

APPENDIX J

ADDENDUM: INFILTRATION TRENCH 8



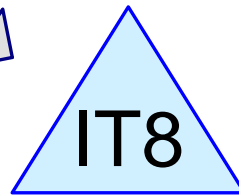
12 WP



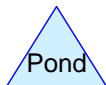
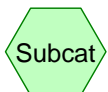
14 WP



16 WP



20 CULTEC R-330XL



8548.0 - Salmon Senior Community - Medway - Proposed Unit Infiltration systems - RE

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.182	98	Roofs, HSG A (12WP, 14WP, 16WP)
0.182	98	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.182	HSG A	12WP, 14WP, 16WP
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.182		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.182	0.000	0.000	0.000	0.000	0.182	Roofs	12WP, 14WP, 16WP
0.182	0.000	0.000	0.000	0.000	0.182	TOTAL AREA	

8548.0 - Salmon Senior Community - Medway - Propo *Type III 24-hr 2-Year Rainfall=3.20"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 12WP: 12 WP

Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>2.77"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.014 af

Subcatchment 14WP: 14 WP

Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>2.77"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.014 af

Subcatchment 16WP: 16 WP

Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>2.77"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.014 af

Pond IT8: 20 CULTEC R-330XL

Peak Elev=180.45' Storage=670 cf Inflow=0.57 cfs 0.042 af
Outflow=0.06 cfs 0.042 af

Total Runoff Area = 0.182 ac Runoff Volume = 0.042 af Average Runoff Depth = 2.77"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.182 ac

Summary for Subcatchment 12WP: 12 WP

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.014 af, Depth> 2.77"

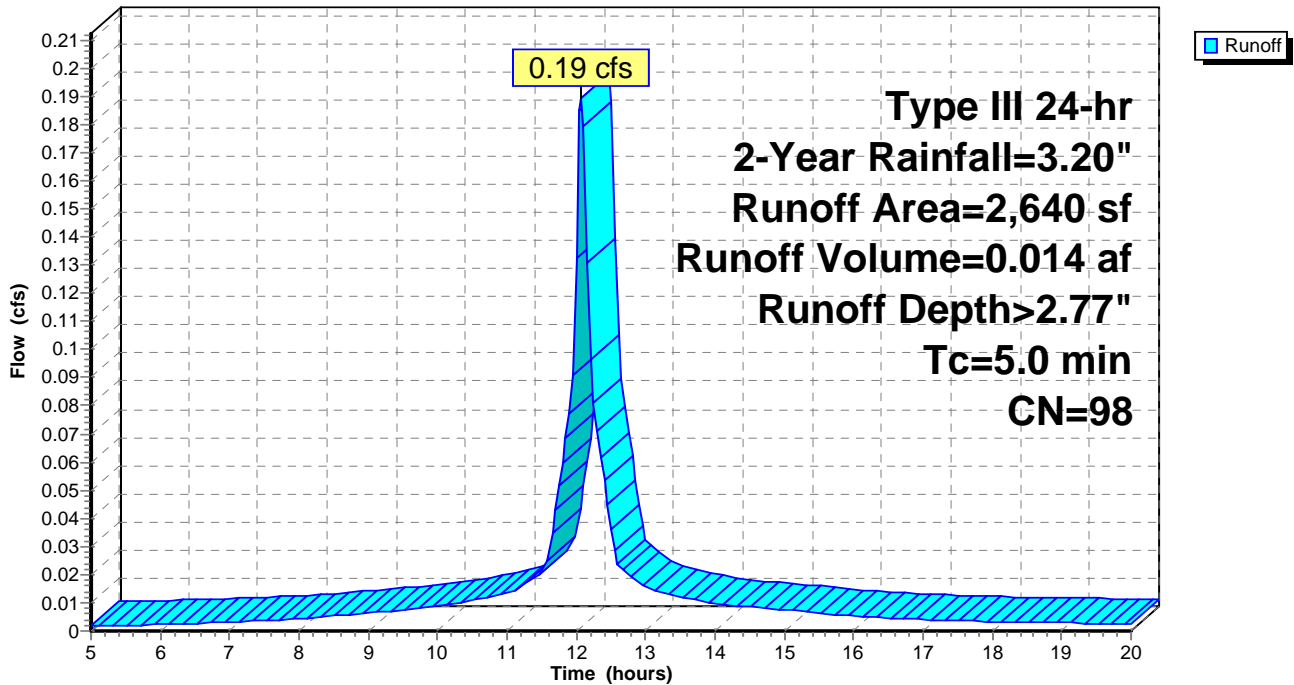
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 12WP: 12 WP

Hydrograph



Summary for Subcatchment 14WP: 14 WP

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.014 af, Depth> 2.77"

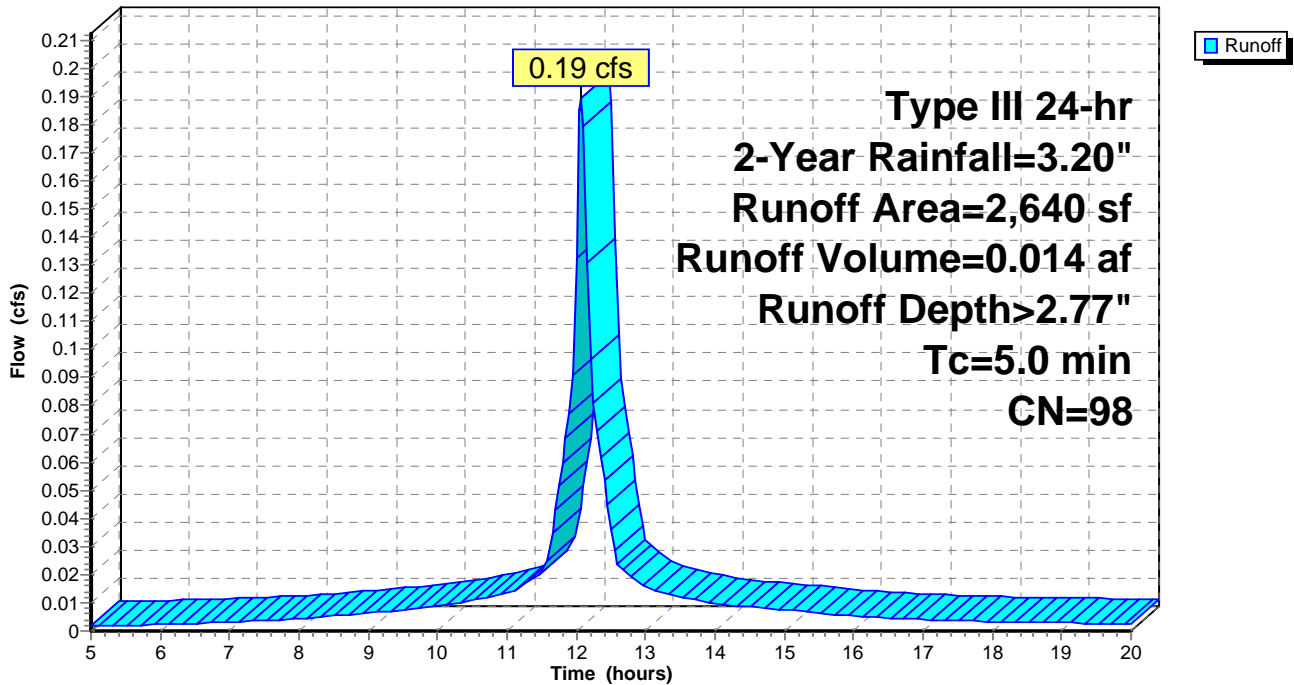
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 14WP: 14 WP

