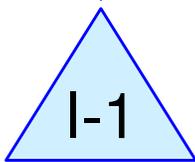


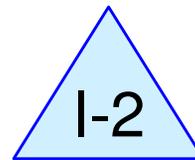
Patio Area



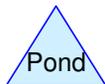
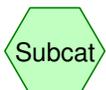
Infiltration Trench



Shed



Shed Infil.



Summary for Subcatchment R-1: Patio Area

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 3.03"

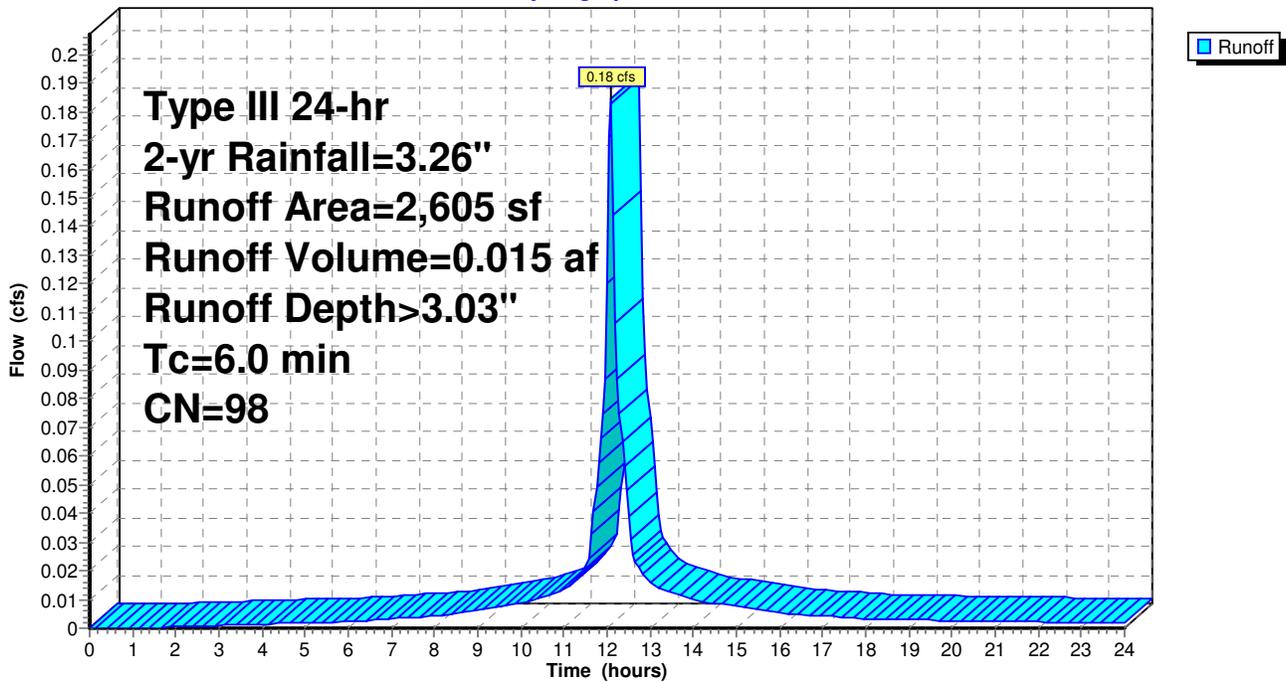
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.26"

Area (sf)	CN	Description
2,605	98	Unconnected pavement, HSG A
2,605		100.00% Impervious Area
2,605		100.00% Unconnected

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

Subcatchment R-1: Patio Area

Hydrograph



Summary for Subcatchment R-2: Shed

Runoff = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af, Depth> 3.03"

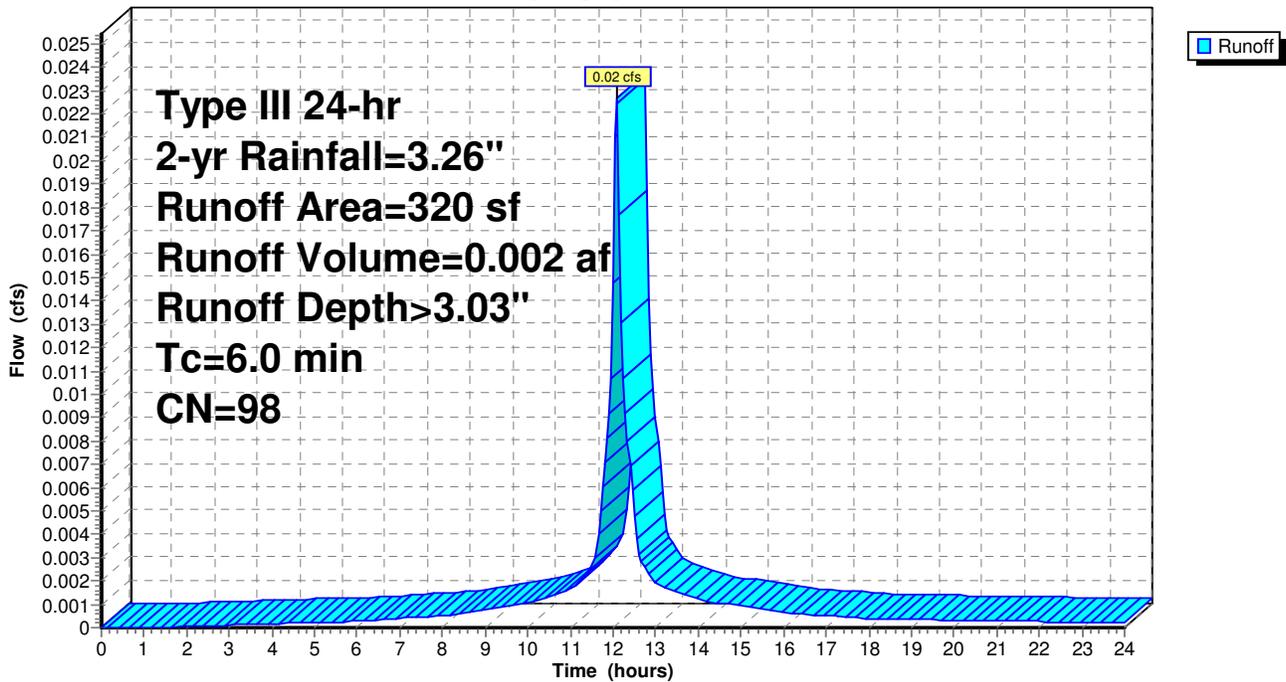
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.26"

Area (sf)	CN	Description
320	98	Roofs, HSG A
320		100.00% Impervious Area

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

Subcatchment R-2: Shed

Hydrograph



Summary for Pond I-1: Infiltration Trench

Inflow Area = 0.060 ac, 100.00% Impervious, Inflow Depth > 3.03" for 2-yr event
 Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af
 Outflow = 0.06 cfs @ 11.85 hrs, Volume= 0.015 af, Atten= 70%, Lag= 0.0 min
 Discarded = 0.06 cfs @ 11.85 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.90' @ 12.40 hrs Surf.Area= 293 sf Storage= 105 cf

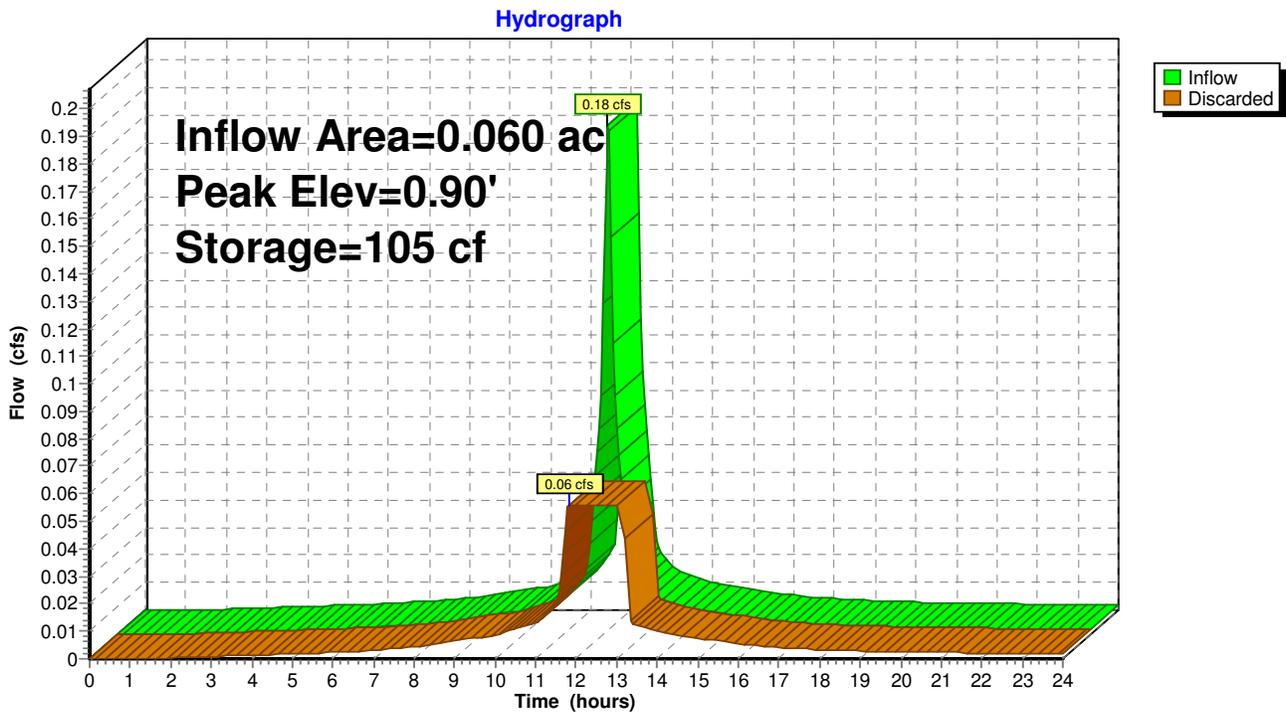
Plug-Flow detention time= 8.5 min calculated for 0.015 af (100% of inflow)
 Center-of-Mass det. time= 8.4 min (763.9 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	351 cf	2.25'W x 130.00'L x 3.00'H Prismatic 878 cf Overall x 40.0% Voids

