

STORMWATER MANAGEMENT NARRATIVE

for

Slipknot Properties, LLC

Site Plan

Project Description

This proposed project site is located on Tax Map 108, Lot 69, at the intersection of N.H. Route 108 and Schoolhouse Lane. The property address is 15 Newmarket Road. The site contains an existing building with adjacent parking.

Existing Site Conditions

In the construction area, slopes range from 3% to more than 5%, with most slopes in the construction area around less than 3%. The site's southern and western boundary front public streets while the northern boundary and the eastern boundary front commercial uses.

The soil types in the proposed disturbance area (per NRCS Web Soil Survey) are a Buxton silt loam and a Hollis-Charlton very rocky fine sandy loams, designated with hydrologic ratings of soil Group D. These soils have a low infiltration rate, with a Ksat value of 0.06 to 0.20 inches/hour. The site is mostly impervious, with grassed areas around the existing structure and parking areas.

Due to the lot infiltration rate and the impervious surface, the site generates a moderate amount of runoff.

Site area is modeled into five subcatchments for the existing drainage analysis:

Subcatchments 1 through 4 consist of Schoolhouse Lane, a majority of the existing lot and two accessory structures to the north. Subcatchment 5 consists of the area around the existing structure, the surrounding grassed area and the remainder of the parking lot. The

Proposed Site Conditions

In the proposed conditions, the size and shape of the subcatchments remains the same because the analysis points don't change and the area of analysis is consistent. The overall impervious area of the site is reduced by more than 7,000 SF which will cause a decrease in peak flow and volume.

Calculation Results

Preface

Existing-development and post-development calculations have been calculated for the 2-year, 10-year, 25-year and 50-year storm frequency in accordance with Town of Durham's Development Regulations. The SCS TR-20 method was used with an NRCS/SCS Type III 24-hour storm. The Time of Concentration (Tc) is calculated using the Lag Method. Two analysis points (**POA1 AND POA2**) were used for comparison of post-development runoff values with those from existing conditions. This project does not propose any changes to subcatchment 1, and this report does not include the comparison of flows at DP-1 as they are identical in peak flow and runoff volume.

Results

Peak Rate (cfs)

	<i>1"</i>	<i>2 Yr.</i>	<i>10 Yr.</i>	<i>25 Yr.</i>	<i>50 Yr.</i>
<i>POA1</i>					
Existing	0.20	1.05	1.70	2.20	2.67
Proposed	0.14	0.90	1.49	1.95	2.38

POA2

Existing	0.91	3.36	5.17	6.59	7.91
Proposed	0.53	2.34	3.72	4.79	5.79

Volume (cf)

	<i>1"</i>	<i>2 Yr.</i>	<i>10 Yr.</i>	<i>25 Yr.</i>	<i>50 Yr.</i>
<i>POA1</i>					
Existing	649	3443	5712	7513	9210
Proposed	472	2891	4922	6546	8080

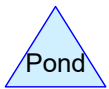
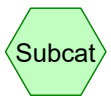
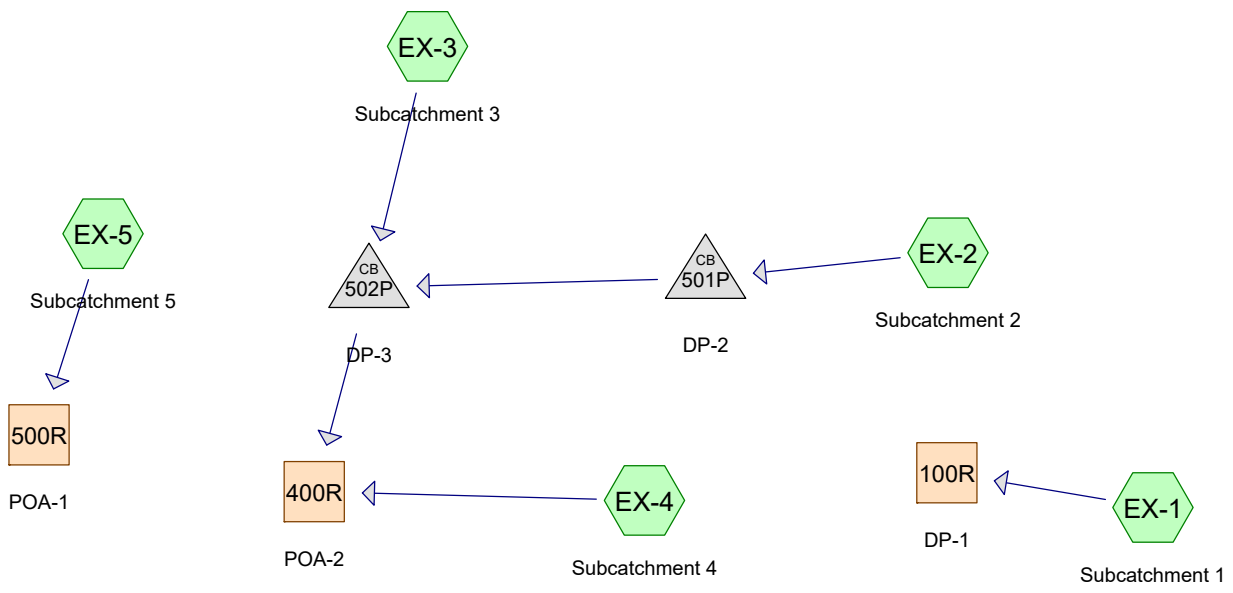
POA2

Existing	2938	11 648	18 356	23 628	28 574
Proposed	1688	7855	12 781	16 681	20 350

Summary

There is a reduction in peak flow and volume at all analysis points for all the design storm events. This is due to the reduction of impervious surface in the proposed condition. Approximately 7,000 SF of pavement is being converted to grass, crushed gravel, or crushed stone. By reducing the impervious surface, more runoff can infiltrate into the ground through the new pervious areas. This will not only help reduce the runoff generated from the site but also increase the groundwater recharge and further protect the water quality of the downstream areas.

In addition to reducing the impervious surfaces on site, the existing catch basin in the middle of the existing parking lot will be converted to a media filter box. This filter box will capture and treat the runoff from Subcatchment two, which is a majority of the parking area. A deep sump catch basin will be installed in the grassed area next to DP-3 and the existing catch basin will be converted to a drain manhole. This will add a level of protection by routing the runoff to the new catch basin, where solids and sediment can settle prior to runoff being discharged to point of analysis 2, in Schoolhouse Lane.



