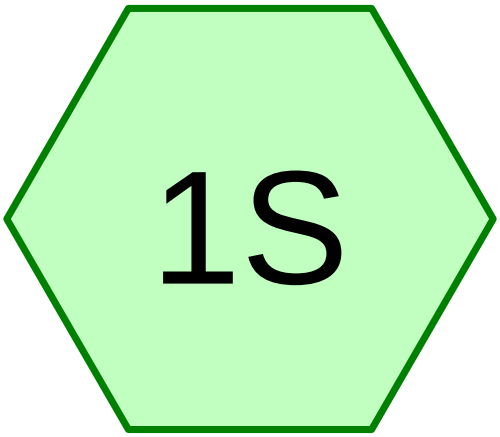


Existing Conditions

Subcat Reach Pond Link

Routing Diagram for 1978Existing
Prepared by Fairfield County Engineering LLC, Printed 5/27/2022
HydroCAD® 10.00-26 s/n 06020 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Existing Conditions

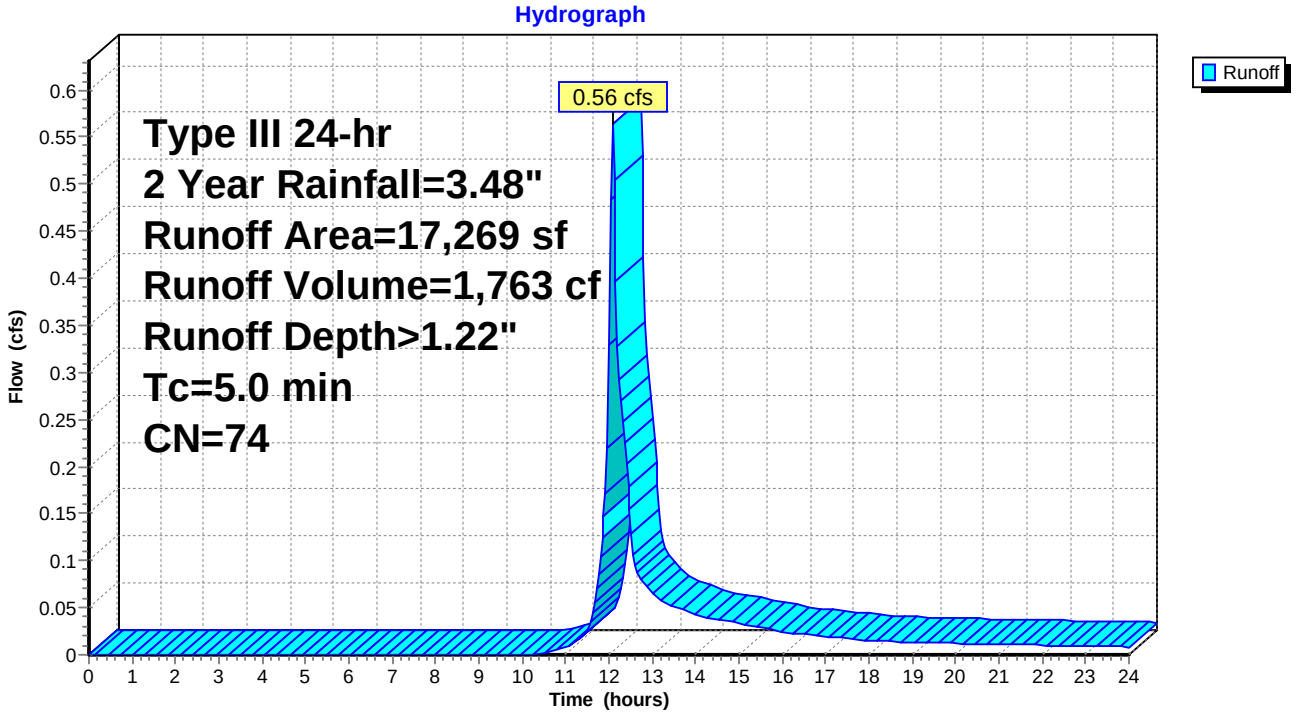
Runoff = 0.56 cfs @ 12.08 hrs, Volume= 1,763 cf, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	2,014	98	Building
*	838	98	Driveway
	14,417	69	50-75% Grass cover, Fair, HSG B
	17,269	74	Weighted Average
	14,417		83.48% Pervious Area
	2,852		16.52% Impervious Area

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

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 1S: Existing Conditions

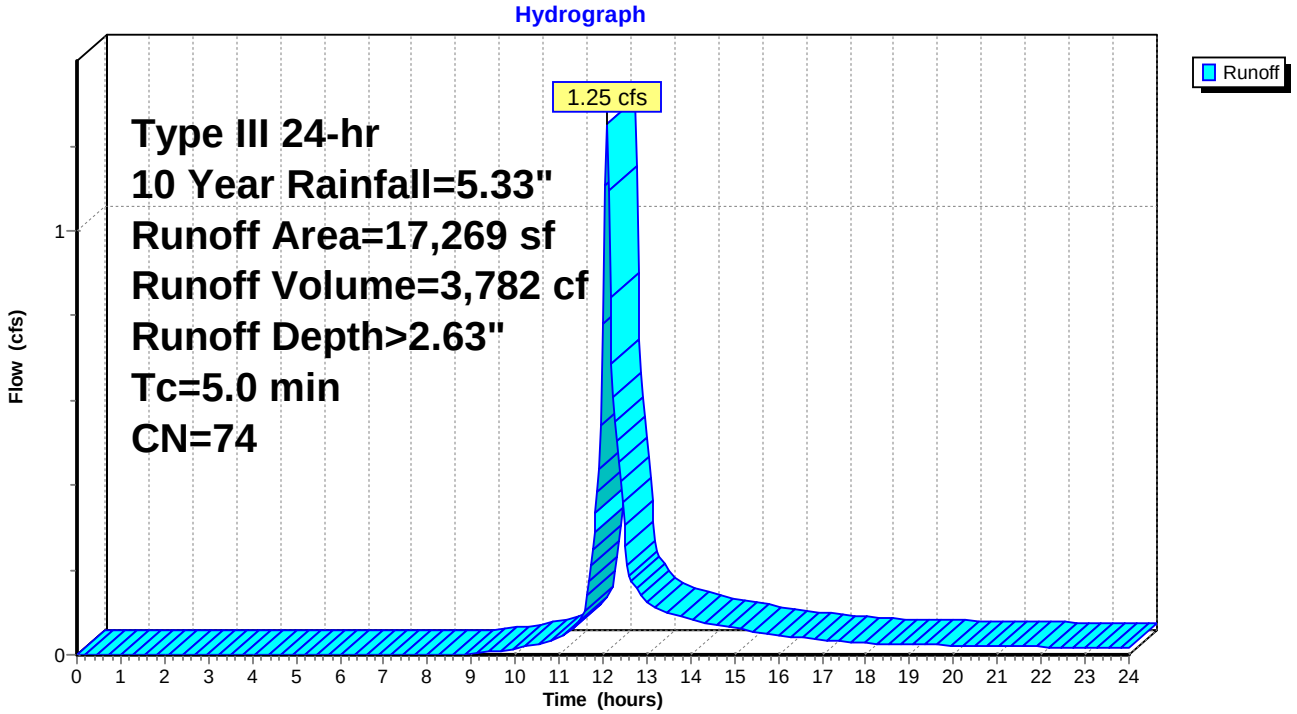
Runoff = 1.25 cfs @ 12.08 hrs, Volume= 3,782 cf, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	2,014	98	Building
*	838	98	Driveway
	14,417	69	50-75% Grass cover, Fair, HSG B
	17,269	74	Weighted Average
	14,417		83.48% Pervious Area
	2,852		16.52% Impervious Area

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

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 1S: Existing Conditions

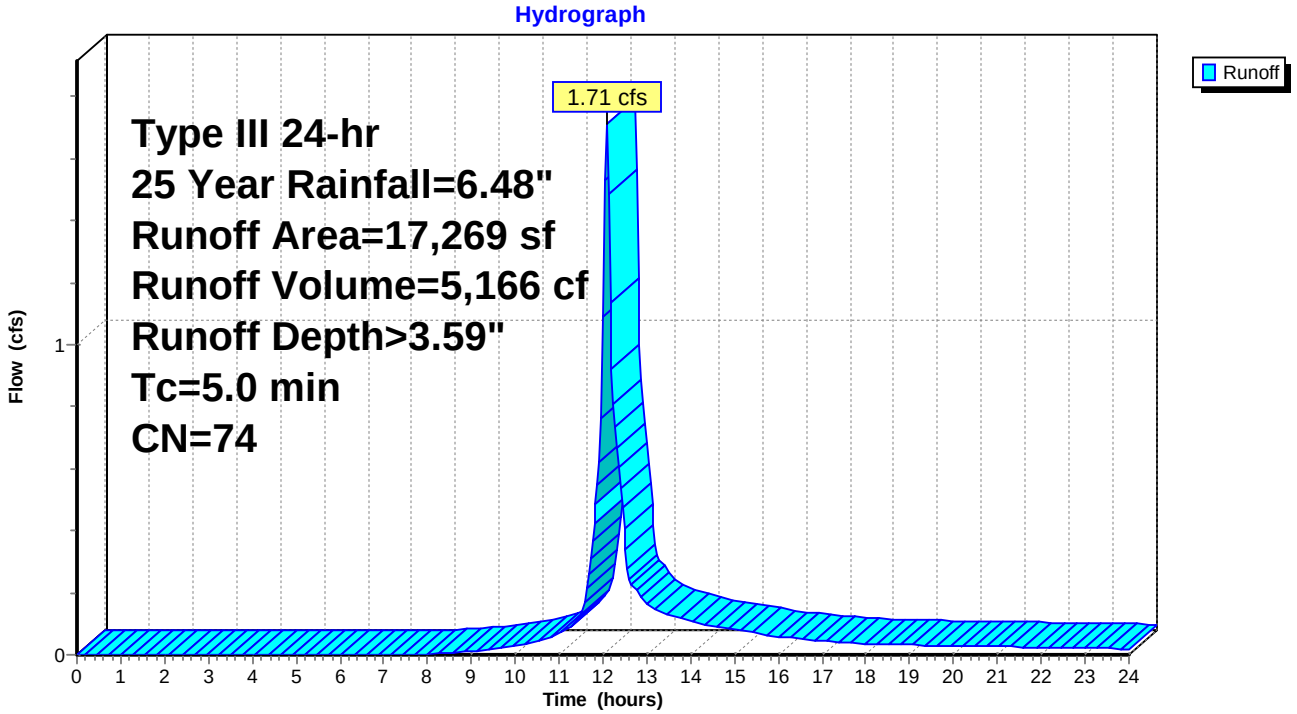
Runoff = 1.71 cfs @ 12.08 hrs, Volume= 5,166 cf, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	2,014	98	Building
*	838	98	Driveway
	14,417	69	50-75% Grass cover, Fair, HSG B
	17,269	74	Weighted Average
	14,417		83.48% Pervious Area
	2,852		16.52% Impervious Area

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

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 1S: Existing Conditions

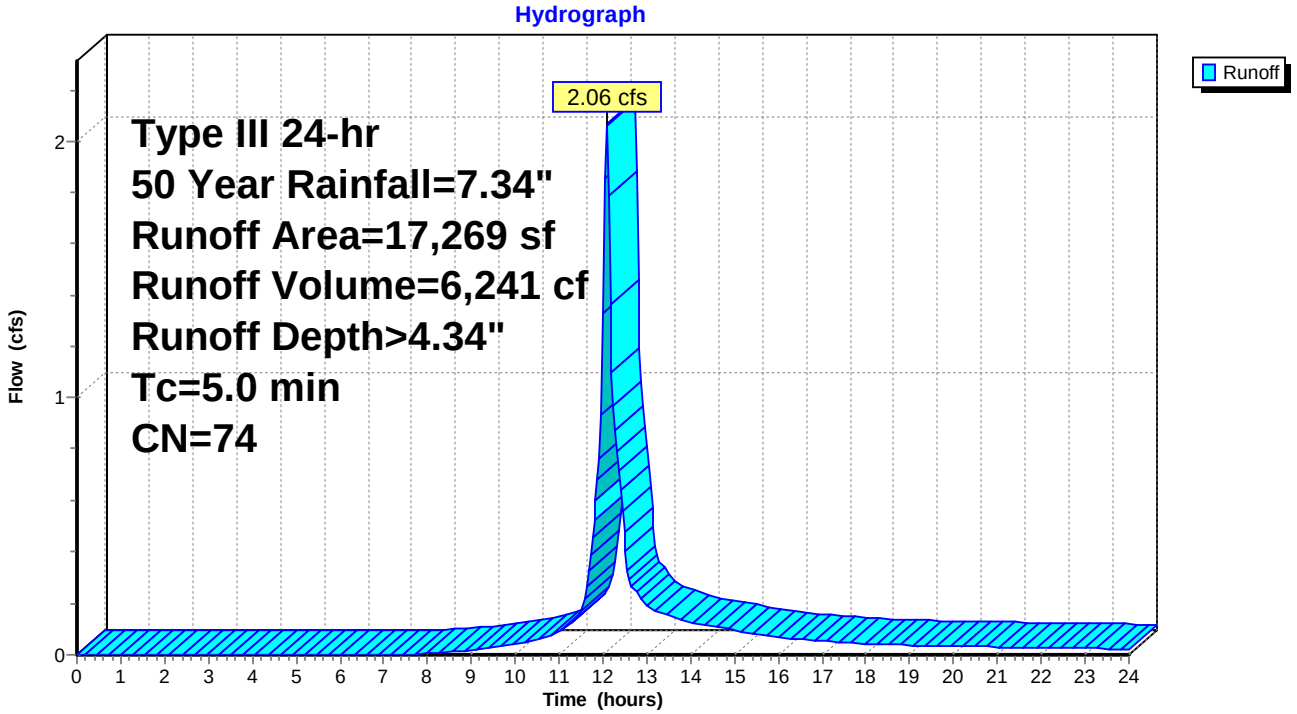
Runoff = 2.06 cfs @ 12.08 hrs, Volume= 6,241 cf, Depth> 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	2,014	98	Building
*	838	98	Driveway
	14,417	69	50-75% Grass cover, Fair, HSG B
	17,269	74	Weighted Average
	14,417		83.48% Pervious Area
	2,852		16.52% Impervious Area