Hydrograph



Summary for Subcatchment 16WP: 16 WP

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.014 af, Depth> 2.77"

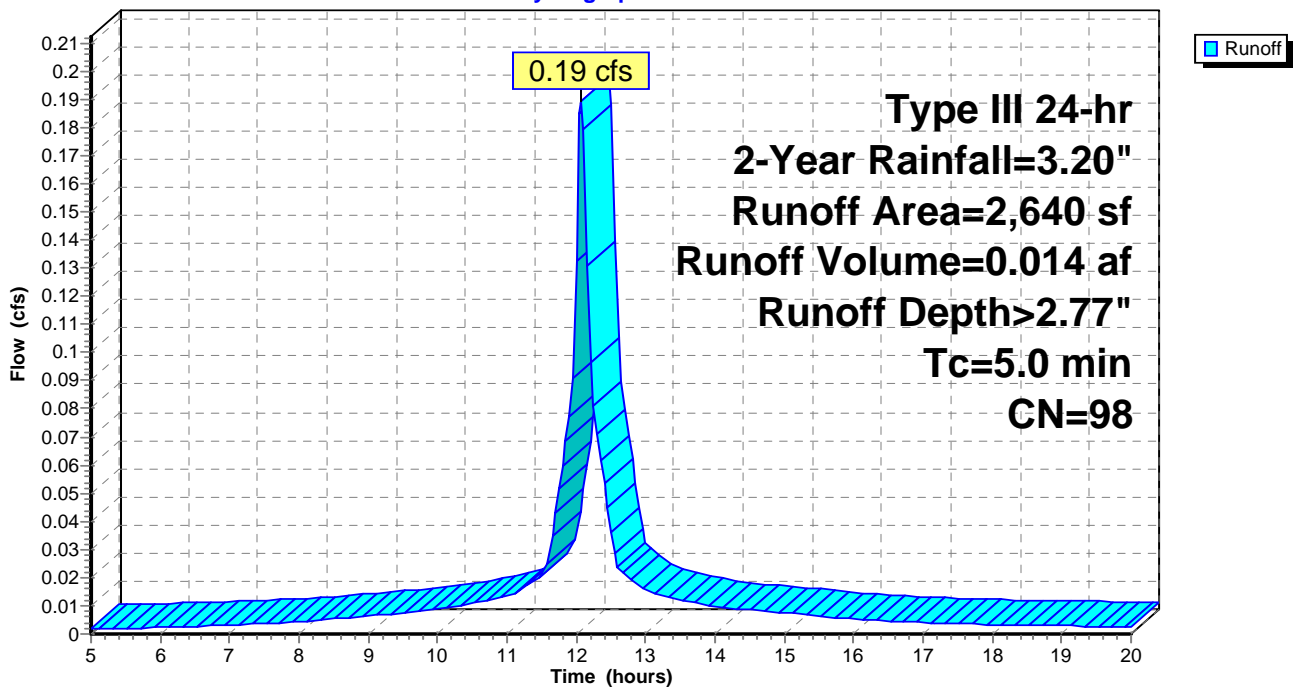
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 16WP: 16 WP

Hydrograph



Summary for Pond IT8: 20 CULTEC R-330XL

Inflow Area = 0.182 ac, 100.00% Impervious, Inflow Depth > 2.77" for 2-Year event
 Inflow = 0.57 cfs @ 12.07 hrs, Volume= 0.042 af
 Outflow = 0.06 cfs @ 12.76 hrs, Volume= 0.042 af, Atten= 90%, Lag= 41.3 min
 Discarded = 0.06 cfs @ 12.76 hrs, Volume= 0.042 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 180.45' @ 12.76 hrs Surf.Area= 858 sf Storage= 670 cf

Plug-Flow detention time= 86.6 min calculated for 0.042 af (100% of inflow)
 Center-of-Mass det. time= 85.7 min (823.5 - 737.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	179.21'	789 cf	11.67'W x 73.50'L x 3.54'H Field A 3,037 cf Overall - 1,065 cf Embedded = 1,971 cf x 40.0% Voids
#2A	179.71'	1,065 cf	Cultec R-330XL x 20 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,854 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	179.21'	2.410 in/hr Exfiltration over Wetted area

Discarded OutFlow Max=0.06 cfs @ 12.76 hrs HW=180.45' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.06 cfs)

Pond IT8: 20 CULTEC R-330XL - Chamber Wizard Field A

Chamber Model = Cultec R-330XL

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 12.0" Spacing = 64.0" C-C Row Spacing

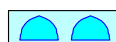
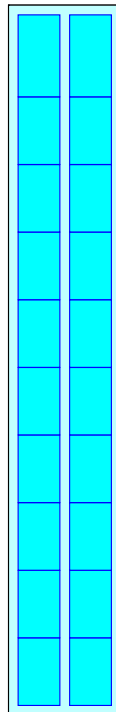
10 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 71.50' Row Length +12.0" End Stone x 2 = 73.50' Base Length
2 Rows x 52.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

20 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,065.5 cf Chamber Storage

3,037.0 cf Field - 1,065.5 cf Chambers = 1,971.5 cf Stone x 40.0% Voids = 788.6 cf Stone Storage

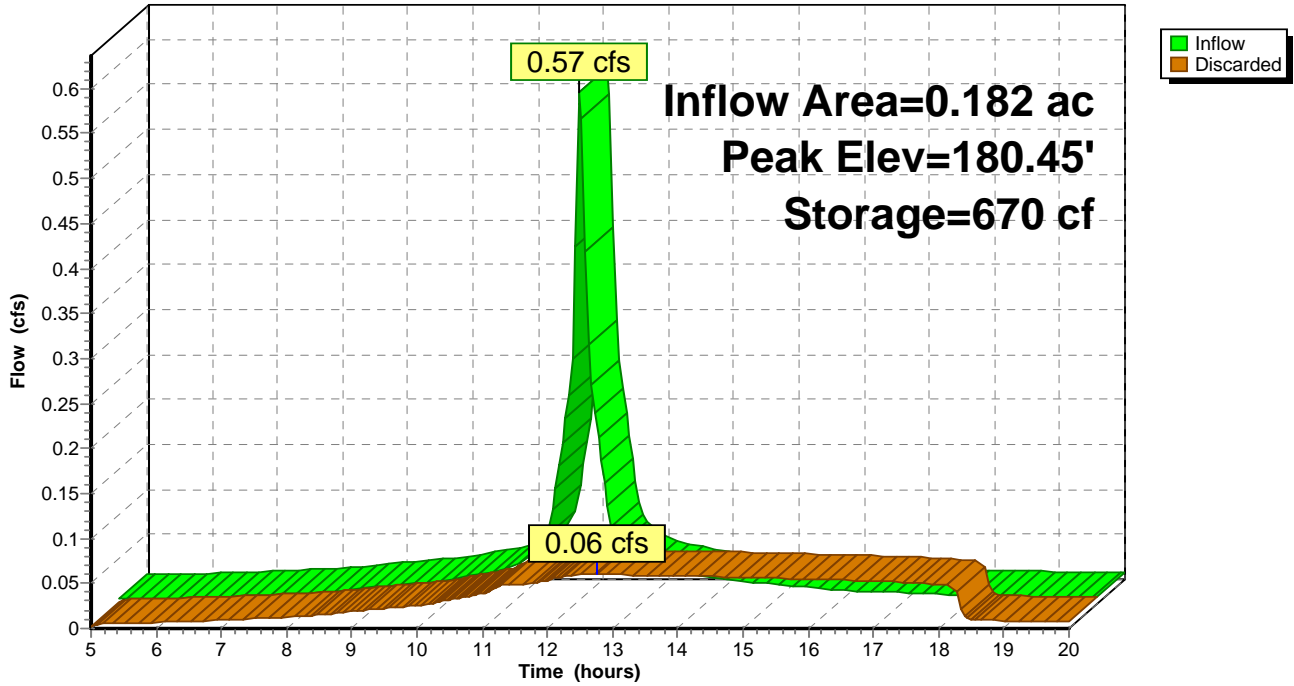
Chamber Storage + Stone Storage = 1,854.1 cf = 0.043 af
Overall Storage Efficiency = 61.1%

