2yr	2.82	3.41	3.92	4.67	5.32	2yr
5yr	0.39	0.60	0.75	1.02	1.30	1.57	5yr	1.12	1.53	1.83	2.47	3.16	4.17	4.71	5yr	3.69	4.53	5.18	6.07	6.84	5yr
10yr	0.45	0.70	0.86	1.21	1.56	1.90	10yr	1.35	1.85	2.21	3.01	3.81	5.14	5.86	10yr	4.55	5.63	6.43	7.41	8.29	10yr
25yr	0.55	0.84	1.05	1.50	1.97	2.44	25yr	1.70	2.38	2.84	3.91	4.89	6.80	7.82	25yr	6.02	7.52	8.52	9.80	10.75	25yr
50yr	0.64	0.97	1.21	1.74	2.35	2.93	50yr	2.03	2.87	3.44	4.75	5.93	8.40	9.74	50yr	7.44	9.37	10.56	12.02	13.18	50yr
100yr	0.75	1.13	1.41	2.04	2.80	3.53	100yr	2.42	3.45	4.17	5.80	7.20	10.39	12.14	100yr	9.19	11.68	13.08	14.77	16.09	100yr
200yr	0.87	1.31	1.65	2.39	3.34	4.26	200yr	2.88	4.17	5.06	7.09	8.73	12.89	15.16	200yr	11.40	14.58	16.21	18.14	19.66	200yr
500yr	1.06	1.58	2.03	2.95	4.20	5.45	500yr	3.62	5.33	6.53	9.24	11.28	17.17	20.32	500yr	15.20	19.54	21.52	23.85	25.67	500yr

Soil Map—Strafford County, New Hampshire



MAP LEGEND

-  Area of Interest (AOI)
-  Soils
-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points
- Special Point Features**
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spot Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
 Survey Area Data: Version 20, May 29, 2020

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

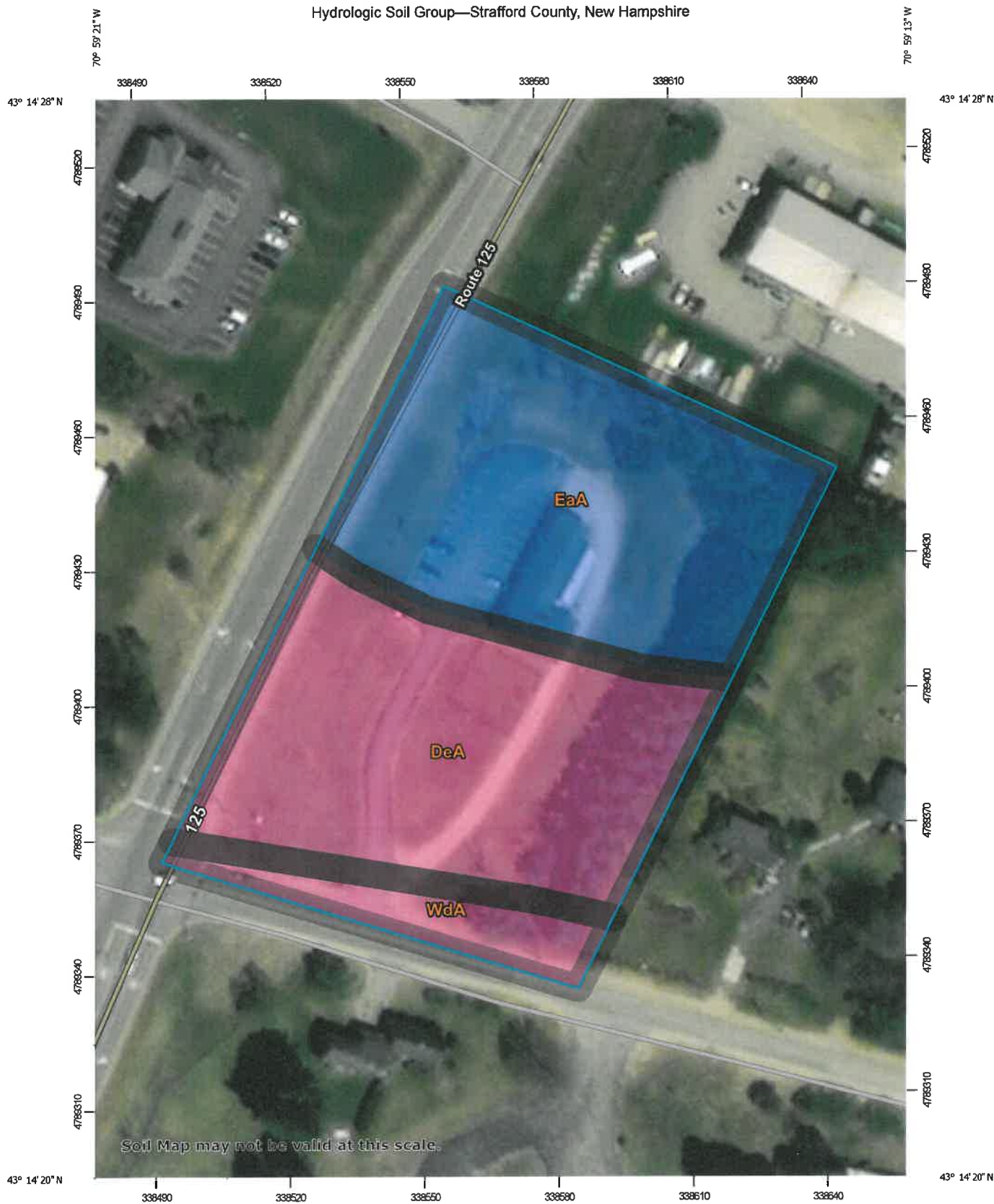
Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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

