



***DRAINAGE SUMMARY-Supplement***  
**February 15, 2022**

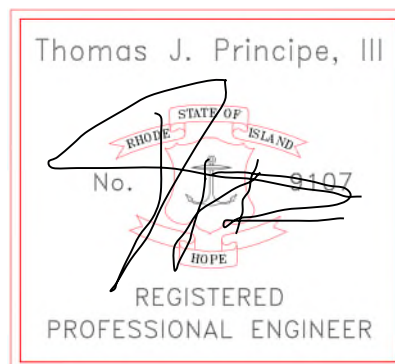
**AP 57-1, LOT 110**  
**Holley Street**  
**South Kingstown, RI 02879**

***Prepared For:***

Holley Street, LLC  
17 Arnold St., Suite 100  
Wakefield, RI 02879

***Prepared By:***

Principe Engineering, Inc.  
27 Sakonnet Ridge Drive  
Tiverton, Rhode Island



At last month's Planning Board meeting, the Board requested further information relative to the porous/permeable driveway and parking areas with respect to the Oak Street sub-watershed and the proposed infiltration area. The current, proposed design includes porous pavement / paver BMPs for the driveway/parking surfaces, however for the purposes of the below analysis, these surface areas have been modeled as if they were impervious with a runoff coefficient of 98.

The resulting calculations (updated HydroCAD report attached hereto) confirms the proposed stormwater design within the site improvements would adequately handle the intensity from the 1, 10, 25 and 100-year storm events. Even with the impervious surface area added back into the analysis, post-development flow rates to the Oak Street design point (and as seen by the residential abutters along Oak Street immediately west of the property) have been reduced below the pre-development flows for the site.

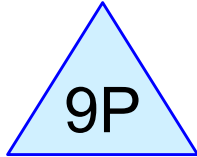
Below is a summary of the HydroCAD analysis comparing pre-development and post-development flow rates for the project at the project Oak Street design point. This chart illustrates the analysis with the driveways as permeable/porous surface as previously presented and as currently modeled (impervious):

WATERSHED	1-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
PRE-OAK	-0- CFS	0.20 CFS	0.75 CFS	2.80 CFS
POST-OAK (porous/permeable driveways/parking)	-0- CFS	0.10 CFS	0.46 CFS	1.85 CFS
OAK (PRE/POST, porous/permeable driveways/parking)	0 = 0	0.20 > 0.10	0.75 > 0.46	2.80 > 1.85
POST-OAK (impervious driveways/parking)	-0- CFS	0.10 CFS	0.46 CFS	2.76 CFS
OAK (PRE/POST, impervious driveways/parking)	0 = 0	0.20 > 0.10	0.75 > 0.46	2.80 > 2.76

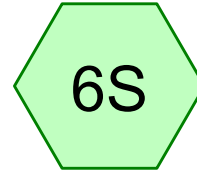
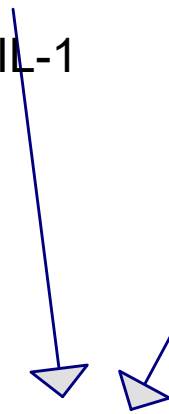
Based on the modeling in the attached calculations, the infiltration basin would safely handle all flows from a 1-year storm event through a 100-year storm event. The designed infiltration basin emergency outlet would have an outflow of 0.93 cfs during a 100-year event but would all storm events up to a 50-year event would be infiltrated within the infiltration basin without overflow.



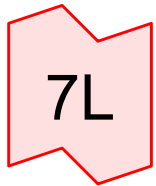
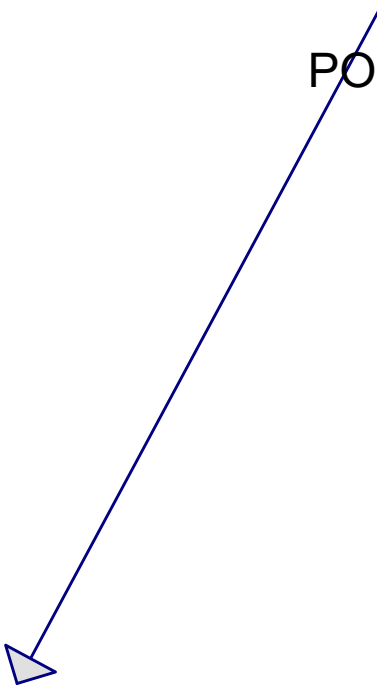
POST-OAK



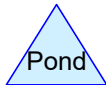
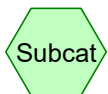
INFIL-1



POST-UNC



POST-OAK



**Routing Diagram for Holley Street MLD\_test**

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**Holley Street MLD\_test**

Type III 24-hr 1-yr Rainfall=2.80"

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

**Subcatchment 5S: POST-OAK** Runoff Area=32,280 sf 53.51% Impervious Runoff Depth=0.65"  
Flow Length=54' Slope=0.0090 '/' Tc=11.8 min CN=71 Runoff=0.39 cfs 0.040 af

**Subcatchment 6S: POST-UNC** Runoff Area=88,901 sf 12.50% Impervious Runoff Depth=0.00"  
Flow Length=702' Tc=24.1 min UI Adjusted CN=41 Runoff=0.00 cfs 0.000 af

**Pond 9P: INFIL-1** Peak Elev=33.60' Storage=124 cf Inflow=0.39 cfs 0.040 af  
Discarded=0.26 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.040 af

**Link 7L: POST-OAK** Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 2.782 ac Runoff Volume = 0.040 af Average Runoff Depth = 0.17"**  
**76.58% Pervious = 2.130 ac 23.42% Impervious = 0.652 ac**

# Holley Street MLD\_test

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Type III 24-hr 1-yr Rainfall=2.80"

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## Summary for Subcatchment 5S: POST-OAK

Runoff = 0.39 cfs @ 12.19 hrs, Volume= 0.040 af, Depth= 0.65"

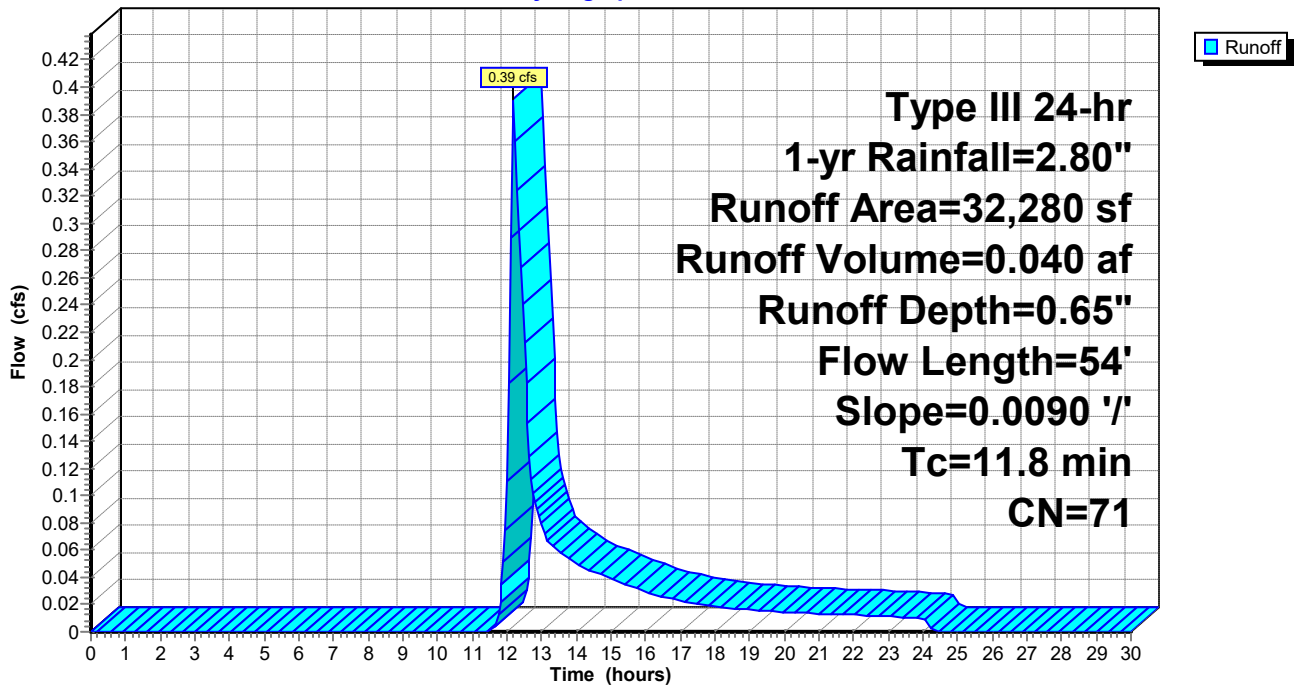
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
Type III 24-hr 1-yr Rainfall=2.80"

