DRAINAGE REPORT

DETENTION POND DESIGN

Project Name: MPS Boardroom

Project Address: 1500 SE 4th Street

Moore, OK

Prepared by:

Flatland Civil LLC

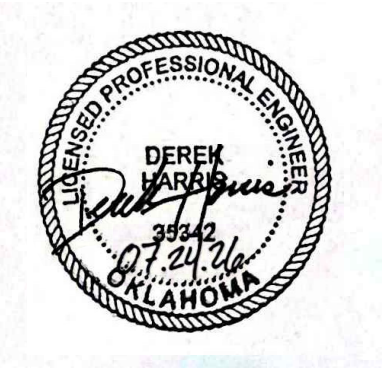
200 36th AVE NW

PO BOX 720072

Norman, OK 73070

Job Number: 26005

Date: July 24th, 2026



HISTORIC CONDITIONS

The existing site currently drains from the SW to the NE into an existing private grate drain. The drainage area consists of 1.35 acres and has a CN value of 78 (some paving, and greater than 75% grass cover, HSG C) and has a total time of concentration of 13.8 minutes. This is converted to lag time in HydroCAD.

The respective discharge rates are shown below.

Storm Event	2-yr	5-yr	10-yr	50-yr	100-yr
Historic Flow (cfs)	3.03	4.33	5.63	9.51	11.48

DEVELOPED (PROPOSED) CONDITIONS

The developed site drainage area consists of 0.80 acres that has a controlled release through a proposed detention pond, and the remaining 0.55 acres bypasses the pond and discharges directly into the existing drainage grate. The 0.80 acres that is in the proposed detention pond area, has a CN value of 86 (<50% Grass cover, HSG C) and has a time of concentration of 14.2 minutes; . The 0.55 acres that is in the proposed bypass of the detention pond area, has a CN value of 86 (<50% Grass cover, HSG C) and has a time of concentration of 10.8 minutes; This is converted to lag time in HydroCAD.

The proposed pond has a 100 yr wsel of 1217.39'.

Storm Event	2-yr	5-yr	10-yr	50-yr	100-yr
Developed Flow (cfs)	2.94	4.08	5.21	8.51	10.19

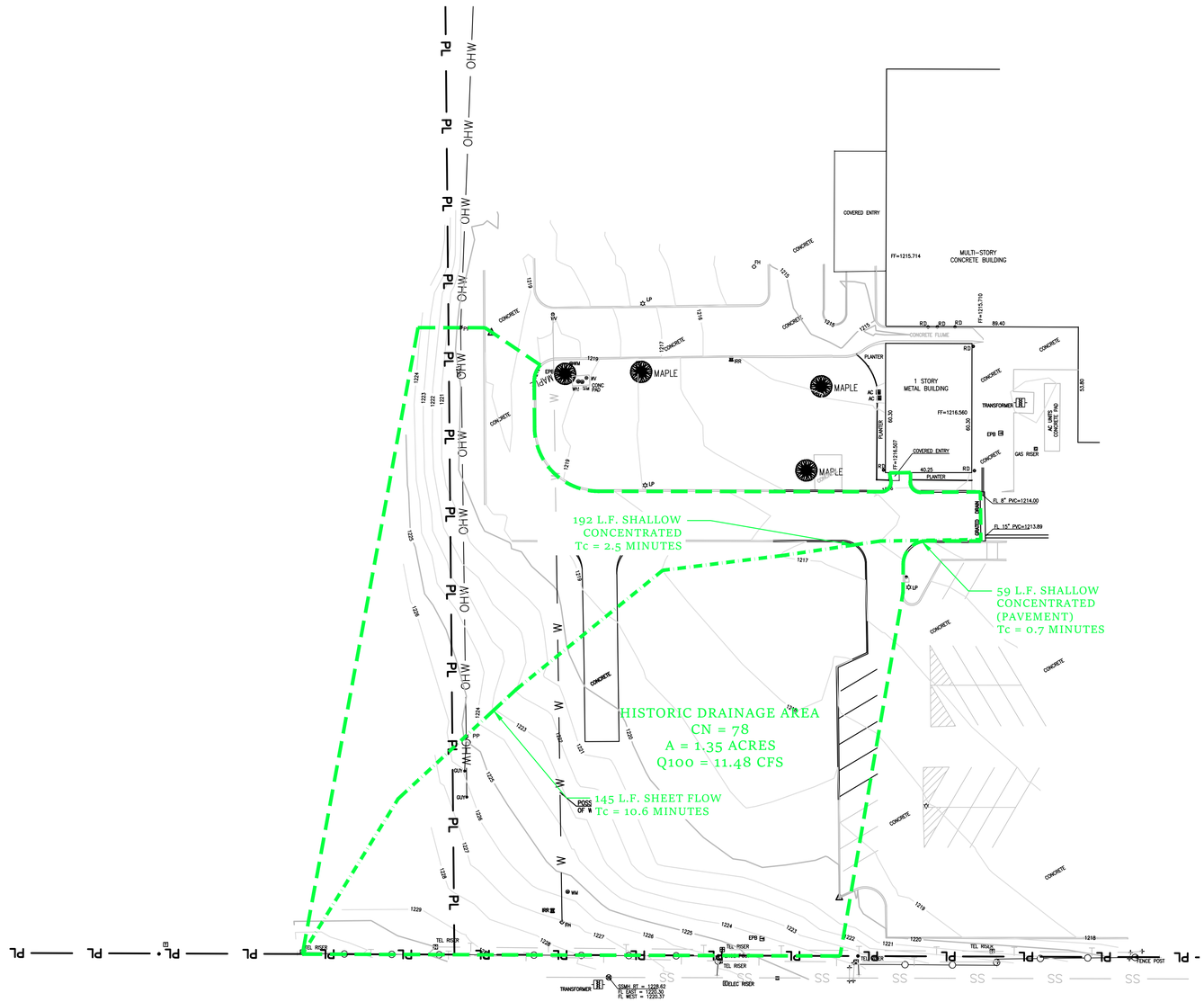
DETENTION POND CALCULATION METHODS

• SCS/NRCE hydrograph method used per the City of Moore development code.

• The pond is sized to restrict post-development peak flows to historic (pre-development) rates for all design storms.

SUMMARY

The proposed detention pond reduces post-development peak flows to match or be below historic conditions for the 2-, 5-, 10-, 50-, and 100-year storm events for the proposed work area. Please review the attached supporting design and calculation documents.



LEGEND

- HISTORIC DRAINAGE AREA
- HISTORIC TIME OF CONCENTRATION PATH

N
W E
S

LEGEND

EX. CENTERLINE	PR. BLDG SETBACK
EX. 1' CONTOUR	PR. CENTERLINE
EX. 5' CONTOUR	PR. 1' CONTOUR
EX. EASEMENT	PR. 5' CONTOUR
EX. ELECTRIC	PR. EASEMENT
EX. FENCE	PR. ELECTRIC
EX. FIBER	PR. FENCE
EX. GAS	PR. FIBER
EX. LOT	PR. GAS
EX. OVERHEAD WIRE	PR. LOT
EX. PROPERTY LINE	PR. OVERHEAD WIRE
EX. ROW	PR. ROW
EX. SECTION LINE	PR. SANITARY SEWER
EX. SANITARY SEWER	PR. STORM DRAIN
EX. STORM DRAIN	PR. TELECOMMUNICATIONS
EX. TELECOMMUNICATIONS	PR. WATER
EX. WATER	

- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAIN MANHOLE
- WATER METER
- FIRE HYDRANT
- HOSE HYDRANT/FDC
- NATURAL GAS MANHOLE
- ELECTRIC MANHOLE/TRANSFORMER
- ELECTRIC METER
- GAS METER
- TELECOMMUNICATIONS HANDHOLE

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REVISIONS

PROJECT

MPS BOARDROOM

#: 26005

DATE: 07.20.26

STATUS

REVIEW

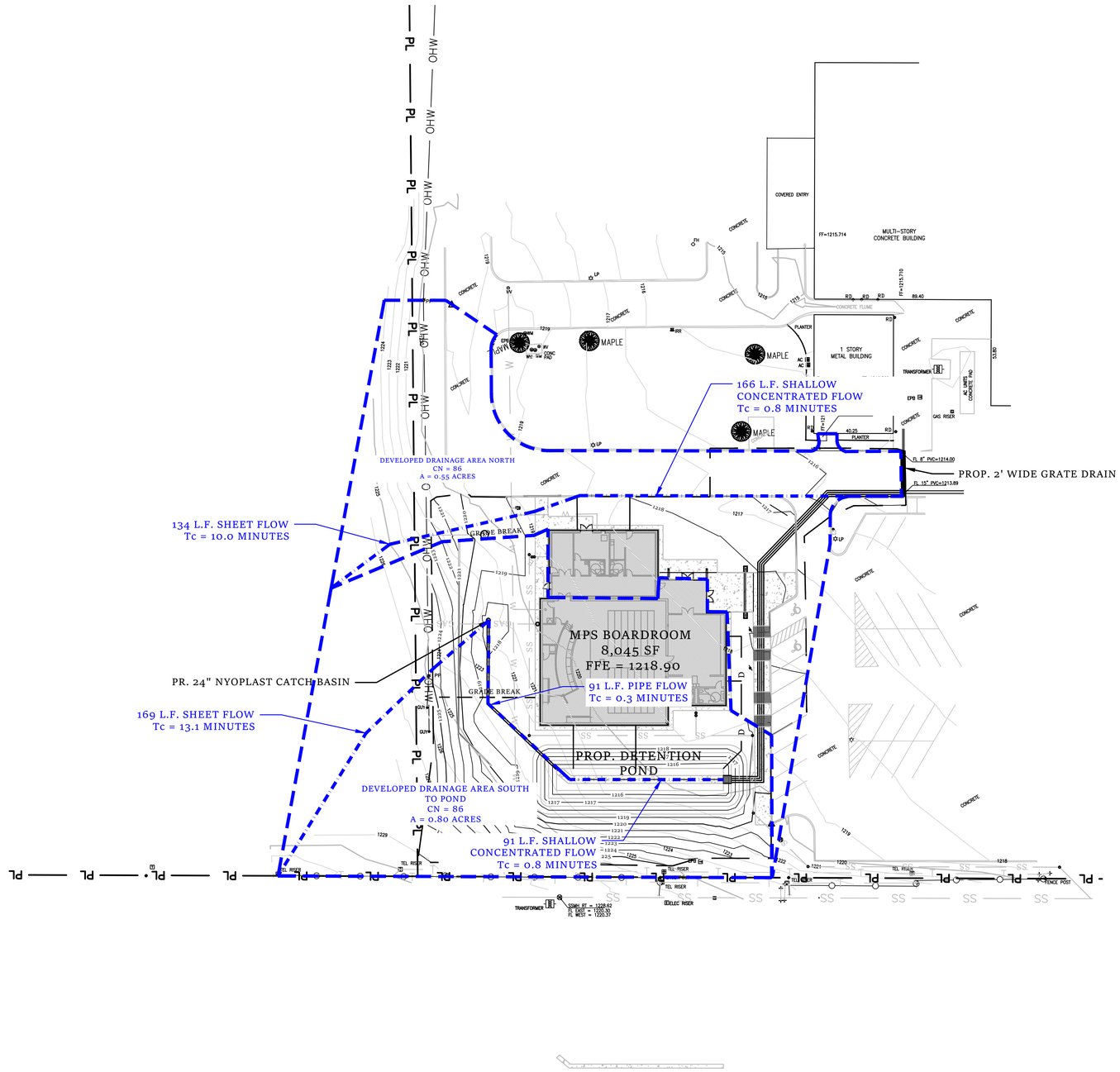
FLATLAND CIVIL CONSULTING
200 36TH AVE NW
PO BOX 720072
NORMAN, OK
73070
P: 405-863-8984
OK CA#9971
EXP. 06/30/2028

SHEET TITLE

HISTORIC DRAINAGE

PAGE NUMBER

C3.01



LEGEND

- DEVELOPED DRAINAGE AREA
- DEVELOPED TIME OF CONCENTRATION PATH

N
W E
S

0 30 60 Feet

REVISIONS

PROJECT

MPS
BOARDROOM

#: 26005

DATE: 07.20.26

STATUS

REVIEW

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CONSULTING

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OK CA#9971
EXP. 06/30/2028

SHEET TITLE

DEVELOPED
DRAINAGE

PAGE NUMBER

C3.02

LEGEND

EX. CENTERLINE	PR. BLDG SETBACK
EX. 1' CONTOUR	PR. CENTERLINE
EX. 5' CONTOUR	PR. 1' CONTOUR
EX. EASEMENT	PR. 5' CONTOUR
EX. ELECTRIC	PR. EASEMENT
EX. FENCE	PR. ELECTRIC
EX. FIBER	PR. FENCE
EX. GAS	PR. FIBER
EX. LOT	PR. GAS
EX. OVERHEAD WIRE	PR. LOT
EX. PROPERTY LINE	PR. OVERHEAD WIRE
EX. ROW	PR. ROW
EX. SECTION LINE	PR. SANITARY SEWER
EX. SANITARY SEWER	PR. STORM DRAIN
EX. STORM DRAIN	PR. TELECOMMUNICATIONS
EX. TELECOMMUNICATIONS	PR. WATER
EX. WATER	

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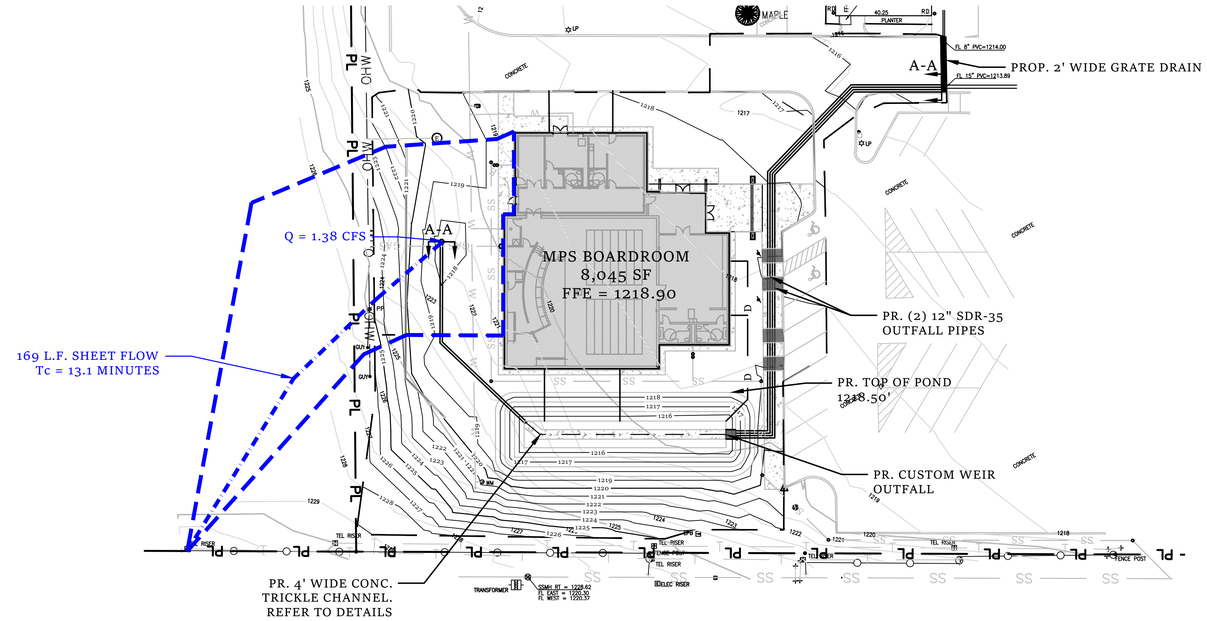
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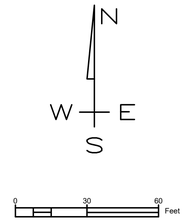
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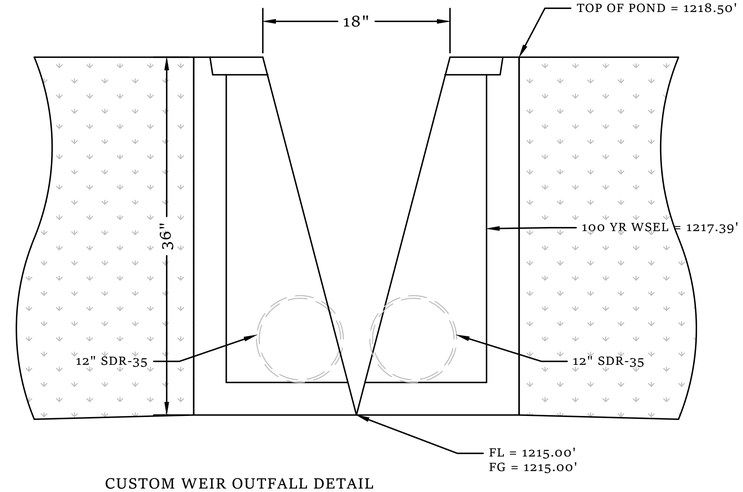
LEGEND

