

**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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(603) 772-4746  
February 9, 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 The vested addition is under construction and was previously approved and grandfathered under outdated regulations, so it is being included in the existing conditions model.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	0.49	1.02	0.80
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).

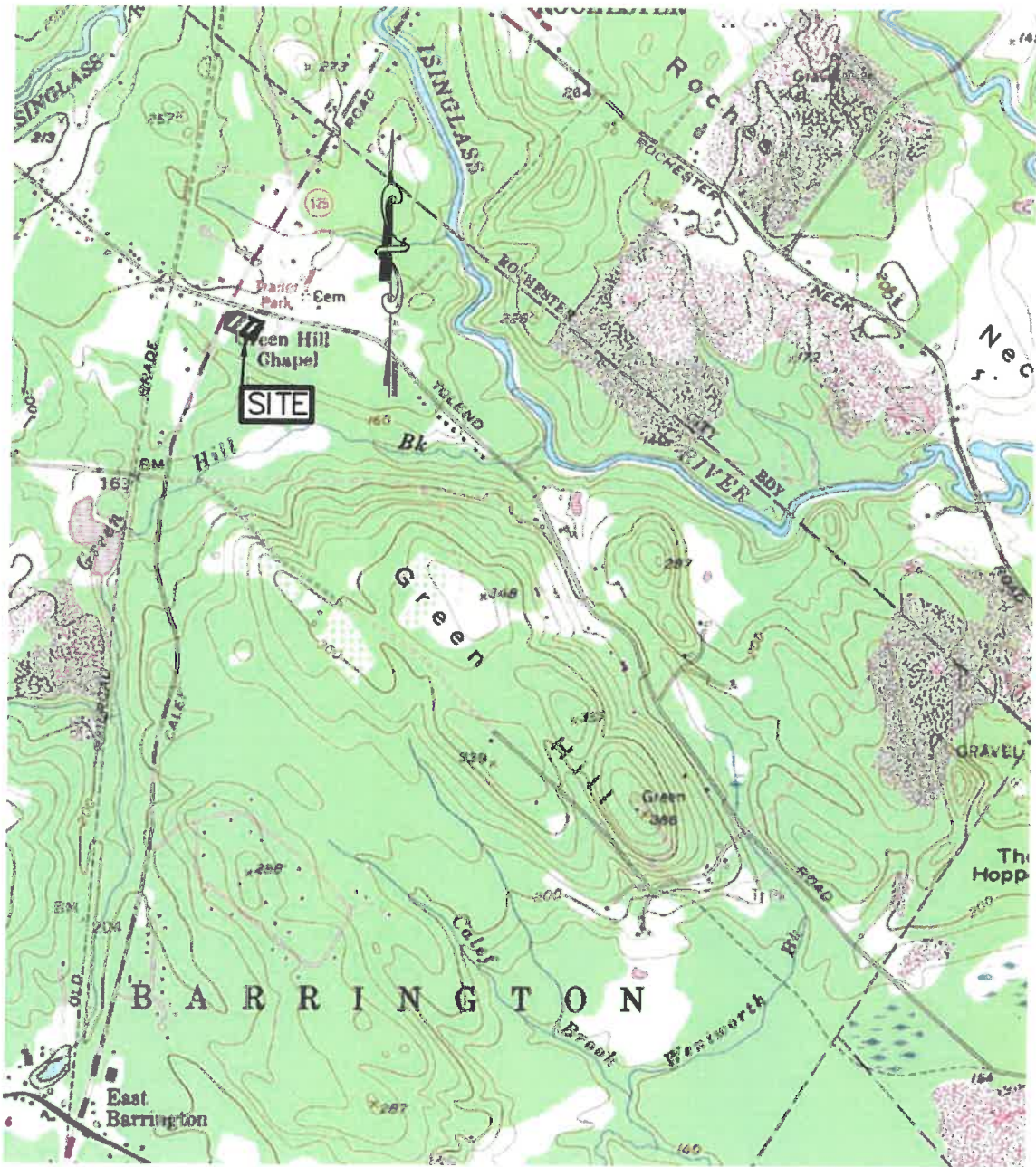
Finally, Subcatchment 4S represents the western corner of the site and is bounded by the crest of the building roofs and a sharp inflection in the site topography. Runoff from here sheet flows into a shallow depression at the intersection of Tolend Road and Route 125 (Analysis Point #4).

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.



GRAPHIC SCALE



( IN FEET )  
1 inch = 2000ft.

**J/B Jones & Beach Engineers, Inc.**  
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PO Box 219 FAX: 603-772-0227  
Stratham, NH 03885 E-Mail: JBE@jonesandbeach.com

Drawing Name:	USGS QUADRANT
Project:	WAREHOUSE BUILDING 7 TOLEND ROAD, BARRINGTON, NH
Owner of Record:	BRIAN R. & DIANE I. BROCHU 2431 270TH AVE., OSCEOLA, IA 50213 BK 1309 PG 0427

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USGS Quadrangle

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Appendix I Existing Conditions Analysis

- 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 15 in/hr after unit conversion, so a Ksat of 7.5 in/hr was used for design with a factor of safety of 2 applied.

## 3.0 PROPOSED CONDITIONS ANALYSIS

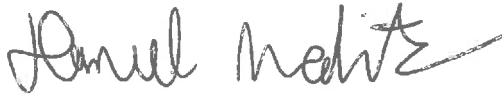
The addition of the new 5,000 S.F. cold storage building causes an increase in the curve number ( $C_n$ ), the result being a potential increase in peak rates of runoff from the site. Because of this, a study was performed to appropriately design a drainage system that would result in equal or lesser 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, appearing to read "Daniel Meditz". The signature is fluid and cursive, with a long horizontal stroke at the end.

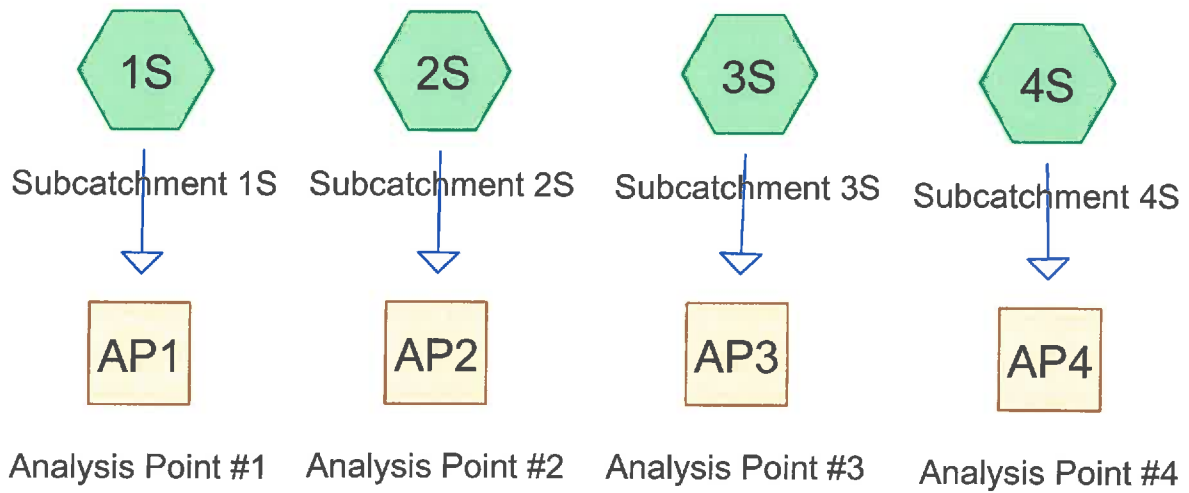
Daniel Meditz, E.I.T  
Project Engineer

## APPENDIX I

### EXISTING CONDITIONS DRAINAGE ANALYSIS

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





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**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)
<b>1.988</b>	<b>62</b>	<b>TOTAL AREA</b>

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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	
<b>1.988</b>		<b>TOTAL AREA</b>

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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 ' 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		<b>Shallow Concentrated Flow,</b> 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		<b>Shallow Concentrated Flow,</b> 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		<b>Sheet Flow,</b> 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		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		<b>Shallow Concentrated Flow,</b> 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



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

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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 > 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

**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=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

**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

**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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		<b>Shallow Concentrated Flow,</b> 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"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		<b>Shallow Concentrated Flow,</b> 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		<b>Sheet Flow,</b> 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		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		<b>Shallow Concentrated Flow,</b> 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"

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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

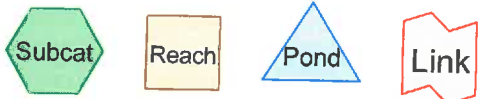
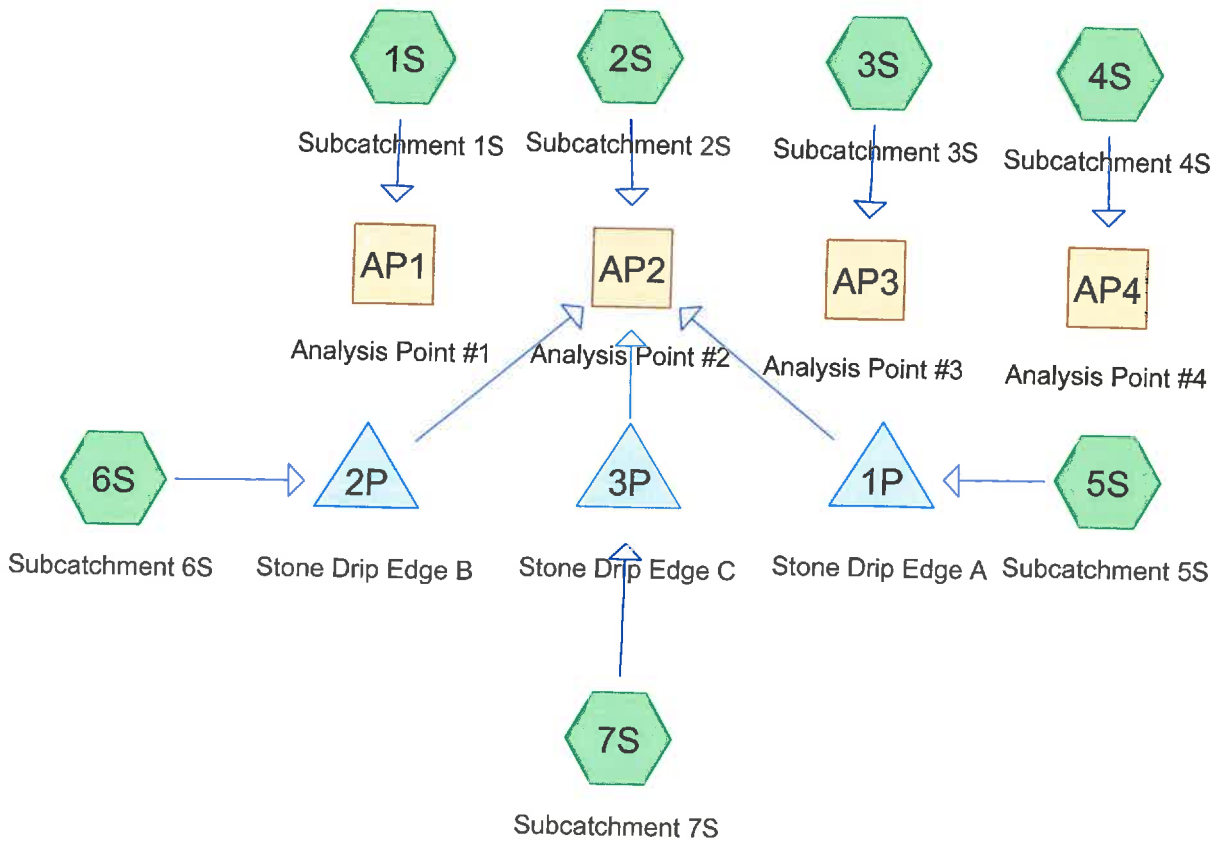
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

## 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)
0.472	39	>75% Grass cover, Good, HSG A (2S, 4S)
0.350	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S, 4S)
0.071	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)
0.237	98	Roofs, HSG A (2S, 3S, 4S, 5S, 6S, 7S)
0.070	98	Roofs, HSG B (2S, 3S)
0.014	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)
<b>1.988</b>	<b>66</b>	<b>TOTAL AREA</b>

**20656-PR**

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**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	
<b>1.988</b>		<b>TOTAL AREA</b>

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

<b>Subcatchment 1S: Subcatchment 1S</b>	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
<b>Subcatchment 2S: Subcatchment 2S</b>	Runoff Area=30,261 sf 7.71% Impervious Runoff Depth>0.14" Flow Length=294' Tc=26.5 min CN=52 Runoff=0.02 cfs 0.008 af
<b>Subcatchment 3S: Subcatchment 3S</b>	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
<b>Subcatchment 4S: Subcatchment 4S</b>	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
<b>Subcatchment 5S: Subcatchment 5S</b>	Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>2.85" Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af
<b>Subcatchment 6S: Subcatchment 6S</b>	Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>2.85" Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af
<b>Subcatchment 7S: Subcatchment 7S</b>	Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>2.85" Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af
<b>Reach AP1: Analysis Point #1</b>	Inflow=0.01 cfs 0.003 af Outflow=0.01 cfs 0.003 af
<b>Reach AP2: Analysis Point #2</b>	Inflow=0.02 cfs 0.008 af Outflow=0.02 cfs 0.008 af
<b>Reach AP3: Analysis Point #3</b>	Inflow=0.63 cfs 0.049 af Outflow=0.63 cfs 0.049 af
<b>Reach AP4: Analysis Point #4</b>	Inflow=0.18 cfs 0.021 af Outflow=0.18 cfs 0.021 af
<b>Pond 1P: Stone Drip Edge A</b>	Peak Elev=198.51' Storage=92 cf Inflow=0.18 cfs 0.015 af Discarded=0.08 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.015 af
<b>Pond 2P: Stone Drip Edge B</b>	Peak Elev=198.51' Storage=92 cf Inflow=0.18 cfs 0.015 af Discarded=0.08 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.015 af
<b>Pond 3P: Stone Drip Edge C</b>	Peak Elev=198.51' Storage=92 cf Inflow=0.18 cfs 0.015 af Discarded=0.08 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.015 af
<b>Total Runoff Area = 1.988 ac Runoff Volume = 0.126 af Average Runoff Depth = 0.76"</b>	
<b>67.47% Pervious = 1.341 ac 32.53% Impervious = 0.647 ac</b>	

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

<b>Subcatchment1S: Subcatchment1S</b>	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
<b>Subcatchment2S: Subcatchment2S</b>	Runoff Area=30,261 sf 7.71% Impervious Runoff Depth>0.64" Flow Length=294' Tc=26.5 min CN=52 Runoff=0.21 cfs 0.037 af
<b>Subcatchment3S: Subcatchment3S</b>	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
<b>Subcatchment4S: Subcatchment4S</b>	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
<b>Subcatchment5S: Subcatchment5S</b>	Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>4.40" Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af
<b>Subcatchment6S: Subcatchment6S</b>	Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>4.40" Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af
<b>Subcatchment7S: Subcatchment7S</b>	Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>4.40" Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af
<b>Reach AP1: Analysis Point #1</b>	Inflow=0.09 cfs 0.012 af Outflow=0.09 cfs 0.012 af
<b>Reach AP2: Analysis Point #2</b>	Inflow=0.21 cfs 0.037 af Outflow=0.21 cfs 0.037 af
<b>Reach AP3: Analysis Point #3</b>	Inflow=1.29 cfs 0.097 af Outflow=1.29 cfs 0.097 af
<b>Reach AP4: Analysis Point #4</b>	Inflow=0.58 cfs 0.056 af Outflow=0.58 cfs 0.056 af
<b>Pond 1P: Stone Drip Edge A</b>	Peak Elev=198.97' Storage=168 cf Inflow=0.27 cfs 0.023 af Discarded=0.11 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.023 af
<b>Pond 2P: Stone Drip Edge B</b>	Peak Elev=198.97' Storage=168 cf Inflow=0.27 cfs 0.023 af Discarded=0.11 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.023 af
<b>Pond 3P: Stone Drip Edge C</b>	Peak Elev=198.97' Storage=168 cf Inflow=0.27 cfs 0.023 af Discarded=0.11 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.023 af
<b>Total Runoff Area = 1.988 ac Runoff Volume = 0.270 af Average Runoff Depth = 1.63"</b>	
<b>67.47% Pervious = 1.341 ac 32.53% Impervious = 0.647 ac</b>	

**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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
19.5	121	Total			

**Summary for Subcatchment 2S: Subcatchment 2S**

Runoff = 0.21 cfs @ 12.51 hrs, Volume= 0.037 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
3,106	76	Gravel roads, HSG A
973	98	Paved parking, HSG A
4,141	61	>75% Grass cover, Good, HSG B
9,745	39	>75% Grass cover, Good, HSG A
7,324	30	Woods, Good, HSG A
1,526	55	Woods, Good, HSG B
30,261	52	Weighted Average
27,927		92.29% Pervious Area
2,334		7.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		<b>Shallow Concentrated Flow,</b> 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		<b>Sheet Flow,</b> 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		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
12.5	204	Total			

**Summary for Subcatchment 5S: Subcatchment 5S**

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 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
200	98	Water Surface, HSG A
2,700	98	Weighted Average
2,700		100.00% Impervious Area

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

**Summary for Subcatchment 6S: Subcatchment 6S**

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 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
200	98	Water Surface, HSG A
2,700	98	Weighted Average
2,700		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 = 0.27 cfs @ 12.09 hrs, Volume= 0.023 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
200	98	Water Surface, HSG A
2,700	98	Weighted Average
2,700		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, 27.20% Impervious, Inflow Depth > 0.51" for 10-Year 24-Hour event  
Inflow = 0.21 cfs @ 12.51 hrs, Volume= 0.037 af  
Outflow = 0.21 cfs @ 12.51 hrs, Volume= 0.037 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**

Inflow Area = 0.062 ac, 100.00% Impervious, Inflow Depth > 4.40" for 10-Year 24-Hour event  
 Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af  
 Outflow = 0.11 cfs @ 12.30 hrs, Volume= 0.023 af, Atten= 59%, Lag= 12.8 min  
 Discarded = 0.11 cfs @ 12.30 hrs, Volume= 0.023 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= 198.97' @ 12.30 hrs Surf.Area= 465 sf Storage= 168 cf

Plug-Flow detention time= 9.4 min calculated for 0.023 af (100% of inflow)  
 Center-of-Mass det. time= 9.2 min ( 758.1 - 748.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	197.70'	625 cf	<b>2.00'W x 100.00'L x 3.01'H Prismatic Z=1.0</b> 1,562 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	<b>7.500 in/hr Exfiltration over Surface area</b> Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	<b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)

**Discarded OutFlow** Max=0.11 cfs @ 12.30 hrs HW=198.97' (Free Discharge)  
 ↑1=Exfiltration ( Controls 0.11 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=197.70' (Free Discharge)  
 ↑2=Sharp-Crested Vee/Trap Weir ( Controls 0.00 cfs)

**Summary for Pond 2P: Stone Drip Edge B**

Inflow Area = 0.062 ac, 100.00% Impervious, Inflow Depth > 4.40" for 10-Year 24-Hour event  
 Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af  
 Outflow = 0.11 cfs @ 12.30 hrs, Volume= 0.023 af, Atten= 59%, Lag= 12.8 min  
 Discarded = 0.11 cfs @ 12.30 hrs, Volume= 0.023 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= 198.97' @ 12.30 hrs Surf.Area= 465 sf Storage= 168 cf

Plug-Flow detention time= 9.4 min calculated for 0.023 af (100% of inflow)  
 Center-of-Mass det. time= 9.2 min ( 758.1 - 748.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	197.70'	625 cf	<b>2.00'W x 100.00'L x 3.01'H Prismaoid Z=1.0</b> 1,562 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	<b>7.500 in/hr Exfiltration over Surface area</b> Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	<b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)

**Discarded OutFlow** Max=0.11 cfs @ 12.30 hrs HW=198.97' (Free Discharge)  
 ↳1=Exfiltration ( Controls 0.11 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=197.70' (Free Discharge)  
 ↳2=Sharp-Crested Vee/Trap Weir ( Controls 0.00 cfs)

**Summary for Pond 3P: Stone Drip Edge C**

Inflow Area = 0.062 ac, 100.00% Impervious, Inflow Depth > 4.40" for 10-Year 24-Hour event  
 Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af  
 Outflow = 0.11 cfs @ 12.30 hrs, Volume= 0.023 af, Atten= 59%, Lag= 12.8 min  
 Discarded = 0.11 cfs @ 12.30 hrs, Volume= 0.023 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= 198.97' @ 12.30 hrs Surf.Area= 465 sf Storage= 168 cf

Plug-Flow detention time= 9.4 min calculated for 0.023 af (100% of inflow)  
 Center-of-Mass det. time= 9.2 min ( 758.1 - 748.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	197.70'	625 cf	<b>2.00'W x 100.00'L x 3.01'H Prismaoid Z=1.0</b> 1,562 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	<b>7.500 in/hr Exfiltration over Surface area</b> Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	<b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)

**20656-PR**

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

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**Discarded OutFlow** Max=0.11 cfs @ 12.30 hrs HW=198.97' (Free Discharge)

↳1=Exfiltration ( Controls 0.11 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=197.70' (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=30,261 sf 7.71% Impervious Runoff Depth>1.20"  
 Flow Length=294' Tc=26.5 min CN=52 Runoff=0.49 cfs 0.070 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=2,700 sf 100.00% Impervious Runoff Depth>5.61"  
 Tc=6.0 min CN=98 Runoff=0.35 cfs 0.029 af

**Subcatchment 6S: Subcatchment 6S** Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>5.61"  
 Tc=6.0 min CN=98 Runoff=0.35 cfs 0.029 af

**Subcatchment 7S: Subcatchment 7S** Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>5.61"  
 Tc=6.0 min CN=98 Runoff=0.35 cfs 0.029 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=0.49 cfs 0.070 af  
 Outflow=0.49 cfs 0.070 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=199.29' Storage=231 cf Inflow=0.35 cfs 0.029 af  
 Discarded=0.13 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.029 af

**Pond 2P: Stone Drip Edge B** Peak Elev=199.29' Storage=231 cf Inflow=0.35 cfs 0.029 af  
 Discarded=0.13 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.029 af

**Pond 3P: Stone Drip Edge C** Peak Elev=199.29' Storage=231 cf Inflow=0.35 cfs 0.029 af  
 Discarded=0.13 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.029 af

**Total Runoff Area = 1.988 ac Runoff Volume = 0.404 af Average Runoff Depth = 2.44"**  
**67.47% Pervious = 1.341 ac 32.53% Impervious = 0.647 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=30,261 sf 7.71% Impervious Runoff Depth>1.83"  
 Flow Length=294' Tc=26.5 min CN=52 Runoff=0.80 cfs 0.106 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

**Subcatchment5S: Subcatchment5S** Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>6.75"  
 Tc=6.0 min CN=98 Runoff=0.42 cfs 0.035 af

**Subcatchment6S: Subcatchment6S** Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>6.75"  
 Tc=6.0 min CN=98 Runoff=0.42 cfs 0.035 af

**Subcatchment7S: Subcatchment7S** Runoff Area=2,700 sf 100.00% Impervious Runoff Depth>6.75"  
 Tc=6.0 min CN=98 Runoff=0.42 cfs 0.035 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=0.80 cfs 0.106 af  
 Outflow=0.80 cfs 0.106 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=199.56' Storage=294 cf Inflow=0.42 cfs 0.035 af  
 Discarded=0.15 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.035 af

**Pond 2P: Stone Drip Edge B** Peak Elev=199.56' Storage=294 cf Inflow=0.42 cfs 0.035 af  
 Discarded=0.15 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.035 af

**Pond 3P: Stone Drip Edge C** Peak Elev=199.56' Storage=294 cf Inflow=0.42 cfs 0.035 af  
 Discarded=0.15 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.035 af

**Total Runoff Area = 1.988 ac Runoff Volume = 0.541 af Average Runoff Depth = 3.26"**  
**67.47% Pervious = 1.341 ac 32.53% Impervious = 0.647 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.6	20	0.1670	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
14.2	41	0.0100	0.05		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
0.7	21	0.0100	0.50		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
19.5	121	Total			

**Summary for Subcatchment 2S: Subcatchment 2S**

Runoff = 0.80 cfs @ 12.42 hrs, Volume= 0.106 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
3,106	76	Gravel roads, HSG A
973	98	Paved parking, HSG A
4,141	61	>75% Grass cover, Good, HSG B
9,745	39	>75% Grass cover, Good, HSG A
7,324	30	Woods, Good, HSG A
1,526	55	Woods, Good, HSG B
30,261	52	Weighted Average
27,927		92.29% Pervious Area
2,334		7.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	38	0.0100	0.10		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
2.1	38	0.1400	0.30		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
9.2	24	0.0100	0.04		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.08"
9.1	194	0.0050	0.35		<b>Shallow Concentrated Flow,</b> 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		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
4.4	30	0.1000	0.11		<b>Sheet Flow,</b> 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		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.08"
10.5	75	0.0100	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.08"
0.5	35	0.0280	1.17		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.2	31	0.0200	2.87		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.6	38	0.0200	0.99		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
12.5	204	Total			

**Summary for Subcatchment 5S: Subcatchment 5S**

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.035 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
200	98	Water Surface, HSG A
2,700	98	Weighted Average
2,700		100.00% Impervious Area

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

**Summary for Subcatchment 6S: Subcatchment 6S**

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.035 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
200	98	Water Surface, HSG A
2,700	98	Weighted Average
2,700		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 = 0.42 cfs @ 12.09 hrs, Volume= 0.035 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
200	98	Water Surface, HSG A
2,700	98	Weighted Average
2,700		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, 27.20% Impervious, Inflow Depth > 1.44" for 50-Year 24-Hour event  
Inflow = 0.80 cfs @ 12.42 hrs, Volume= 0.106 af  
Outflow = 0.80 cfs @ 12.42 hrs, Volume= 0.106 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**

Inflow Area = 0.062 ac, 100.00% Impervious, Inflow Depth > 6.75" for 50-Year 24-Hour event  
 Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.035 af  
 Outflow = 0.15 cfs @ 12.33 hrs, Volume= 0.035 af, Atten= 63%, Lag= 14.6 min  
 Discarded = 0.15 cfs @ 12.33 hrs, Volume= 0.035 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= 199.56' @ 12.33 hrs Surf.Area= 594 sf Storage= 294 cf

Plug-Flow detention time= 12.8 min calculated for 0.035 af (100% of inflow)  
 Center-of-Mass det. time= 12.6 min ( 755.2 - 742.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	197.70'	625 cf	<b>2.00'W x 100.00'L x 3.01'H Prismatic Z=1.0</b> 1,562 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	<b>7.500 in/hr Exfiltration over Surface area</b> Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	<b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)

**Discarded OutFlow** Max=0.15 cfs @ 12.33 hrs HW=199.56' (Free Discharge)  
 ↑ **1=Exfiltration** ( Controls 0.15 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=197.70' (Free Discharge)  
 ↑ **2=Sharp-Crested Vee/Trap Weir** ( Controls 0.00 cfs)

**Summary for Pond 2P: Stone Drip Edge B**

Inflow Area = 0.062 ac, 100.00% Impervious, Inflow Depth > 6.75" for 50-Year 24-Hour event  
 Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.035 af  
 Outflow = 0.15 cfs @ 12.33 hrs, Volume= 0.035 af, Atten= 63%, Lag= 14.6 min  
 Discarded = 0.15 cfs @ 12.33 hrs, Volume= 0.035 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= 199.56' @ 12.33 hrs Surf.Area= 594 sf Storage= 294 cf

Plug-Flow detention time= 12.8 min calculated for 0.035 af (100% of inflow)  
 Center-of-Mass det. time= 12.6 min ( 755.2 - 742.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	197.70'	625 cf	<b>2.00'W x 100.00'L x 3.01'H Prismaoid Z=1.0</b> 1,562 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	<b>7.500 in/hr Exfiltration over Surface area</b> Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	<b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)

**Discarded OutFlow** Max=0.15 cfs @ 12.33 hrs HW=199.56' (Free Discharge)  
 ↖1=Exfiltration ( Controls 0.15 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=197.70' (Free Discharge)  
 ↖2=Sharp-Crested Vee/Trap Weir ( Controls 0.00 cfs)

**Summary for Pond 3P: Stone Drip Edge C**

Inflow Area = 0.062 ac, 100.00% Impervious, Inflow Depth > 6.75" for 50-Year 24-Hour event  
 Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.035 af  
 Outflow = 0.15 cfs @ 12.33 hrs, Volume= 0.035 af, Atten= 63%, Lag= 14.6 min  
 Discarded = 0.15 cfs @ 12.33 hrs, Volume= 0.035 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= 199.56' @ 12.33 hrs Surf.Area= 594 sf Storage= 294 cf

Plug-Flow detention time= 12.8 min calculated for 0.035 af (100% of inflow)  
 Center-of-Mass det. time= 12.6 min ( 755.2 - 742.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	197.70'	625 cf	<b>2.00'W x 100.00'L x 3.01'H Prismaoid Z=1.0</b> 1,562 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	<b>7.500 in/hr Exfiltration over Surface area</b> Conductivity to Groundwater Elevation = 195.50'
#2	Primary	200.70'	<b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)

**20656-PR**

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

Prepared by {enter your company name here}

Printed 2/5/2021

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Page 21

**Discarded OutFlow** Max=0.15 cfs @ 12.33 hrs HW=199.56' (Free Discharge)

↳1=Exfiltration ( Controls 0.15 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=197.70' (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

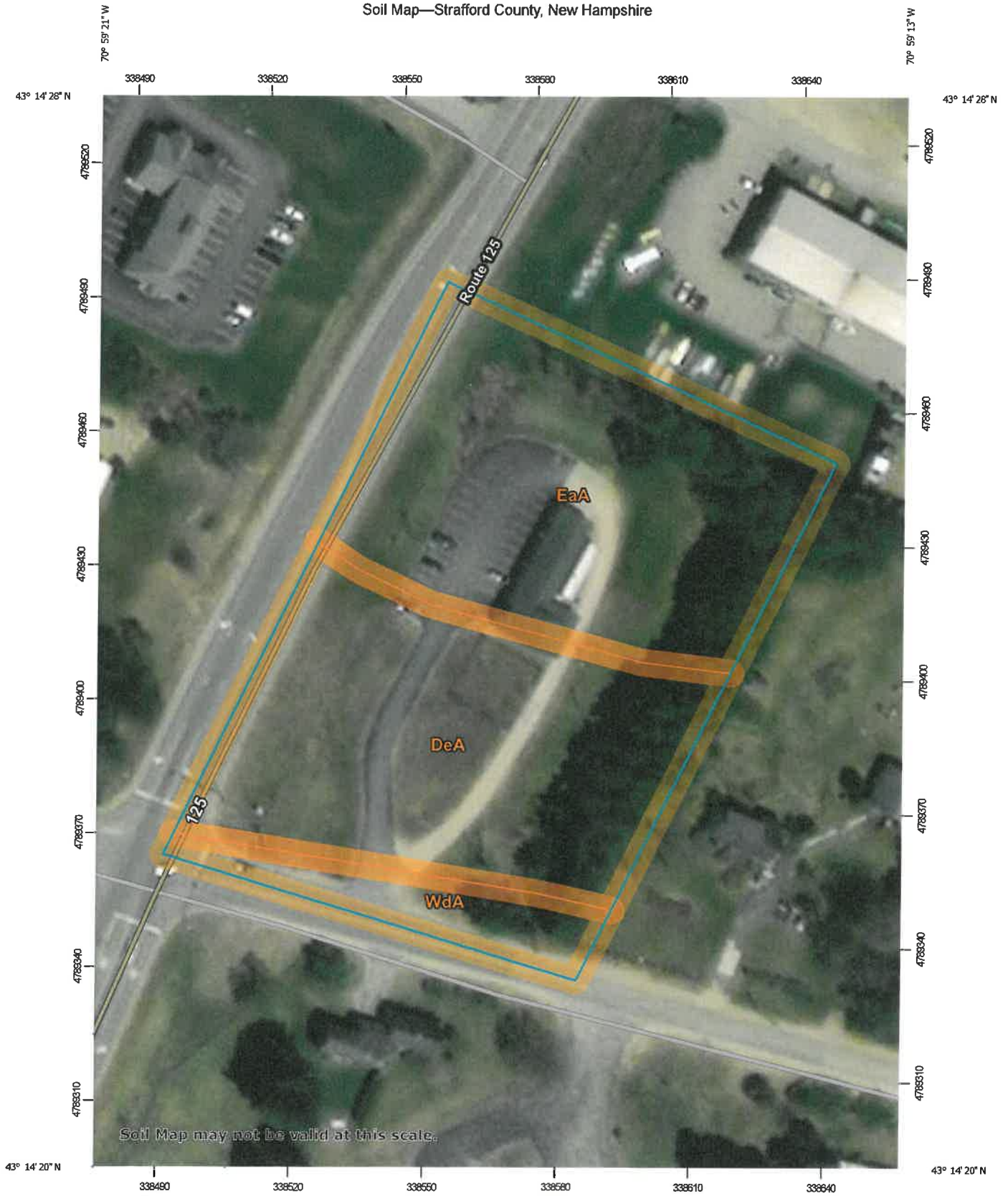
### Lower Confidence Limits

	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 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











































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Conservation Service

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National Cooperative Soil Survey

1/26/2021  
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## MAP LEGEND

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

## 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.

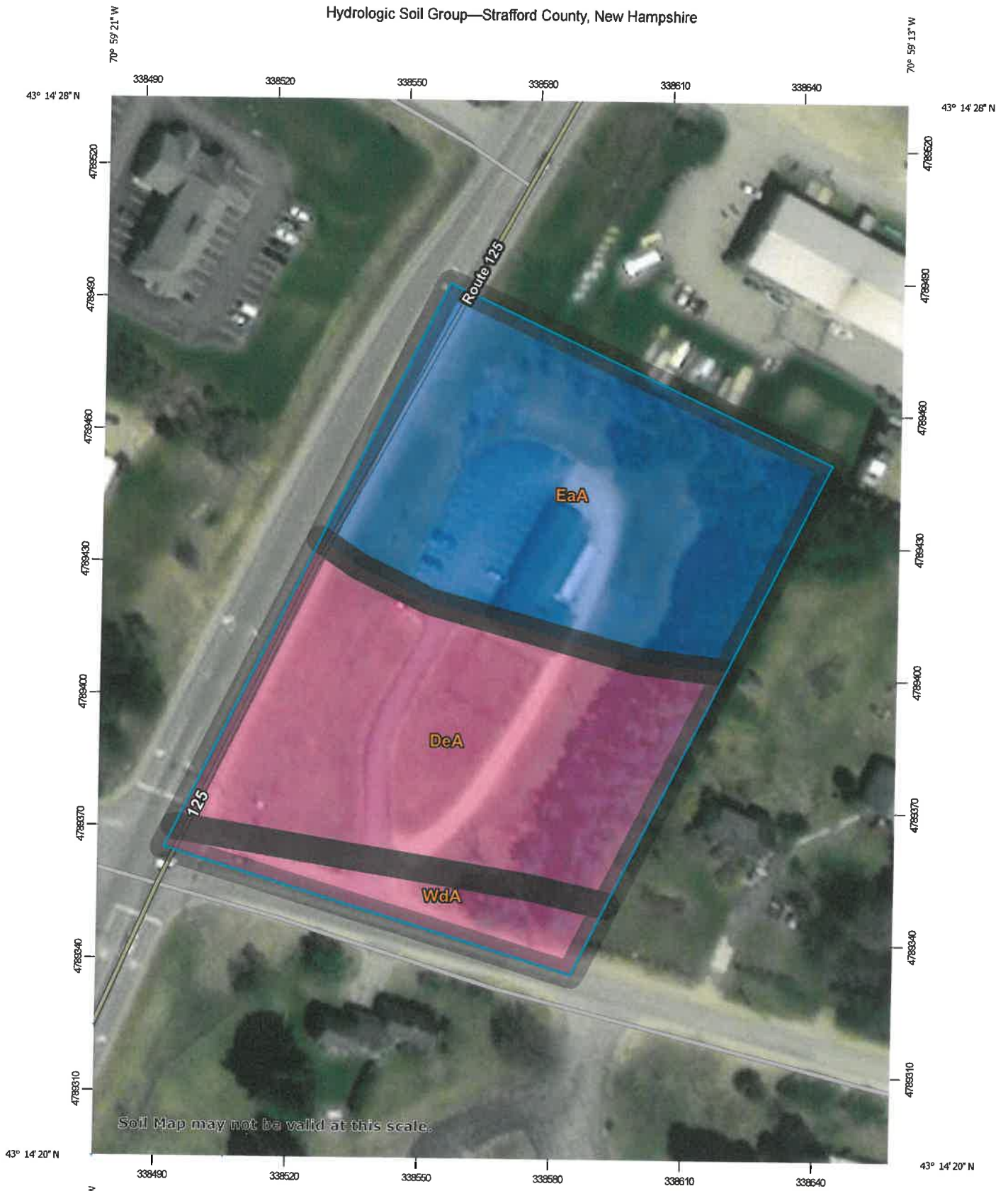
Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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.

## 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%
<b>Totals for Area of Interest</b>		<b>3.3</b>	<b>100.0%</b>

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

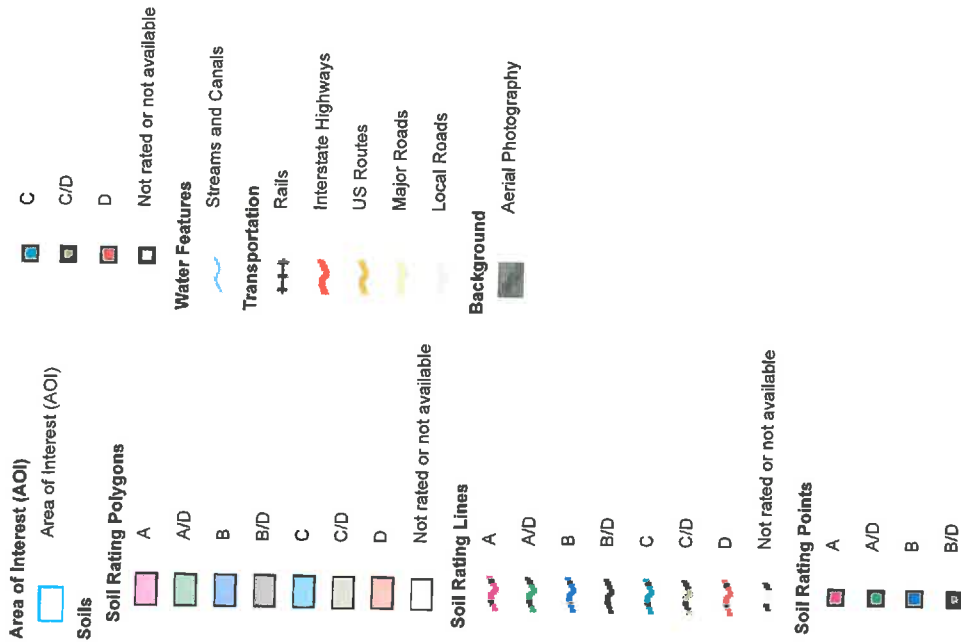


Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

1/26/2021  
Page 1 of 4

## MAP LEGEND



## 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%
<b>Totals for Area of Interest</b>			<b>3.3</b>	<b>100.0%</b>

### 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.

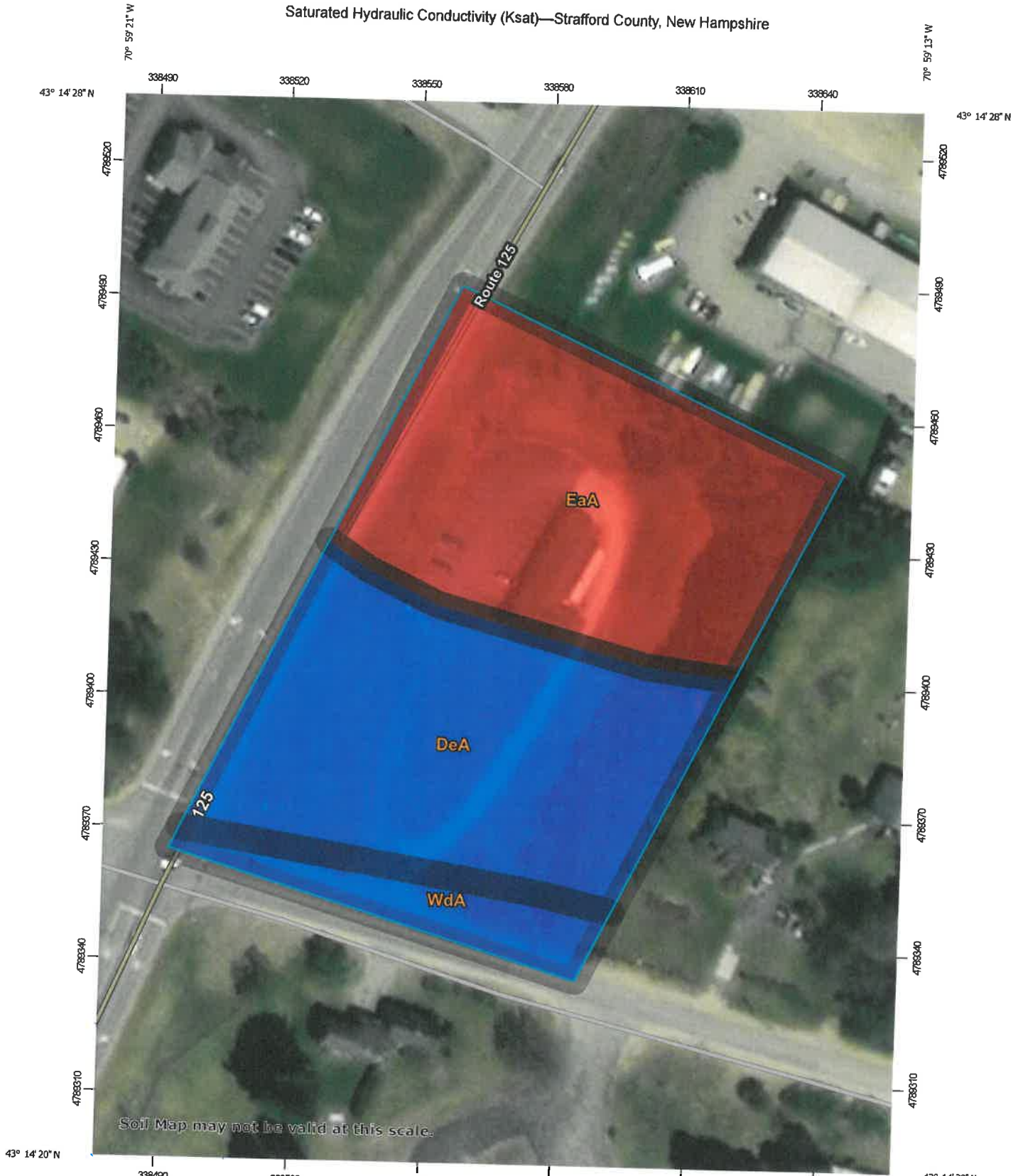
## Rating Options

*Aggregation Method: Dominant Condition*

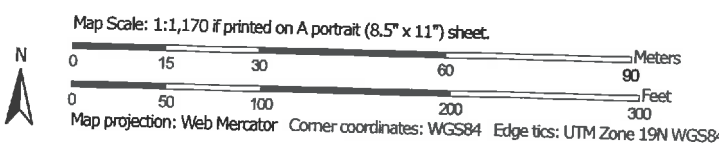
*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

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



Soil Map may not be valid at this scale.



## 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%
<b>Totals for Area of Interest</b>			<b>3.3</b>	<b>100.0%</b>

### 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

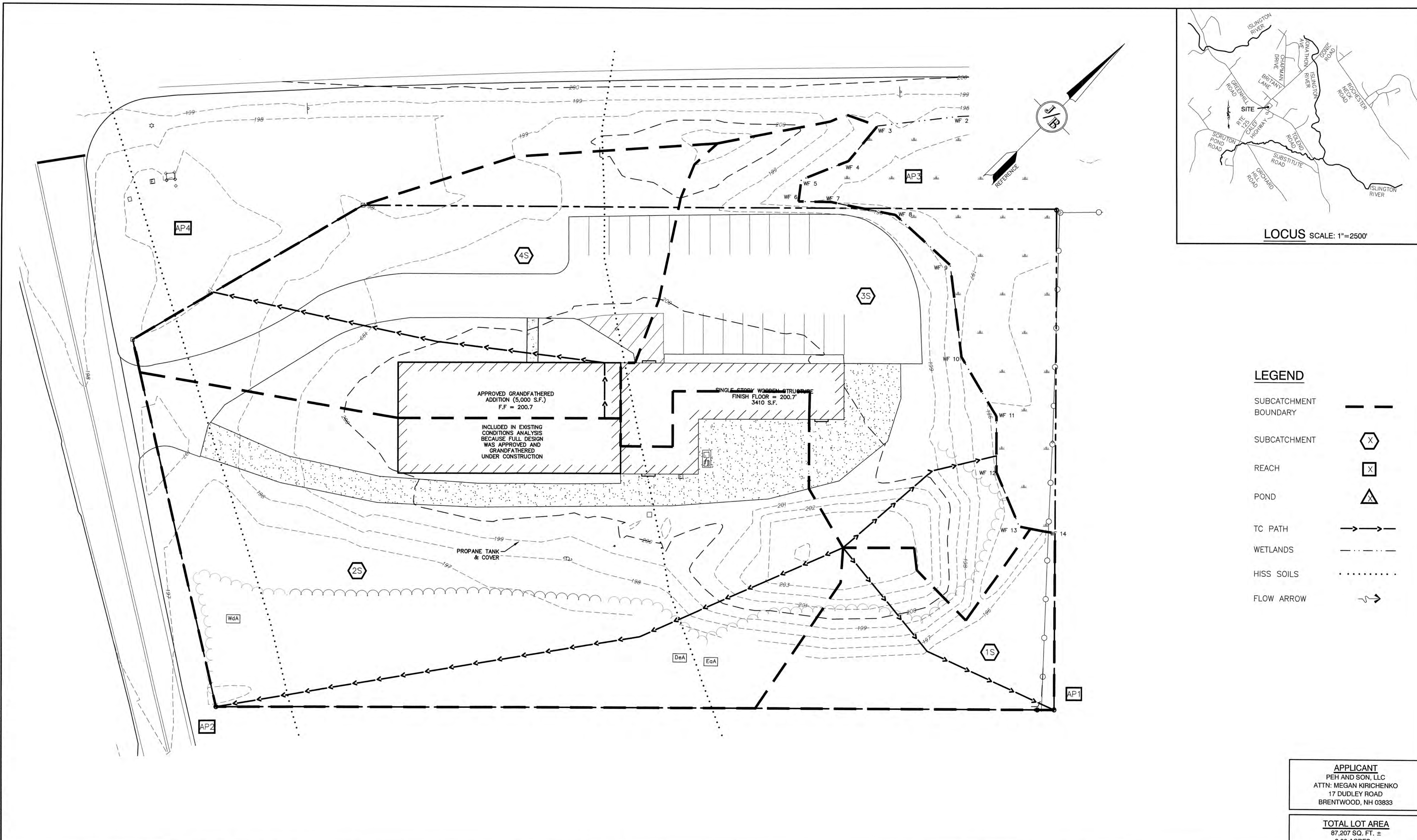
*Layer Options (Horizon Aggregation Method):* Depth Range (Weighted Average)

*Top Depth:* 0

*Bottom Depth:* 48

*Units of Measure:* Inches

F:\CADD\MASTER STANDARD\dwg\LB-LAYOUTS.dwg 3/12/2015 3:27:20 PM EDT



APPLICANT  
 PEH AND SON, LLC  
 ATTN: MEGAN KIRICHENKO  
 17 DUDLEY ROAD  
 BRENTWOOD, NH 03833

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



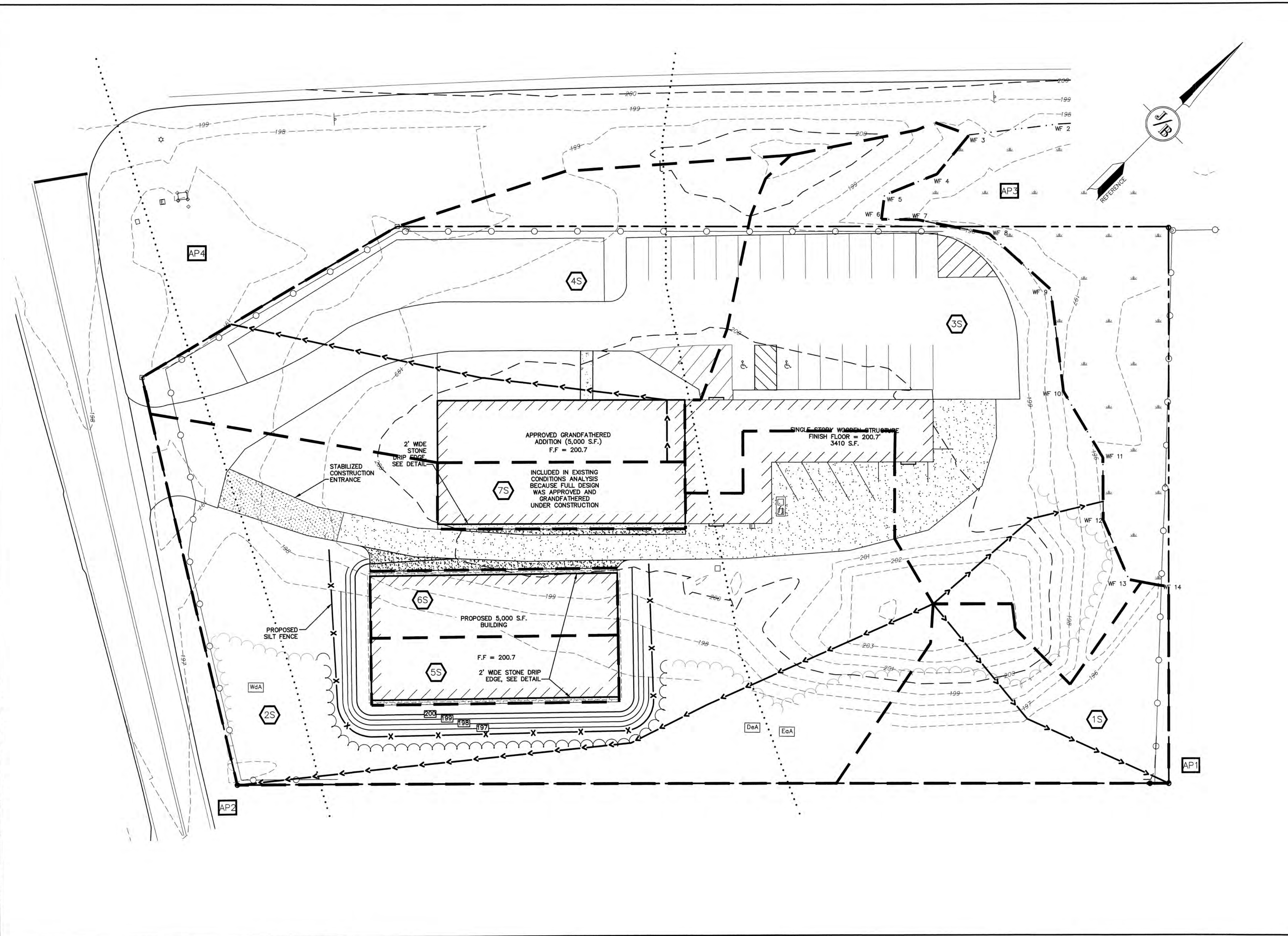
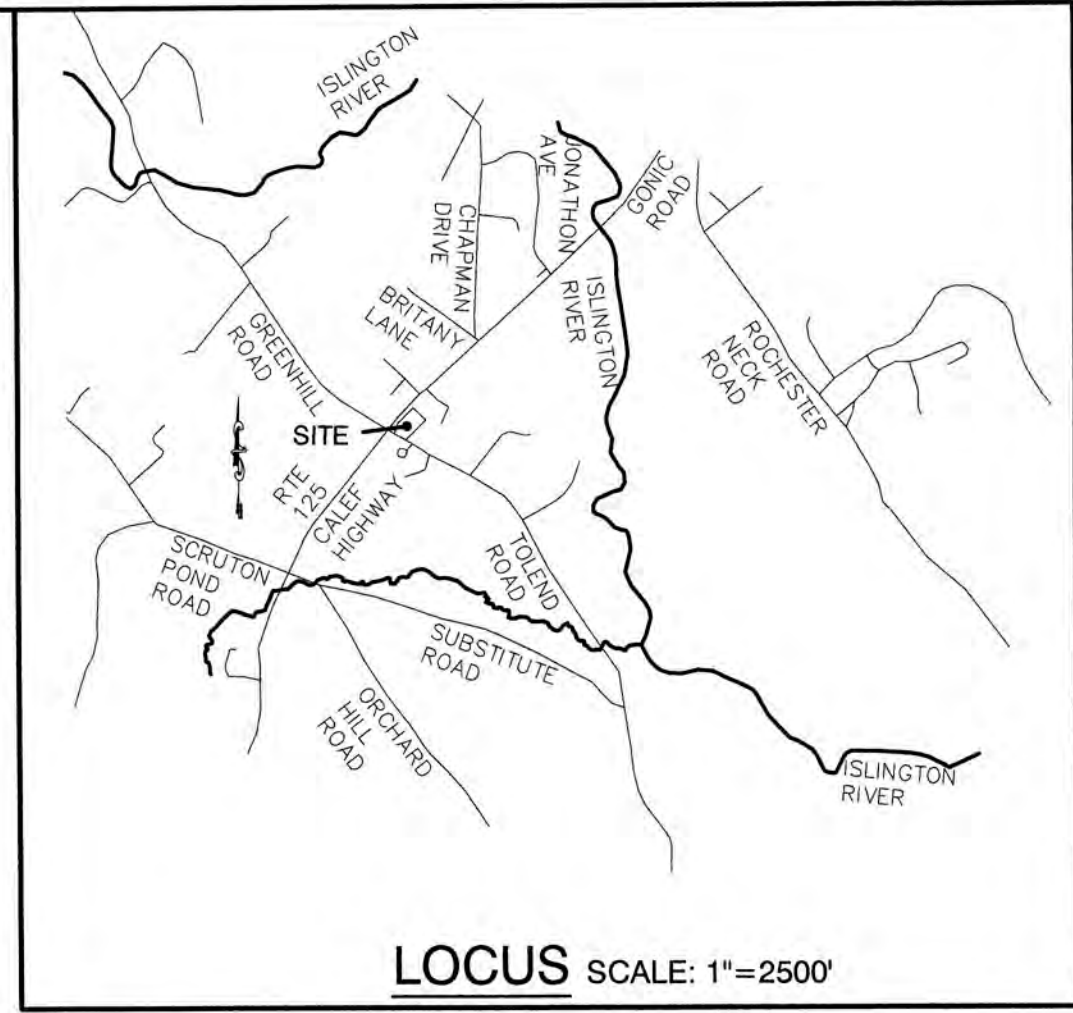
REV.	DATE	REVISION	BY
1	2/9/21	ISSUED FOR REVIEW	DJM
0	1/20/21	ISSUED TO CLIENT	DJM

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

Plan Name: **EXISTING WATERSHED PLAN**  
 Project: **WAREHOUSE BUILDING  
 7 TOLEND ROAD, BARRINGTON, NH**  
 Owner of Record: **BRIAN R. & DIANE I. BROCHU  
 2431 270TH AVE, OSCEOLA, IA 50213 BK 1309 PG 0427**

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

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**LEGEND**

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

**APPLICANT**  
 PEH AND SON, LLC  
 ATTN: MEGAN KIRICHENKO  
 17 DUDLEY ROAD  
 BRENTWOOD, NH 03833

**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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REV.	DATE	REVISION	BY
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.**

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Plan Name: **PROPOSED WATERSHED PLAN**  
 Warehouse Building  
 7 Tolend Road, Barrington, NH

Owner of Record: BRIAN R. & DIANE I. BROCHU  
 2431 270TH AVE, OSCEOLA, IA 50213    BK 1309 PG 0427

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