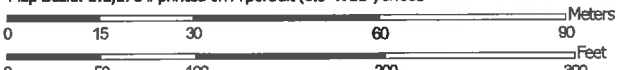
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	1.5	45.3%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	1.5	46.0%
WdA	Windsor loamy sand, 0 to 3 percent slopes	0.3	8.7%
Totals for Area of Interest		3.3	100.0%

Hydrologic Soil Group—Strafford County, New Hampshire





































Map Scale: 1:1,170 if printed on A portrait (8.5" x 11") sheet.



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



MAP LEGEND

 Area of Interest (AOI)	 C
 Soils	 C/D
 Soil Rating Polygons	 D
 A	 Not rated or not available
 A/D	Water Features
 B	 Streams and Canals
 B/D	Transportation
 C	 Rails
 C/D	 Interstate Highways
 D	 US Routes
 Not rated or not available	 Major Roads
Soil Rating Lines	 Local Roads
 A	Background
 A/D	 Aerial Photography
 B	
 B/D	
 C	
 C/D	
 D	
 Not rated or not available	
Soil Rating Points	
 A	
 A/D	
 B	
 B/D	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
 Survey Area Data: Version 20, May 29, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	A	1.5	45.3%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	B	1.5	46.0%
WdA	Windsor loamy sand, 0 to 3 percent slopes	A	0.3	8.7%
Totals for Area of Interest			3.3	100.0%

Description

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

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

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

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

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

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

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

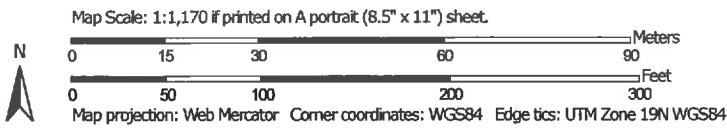
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Saturated Hydraulic Conductivity (Ksat)—Strafford County, New Hampshire



MAP LEGEND

- Area of Interest (AOI)
 - Area of Interest (AOI)
- Soils
 - Soil Rating Polygons
 - <= 13.5803
 - > 13.5803 and <= 100.0000
 - Not rated or not available
 - Soil Rating Lines
 - <= 13.5803
 - > 13.5803 and <= 100.0000
 - # # Not rated or not available
 - Soil Rating Points
 - <= 13.5803
 - > 13.5803 and <= 100.0000
 - Not rated or not available
- Water Features
 - Streams and Canals
- Transportation
 - Rails
 - Interstate Highways
 - US Routes
 - Major Roads
 - Local Roads
- Background
 - Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
 Survey Area Data: Version 20, May 29, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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

Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	100.0000	1.5	45.3%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	13.5803	1.5	46.0%
WdA	Windsor loamy sand, 0 to 3 percent slopes	100.0000	0.3	8.7%
Totals for Area of Interest			3.3	100.0%

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 48

Units of Measure: Inches

STORMWATER MANAGEMENT OPERATION AND MAINTENANCE MANUAL

Prepared for:

**PEH And Son, LLC
Map 220, Lot 50
7 Tolend Road
Barrington, NH**

Prepared by:

**Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
Phone: (603) 772-4746
March 29, 2021
JBE Project No. 20656.1**

Inspection and Maintenance of Facilities and Property

A. Maintenance of Common Facilities or Property

1. PEH and Son, LLC, future owners and assigns, are responsible for maintenance of all stormwater infrastructure associated with the facility and the property. This includes all temporary and permanent stormwater and erosion control facilities, roadways, and parking areas both during and after construction.