Area (sf)	CN	Description
11,076	98	Roofs, HSG A
15,008	39	>75% Grass cover, Good, HSG A
* 6,196	98	Driveways (Impervious)
32,280	71	Weighted Average
15,008	39	46.49% Pervious Area
17,272	98	53.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	54	0.0090	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.33"

## Subcatchment 5S: POST-OAK

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 1-yr Rainfall=2.80"

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**Summary for Subcatchment 6S: POST-UNC**

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

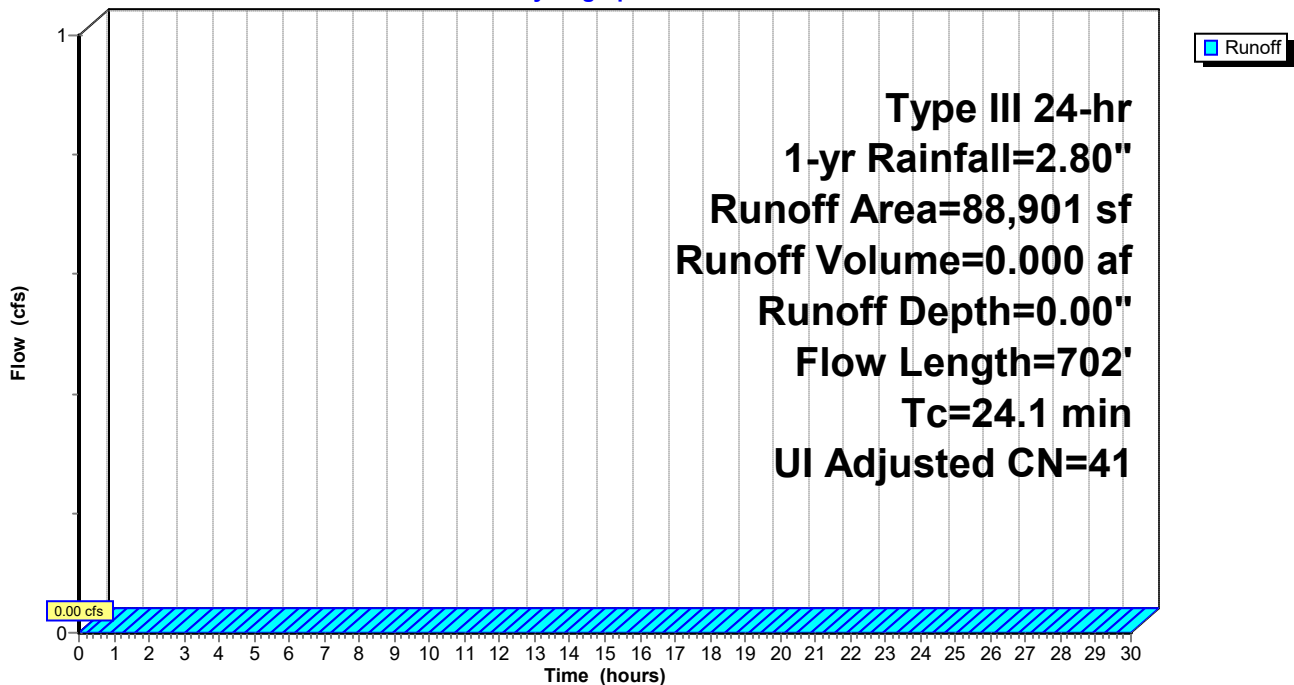
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
Type III 24-hr 1-yr Rainfall=2.80"

Area (sf)	CN	Adj	Description
58,561	39		>75% Grass cover, Good, HSG A
11,110	98		Unconnected pavement, HSG A
19,230	30		Woods, Good, HSG A
88,901	44	41	Weighted Average, UI Adjusted
77,791	37	37	87.50% Pervious Area
11,110	98	98	12.50% Impervious Area
11,110			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	117	0.0340	0.15		<b>Sheet Flow,</b> Grass: Dense n= 0.240 P2= 3.33"
9.5	442	0.0240	0.77		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
1.8	143	0.0070	1.35		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
24.1	702	Total			

**Subcatchment 6S: POST-UNC**

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 1-yr Rainfall=2.80"

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**Summary for Pond 9P: INFIL-1**

Inflow Area = 0.741 ac, 53.51% Impervious, Inflow Depth = 0.65" for 1-yr event  
 Inflow = 0.39 cfs @ 12.19 hrs, Volume= 0.040 af  
 Outflow = 0.26 cfs @ 12.42 hrs, Volume= 0.040 af, Atten= 34%, Lag= 13.5 min  
 Discarded = 0.26 cfs @ 12.42 hrs, Volume= 0.040 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 33.60' @ 12.42 hrs Surf.Area= 1,348 sf Storage= 124 cf

Plug-Flow detention time= 2.9 min calculated for 0.040 af (100% of inflow)  
 Center-of-Mass det. time= 2.9 min ( 890.7 - 887.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	3,941 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,081	0	0
34.00	2,392	868	868
35.00	3,753	3,073	3,941

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.50'	<b>8.270 in/hr Exfiltration over Surface area</b>
#2	Primary	34.75'	<b>5.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Discarded OutFlow** Max=0.26 cfs @ 12.42 hrs HW=33.60' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.26 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.50' (Free Discharge)  
 ↑2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Holley Street MLD\_test

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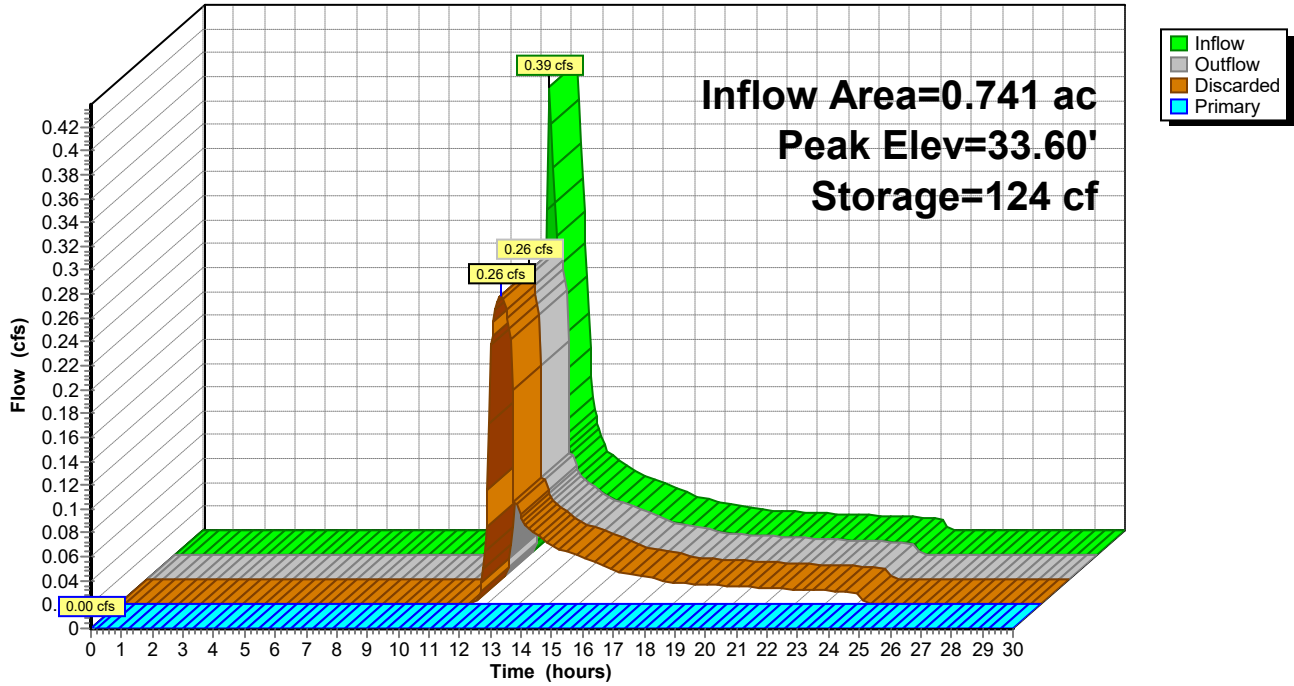
Type III 24-hr 1-yr Rainfall=2.80"