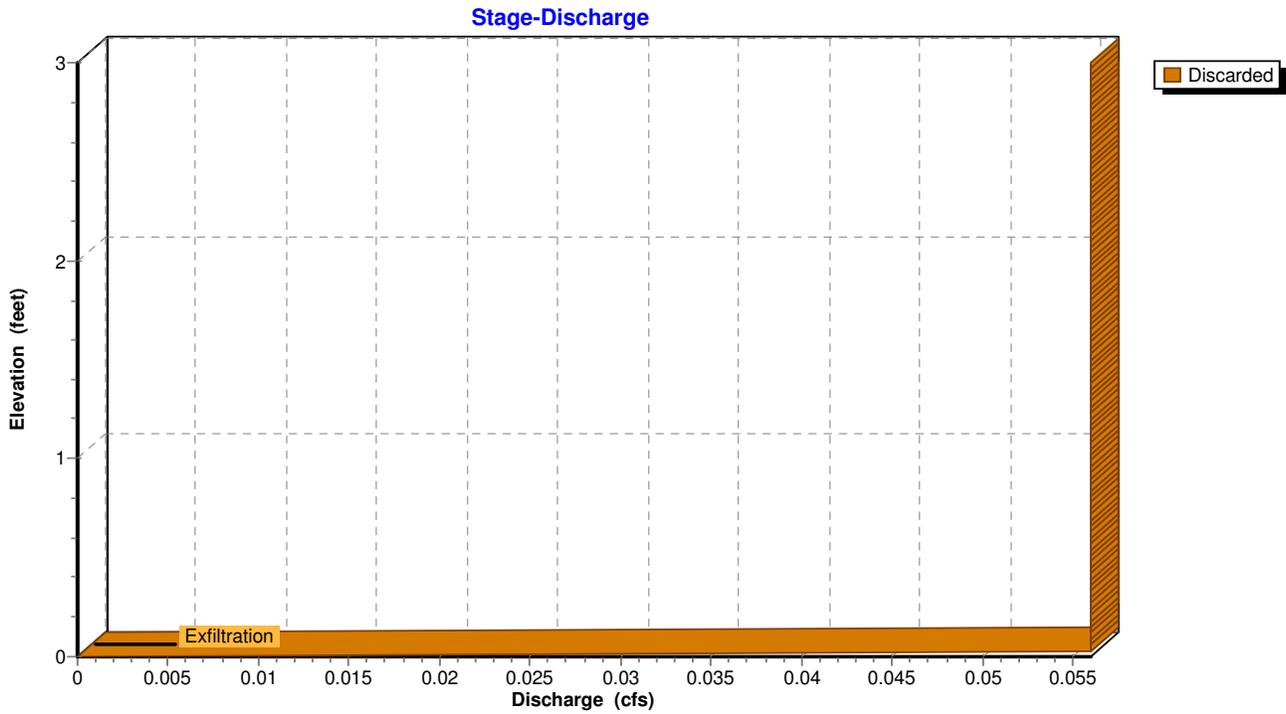
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 11.85 hrs HW=0.04' (Free Discharge)
 ←1=Exfiltration (Exfiltration Controls 0.06 cfs)

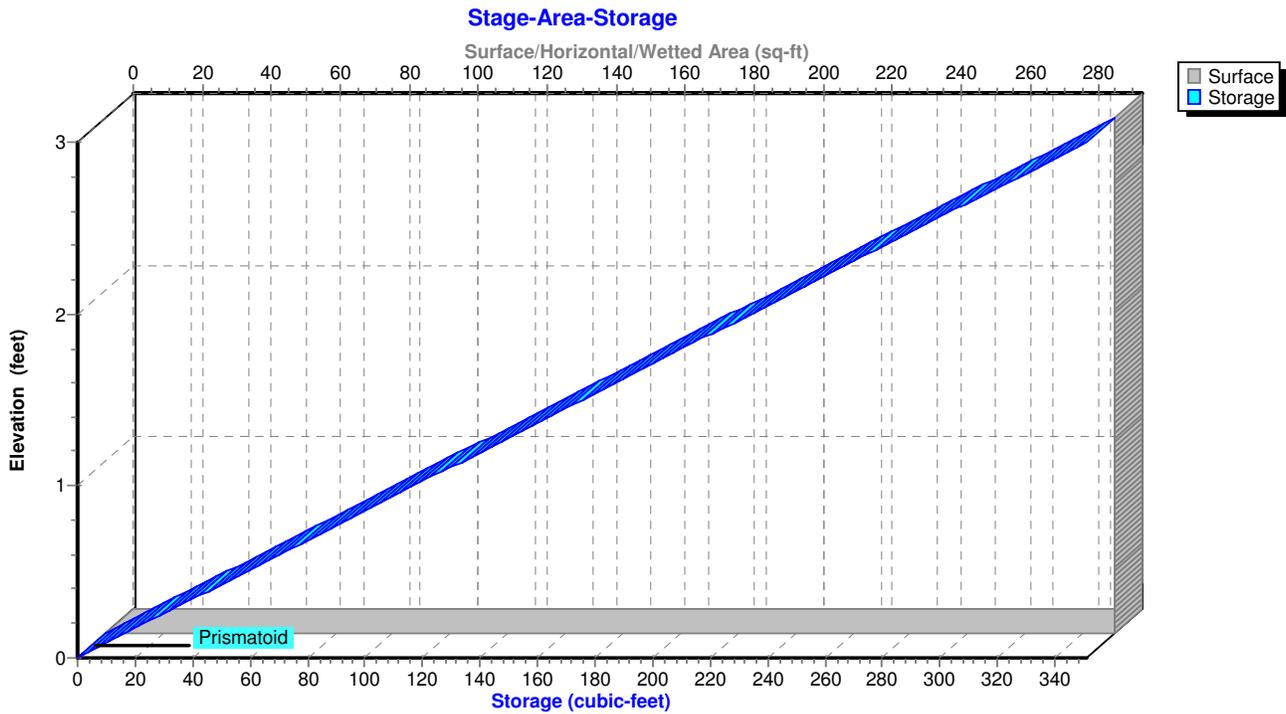
Pond I-1: Infiltration Trench



Pond I-1: Infiltration Trench



Pond I-1: Infiltration Trench



2021-11-23 INFILTRATION_Submitted

Type III 24-hr 2-yr Rainfall=3.26"

Prepared by Strong Point Engineering Solutions, Inc.

Printed 11/23/2021

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Summary for Pond I-2: Shed Infil.

Inflow Area = 0.007 ac, 100.00% Impervious, Inflow Depth > 3.03" for 2-yr event
 Inflow = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.00 hrs, Volume= 0.002 af, Atten= 48%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 12.00 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.24' @ 12.23 hrs Surf.Area= 62 sf Storage= 6 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 2.1 min (757.7 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	51 cf	4.75'W x 13.00'L x 2.54'H Field A 157 cf Overall - 29 cf Embedded = 128 cf x 40.0% Voids
#2A	0.50'	29 cf	Cultec R-150XLHD Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 1 rows
		80 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.00 hrs HW=0.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Pond I-2: Shed Infil. - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap

Row Length Adjustment= +0.75' x 2.65 sf x 1 rows

1 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 11.00' Row Length +12.0" End Stone x 2 = 13.00' Base Length

1 Rows x 33.0" Wide + 12.0" Side Stone x 2 = 4.75' Base Width

6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

1 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 1 Rows = 29.1 cf Chamber Storage

156.9 cf Field - 29.1 cf Chambers = 127.8 cf Stone x 40.0% Voids = 51.1 cf Stone Storage

Chamber Storage + Stone Storage = 80.3 cf = 0.002 af

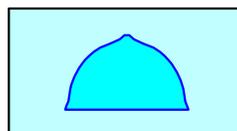
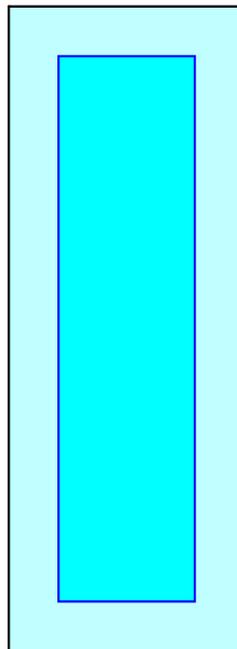
Overall Storage Efficiency = 51.1%

Overall System Size = 13.00' x 4.75' x 2.54'