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

Subcatchment 1S: Existing Conditions



Summary for Subcatchment 1S: Existing Conditions

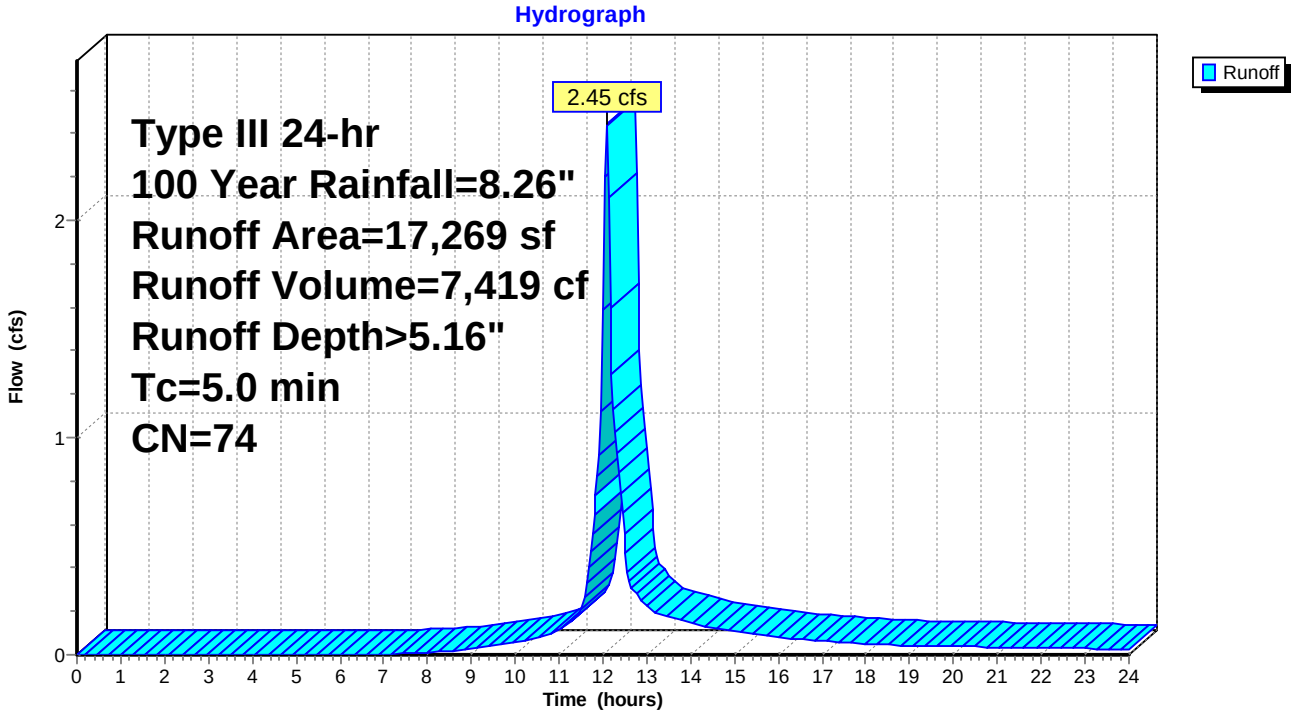
Runoff = 2.45 cfs @ 12.08 hrs, Volume= 7,419 cf, Depth> 5.16"

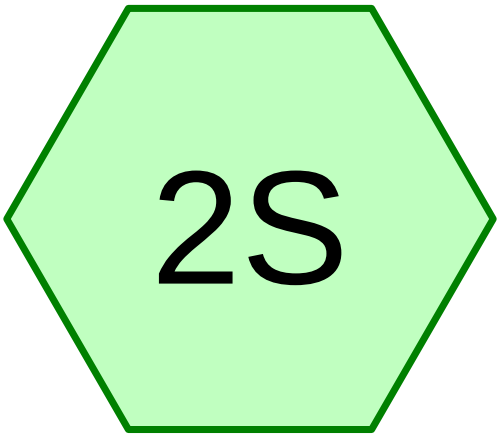
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

	Area (sf)	CN	Description
*	2,014	98	Building
*	838	98	Driveway
	14,417	69	50-75% Grass cover, Fair, HSG B
	17,269	74	Weighted Average
	14,417		83.48% Pervious Area
	2,852		16.52% Impervious Area

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

Subcatchment 1S: Existing Conditions





Proposed Conditions

Subcat Reach Pond Link

Routing Diagram for 1978Proposed
Prepared by Fairfield County Engineering LLC, Printed 5/27/2022
HydroCAD® 10.00-26 s/n 06020 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: Proposed Conditions

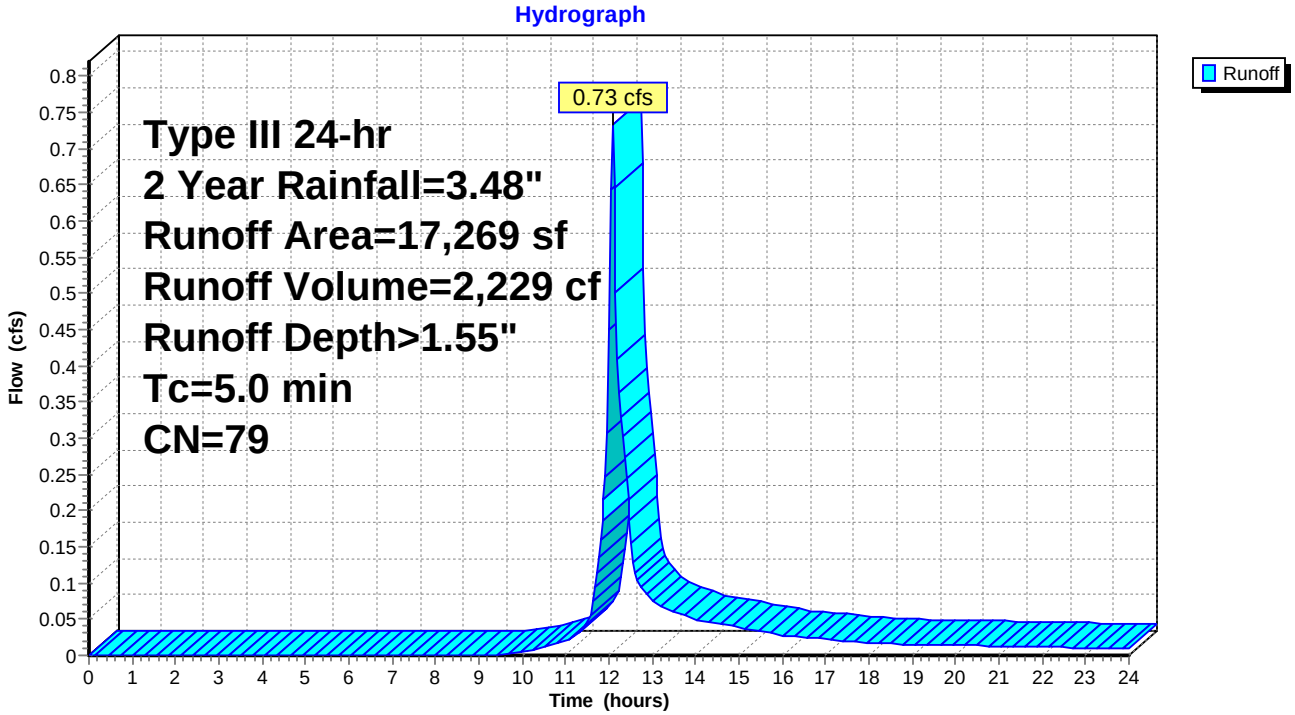
Runoff = 0.73 cfs @ 12.08 hrs, Volume= 2,229 cf, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	2,917	98	House
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	17,269	79	Weighted Average
	11,502		66.60% Pervious Area
	5,767		33.40% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 2S: Proposed Conditions

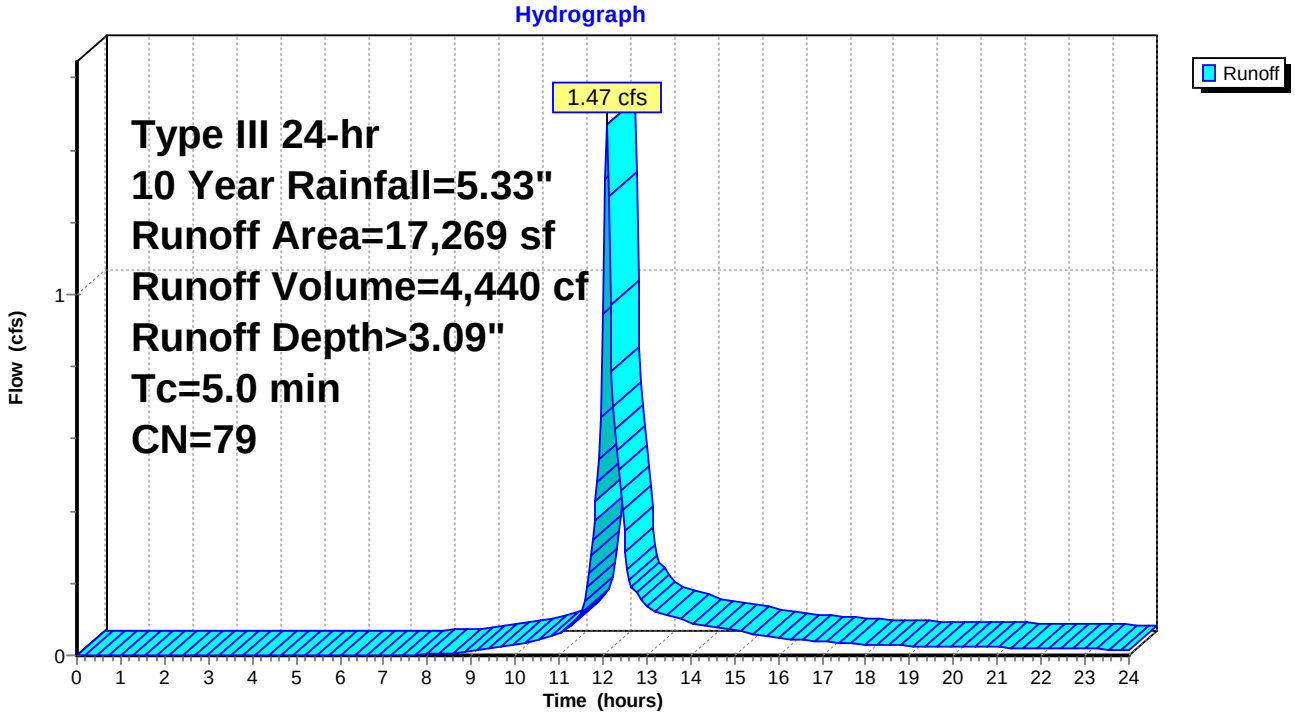
Runoff = 1.47 cfs @ 12.08 hrs, Volume= 4,440 cf, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	2,917	98	House
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	17,269	79	Weighted Average
	11,502		66.60% Pervious Area
	5,767		33.40% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 2S: Proposed Conditions