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Pond 9P: INFIL-1

Hydrograph





# Holley Street MLD\_test

Type III 24-hr 1-yr Rainfall=2.80"

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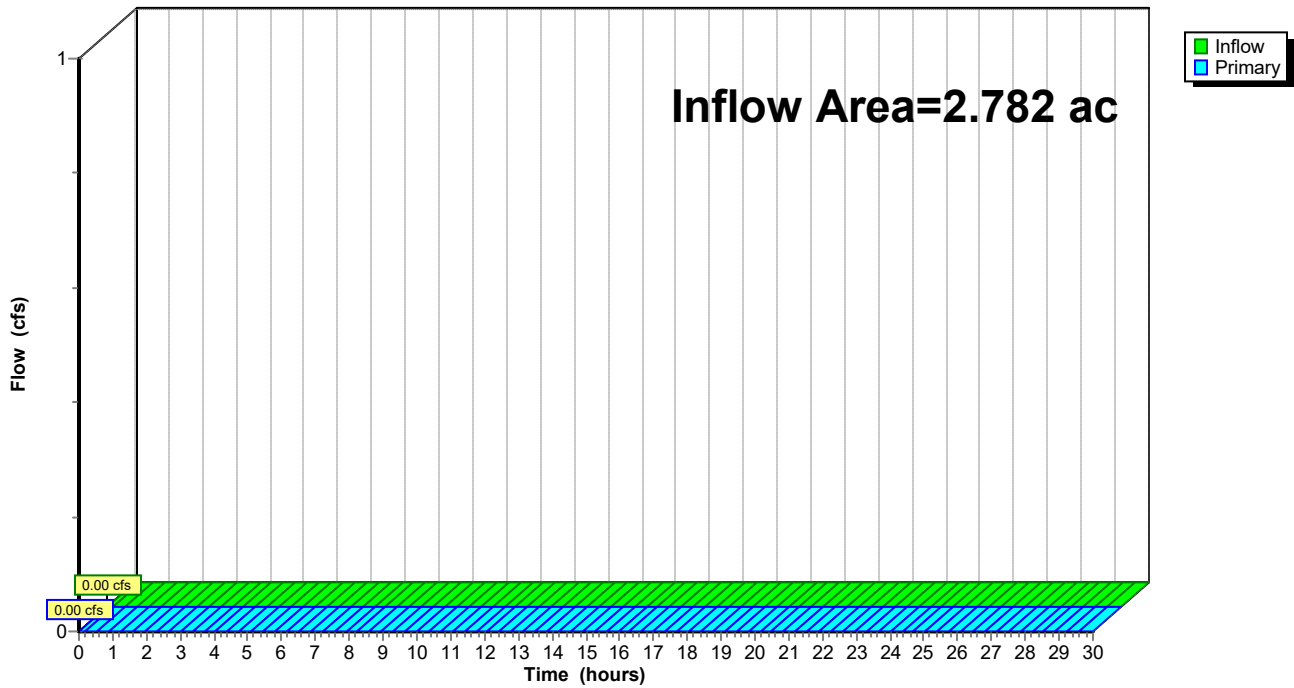
## Summary for Link 7L: POST-OAK

Inflow Area = 2.782 ac, 23.42% Impervious, Inflow Depth = 0.00" for 1-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

### Link 7L: POST-OAK

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 10-yr Rainfall=4.90"

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

**Subcatchment 5S: POST-OAK** Runoff Area=32,280 sf 53.51% Impervious Runoff Depth=2.04"  
Flow Length=54' Slope=0.0090 '/' Tc=11.8 min CN=71 Runoff=1.43 cfs 0.126 af

**Subcatchment 6S: POST-UNC** Runoff Area=88,901 sf 12.50% Impervious Runoff Depth=0.25"  
Flow Length=702' Tc=24.1 min UI Adjusted CN=41 Runoff=0.10 cfs 0.042 af

**Pond 9P: INFIL-1** Peak Elev=34.15' Storage=1,230 cf Inflow=1.43 cfs 0.126 af  
Discarded=0.50 cfs 0.126 af Primary=0.00 cfs 0.000 af Outflow=0.50 cfs 0.126 af

**Link 7L: POST-OAK** Inflow=0.10 cfs 0.042 af  
Primary=0.10 cfs 0.042 af

**Total Runoff Area = 2.782 ac Runoff Volume = 0.168 af Average Runoff Depth = 0.73"**  
**76.58% Pervious = 2.130 ac 23.42% Impervious = 0.652 ac**

# Holley Street MLD\_test

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Type III 24-hr 10-yr Rainfall=4.90"

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## Summary for Subcatchment 5S: POST-OAK

Runoff = 1.43 cfs @ 12.17 hrs, Volume= 0.126 af, Depth= 2.04"

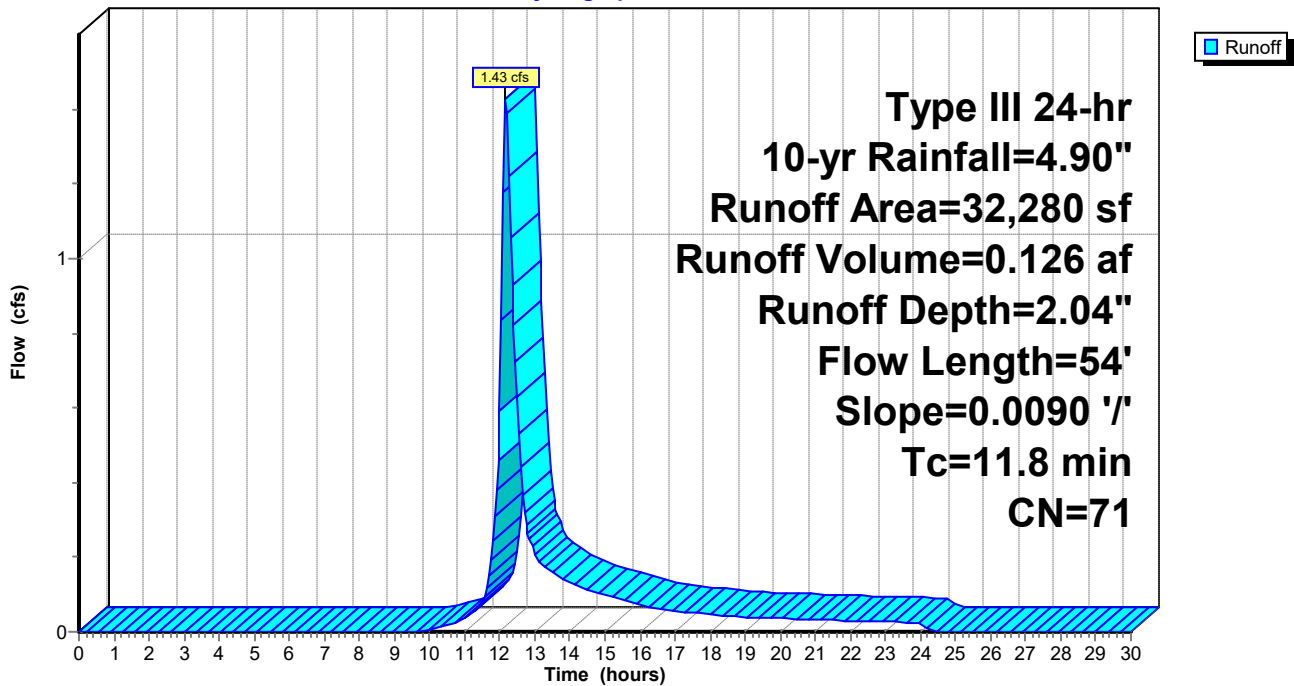
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
11,076	98	Roofs, HSG A
15,008	39	>75% Grass cover, Good, HSG A
* 6,196	98	Driveways (Impervious)
32,280	71	Weighted Average
15,008	39	46.49% Pervious Area
17,272	98	53.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	54	0.0090	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.33"