1 Chambers

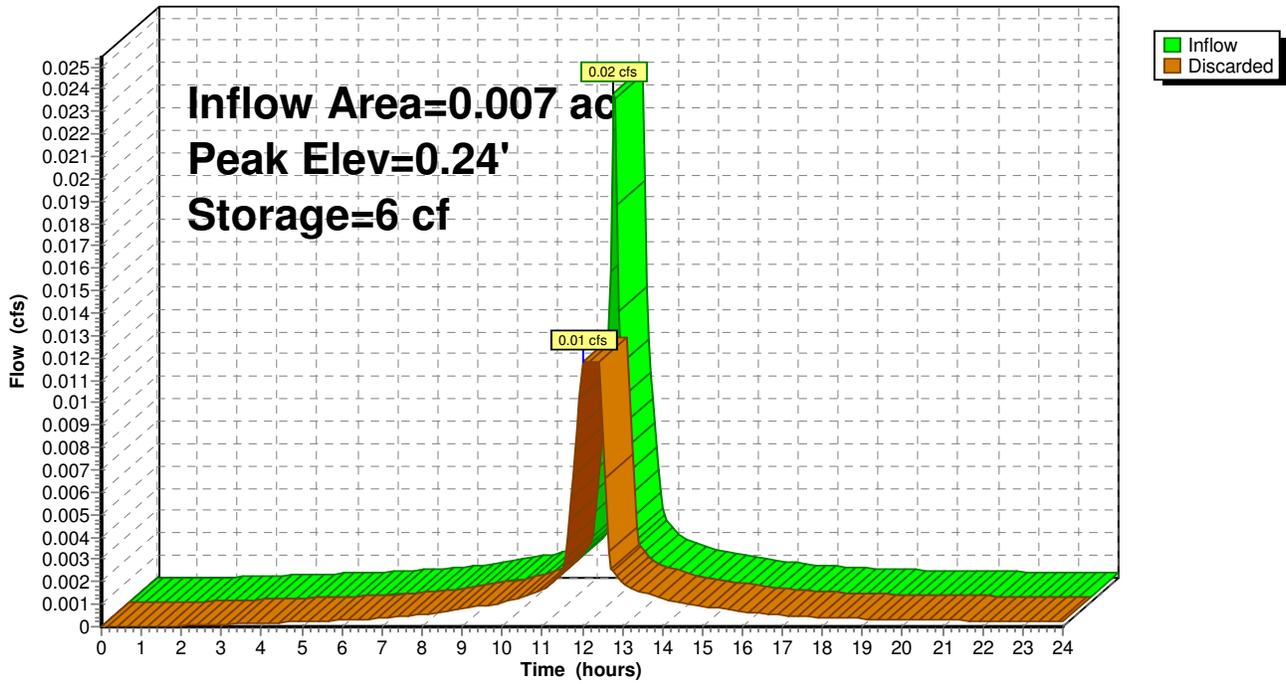
5.8 cy Field

4.7 cy Stone



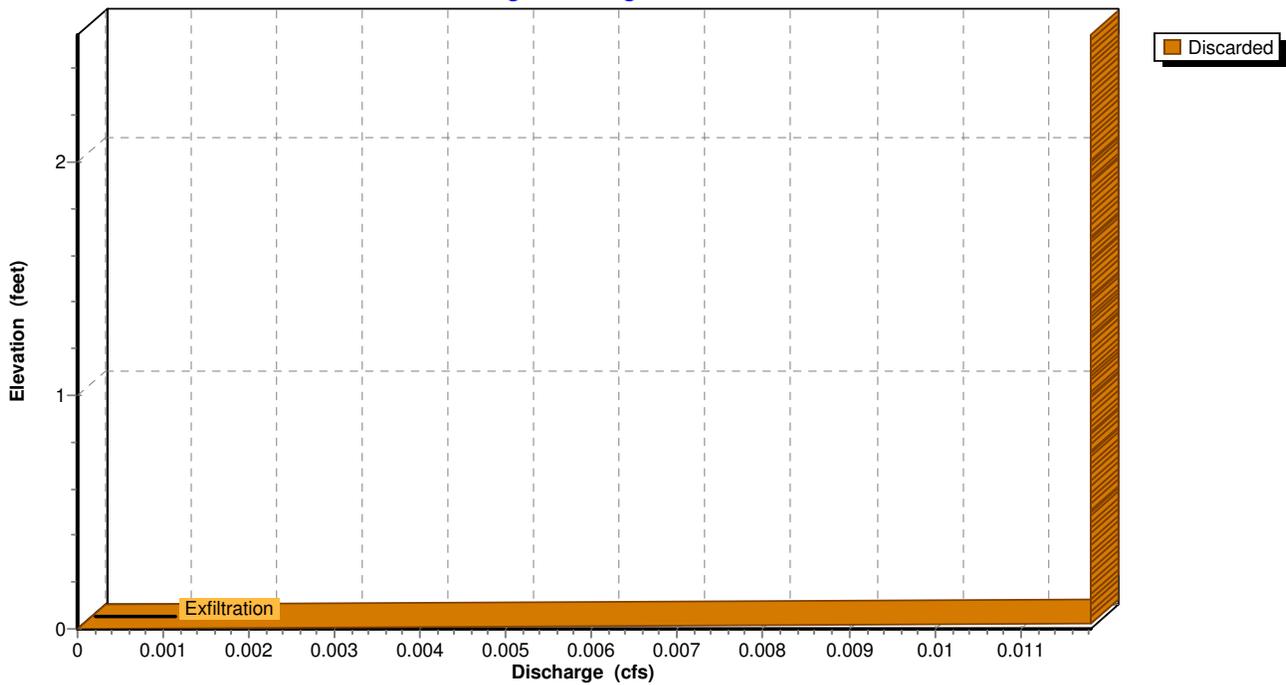
Pond I-2: Shed Infil.

Hydrograph

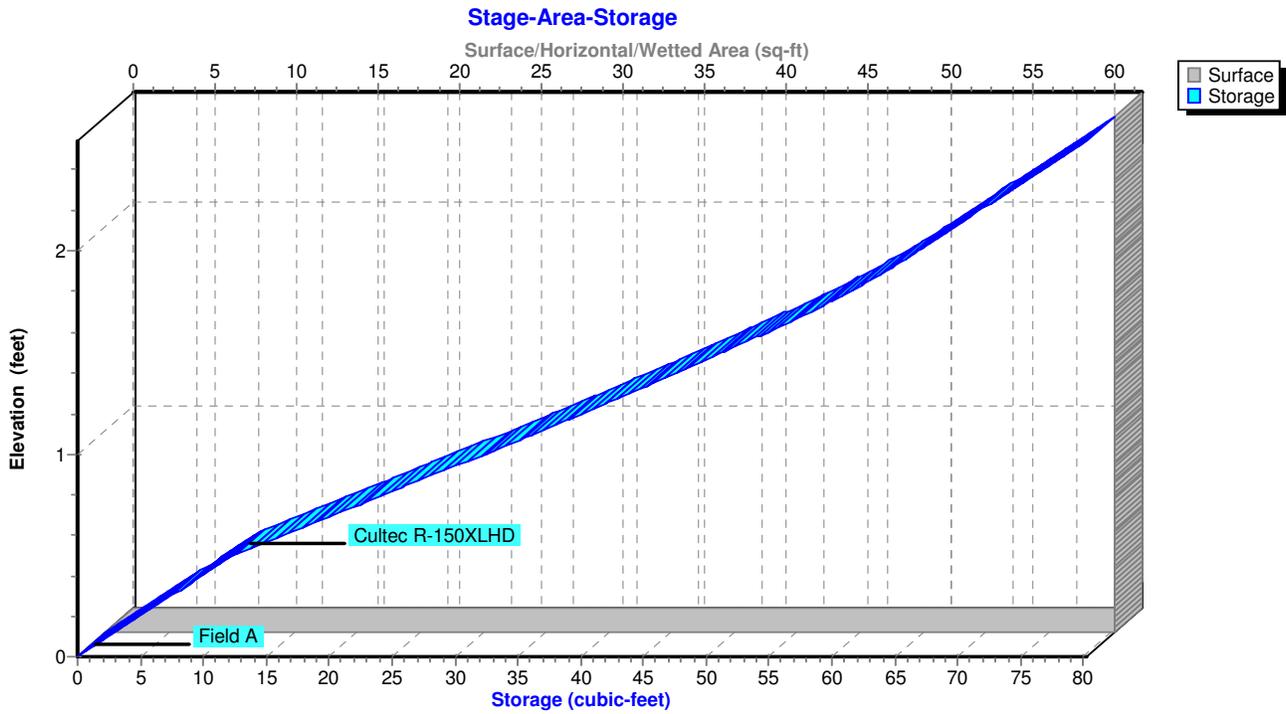


Pond I-2: Shed Infil.

Stage-Discharge



Pond I-2: Shed Infil.



Summary for Subcatchment R-1: Patio Area

Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 4.65"

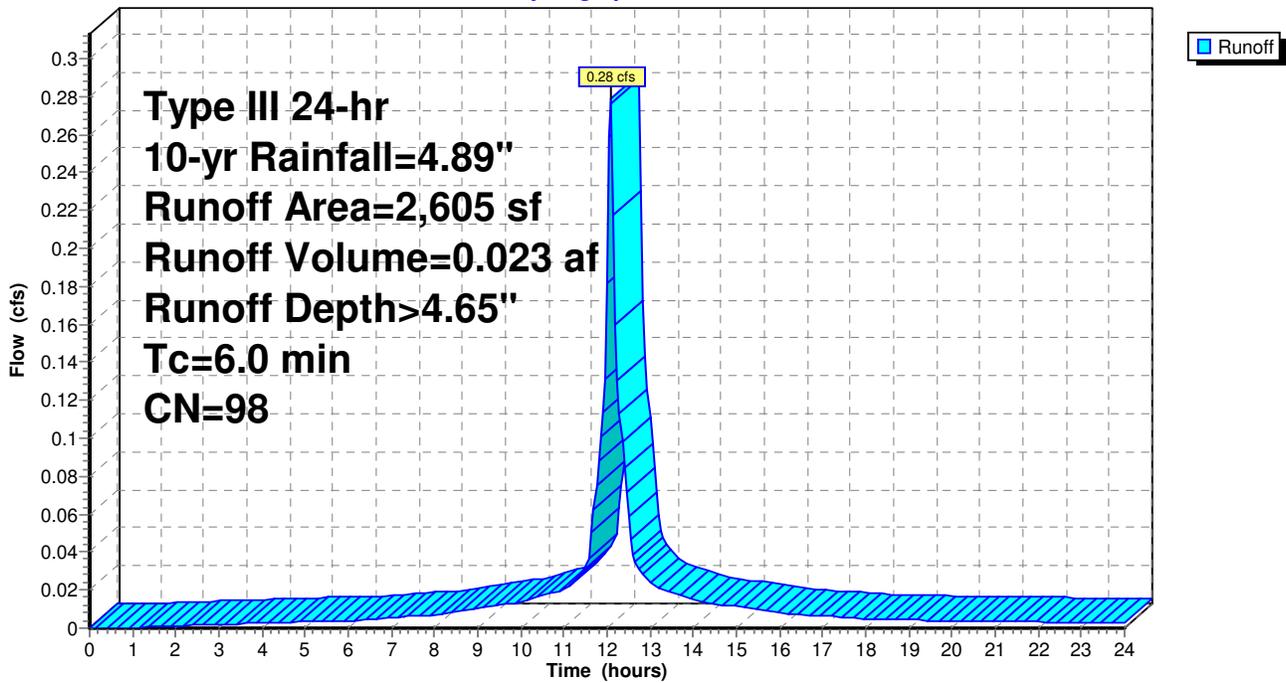
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.89"