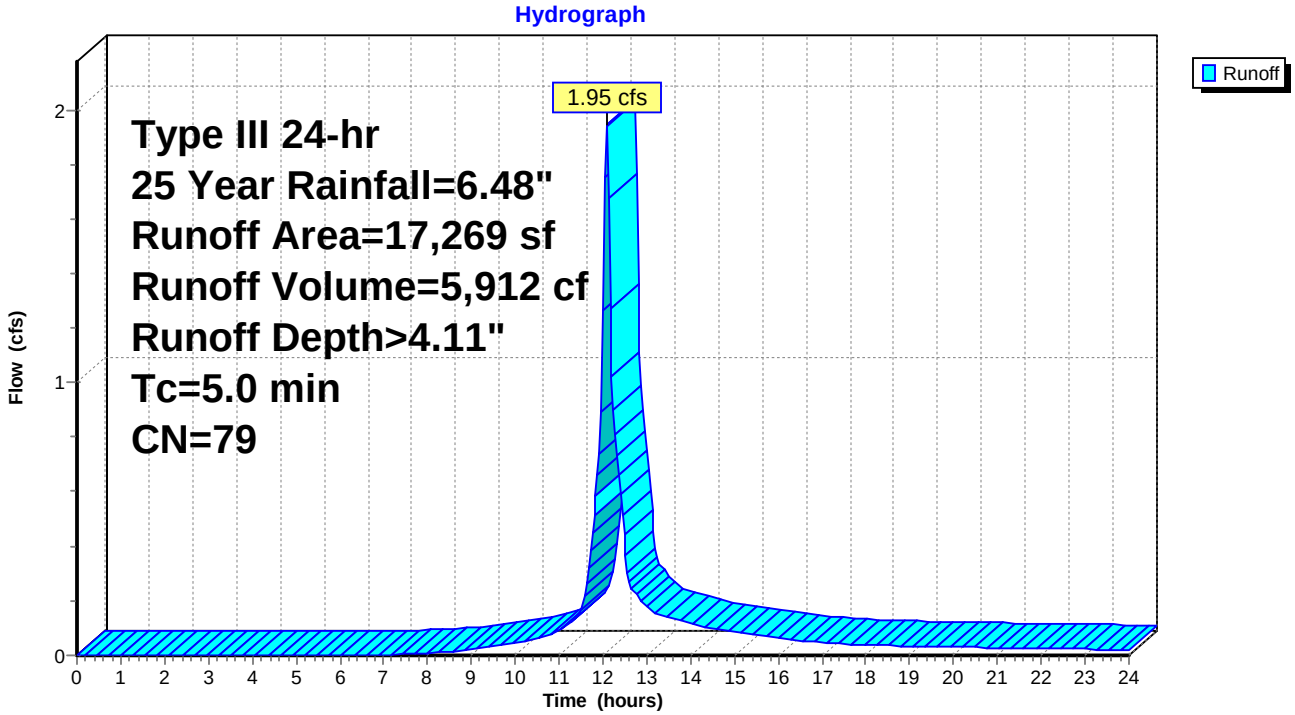
Runoff = 1.95 cfs @ 12.08 hrs, Volume= 5,912 cf, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	2,917	98	House
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	17,269	79	Weighted Average
	11,502		66.60% Pervious Area
	5,767		33.40% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 2S: Proposed Conditions

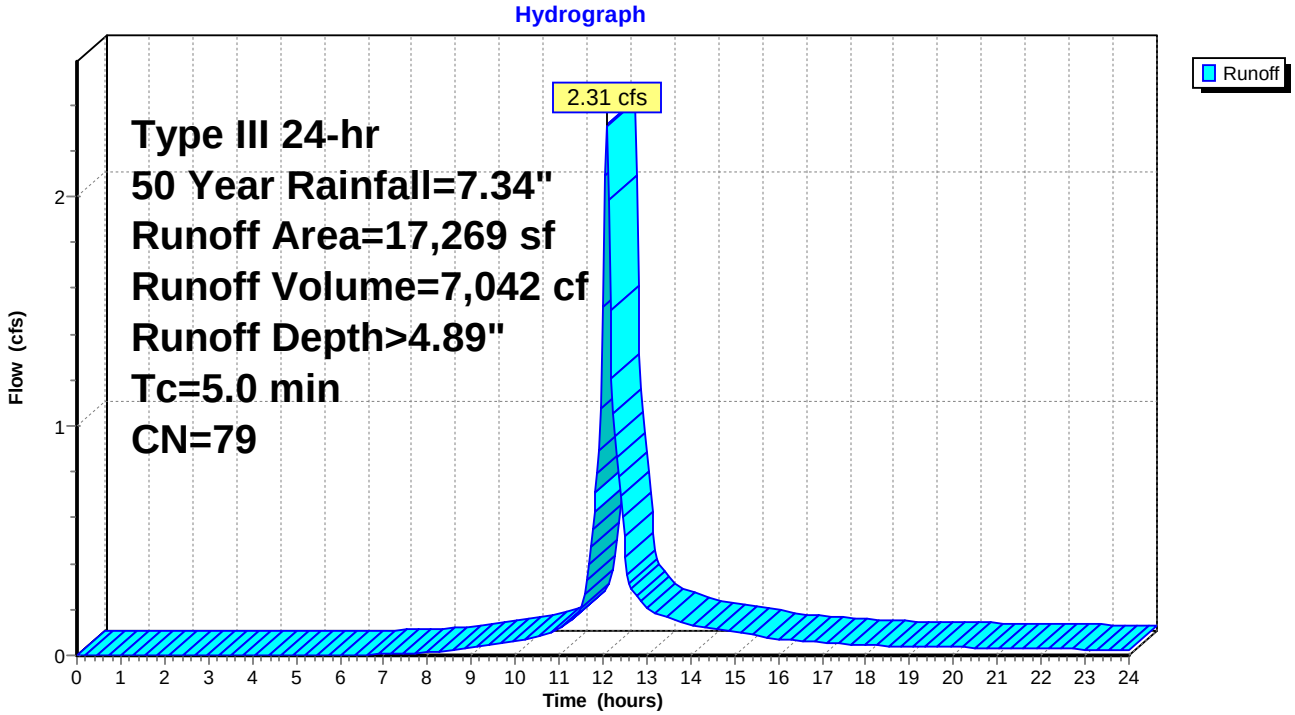
Runoff = 2.31 cfs @ 12.08 hrs, Volume= 7,042 cf, Depth> 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	2,917	98	House
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	17,269	79	Weighted Average
	11,502		66.60% Pervious Area
	5,767		33.40% Impervious Area

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

Subcatchment 2S: Proposed Conditions



Summary for Subcatchment 2S: Proposed Conditions

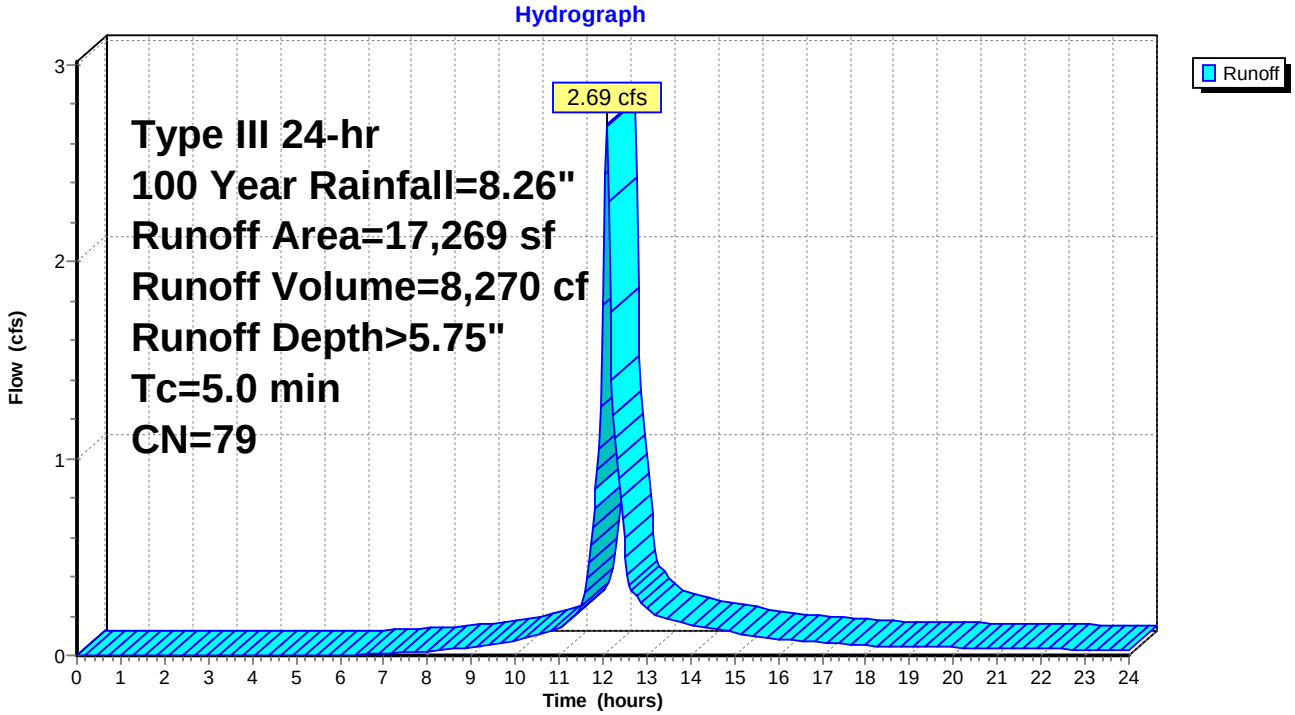
Runoff = 2.69 cfs @ 12.08 hrs, Volume= 8,270 cf, Depth> 5.75"

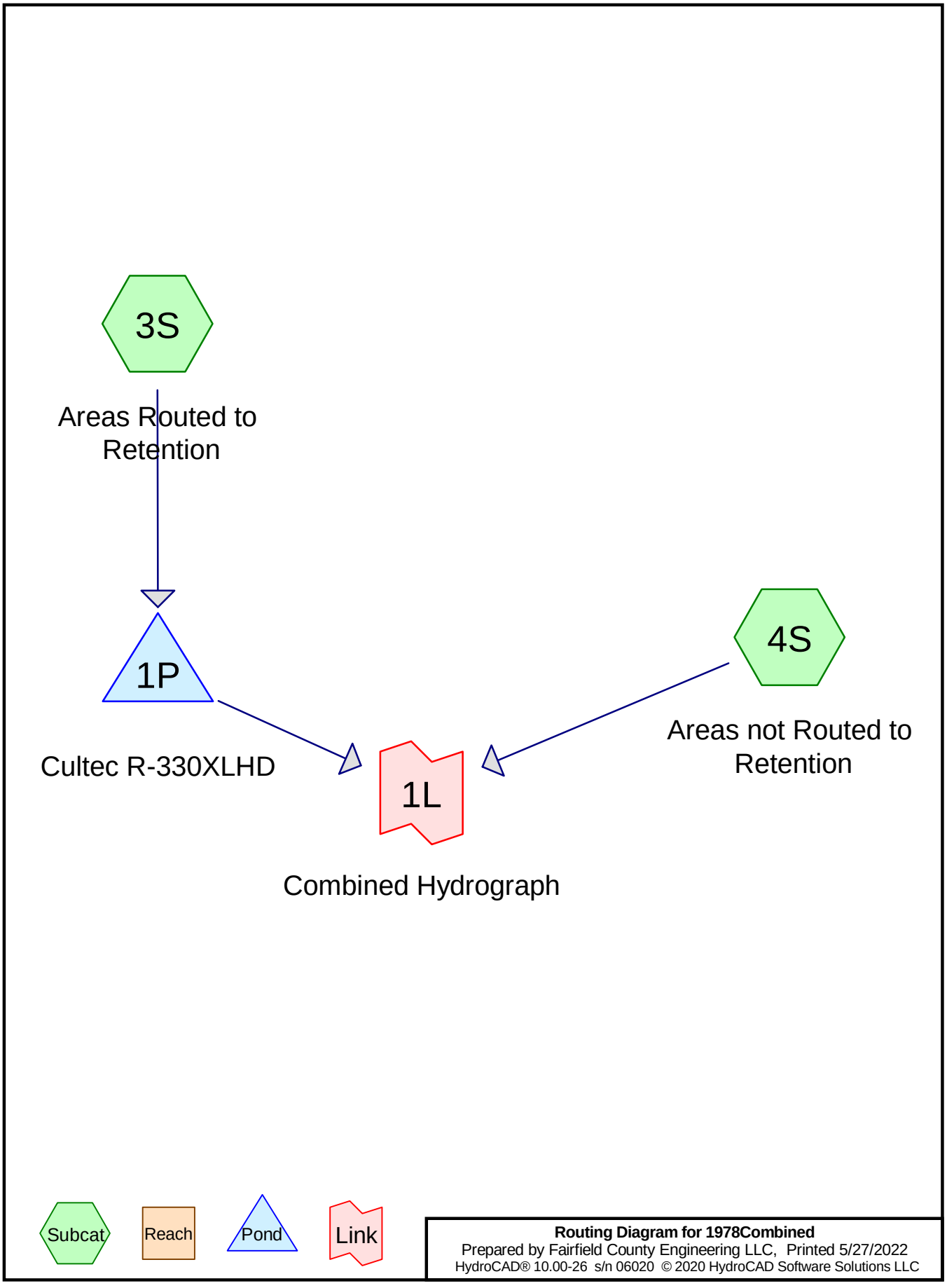
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

	Area (sf)	CN	Description
*	2,917	98	House
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	17,269	79	Weighted Average
	11,502		66.60% Pervious Area
	5,767		33.40% Impervious Area