## Subcatchment 5S: POST-OAK

Hydrograph



# Holley Street MLD\_test

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Type III 24-hr 10-yr Rainfall=4.90"

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## Summary for Subcatchment 6S: POST-UNC

Runoff = 0.10 cfs @ 12.71 hrs, Volume= 0.042 af, Depth= 0.25"

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-yr Rainfall=4.90"

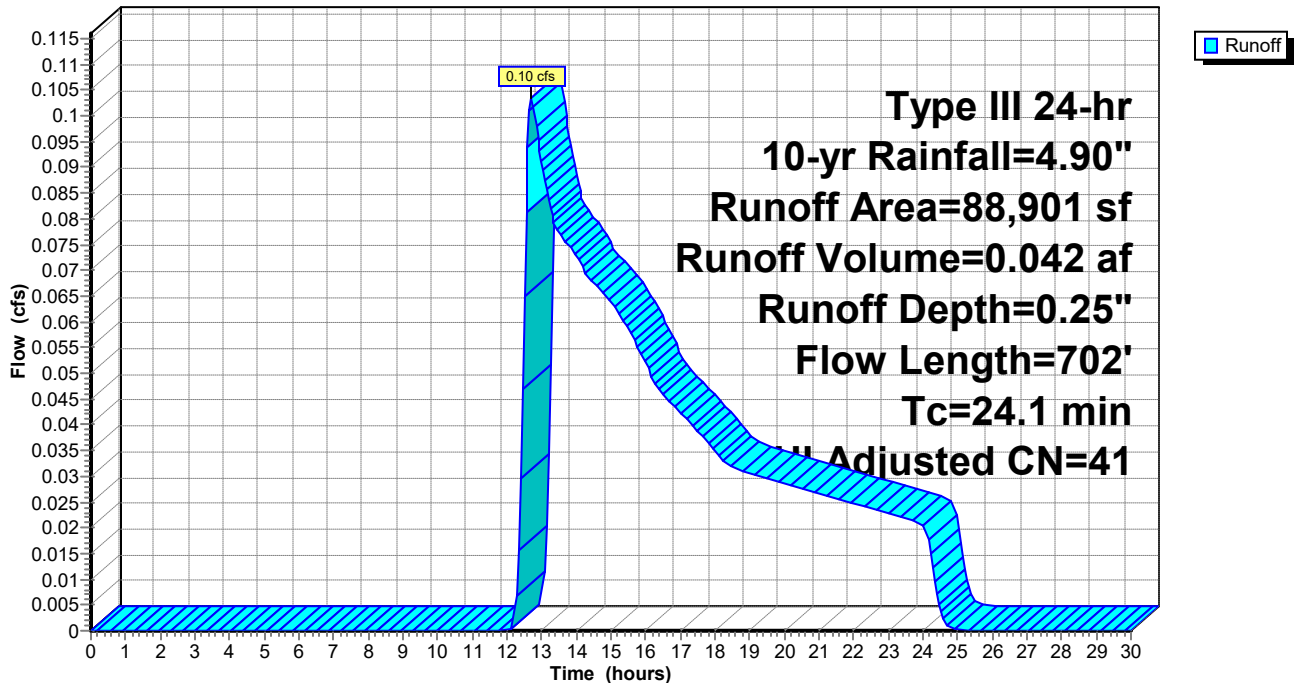
Area (sf)	CN	Adj	Description
58,561	39		>75% Grass cover, Good, HSG A
11,110	98		Unconnected pavement, HSG A
19,230	30		Woods, Good, HSG A
88,901	44	41	Weighted Average, UI Adjusted
77,791	37	37	87.50% Pervious Area
11,110	98	98	12.50% Impervious Area
11,110			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	117	0.0340	0.15		<b>Sheet Flow,</b> Grass: Dense n= 0.240 P2= 3.33"
9.5	442	0.0240	0.77		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
1.8	143	0.0070	1.35		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
24.1	702	Total			

## Subcatchment 6S: POST-UNC

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 10-yr Rainfall=4.90"

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**Summary for Pond 9P: INFIL-1**

Inflow Area = 0.741 ac, 53.51% Impervious, Inflow Depth = 2.04" for 10-yr event  
 Inflow = 1.43 cfs @ 12.17 hrs, Volume= 0.126 af  
 Outflow = 0.50 cfs @ 12.57 hrs, Volume= 0.126 af, Atten= 65%, Lag= 24.0 min  
 Discarded = 0.50 cfs @ 12.57 hrs, Volume= 0.126 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.15' @ 12.57 hrs Surf.Area= 2,590 sf Storage= 1,230 cf

Plug-Flow detention time= 17.0 min calculated for 0.126 af (100% of inflow)  
 Center-of-Mass det. time= 17.0 min ( 868.5 - 851.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	3,941 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,081	0	0
34.00	2,392	868	868
35.00	3,753	3,073	3,941

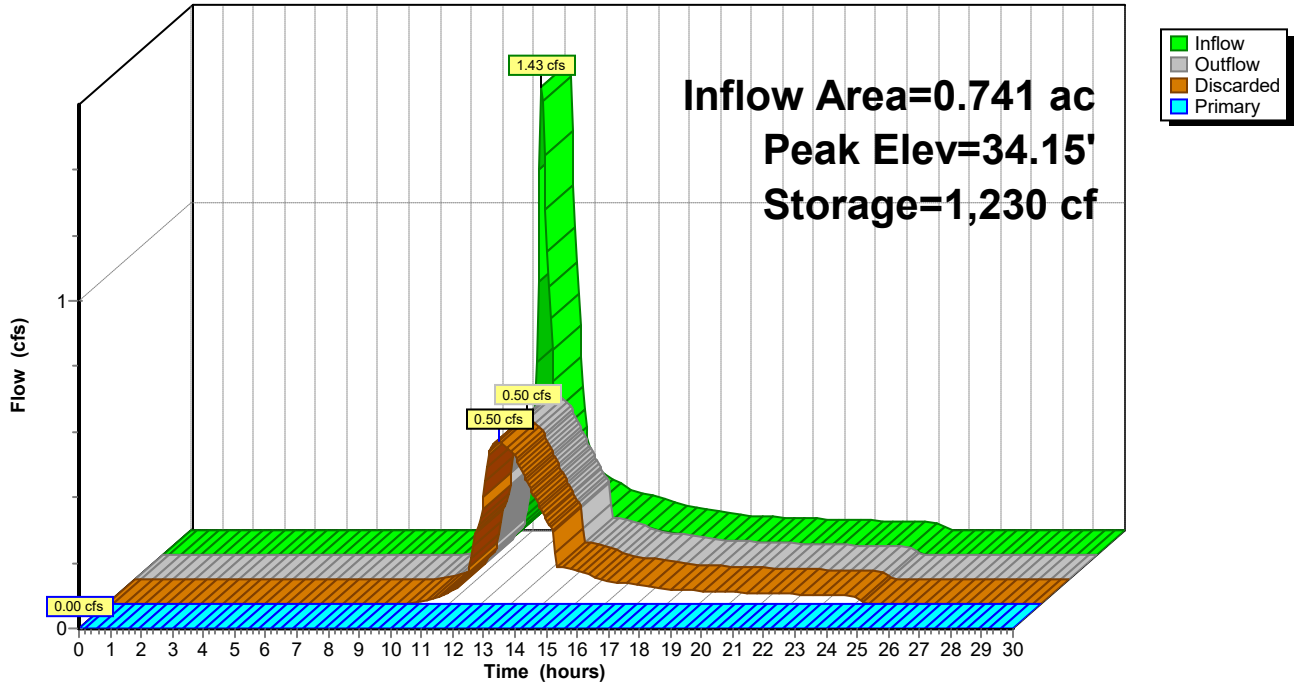
Device	Routing	Invert	Outlet Devices
#1	Discarded	33.50'	<b>8.270 in/hr Exfiltration over Surface area</b>
#2	Primary	34.75'	<b>5.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Discarded OutFlow** Max=0.50 cfs @ 12.57 hrs HW=34.14' (Free Discharge)  
 ↑1=**Exfiltration** (Exfiltration Controls 0.50 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.50' (Free Discharge)  
 ↑2=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Pond 9P: INFIL-1**