20 Chambers
112.5 cy Field
73.0 cy Stone



Pond IT8: 20 CULTEC R-330XL

Hydrograph



8548.0 - Salmon Senior Community - Medway - Prop Type III 24-hr 10-Year Rainfall=4.70"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 12WP: 12 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>4.15" Tc=5.0 min CN=98 Runoff=0.28 cfs 0.021 af
Subcatchment 14WP: 14 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>4.15" Tc=5.0 min CN=98 Runoff=0.28 cfs 0.021 af
Subcatchment 16WP: 16 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>4.15" Tc=5.0 min CN=98 Runoff=0.28 cfs 0.021 af
Pond IT8: 20 CULTEC R-330XL	Peak Elev=181.19' Storage=1,145 cf Inflow=0.84 cfs 0.063 af Outflow=0.07 cfs 0.057 af

Total Runoff Area = 0.182 ac Runoff Volume = 0.063 af Average Runoff Depth = 4.15"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.182 ac

Summary for Subcatchment 12WP: 12 WP

Runoff = 0.28 cfs @ 12.07 hrs, Volume= 0.021 af, Depth> 4.15"

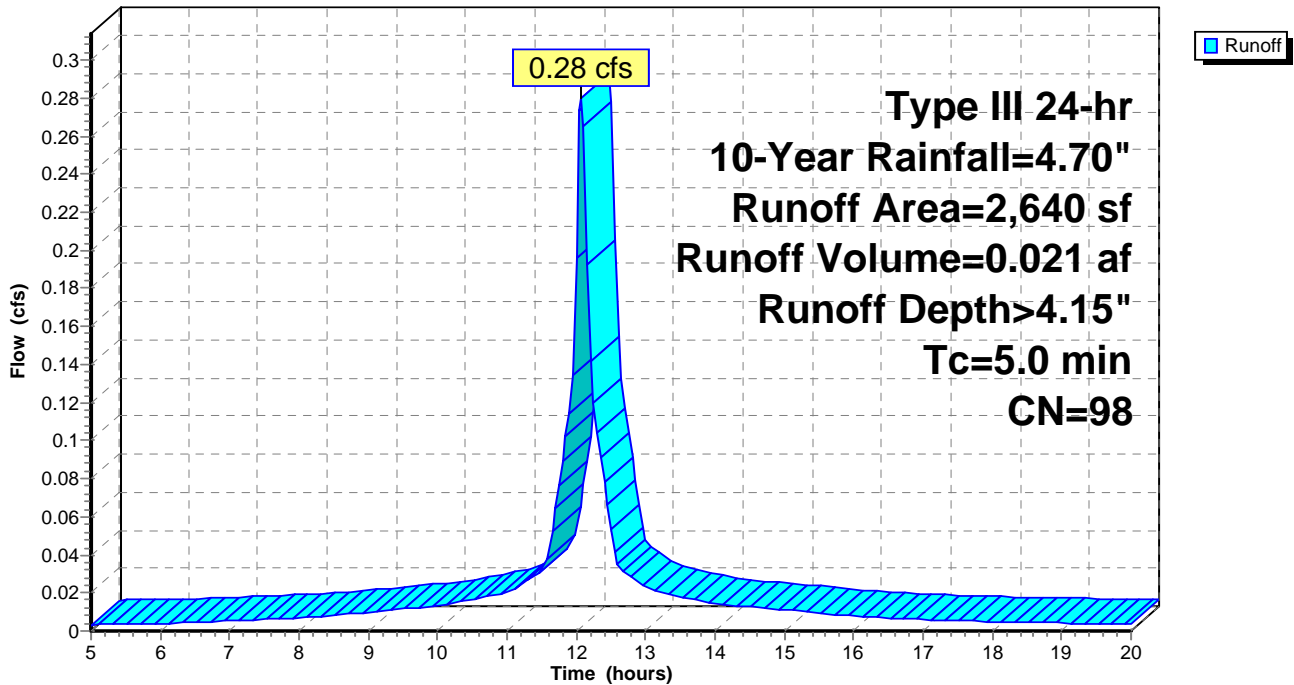
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 12WP: 12 WP

Hydrograph



Summary for Subcatchment 14WP: 14 WP

Runoff = 0.28 cfs @ 12.07 hrs, Volume= 0.021 af, Depth> 4.15"

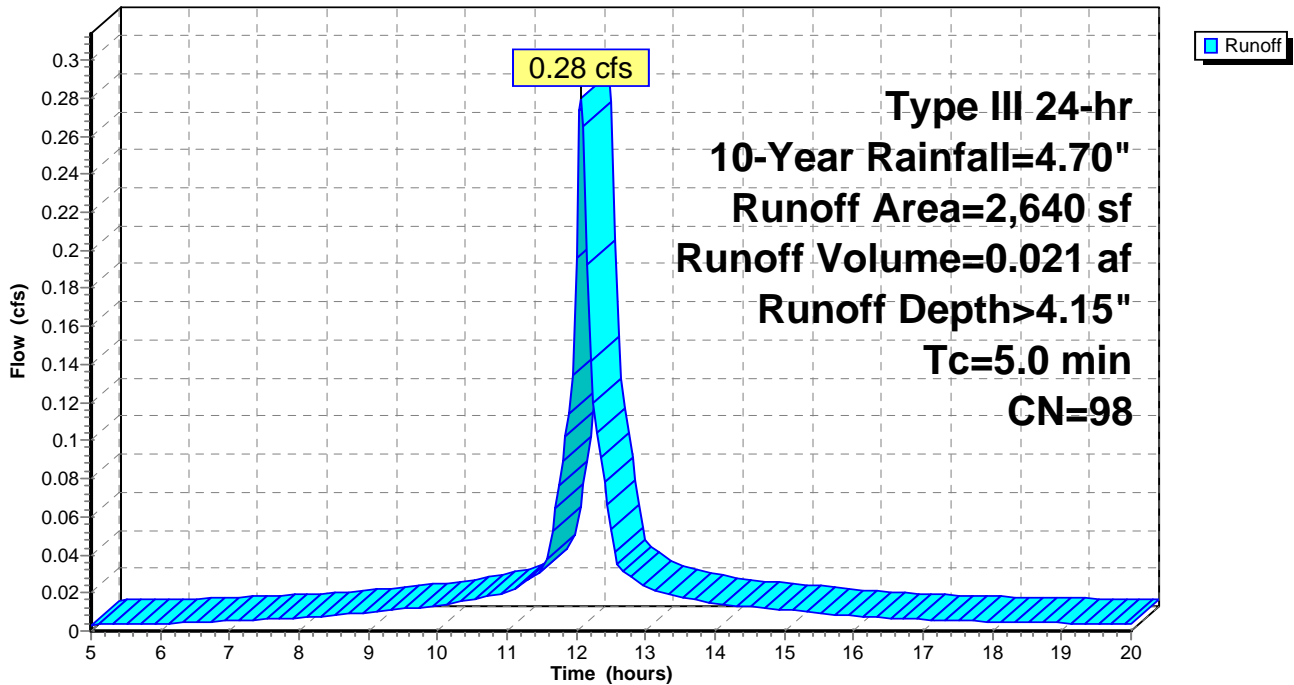
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 14WP: 14 WP