- EX. CENTERLINE
- EX. 1' CONTOUR
- EX. 5' CONTOUR
- EX. EASEMENT
- EX. ELECTRIC
- EX. FENCE
- EX. FIBER
- EX. GAS
- EX. LOT
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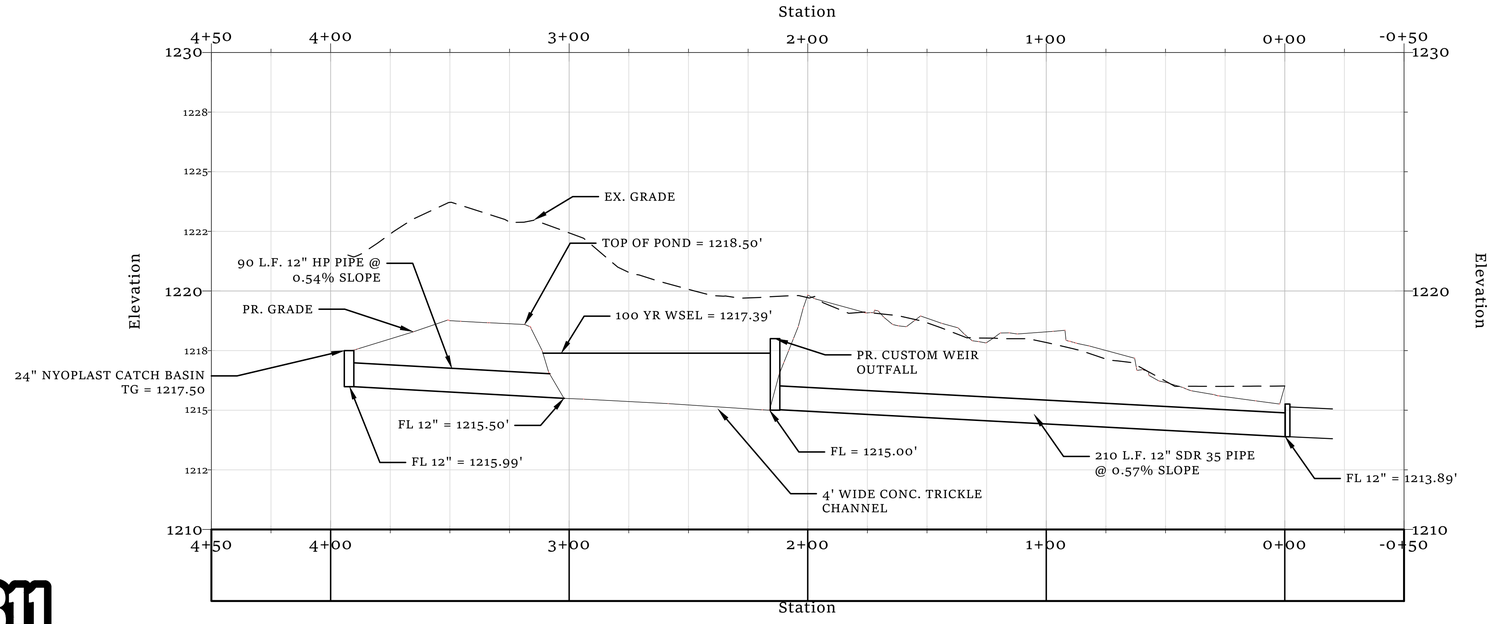






CUSTOM WEIR OUTFALL DETAIL

DETENTION PROFILE



SECTION A-A
1" = 30' HORIZONTAL
1" = 3' VERTICAL

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REVISIONS

PROJECT

MPS BOARDROOM

#: 26005

DATE: 07.20.26

STATUS

REVIEW

FLATLAND CIVIL
CONSULTING

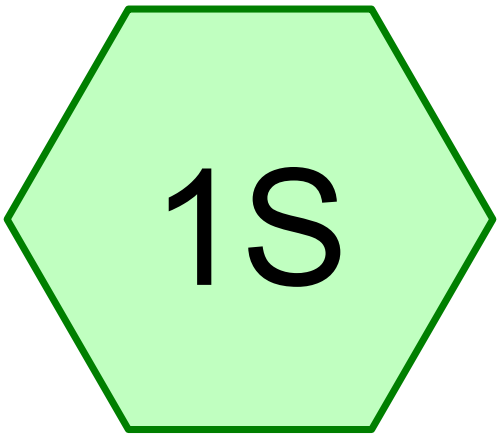
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SHEET TITLE

DETENTION POND PLAN

PAGE NUMBER

C3.03



Historic

Subcat Reach Pond Link

Routing Diagram for historic

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Project Notes

Defined 5 rainfall events from Oklahoma City IDF
Defined 5 rainfall events from Oklahoma City IDF

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.73	2
2	5-yr	Type II 24-hr		Default	24.00	1	4.61	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.46	2
4	50-yr	Type II 24-hr		Default	24.00	1	7.92	2
5	100-yr	Type II 24-hr		Default	24.00	1	9.16	2

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Summary for Subcatchment 1S: Historic

Runoff = 3.03 cfs @ 12.06 hrs, Volume= 0.173 af, Depth> 1.53"

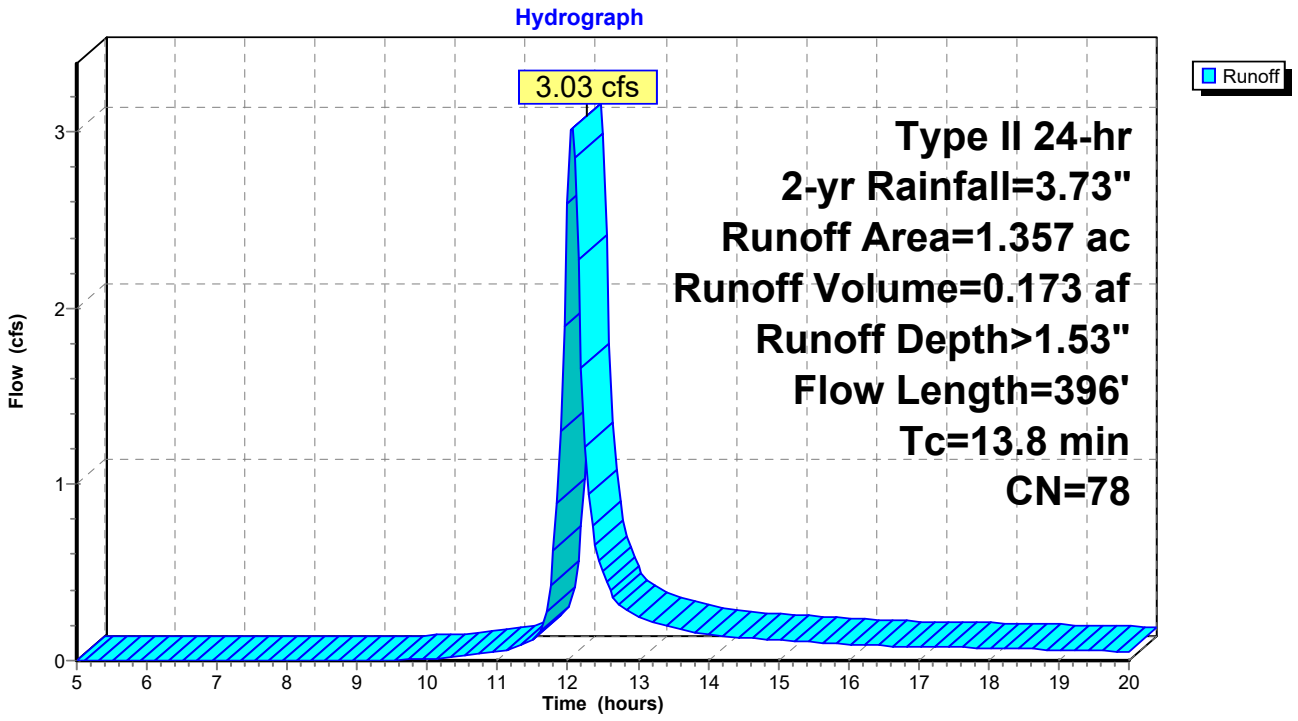
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.73"

Area (ac)	CN	Description
0.250	98	Paved parking, HSG C
1.107	74	>75% Grass cover, Good, HSG C
1.357	78	Weighted Average
1.107		81.58% Pervious Area
0.250		18.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	145	0.0620	0.23		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
2.5	192	0.0330	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Short Grass Pasture Kv= 7.0 fps
0.7	59	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW CONCENTRATED FLOW** Paved Kv= 20.3 fps
13.8	396	Total			

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Subcatchment 1S: Historic



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Summary for Subcatchment 1S: Historic

Runoff = 4.33 cfs @ 12.06 hrs, Volume= 0.248 af, Depth> 2.19"

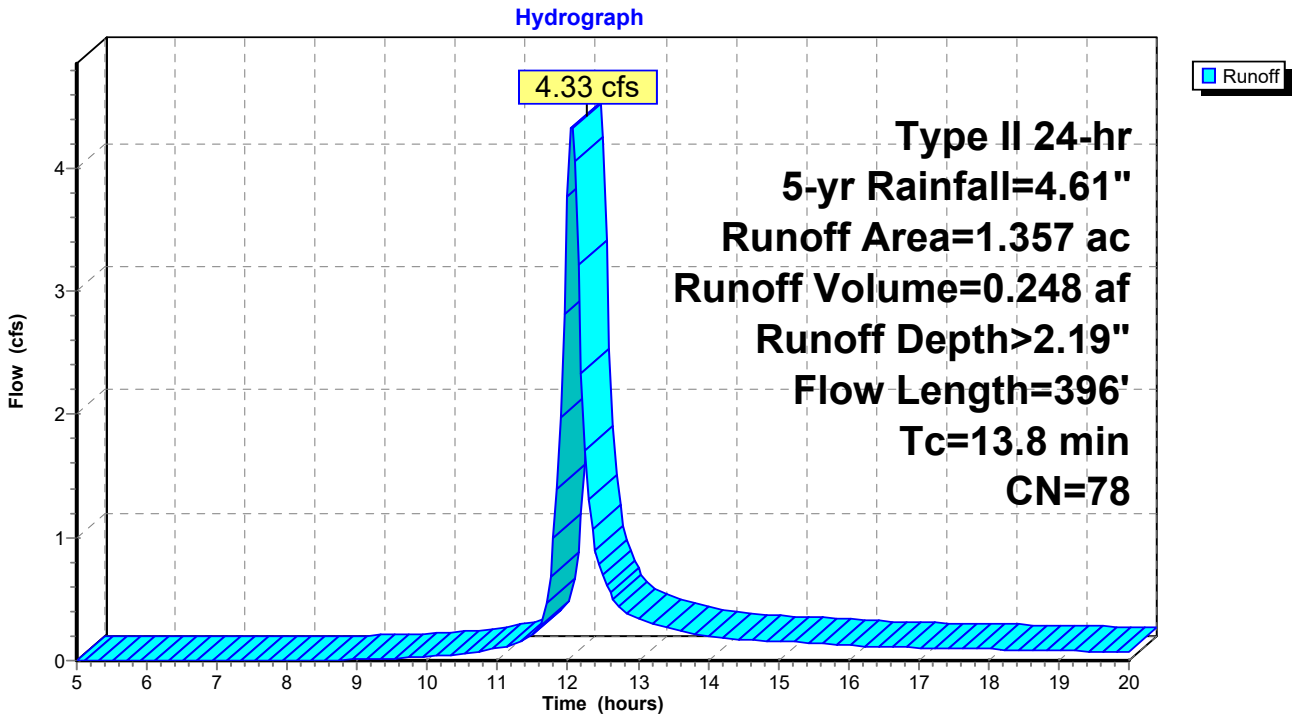
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-yr Rainfall=4.61"

Area (ac)	CN	Description
0.250	98	Paved parking, HSG C
1.107	74	>75% Grass cover, Good, HSG C
1.357	78	Weighted Average
1.107		81.58% Pervious Area
0.250		18.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	145	0.0620	0.23		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
2.5	192	0.0330	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Short Grass Pasture Kv= 7.0 fps
0.7	59	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW CONCENTRATED FLOW** Paved Kv= 20.3 fps
13.8	396	Total			

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Subcatchment 1S: Historic



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Summary for Subcatchment 1S: Historic

Runoff = 5.63 cfs @ 12.06 hrs, Volume= 0.324 af, Depth> 2.87"

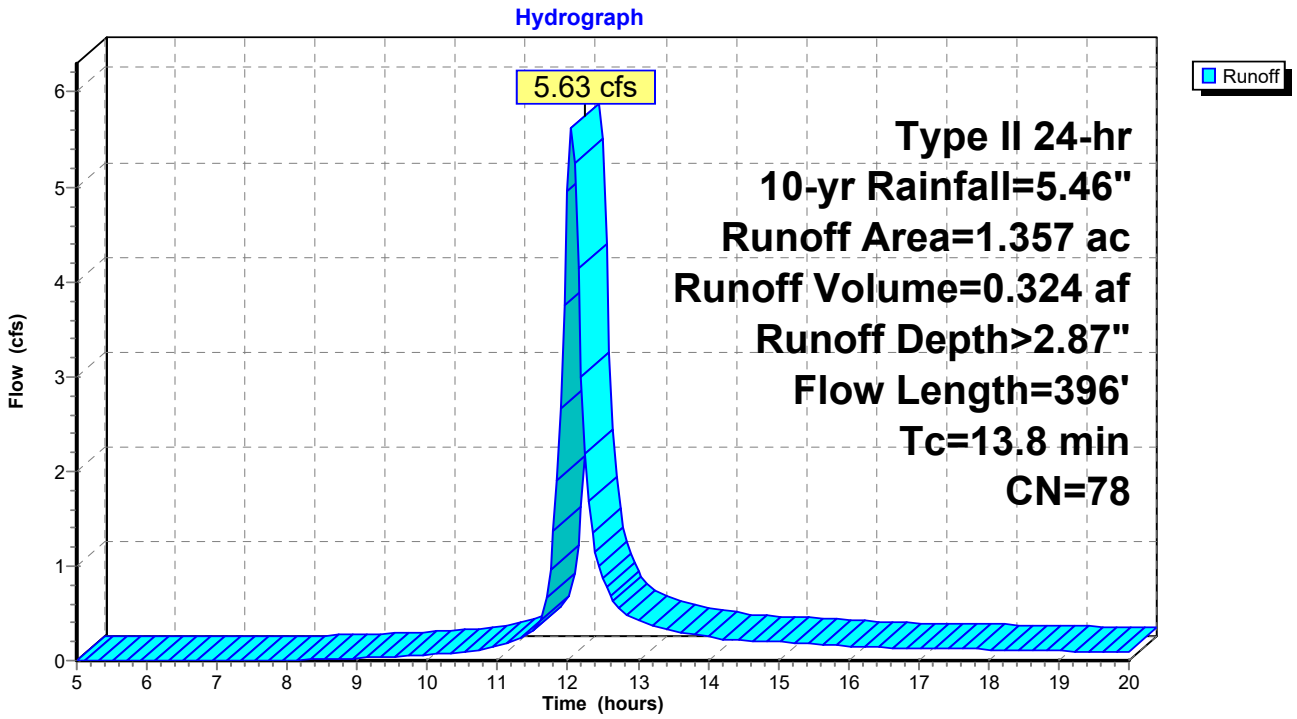
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.46"