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

Subcatchment 2S: Proposed Conditions





Summary for Subcatchment 3S: Areas Routed to Retention

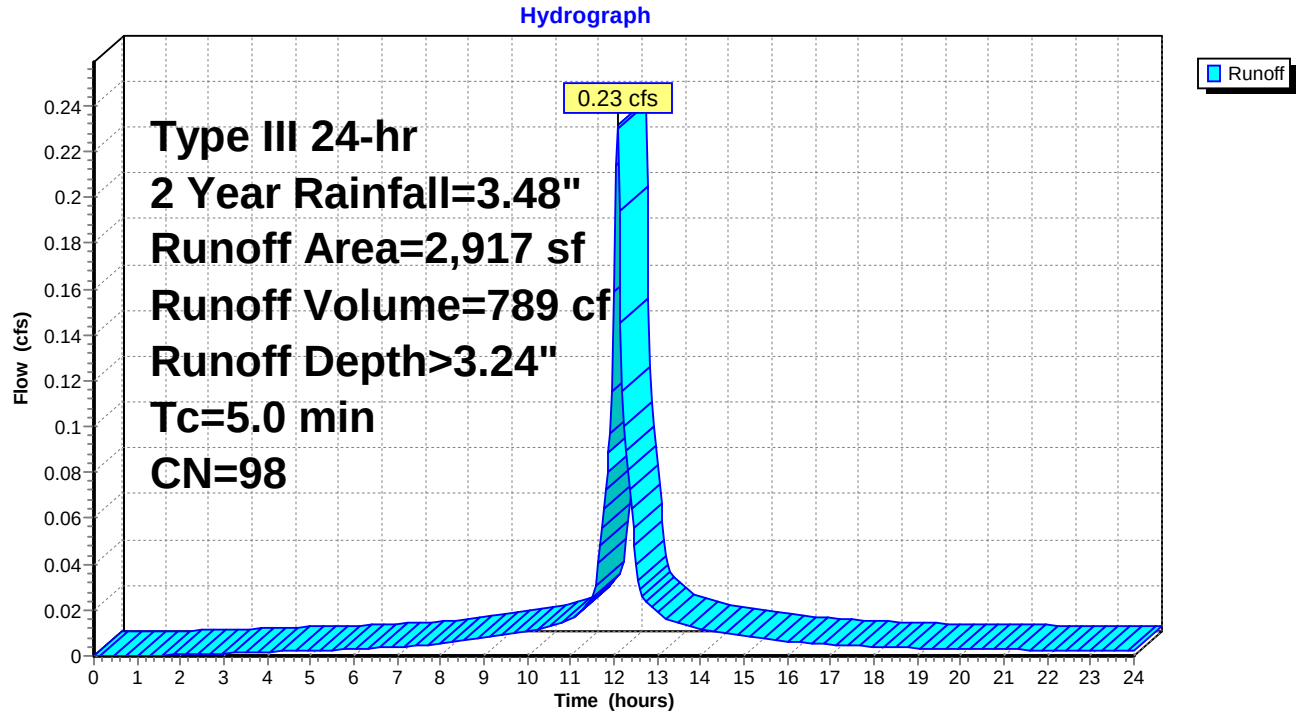
Runoff = 0.23 cfs @ 12.07 hrs, Volume= 789 cf, Depth> 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	2,917	98	House
	2,917		100.00% Impervious Area

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

Subcatchment 3S: Areas Routed to Retention



Summary for Subcatchment 4S: Areas not Routed to Retention

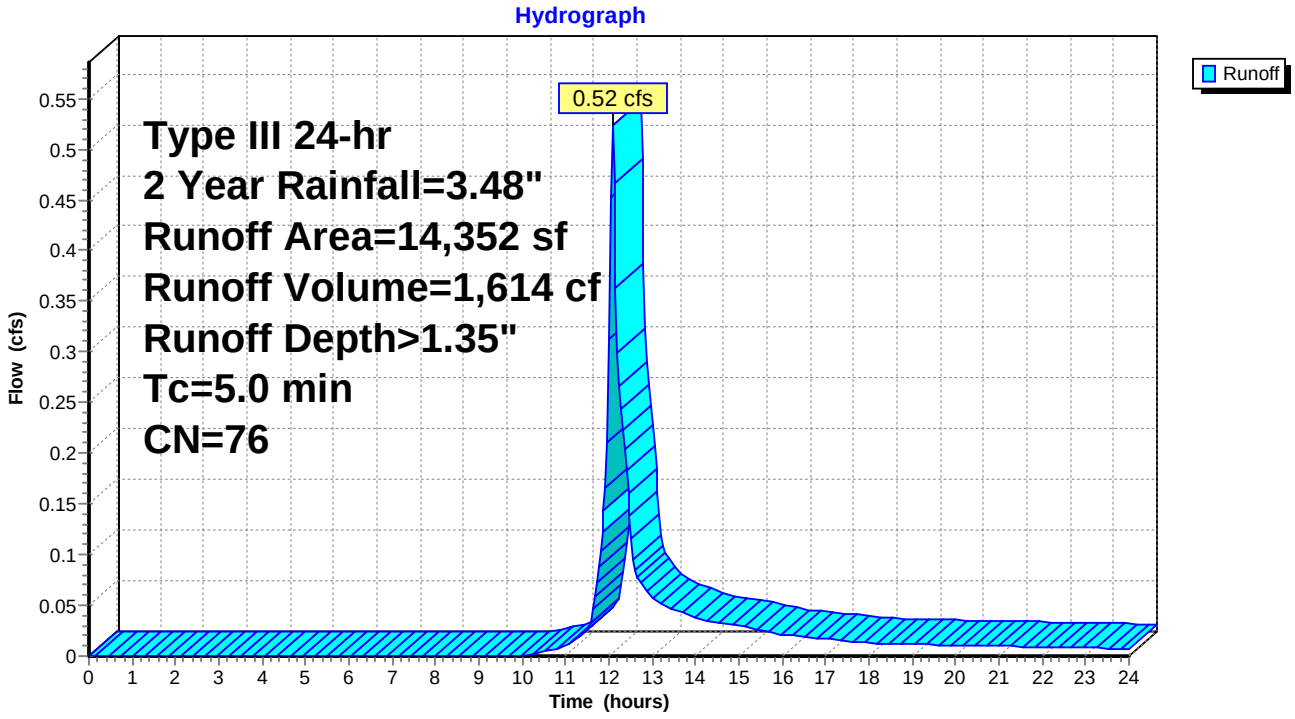
Runoff = 0.52 cfs @ 12.08 hrs, Volume= 1,614 cf, Depth> 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	14,352	76	Weighted Average
	11,502		80.14% Pervious Area
	2,850		19.86% Impervious Area

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

Subcatchment 4S: Areas not Routed to Retention



Summary for Pond 1P: Cultec R-330XLHD

Inflow Area = 2,917 sf,100.00% Impervious, Inflow Depth > 3.24" for 2 Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 789 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 5.72' @ 24.00 hrs Surf.Area= 566 sf Storage= 789 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

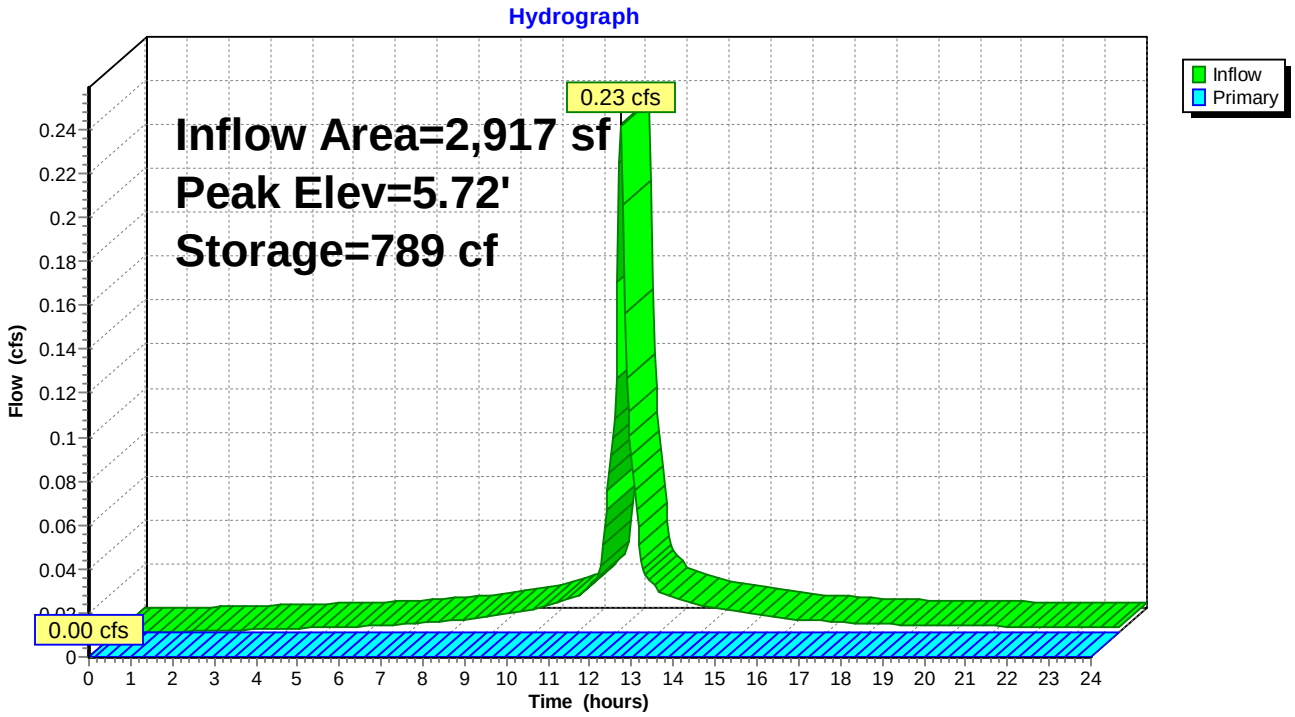
Volume	Invert	Avail.Storage	Storage Description
#1A	4.00'	365 cf	**32.33'W x 17.50'L x 3.04'H Field A** 1,721 cf Overall - 808 cf Embedded = 913 cf x 40.0% Voids
#2A	4.00'	808 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		1,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.54'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=4.00' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: Cultec R-330XLHD

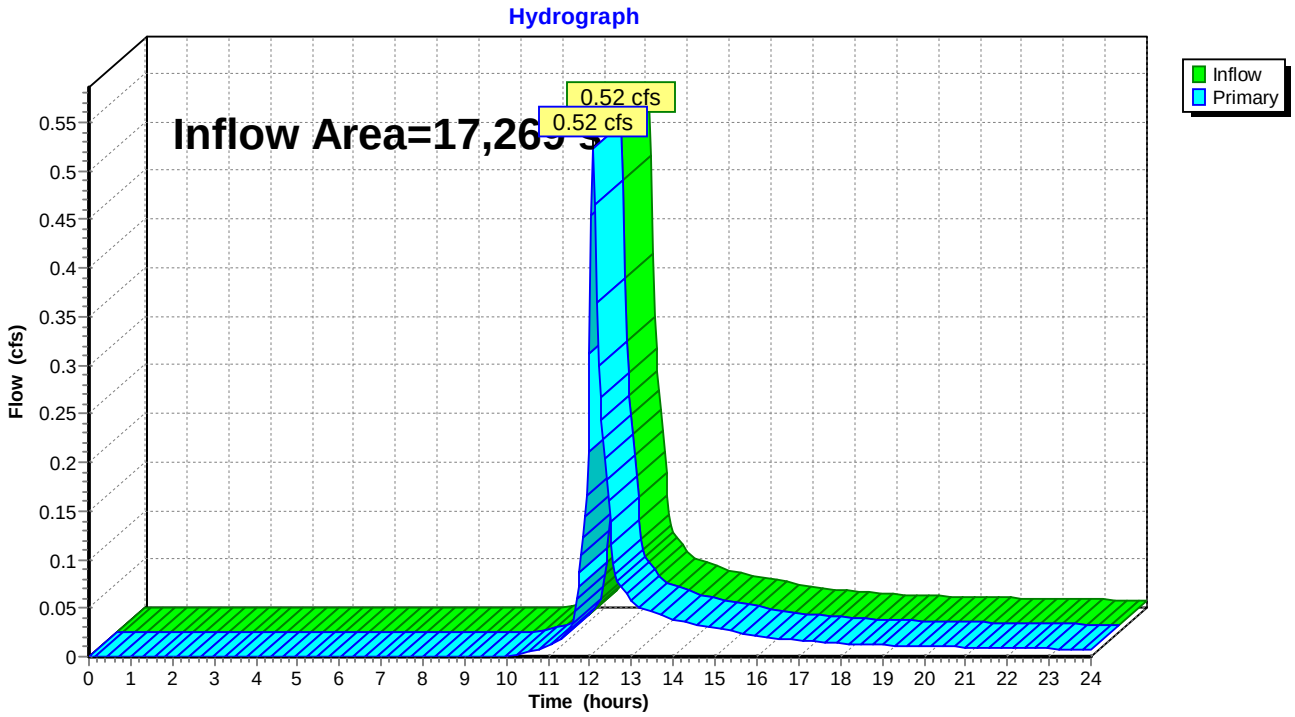


Summary for Link 1L: Combined Hydrograph

Inflow Area = 17,269 sf, 33.40% Impervious, Inflow Depth > 1.12" for 2 Year event
Inflow = 0.52 cfs @ 12.08 hrs, Volume= 1,614 cf
Primary = 0.52 cfs @ 12.08 hrs, Volume= 1,614 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



Summary for Subcatchment 3S: Areas Routed to Retention

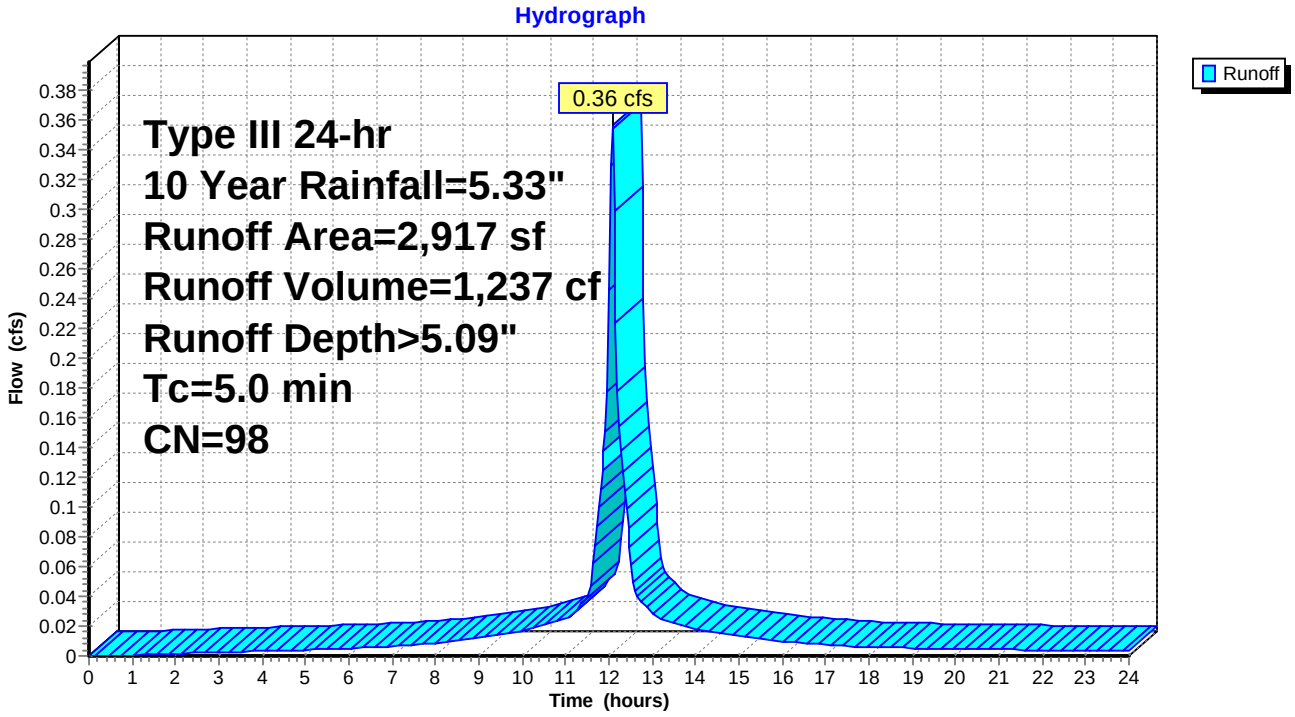
Runoff = 0.36 cfs @ 12.07 hrs, Volume= 1,237 cf, Depth> 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	2,917	98	House
	2,917		100.00% Impervious Area

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

Subcatchment 3S: Areas Routed to Retention



Summary for Subcatchment 4S: Areas not Routed to Retention

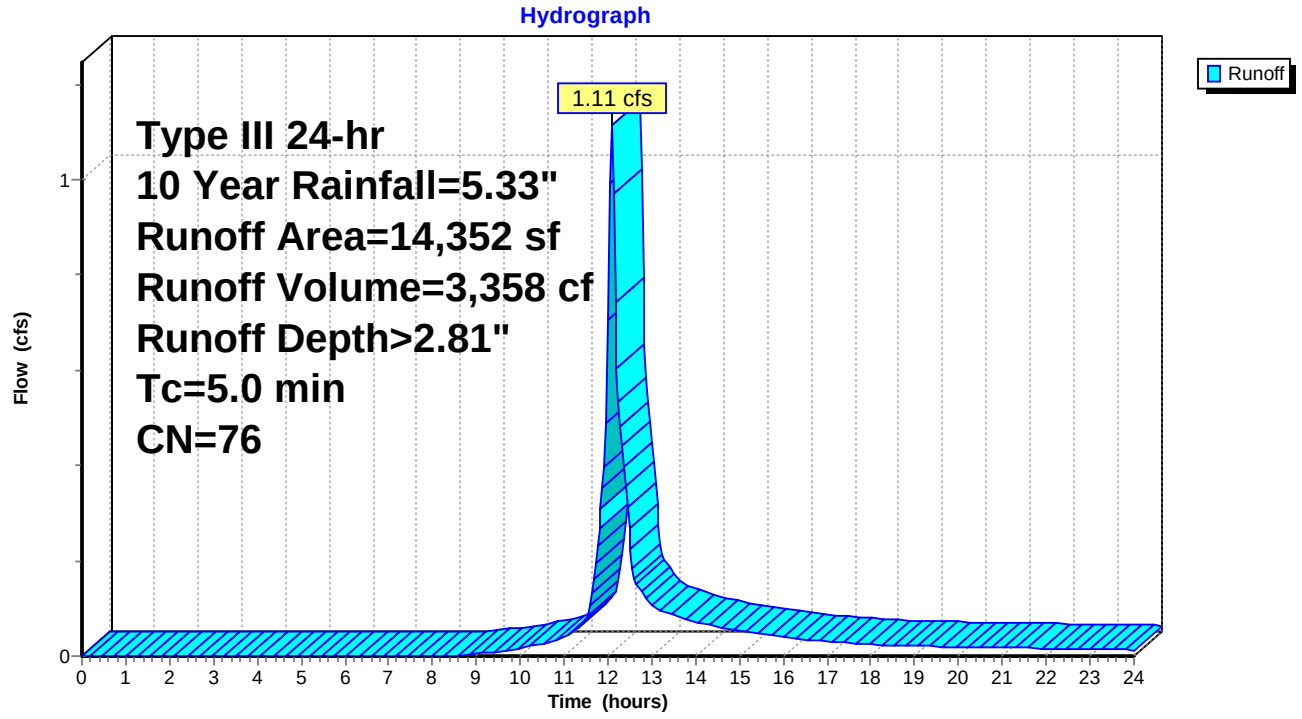
Runoff = 1.11 cfs @ 12.08 hrs, Volume= 3,358 cf, Depth> 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	14,352	76	Weighted Average
	11,502		80.14% Pervious Area
	2,850		19.86% Impervious Area

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

Subcatchment 4S: Areas not Routed to Retention



Summary for Pond 1P: Cultec R-330XLHD

Inflow Area = 2,917 sf,100.00% Impervious, Inflow Depth > 5.09" for 10 Year event
Inflow = 0.36 cfs @ 12.07 hrs, Volume= 1,237 cf
Outflow = 0.01 cfs @ 15.58 hrs, Volume= 176 cf, Atten= 97%, Lag= 210.3 min
Primary = 0.01 cfs @ 15.58 hrs, Volume= 176 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 6.56' @ 15.58 hrs Surf.Area= 566 sf Storage= 1,064 cf

Plug-Flow detention time= 702.4 min calculated for 176 cf (14% of inflow)
Center-of-Mass det. time= 381.8 min (1,127.5 - 745.7)

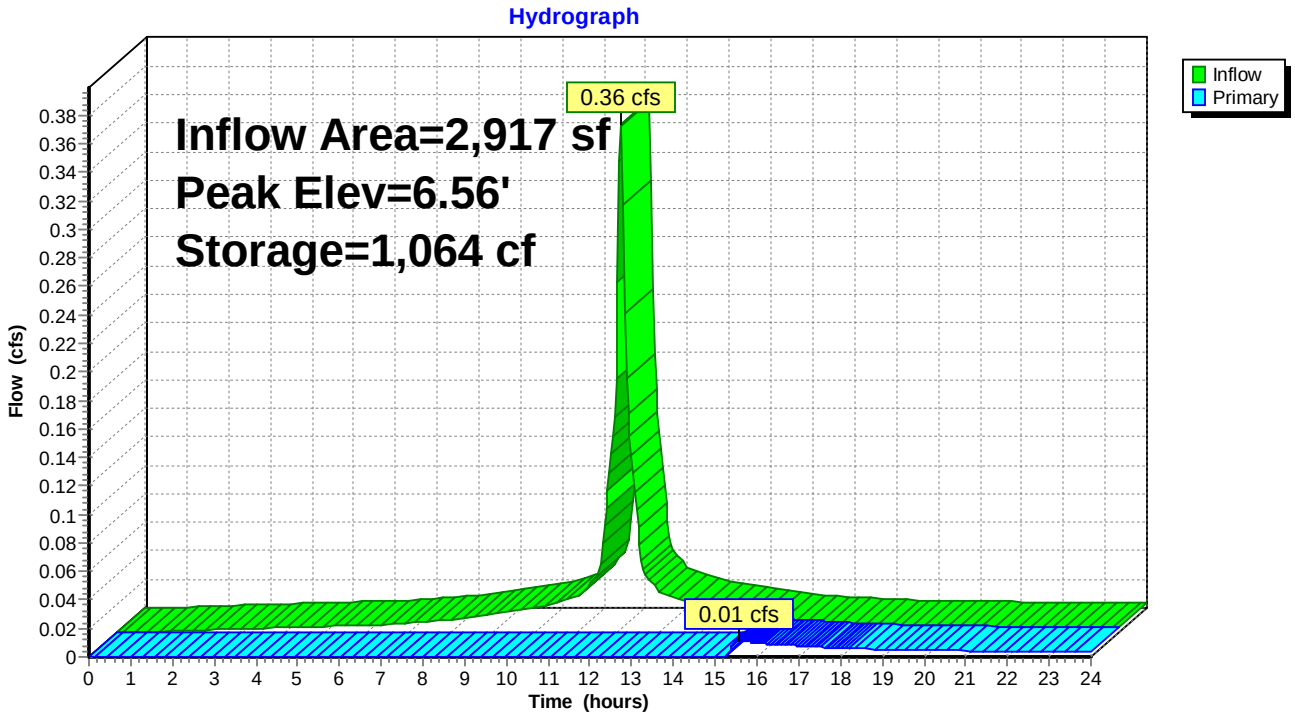
Volume	Invert	Avail.Storage	Storage Description
#1A	4.00'	365 cf	**32.33'W x 17.50'L x 3.04'H Field A** 1,721 cf Overall - 808 cf Embedded = 913 cf x 40.0% Voids
#2A	4.00'	808 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		1,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.54'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 15.58 hrs HW=6.56' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.42 fps)

Pond 1P: Cultec R-330XLHD

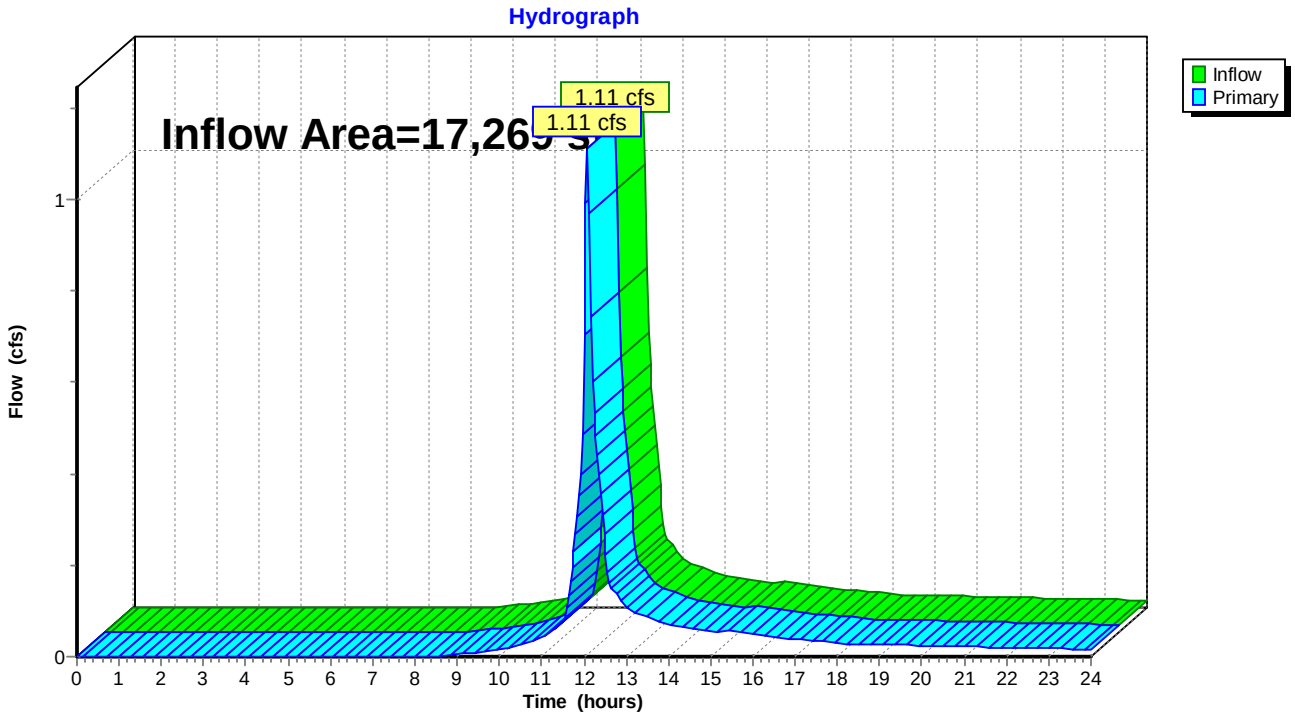


Summary for Link 1L: Combined Hydrograph

Inflow Area = 17,269 sf, 33.40% Impervious, Inflow Depth > 2.46" for 10 Year event
Inflow = 1.11 cfs @ 12.08 hrs, Volume= 3,534 cf
Primary = 1.11 cfs @ 12.08 hrs, Volume= 3,534 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