Area (sf)	CN	Description
2,605	98	Unconnected pavement, HSG A
2,605		100.00% Impervious Area
2,605		100.00% Unconnected

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

Subcatchment R-1: Patio Area

Hydrograph



Summary for Subcatchment R-2: Shed

Runoff = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af, Depth> 4.65"

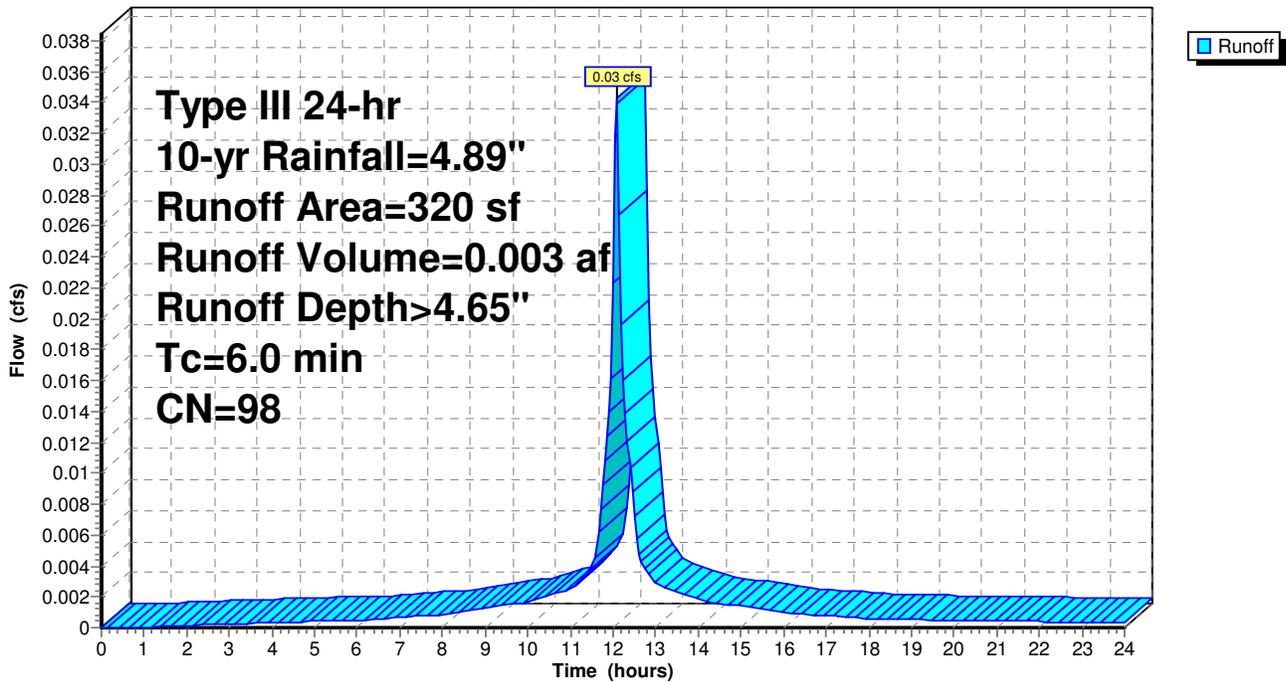
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.89"

Area (sf)	CN	Description
320	98	Roofs, HSG A
320		100.00% Impervious Area

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

Subcatchment R-2: Shed

Hydrograph



Summary for Pond I-1: Infiltration Trench

Inflow Area = 0.060 ac, 100.00% Impervious, Inflow Depth > 4.65" for 10-yr event
 Inflow = 0.28 cfs @ 12.09 hrs, Volume= 0.023 af
 Outflow = 0.06 cfs @ 11.70 hrs, Volume= 0.023 af, Atten= 80%, Lag= 0.0 min
 Discarded = 0.06 cfs @ 11.70 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1.98' @ 12.51 hrs Surf.Area= 293 sf Storage= 232 cf

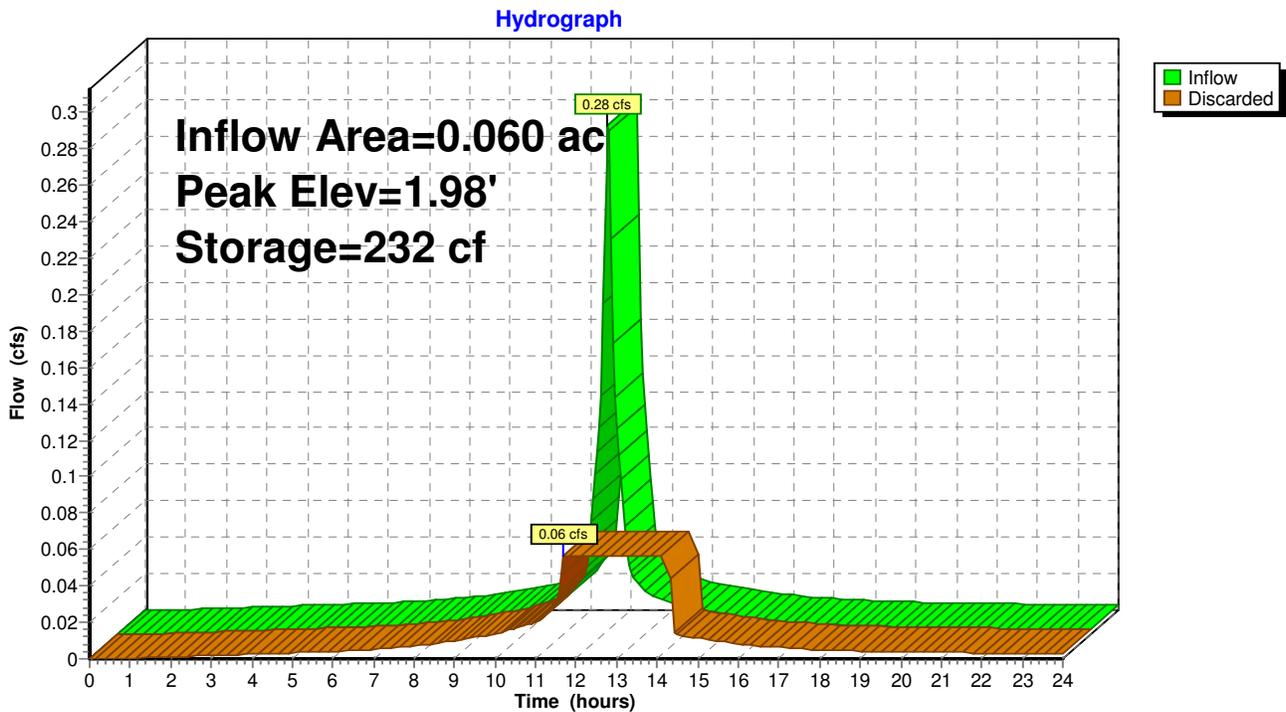
Plug-Flow detention time= 20.7 min calculated for 0.023 af (100% of inflow)
 Center-of-Mass det. time= 20.6 min (768.5 - 748.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	351 cf	2.25'W x 130.00'L x 3.00'H Prismatic 878 cf Overall x 40.0% Voids

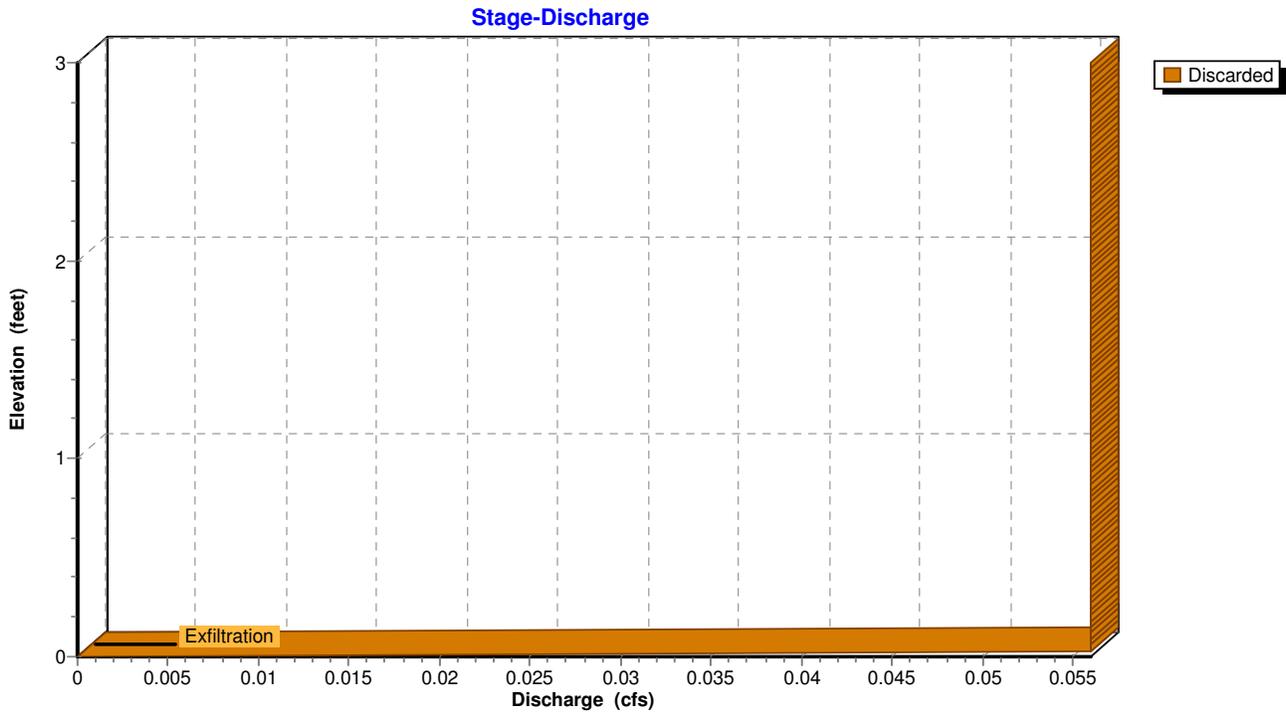
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 11.70 hrs HW=0.03' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.06 cfs)

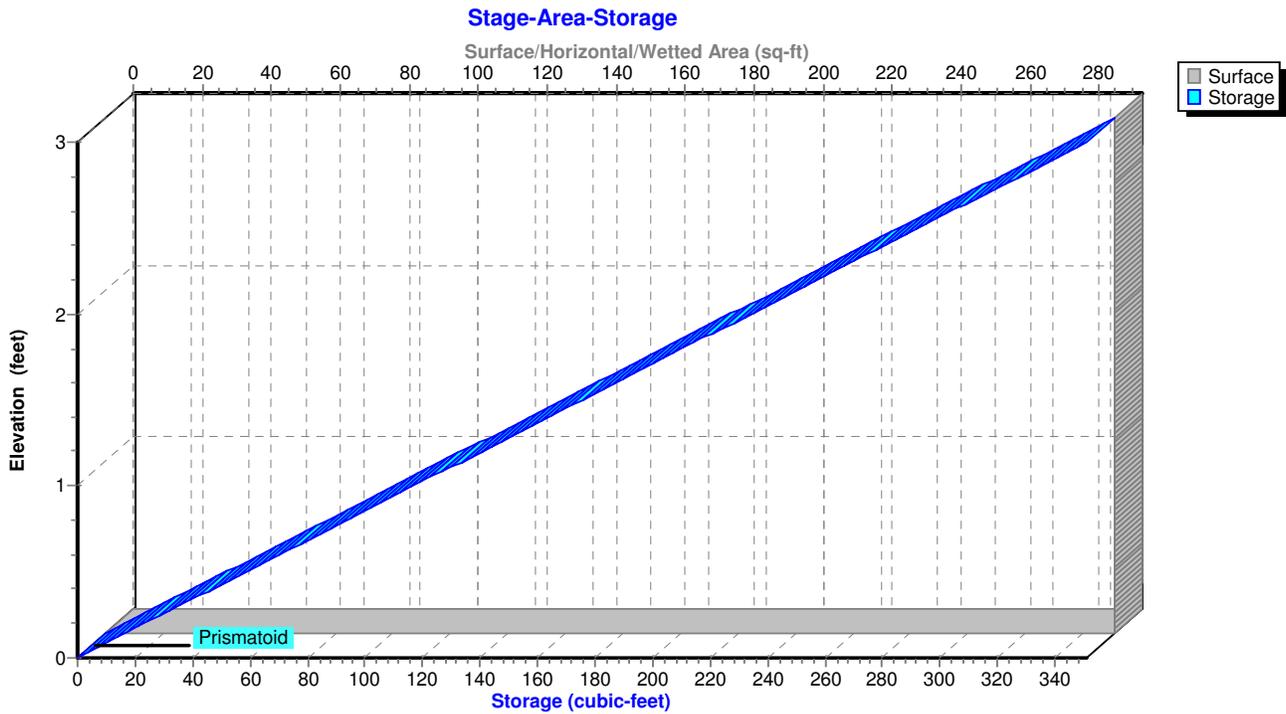
Pond I-1: Infiltration Trench



Pond I-1: Infiltration Trench



Pond I-1: Infiltration Trench



2021-11-23 INFILTRATION_Submitted

Type III 24-hr 10-yr Rainfall=4.89"

Prepared by Strong Point Engineering Solutions, Inc.

Printed 11/23/2021

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Summary for Pond I-2: Shed Infil.

Inflow Area = 0.007 ac, 100.00% Impervious, Inflow Depth > 4.65" for 10-yr event
 Inflow = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af
 Outflow = 0.01 cfs @ 11.85 hrs, Volume= 0.003 af, Atten= 66%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 11.85 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.60' @ 12.36 hrs Surf.Area= 62 sf Storage= 17 cf

Plug-Flow detention time= 6.0 min calculated for 0.003 af (100% of inflow)
 Center-of-Mass det. time= 5.9 min (753.9 - 748.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	51 cf	4.75'W x 13.00'L x 2.54'H Field A 157 cf Overall - 29 cf Embedded = 128 cf x 40.0% Voids
#2A	0.50'	29 cf	Cultec R-150XLHD Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 1 rows
		80 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 11.85 hrs HW=0.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Pond I-2: Shed Infil. - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap

Row Length Adjustment= +0.75' x 2.65 sf x 1 rows

1 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 11.00' Row Length +12.0" End Stone x 2 = 13.00' Base Length

1 Rows x 33.0" Wide + 12.0" Side Stone x 2 = 4.75' Base Width

6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

1 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 1 Rows = 29.1 cf Chamber Storage

156.9 cf Field - 29.1 cf Chambers = 127.8 cf Stone x 40.0% Voids = 51.1 cf Stone Storage

Chamber Storage + Stone Storage = 80.3 cf = 0.002 af

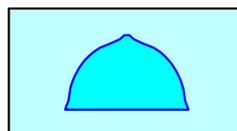
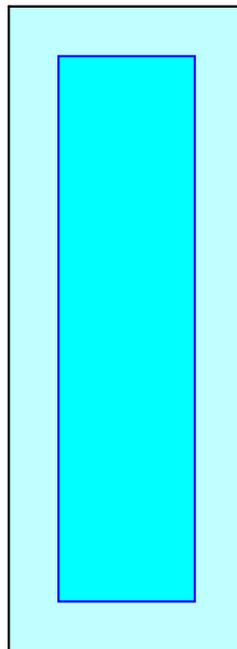
Overall Storage Efficiency = 51.1%

Overall System Size = 13.00' x 4.75' x 2.54'

1 Chambers

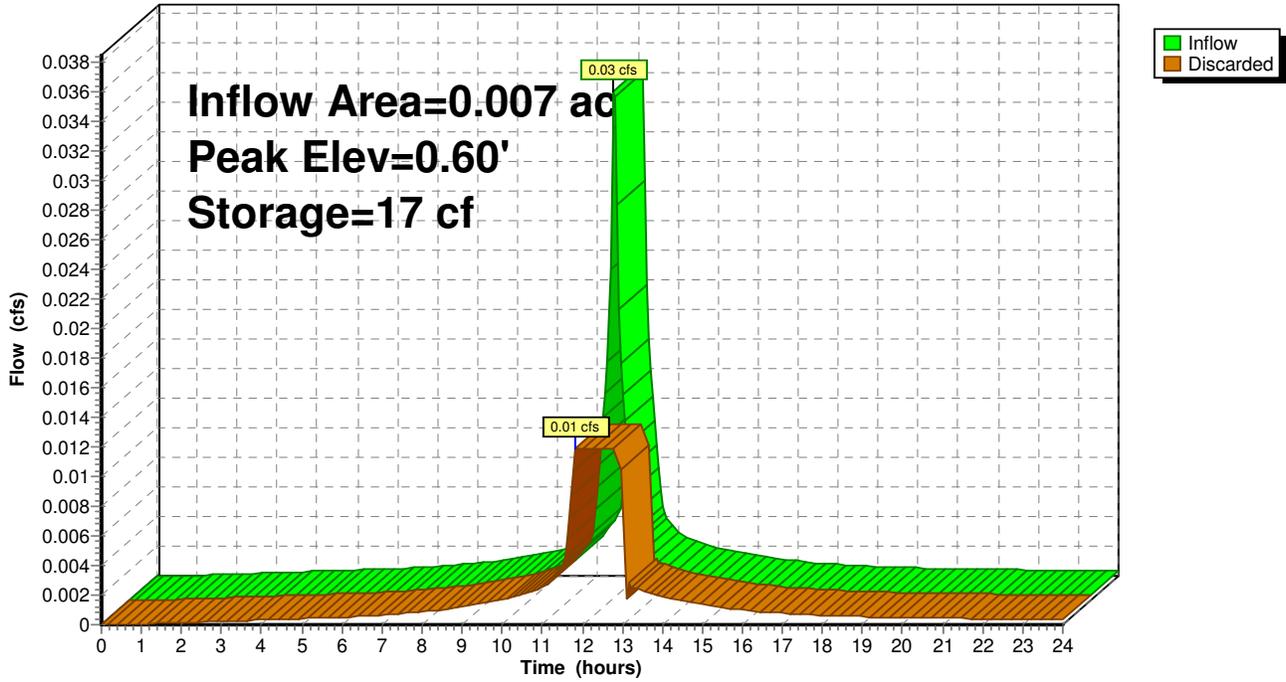
5.8 cy Field

4.7 cy Stone



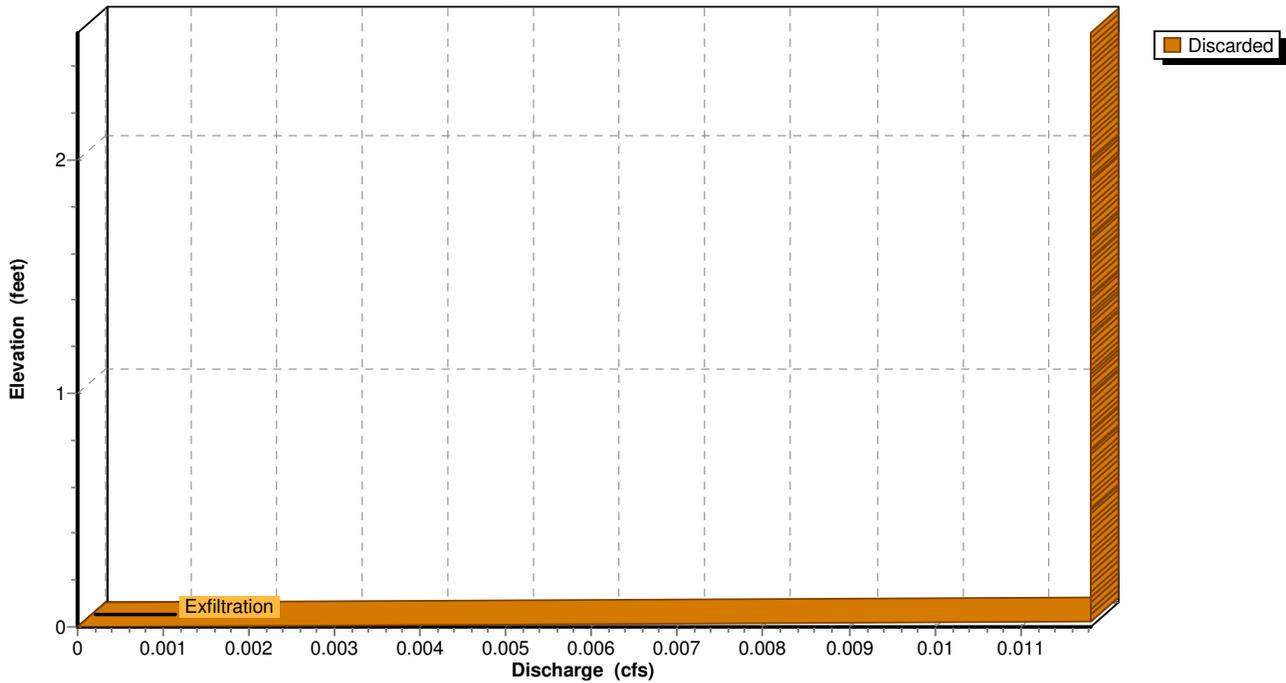
Pond I-2: Shed Infil.

Hydrograph

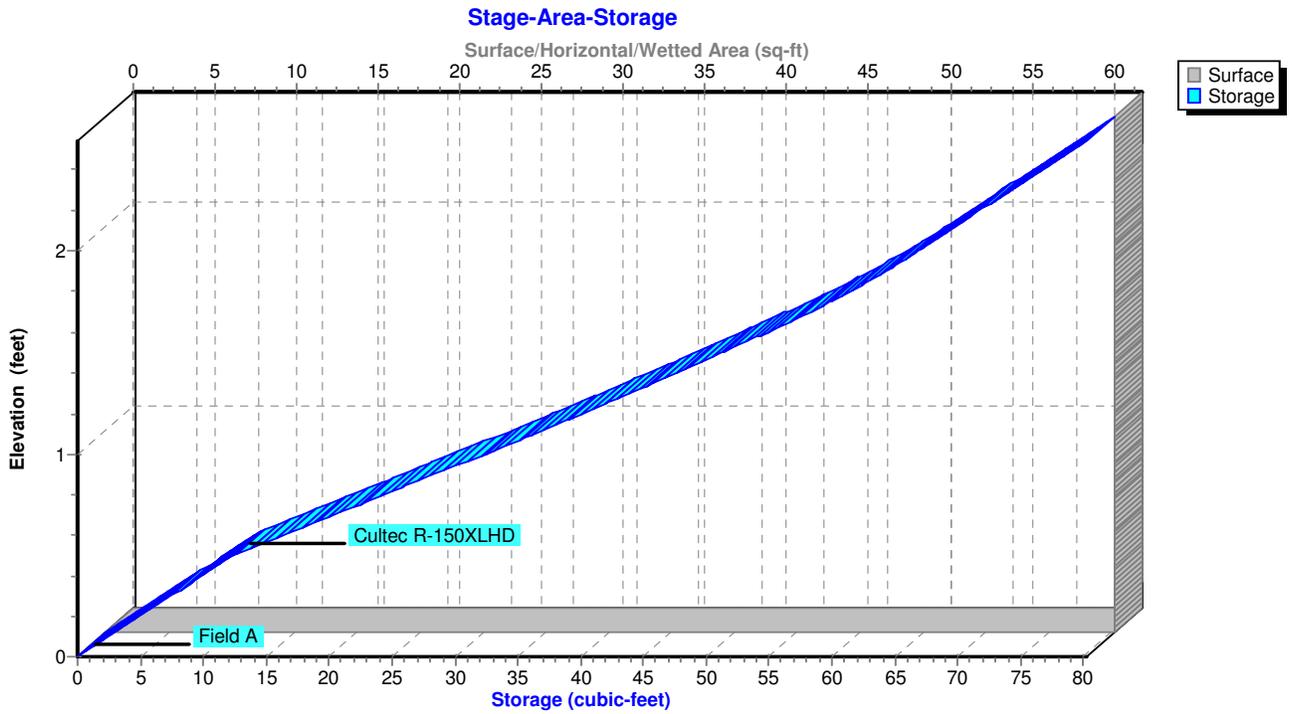


Pond I-2: Shed Infil.

Stage-Discharge



Pond I-2: Shed Infil.



Summary for Subcatchment R-1: Patio Area

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 5.92"

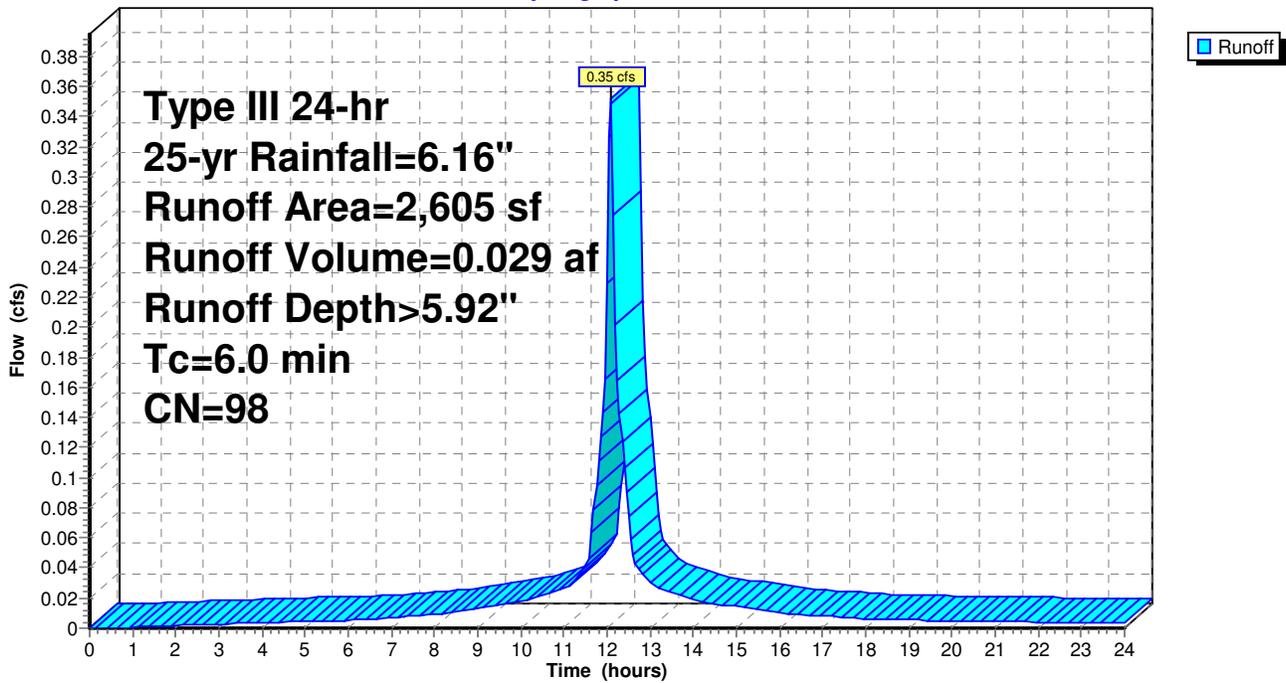
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
2,605	98	Unconnected pavement, HSG A
2,605		100.00% Impervious Area
2,605		100.00% Unconnected

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

Subcatchment R-1: Patio Area

Hydrograph



Summary for Subcatchment R-2: Shed

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 5.92"