Hydrograph



# Holley Street MLD\_test

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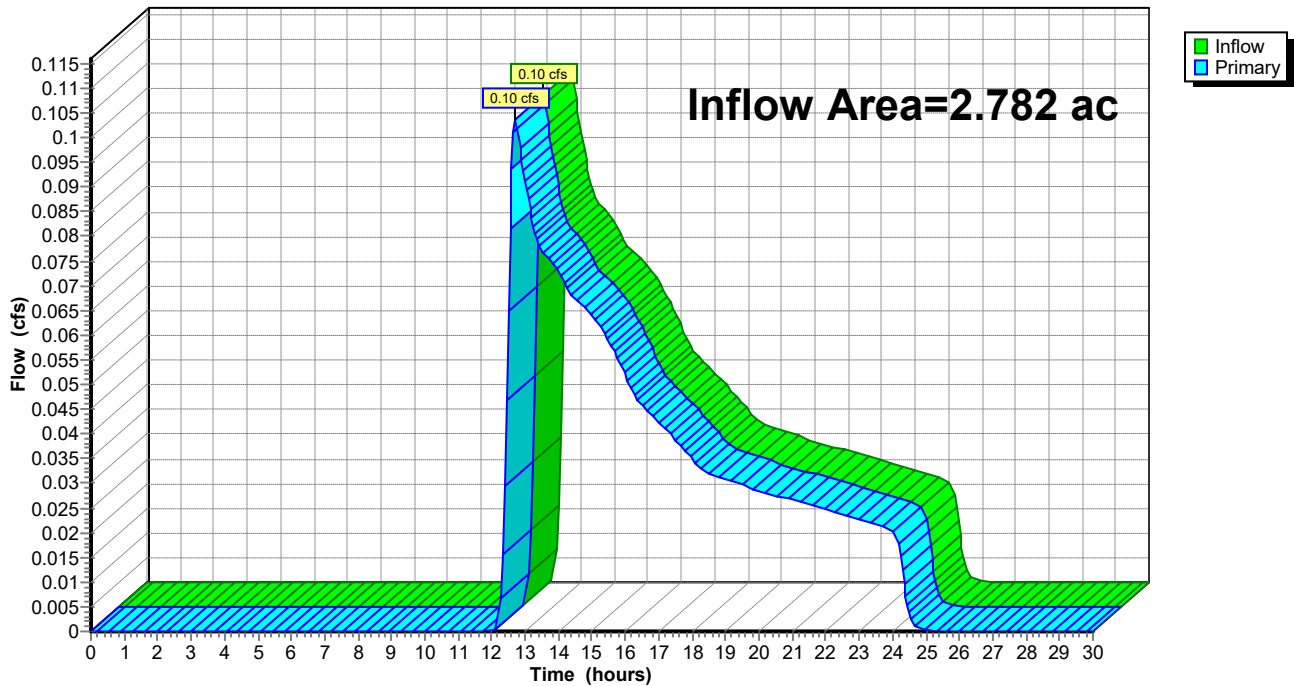
## Summary for Link 7L: POST-OAK

Inflow Area = 2.782 ac, 23.42% Impervious, Inflow Depth = 0.18" for 10-yr event  
Inflow = 0.10 cfs @ 12.71 hrs, Volume= 0.042 af  
Primary = 0.10 cfs @ 12.71 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

### Link 7L: POST-OAK

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 25-yr Rainfall=6.10"

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

**Subcatchment 5S: POST-OAK** Runoff Area=32,280 sf 53.51% Impervious Runoff Depth=2.98"  
Flow Length=54' Slope=0.0090 '/' Tc=11.8 min CN=71 Runoff=2.12 cfs 0.184 af

**Subcatchment 6S: POST-UNC** Runoff Area=88,901 sf 12.50% Impervious Runoff Depth=0.59"  
Flow Length=702' Tc=24.1 min UI Adjusted CN=41 Runoff=0.46 cfs 0.100 af

**Pond 9P: INFIL-1** Peak Elev=34.48' Storage=2,183 cf Inflow=2.12 cfs 0.184 af  
Discarded=0.58 cfs 0.184 af Primary=0.00 cfs 0.000 af Outflow=0.58 cfs 0.184 af

**Link 7L: POST-OAK** Inflow=0.46 cfs 0.100 af  
Primary=0.46 cfs 0.100 af

**Total Runoff Area = 2.782 ac Runoff Volume = 0.284 af Average Runoff Depth = 1.23"**  
**76.58% Pervious = 2.130 ac 23.42% Impervious = 0.652 ac**



# Holley Street MLD\_test

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Type III 24-hr 25-yr Rainfall=6.10"

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## Summary for Subcatchment 5S: POST-OAK

Runoff = 2.12 cfs @ 12.17 hrs, Volume= 0.184 af, Depth= 2.98"

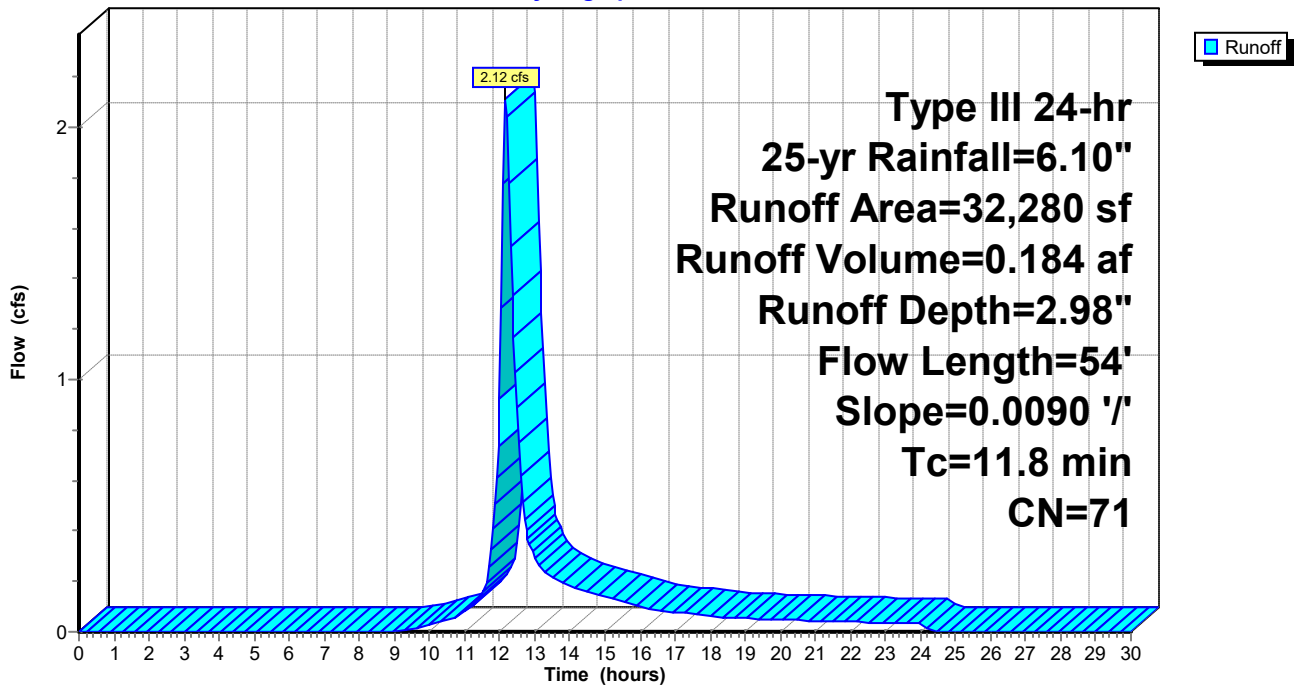
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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	54	0.0090	0.08		<b>Sheet Flow,</b> Grass: Dense n= 0.240 P2= 3.33"

## Subcatchment 5S: POST-OAK

Hydrograph



# Holley Street MLD\_test

Type III 24-hr 25-yr Rainfall=6.10"

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## Summary for Subcatchment 6S: POST-UNC

Runoff = 0.46 cfs @ 12.56 hrs, Volume= 0.100 af, Depth= 0.59"

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 25-yr Rainfall=6.10"