Area (ac)	CN	Description
0.250	98	Paved parking, HSG C
1.107	74	>75% Grass cover, Good, HSG C
1.357	78	Weighted Average
1.107		81.58% Pervious Area
0.250		18.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	145	0.0620	0.23		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
2.5	192	0.0330	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Short Grass Pasture Kv= 7.0 fps
0.7	59	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW CONCENTRATED FLOW** Paved Kv= 20.3 fps
13.8	396	Total			

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Subcatchment 1S: Historic



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Summary for Subcatchment 1S: Historic

Runoff = 9.51 cfs @ 12.05 hrs, Volume= 0.560 af, Depth> 4.95"

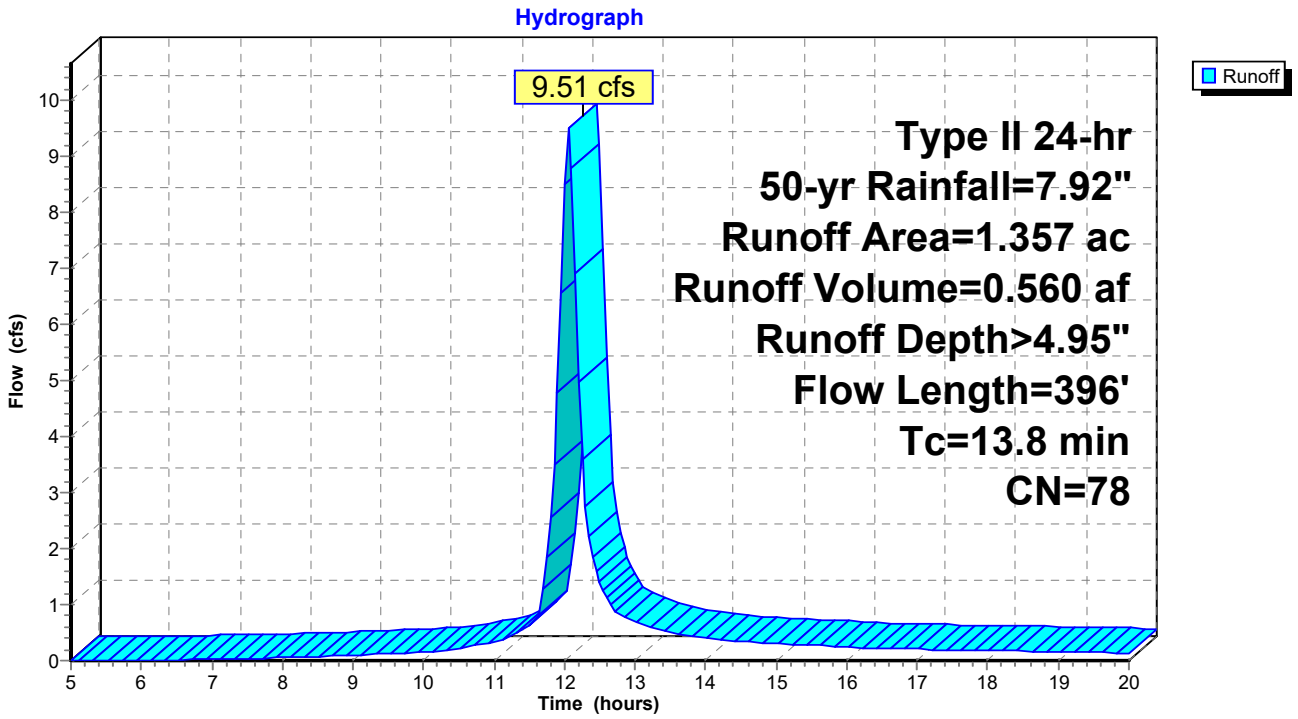
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=7.92"

Area (ac)	CN	Description
0.250	98	Paved parking, HSG C
1.107	74	>75% Grass cover, Good, HSG C
1.357	78	Weighted Average
1.107		81.58% Pervious Area
0.250		18.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	145	0.0620	0.23		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
2.5	192	0.0330	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Short Grass Pasture Kv= 7.0 fps
0.7	59	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW CONCENTRATED FLOW** Paved Kv= 20.3 fps
13.8	396	Total			

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Subcatchment 1S: Historic



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Summary for Subcatchment 1S: Historic

Runoff = 11.48 cfs @ 12.05 hrs, Volume= 0.683 af, Depth> 6.04"

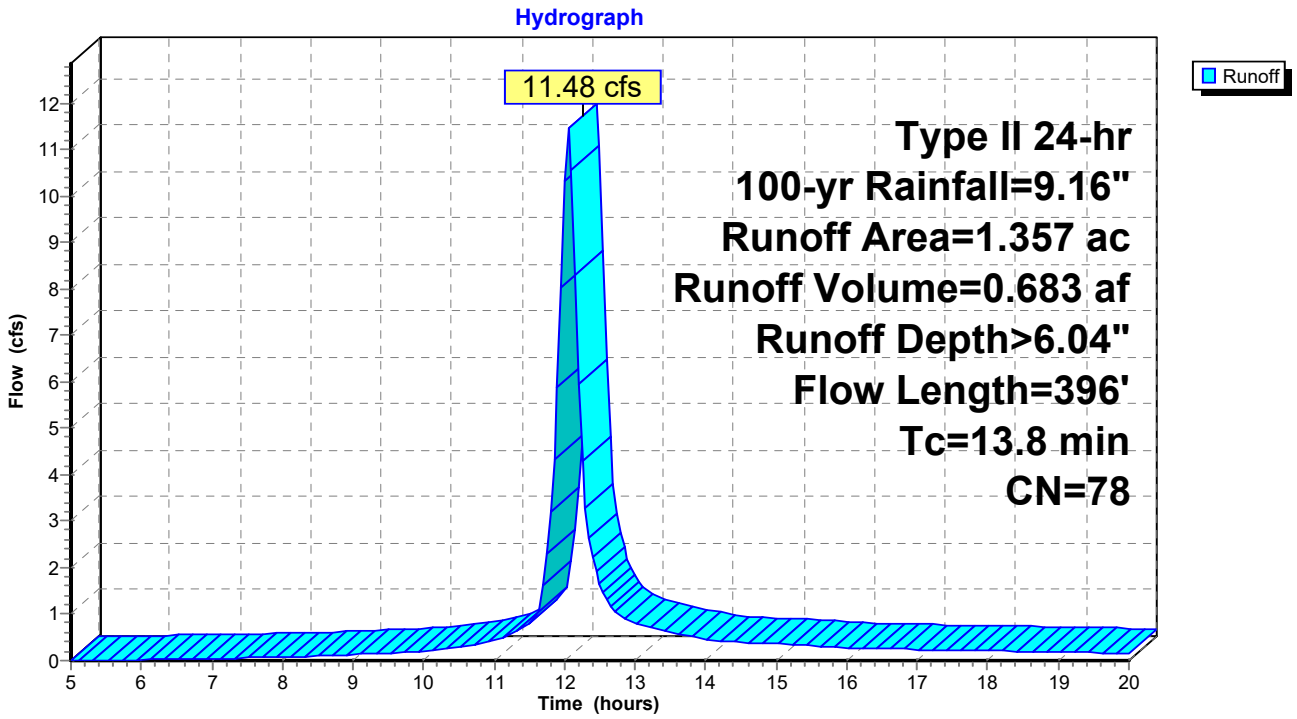
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=9.16"

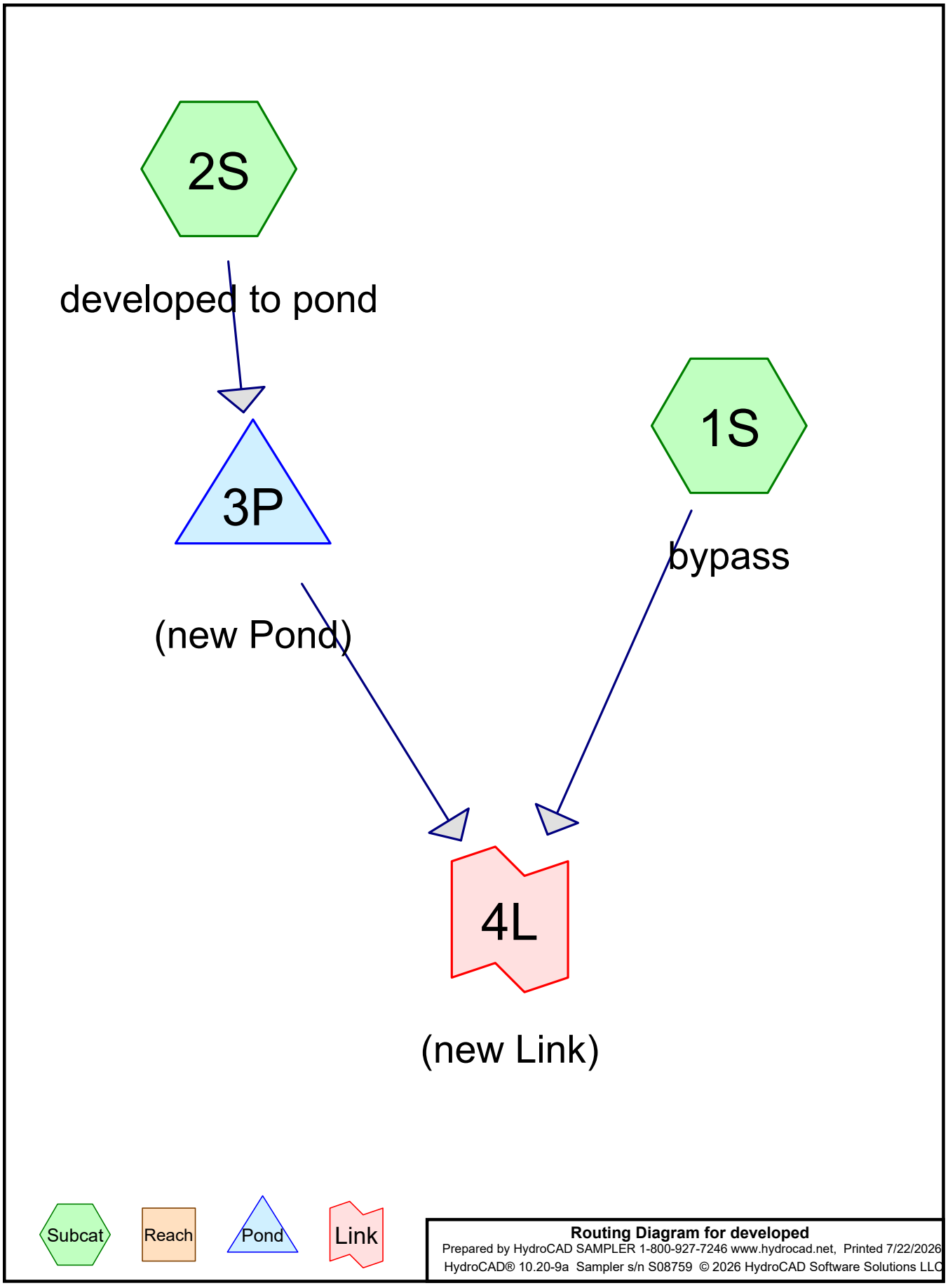
Area (ac)	CN	Description
0.250	98	Paved parking, HSG C
1.107	74	>75% Grass cover, Good, HSG C
1.357	78	Weighted Average
1.107		81.58% Pervious Area
0.250		18.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	145	0.0620	0.23		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
2.5	192	0.0330	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Short Grass Pasture Kv= 7.0 fps
0.7	59	0.0050	1.44		**Shallow Concentrated Flow, SHALLOW CONCENTRATED FLOW** Paved Kv= 20.3 fps
13.8	396	Total			

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Subcatchment 1S: Historic





Routing Diagram for developed

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.73	2
2	5-yr	Type II 24-hr		Default	24.00	1	4.61	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.46	2
4	50-yr	Type II 24-hr		Default	24.00	1	7.92	2
5	100-yr	Type II 24-hr		Default	24.00	1	9.16	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.350	86	<50% Grass cover, Poor, HSG C (1S, 2S)
1.350	**86**	**TOTAL AREA**

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.350	HSG C	1S, 2S
0.000	HSG D	
0.000	Other	
1.350		**TOTAL AREA**

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.350	0.000	0.000	1.350	<50% Grass cover, Poor	1S, 2S
0.000	**0.000**	**1.350**	**0.000**	**0.000**	**1.350**	**TOTAL AREA**	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	2S	0.00	0.00	91.0	0.0100	0.013	0.0	12.0	0.0	
2	3P	1,215.00	1,213.89	214.0	0.0052	0.013	0.0	12.0	0.0	

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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

Subcatchment1S: bypass Runoff Area=0.550 ac 0.00% Impervious Runoff Depth>2.14"
Flow Length=300' Tc=10.8 min CN=86 Runoff=1.84 cfs 0.098 af

Subcatchment2S: developed to pond Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>2.13"
Flow Length=330' Tc=14.2 min CN=86 Runoff=2.42 cfs 0.142 af

Pond 3P: (new Pond) Peak Elev=1,216.43' Storage=1,473 cf Inflow=2.42 cfs 0.142 af
Outflow=1.60 cfs 0.140 af

Link 4L: (new Link) Inflow=2.94 cfs 0.238 af
Primary=2.94 cfs 0.238 af

Total Runoff Area = 1.350 ac Runoff Volume = 0.240 af Average Runoff Depth = 2.14"
100.00% Pervious = 1.350 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: bypass