B. General Inspection and Maintenance Requirements

1. Temporary and permanent stormwater and sediment and erosion control facilities to be maintained on the site include, but are not limited to, the following:
 - a. Silt fencing and/or organic filter berms
 - b. Temporary diversion and swales
 - c. Construction entrances
 - d. Vegetation and landscaping
 - e. Parking lots and roadways
 - f. Drip Edges
2. Maintenance of temporary measures shall follow the following schedule:
 - a. During the construction process, all silt fencing will be **inspected during and after storm events** to ensure that the fence still has integrity and is not allowing sediment to pass. Any section of fence that has failed or is failing is to be replaced immediately, overlapping adjacent fence sections by at least one foot. If the problem persists, measures such as additional fencing (i.e. double) or the addition of haybales on the project side of the fence line should be considered. Sediment is to be removed from behind the fencing if found to be deeper than six inches and disposed of properly.
 - b. Sediment is to be removed from behind diversions if found to be deeper than six inches and disposed of properly.
 - c. The stabilized construction entrance shall be **inspected weekly** and after every rain event in order to ensure that the pad is not becoming choked with sediment. Additional stone shall be added if required.
 - d. All construction debris and trash shall be removed from the site at the completion of construction and disposed of properly.
 - e. Once construction has been completed, the contractor is to remove all temporary erosion control measures and, if necessary, smooth and revegetate the areas disturbed by the removal.

3. Maintenance of permanent measures shall follow the following schedule:

- a. **Annual inspection** of the site for erosion, destabilization, settling, and sloughing. Any needed repairs are to be conducted immediately. **Annual inspection** of site's vegetation and landscaping. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in kind, if they are found to be dead or dying.
- b. Normal winter parking lot maintenance including plowing and snow removal. Parking lot sweeping at the end of every winter, preferably at the start of the spring rain season. Inspect pavement for cracking and possible repairs.
- c. Stone Drip Edges:

The following recommendations will help assure that the stone drip edges are maintained to preserve their effectiveness.

- In the spring and fall, visually inspect the area around the system and repair any erosion. Use small stones to stabilize erosion along drainage paths. Re-mulch any void areas by hand as needed.
- Do not plant deep rooted trees and shrubs within 5' of the system.
- Keep heavy vehicles from driving or parking over the system. If heavy vehicles do drive over the system, visually check for any signs of erosion or unwarranted compaction of the stone material and use small stones to stabilize the system if needed.
- After each major rain event or otherwise on an annual basis, inspect the static water levels in observation wells on each drip edge.

See attached sample form as a guideline.

Any inquiries in regards to the design, function, and/or maintenance of any one of the above-mentioned facilities or tasks shall be directed to the project engineer:

Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885

T#: (603) 772-4746

Commitment to maintenance requirements

I agree to complete and/or observe all of the required maintenance practices and their respective schedules as outlined above.

«OwnerName»