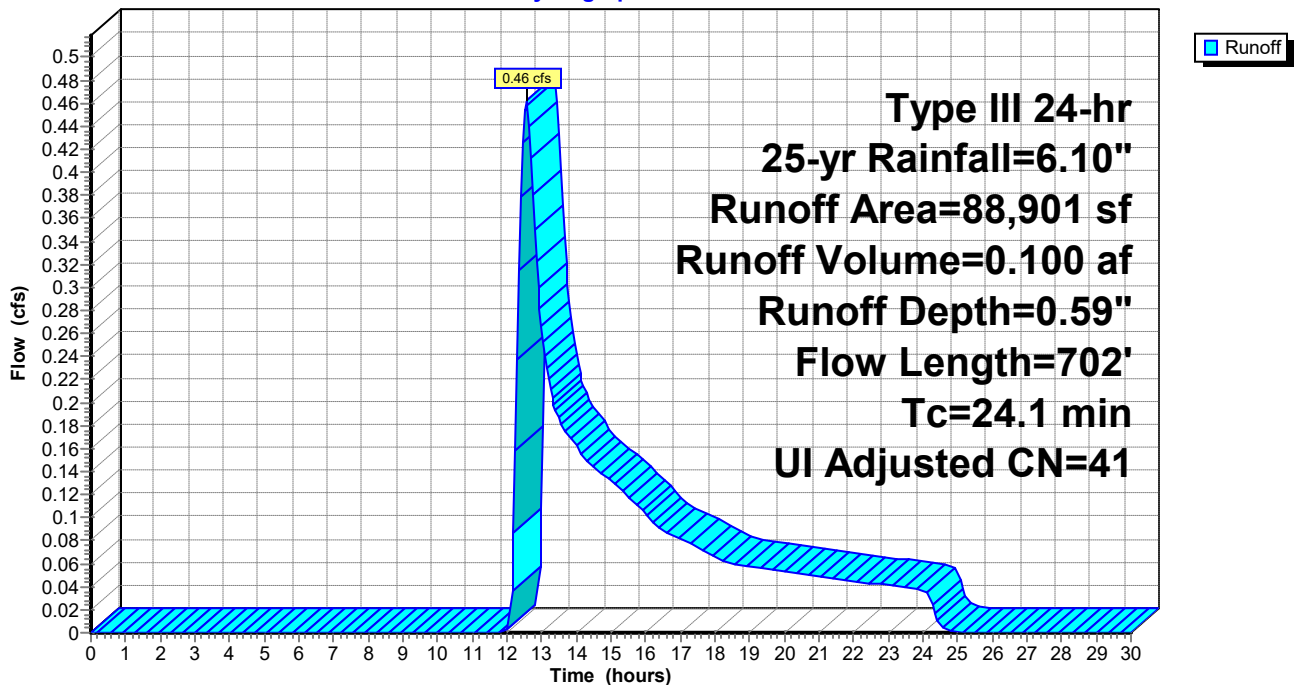
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77,791	37	37	87.50% Pervious Area
11,110	98	98	12.50% Impervious Area
11,110			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	117	0.0340	0.15		<b>Sheet Flow,</b> Grass: Dense n= 0.240 P2= 3.33"
9.5	442	0.0240	0.77		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
1.8	143	0.0070	1.35		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
24.1	702	Total			

## Subcatchment 6S: POST-UNC

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 25-yr Rainfall=6.10"

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**Summary for Pond 9P: INFIL-1**

Inflow Area = 0.741 ac, 53.51% Impervious, Inflow Depth = 2.98" for 25-yr event  
 Inflow = 2.12 cfs @ 12.17 hrs, Volume= 0.184 af  
 Outflow = 0.58 cfs @ 12.62 hrs, Volume= 0.184 af, Atten= 72%, Lag= 27.0 min  
 Discarded = 0.58 cfs @ 12.62 hrs, Volume= 0.184 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.48' @ 12.62 hrs Surf.Area= 3,050 sf Storage= 2,183 cf

Plug-Flow detention time= 27.9 min calculated for 0.184 af (100% of inflow)  
 Center-of-Mass det. time= 27.8 min ( 868.3 - 840.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	3,941 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,081	0	0
34.00	2,392	868	868
35.00	3,753	3,073	3,941

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.50'	<b>8.270 in/hr Exfiltration over Surface area</b>
#2	Primary	34.75'	<b>5.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Discarded OutFlow** Max=0.58 cfs @ 12.62 hrs HW=34.48' (Free Discharge)  
 ↑1=**Exfiltration** (Exfiltration Controls 0.58 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.50' (Free Discharge)  
 ↑2=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

# Holley Street MLD\_test

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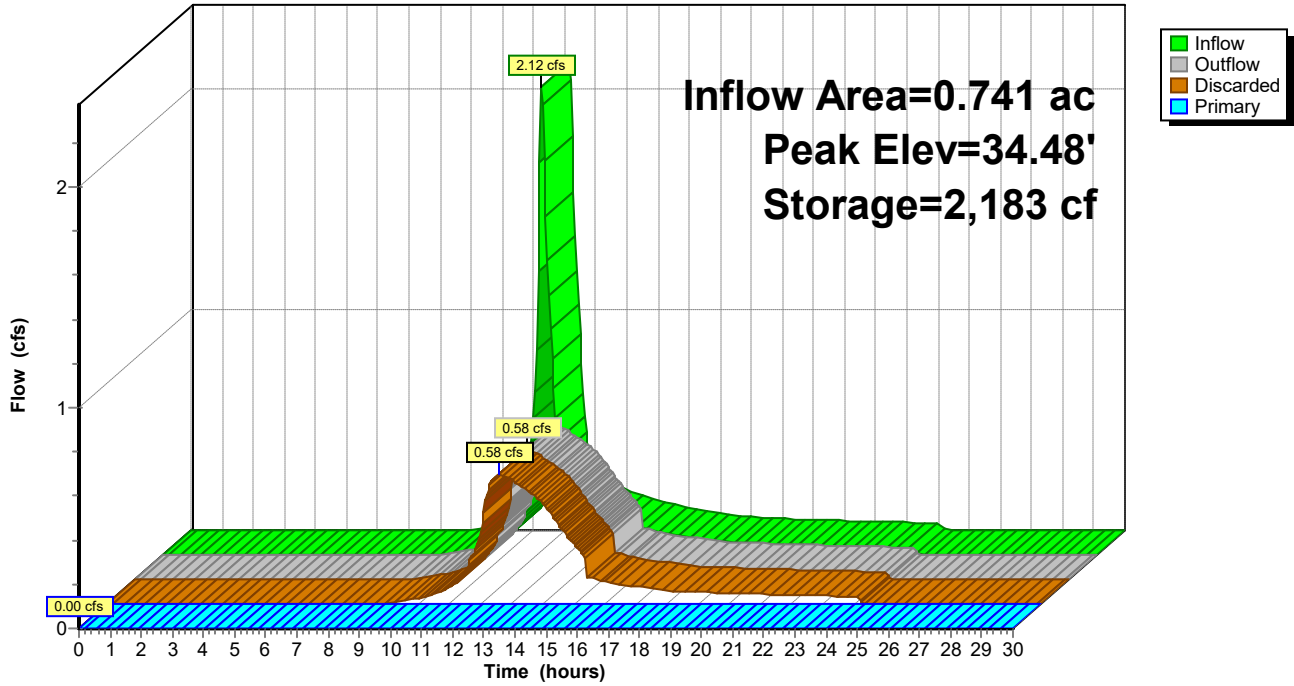
Type III 24-hr 25-yr Rainfall=6.10"

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## Pond 9P: INFIL-1

Hydrograph



# Holley Street MLD\_test

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Type III 24-hr 25-yr Rainfall=6.10"

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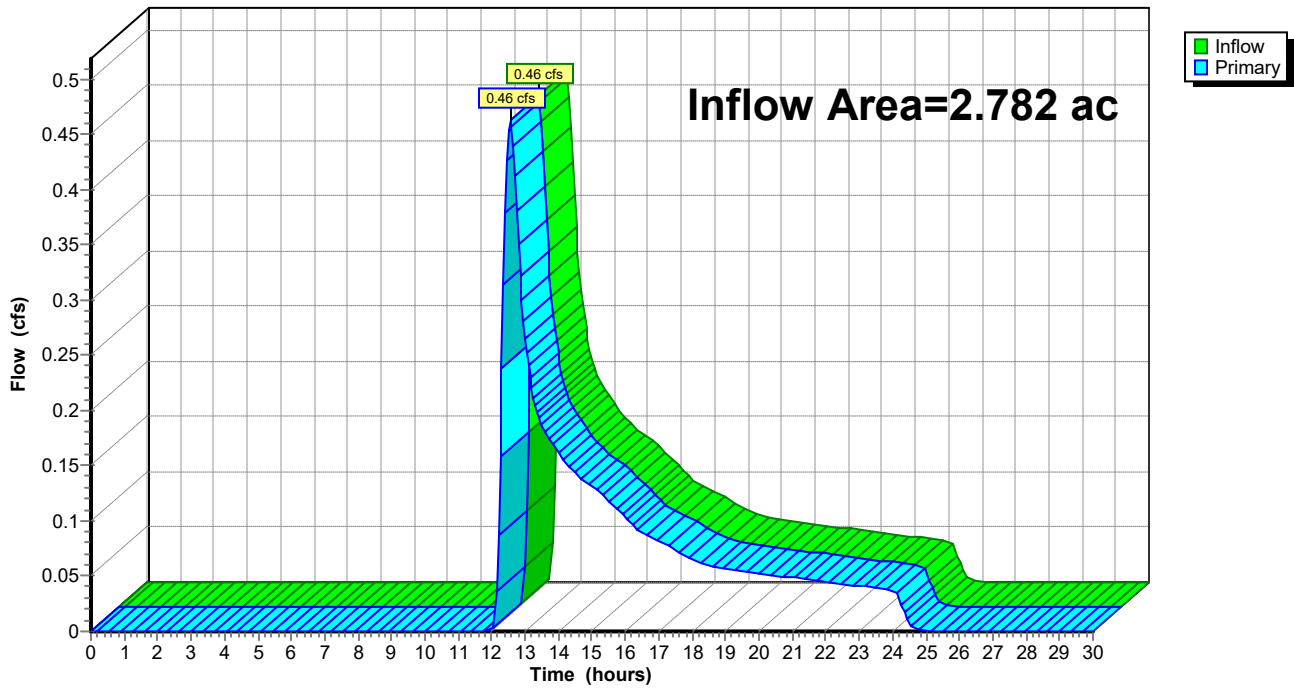
## Summary for Link 7L: POST-OAK

Inflow Area = 2.782 ac, 23.42% Impervious, Inflow Depth = 0.43" for 25-yr event  
Inflow = 0.46 cfs @ 12.56 hrs, Volume= 0.100 af  
Primary = 0.46 cfs @ 12.56 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

### Link 7L: POST-OAK

Hydrograph



## Holley Street MLD\_test

Type III 24-hr 100-yr Rainfall=8.50"

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

### Subcatchment 5S: POST-OAK

Runoff Area=32,280 sf 53.51% Impervious Runoff Depth=5.02"  
Flow Length=54' Slope=0.0090 '/' Tc=11.8 min CN=71 Runoff=3.58 cfs 0.310 af

### Subcatchment 6S: POST-UNC

Runoff Area=88,901 sf 12.50% Impervious Runoff Depth=1.58"  
Flow Length=702' Tc=24.1 min UI Adjusted CN=41 Runoff=1.85 cfs 0.269 af

### Pond 9P: INFIL-1

Peak Elev=34.93' Storage=3,682 cf Inflow=3.58 cfs 0.310 af  
Discarded=0.70 cfs 0.281 af Primary=0.93 cfs 0.029 af Outflow=1.63 cfs 0.310 af

### Link 7L: POST-OAK

Inflow=2.76 cfs 0.298 af  
Primary=2.76 cfs 0.298 af

**Total Runoff Area = 2.782 ac Runoff Volume = 0.578 af Average Runoff Depth = 2.49"**  
**76.58% Pervious = 2.130 ac 23.42% Impervious = 0.652 ac**

# Holley Street MLD\_test

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Type III 24-hr 100-yr Rainfall=8.50"

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## Summary for Subcatchment 5S: POST-OAK

Runoff = 3.58 cfs @ 12.16 hrs, Volume= 0.310 af, Depth= 5.02"

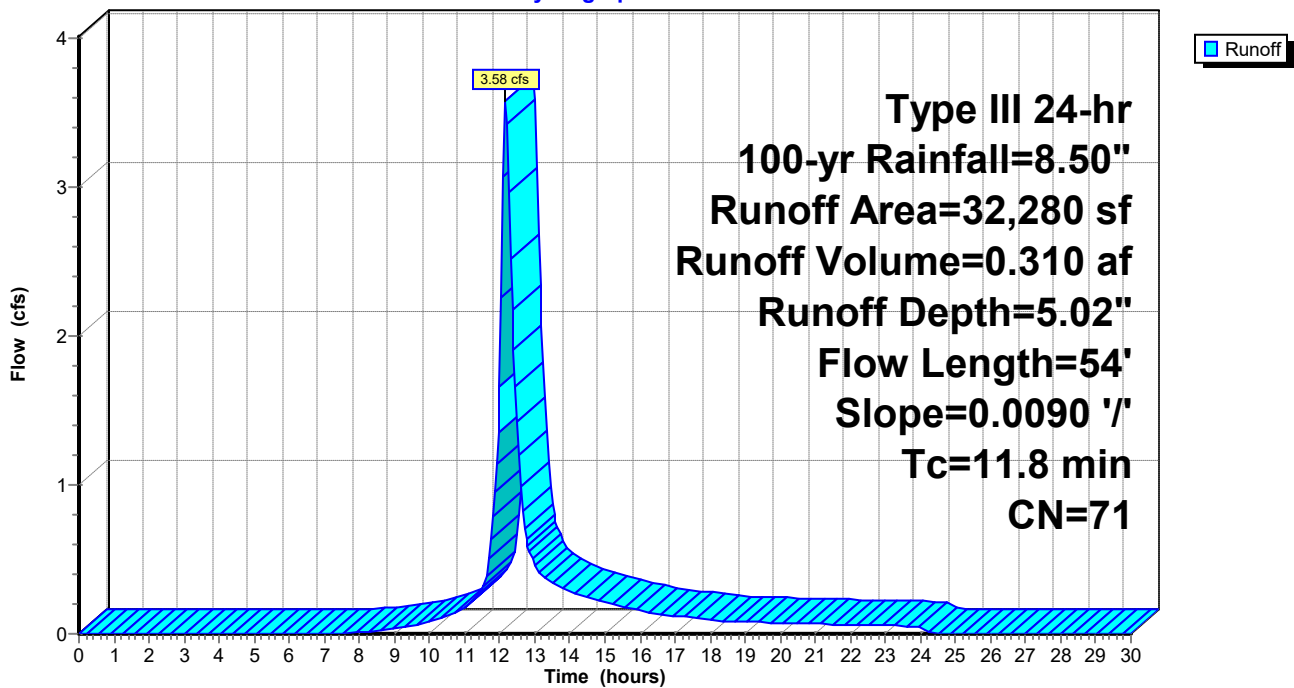
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-yr Rainfall=8.50"

Area (sf)	CN	Description
11,076	98	Roofs, HSG A
15,008	39	>75% Grass cover, Good, HSG A
* 6,196	98	Driveways (Impervious)
32,280	71	Weighted Average
15,008	39	46.49% Pervious Area
17,272	98	53.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	54	0.0090	0.08		<b>Sheet Flow,</b> Grass: Dense n= 0.240 P2= 3.33"

## Subcatchment 5S: POST-OAK

Hydrograph



# Holley Street MLD\_test

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Type III 24-hr 100-yr Rainfall=8.50"

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## Summary for Subcatchment 6S: POST-UNC

Runoff = 1.85 cfs @ 12.42 hrs, Volume= 0.269 af, Depth= 1.58"

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 100-yr Rainfall=8.50"

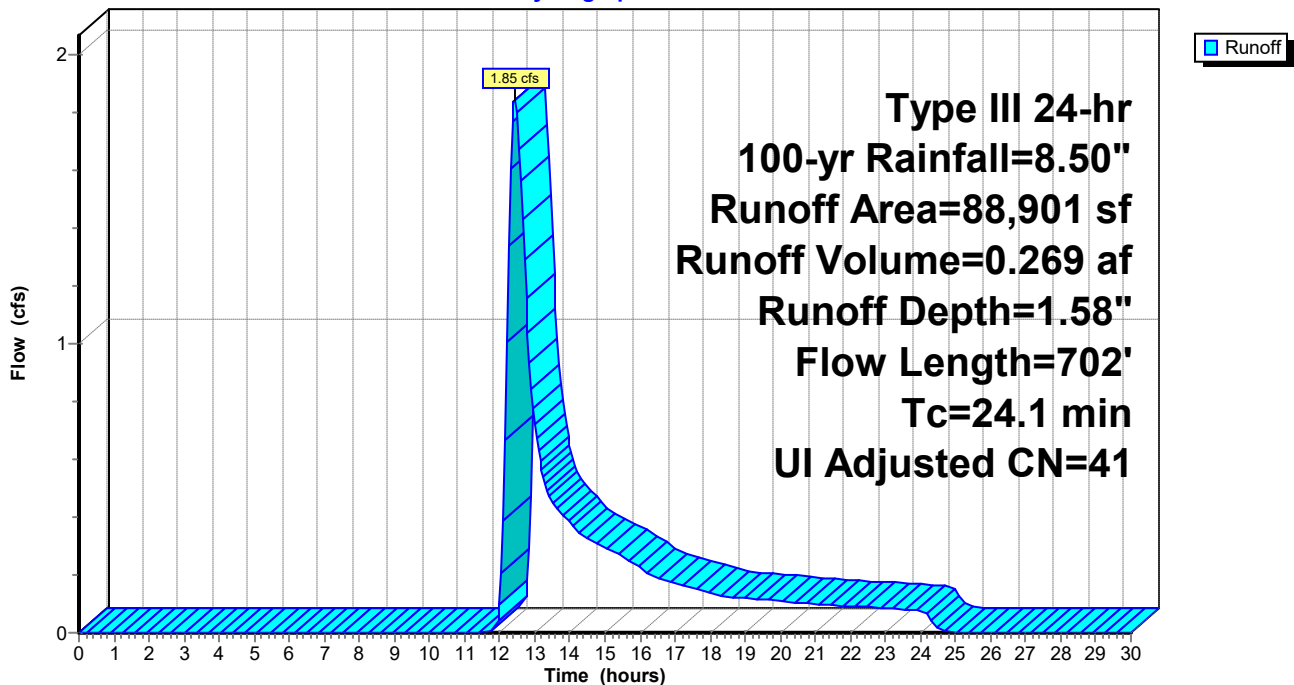
Area (sf)	CN	Adj	Description
58,561	39		>75% Grass cover, Good, HSG A
11,110	98		Unconnected pavement, HSG A
19,230	30		Woods, Good, HSG A
88,901	44	41	Weighted Average, UI Adjusted
77,791	37	37	87.50% Pervious Area
11,110	98	98	12.50% Impervious Area
11,110			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	117	0.0340	0.15		<b>Sheet Flow,</b> Grass: Dense n= 0.240 P2= 3.33"
9.5	442	0.0240	0.77		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
1.8	143	0.0070	1.35		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
24.1	702	Total			

## Subcatchment 6S: POST-UNC

Hydrograph





**Holley Street MLD\_test**

Type III 24-hr 100-yr Rainfall=8.50"

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**Summary for Pond 9P: INFIL-1**

Inflow Area = 0.741 ac, 53.51% Impervious, Inflow Depth = 5.02" for 100-yr event  
 Inflow = 3.58 cfs @ 12.16 hrs, Volume= 0.310 af  
 Outflow = 1.63 cfs @ 12.46 hrs, Volume= 0.310 af, Atten= 54%, Lag= 17.7 min  
 Discarded = 0.70 cfs @ 12.46 hrs, Volume= 0.281 af  
 Primary = 0.93 cfs @ 12.46 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.93' @ 12.46 hrs Surf.Area= 3,658 sf Storage= 3,682 cf

Plug-Flow detention time= 36.6 min calculated for 0.309 af (100% of inflow)  
 Center-of-Mass det. time= 36.5 min ( 862.0 - 825.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	3,941 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,081	0	0
34.00	2,392	868	868
35.00	3,753	3,073	3,941

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.50'	<b>8.270 in/hr Exfiltration over Surface area</b>
#2	Primary	34.75'	<b>5.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50			
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68			
2.72 2.81 2.92 2.97 3.07 3.32			

**Discarded OutFlow** Max=0.70 cfs @ 12.46 hrs HW=34.93' (Free Discharge)  
 ↑1=**Exfiltration** (Exfiltration Controls 0.70 cfs)

**Primary OutFlow** Max=0.93 cfs @ 12.46 hrs HW=34.93' (Free Discharge)  
 ↑2=**Broad-Crested Rectangular Weir** (Weir Controls 0.93 cfs @ 1.03 fps)

**Holley Street MLD\_test**

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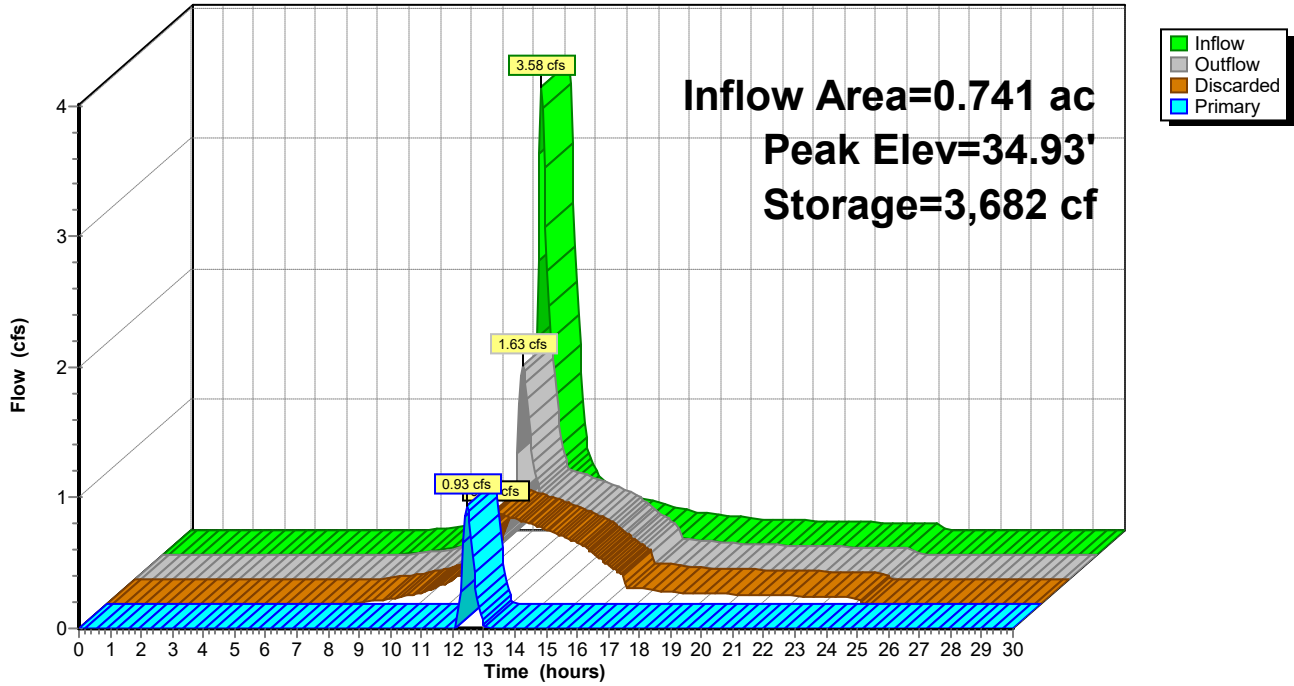
Type III 24-hr 100-yr Rainfall=8.50"

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**Pond 9P: INFIL-1**

Hydrograph



**Holley Street MLD\_test**

Type III 24-hr 100-yr Rainfall=8.50"

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**Summary for Link 7L: POST-OAK**

Inflow Area = 2.782 ac, 23.42% Impervious, Inflow Depth = 1.28" for 100-yr event  
Inflow = 2.76 cfs @ 12.44 hrs, Volume= 0.298 af  
Primary = 2.76 cfs @ 12.44 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

**Link 7L: POST-OAK**

Hydrograph