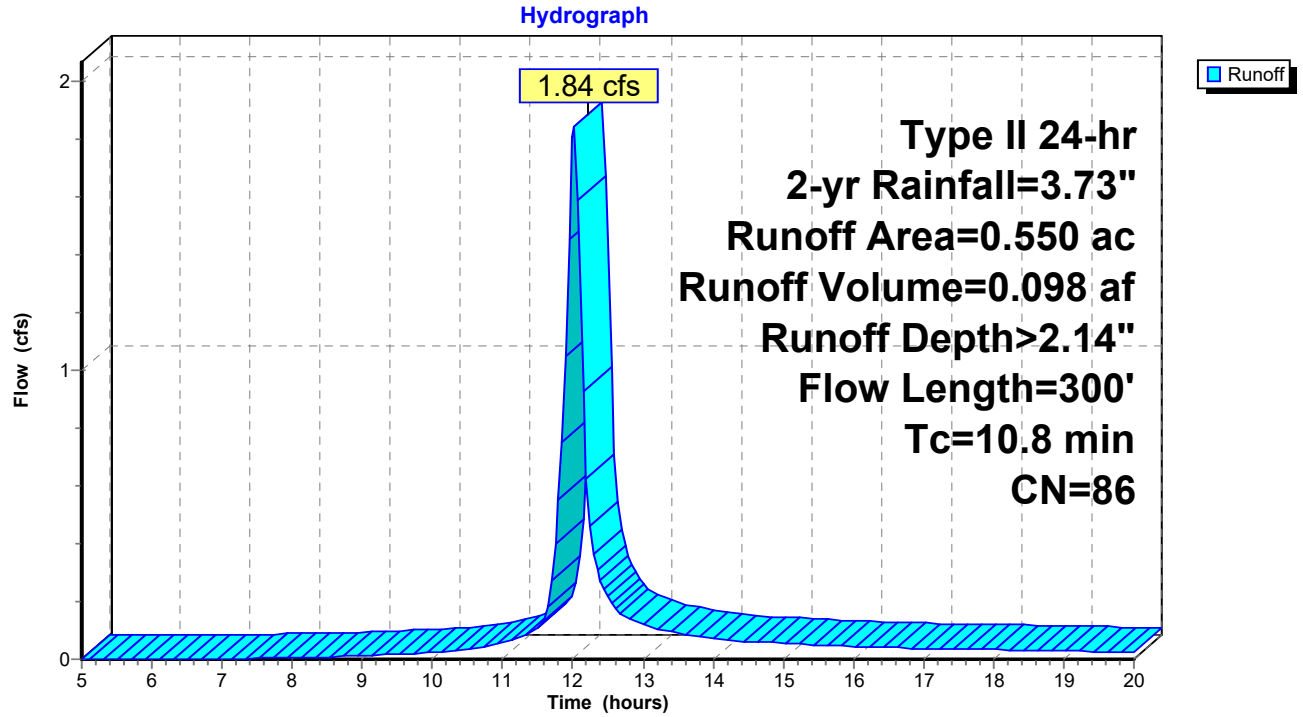
Runoff = 1.84 cfs @ 12.02 hrs, Volume= 0.098 af, Depth> 2.14"
Routed to Link 4L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.73"

Area (ac)	CN	Description
0.550	86	<50% Grass cover, Poor, HSG C
0.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	134	0.0620	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.8	166	0.0330	3.69		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Paved Kv= 20.3 fps
10.8	300	Total			

Subcatchment 1S: bypass



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Summary for Subcatchment 2S: developed to pond

Runoff = 2.42 cfs @ 12.06 hrs, Volume= 0.142 af, Depth> 2.13"
Routed to Pond 3P : (new Pond)

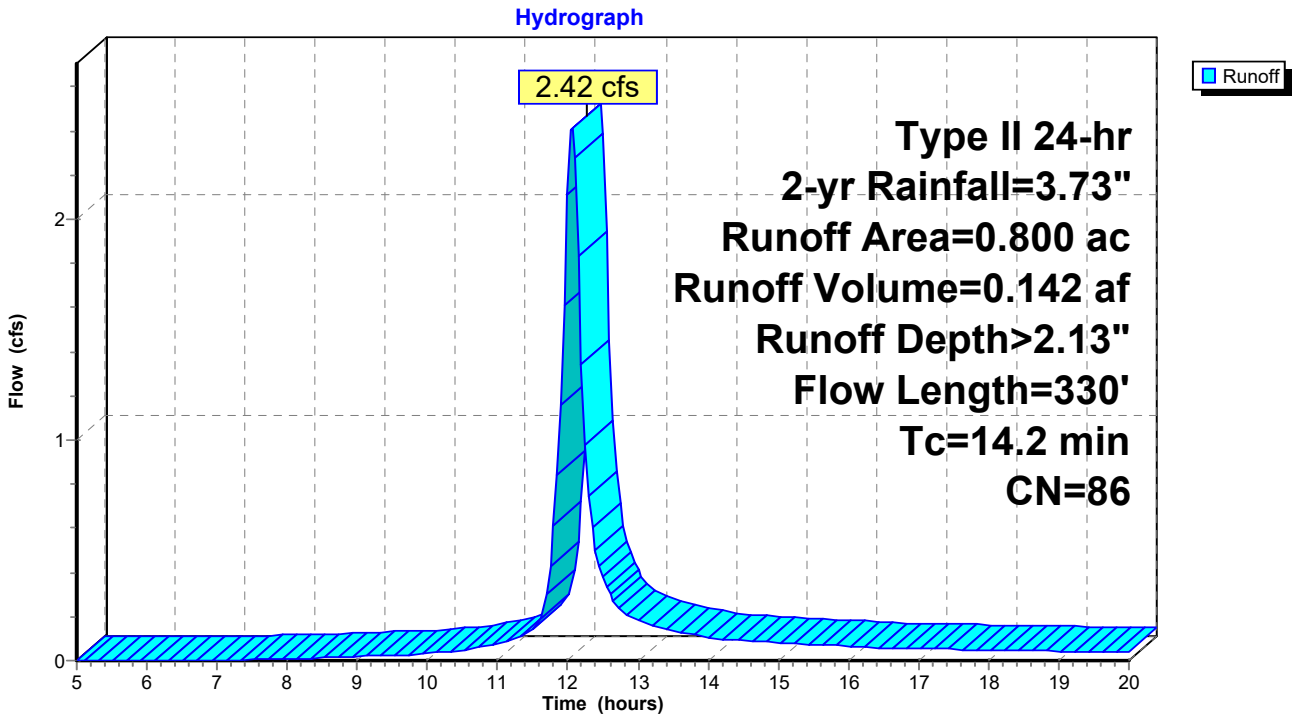
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.73"

Area (ac)	CN	Description
0.800	86	<50% Grass cover, Poor, HSG C
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	169	0.0500	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.3	91	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.8	70	0.0050	1.44		**Shallow Concentrated Flow, Shallow Concentrated Flow** Paved Kv= 20.3 fps
14.2	330	Total			

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Subcatchment 2S: developed to pond



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Summary for Pond 3P: (new Pond)

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 2.13" for 2-yr event
Inflow = 2.42 cfs @ 12.06 hrs, Volume= 0.142 af
Outflow = 1.60 cfs @ 12.18 hrs, Volume= 0.140 af, Atten= 34%, Lag= 6.9 min
Primary = 1.60 cfs @ 12.18 hrs, Volume= 0.140 af
Routed to Link 4L : (new Link)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,216.43' @ 12.18 hrs Surf.Area= 1,716 sf Storage= 1,473 cf

Plug-Flow detention time= 25.8 min calculated for 0.140 af (98% of inflow)
Center-of-Mass det. time= 19.4 min (800.3 - 780.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,215.00'	7,073 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

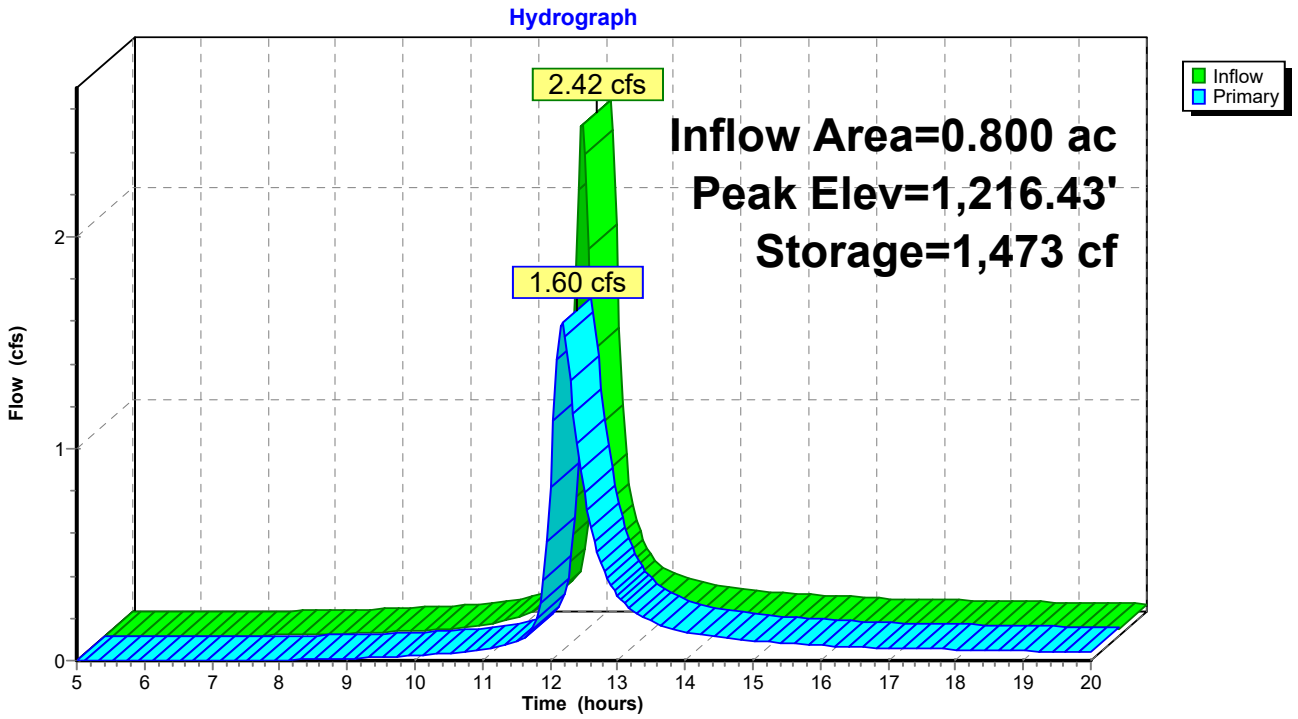
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,215.00	0	0	0
1,215.50	946	237	237
1,216.50	1,775	1,361	1,597
1,217.50	2,713	2,244	3,841
1,218.50	3,751	3,232	7,073

Device	Routing	Invert	Outlet Devices
#1	Primary	1,215.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 3.00 Width (feet) 0.00 1.50
#2	Device 1	1,215.00'	**12.0" Round Culvert X 2.00** L= 214.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 1,215.00' / 1,213.89' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.58 cfs @ 12.18 hrs HW=1,216.42' TW=1,214.89' (Fixed TW Elev= 1,214.89')
↑ **1=Custom Weir/Orifice** (Weir Controls 1.58 cfs @ 3.13 fps)
↑ **2=Culvert** (Passes 1.58 cfs of 5.25 cfs potential flow)

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Pond 3P: (new Pond)



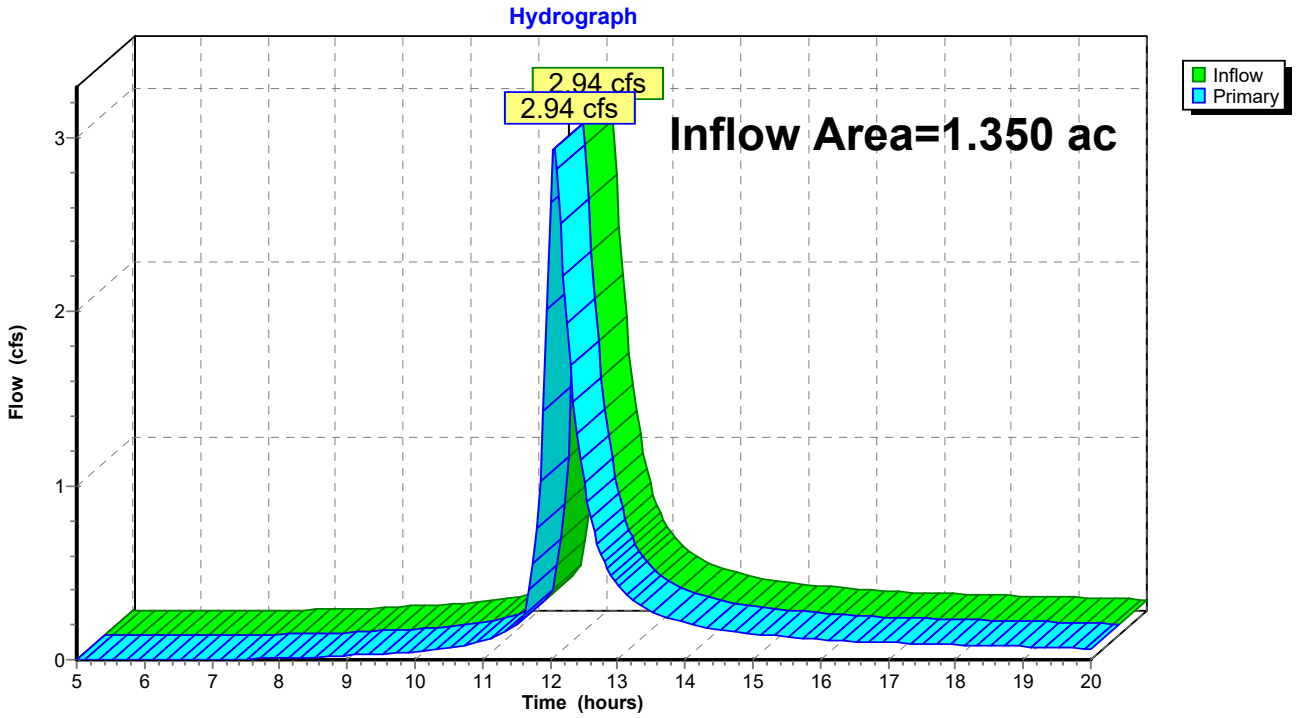
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Summary for Link 4L: (new Link)

Inflow Area = 1.350 ac, 0.00% Impervious, Inflow Depth > 2.12" for 2-yr event
Inflow = 2.94 cfs @ 12.06 hrs, Volume= 0.238 af
Primary = 2.94 cfs @ 12.06 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: (new Link)



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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

Subcatchment1S: bypass Runoff Area=0.550 ac 0.00% Impervious Runoff Depth>2.89"
Flow Length=300' Tc=10.8 min CN=86 Runoff=2.46 cfs 0.133 af

Subcatchment2S: developed to pond Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>2.89"
Flow Length=330' Tc=14.2 min CN=86 Runoff=3.23 cfs 0.193 af

Pond 3P: (new Pond) Peak Elev=1,216.64' Storage=1,859 cf Inflow=3.23 cfs 0.193 af
Outflow=2.26 cfs 0.190 af

Link 4L: (new Link) Inflow=4.08 cfs 0.322 af
Primary=4.08 cfs 0.322 af

Total Runoff Area = 1.350 ac Runoff Volume = 0.325 af Average Runoff Depth = 2.89"
100.00% Pervious = 1.350 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: bypass