Routing Diagram for 220102 existing analysis
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220102 existing analysis

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
7,899	80	>75% Grass cover, Good, HSG D (EX-1, EX-2, EX-3, EX-4, EX-5)
52,668	98	Paved parking, HSG D (EX-1, EX-2, EX-3, EX-4, EX-5)
7,469	98	Roofs, HSG D (EX-2, EX-3, EX-4, EX-5)
652	77	Woods, Good, HSG D (EX-1, EX-2)
68,688	96	TOTAL AREA

220102 existing analysis

Type III 24-hr 1" Rainfall=1.00"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=0.50" Tc=6.0 min CN=94 Runoff=0.02 cfs 60 cf
Subcatchment EX-2: Subcatchment 2	Runoff Area=14,252 sf 95.39% Impervious Runoff Depth=0.71" Tc=6.0 min CN=97 Runoff=0.26 cfs 838 cf
Subcatchment EX-3: Subcatchment 3	Runoff Area=16,549 sf 92.12% Impervious Runoff Depth=0.71" Tc=6.0 min CN=97 Runoff=0.30 cfs 973 cf
Subcatchment EX-4: Subcatchment 4	Runoff Area=19,170 sf 94.00% Impervious Runoff Depth=0.71" Tc=6.0 min CN=97 Runoff=0.35 cfs 1,127 cf
Subcatchment EX-5: Subcatchment 5	Runoff Area=17,298 sf 70.01% Impervious Runoff Depth=0.45" Tc=6.0 min CN=93 Runoff=0.20 cfs 649 cf
Reach 100R: DP-1	Inflow=0.02 cfs 60 cf Outflow=0.02 cfs 60 cf
Reach 400R: POA-2	Inflow=0.91 cfs 2,938 cf Outflow=0.91 cfs 2,938 cf
Reach 500R: POA-1	Inflow=0.20 cfs 649 cf Outflow=0.20 cfs 649 cf
Pond 501P: DP-2	Peak Elev=29.68' Inflow=0.26 cfs 838 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=0.26 cfs 838 cf
Pond 502P: DP-3	Peak Elev=28.74' Inflow=0.56 cfs 1,811 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=0.56 cfs 1,811 cf
Total Runoff Area = 68,688 sf Runoff Volume = 3,647 cf Average Runoff Depth = 0.64" 12.45% Pervious = 8,551 sf 87.55% Impervious = 60,137 sf	

220102 existing analysis

Type III 24-hr 2 Year Rainfall=3.14"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=2.49" Tc=6.0 min CN=94 Runoff=0.09 cfs 294 cf
Subcatchment EX-2: Subcatchment 2	Runoff Area=14,252 sf 95.39% Impervious Runoff Depth=2.80" Tc=6.0 min CN=97 Runoff=0.96 cfs 3,322 cf
Subcatchment EX-3: Subcatchment 3	Runoff Area=16,549 sf 92.12% Impervious Runoff Depth=2.80" Tc=6.0 min CN=97 Runoff=1.11 cfs 3,857 cf
Subcatchment EX-4: Subcatchment 4	Runoff Area=19,170 sf 94.00% Impervious Runoff Depth=2.80" Tc=6.0 min CN=97 Runoff=1.29 cfs 4,468 cf
Subcatchment EX-5: Subcatchment 5	Runoff Area=17,298 sf 70.01% Impervious Runoff Depth=2.39" Tc=6.0 min CN=93 Runoff=1.05 cfs 3,443 cf
Reach 100R: DP-1	Inflow=0.09 cfs 294 cf Outflow=0.09 cfs 294 cf
Reach 400R: POA-2	Inflow=3.36 cfs 11,648 cf Outflow=3.36 cfs 11,648 cf
Reach 500R: POA-1	Inflow=1.05 cfs 3,443 cf Outflow=1.05 cfs 3,443 cf
Pond 501P: DP-2	Peak Elev=29.97' Inflow=0.96 cfs 3,322 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=0.96 cfs 3,322 cf
Pond 502P: DP-3	Peak Elev=29.24' Inflow=2.07 cfs 7,179 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=2.07 cfs 7,179 cf
Total Runoff Area = 68,688 sf Runoff Volume = 15,384 cf Average Runoff Depth = 2.69" 12.45% Pervious = 8,551 sf 87.55% Impervious = 60,137 sf	

220102 existing analysis

Type III 24-hr 25 Year Rainfall=6.03"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=5.33" Tc=6.0 min CN=94 Runoff=0.18 cfs 630 cf
Subcatchment EX-2: Subcatchment 2	Runoff Area=14,252 sf 95.39% Impervious Runoff Depth=5.67" Tc=6.0 min CN=97 Runoff=1.88 cfs 6,739 cf
Subcatchment EX-3: Subcatchment 3	Runoff Area=16,549 sf 92.12% Impervious Runoff Depth=5.67" Tc=6.0 min CN=97 Runoff=2.18 cfs 7,825 cf
Subcatchment EX-4: Subcatchment 4	Runoff Area=19,170 sf 94.00% Impervious Runoff Depth=5.67" Tc=6.0 min CN=97 Runoff=2.53 cfs 9,064 cf
Subcatchment EX-5: Subcatchment 5	Runoff Area=17,298 sf 70.01% Impervious Runoff Depth=5.21" Tc=6.0 min CN=93 Runoff=2.20 cfs 7,513 cf
Reach 100R: DP-1	Inflow=0.18 cfs 630 cf Outflow=0.18 cfs 630 cf
Reach 400R: POA-2	Inflow=6.59 cfs 23,628 cf Outflow=6.59 cfs 23,628 cf
Reach 500R: POA-1	Inflow=2.20 cfs 7,513 cf Outflow=2.20 cfs 7,513 cf
Pond 501P: DP-2	Peak Elev=30.87' Inflow=1.88 cfs 6,739 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=1.88 cfs 6,739 cf
Pond 502P: DP-3	Peak Elev=30.62' Inflow=4.06 cfs 14,564 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=4.06 cfs 14,564 cf

**Total Runoff Area = 68,688 sf Runoff Volume = 31,772 cf Average Runoff Depth = 5.55"
12.45% Pervious = 8,551 sf 87.55% Impervious = 60,137 sf**

220102 existing analysis

Type III 24-hr 50 Year Rainfall=7.22"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=6.51" Tc=6.0 min CN=94 Runoff=0.22 cfs 769 cf
Subcatchment EX-2: Subcatchment 2	Runoff Area=14,252 sf 95.39% Impervious Runoff Depth=6.86" Tc=6.0 min CN=97 Runoff=2.26 cfs 8,149 cf
Subcatchment EX-3: Subcatchment 3	Runoff Area=16,549 sf 92.12% Impervious Runoff Depth=6.86" Tc=6.0 min CN=97 Runoff=2.62 cfs 9,463 cf
Subcatchment EX-4: Subcatchment 4	Runoff Area=19,170 sf 94.00% Impervious Runoff Depth=6.86" Tc=6.0 min CN=97 Runoff=3.03 cfs 10,962 cf
Subcatchment EX-5: Subcatchment 5	Runoff Area=17,298 sf 70.01% Impervious Runoff Depth=6.39" Tc=6.0 min CN=93 Runoff=2.67 cfs 9,210 cf
Reach 100R: DP-1	Inflow=0.22 cfs 769 cf Outflow=0.22 cfs 769 cf
Reach 400R: POA-2	Inflow=7.91 cfs 28,574 cf Outflow=7.91 cfs 28,574 cf
Reach 500R: POA-1	Inflow=2.67 cfs 9,210 cf Outflow=2.67 cfs 9,210 cf
Pond 501P: DP-2	Peak Elev=31.82' Inflow=2.26 cfs 8,149 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=2.26 cfs 8,149 cf
Pond 502P: DP-3	Peak Elev=31.43' Inflow=4.87 cfs 17,612 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=4.87 cfs 17,612 cf
Total Runoff Area = 68,688 sf Runoff Volume = 38,553 cf Average Runoff Depth = 6.74" 12.45% Pervious = 8,551 sf 87.55% Impervious = 60,137 sf	