Hydrograph



Summary for Subcatchment 16WP: 16 WP

Runoff = 0.28 cfs @ 12.07 hrs, Volume= 0.021 af, Depth> 4.15"

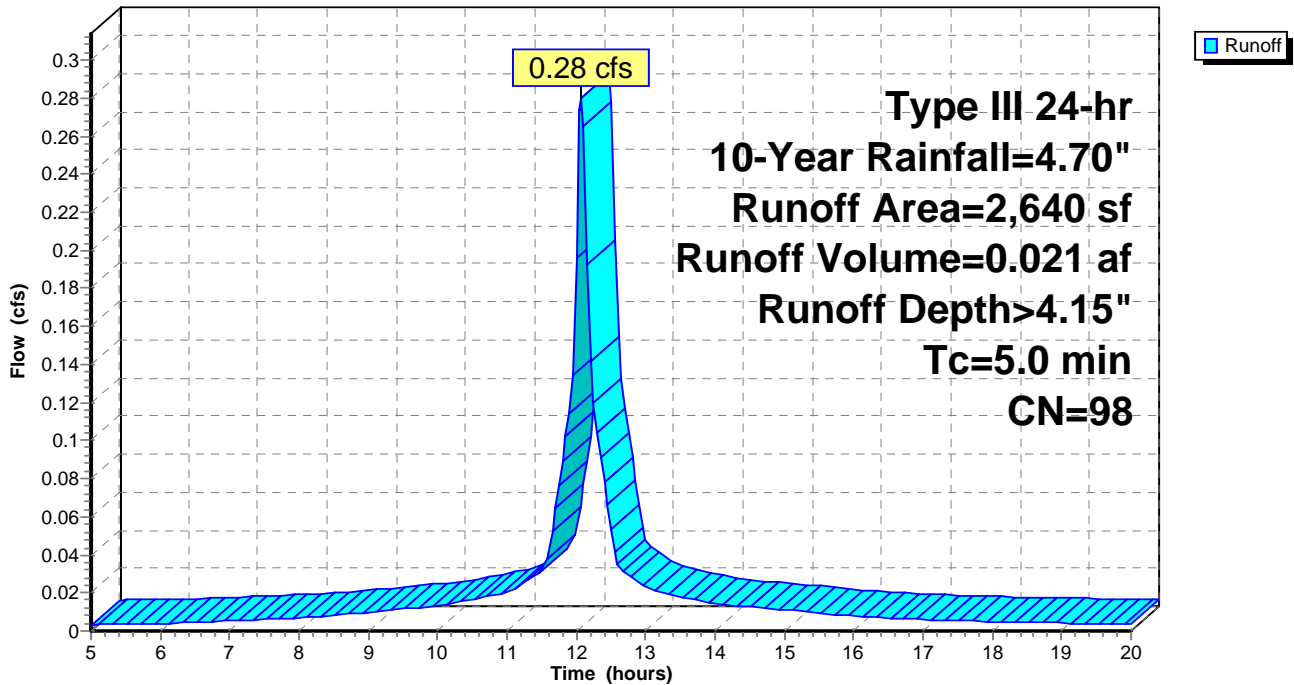
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 16WP: 16 WP

Hydrograph



Summary for Pond IT8: 20 CULTEC R-330XL

Inflow Area = 0.182 ac, 100.00% Impervious, Inflow Depth > 4.15" for 10-Year event
 Inflow = 0.84 cfs @ 12.07 hrs, Volume= 0.063 af
 Outflow = 0.07 cfs @ 13.03 hrs, Volume= 0.057 af, Atten= 92%, Lag= 57.6 min
 Discarded = 0.07 cfs @ 13.03 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 181.19' @ 13.03 hrs Surf.Area= 858 sf Storage= 1,145 cf

Plug-Flow detention time= 143.5 min calculated for 0.057 af (91% of inflow)
 Center-of-Mass det. time= 110.7 min (845.4 - 734.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	179.21'	789 cf	11.67'W x 73.50'L x 3.54'H Field A
			3,037 cf Overall - 1,065 cf Embedded = 1,971 cf x 40.0% Voids
#2A	179.71'	1,065 cf	Cultec R-330XL x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,854 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	179.21'	2.410 in/hr Exfiltration over Wetted area

Discarded OutFlow Max=0.07 cfs @ 13.03 hrs HW=181.19' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.07 cfs)

Pond IT8: 20 CULTEC R-330XL - Chamber Wizard Field A

Chamber Model = Cultec R-330XL

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 12.0" Spacing = 64.0" C-C Row Spacing

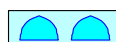
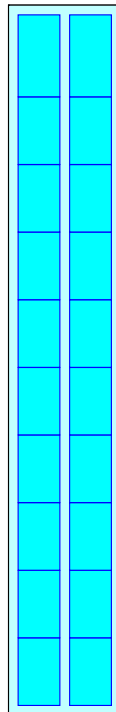
10 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 71.50' Row Length +12.0" End Stone x 2 = 73.50' Base Length
2 Rows x 52.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

20 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,065.5 cf Chamber Storage

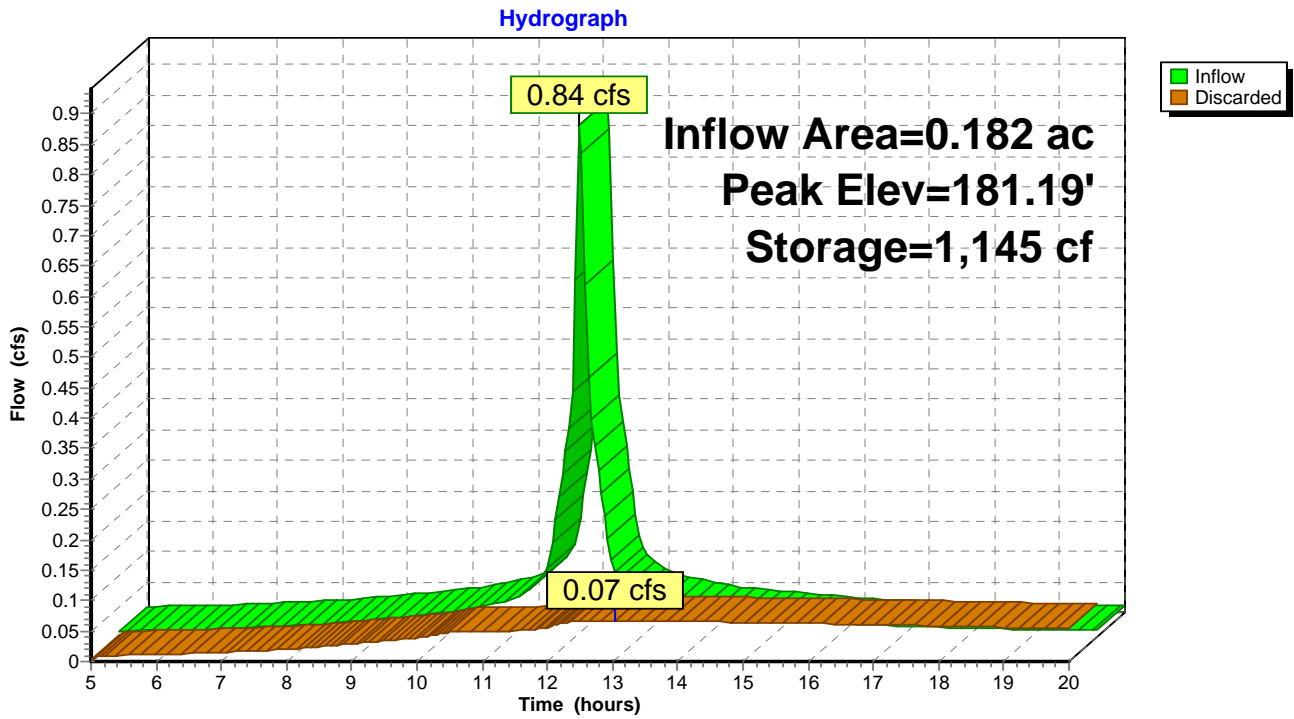
3,037.0 cf Field - 1,065.5 cf Chambers = 1,971.5 cf Stone x 40.0% Voids = 788.6 cf Stone Storage

Chamber Storage + Stone Storage = 1,854.1 cf = 0.043 af
Overall Storage Efficiency = 61.1%

20 Chambers
112.5 cy Field
73.0 cy Stone



Pond IT8: 20 CULTEC R-330XL



8548.0 - Salmon Senior Community - Medway - Prop Type III 24-hr 25-Year Rainfall=5.50"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 12WP: 12 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>4.87" Tc=5.0 min CN=98 Runoff=0.33 cfs 0.025 af
Subcatchment 14WP: 14 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>4.87" Tc=5.0 min CN=98 Runoff=0.33 cfs 0.025 af
Subcatchment 16WP: 16 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>4.87" Tc=5.0 min CN=98 Runoff=0.33 cfs 0.025 af
Pond IT8: 20 CULTEC R-330XL	Peak Elev=181.66' Storage=1,420 cf Inflow=0.99 cfs 0.074 af Outflow=0.07 cfs 0.062 af

Total Runoff Area = 0.182 ac Runoff Volume = 0.074 af Average Runoff Depth = 4.87"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.182 ac

Summary for Subcatchment 12WP: 12 WP

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.025 af, Depth> 4.87"

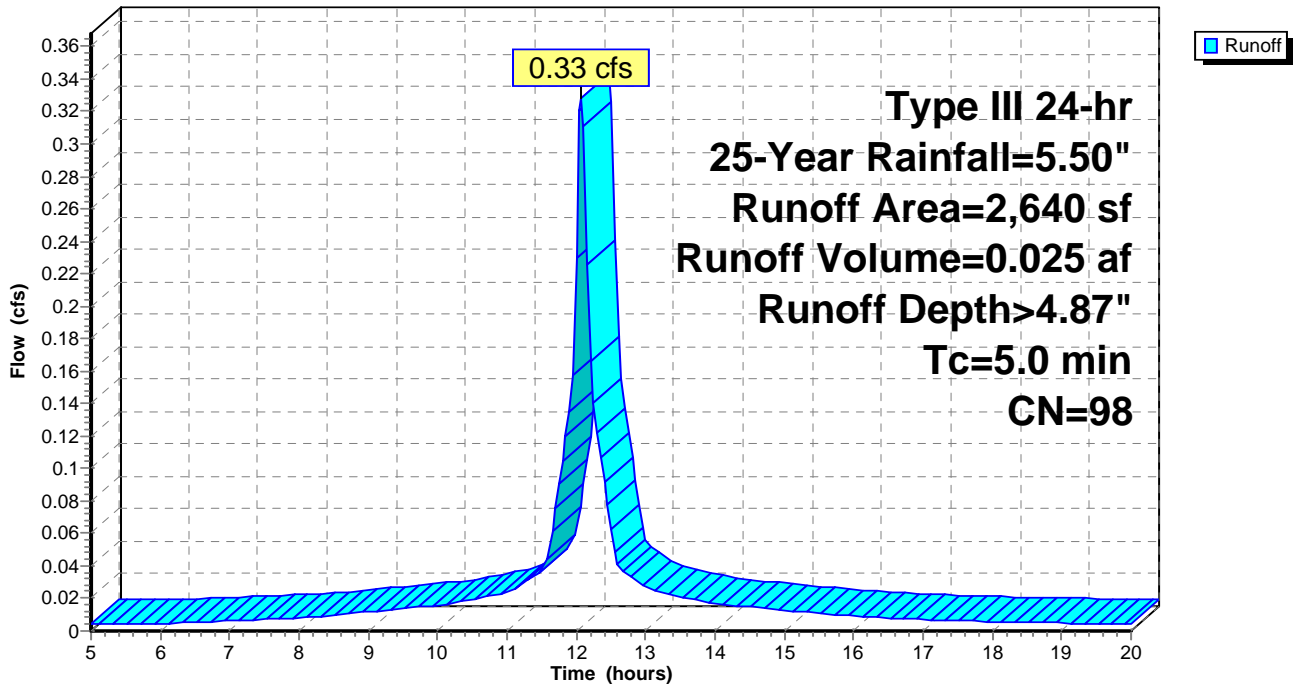
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 12WP: 12 WP

Hydrograph



Summary for Subcatchment 14WP: 14 WP

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.025 af, Depth> 4.87"