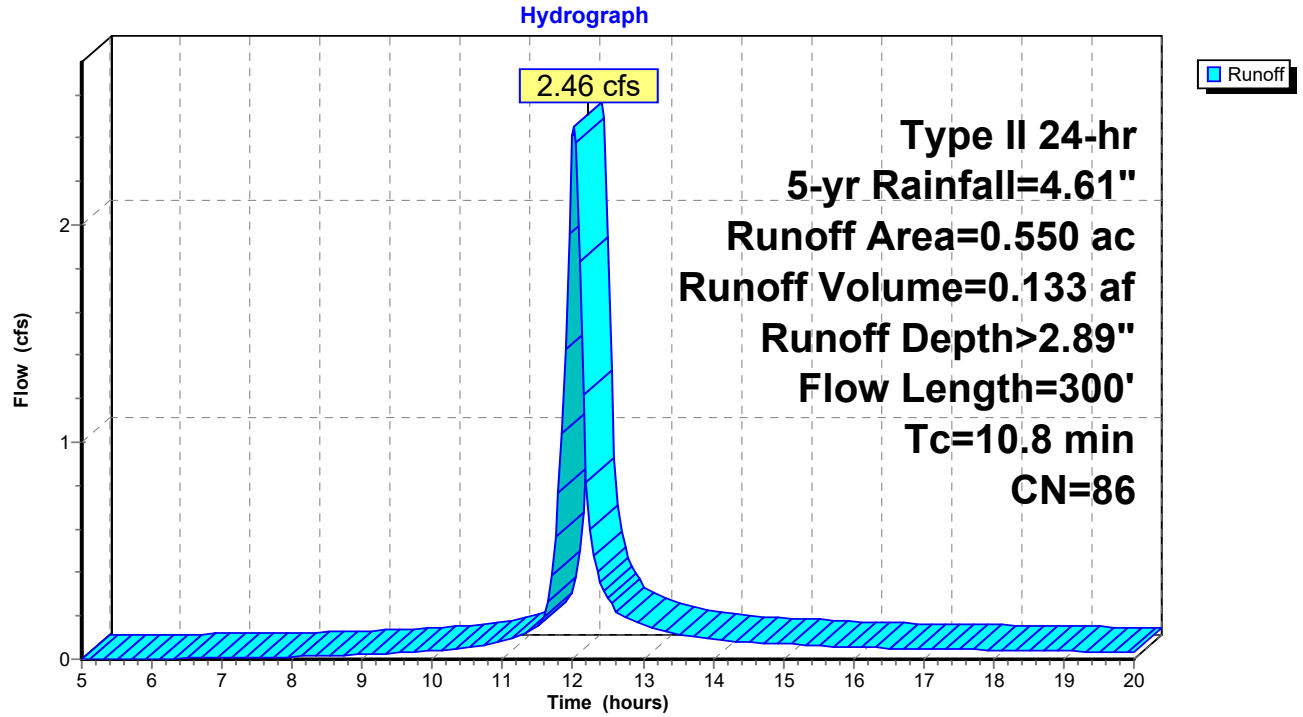
Runoff = 2.46 cfs @ 12.02 hrs, Volume= 0.133 af, Depth> 2.89"
Routed to Link 4L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-yr Rainfall=4.61"

Area (ac)	CN	Description
0.550	86	<50% Grass cover, Poor, HSG C
0.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	134	0.0620	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.8	166	0.0330	3.69		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Paved Kv= 20.3 fps
10.8	300	Total			

Subcatchment 1S: bypass



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Summary for Subcatchment 2S: developed to pond

Runoff = 3.23 cfs @ 12.06 hrs, Volume= 0.193 af, Depth> 2.89"
Routed to Pond 3P : (new Pond)

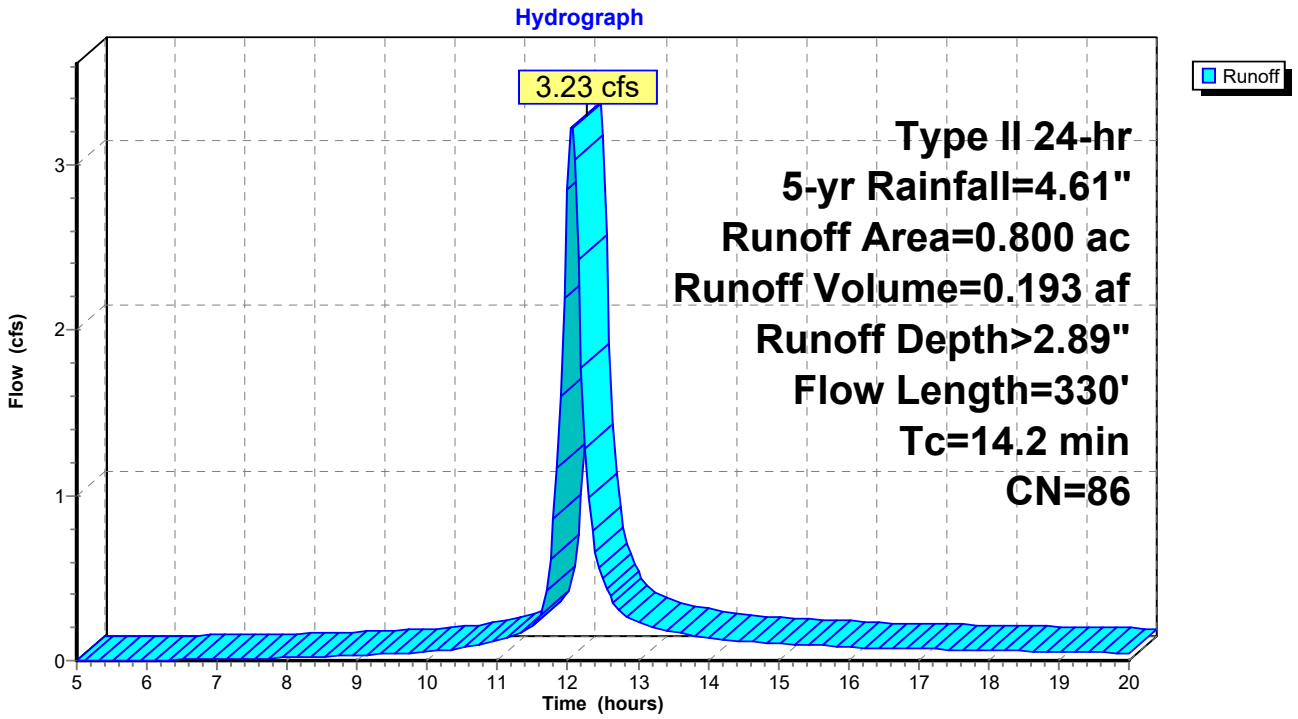
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-yr Rainfall=4.61"

Area (ac)	CN	Description
0.800	86	<50% Grass cover, Poor, HSG C
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	169	0.0500	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.3	91	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.8	70	0.0050	1.44		**Shallow Concentrated Flow, Shallow Concentrated Flow** Paved Kv= 20.3 fps
14.2	330	Total			

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Subcatchment 2S: developed to pond



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Summary for Pond 3P: (new Pond)

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 2.89" for 5-yr event
Inflow = 3.23 cfs @ 12.06 hrs, Volume= 0.193 af
Outflow = 2.26 cfs @ 12.17 hrs, Volume= 0.190 af, Atten= 30%, Lag= 6.4 min
Primary = 2.26 cfs @ 12.17 hrs, Volume= 0.190 af
Routed to Link 4L : (new Link)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,216.64' @ 12.17 hrs Surf.Area= 1,908 sf Storage= 1,859 cf

Plug-Flow detention time= 24.0 min calculated for 0.190 af (99% of inflow)
Center-of-Mass det. time= 18.1 min (792.2 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,215.00'	7,073 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

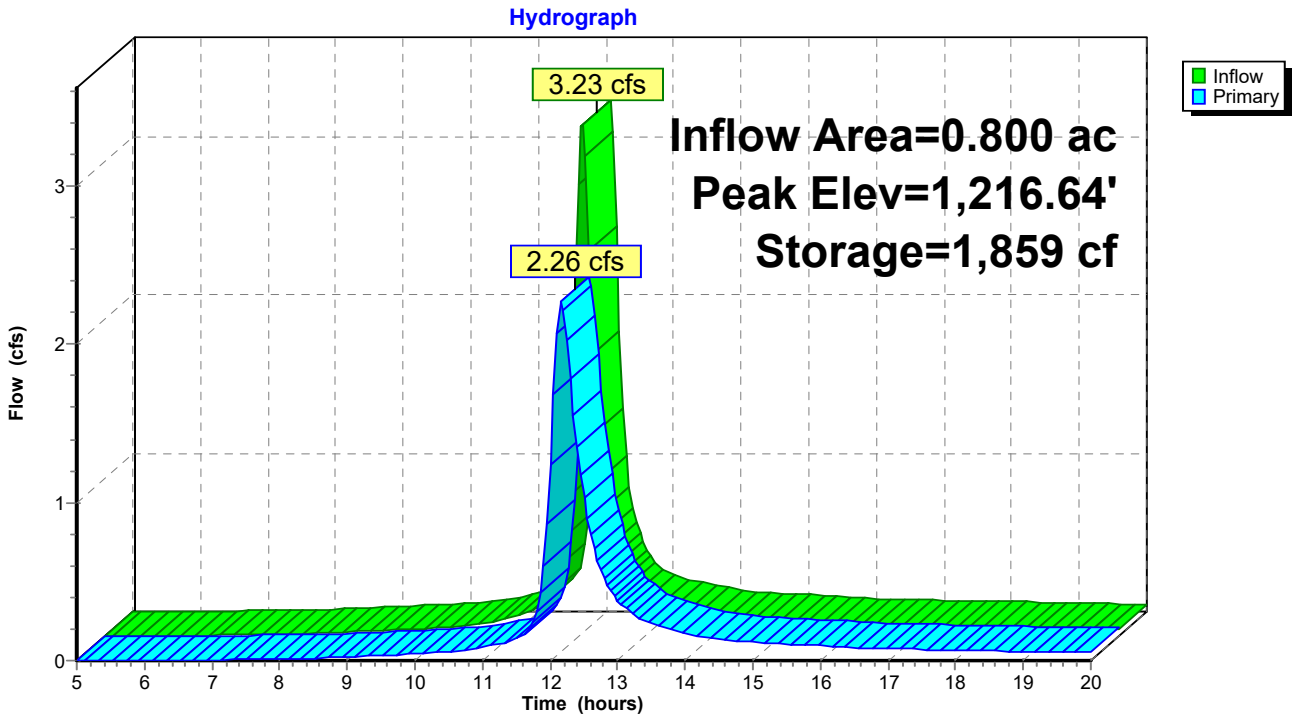
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,215.00	0	0	0
1,215.50	946	237	237
1,216.50	1,775	1,361	1,597
1,217.50	2,713	2,244	3,841
1,218.50	3,751	3,232	7,073

Device	Routing	Invert	Outlet Devices
#1	Primary	1,215.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 3.00 Width (feet) 0.00 1.50
#2	Device 1	1,215.00'	**12.0" Round Culvert X 2.00** L= 214.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 1,215.00' / 1,213.89' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.24 cfs @ 12.17 hrs HW=1,216.63' TW=1,214.89' (Fixed TW Elev= 1,214.89')
↑ **1=Custom Weir/Orifice** (Weir Controls 2.24 cfs @ 3.35 fps)
↑ **2=Culvert** (Passes 2.24 cfs of 5.62 cfs potential flow)

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Pond 3P: (new Pond)



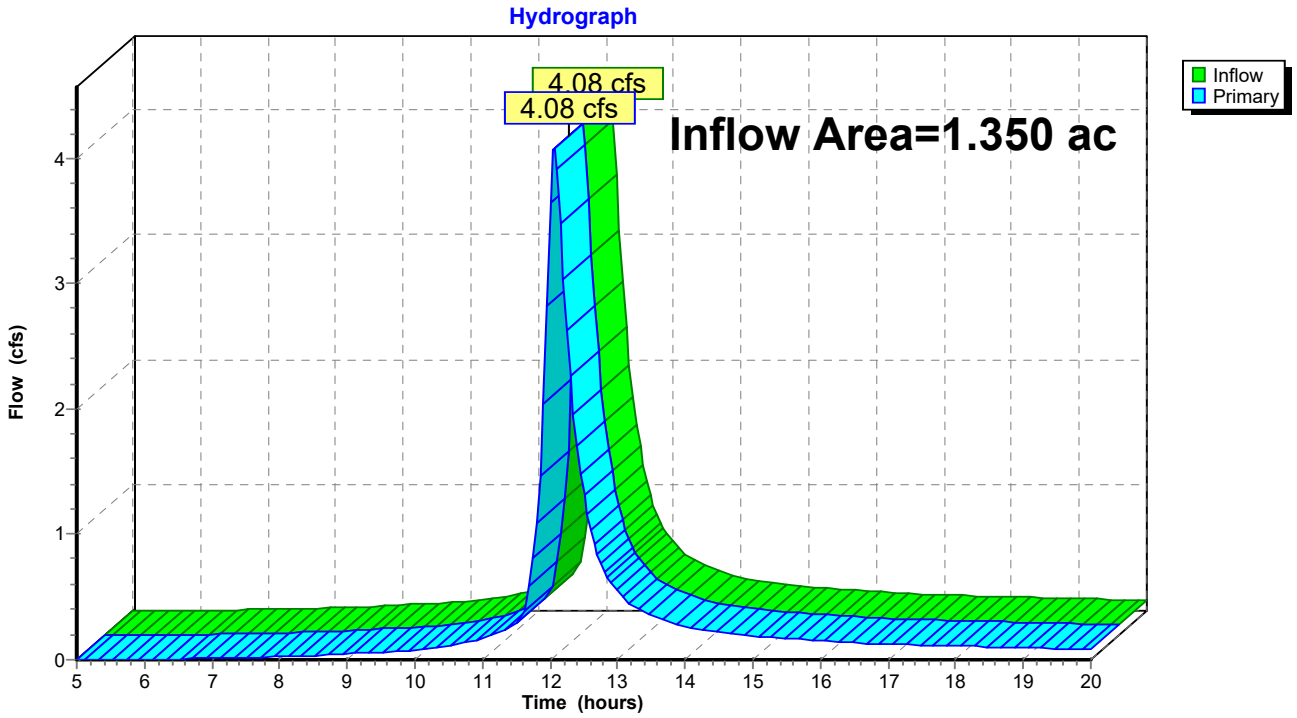
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Summary for Link 4L: (new Link)

Inflow Area = 1.350 ac, 0.00% Impervious, Inflow Depth > 2.87" for 5-yr event
Inflow = 4.08 cfs @ 12.06 hrs, Volume= 0.322 af
Primary = 4.08 cfs @ 12.06 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: (new Link)



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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

Subcatchment1S: bypass Runoff Area=0.550 ac 0.00% Impervious Runoff Depth>3.64"
Flow Length=300' Tc=10.8 min CN=86 Runoff=3.06 cfs 0.167 af

Subcatchment2S: developed to pond Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>3.64"
Flow Length=330' Tc=14.2 min CN=86 Runoff=4.02 cfs 0.243 af

Pond 3P: (new Pond) Peak Elev=1,216.82' Storage=2,206 cf Inflow=4.02 cfs 0.243 af
Outflow=2.91 cfs 0.239 af

Link 4L: (new Link) Inflow=5.21 cfs 0.406 af
Primary=5.21 cfs 0.406 af

Total Runoff Area = 1.350 ac Runoff Volume = 0.410 af Average Runoff Depth = 3.64"
100.00% Pervious = 1.350 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: bypass