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Type III 24-hr 100 Year Rainfall=8.64"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=7.92" Tc=6.0 min CN=94 Runoff=0.27 cfs 936 cf
Subcatchment EX-2: Subcatchment 2	Runoff Area=14,252 sf 95.39% Impervious Runoff Depth=8.28" Tc=6.0 min CN=97 Runoff=2.70 cfs 9,833 cf
Subcatchment EX-3: Subcatchment 3	Runoff Area=16,549 sf 92.12% Impervious Runoff Depth=8.28" Tc=6.0 min CN=97 Runoff=3.14 cfs 11,418 cf
Subcatchment EX-4: Subcatchment 4	Runoff Area=19,170 sf 94.00% Impervious Runoff Depth=8.28" Tc=6.0 min CN=97 Runoff=3.64 cfs 13,227 cf
Subcatchment EX-5: Subcatchment 5	Runoff Area=17,298 sf 70.01% Impervious Runoff Depth=7.80" Tc=6.0 min CN=93 Runoff=3.22 cfs 11,241 cf
Reach 100R: DP-1	Inflow=0.27 cfs 936 cf Outflow=0.27 cfs 936 cf
Reach 400R: POA-2	Inflow=9.48 cfs 34,478 cf Outflow=9.48 cfs 34,478 cf
Reach 500R: POA-1	Inflow=3.22 cfs 11,241 cf Outflow=3.22 cfs 11,241 cf
Pond 501P: DP-2	Peak Elev=33.13' Inflow=2.70 cfs 9,833 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/ Outflow=2.70 cfs 9,833 cf
Pond 502P: DP-3	Peak Elev=32.57' Inflow=5.84 cfs 21,252 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/ Outflow=5.84 cfs 21,252 cf
Total Runoff Area = 68,688 sf Runoff Volume = 46,656 cf Average Runoff Depth = 8.15" 12.45% Pervious = 8,551 sf 87.55% Impervious = 60,137 sf	

220102 existing analysis

Type III 24-hr 10 Year Rainfall=4.76"

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Summary for Subcatchment EX-1: Subcatchment 1

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 481 cf, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
1,167	98	Paved parking, HSG D
35	80	>75% Grass cover, Good, HSG D
217	77	Woods, Good, HSG D
1,419	94	Weighted Average
252		17.76% Pervious Area
1,167		82.24% Impervious Area

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

Summary for Subcatchment EX-2: Subcatchment 2

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 5,235 cf, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
12,922	98	Paved parking, HSG D
673	98	Roofs, HSG D
222	80	>75% Grass cover, Good, HSG D
435	77	Woods, Good, HSG D
14,252	97	Weighted Average
657		4.61% Pervious Area
13,595		95.39% Impervious Area

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

Summary for Subcatchment EX-3: Subcatchment 3

Runoff = 1.71 cfs @ 12.09 hrs, Volume= 6,079 cf, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

220102 existing analysis

Type III 24-hr 10 Year Rainfall=4.76"

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Area (sf)	CN	Description
14,083	98	Paved parking, HSG D
1,162	98	Roofs, HSG D
1,304	80	>75% Grass cover, Good, HSG D
16,549	97	Weighted Average
1,304		7.88% Pervious Area
15,245		92.12% Impervious Area

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

Summary for Subcatchment EX-4: Subcatchment 4

Runoff = 1.98 cfs @ 12.09 hrs, Volume= 7,042 cf, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
16,372	98	Paved parking, HSG D
1,648	98	Roofs, HSG D
1,150	80	>75% Grass cover, Good, HSG D
19,170	97	Weighted Average
1,150		6.00% Pervious Area
18,020		94.00% Impervious Area

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

Summary for Subcatchment EX-5: Subcatchment 5

Runoff = 1.70 cfs @ 12.09 hrs, Volume= 5,712 cf, Depth= 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
8,124	98	Paved parking, HSG D
3,986	98	Roofs, HSG D
5,188	80	>75% Grass cover, Good, HSG D
17,298	93	Weighted Average
5,188		29.99% Pervious Area
12,110		70.01% Impervious Area

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Type III 24-hr 10 Year Rainfall=4.76"

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

Summary for Reach 100R: DP-1

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

Inflow Area = 1,419 sf, 82.24% Impervious, Inflow Depth = 4.07" for 10 Year event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 481 cf
Outflow = 0.14 cfs @ 12.09 hrs, Volume= 481 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Reach 400R: POA-2

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

Inflow Area = 49,971 sf, 93.77% Impervious, Inflow Depth = 4.41" for 10 Year event
Inflow = 5.17 cfs @ 12.09 hrs, Volume= 18,356 cf
Outflow = 5.17 cfs @ 12.09 hrs, Volume= 18,356 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Reach 500R: POA-1

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

Inflow Area = 17,298 sf, 70.01% Impervious, Inflow Depth = 3.96" for 10 Year event
Inflow = 1.70 cfs @ 12.09 hrs, Volume= 5,712 cf
Outflow = 1.70 cfs @ 12.09 hrs, Volume= 5,712 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Pond 501P: DP-2

[57] Hint: Peaked at 30.27' (Flood elevation advised)

Inflow Area = 14,252 sf, 95.39% Impervious, Inflow Depth = 4.41" for 10 Year event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 5,235 cf
Outflow = 1.48 cfs @ 12.09 hrs, Volume= 5,235 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.09 hrs, Volume= 5,235 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 30.27' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	29.43'	12.0" Round 12" RCP L= 102.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.43' / 28.50' S= 0.0091 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

220102 existing analysis

Type III 24-hr 10 Year Rainfall=4.76"

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Primary OutFlow Max=1.13 cfs @ 12.09 hrs HW=30.21' TW=29.88' (Dynamic Tailwater)

↳ **1=12" RCP** (Outlet Controls 1.13 cfs @ 2.35 fps)

Summary for Pond 502P: DP-3

[57] Hint: Peaked at 29.94' (Flood elevation advised)

Inflow Area = 30,801 sf, 93.63% Impervious, Inflow Depth = 4.41" for 10 Year event
Inflow = 3.19 cfs @ 12.09 hrs, Volume= 11,314 cf
Outflow = 3.19 cfs @ 12.09 hrs, Volume= 11,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.09 hrs, Volume= 11,314 cf

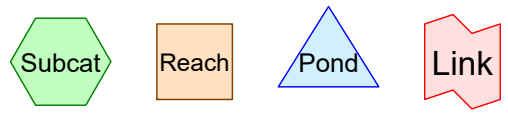
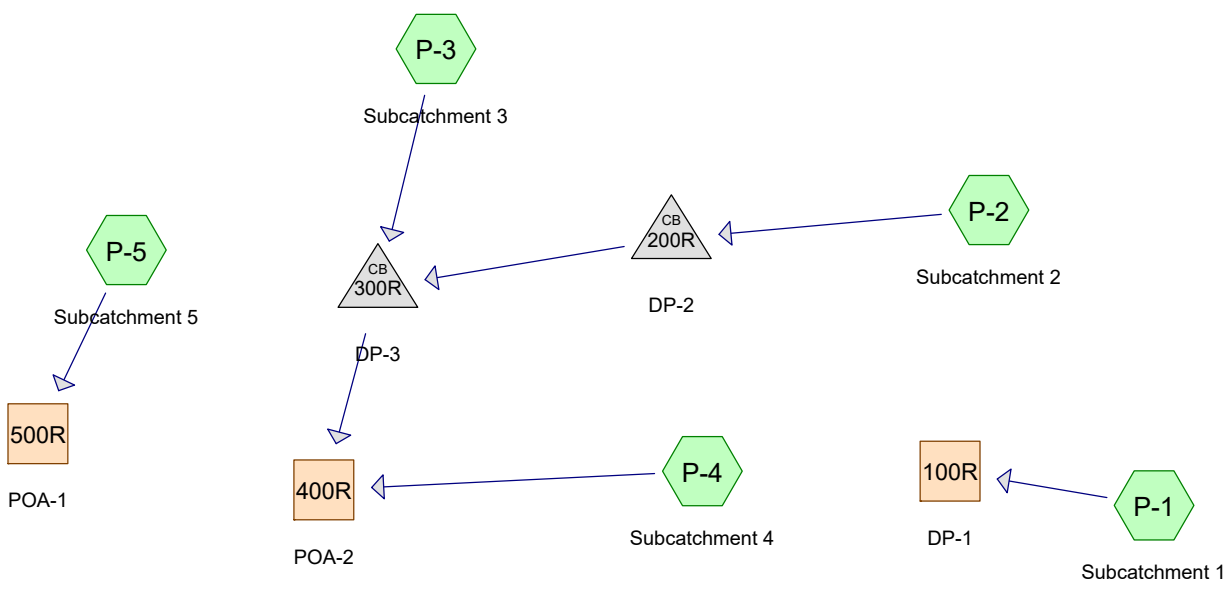
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 29.94' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	28.31'	12.0" Round 12" RCP L= 108.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 28.31' / 27.81' S= 0.0046 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=3.10 cfs @ 12.09 hrs HW=29.88' TW=0.00' (Dynamic Tailwater)

↳ **1=12" RCP** (Barrel Controls 3.10 cfs @ 3.95 fps)



Routing Diagram for 220102 proposed analysis
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220102 proposed analysis

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
10,956	80	>75% Grass cover, Good, HSG D (P-1, P-2, P-3, P-4, P-5)
2,278	89	Dirt roads, HSG D (P-4)
1,716	91	Gravel roads, HSG D (P-3)
1,605	96	Gravel surface, HSG D (P-2)
32,535	98	Paved parking, HSG D (P-1, P-2, P-3, P-4, P-5)
4,768	98	Roofs, HSG D (P-2, P-3, P-4, P-5)
652	77	Woods, Good, HSG D (P-1, P-2)
54,510	93	TOTAL AREA

220102 proposed analysis

Type III 24-hr 1" Rainfall=1.00"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=0.50" Tc=6.0 min CN=94 Runoff=0.02 cfs 60 cf
Subcatchment P-2: Subcatchment 2	Runoff Area=14,253 sf 85.12% Impervious Runoff Depth=0.71" Tc=6.0 min CN=97 Runoff=0.26 cfs 838 cf
Subcatchment P-3: Subcatchment 3	Runoff Area=6,517 sf 35.71% Impervious Runoff Depth=0.28" Tc=6.0 min CN=89 Runoff=0.05 cfs 155 cf
Subcatchment P-4: Subcatchment 4	Runoff Area=16,568 sf 73.55% Impervious Runoff Depth=0.50" Tc=6.0 min CN=94 Runoff=0.22 cfs 696 cf
Subcatchment P-5: Subcatchment 5	Runoff Area=15,753 sf 60.26% Impervious Runoff Depth=0.36" Tc=6.0 min CN=91 Runoff=0.14 cfs 472 cf
Reach 100R: DP-1	Inflow=0.02 cfs 60 cf Outflow=0.02 cfs 60 cf
Reach 400R: POA-2	Inflow=0.53 cfs 1,688 cf Outflow=0.53 cfs 1,688 cf
Reach 500R: POA-1	Inflow=0.14 cfs 472 cf Outflow=0.14 cfs 472 cf
Pond 200R: DP-2	Peak Elev=29.62' Inflow=0.26 cfs 838 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=0.26 cfs 838 cf
Pond 300R: DP-3	Peak Elev=28.62' Inflow=0.31 cfs 993 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=0.31 cfs 993 cf
Total Runoff Area = 54,510 sf Runoff Volume = 2,219 cf Average Runoff Depth = 0.49" 31.57% Pervious = 17,207 sf 68.43% Impervious = 37,303 sf	

220102 proposed analysis

Type III 24-hr 2 Year Rainfall=3.14"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=2.49" Tc=6.0 min CN=94 Runoff=0.09 cfs 294 cf
Subcatchment P-2: Subcatchment 2	Runoff Area=14,253 sf 85.12% Impervious Runoff Depth=2.80" Tc=6.0 min CN=97 Runoff=0.96 cfs 3,322 cf
Subcatchment P-3: Subcatchment 3	Runoff Area=6,517 sf 35.71% Impervious Runoff Depth=2.03" Tc=6.0 min CN=89 Runoff=0.35 cfs 1,101 cf
Subcatchment P-4: Subcatchment 4	Runoff Area=16,568 sf 73.55% Impervious Runoff Depth=2.49" Tc=6.0 min CN=94 Runoff=1.04 cfs 3,432 cf
Subcatchment P-5: Subcatchment 5	Runoff Area=15,753 sf 60.26% Impervious Runoff Depth=2.20" Tc=6.0 min CN=91 Runoff=0.90 cfs 2,891 cf
Reach 100R: DP-1	Inflow=0.09 cfs 294 cf Outflow=0.09 cfs 294 cf
Reach 400R: POA-2	Inflow=2.34 cfs 7,855 cf Outflow=2.34 cfs 7,855 cf
Reach 500R: POA-1	Inflow=0.90 cfs 2,891 cf Outflow=0.90 cfs 2,891 cf
Pond 200R: DP-2	Peak Elev=29.93' Inflow=0.96 cfs 3,322 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/ Outflow=0.96 cfs 3,322 cf
Pond 300R: DP-3	Peak Elev=29.00' Inflow=1.30 cfs 4,423 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/ Outflow=1.30 cfs 4,423 cf
Total Runoff Area = 54,510 sf Runoff Volume = 11,039 cf Average Runoff Depth = 2.43" 31.57% Pervious = 17,207 sf 68.43% Impervious = 37,303 sf	

220102 proposed analysis

Type III 24-hr 25 Year Rainfall=6.03"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=5.33" Tc=6.0 min CN=94 Runoff=0.18 cfs 630 cf
Subcatchment P-2: Subcatchment 2	Runoff Area=14,253 sf 85.12% Impervious Runoff Depth=5.67" Tc=6.0 min CN=97 Runoff=1.88 cfs 6,739 cf
Subcatchment P-3: Subcatchment 3	Runoff Area=6,517 sf 35.71% Impervious Runoff Depth=4.76" Tc=6.0 min CN=89 Runoff=0.78 cfs 2,588 cf
Subcatchment P-4: Subcatchment 4	Runoff Area=16,568 sf 73.55% Impervious Runoff Depth=5.33" Tc=6.0 min CN=94 Runoff=2.13 cfs 7,354 cf
Subcatchment P-5: Subcatchment 5	Runoff Area=15,753 sf 60.26% Impervious Runoff Depth=4.99" Tc=6.0 min CN=91 Runoff=1.95 cfs 6,546 cf
Reach 100R: DP-1	Inflow=0.18 cfs 630 cf Outflow=0.18 cfs 630 cf
Reach 400R: POA-2	Inflow=4.79 cfs 16,681 cf Outflow=4.79 cfs 16,681 cf
Reach 500R: POA-1	Inflow=1.95 cfs 6,546 cf Outflow=1.95 cfs 6,546 cf
Pond 200R: DP-2	Peak Elev=30.23' Inflow=1.88 cfs 6,739 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/ Outflow=1.88 cfs 6,739 cf
Pond 300R: DP-3	Peak Elev=29.46' Inflow=2.66 cfs 9,327 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/ Outflow=2.66 cfs 9,327 cf
Total Runoff Area = 54,510 sf Runoff Volume = 23,857 cf Average Runoff Depth = 5.25" 31.57% Pervious = 17,207 sf 68.43% Impervious = 37,303 sf	

220102 proposed analysis

Type III 24-hr 50 Year Rainfall=7.22"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=6.51" Tc=6.0 min CN=94 Runoff=0.22 cfs 769 cf
Subcatchment P-2: Subcatchment 2	Runoff Area=14,253 sf 85.12% Impervious Runoff Depth=6.86" Tc=6.0 min CN=97 Runoff=2.26 cfs 8,150 cf
Subcatchment P-3: Subcatchment 3	Runoff Area=6,517 sf 35.71% Impervious Runoff Depth=5.92" Tc=6.0 min CN=89 Runoff=0.96 cfs 3,217 cf
Subcatchment P-4: Subcatchment 4	Runoff Area=16,568 sf 73.55% Impervious Runoff Depth=6.51" Tc=6.0 min CN=94 Runoff=2.57 cfs 8,984 cf
Subcatchment P-5: Subcatchment 5	Runoff Area=15,753 sf 60.26% Impervious Runoff Depth=6.16" Tc=6.0 min CN=91 Runoff=2.38 cfs 8,080 cf
Reach 100R: DP-1	Inflow=0.22 cfs 769 cf Outflow=0.22 cfs 769 cf
Reach 400R: POA-2	Inflow=5.79 cfs 20,350 cf Outflow=5.79 cfs 20,350 cf
Reach 500R: POA-1	Inflow=2.38 cfs 8,080 cf Outflow=2.38 cfs 8,080 cf
Pond 200R: DP-2	Peak Elev=30.47' Inflow=2.26 cfs 8,150 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=2.26 cfs 8,150 cf
Pond 300R: DP-3	Peak Elev=29.96' Inflow=3.22 cfs 11,367 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=3.22 cfs 11,367 cf
Total Runoff Area = 54,510 sf Runoff Volume = 29,200 cf Average Runoff Depth = 6.43" 31.57% Pervious = 17,207 sf 68.43% Impervious = 37,303 sf	

220102 proposed analysis

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Type III 24-hr 100 Year Rainfall=8.64"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcatchment 1	Runoff Area=1,419 sf 82.24% Impervious Runoff Depth=7.92" Tc=6.0 min CN=94 Runoff=0.27 cfs 936 cf
Subcatchment P-2: Subcatchment 2	Runoff Area=14,253 sf 85.12% Impervious Runoff Depth=8.28" Tc=6.0 min CN=97 Runoff=2.70 cfs 9,834 cf
Subcatchment P-3: Subcatchment 3	Runoff Area=6,517 sf 35.71% Impervious Runoff Depth=7.32" Tc=6.0 min CN=89 Runoff=1.17 cfs 3,973 cf
Subcatchment P-4: Subcatchment 4	Runoff Area=16,568 sf 73.55% Impervious Runoff Depth=7.92" Tc=6.0 min CN=94 Runoff=3.10 cfs 10,933 cf
Subcatchment P-5: Subcatchment 5	Runoff Area=15,753 sf 60.26% Impervious Runoff Depth=7.56" Tc=6.0 min CN=91 Runoff=2.89 cfs 9,920 cf
Reach 100R: DP-1	Inflow=0.27 cfs 936 cf Outflow=0.27 cfs 936 cf
Reach 400R: POA-2	Inflow=6.98 cfs 24,740 cf Outflow=6.98 cfs 24,740 cf
Reach 500R: POA-1	Inflow=2.89 cfs 9,920 cf Outflow=2.89 cfs 9,920 cf
Pond 200R: DP-2	Peak Elev=31.05' Inflow=2.70 cfs 9,834 cf 12.0" Round Culvert n=0.012 L=102.0' S=0.0091 '/' Outflow=2.70 cfs 9,834 cf
Pond 300R: DP-3	Peak Elev=30.47' Inflow=3.88 cfs 13,807 cf 12.0" Round Culvert n=0.012 L=108.0' S=0.0046 '/' Outflow=3.88 cfs 13,807 cf
Total Runoff Area = 54,510 sf Runoff Volume = 35,597 cf Average Runoff Depth = 7.84" 31.57% Pervious = 17,207 sf 68.43% Impervious = 37,303 sf	

220102 proposed analysis

Type III 24-hr 10 Year Rainfall=4.76"

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Page 1

Summary for Subcatchment P-1: Subcatchment 1

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 481 cf, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
1,167	98	Paved parking, HSG D
35	80	>75% Grass cover, Good, HSG D
217	77	Woods, Good, HSG D
1,419	94	Weighted Average
252		17.76% Pervious Area
1,167		82.24% Impervious Area

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

Summary for Subcatchment P-2: Subcatchment 2

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 5,236 cf, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
11,459	98	Paved parking, HSG D
1,605	96	Gravel surface, HSG D
673	98	Roofs, HSG D
81	80	>75% Grass cover, Good, HSG D
435	77	Woods, Good, HSG D
14,253	97	Weighted Average
2,121		14.88% Pervious Area
12,132		85.12% Impervious Area

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

Summary for Subcatchment P-3: Subcatchment 3

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 1,924 cf, Depth= 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

220102 proposed analysis

Type III 24-hr 10 Year Rainfall=4.76"

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Area (sf)	CN	Description
1,779	98	Paved parking, HSG D
548	98	Roofs, HSG D
1,716	91	Gravel roads, HSG D
2,474	80	>75% Grass cover, Good, HSG D
6,517	89	Weighted Average
4,190		64.29% Pervious Area
2,327		35.71% Impervious Area

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

Summary for Subcatchment P-4: Subcatchment 4

Runoff = 1.65 cfs @ 12.09 hrs, Volume= 5,621 cf, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
11,082	98	Paved parking, HSG D
1,103	98	Roofs, HSG D
2,278	89	Dirt roads, HSG D
2,105	80	>75% Grass cover, Good, HSG D
16,568	94	Weighted Average
4,383		26.45% Pervious Area
12,185		73.55% Impervious Area

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

Summary for Subcatchment P-5: Subcatchment 5

Runoff = 1.49 cfs @ 12.09 hrs, Volume= 4,922 cf, Depth= 3.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.76"

Area (sf)	CN	Description
7,048	98	Paved parking, HSG D
2,444	98	Roofs, HSG D
6,261	80	>75% Grass cover, Good, HSG D
15,753	91	Weighted Average
6,261		39.74% Pervious Area
9,492		60.26% Impervious Area

220102 proposed analysis

Type III 24-hr 10 Year Rainfall=4.76"

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

Summary for Reach 100R: DP-1

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

Inflow Area = 1,419 sf, 82.24% Impervious, Inflow Depth = 4.07" for 10 Year event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 481 cf
Outflow = 0.14 cfs @ 12.09 hrs, Volume= 481 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Reach 400R: POA-2

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

Inflow Area = 37,338 sf, 71.36% Impervious, Inflow Depth = 4.11" for 10 Year event
Inflow = 3.72 cfs @ 12.09 hrs, Volume= 12,781 cf
Outflow = 3.72 cfs @ 12.09 hrs, Volume= 12,781 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Reach 500R: POA-1

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

Inflow Area = 15,753 sf, 60.26% Impervious, Inflow Depth = 3.75" for 10 Year event
Inflow = 1.49 cfs @ 12.09 hrs, Volume= 4,922 cf
Outflow = 1.49 cfs @ 12.09 hrs, Volume= 4,922 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Pond 200R: DP-2

[57] Hint: Peaked at 30.10' (Flood elevation advised)

Inflow Area = 14,253 sf, 85.12% Impervious, Inflow Depth = 4.41" for 10 Year event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 5,236 cf
Outflow = 1.48 cfs @ 12.09 hrs, Volume= 5,236 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.09 hrs, Volume= 5,236 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 30.10' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	29.43'	12.0" Round 12" RCP L= 102.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.43' / 28.50' S= 0.0091 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

220102 proposed analysis

Type III 24-hr 10 Year Rainfall=4.76"

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Primary OutFlow Max=1.38 cfs @ 12.09 hrs HW=30.08' TW=29.22' (Dynamic Tailwater)

↳ **1=12" RCP** (Outlet Controls 1.38 cfs @ 3.60 fps)

Summary for Pond 300R: DP-3

[57] Hint: Peaked at 29.24' (Flood elevation advised)

Inflow Area = 20,770 sf, 69.61% Impervious, Inflow Depth = 4.14" for 10 Year event
Inflow = 2.07 cfs @ 12.09 hrs, Volume= 7,159 cf
Outflow = 2.07 cfs @ 12.09 hrs, Volume= 7,159 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.07 cfs @ 12.09 hrs, Volume= 7,159 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 29.24' @ 12.09 hrs

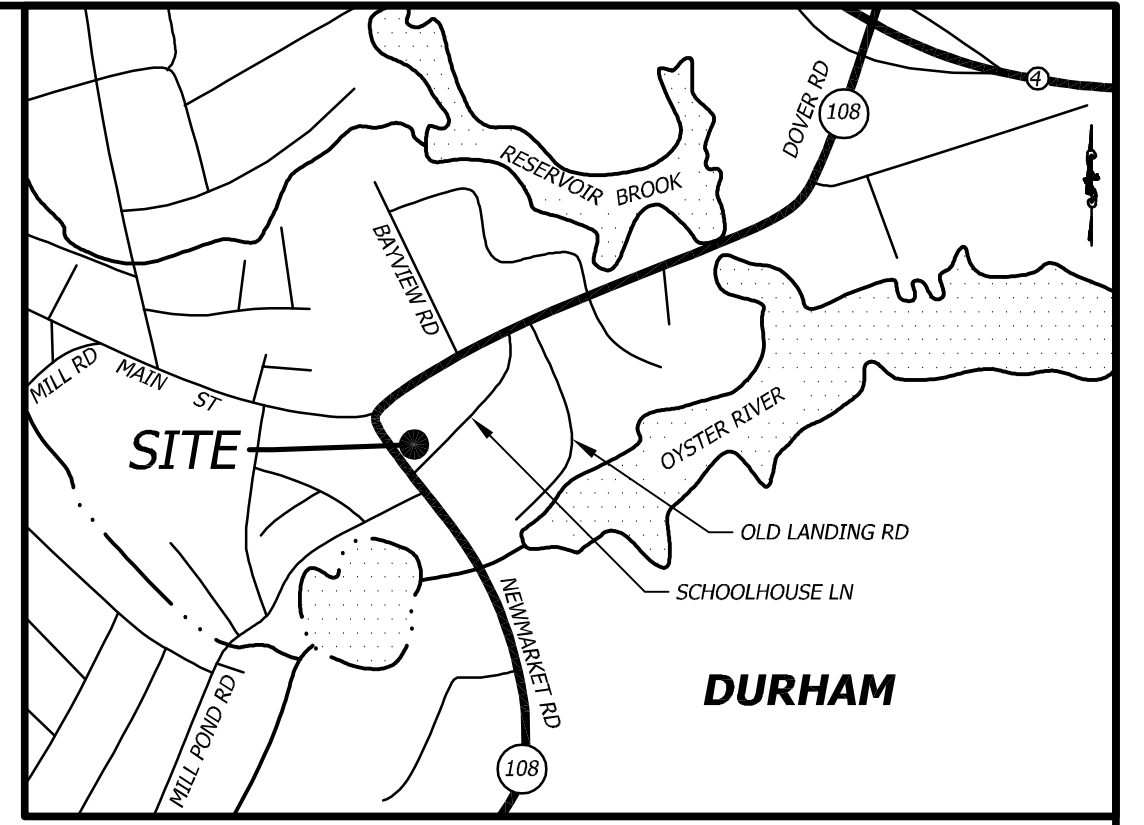
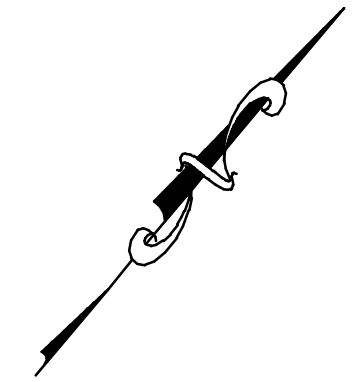
Device	Routing	Invert	Outlet Devices
#1	Primary	28.31'	12.0" Round 12" RCP L= 108.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 28.31' / 27.81' S= 0.0046 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=2.01 cfs @ 12.09 hrs HW=29.23' TW=0.00' (Dynamic Tailwater)

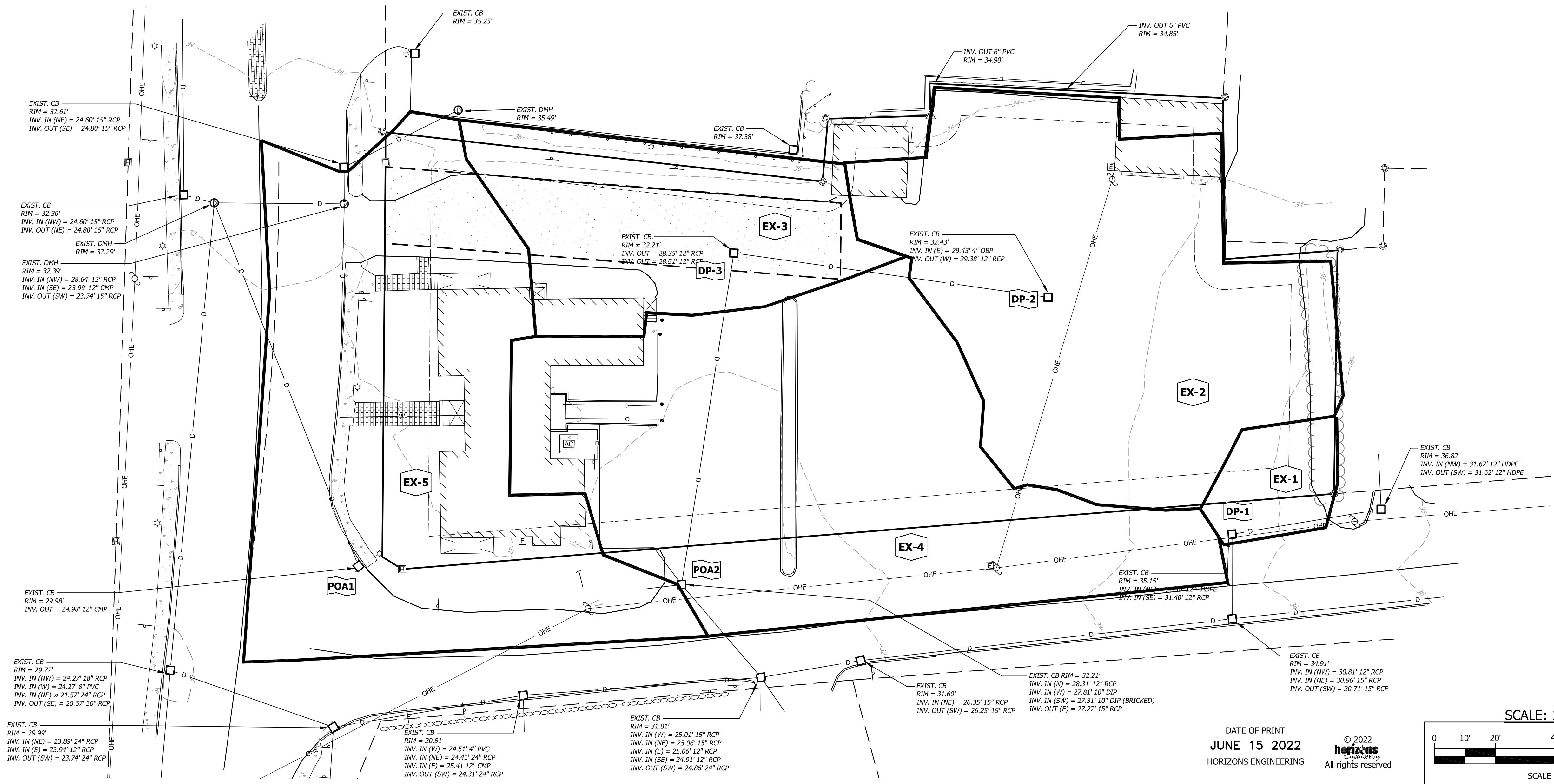
↳ **1=12" RCP** (Barrel Controls 2.01 cfs @ 3.50 fps)

LEGEND

- | | | | |
|--|-----------------------------|--|---------------------------------|
| | AIR CONDITIONING | | PROPERTY LINE |
| | ELECTRIC METER | | CONTOUR - MAJOR INTERVAL |
| | GAS VALVE | | CONTOUR - MINOR INTERVAL |
| | DECIDUOUS TREE | | ABUTTING PROPERTY LINE |
| | STUMP | | GUARD RAIL |
| | SIGN | | VINYL FENCE |
| | GATE VALVE | | BRUSH / TREE LINE |
| | SEWER MANHOLE | | EXISTING EASEMENT LINE |
| | DRAINAGE MANHOLE | | UNDERGROUND WATERLINE |
| | CATCH BASIN | | EXISTING UNDERGROUND DRAIN |
| | UTILITY POLE | | EXISTING UNDERGROUND SEWER LINE |
| | GUY WIRE | | EXISTING UNDERGROUND GAS LINE |
| | HYDRANT | | OVERHEAD ELECTRIC |
| | BOLLARD | | GRANITE CURB |
| | IRON ROD FOUND | | PAVEMENT |
| | NEW HAMPSHIRE HIGHWAY BOUND | | BRICK |
| | MAGNAIL FOUND | | CONCRETE PAD |
| | TEMPORARY BENCHMARK | | DRAINAGE AREA |
| | LIGHT POST | | ANALYSIS POINT |
| | | | DRAINAGE AREA BOUNDARY |



VICINITY MAP
1" = 1,000'



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NEWPORT VT • LITTLETON NH • NEW LONDON NH
POMFRET VT • KENNEBUNK ME • CONWAY NH

EXISTING DRAINAGE PLAN PREPARED FOR
SLIPKNOT PROPERTIES, LLC
 26 NEWMARKET ROAD
 DURHAM, NH
 OF PROPERTY LOCATED AT
 15 NEWMARKET ROAD (NH RT 108) &
 SCHOOLHOUSE LANE
 NEWMARKET, STRAFFORD COUNTY, NH
 LAND OF: THMB LLC
 87 PACKER FALLS ROAD, DURHAM, NH 03824

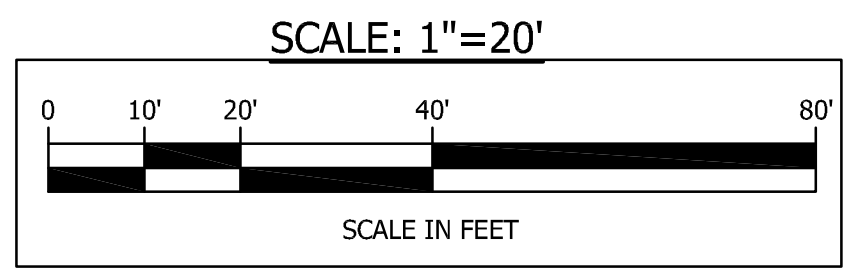
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CHECK'D BY: XXX	ARCHIVE #: H-___

SHEET 1 OF 2

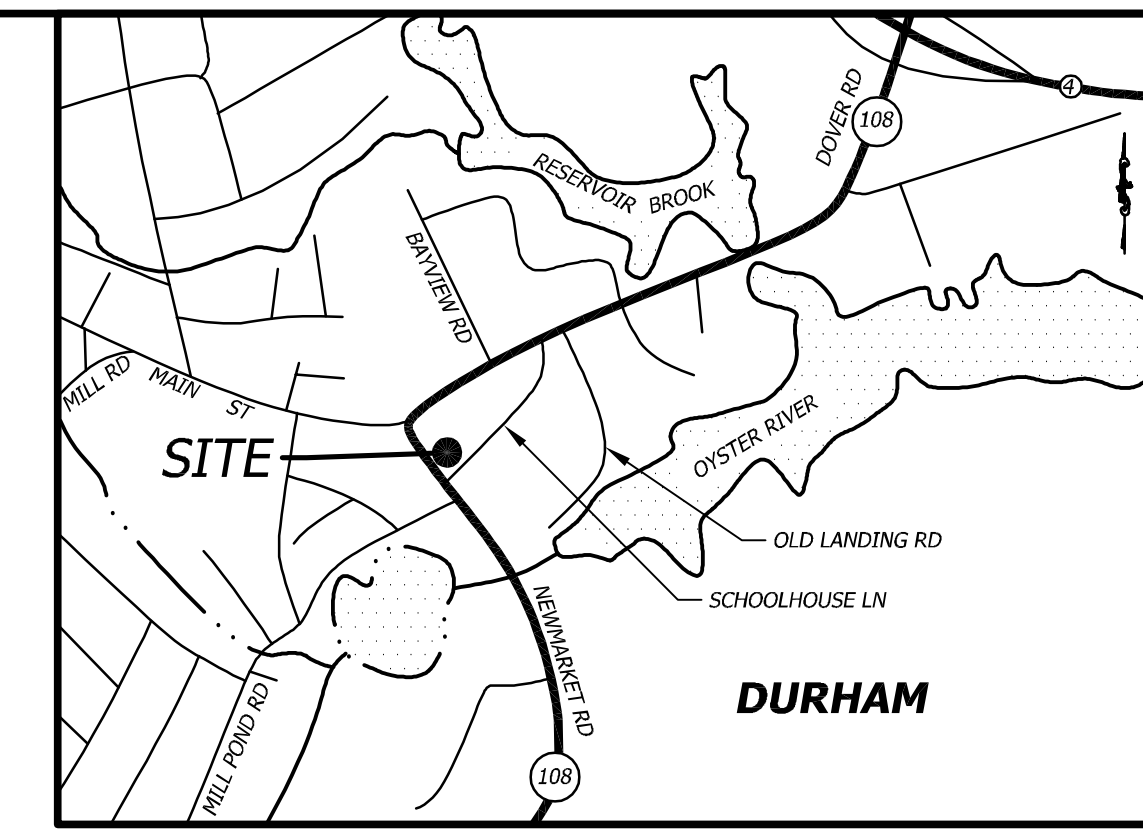
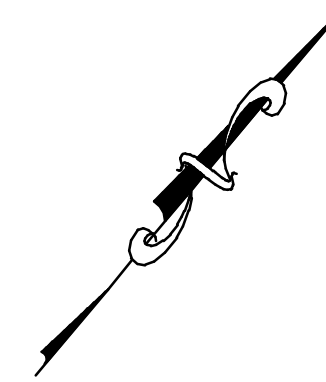
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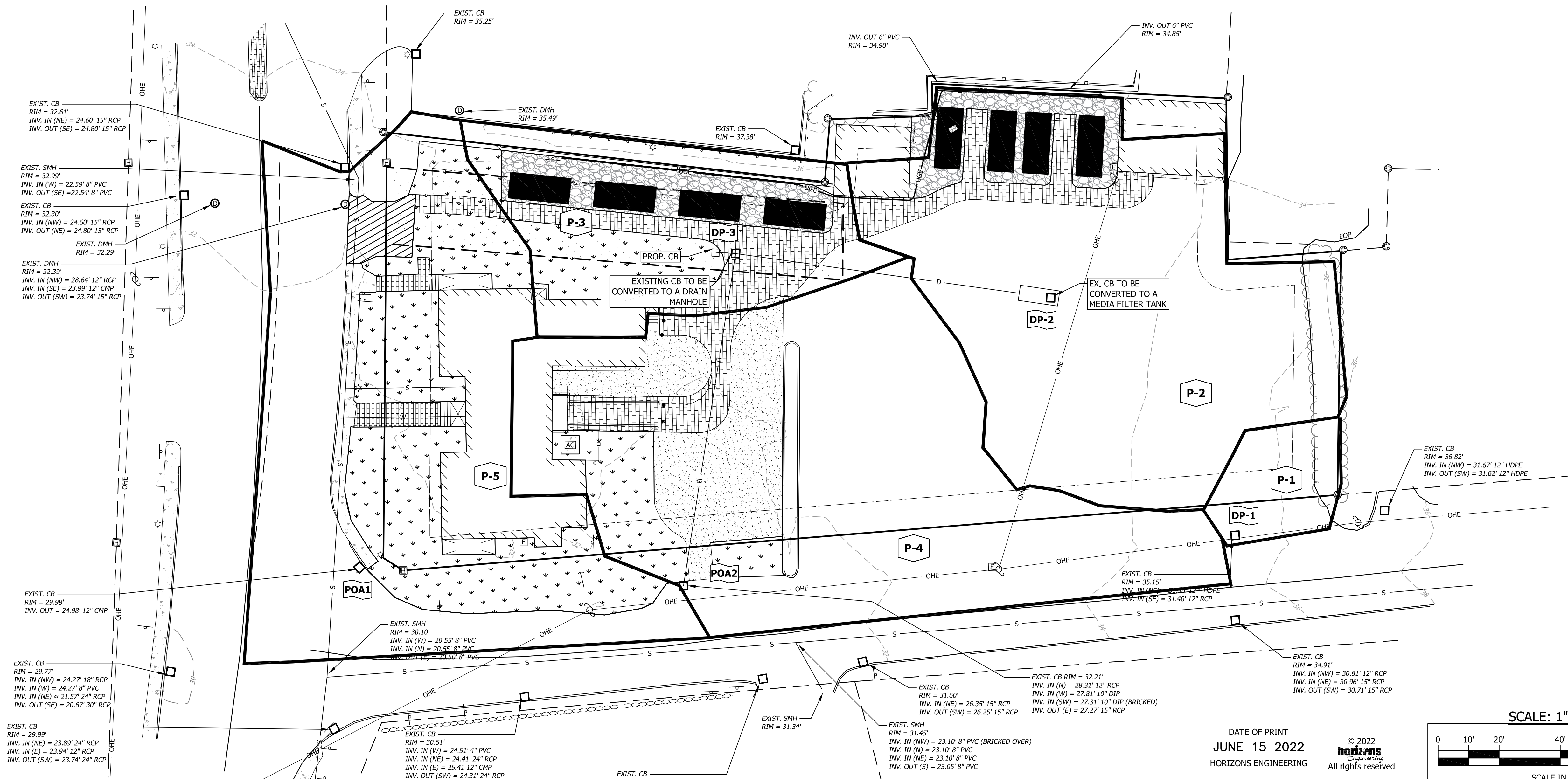


LEGEND

- | | | | |
|--|-----------------------------|--|---------------------------------|
| | AIR CONDITIONING | | PROPERTY LINE |
| | ELECTRIC METER | | CONTOUR - MAJOR INTERVAL |
| | GAS VALVE | | CONTOUR - MINOR INTERVAL |
| | DECIDUOUS TREE | | ABUTTING PROPERTY LINE |
| | STUMP | | GUARD RAIL |
| | SIGN | | VINYL FENCE |
| | GATE VALVE | | BRUSH / TREE LINE |
| | SEWER MANHOLE | | EXISTING EASEMENT LINE |
| | DRAINAGE MANHOLE | | UNDERGROUND WATERLINE |
| | CATCH BASIN | | EXISTING UNDERGROUND DRAIN |
| | UTILITY POLE | | EXISTING UNDERGROUND SEWER LINE |
| | GUY WIRE | | EXISTING UNDERGROUND GAS LINE |
| | HYDRANT | | OVERHEAD ELECTRIC |
| | BOLLARD | | GRANITE CURB |
| | IRON ROD FOUND | | PAVEMENT |
| | NEW HAMPSHIRE HIGHWAY BOUND | | BRICK |
| | MAGNAIL FOUND | | CONCRETE PAD |
| | TEMPORARY BENCHMARK | | DRAINAGE AREA |
| | LIGHT POST | | ANALYSIS POINT |
| | | | DRAINAGE AREA BOUNDARY |



VICINITY MAP
1" = 1,000'



horizons
Engineering

NEWPORT VT • LITTLETON NH • NEW LONDON NH
POMFRET VT • KENNEBUNK ME • CONWAY NH

PROPOSED DRAINAGE PLAN PREPARED FOR
SLIPKNOT PROPERTIES, LLC
 26 NEWMARKET ROAD
 DURHAM, NH

OF PROPERTY LOCATED AT
 15 NEWMARKET ROAD (NH RT 108) &
 SCHOOLHOUSE LANE
 NEWMARKET, STRAFFORD COUNTY, NH
 LAND OF: THMB LLC
 87 PACKER FALLS ROAD, DURHAM, NH 03824

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: 6/2/2022	PROJECT #: 220102
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