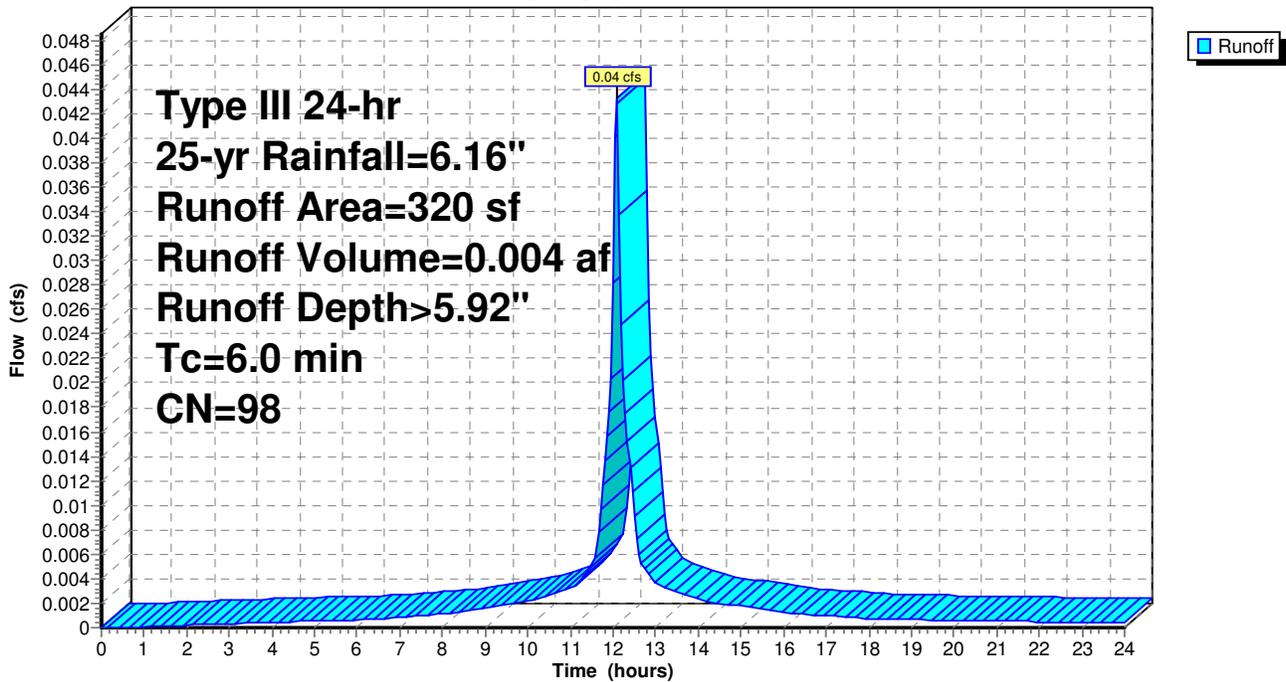
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
320	98	Roofs, HSG A
320		100.00% Impervious Area

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

Subcatchment R-2: Shed

Hydrograph



Summary for Pond I-1: Infiltration Trench

Inflow Area = 0.060 ac, 100.00% Impervious, Inflow Depth > 5.92" for 25-yr event
 Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.029 af
 Outflow = 0.06 cfs @ 11.65 hrs, Volume= 0.029 af, Atten= 84%, Lag= 0.0 min
 Discarded = 0.06 cfs @ 11.65 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 2.90' @ 12.57 hrs Surf.Area= 293 sf Storage= 339 cf

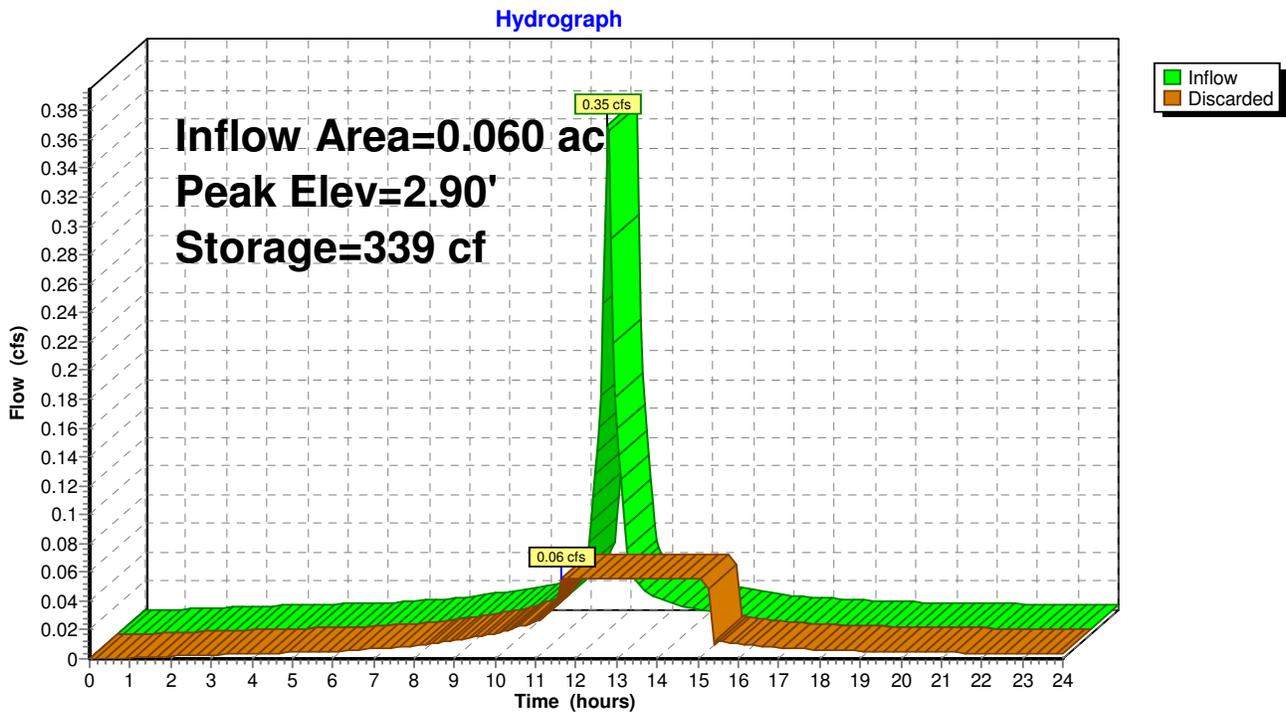
Plug-Flow detention time= 32.9 min calculated for 0.029 af (100% of inflow)
 Center-of-Mass det. time= 32.8 min (777.1 - 744.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	351 cf	2.25'W x 130.00'L x 3.00'H Prismaoid 878 cf Overall x 40.0% Voids

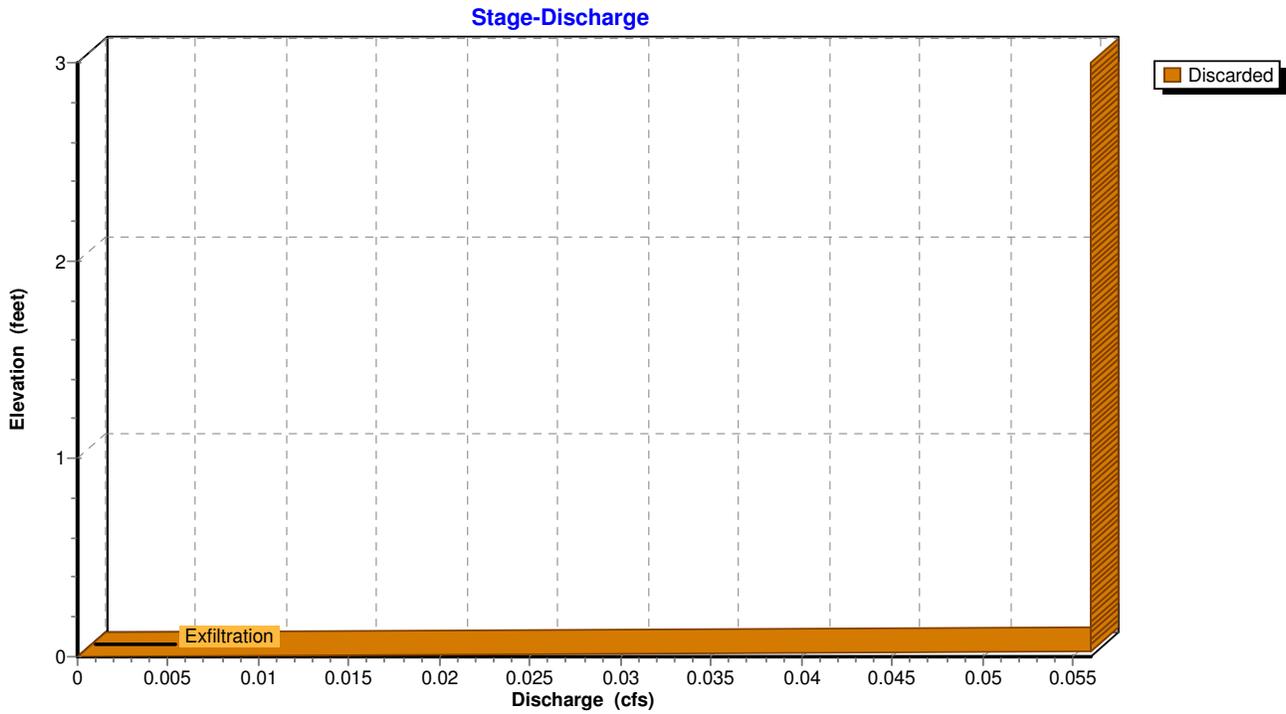
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 11.65 hrs HW=0.03' (Free Discharge)
 ←1=Exfiltration (Exfiltration Controls 0.06 cfs)

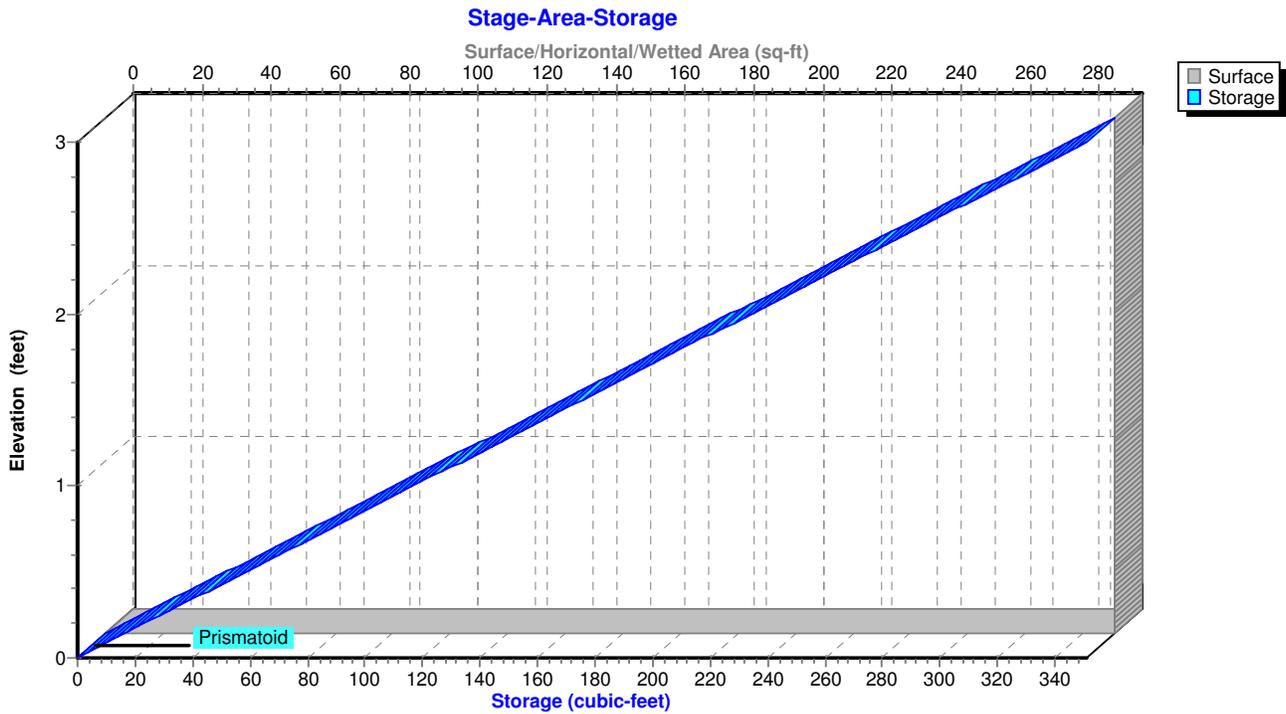
Pond I-1: Infiltration Trench



Pond I-1: Infiltration Trench



Pond I-1: Infiltration Trench



2021-11-23 INFILTRATION_Submitted

Type III 24-hr 25-yr Rainfall=6.16"

Prepared by Strong Point Engineering Solutions, Inc.

Printed 11/23/2021

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Summary for Pond I-2: Shed Infil.

Inflow Area = 0.007 ac, 100.00% Impervious, Inflow Depth > 5.92" for 25-yr event
 Inflow = 0.04 cfs @ 12.09 hrs, Volume= 0.004 af
 Outflow = 0.01 cfs @ 11.80 hrs, Volume= 0.004 af, Atten= 73%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 11.80 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 0.88' @ 12.43 hrs Surf.Area= 62 sf Storage= 28 cf

Plug-Flow detention time= 10.4 min calculated for 0.004 af (100% of inflow)
 Center-of-Mass det. time= 10.3 min (754.6 - 744.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	51 cf	4.75'W x 13.00'L x 2.54'H Field A 157 cf Overall - 29 cf Embedded = 128 cf x 40.0% Voids
#2A	0.50'	29 cf	Cultec R-150XLHD Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 1 rows
		80 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 11.80 hrs HW=0.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Pond I-2: Shed Infil. - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger® 150XLHD)

Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf

Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap

Row Length Adjustment= +0.75' x 2.65 sf x 1 rows

1 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 11.00' Row Length +12.0" End Stone x 2 = 13.00' Base Length

1 Rows x 33.0" Wide + 12.0" Side Stone x 2 = 4.75' Base Width

6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

1 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 1 Rows = 29.1 cf Chamber Storage

156.9 cf Field - 29.1 cf Chambers = 127.8 cf Stone x 40.0% Voids = 51.1 cf Stone Storage

Chamber Storage + Stone Storage = 80.3 cf = 0.002 af

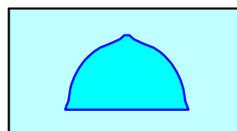
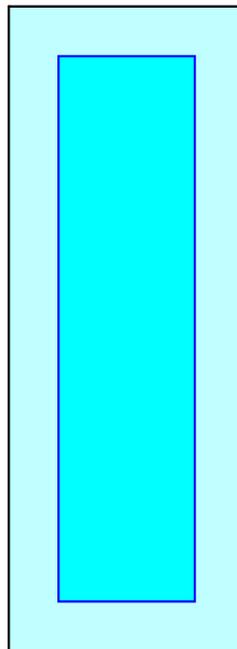
Overall Storage Efficiency = 51.1%

Overall System Size = 13.00' x 4.75' x 2.54'

1 Chambers

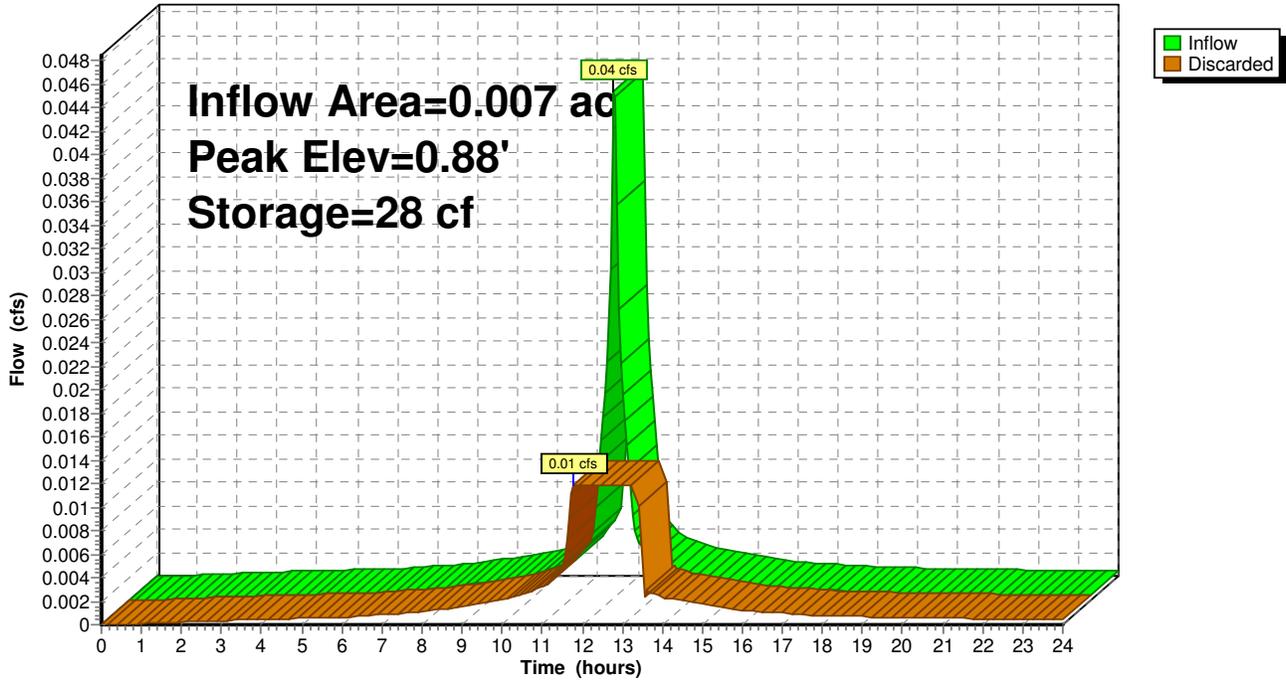
5.8 cy Field

4.7 cy Stone



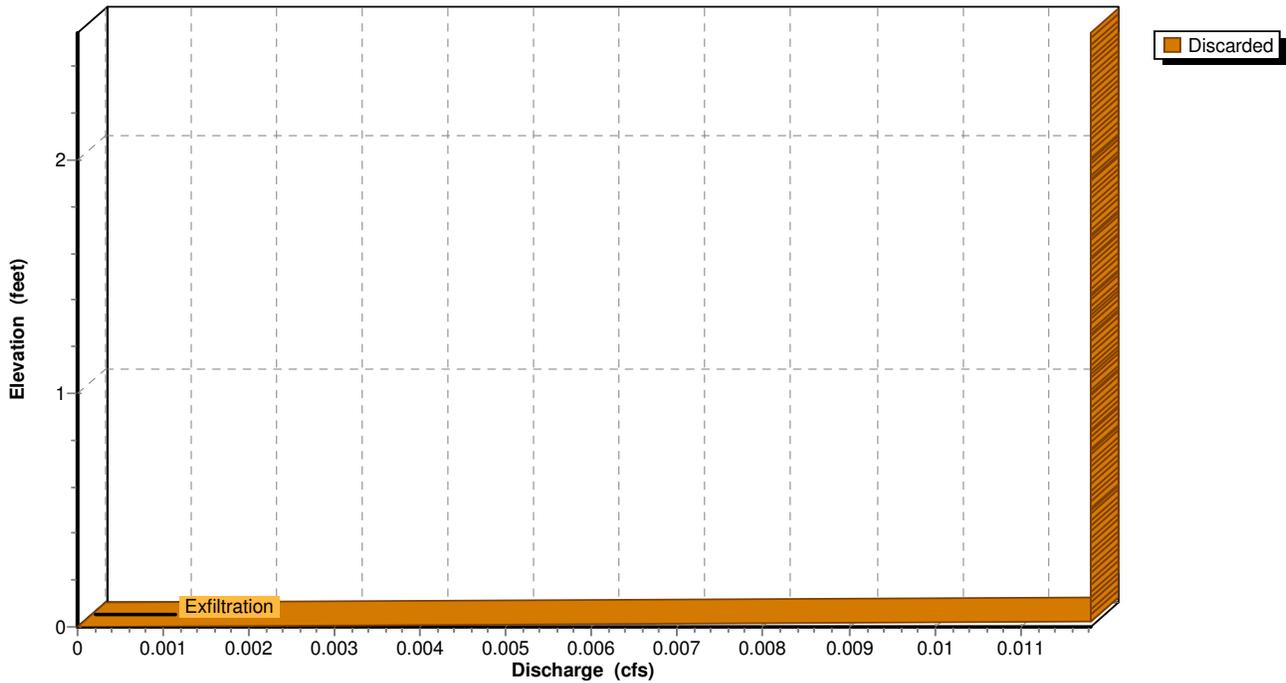
Pond I-2: Shed Infil.

Hydrograph



Pond I-2: Shed Infil.

Stage-Discharge



Pond I-2: Shed Infil.