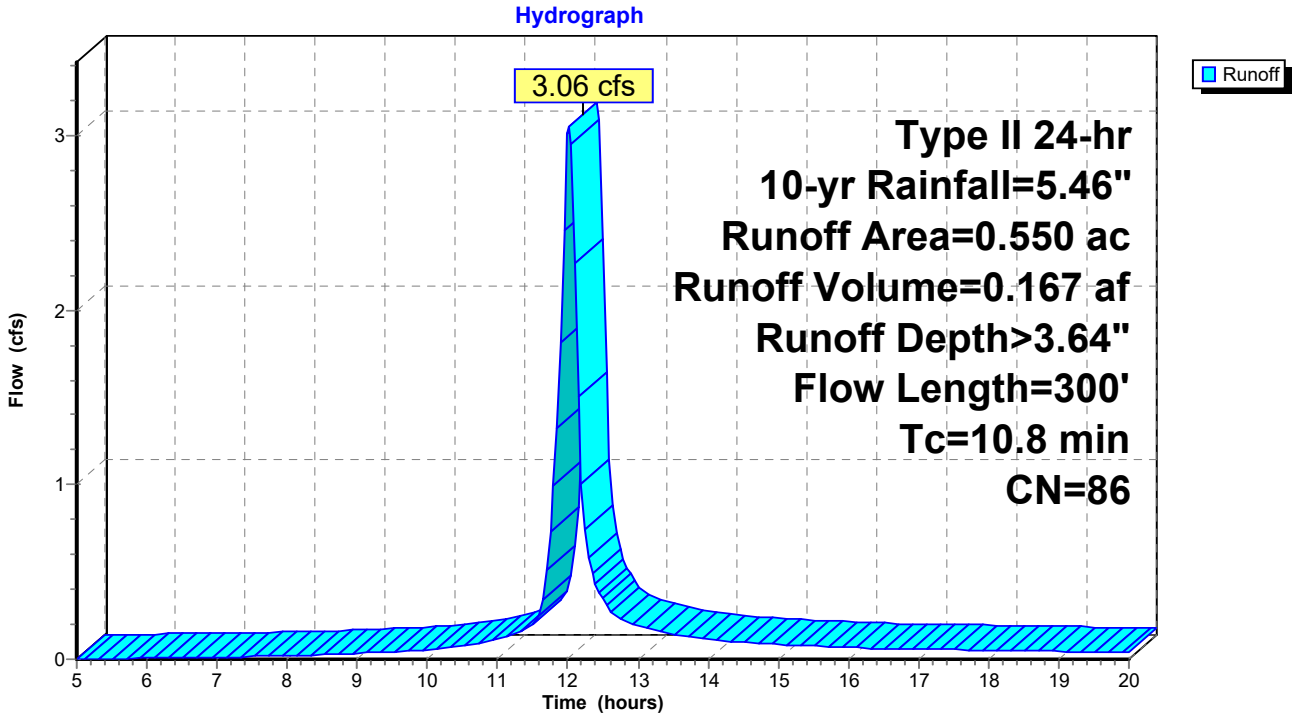
Runoff = 3.06 cfs @ 12.02 hrs, Volume= 0.167 af, Depth> 3.64"
Routed to Link 4L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.46"

Area (ac)	CN	Description
0.550	86	<50% Grass cover, Poor, HSG C
0.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	134	0.0620	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.8	166	0.0330	3.69		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Paved Kv= 20.3 fps
10.8	300	Total			

Subcatchment 1S: bypass



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Summary for Subcatchment 2S: developed to pond

[47] Hint: Peak is 113% of capacity of segment #2

Runoff = 4.02 cfs @ 12.06 hrs, Volume= 0.243 af, Depth> 3.64"
Routed to Pond 3P : (new Pond)

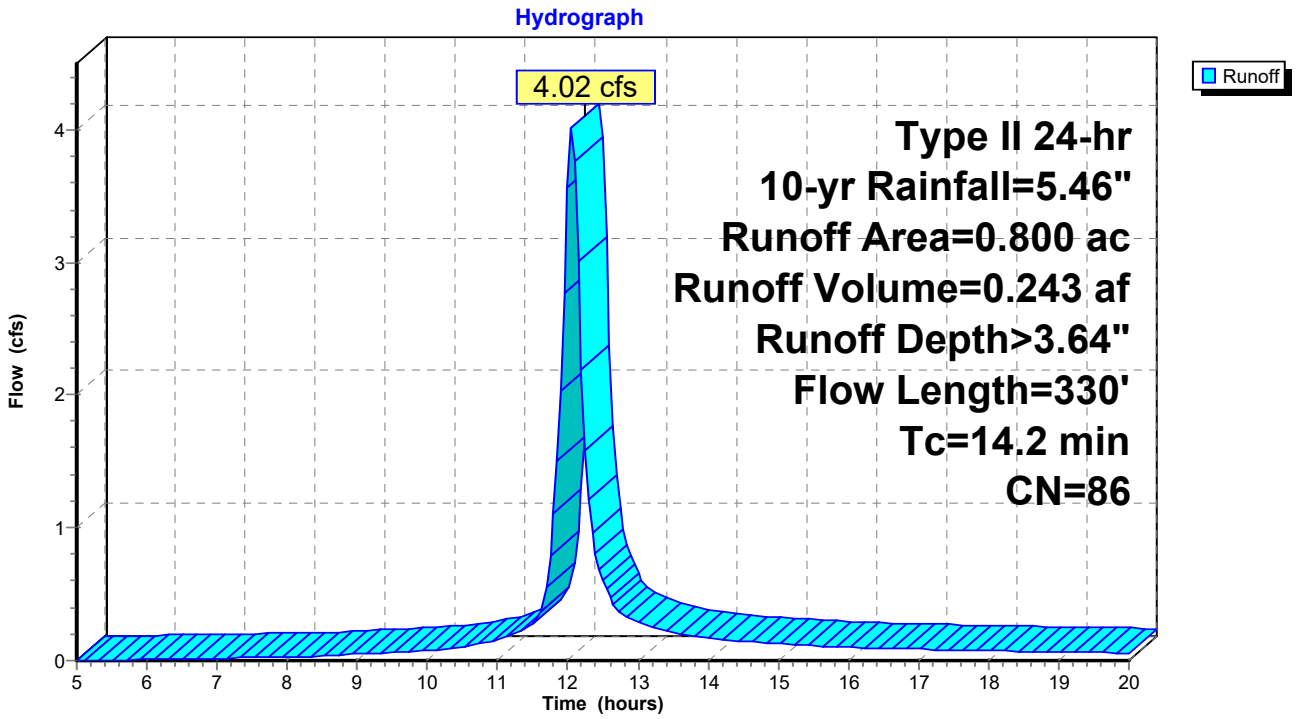
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.46"

Area (ac)	CN	Description
0.800	86	<50% Grass cover, Poor, HSG C
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	169	0.0500	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.3	91	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.8	70	0.0050	1.44		**Shallow Concentrated Flow, Shallow Concentrated Flow** Paved Kv= 20.3 fps
14.2	330	Total			

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Subcatchment 2S: developed to pond



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Summary for Pond 3P: (new Pond)

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 3.64" for 10-yr event
Inflow = 4.02 cfs @ 12.06 hrs, Volume= 0.243 af
Outflow = 2.91 cfs @ 12.16 hrs, Volume= 0.239 af, Atten= 28%, Lag= 6.1 min
Primary = 2.91 cfs @ 12.16 hrs, Volume= 0.239 af
Routed to Link 4L : (new Link)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,216.82' @ 12.16 hrs Surf.Area= 2,072 sf Storage= 2,206 cf

Plug-Flow detention time= 22.8 min calculated for 0.239 af (99% of inflow)
Center-of-Mass det. time= 17.2 min (785.9 - 768.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,215.00'	7,073 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

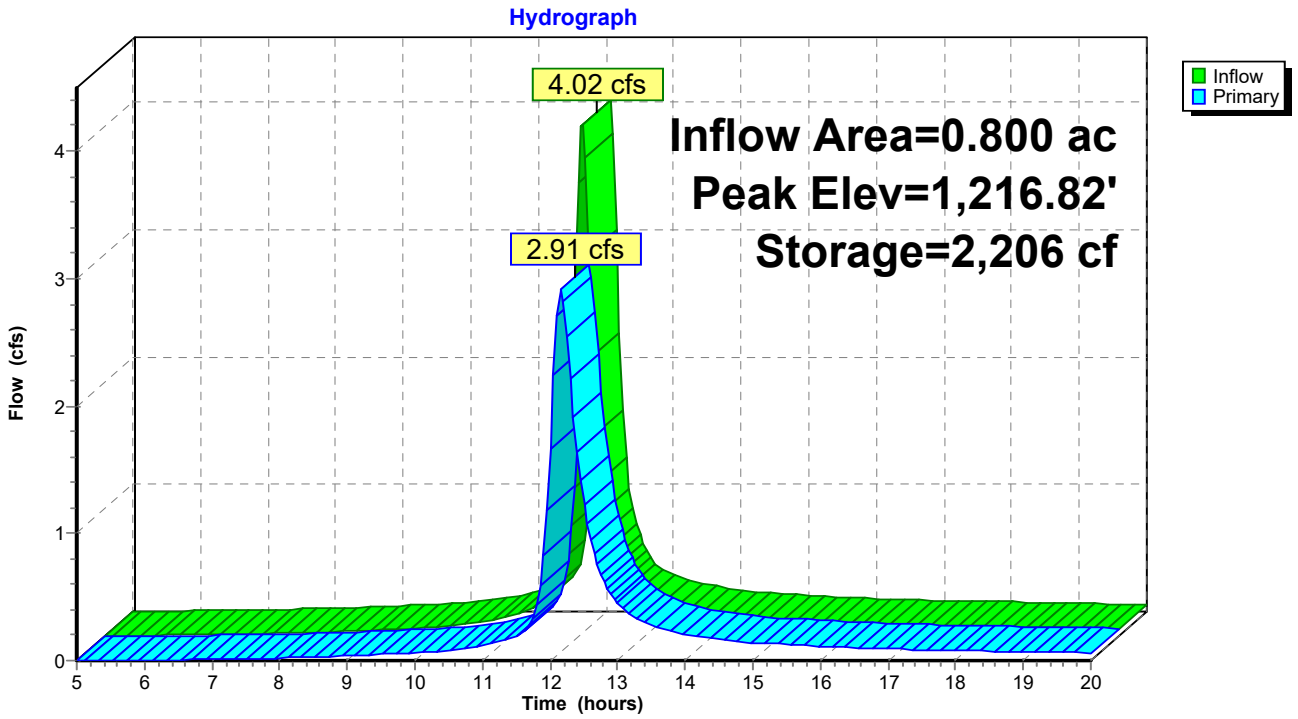
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,215.00	0	0	0
1,215.50	946	237	237
1,216.50	1,775	1,361	1,597
1,217.50	2,713	2,244	3,841
1,218.50	3,751	3,232	7,073

Device	Routing	Invert	Outlet Devices
#1	Primary	1,215.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 3.00 Width (feet) 0.00 1.50
#2	Device 1	1,215.00'	**12.0" Round Culvert X 2.00** L= 214.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 1,215.00' / 1,213.89' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.89 cfs @ 12.16 hrs HW=1,216.81' TW=1,214.89' (Fixed TW Elev= 1,214.89')
↑ **1=Custom Weir/Orifice** (Weir Controls 2.89 cfs @ 3.53 fps)
↑ **2=Culvert** (Passes 2.89 cfs of 5.92 cfs potential flow)

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Pond 3P: (new Pond)



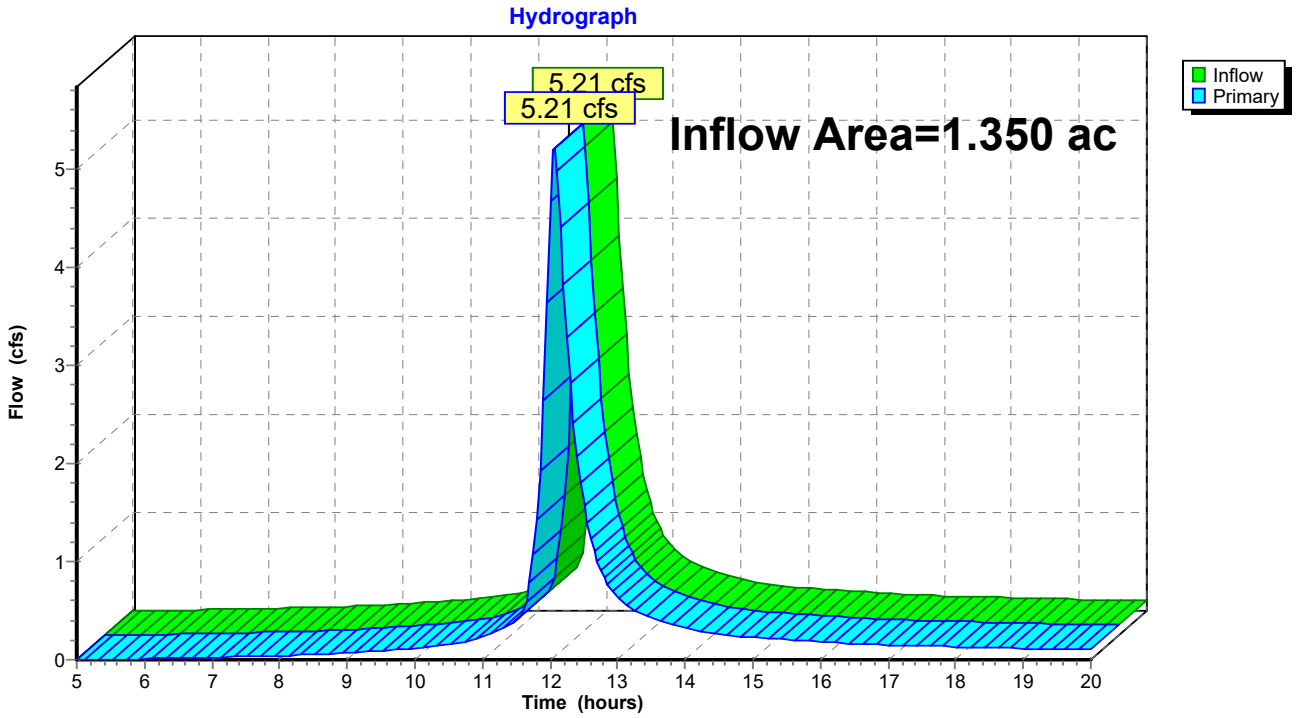
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Summary for Link 4L: (new Link)

Inflow Area = 1.350 ac, 0.00% Impervious, Inflow Depth > 3.61" for 10-yr event
Inflow = 5.21 cfs @ 12.06 hrs, Volume= 0.406 af
Primary = 5.21 cfs @ 12.06 hrs, Volume= 0.406 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: (new Link)



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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

Subcatchment1S: bypass Runoff Area=0.550 ac 0.00% Impervious Runoff Depth>5.86"
Flow Length=300' Tc=10.8 min CN=86 Runoff=4.78 cfs 0.269 af

Subcatchment2S: developed to pond Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>5.85"
Flow Length=330' Tc=14.2 min CN=86 Runoff=6.30 cfs 0.390 af

Pond 3P: (new Pond) Peak Elev=1,217.22' Storage=3,125 cf Inflow=6.30 cfs 0.390 af
Outflow=4.82 cfs 0.386 af

Link 4L: (new Link) Inflow=8.51 cfs 0.654 af
Primary=8.51 cfs 0.654 af

Total Runoff Area = 1.350 ac Runoff Volume = 0.659 af Average Runoff Depth = 5.86"
100.00% Pervious = 1.350 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: bypass