Print Name

Title

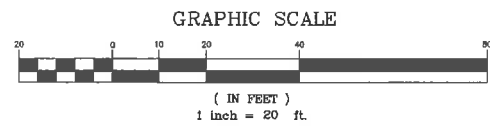
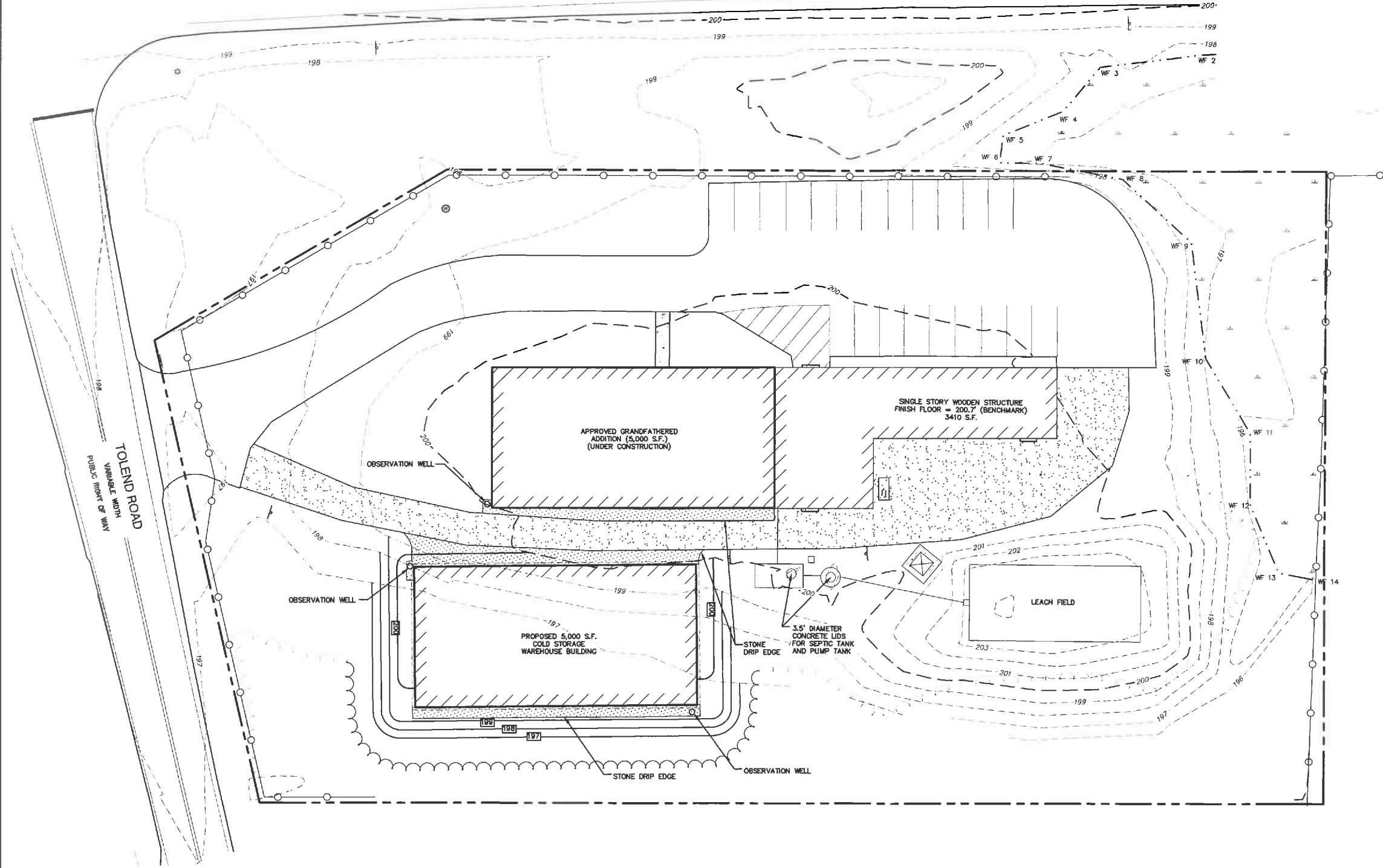
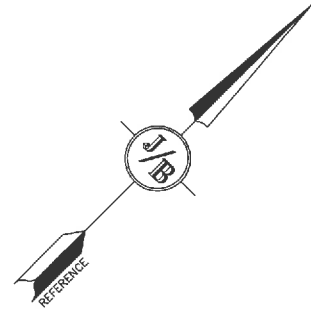
Date

Annual Operations and Maintenance Report

PEH and Son, LLC., future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. PEH and Son, LLC, future owners and assigns, shall keep receipts and records of all maintenance companies hired throughout the year to retain with the following form.

Construction Activity	Date of Inspection	Who Inspected	Findings of Inspector & Repairs
Vegetation and Landscaping			
Parking Lots and Roadways			
Drip Edges			

NH ROUTE 120
VARIABLE WIDTH
PUBLIC RIGHT-OF-WAY



TOTAL LOT AREA
87,207 SQ. FT. ±
2.00 ACRES ±

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:23 PM EDT

Design: JAC	Draft: DJM	Date: 10/30/20
Checked: JAC	Scale: AS NOTED	Project No.: 20656.1
Drawing Name: 20656-PLAN.dwg		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		

REV.	DATE	REVISION	BY
4	4/9/21	REVISED PER ENGINEERING AND PLANNING DEPT COMMENTS	DJM
3	3/29/21	REVISED PER ENGINEERING COMMENTS	DJM
2	3/11/21	REVISED PER PLANNING BOARD COMMENTS	DJM
1	2/9/21	ISSUED FOR REVIEW	DJM
0	1/20/21	ISSUED CONCEPT TO CLIENT	DJM
REV.	DATE	REVISION	BY

Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. PO Box 219 Stratham, NH 03885

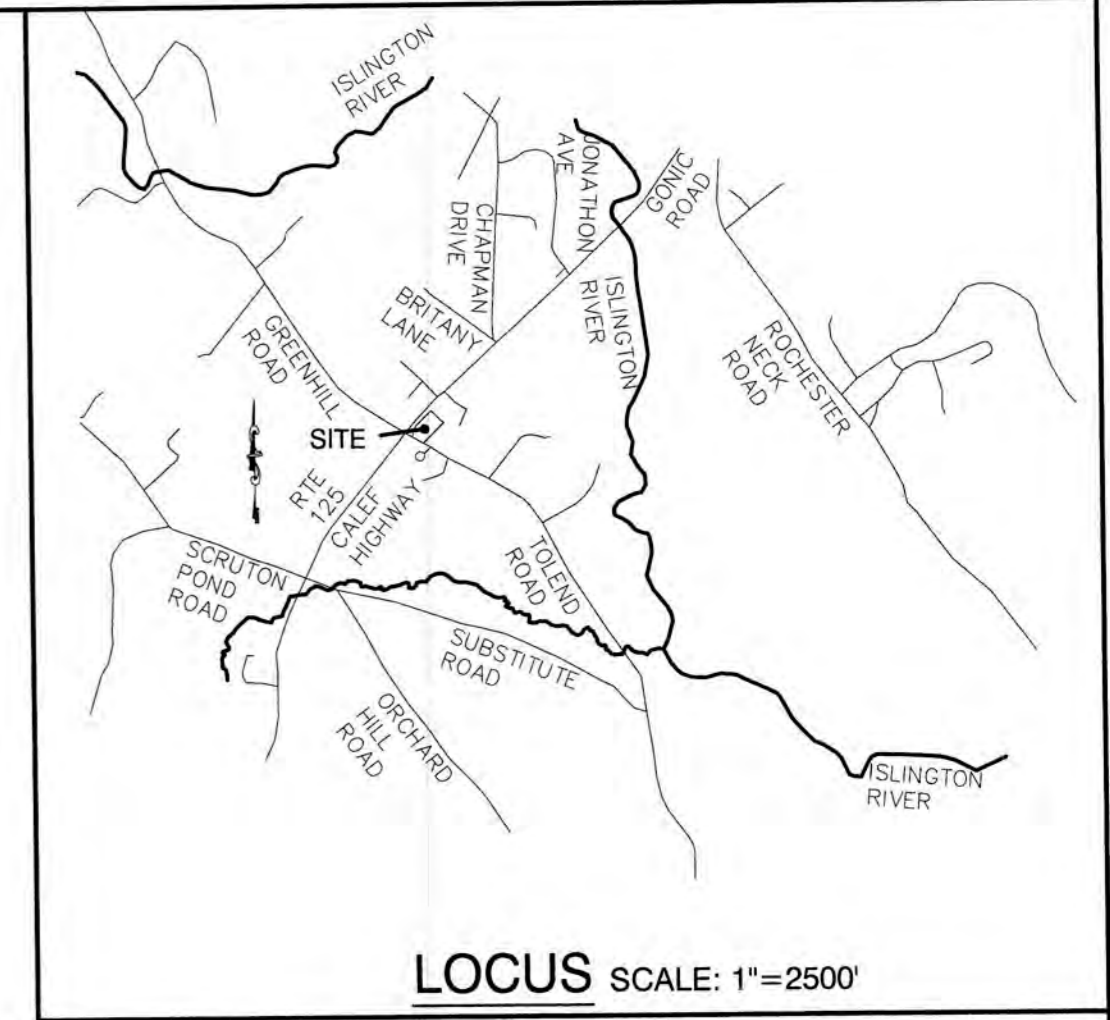
Civil Engineering Services

603-772-4748
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	BMP LOCATION PLAN
Project:	VENTURE POWERSPORTS 7 TOLEND ROAD, BARRINGTON, NH
Owner of Record:	PEH AND SON, LLC 17 DUDLEY ROAD, BRENTWOOD, NH 03833 BK 4855 PG 0723

DRAWING No.
BMP
SHEET 1 OF 1
JBE PROJECT NO. 20656.1

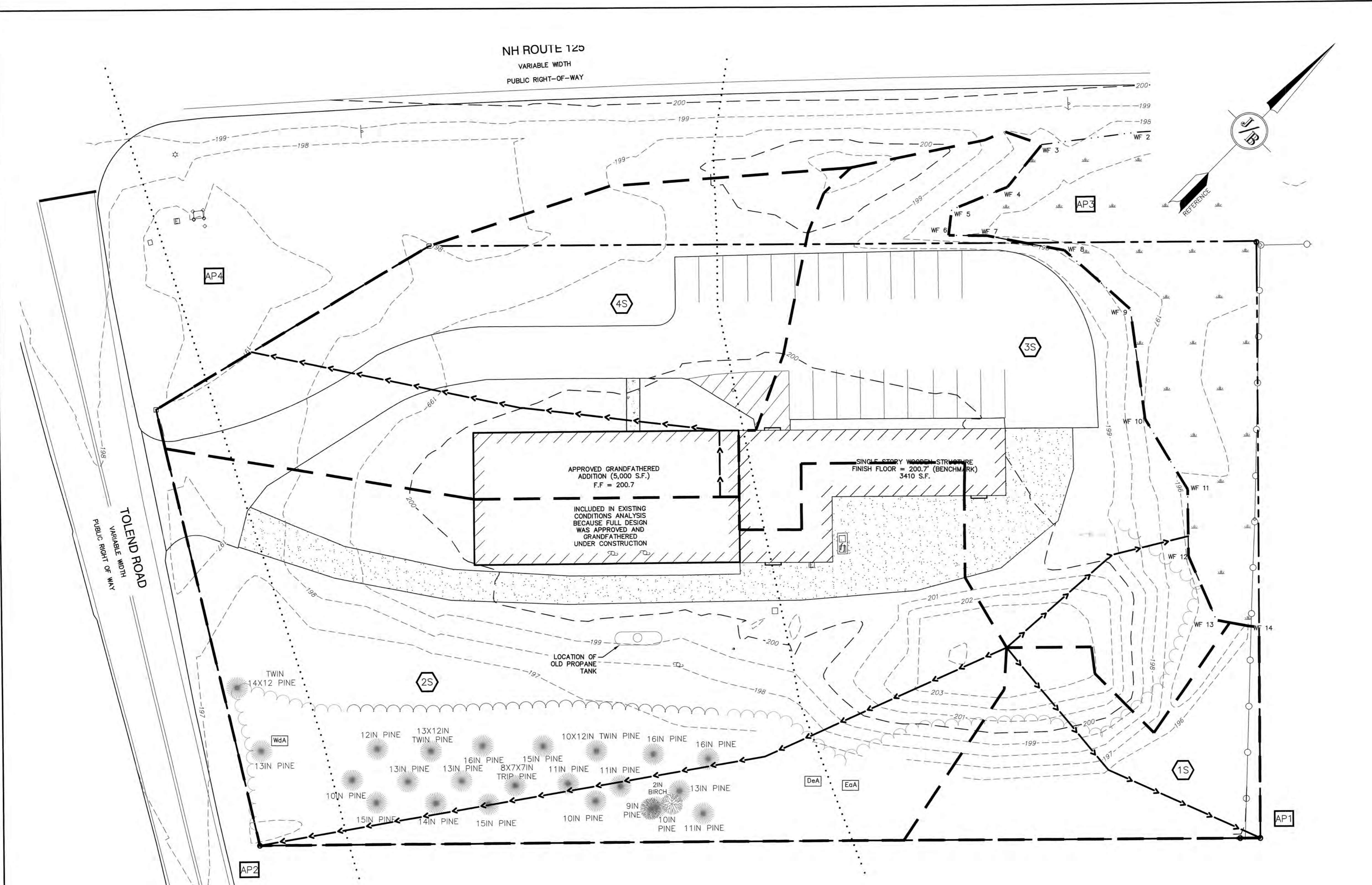
NH ROUTE 125
VARIABLE WIDTH
PUBLIC RIGHT-OF-WAY



LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT
- REACH
- POND
- TC PATH
- WETLANDS
- NRCS SOILS
- FLOW ARROW

TOTAL LOT AREA
87,207 SQ. FT. ±
2.00 ACRES ±



APPROVED GRANDFATHERED ADDITION (5,000 S.F.)
F.F. = 200.7

SINGLE STORY WOODEN STRUCTURE
FINISH FLOOR = 200.7' (BENCHM. RK)
3410 S.F.

INCLUDED IN EXISTING CONDITIONS ANALYSIS BECAUSE FULL DESIGN WAS APPROVED AND GRANDFATHERED UNDER CONSTRUCTION

- TWIN 14X12 PINE
- 12IN PINE
- 13X12IN TWIN PINE
- 10X12IN TWIN PINE
- 16IN PINE
- 16IN PINE
- 13IN PINE
- 16IN PINE
- 15IN PINE
- 8X7X7IN TRIP PINE
- 11IN PINE
- 11IN PINE
- 2IN BIRCH
- 13IN PINE
- 10IN PINE
- 15IN PINE
- 14IN PINE
- 15IN PINE
- 10IN PINE
- 9IN PINE
- 10IN PINE
- 11IN PINE

Design: JAC Draft: DJM Date: 10/30/20
Checked: JAC Scale: AS NOTED Project No.: 20656
Drawing Name: 20656-PLAN-CHANGE-OF-USE.dwg
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



REV.	DATE	REVISION	BY
3	4/12/21	REVISED PER ENGINEERING AND PLANNING DEPT COMMENTS	DJM
2	3/29/21	REVISED PER ENGINEERING COMMENTS	DJM
1	2/9/21	ISSUED FOR REVIEW	DJM
0	1/20/21	ISSUED TO CLIENT	DJM

Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.