Summary for Subcatchment 3S: Areas Routed to Retention

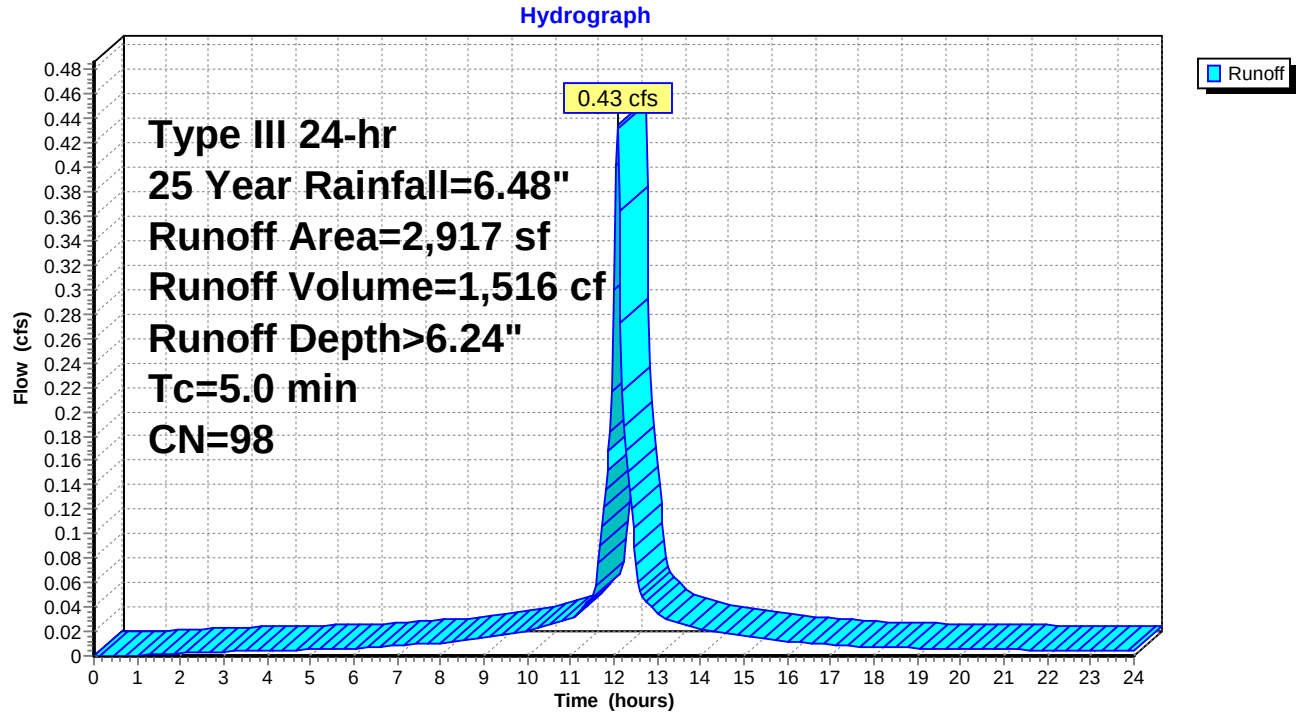
Runoff = 0.43 cfs @ 12.07 hrs, Volume= 1,516 cf, Depth> 6.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	2,917	98	House
	2,917		100.00% Impervious Area

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

Subcatchment 3S: Areas Routed to Retention



Summary for Subcatchment 4S: Areas not Routed to Retention

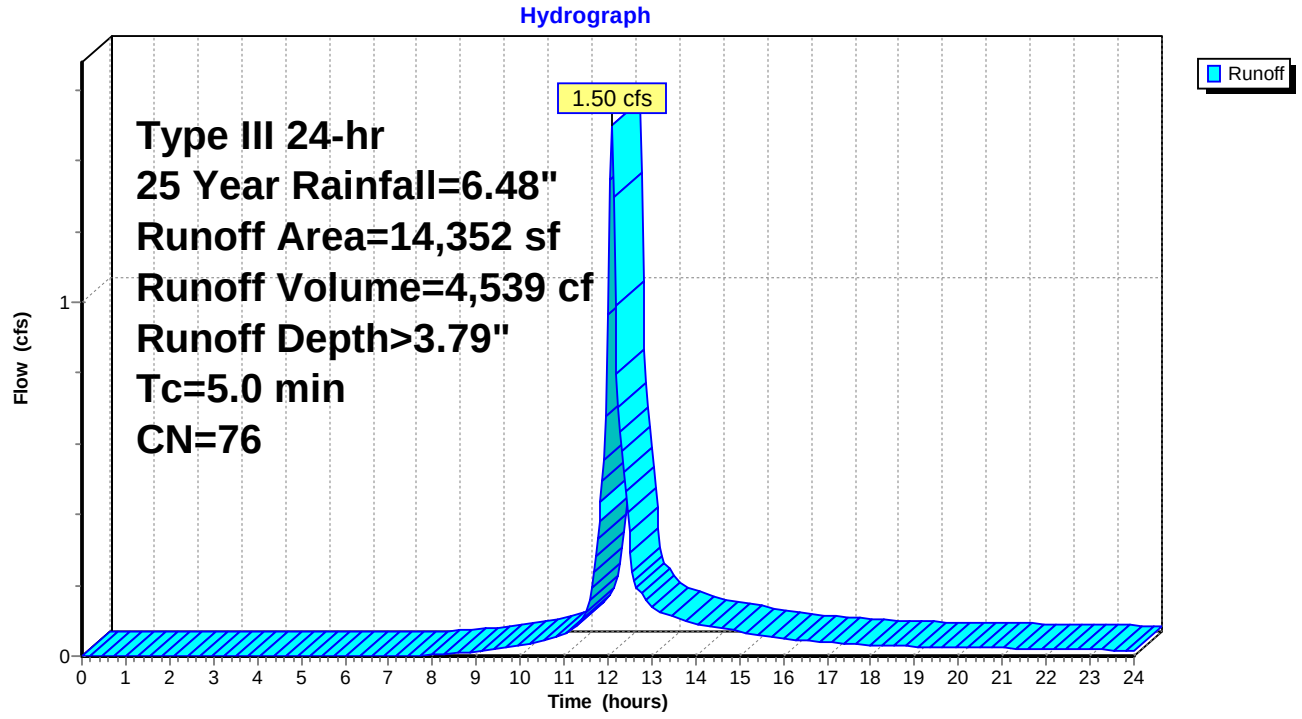
Runoff = 1.50 cfs @ 12.08 hrs, Volume= 4,539 cf, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	14,352	76	Weighted Average
	11,502		80.14% Pervious Area
	2,850		19.86% Impervious Area

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

Subcatchment 4S: Areas not Routed to Retention



Summary for Pond 1P: Cultec R-330XLHD

Inflow Area = 2,917 sf,100.00% Impervious, Inflow Depth > 6.24" for 25 Year event
Inflow = 0.43 cfs @ 12.07 hrs, Volume= 1,516 cf
Outflow = 0.04 cfs @ 12.81 hrs, Volume= 455 cf, Atten= 90%, Lag= 44.2 min
Primary = 0.04 cfs @ 12.81 hrs, Volume= 455 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 6.58' @ 12.81 hrs Surf.Area= 566 sf Storage= 1,069 cf

Plug-Flow detention time= 428.2 min calculated for 455 cf (30% of inflow)
Center-of-Mass det. time= 226.3 min (969.0 - 742.7)

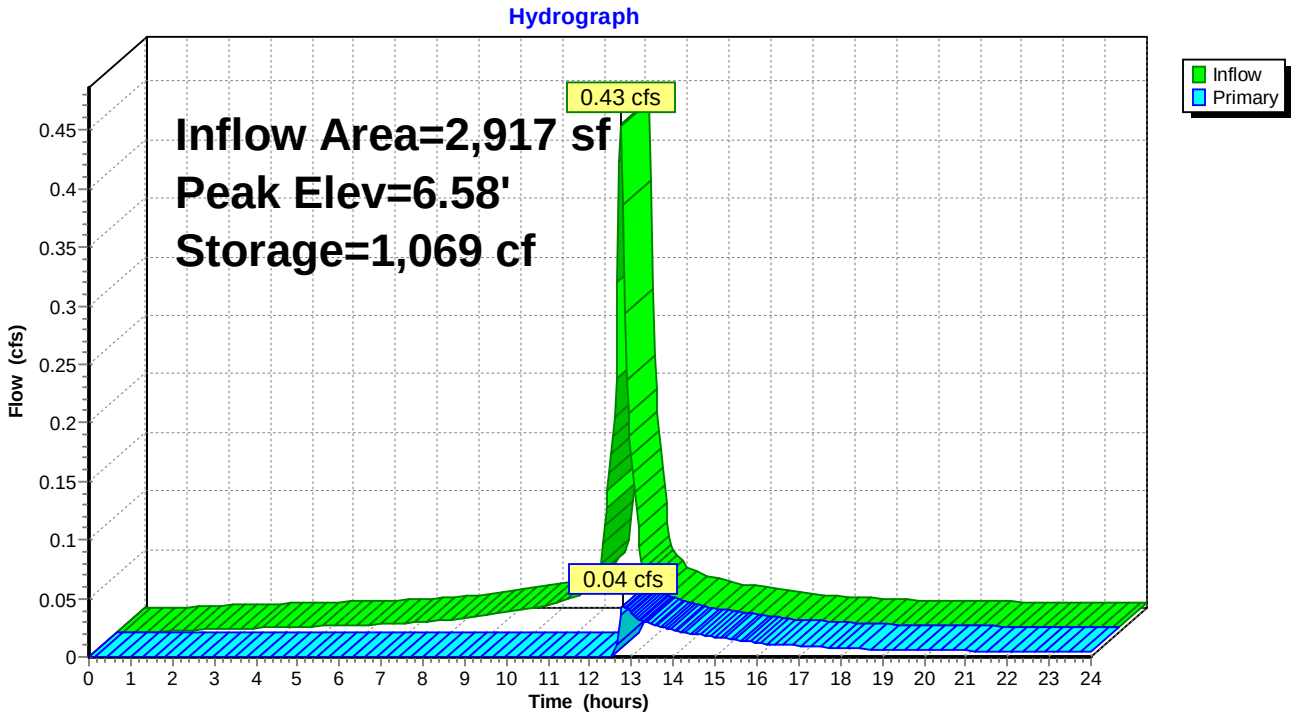
Volume	Invert	Avail.Storage	Storage Description
#1A	4.00'	365 cf	**32.33'W x 17.50'L x 3.04'H Field A** 1,721 cf Overall - 808 cf Embedded = 913 cf x 40.0% Voids
#2A	4.00'	808 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		1,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.54'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 12.81 hrs HW=6.58' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.04 cfs @ 0.66 fps)

Pond 1P: Cultec R-330XLHD

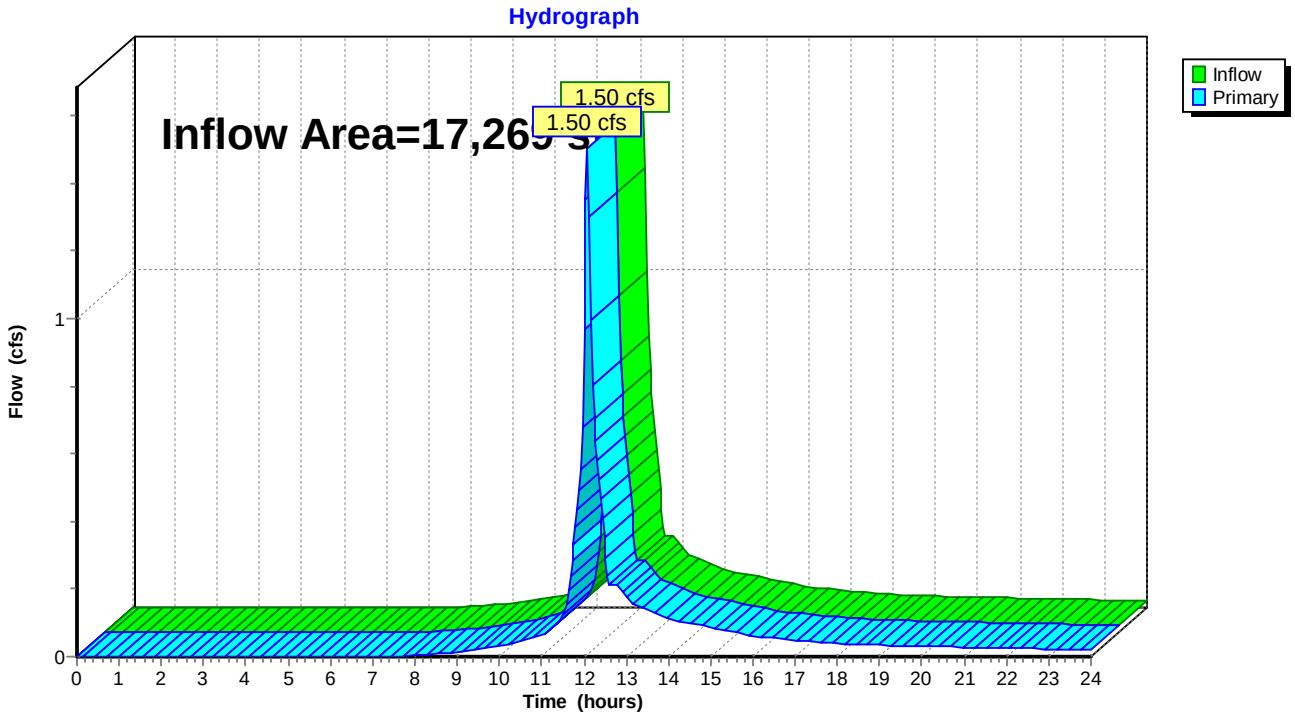


Summary for Link 1L: Combined Hydrograph

Inflow Area = 17,269 sf, 33.40% Impervious, Inflow Depth > 3.47" for 25 Year event
Inflow = 1.50 cfs @ 12.08 hrs, Volume= 4,994 cf
Primary = 1.50 cfs @ 12.08 hrs, Volume= 4,994 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



Summary for Subcatchment 3S: Areas Routed to Retention

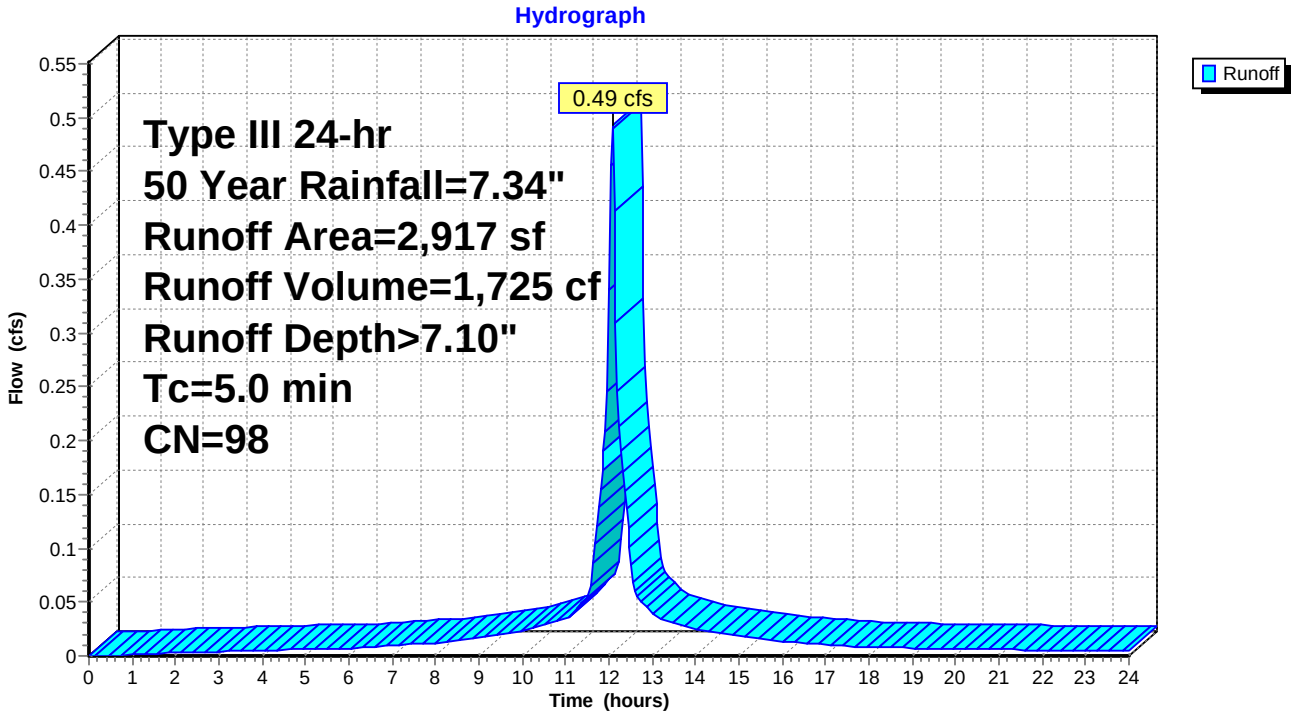
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,725 cf, Depth> 7.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	2,917	98	House
	2,917		100.00% Impervious Area

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

Subcatchment 3S: Areas Routed to Retention



Summary for Subcatchment 4S: Areas not Routed to Retention

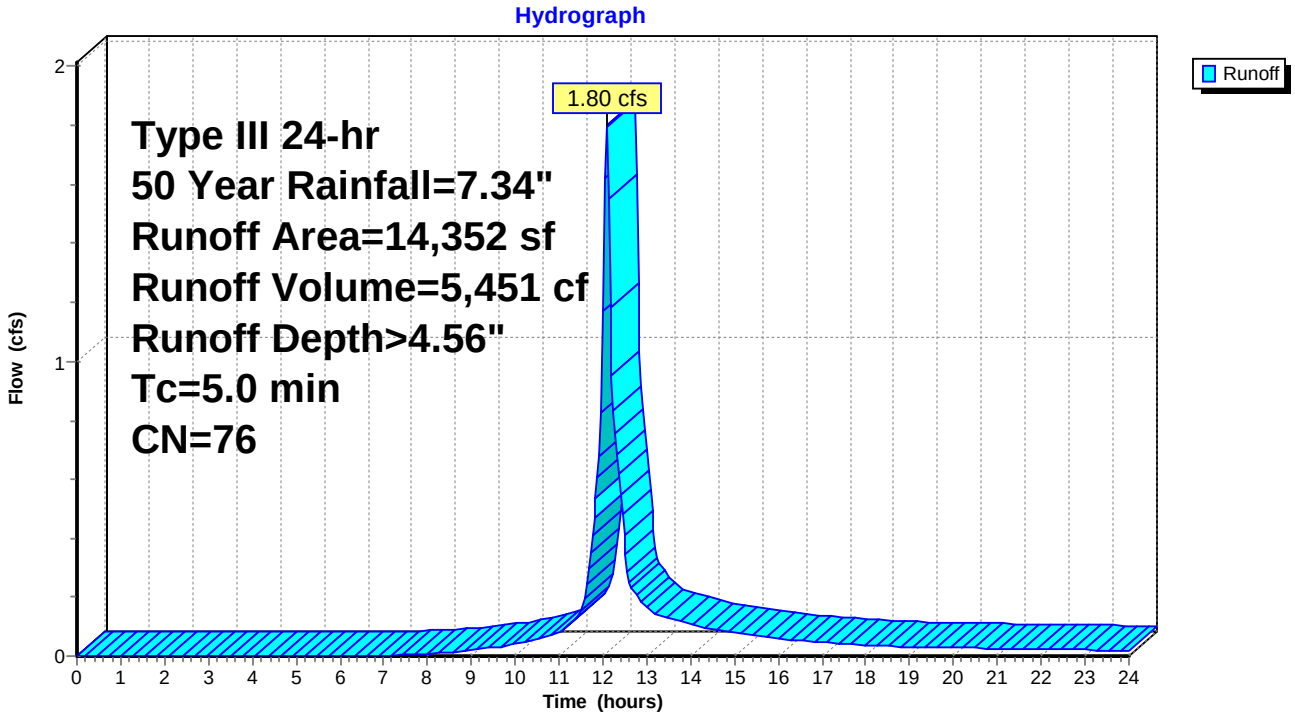
Runoff = 1.80 cfs @ 12.08 hrs, Volume= 5,451 cf, Depth> 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	14,352	76	Weighted Average
	11,502		80.14% Pervious Area
	2,850		19.86% Impervious Area

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

Subcatchment 4S: Areas not Routed to Retention



Summary for Pond 1P: Cultec R-330XLHD

Inflow Area = 2,917 sf,100.00% Impervious, Inflow Depth > 7.10" for 50 Year event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,725 cf
Outflow = 0.16 cfs @ 12.37 hrs, Volume= 664 cf, Atten= 68%, Lag= 18.0 min
Primary = 0.16 cfs @ 12.37 hrs, Volume= 664 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 6.64' @ 12.37 hrs Surf.Area= 566 sf Storage= 1,082 cf

Plug-Flow detention time= 344.2 min calculated for 663 cf (38% of inflow)
Center-of-Mass det. time= 178.6 min (919.6 - 741.0)

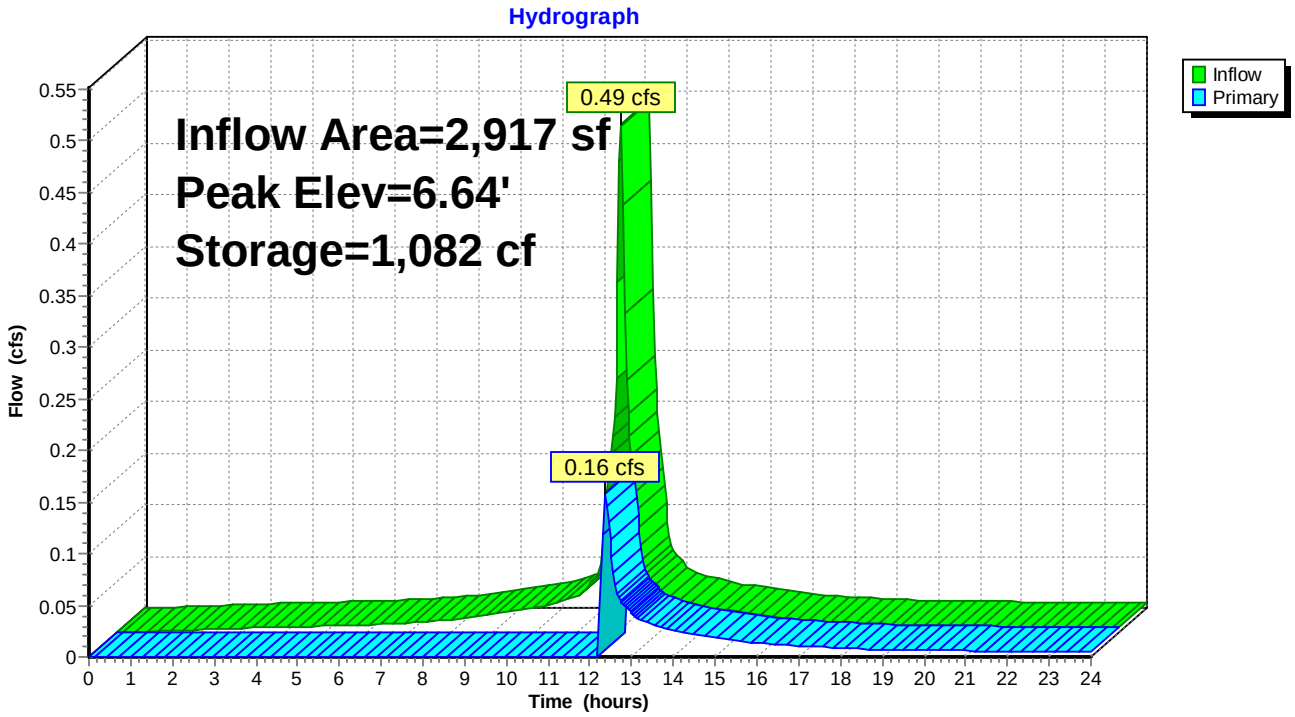
Volume	Invert	Avail.Storage	Storage Description
#1A	4.00'	365 cf	**32.33'W x 17.50'L x 3.04'H Field A** 1,721 cf Overall - 808 cf Embedded = 913 cf x 40.0% Voids
#2A	4.00'	808 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		1,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.54'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 12.37 hrs HW=6.64' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.15 cfs @ 1.01 fps)