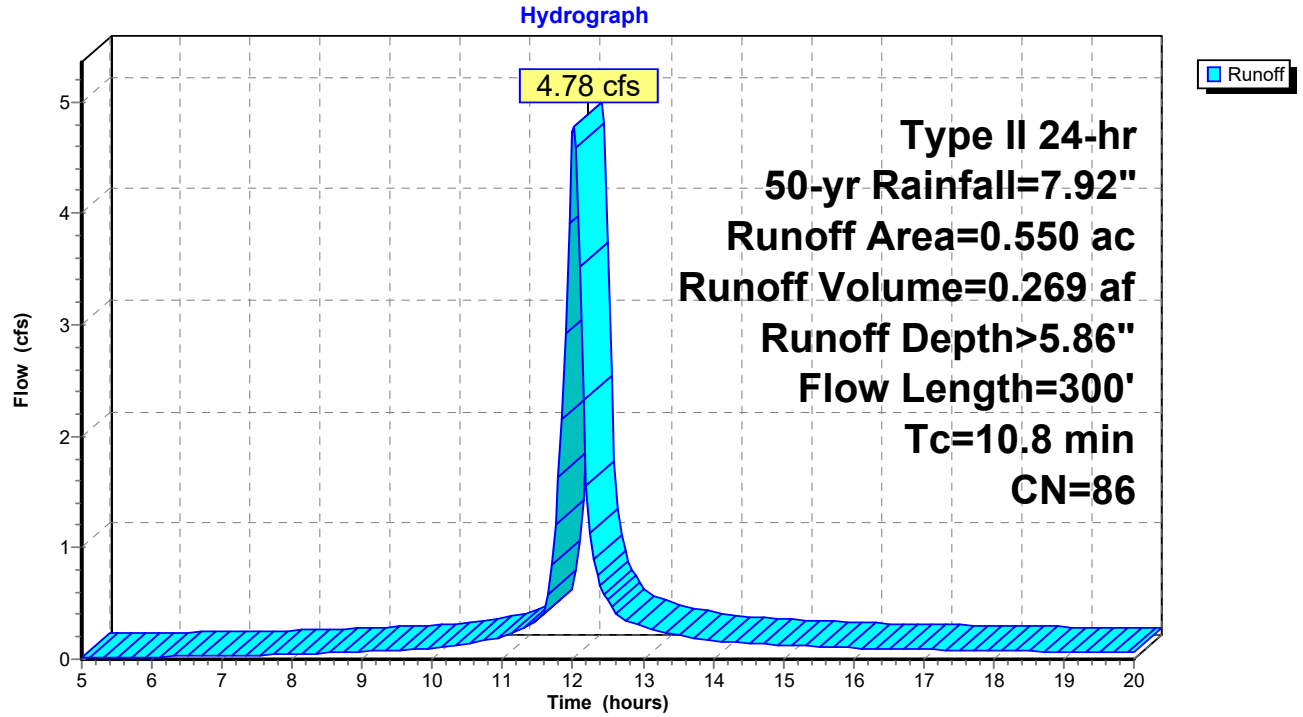
Runoff = 4.78 cfs @ 12.02 hrs, Volume= 0.269 af, Depth> 5.86"
Routed to Link 4L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=7.92"

Area (ac)	CN	Description
0.550	86	<50% Grass cover, Poor, HSG C
0.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	134	0.0620	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.8	166	0.0330	3.69		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Paved Kv= 20.3 fps
10.8	300	Total			

Subcatchment 1S: bypass



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Summary for Subcatchment 2S: developed to pond

[47] Hint: Peak is 177% of capacity of segment #2

Runoff = 6.30 cfs @ 12.06 hrs, Volume= 0.390 af, Depth> 5.85"
Routed to Pond 3P : (new Pond)

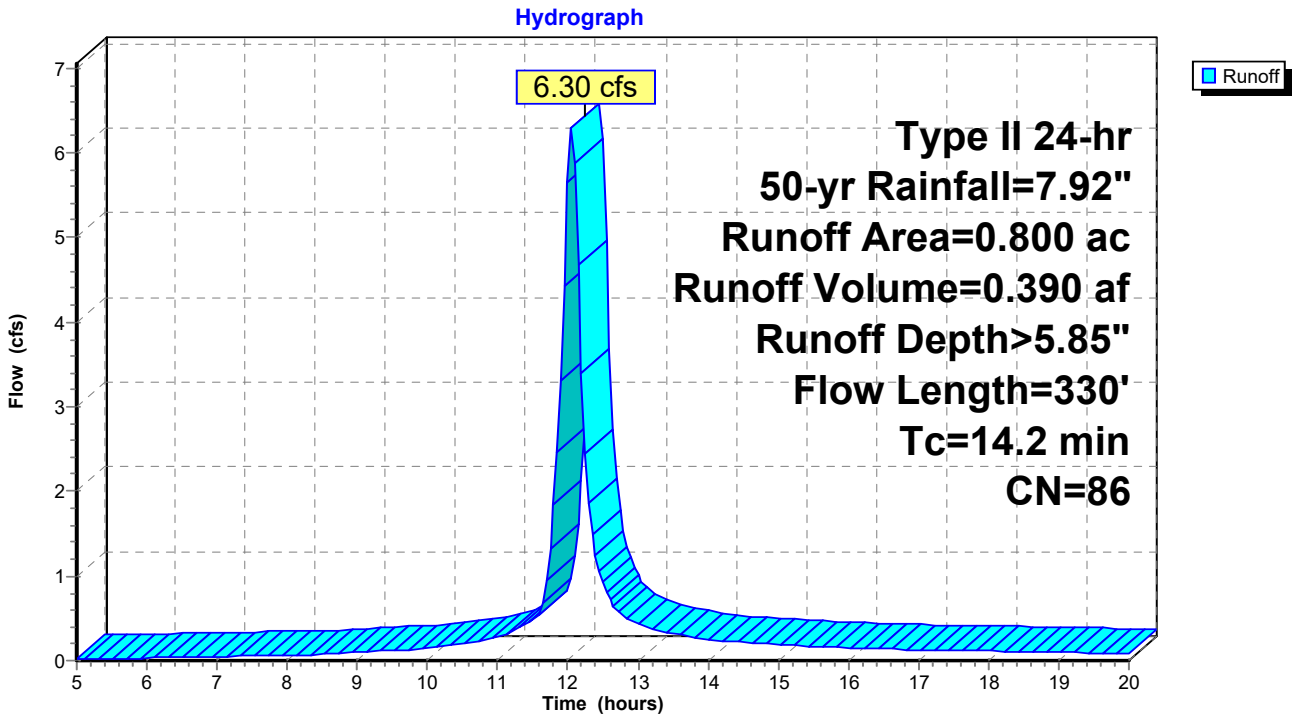
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=7.92"

Area (ac)	CN	Description
0.800	86	<50% Grass cover, Poor, HSG C
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	169	0.0500	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.3	91	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.8	70	0.0050	1.44		**Shallow Concentrated Flow, Shallow Concentrated Flow** Paved Kv= 20.3 fps
14.2	330	Total			

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Subcatchment 2S: developed to pond



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Summary for Pond 3P: (new Pond)

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 5.85" for 50-yr event
Inflow = 6.30 cfs @ 12.06 hrs, Volume= 0.390 af
Outflow = 4.82 cfs @ 12.15 hrs, Volume= 0.386 af, Atten= 23%, Lag= 5.5 min
Primary = 4.82 cfs @ 12.15 hrs, Volume= 0.386 af
Routed to Link 4L : (new Link)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,217.22' @ 12.15 hrs Surf.Area= 2,453 sf Storage= 3,125 cf

Plug-Flow detention time= 20.4 min calculated for 0.386 af (99% of inflow)
Center-of-Mass det. time= 15.4 min (773.7 - 758.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,215.00'	7,073 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

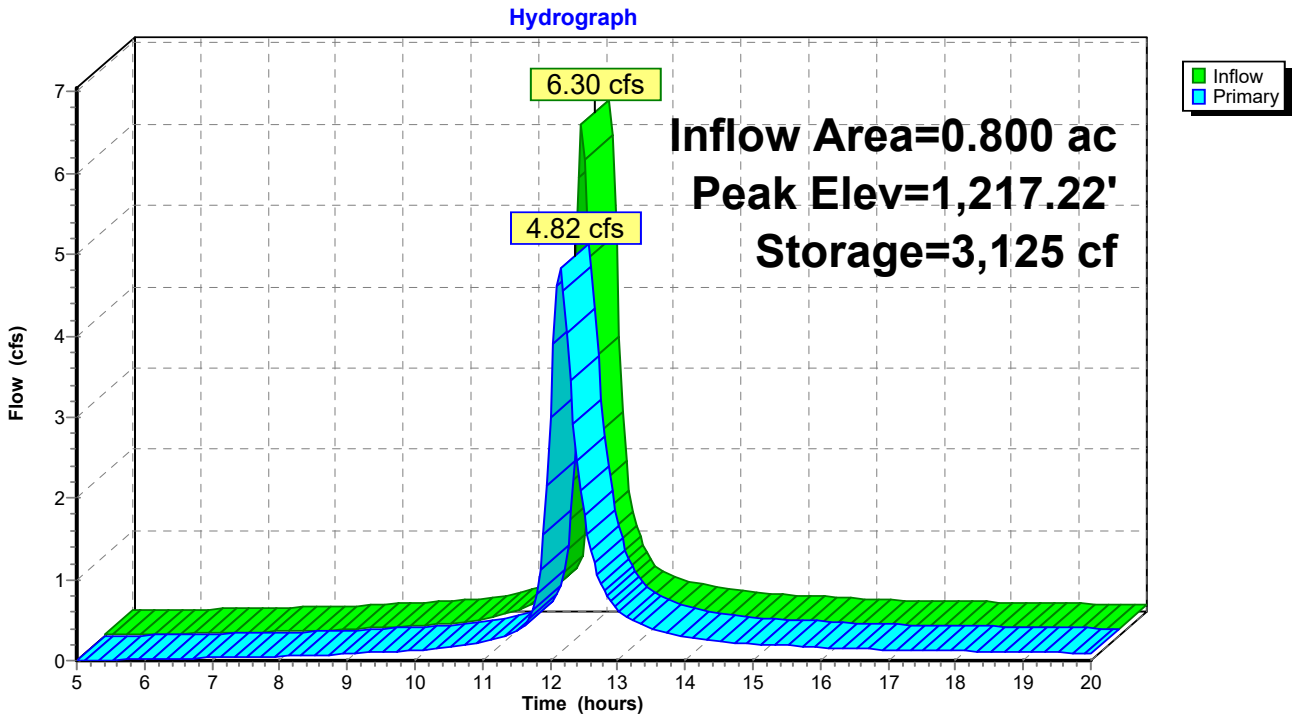
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,215.00	0	0	0
1,215.50	946	237	237
1,216.50	1,775	1,361	1,597
1,217.50	2,713	2,244	3,841
1,218.50	3,751	3,232	7,073

Device	Routing	Invert	Outlet Devices
#1	Primary	1,215.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 3.00 Width (feet) 0.00 1.50
#2	Device 1	1,215.00'	**12.0" Round Culvert X 2.00** L= 214.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 1,215.00' / 1,213.89' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=4.81 cfs @ 12.15 hrs HW=1,217.22' TW=1,214.89' (Fixed TW Elev= 1,214.89')
↑—**1=Custom Weir/Orifice** (Weir Controls 4.81 cfs @ 3.90 fps)
↑—**2=Culvert** (Passes 4.81 cfs of 6.55 cfs potential flow)

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Pond 3P: (new Pond)



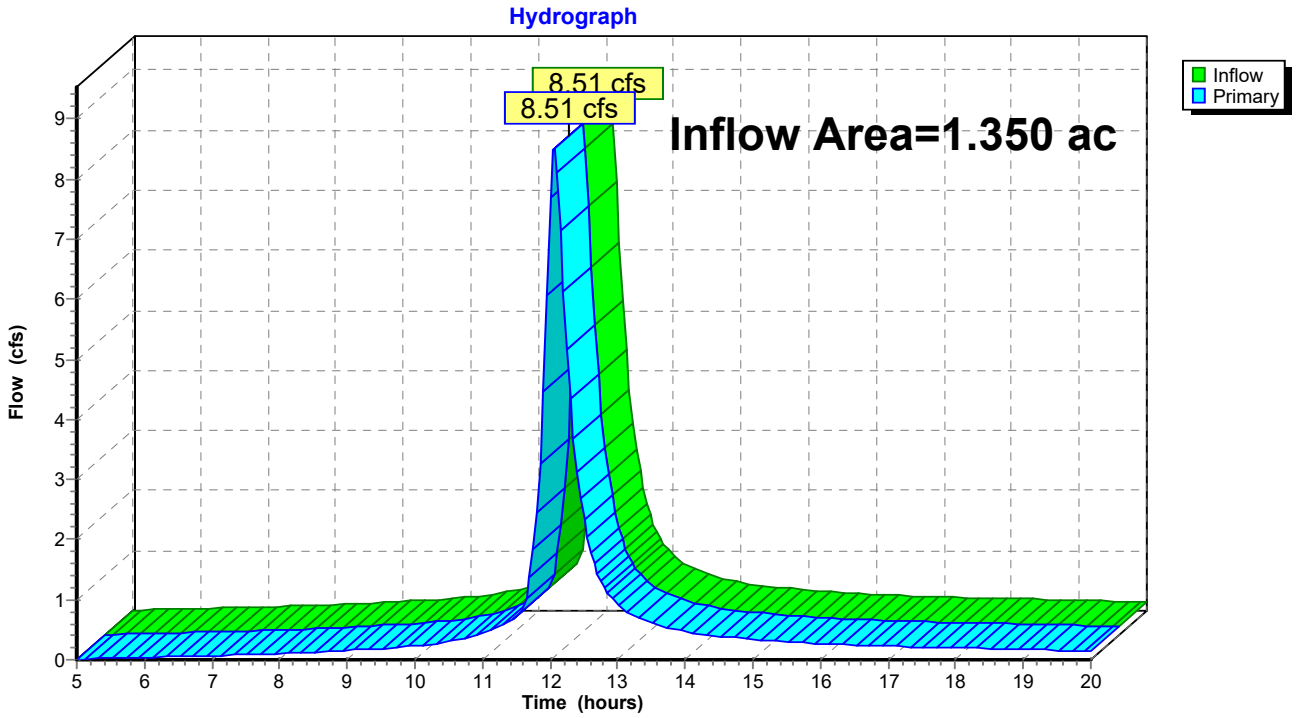
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Summary for Link 4L: (new Link)

Inflow Area = 1.350 ac, 0.00% Impervious, Inflow Depth > 5.82" for 50-yr event
Inflow = 8.51 cfs @ 12.06 hrs, Volume= 0.654 af
Primary = 8.51 cfs @ 12.06 hrs, Volume= 0.654 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: (new Link)



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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

Subcatchment1S: bypass Runoff Area=0.550 ac 0.00% Impervious Runoff Depth>6.99"
Flow Length=300' Tc=10.8 min CN=86 Runoff=5.64 cfs 0.320 af

Subcatchment2S: developed to pond Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>6.98"
Flow Length=330' Tc=14.2 min CN=86 Runoff=7.44 cfs 0.466 af

Pond 3P: (new Pond) Peak Elev=1,217.39' Storage=3,553 cf Inflow=7.44 cfs 0.466 af
Outflow=5.80 cfs 0.460 af