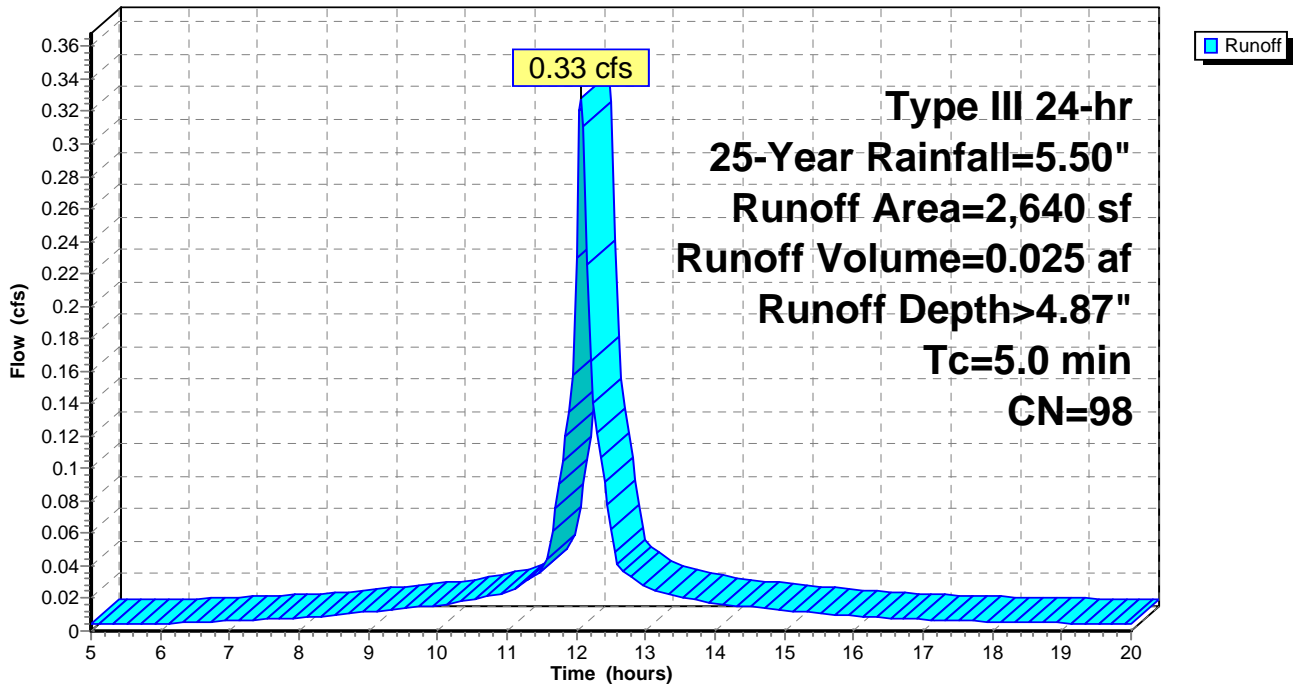
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 14WP: 14 WP

Hydrograph



Summary for Subcatchment 16WP: 16 WP

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.025 af, Depth> 4.87"

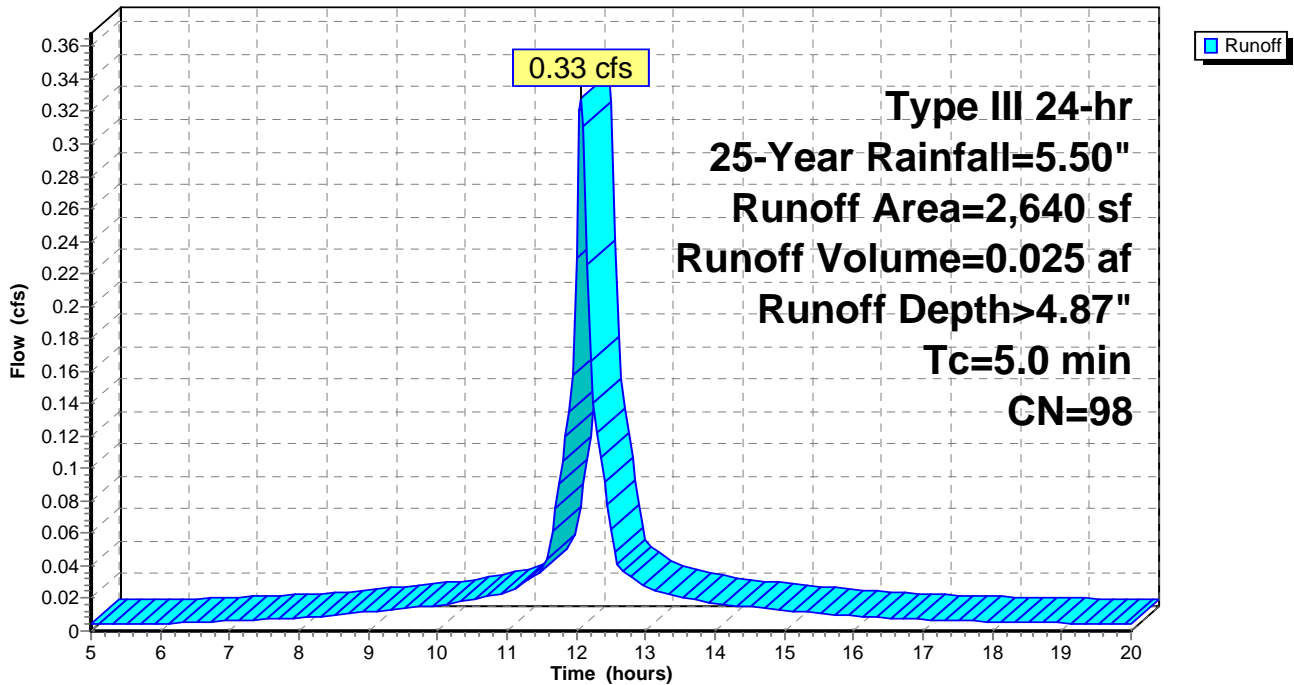
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 16WP: 16 WP

Hydrograph



Summary for Pond IT8: 20 CULTEC R-330XL

Inflow Area = 0.182 ac, 100.00% Impervious, Inflow Depth > 4.87" for 25-Year event
 Inflow = 0.99 cfs @ 12.07 hrs, Volume= 0.074 af
 Outflow = 0.07 cfs @ 13.18 hrs, Volume= 0.062 af, Atten= 93%, Lag= 66.3 min
 Discarded = 0.07 cfs @ 13.18 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 181.66' @ 13.18 hrs Surf.Area= 858 sf Storage= 1,420 cf

Plug-Flow detention time= 154.4 min calculated for 0.061 af (83% of inflow)
 Center-of-Mass det. time= 106.3 min (840.1 - 733.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	179.21'	789 cf	11.67'W x 73.50'L x 3.54'H Field A
			3,037 cf Overall - 1,065 cf Embedded = 1,971 cf x 40.0% Voids
#2A	179.71'	1,065 cf	Cultec R-330XL x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,854 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	179.21'	2.410 in/hr Exfiltration over Wetted area

Discarded OutFlow Max=0.07 cfs @ 13.18 hrs HW=181.66' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.07 cfs)

Pond IT8: 20 CULTEC R-330XL - Chamber Wizard Field A

Chamber Model = Cultec R-330XL

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 12.0" Spacing = 64.0" C-C Row Spacing

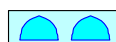
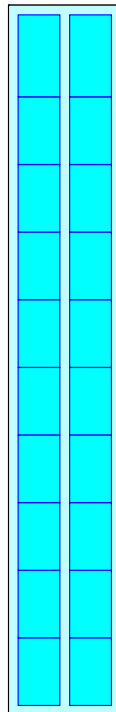
10 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 71.50' Row Length +12.0" End Stone x 2 = 73.50' Base Length
2 Rows x 52.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

20 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,065.5 cf Chamber Storage

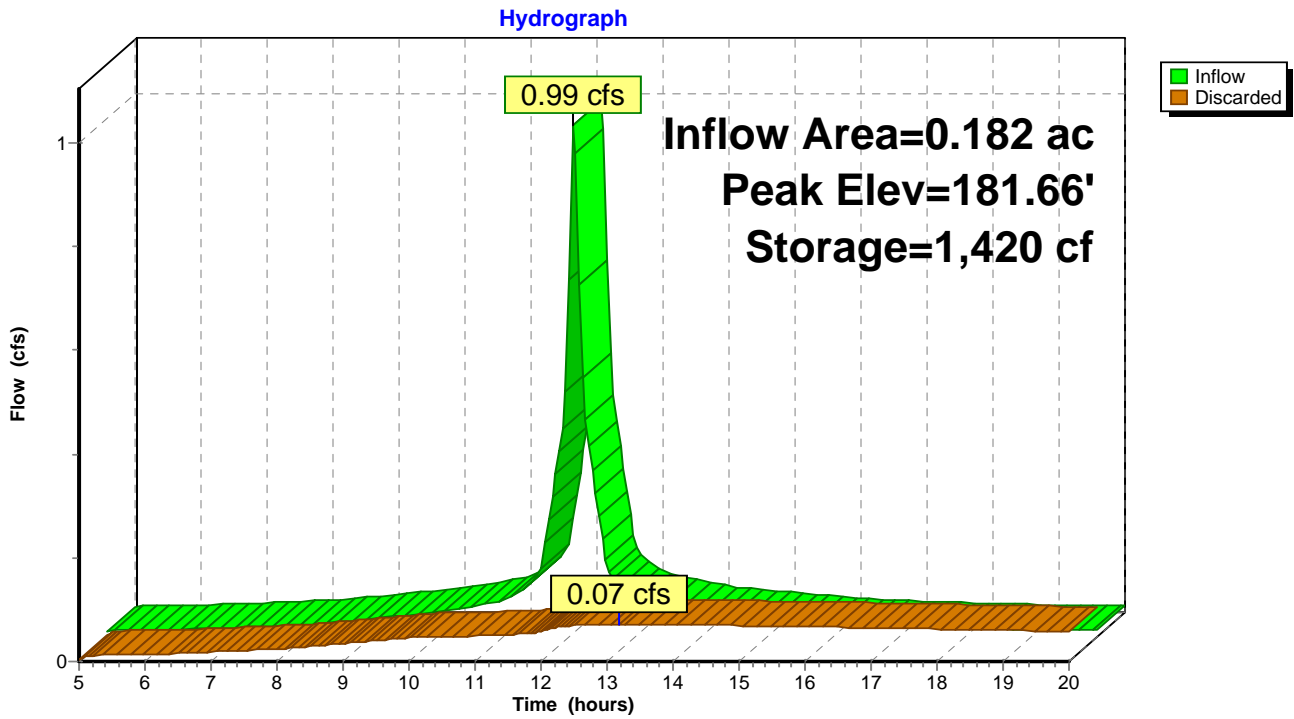
3,037.0 cf Field - 1,065.5 cf Chambers = 1,971.5 cf Stone x 40.0% Voids = 788.6 cf Stone Storage

Chamber Storage + Stone Storage = 1,854.1 cf = 0.043 af
Overall Storage Efficiency = 61.1%

20 Chambers
112.5 cy Field
73.0 cy Stone



Pond IT8: 20 CULTEC R-330XL



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 12WP: 12 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>5.97" Tc=5.0 min CN=98 Runoff=0.40 cfs 0.030 af
Subcatchment 14WP: 14 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>5.97" Tc=5.0 min CN=98 Runoff=0.40 cfs 0.030 af
Subcatchment 16WP: 16 WP	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth>5.97" Tc=5.0 min CN=98 Runoff=0.40 cfs 0.030 af
Pond IT8: 20 CULTEC R-330XL	Peak Elev=182.72' Storage=1,845 cf Inflow=1.20 cfs 0.090 af Outflow=0.08 cfs 0.069 af

Total Runoff Area = 0.182 ac Runoff Volume = 0.090 af Average Runoff Depth = 5.97"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.182 ac

Summary for Subcatchment 12WP: 12 WP

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.030 af, Depth> 5.97"

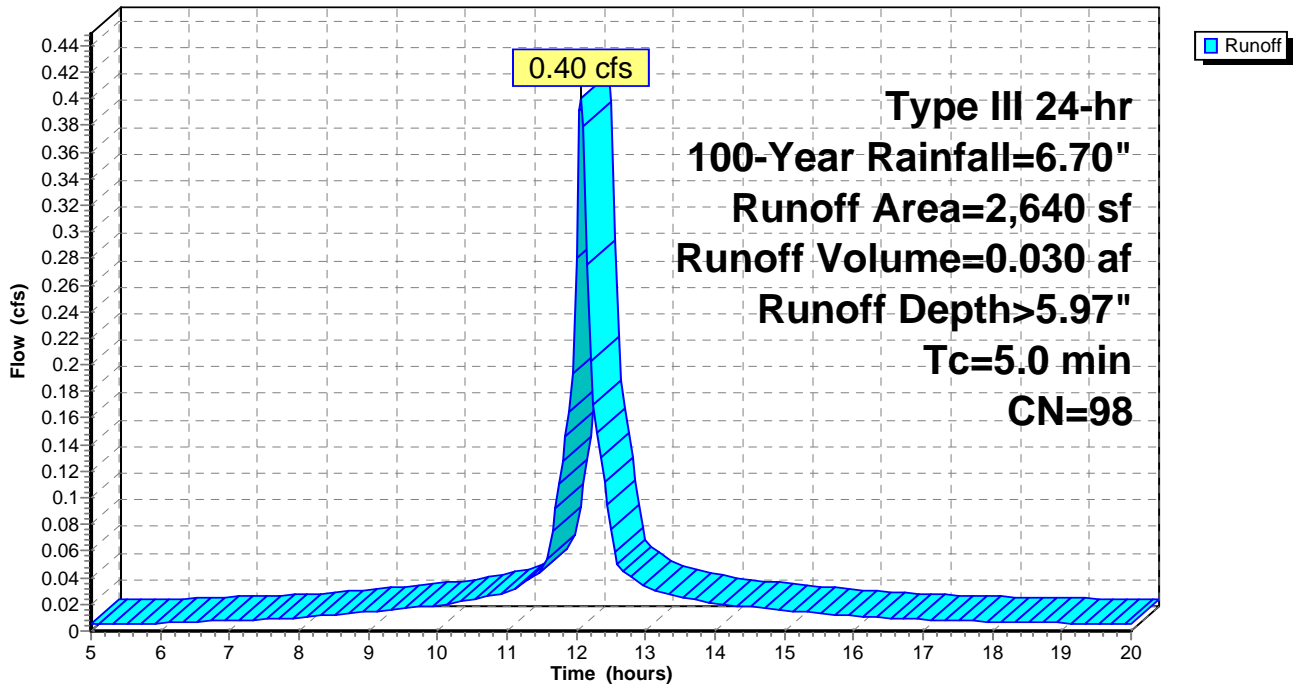
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 12WP: 12 WP

Hydrograph



Summary for Subcatchment 14WP: 14 WP

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.030 af, Depth> 5.97"

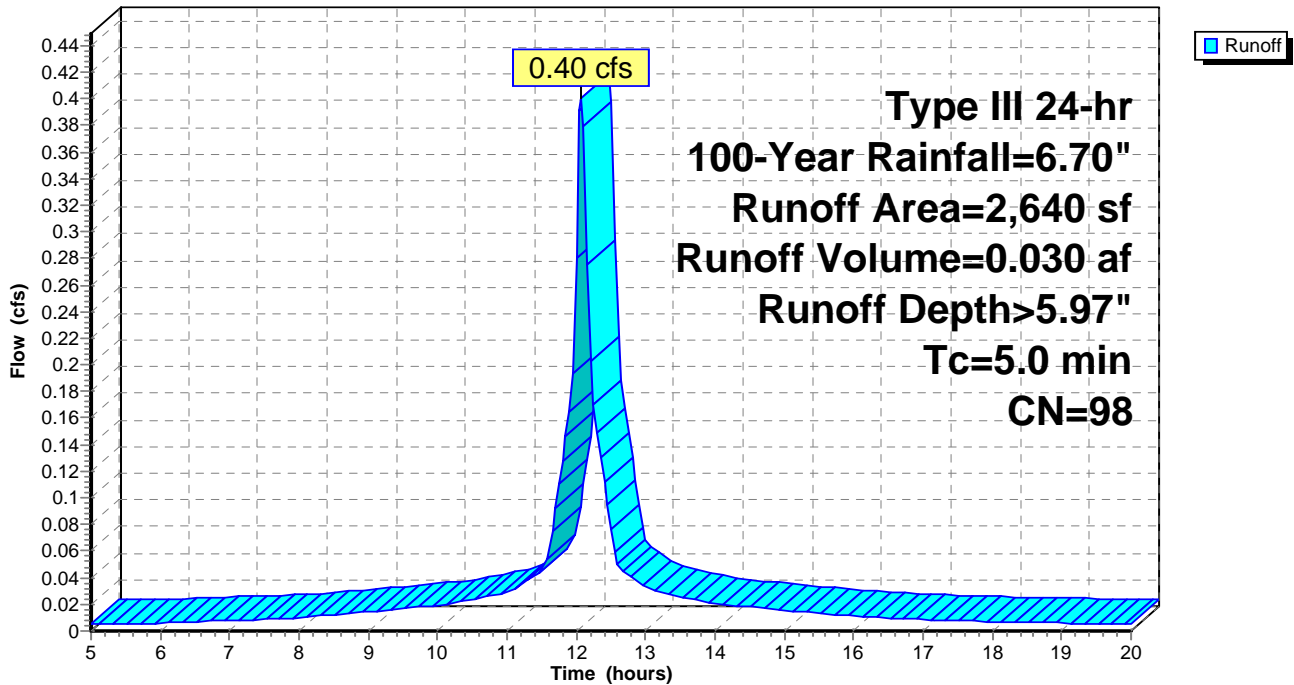
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 14WP: 14 WP

Hydrograph



Summary for Subcatchment 16WP: 16 WP

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.030 af, Depth> 5.97"

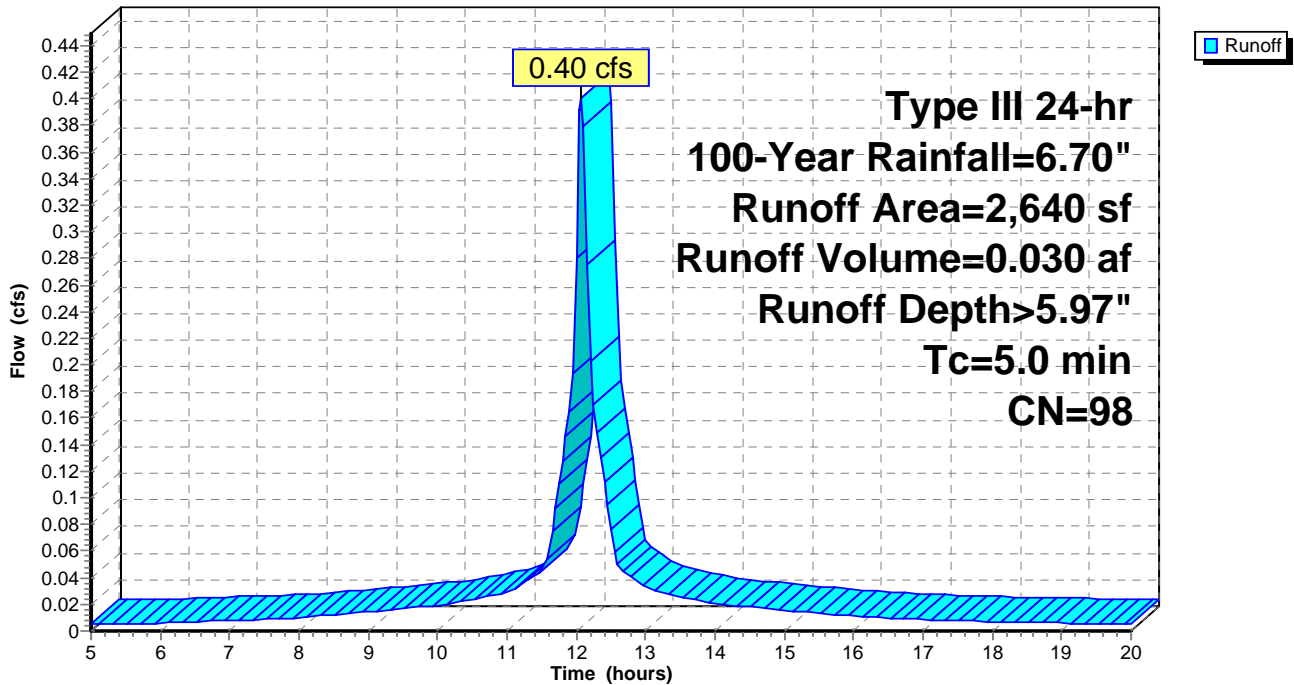
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
2,640	98	Roofs, HSG A
2,640		100.00% Impervious Area

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

Subcatchment 16WP: 16 WP

Hydrograph



Summary for Pond IT8: 20 CULTEC R-330XL

Inflow Area = 0.182 ac, 100.00% Impervious, Inflow Depth > 5.97" for 100-Year event
 Inflow = 1.20 cfs @ 12.07 hrs, Volume= 0.090 af
 Outflow = 0.08 cfs @ 13.36 hrs, Volume= 0.069 af, Atten= 93%, Lag= 77.4 min
 Discarded = 0.08 cfs @ 13.36 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 182.72' @ 13.36 hrs Surf.Area= 858 sf Storage= 1,845 cf

Plug-Flow detention time= 161.9 min calculated for 0.069 af (76% of inflow)
 Center-of-Mass det. time= 102.3 min (835.3 - 733.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	179.21'	789 cf	11.67'W x 73.50'L x 3.54'H Field A
			3,037 cf Overall - 1,065 cf Embedded = 1,971 cf x 40.0% Voids
#2A	179.71'	1,065 cf	Cultec R-330XL x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,854 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	179.21'	2.410 in/hr Exfiltration over Wetted area

Discarded OutFlow Max=0.08 cfs @ 13.36 hrs HW=182.72' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Pond IT8: 20 CULTEC R-330XL - Chamber Wizard Field A

Chamber Model = Cultec R-330XL

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 12.0" Spacing = 64.0" C-C Row Spacing

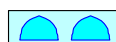
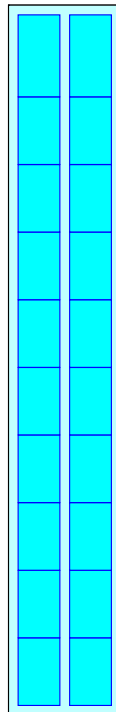
10 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 71.50' Row Length +12.0" End Stone x 2 = 73.50' Base Length
2 Rows x 52.0" Wide + 12.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

20 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,065.5 cf Chamber Storage

3,037.0 cf Field - 1,065.5 cf Chambers = 1,971.5 cf Stone x 40.0% Voids = 788.6 cf Stone Storage

Chamber Storage + Stone Storage = 1,854.1 cf = 0.043 af
Overall Storage Efficiency = 61.1%

20 Chambers
112.5 cy Field
73.0 cy Stone



Pond IT8: 20 CULTEC R-330XL