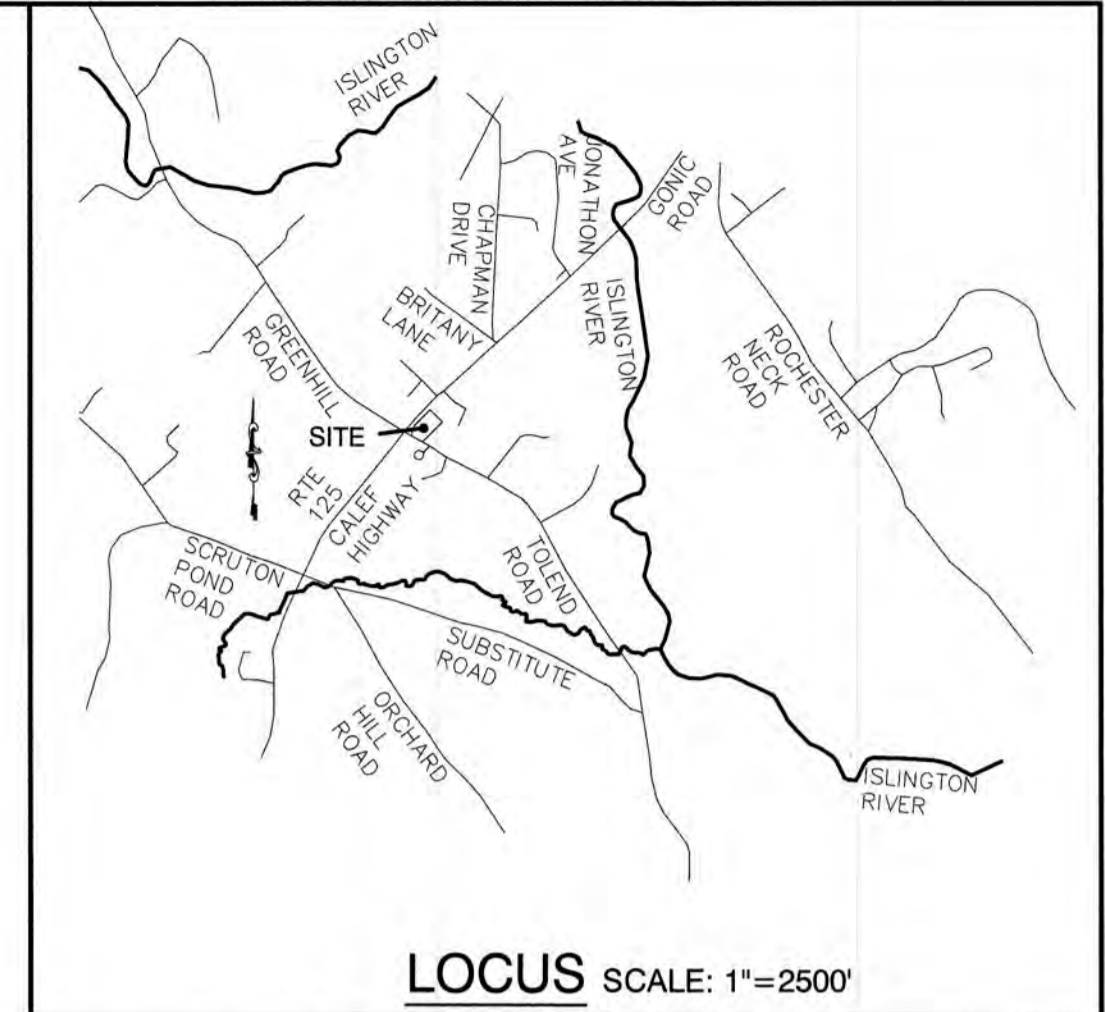
85 Portsmouth Ave. Civil Engineering Services 603-772-4746
PO Box 219 Stratham, NH 03885 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	EXISTING WATERSHED PLAN
Project:	WAREHOUSE BUILDING 7 TOLEND ROAD, BARRINGTON, NH
Owner of Record:	PEH AND SON, LLC 17 DUDLEY ROAD, BRENTWOOD, NH 03833 BK 4855 PG 0723

DRAWING No.
W1
SHEET 1 OF 2
JBE PROJECT NO. 20656

NH ROUTE 125
VARIABLE WIDTH
PUBLIC RIGHT-OF-WAY

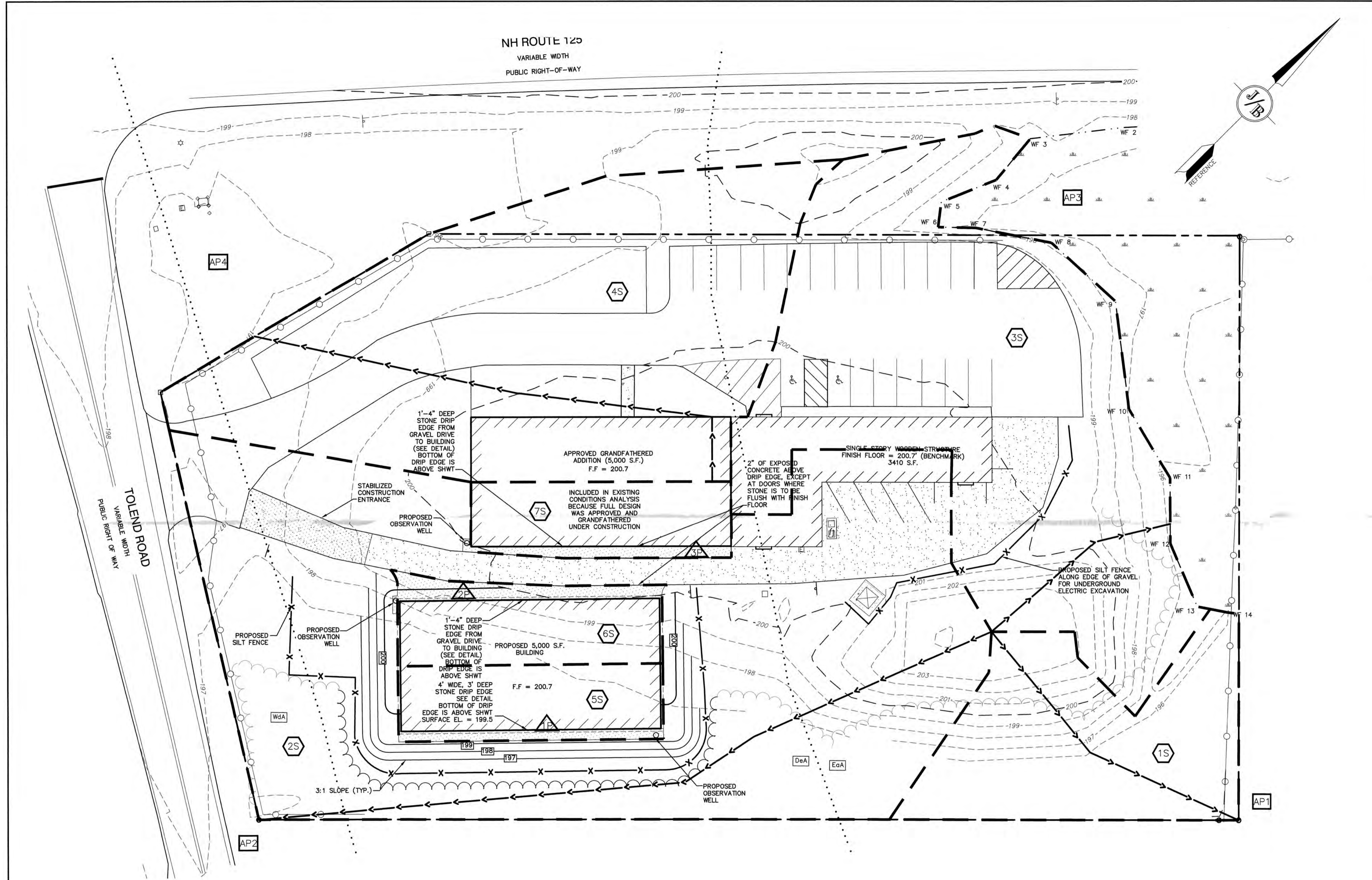
J/B



LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT
- REACH
- POND
- TC PATH
- WETLANDS
- NRCS SOILS
- FLOW ARROW

TOTAL LOT AREA
87,207 SQ. FT. ±
2.00 ACRES ±



Design: JAC Draft: DJM Date: 10/30/20
Checked: JAC Scale: AS NOTED Project No.: 20656
Drawing Name: 20656-PLAN-CHANGE-OF-USE.dwg
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Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. Civil Engineering Services 603-772-4746
PO Box 219 Stratham, NH 03885 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **PROPOSED WATERSHED PLAN**
Warehouse Building
7 Tolend Road, Barrington, NH
Owner of Record: PEH AND SON, LLC
17 DUDLEY ROAD, BRENTWOOD, NH 03833 BK 4855 PG 0723

DRAWING No.
W2
SHEET 2 OF 2
JBE PROJECT NO. 20656