Link 4L: (new Link) Inflow=10.19 cfs 0.781 af
Primary=10.19 cfs 0.781 af

Total Runoff Area = 1.350 ac Runoff Volume = 0.786 af Average Runoff Depth = 6.98"
100.00% Pervious = 1.350 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: bypass

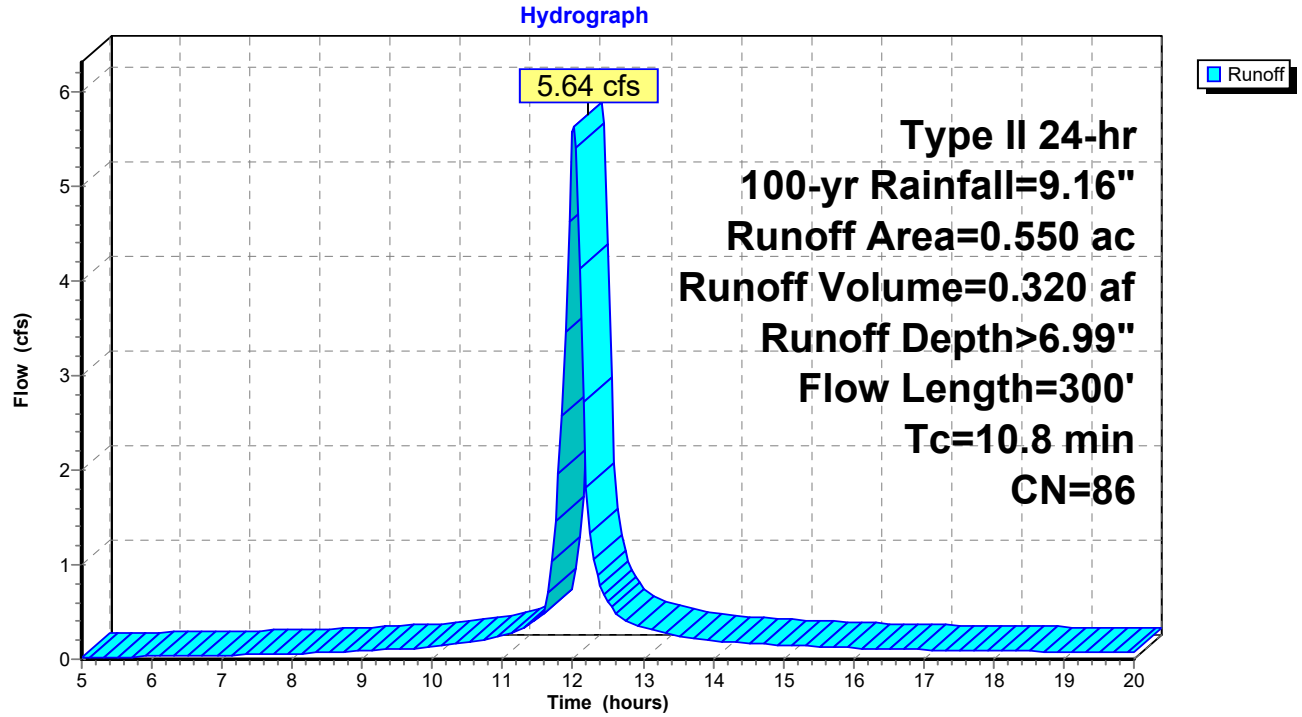
Runoff = 5.64 cfs @ 12.02 hrs, Volume= 0.320 af, Depth> 6.99"
Routed to Link 4L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=9.16"

Area (ac)	CN	Description
0.550	86	<50% Grass cover, Poor, HSG C
0.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	134	0.0620	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.8	166	0.0330	3.69		**Shallow Concentrated Flow, SHALLOW CONCENTRATED ON GI** Paved Kv= 20.3 fps
10.8	300	Total			

Subcatchment 1S: bypass



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Summary for Subcatchment 2S: developed to pond

[47] Hint: Peak is 209% of capacity of segment #2

Runoff = 7.44 cfs @ 12.05 hrs, Volume= 0.466 af, Depth> 6.98"
Routed to Pond 3P : (new Pond)

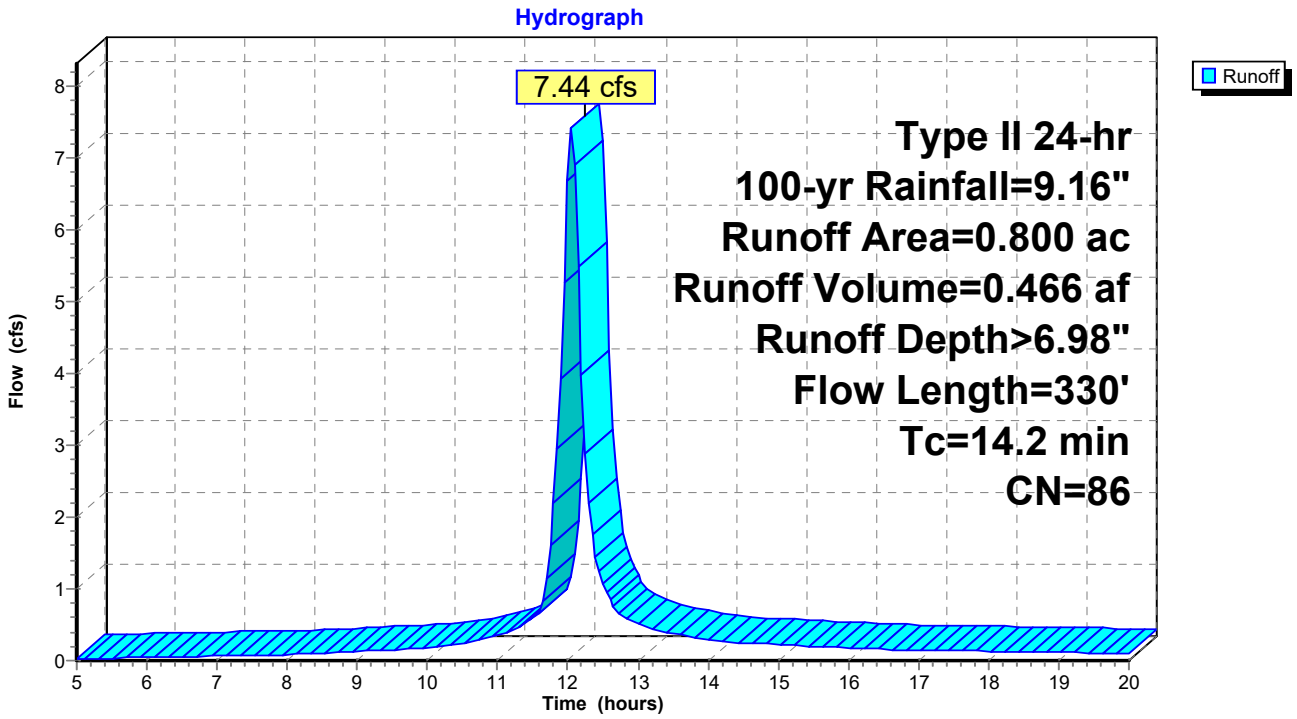
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=9.16"

Area (ac)	CN	Description
0.800	86	<50% Grass cover, Poor, HSG C
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	169	0.0500	0.22		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.00"
0.3	91	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.8	70	0.0050	1.44		**Shallow Concentrated Flow, Shallow Concentrated Flow** Paved Kv= 20.3 fps
14.2	330	Total			

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Subcatchment 2S: developed to pond



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Summary for Pond 3P: (new Pond)

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 6.98" for 100-yr event
Inflow = 7.44 cfs @ 12.05 hrs, Volume= 0.466 af
Outflow = 5.80 cfs @ 12.14 hrs, Volume= 0.460 af, Atten= 22%, Lag= 5.4 min
Primary = 5.80 cfs @ 12.14 hrs, Volume= 0.460 af
Routed to Link 4L : (new Link)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,217.39' @ 12.14 hrs Surf.Area= 2,612 sf Storage= 3,553 cf

Plug-Flow detention time= 19.5 min calculated for 0.460 af (99% of inflow)
Center-of-Mass det. time= 14.8 min (769.7 - 754.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,215.00'	7,073 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

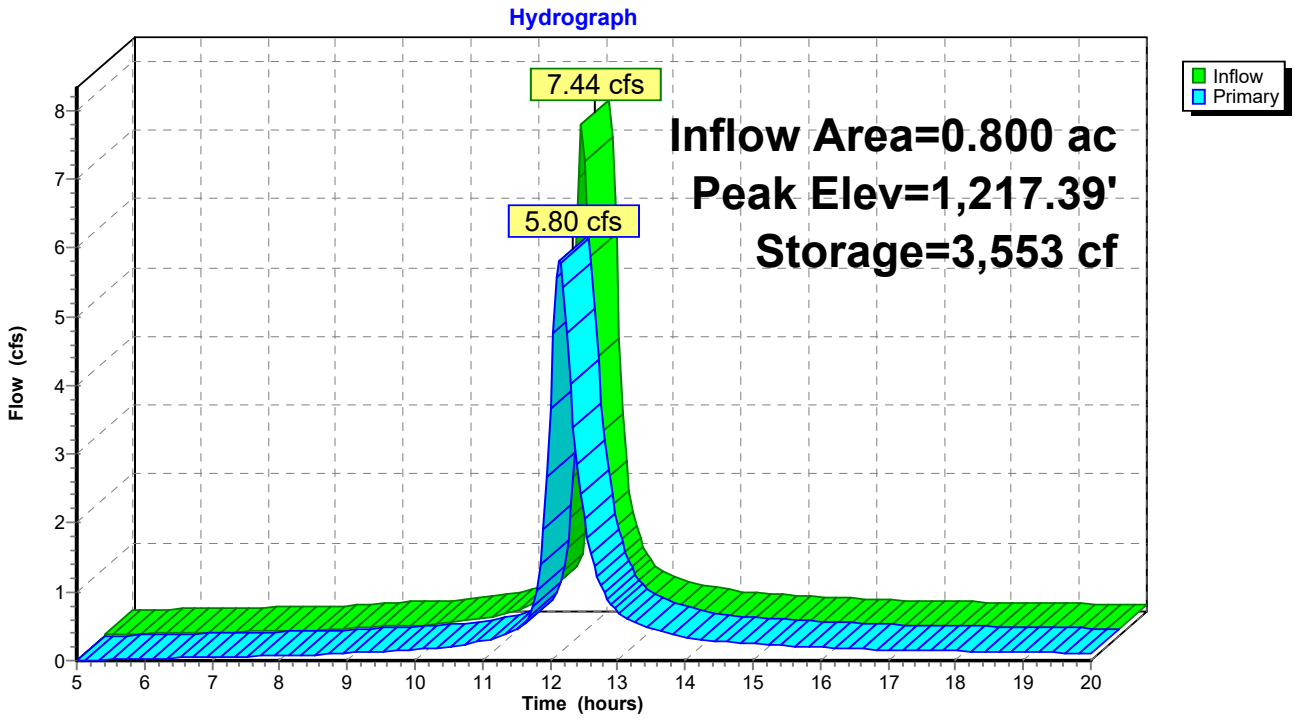
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,215.00	0	0	0
1,215.50	946	237	237
1,216.50	1,775	1,361	1,597
1,217.50	2,713	2,244	3,841
1,218.50	3,751	3,232	7,073

Device	Routing	Invert	Outlet Devices
#1	Primary	1,215.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 3.00 Width (feet) 0.00 1.50
#2	Device 1	1,215.00'	**12.0" Round Culvert X 2.00** L= 214.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 1,215.00' / 1,213.89' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=5.76 cfs @ 12.14 hrs HW=1,217.39' TW=1,214.89' (Fixed TW Elev= 1,214.89')
└─**1=Custom Weir/Orifice** (Weir Controls 5.76 cfs @ 4.05 fps)
└─**2=Culvert** (Passes 5.76 cfs of 6.79 cfs potential flow)

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Pond 3P: (new Pond)



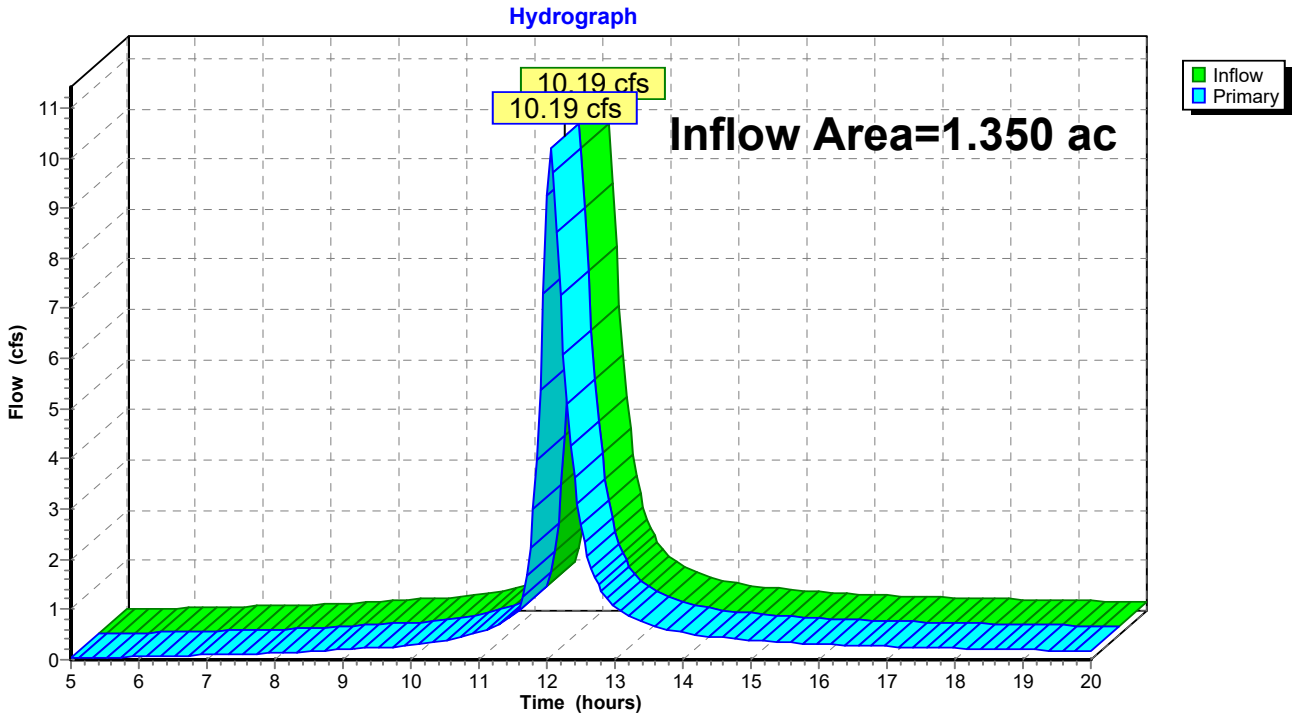
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Summary for Link 4L: (new Link)

Inflow Area = 1.350 ac, 0.00% Impervious, Inflow Depth > 6.94" for 100-yr event
Inflow = 10.19 cfs @ 12.06 hrs, Volume= 0.781 af
Primary = 10.19 cfs @ 12.06 hrs, Volume= 0.781 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: (new Link)



Hydrologic Soil Group—Cleveland County, Oklahoma



Map Scale: 1:537 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cleveland County, Oklahoma
Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
9	Kingfisher-Ironmound complex, 1 to 5 percent slopes	C	1.0	97.3%
65	Renfrow-Huska complex, 3 to 5 percent slopes, eroded	D	0.0	2.7%
Totals for Area of Interest			**1.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher