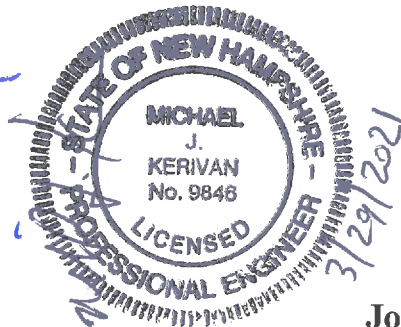


**DRAINAGE ANALYSIS**  
**SEDIMENT AND EROSION CONTROL PLAN**

**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:  
Jones & Beach Engineers, Inc.  
85 Portsmouth Avenue  
P.O. Box 219  
Stratham, NH 03885  
(603) 772-4746  
February 9, 2021  
REVISED March 26, 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 The vested addition is under construction and was previously approved and grandfathered under outdated regulations, so it is being included in the existing conditions model.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).

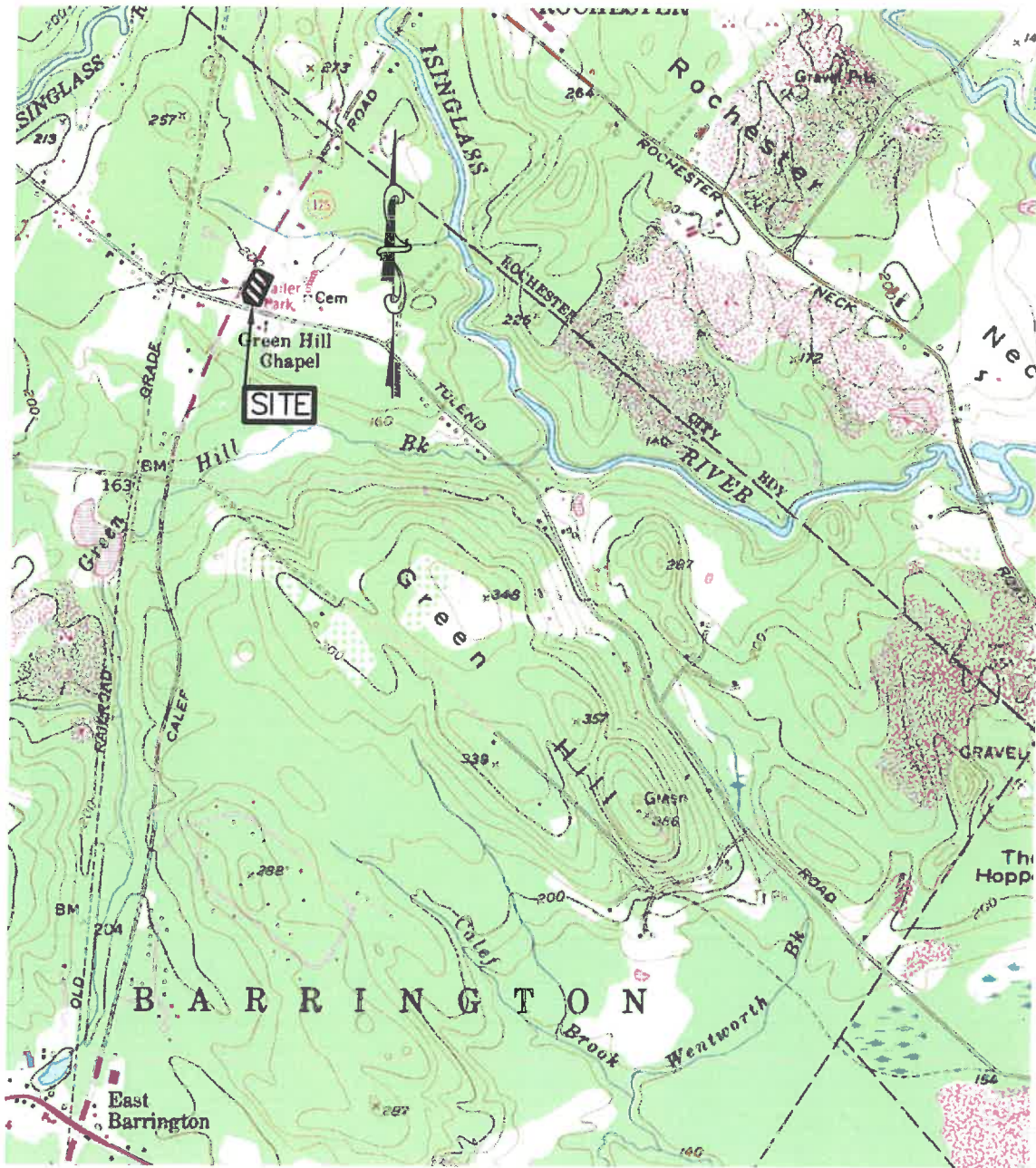
Finally, Subcatchment 4S represents the western corner of the site and is bounded by the crest of the building roofs and a sharp inflection in the site topography. Runoff from here sheet flows into a shallow depression at the intersection of Tolend Road and Route 125 (Analysis Point #4).

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.



GRAPHIC SCALE



( IN FEET )  
1 inch = 2000ft.

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

|                  |   |
|------------------|---|
| Drawing Name:    | USGS QUADRANT   |
| Project:         | VENTURE POWERSPORTS<br>7 TOLEND ROAD, BARRINGTON, NH                    |
| Owner of Record: | PEH AND SON, LLC<br>17 DUDLEY ROAD, BRENTWOOD, NH 03833 BK 4855 PG 0723 |

# TABLE OF CONTENTS

Executive Summary

USGS Quadrangle

|     |                              |        |
|-----|------------------------------|--------|
| 1.0 | Rainfall Characteristics     | Page 1 |
| 2.0 | Existing Conditions Analysis | Page 1 |
| 3.0 | Proposed Conditions Analysis | Page 1 |
| 4.0 | Conclusion                   | Page 2 |

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 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.

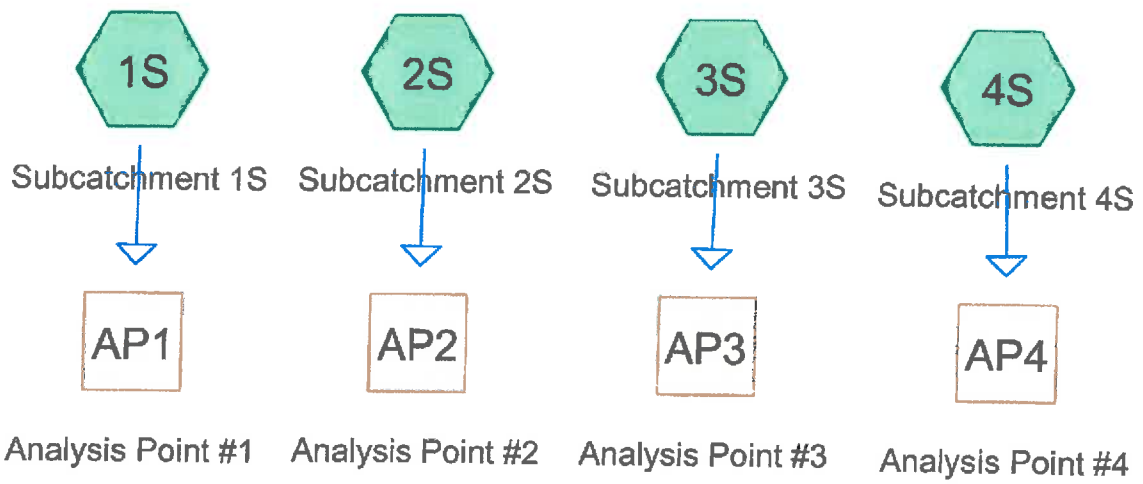
Daniel Meditz, E.I.T  
Project Engineer

## APPENDIX I

### EXISTING CONDITIONS DRAINAGE ANALYSIS

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





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**Area Listing (all nodes)**

| Area<br>(acres) | CN        | Description<br>(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>                              |

**Soil Listing (all nodes)**

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>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 1' 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**

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

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

20656-EX

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

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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>2.20"  
Flow Length=121' Tc=19.5 min CN=56 Runoff=0.28 cfs 0.031 af

**Subcatchment 2S: Subcatchment 2S** 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

**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

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

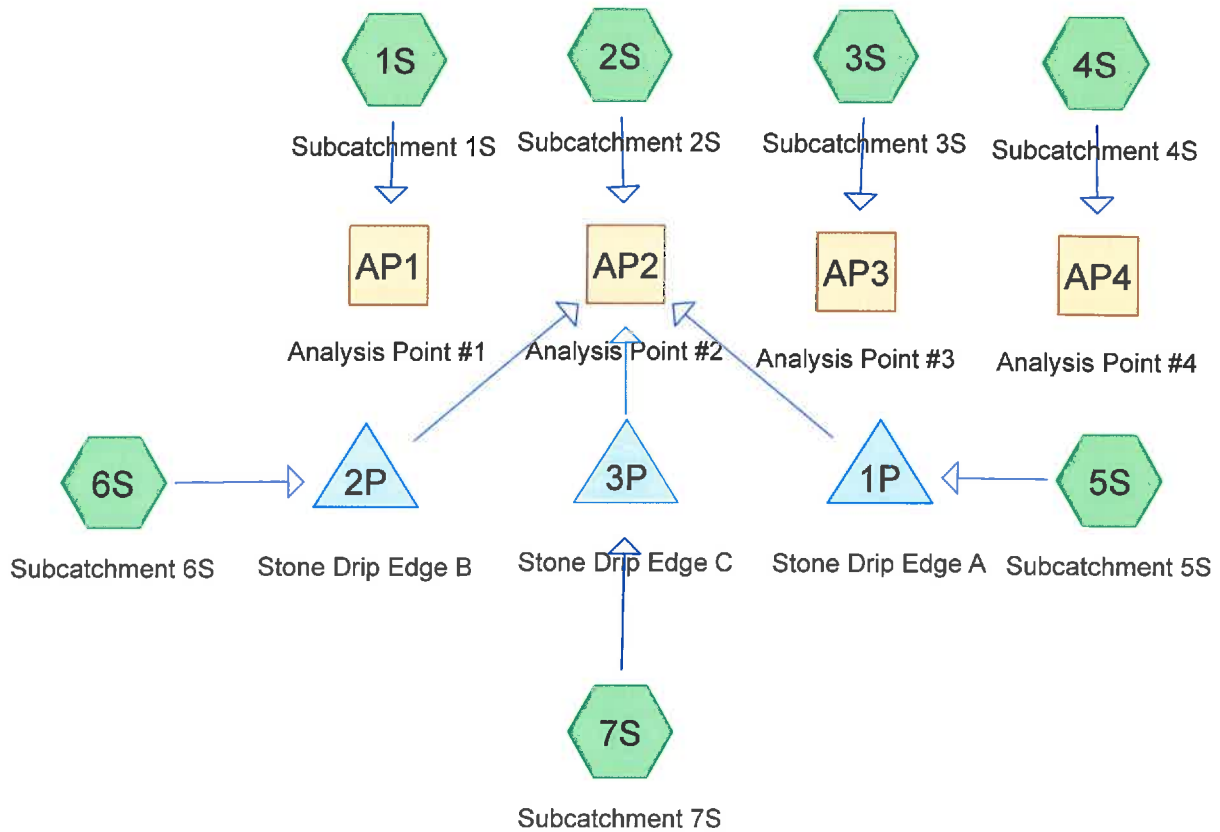
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

## APPENDIX II

### PROPOSED CONDITIONS DRAINAGE ANALYSIS

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





**Area Listing (all nodes)**

| Area<br>(acres) | CN        | Description<br>(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)                |
| <b>1.988</b>    | <b>67</b> | <b>TOTAL AREA</b>                              |

**Soil Listing (all nodes)**

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>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

**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=199.92' Storage=60 cf Inflow=0.22 cfs 0.018 af  
 Discarded=0.14 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.018 af

**Pond 3P: Stone Drip Edge C** Peak Elev=200.14' Storage=71 cf Inflow=0.19 cfs 0.016 af  
 Discarded=0.11 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.11 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

|   |  |
|---|--|
| <b>Subcatchment 1S: Subcatchment 1S</b> | Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>0.86"<br>Flow Length=121' Tc=19.5 min CN=56 Runoff=0.09 cfs 0.012 af                      |
| <b>Subcatchment 2S: Subcatchment 2S</b> | Runoff Area=29,100 sf 8.02% Impervious Runoff Depth>0.64"<br>Flow Length=294' Tc=26.5 min CN=52 Runoff=0.21 cfs 0.036 af                     |
| <b>Subcatchment 3S: Subcatchment 3S</b> | Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>2.49"<br>Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=1.29 cfs 0.097 af     |
| <b>Subcatchment 4S: Subcatchment 4S</b> | Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>1.41"<br>Flow Length=204' Tc=12.5 min CN=65 Runoff=0.58 cfs 0.056 af                    |
| <b>Subcatchment 5S: Subcatchment 5S</b> | Runoff Area=3,060 sf 100.00% Impervious Runoff Depth>4.40"<br>Tc=6.0 min CN=98 Runoff=0.31 cfs 0.026 af                                      |
| <b>Subcatchment 6S: Subcatchment 6S</b> | Runoff Area=3,306 sf 100.00% Impervious Runoff Depth>4.40"<br>Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af                                      |
| <b>Subcatchment 7S: Subcatchment 7S</b> | Runoff Area=2,895 sf 100.00% Impervious Runoff Depth>4.40"<br>Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af                                      |
| <b>Reach AP1: Analysis Point #1</b>     | Inflow=0.09 cfs 0.012 af<br>Outflow=0.09 cfs 0.012 af  |
| <b>Reach AP2: Analysis Point #2</b>     | Inflow=0.21 cfs 0.036 af<br>Outflow=0.21 cfs 0.036 af  |
| <b>Reach AP3: Analysis Point #3</b>     | Inflow=1.29 cfs 0.097 af<br>Outflow=1.29 cfs 0.097 af  |
| <b>Reach AP4: Analysis Point #4</b>     | Inflow=0.58 cfs 0.056 af<br>Outflow=0.58 cfs 0.056 af  |
| <b>Pond 1P: Stone Drip Edge A</b>       | Peak Elev=197.26' Storage=146 cf Inflow=0.31 cfs 0.026 af<br>Discarded=0.15 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.026 af |
| <b>Pond 2P: Stone Drip Edge B</b>       | Peak Elev=200.17' Storage=126 cf Inflow=0.34 cfs 0.028 af<br>Discarded=0.18 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.028 af |
| <b>Pond 3P: Stone Drip Edge C</b>       | Peak Elev=200.56' Storage=137 cf Inflow=0.29 cfs 0.024 af<br>Discarded=0.15 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.15 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              |                | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 2.6      | 20            | 0.1670        | 0.13              |                | <b>Sheet Flow,</b><br>Woods: Light underbrush n= 0.400 P2= 3.08" |
| 14.2     | 41            | 0.0100        | 0.05              |                | <b>Sheet Flow,</b><br>Woods: Light underbrush n= 0.400 P2= 3.08" |
| 0.7      | 21            | 0.0100        | 0.50              |                | <b>Shallow Concentrated Flow,</b><br>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              |                | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 2.1      | 38            | 0.1400        | 0.30              |                | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 9.2      | 24            | 0.0100        | 0.04              |                | <b>Sheet Flow,</b><br>Woods: Light underbrush n= 0.400 P2= 3.08" |
| 9.1      | 194           | 0.0050        | 0.35              |                | <b>Shallow Concentrated Flow,</b><br>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><br>Grass: Short n= 0.150 P2= 3.08"            |
| 4.4      | 30            | 0.1000        | 0.11              |                | <b>Sheet Flow,</b><br>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><br>Smooth surfaces n= 0.011 P2= 3.08"             |
| 10.5     | 75            | 0.0100        | 0.12              |                | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"                |
| 0.5      | 35            | 0.0280        | 1.17              |                | <b>Shallow Concentrated Flow,</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 31            | 0.0200        | 2.87              |                | <b>Shallow Concentrated Flow,</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow,</b><br>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      |               |               |                   |                | <b>Direct Entry,</b> |

**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        | <b>4.00'W x 100.00'L x 3.01'H Prismatoid Z=1.0</b><br>2,183 cf Overall x 40.0% Voids |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Discarded | 196.50' | <b>7.080 in/hr Exfiltration over Horizontal area</b><br>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 @ 12.25 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**

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 = 0.18 cfs @ 12.22 hrs, Volume= 0.028 af, Atten= 46%, Lag= 7.9 min  
 Discarded = 0.18 cfs @ 12.22 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= 200.17' @ 12.22 hrs Surf.Area= 654 sf Storage= 126 cf

Plug-Flow detention time= 5.6 min calculated for 0.028 af (100% of inflow)  
 Center-of-Mass det. time= 5.2 min ( 754.0 - 748.9 )

| Volume           | Invert            | Avail.Storage | Storage Description  |                        |
|------------------|-------------------|---------------|--|------------------------|
| #1               | 199.69'           | 271 cf        | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |                        |
| Elevation (feet) | Surf.Area (sq-ft) | Voids (%)     | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) |
| 199.69           | 654               | 0.0           | 0  | 0                      |
| 199.70           | 654               | 40.0          | 3  | 3                      |
| 200.70           | 654               | 40.0          | 262  | 264                    |
| 200.71           | 654               | 100.0         | 7  | 271                    |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Discarded | 199.69' | <b>7.080 in/hr Exfiltration over Horizontal area</b><br>Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10' |
| #2     | Primary   | 200.70' | <b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)   |

**Discarded OutFlow** Max=0.18 cfs @ 12.22 hrs HW=200.17' (Free Discharge)

↳1=Exfiltration ( Controls 0.18 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=199.69' (Free Discharge)

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

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

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 = 0.15 cfs @ 12.24 hrs, Volume= 0.024 af, Atten= 50%, Lag= 9.2 min  
 Discarded = 0.15 cfs @ 12.24 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= 200.56' @ 12.24 hrs Surf.Area= 395 sf Storage= 137 cf

Plug-Flow detention time= 7.1 min calculated for 0.024 af (100% of inflow)  
 Center-of-Mass det. time= 6.7 min ( 755.5 - 748.9 )

20656-PR

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

Prepared by {enter your company name here}

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| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 199.69' | 164 cf        | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Voids<br>(%) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|--------------|---------------------------|---------------------------|
| 199.69              | 395                  | 0.0          | 0                         | 0                         |
| 199.70              | 395                  | 40.0         | 2                         | 2                         |
| 200.70              | 395                  | 40.0         | 158                       | 160                       |
| 200.71              | 395                  | 100.0        | 4                         | 164                       |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Discarded | 199.69' | <b>7.080 in/hr Exfiltration over Horizontal area</b><br>Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10' |
| #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 @ 12.24 hrs HW=200.56' (Free Discharge)

↑1=Exfiltration ( Controls 0.15 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=199.69' (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

|                                       |  |
|---------------------------------------|--|
| <b>Subcatchment1S: Subcatchment1S</b> | Runoff Area=7,309 sf 0.00% Impervious Runoff Depth>1.50"<br>Flow Length=121' Tc=19.5 min CN=56 Runoff=0.18 cfs 0.021 af                      |
| <b>Subcatchment2S: Subcatchment2S</b> | Runoff Area=29,100 sf 8.02% Impervious Runoff Depth>1.20"<br>Flow Length=294' Tc=26.5 min CN=52 Runoff=0.47 cfs 0.067 af                     |
| <b>Subcatchment3S: Subcatchment3S</b> | Runoff Area=20,430 sf 45.23% Impervious Runoff Depth>3.54"<br>Flow Length=82' Slope=0.1000 '/' Tc=7.5 min CN=79 Runoff=1.83 cfs 0.138 af     |
| <b>Subcatchment4S: Subcatchment4S</b> | Runoff Area=20,515 sf 41.46% Impervious Runoff Depth>2.24"<br>Flow Length=204' Tc=12.5 min CN=65 Runoff=0.96 cfs 0.088 af                    |
| <b>Subcatchment5S: Subcatchment5S</b> | Runoff Area=3,060 sf 100.00% Impervious Runoff Depth>5.61"<br>Tc=6.0 min CN=98 Runoff=0.39 cfs 0.033 af                                      |
| <b>Subcatchment6S: Subcatchment6S</b> | Runoff Area=3,306 sf 100.00% Impervious Runoff Depth>5.61"<br>Tc=6.0 min CN=98 Runoff=0.42 cfs 0.035 af                                      |
| <b>Subcatchment7S: Subcatchment7S</b> | Runoff Area=2,895 sf 100.00% Impervious Runoff Depth>5.61"<br>Tc=6.0 min CN=98 Runoff=0.37 cfs 0.031 af                                      |
| <b>Reach AP1: Analysis Point #1</b>   | Inflow=0.18 cfs 0.021 af<br>Outflow=0.18 cfs 0.021 af  |
| <b>Reach AP2: Analysis Point #2</b>   | Inflow=0.47 cfs 0.068 af<br>Outflow=0.47 cfs 0.068 af  |
| <b>Reach AP3: Analysis Point #3</b>   | Inflow=1.83 cfs 0.138 af<br>Outflow=1.83 cfs 0.138 af  |
| <b>Reach AP4: Analysis Point #4</b>   | Inflow=0.96 cfs 0.088 af<br>Outflow=0.96 cfs 0.088 af  |
| <b>Pond 1P: Stone Drip Edge A</b>     | Peak Elev=197.52' Storage=207 cf Inflow=0.39 cfs 0.033 af<br>Discarded=0.18 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.033 af |
| <b>Pond 2P: Stone Drip Edge B</b>     | Peak Elev=200.39' Storage=184 cf Inflow=0.42 cfs 0.035 af<br>Discarded=0.22 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.035 af |
| <b>Pond 3P: Stone Drip Edge C</b>     | Peak Elev=200.70' Storage=161 cf Inflow=0.37 cfs 0.031 af<br>Discarded=0.16 cfs 0.030 af Primary=0.17 cfs 0.001 af Outflow=0.33 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

**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=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

**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=3,060 sf 100.00% Impervious Runoff Depth>6.75"  
 Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af

**Subcatchment6S: Subcatchment6S** 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

**Subcatchment7S: Subcatchment7S** 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 0.104 af  
 Outflow=0.77 cfs 0.104 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=200.61' Storage=242 cf Inflow=0.51 cfs 0.043 af  
 Discarded=0.25 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.25 cfs 0.043 af

**Pond 3P: Stone Drip Edge C** Peak Elev=200.70' Storage=161 cf Inflow=0.45 cfs 0.037 af  
 Discarded=0.16 cfs 0.035 af Primary=0.29 cfs 0.003 af Outflow=0.45 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              |                | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 2.6      | 20            | 0.1670        | 0.13              |                | <b>Sheet Flow,</b><br>Woods: Light underbrush n= 0.400 P2= 3.08" |
| 14.2     | 41            | 0.0100        | 0.05              |                | <b>Sheet Flow,</b><br>Woods: Light underbrush n= 0.400 P2= 3.08" |
| 0.7      | 21            | 0.0100        | 0.50              |                | <b>Shallow Concentrated Flow,</b><br>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<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description  |
|-------------|------------------|------------------|----------------------|-------------------|--|
| 6.1         | 38               | 0.0100           | 0.10                 |                   | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 2.1         | 38               | 0.1400           | 0.30                 |                   | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 9.2         | 24               | 0.0100           | 0.04                 |                   | <b>Sheet Flow,</b><br>Woods: Light underbrush n= 0.400 P2= 3.08" |
| 9.1         | 194              | 0.0050           | 0.35                 |                   | <b>Shallow Concentrated Flow,</b><br>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<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description  |
|-------------|------------------|------------------|----------------------|-------------------|--|
| 3.1         | 52               | 0.1000           | 0.28                 |                   | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"            |
| 4.4         | 30               | 0.1000           | 0.11                 |                   | <b>Sheet Flow,</b><br>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><br>Smooth surfaces n= 0.011 P2= 3.08"             |
| 10.5     | 75            | 0.0100        | 0.12              |                | <b>Sheet Flow,</b><br>Grass: Short n= 0.150 P2= 3.08"                |
| 0.5      | 35            | 0.0280        | 1.17              |                | <b>Shallow Concentrated Flow,</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 31            | 0.0200        | 2.87              |                | <b>Shallow Concentrated Flow,</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow,</b><br>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      |               |               |                   |                | <b>Direct Entry,</b> |

**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 > 1.42" for 50-Year 24-Hour event  
Inflow = 0.77 cfs @ 12.42 hrs, Volume= 0.104 af  
Outflow = 0.77 cfs @ 12.42 hrs, Volume= 0.104 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        | <b>4.00'W x 100.00'L x 3.01'H Prismatic Z=1.0</b><br>2,183 cf Overall x 40.0% Voids |

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

**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**

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 = 0.25 cfs @ 12.24 hrs, Volume= 0.043 af, Atten= 51%, Lag= 9.3 min  
 Discarded = 0.25 cfs @ 12.24 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= 200.61' @ 12.24 hrs Surf.Area= 654 sf Storage= 242 cf

Plug-Flow detention time= 7.2 min calculated for 0.043 af (100% of inflow)  
 Center-of-Mass det. time= 6.8 min ( 749.4 - 742.5 )

| Volume           | Invert            | Avail.Storage | Storage Description  |                        |
|------------------|-------------------|---------------|--|------------------------|
| #1               | 199.69'           | 271 cf        | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |                        |
| Elevation (feet) | Surf.Area (sq-ft) | Voids (%)     | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) |
| 199.69           | 654               | 0.0           | 0  | 0                      |
| 199.70           | 654               | 40.0          | 3  | 3                      |
| 200.70           | 654               | 40.0          | 262  | 264                    |
| 200.71           | 654               | 100.0         | 7  | 271                    |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Discarded | 199.69' | <b>7.080 in/hr Exfiltration over Horizontal area</b><br>Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10' |
| #2     | Primary   | 200.70' | <b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)   |

**Discarded OutFlow** Max=0.25 cfs @ 12.24 hrs HW=200.61' (Free Discharge)  
 ↳1=Exfiltration ( Controls 0.25 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=199.69' (Free Discharge)  
 ↳2=Sharp-Crested Vee/Trap Weir ( Controls 0.00 cfs)

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

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

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 = 0.45 cfs @ 12.11 hrs, Volume= 0.037 af, Atten= 0%, Lag= 1.6 min  
 Discarded = 0.16 cfs @ 12.10 hrs, Volume= 0.035 af  
 Primary = 0.29 cfs @ 12.11 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 200.70' @ 12.10 hrs Surf.Area= 395 sf Storage= 161 cf

Plug-Flow detention time= 7.1 min calculated for 0.037 af (100% of inflow)  
 Center-of-Mass det. time= 6.7 min ( 749.3 - 742.5 )

**20656-PR**

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

Prepared by {enter your company name here}

Printed 3/29/2021

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| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 199.69' | 164 cf        | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Voids<br>(%) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|--------------|---------------------------|---------------------------|
| 199.69              | 395                  | 0.0          | 0                         | 0                         |
| 199.70              | 395                  | 40.0         | 2                         | 2                         |
| 200.70              | 395                  | 40.0         | 158                       | 160                       |
| 200.71              | 395                  | 100.0        | 4                         | 164                       |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Discarded | 199.69' | <b>7.080 in/hr Exfiltration over Horizontal area</b><br>Conductivity to Groundwater Elevation = 199.00' Phase-In= 0.10' |
| #2     | Primary   | 200.70' | <b>204.0' long Sharp-Crested Vee/Trap Weir</b> Cv= 2.62 (C= 3.28)   |

**Discarded OutFlow** Max=0.16 cfs @ 12.10 hrs HW=200.70' (Free Discharge)

↑1=Exfiltration ( Controls 0.16 cfs)

**Primary OutFlow** Max=0.16 cfs @ 12.11 hrs HW=200.70' (Free Discharge)

↑2=Sharp-Crested Vee/Trap Weir (Weir Controls 0.16 cfs @ 0.20 fps)

## 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 |

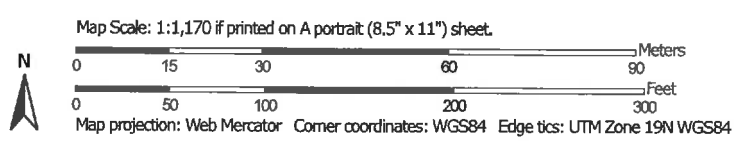
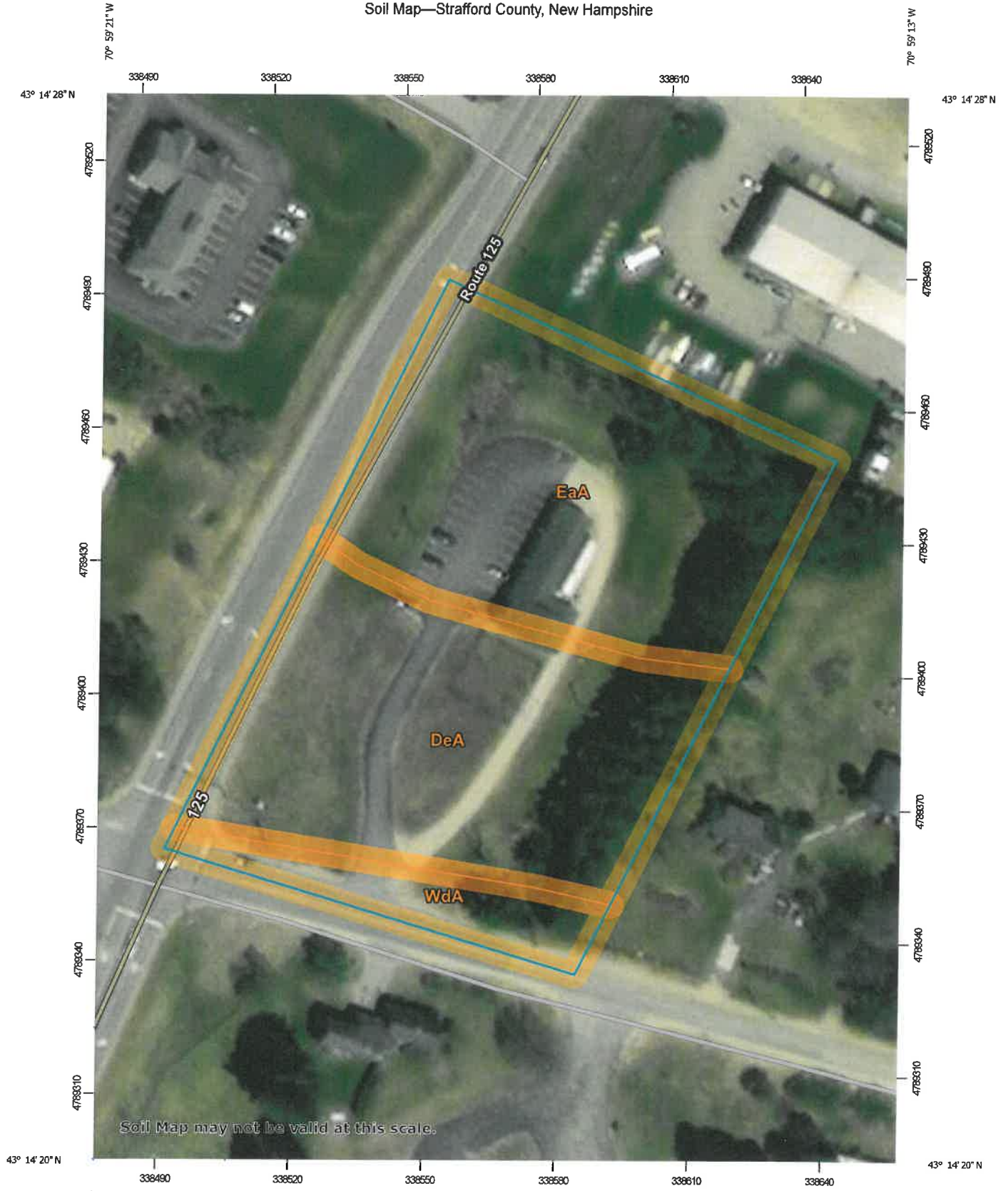
### Lower Confidence Limits

|       | 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)**
  -  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
- 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.

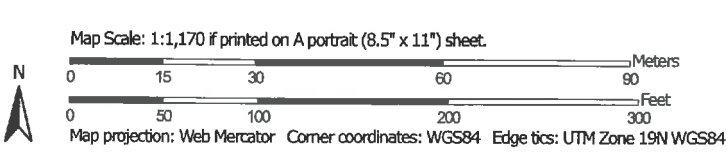
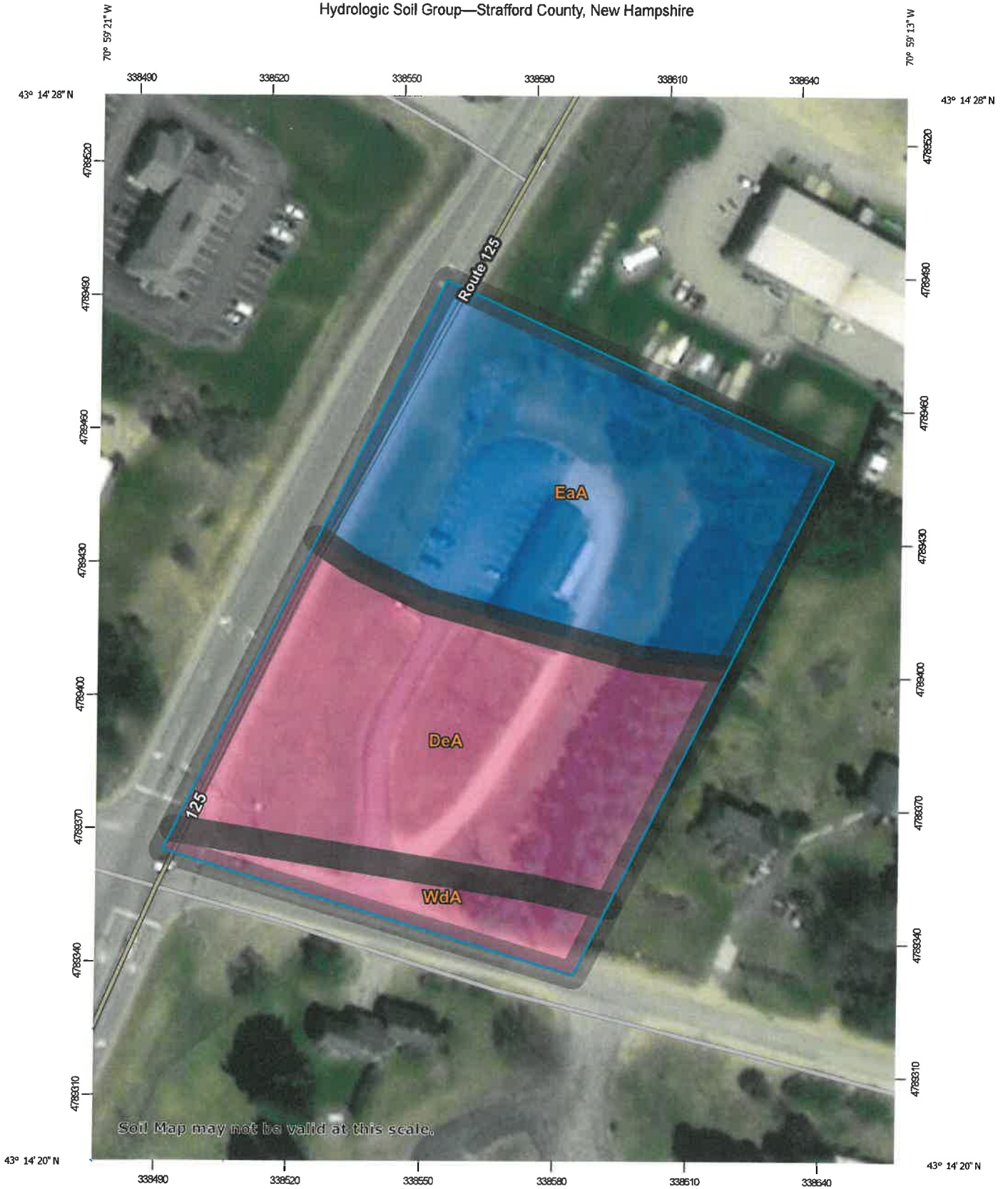
Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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.

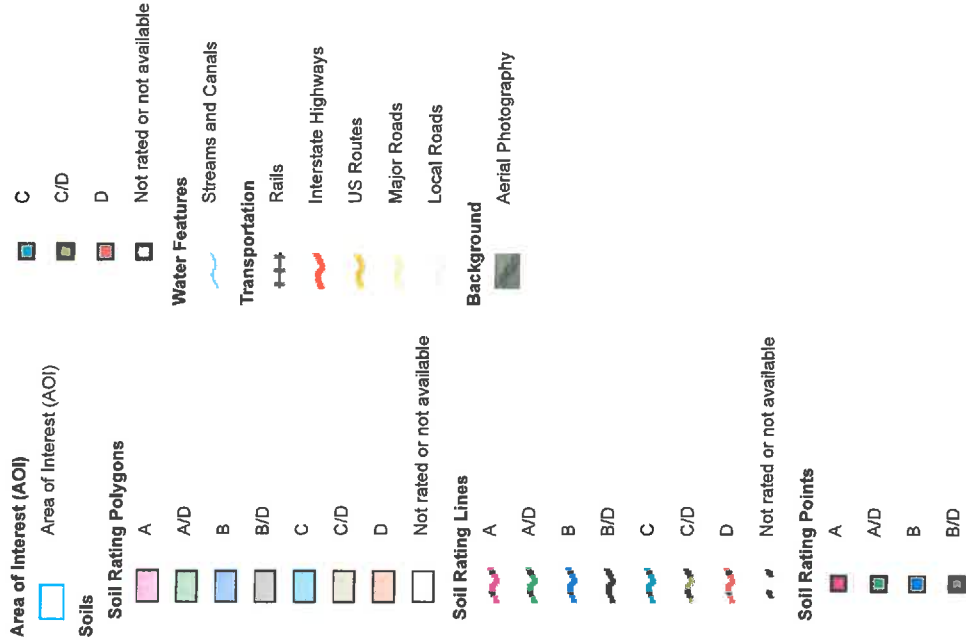
## Map Unit Legend

| 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 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.

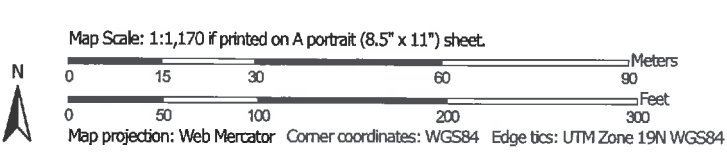
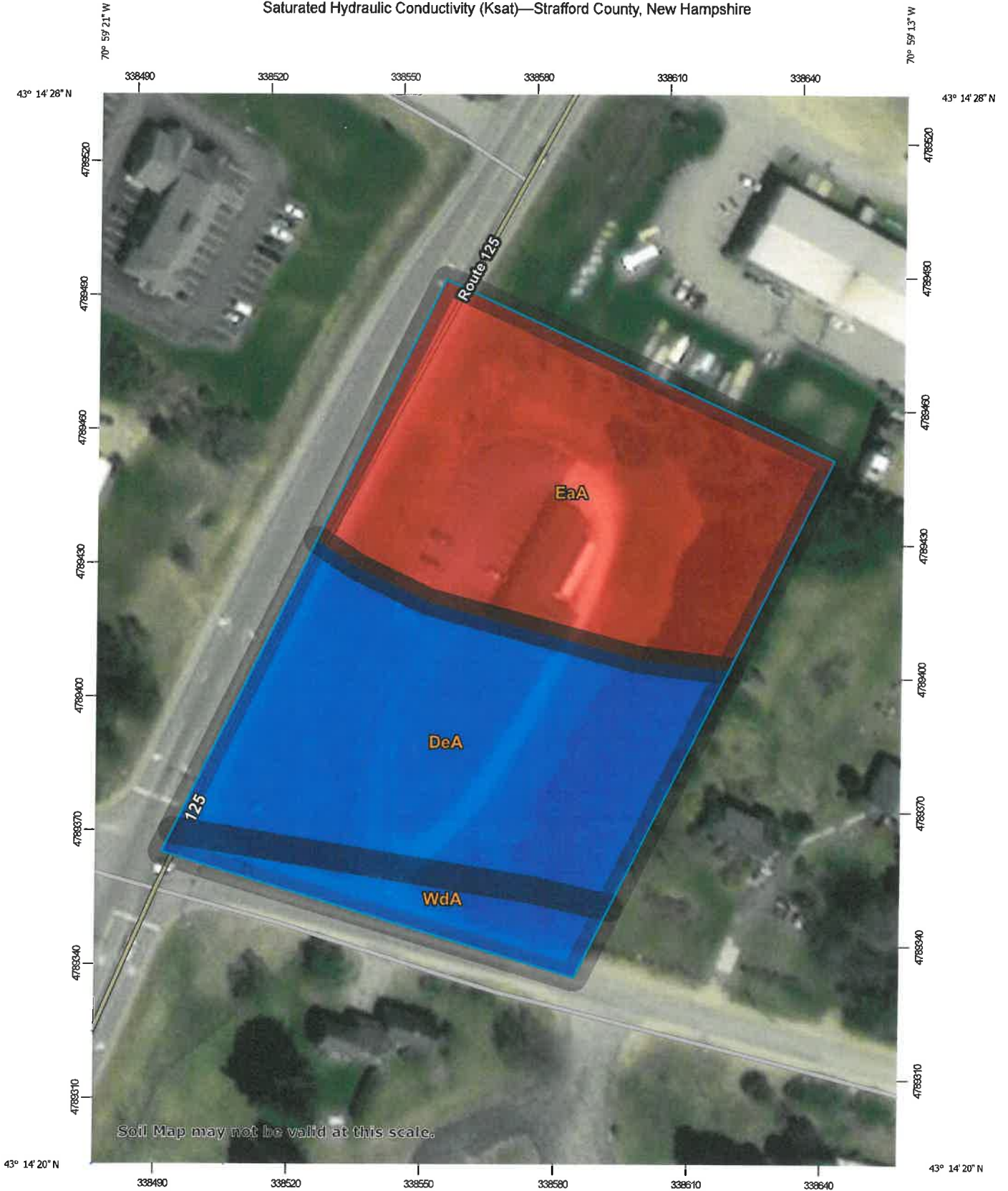
## Rating Options

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

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



## 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

# **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

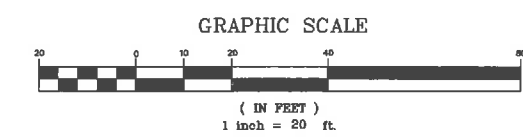
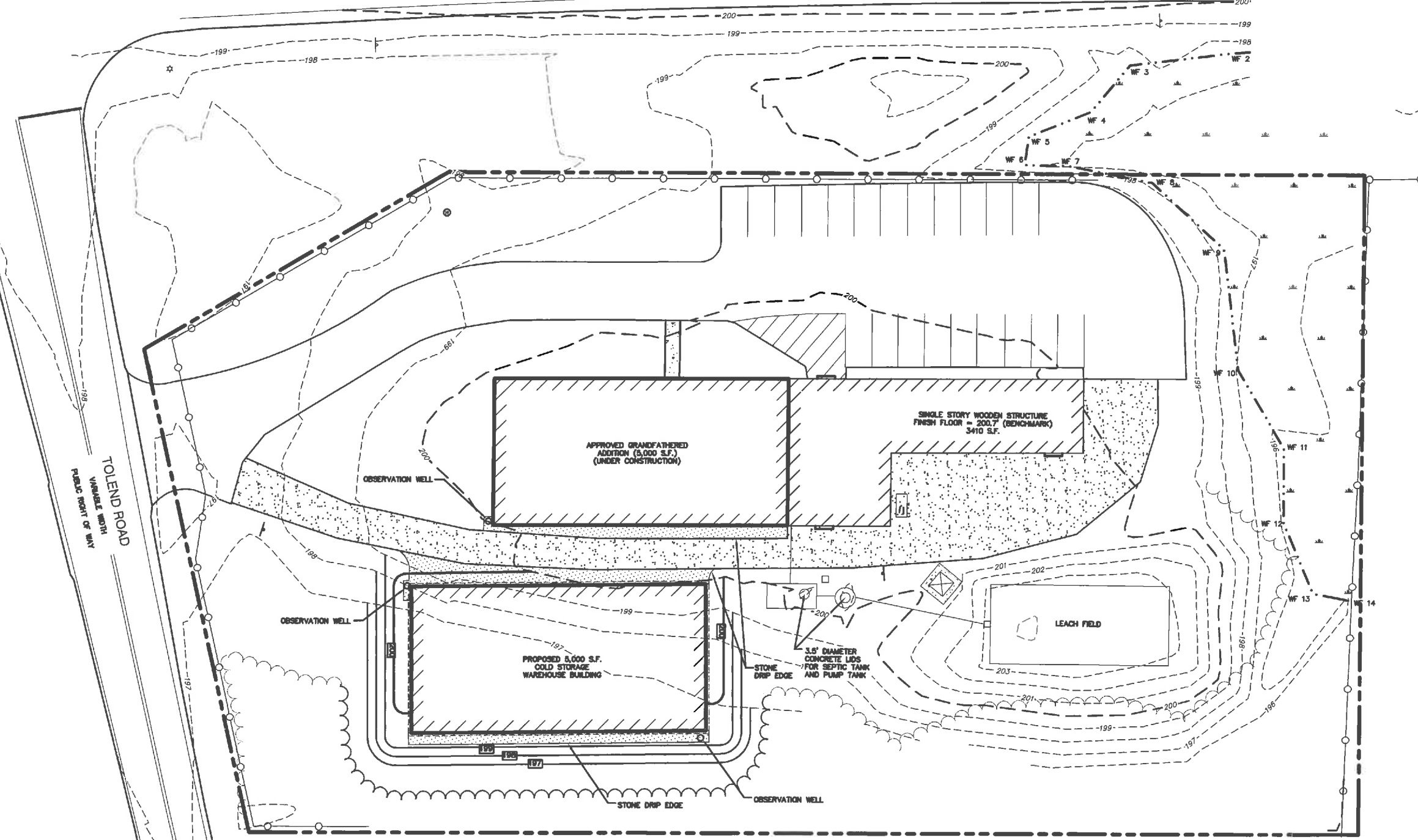
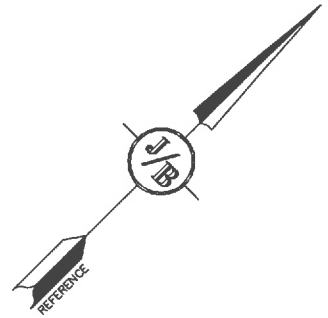
### Annual Operations and Maintenance Report

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.

| <b>Construction Activity</b> | <b>Date of Inspection</b> | <b>Who Inspected</b> | <b>Findings of Inspector &amp; Repairs</b> |
|------------------------------|---------------------------|----------------------|--|
| Vegetation and Landscaping   |                           |                      |  |
| Parking Lots and Roadways    |                           |                      |  |
| Drip Edges                   |                           |                      |  |



NH ROUTE 125  
 VARIABLE WIDTH  
 PUBLIC RIGHT-OF-WAY



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

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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  |
|------|---------|-------------------------------------|-----|
| 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 |

Designed and Produced In NH

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

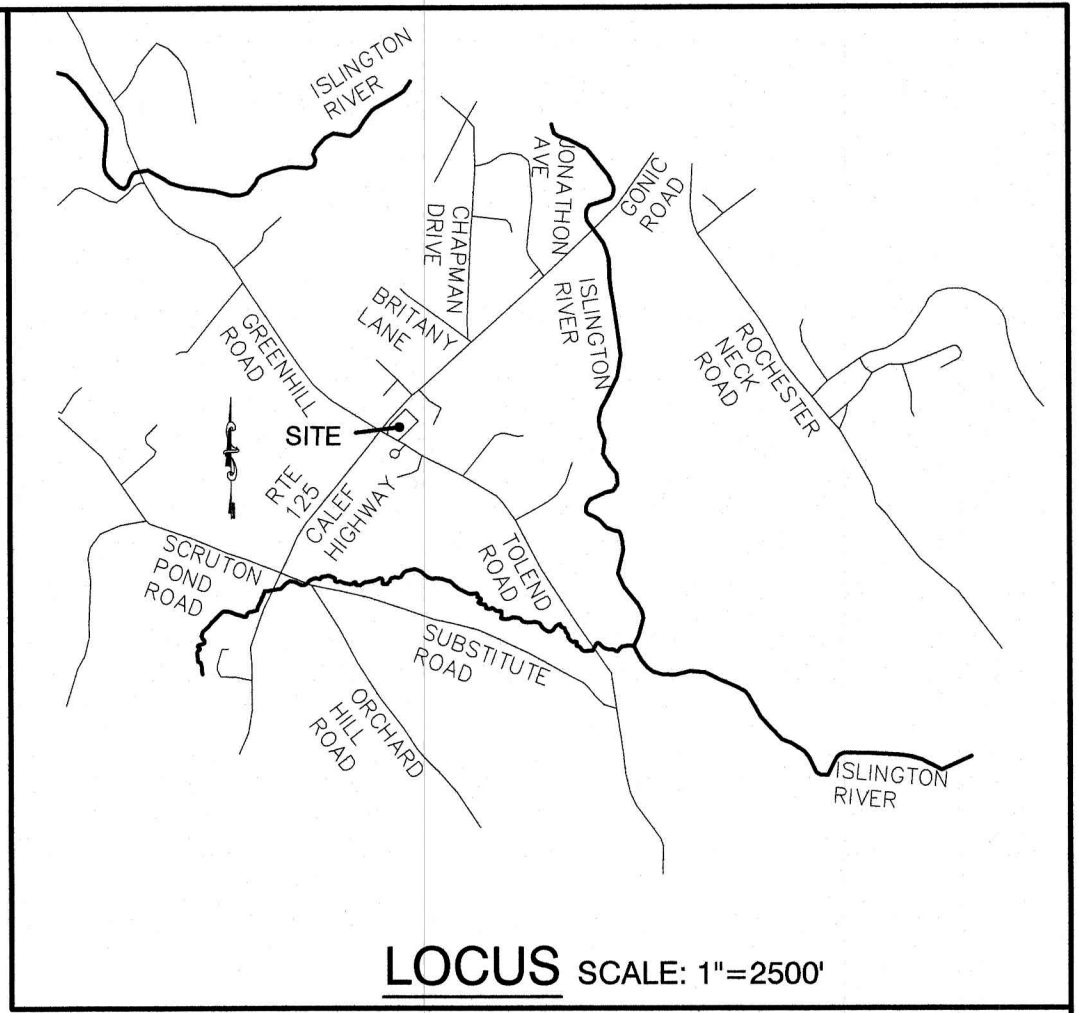
85 Portsmouth Ave.    PO Box 219    Stratham, NH 03885    603-772-4748    FAX: 603-772-0227    E-MAIL: JBE@JONESANDBEACH.COM

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

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

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

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

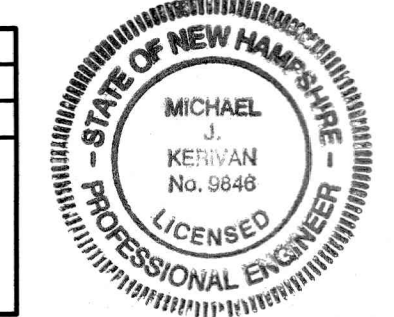
LOCATION OF OLD PROPANE TANK

- 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

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

F:\CAD\MASTER STANDARD\dwg\B-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

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    | 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

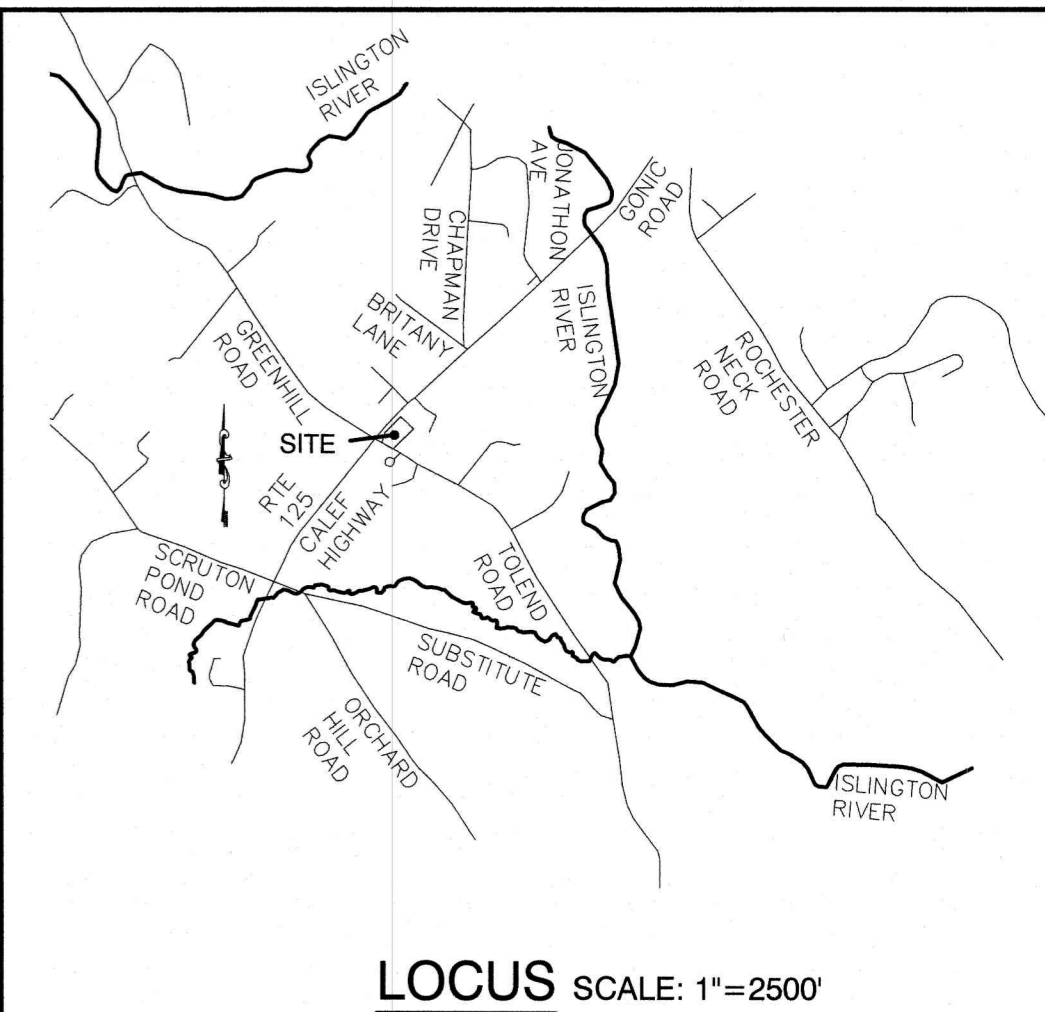
**J/B Jones & Beach Engineers, Inc.**

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:       | <b>EXISTING WATERSHED PLAN</b>   |
| Project:         | <b>WAREHOUSE BUILDING<br/>7 TOLEND ROAD, BARRINGTON, NH</b>                        |
| Owner of Record: | <b>PEH AND SON, LLC<br/>17 DUDLEY ROAD, BRENTWOOD, NH 03833    BK 4855 PG 0723</b> |

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

NH ROUTE 125  
VARIABLE WIDTH  
PUBLIC RIGHT-OF-WAY



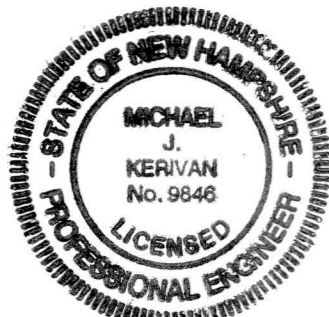
**LEGEND**

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

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

F:\CADD\MASTER STANDARD\dwg\LB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

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    | 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.**  
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: **PROPOSED 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. **W2**  
SHEET 2 OF 2  
JBE PROJECT NO. 20656