Pond 1P: Cultec R-330XLHD

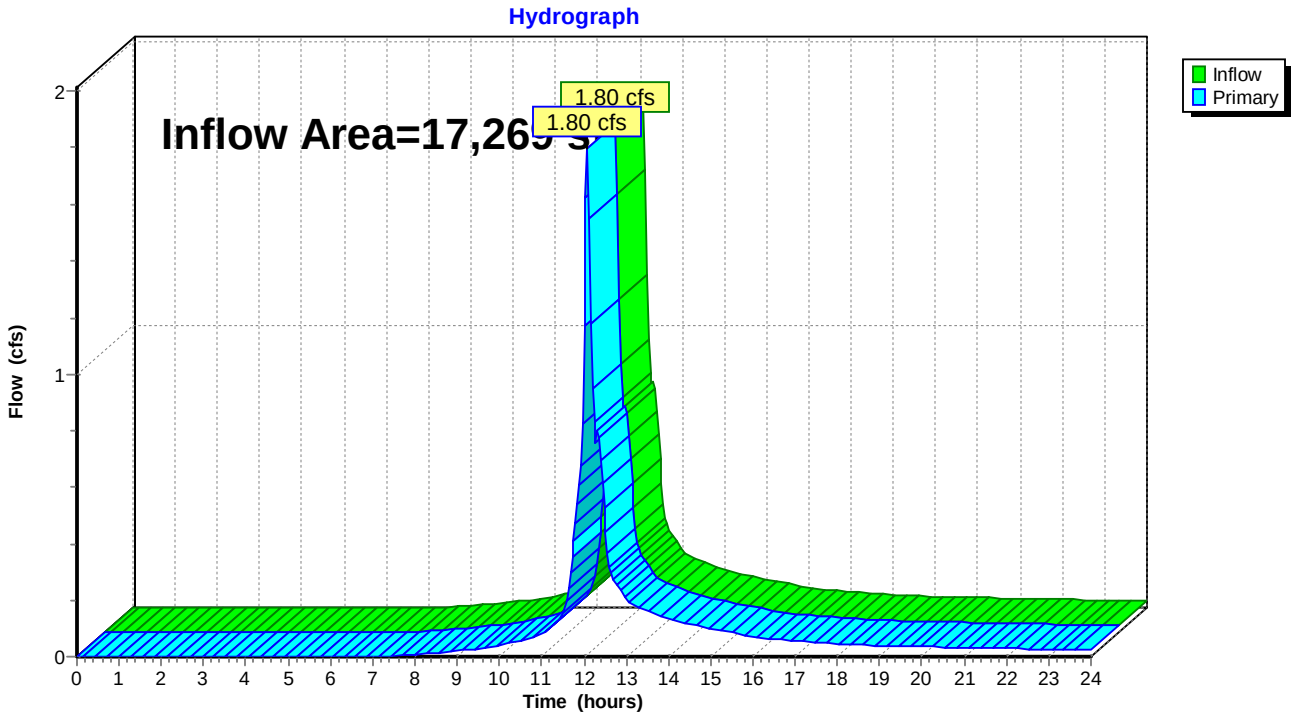


Summary for Link 1L: Combined Hydrograph

Inflow Area = 17,269 sf, 33.40% Impervious, Inflow Depth > 4.25" for 50 Year event
Inflow = 1.80 cfs @ 12.08 hrs, Volume= 6,115 cf
Primary = 1.80 cfs @ 12.08 hrs, Volume= 6,115 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



Summary for Subcatchment 3S: Areas Routed to Retention

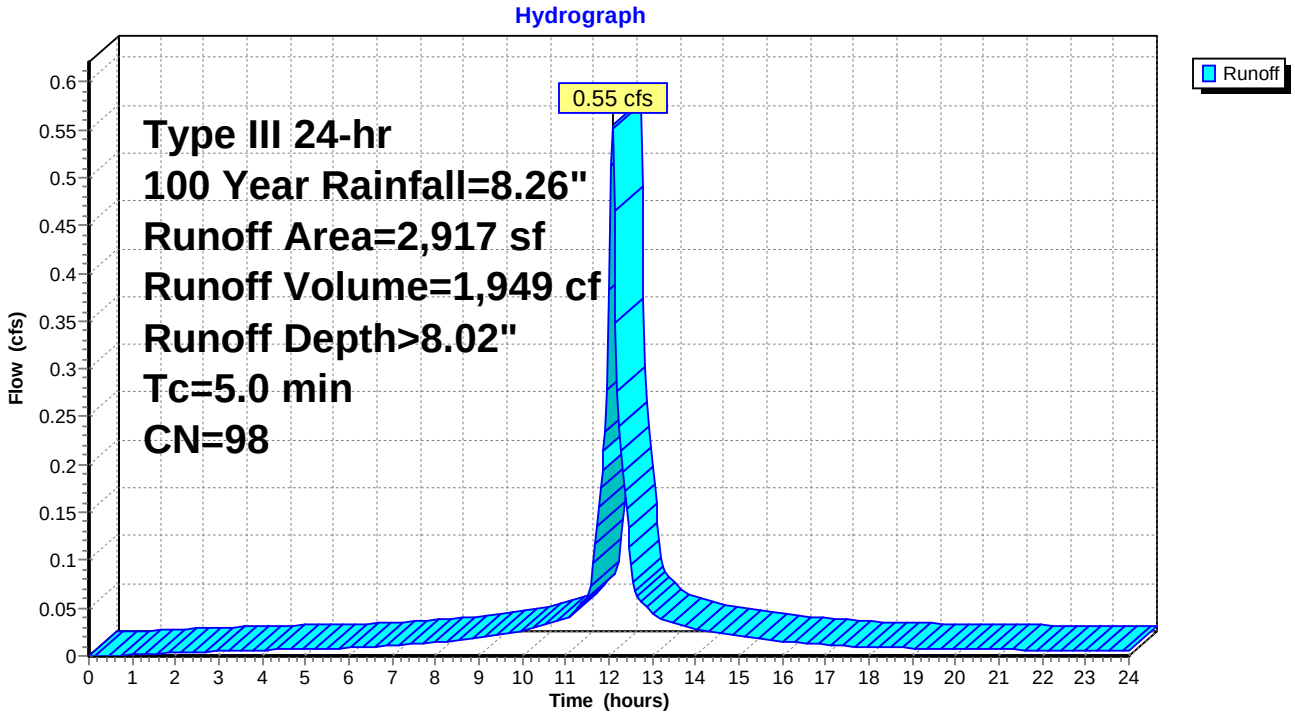
Runoff = 0.55 cfs @ 12.07 hrs, Volume= 1,949 cf, Depth> 8.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

	Area (sf)	CN	Description
*	2,917	98	House
	2,917		100.00% Impervious Area

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

Subcatchment 3S: Areas Routed to Retention



Summary for Subcatchment 4S: Areas not Routed to Retention

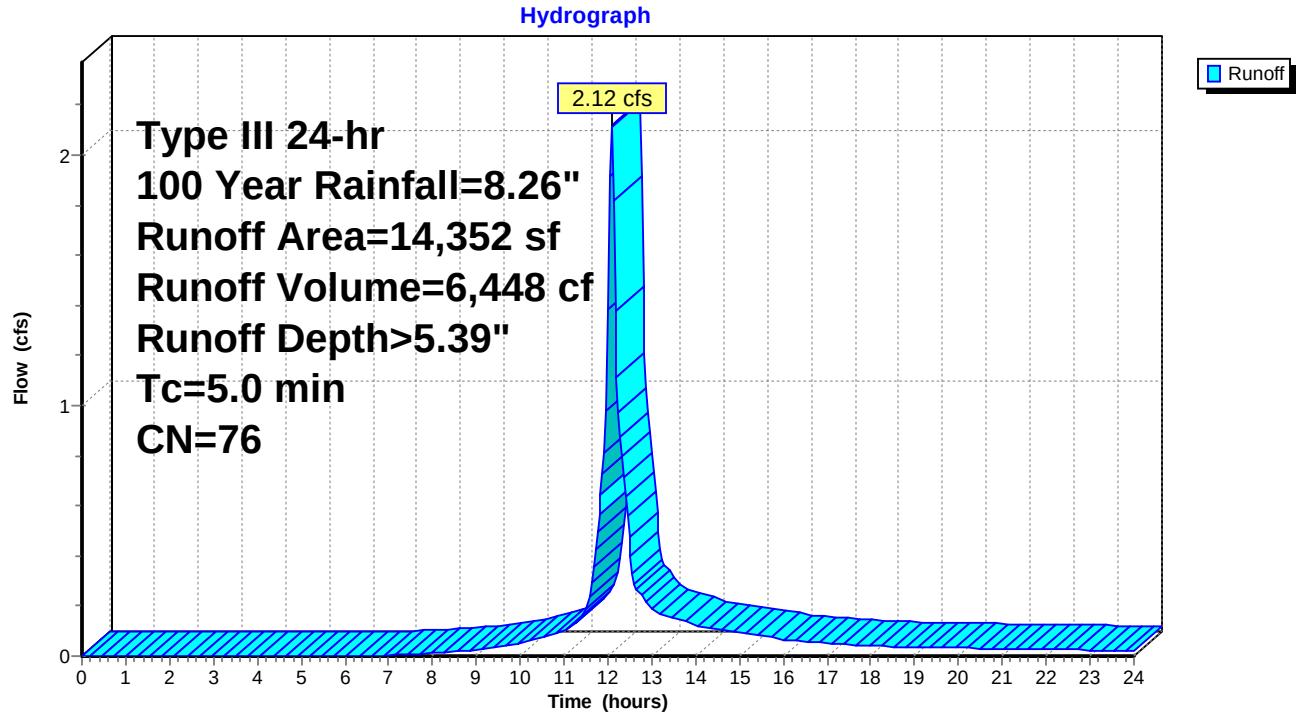
Runoff = 2.12 cfs @ 12.08 hrs, Volume= 6,448 cf, Depth> 5.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

	Area (sf)	CN	Description
*	1,198	98	Driveway
*	1,093	98	Patios
*	724	85	Deck
*	139	98	Walk
*	420	98	Pool
	10,778	69	50-75% Grass cover, Fair, HSG B
	14,352	76	Weighted Average
	11,502		80.14% Pervious Area
	2,850		19.86% Impervious Area

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

Subcatchment 4S: Areas not Routed to Retention



Summary for Pond 1P: Cultec R-330XLHD

Inflow Area = 2,917 sf,100.00% Impervious, Inflow Depth > 8.02" for 100 Year event
Inflow = 0.55 cfs @ 12.07 hrs, Volume= 1,949 cf
Outflow = 0.31 cfs @ 12.21 hrs, Volume= 887 cf, Atten= 45%, Lag= 8.5 min
Primary = 0.31 cfs @ 12.21 hrs, Volume= 887 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 6.69' @ 12.21 hrs Surf.Area= 566 sf Storage= 1,095 cf

Plug-Flow detention time= 295.6 min calculated for 887 cf (46% of inflow)
Center-of-Mass det. time= 150.7 min (890.2 - 739.5)

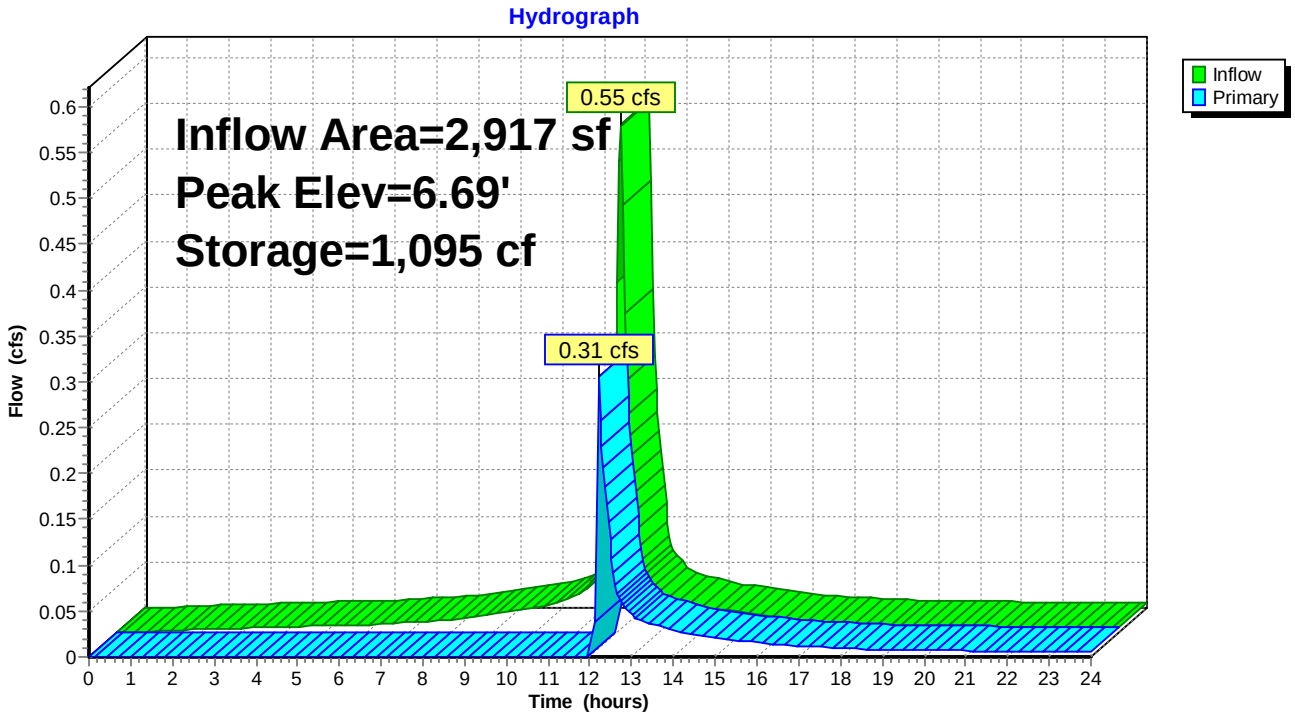
Volume	Invert	Avail.Storage	Storage Description
#1A	4.00'	365 cf	**32.33'W x 17.50'L x 3.04'H Field A** 1,721 cf Overall - 808 cf Embedded = 913 cf x 40.0% Voids
#2A	4.00'	808 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		1,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.54'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 12.21 hrs HW=6.68' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.28 cfs @ 1.24 fps)

Pond 1P: Cultec R-330XLHD



Summary for Link 1L: Combined Hydrograph

Inflow Area = 17,269 sf, 33.40% Impervious, Inflow Depth > 5.10" for 100 Year event
Inflow = 2.12 cfs @ 12.08 hrs, Volume= 7,335 cf
Primary = 2.12 cfs @ 12.08 hrs, Volume= 7,335 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph