

**CREATIVE CORNER DAY CARE
STORM WATER MANAGEMENT
REPORT**

October 29, 2018
Revised February 13, 2019

Prepared For:
Creative Corner Childcare Center
1075 Highway P
O'Fallon, MO 63366
636-272-0222

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Creative Corner Childcare Center is planning an expansion to their existing facility located at 1075 Highway P in O'Fallon, Missouri. The expansion includes an addition to the existing building in the area of the existing outdoor playground and moving the outdoor playground northwest into the existing storm water detention basin. To make room for the proposed expansion, the existing detention basin will be filled in and a new storm water management facility will be built meeting the current design standards of the City of O'Fallon. The facility will include Water Quality Volume (WQv) to capture and treat the runoff from ninety percent of the recorded daily runoff events. The design of the WQv will meet the requirements of section 405.247 of the City of O'Fallon, MO Development Standards. Creative Corner Childcare Center lies within the Peruque Creek watershed. In accordance with Section 405.240 of the City of O'Fallon, MO Development Standards Paragraph B.4.a, storm water detention of the differential runoff will be provided for the two-, fifteen-, twenty-five-, and one-hundred-year frequency 20 minute storms.

Since this facility is a child day care facility, it requires open space outdoors for a playground facility thus reducing the area available for impervious surfaces. To determine the percent impervious of the facility, the impervious surface areas were calculated. The building with the proposed addition is 9,628 sq. ft. and the paved surface including the proposed 24 added parking spaces is 25,954 sq. ft. for a total of 35,582 sq. ft. of impervious surface. The developed area of the lot was then calculated from a line at the northwest side of the relocated dumpster southeastwardly to Royal Oaks Drive. This area is 76,500 sq. ft. The percent impervious of the area that is being developed is 35,582 sq. ft. / 76,500 sq. ft. = 46.5% impervious. Any future development of the remaining area of the lot would include a small building with enough parking to serve that building. With the proposed storm water management facility taking up a large part of the remaining area of the site and the building setbacks, it would be very difficult to add enough impervious area to exceed 50% total impervious area on the site. If the existing day care facility were removed and the site redeveloped completely, this storm water management facility as designed would be in a poor location for any conceivable redevelopment. The only reason for its location as designed today is that the existing building and parking lot are in the ideal location for a storm water management facility. For this reason the water quality volume and the differential runoff were calculated using 50% impervious for the entire 2.29 acre site.

WATER QUALITY VOLUME (WQv): The following equations are used to calculate the WQv in acre feet of storage required:

$$WQv = (P * R_v * A) / 12$$

$$P = 1.14 \text{ inches of rainfall}$$

$$\text{Where: } R_v = 0.05 + (0.009 * I) \text{ where } I \text{ is percent impervious cover}$$

$$A = \text{Area of site in acres}$$

The percent impervious is 50% so $R_v = 0.05 + (0.009 * 50) = 0.05 + 0.45 = 0.50$.

$$WQv = (1.14 * 0.50 * 2.29) / 12 = 0.109 \text{ Acre feet} = 4738 \text{ cu. ft.}$$

SEDIMENT STORAGE: Figure 1 of Appendix D of the City of O'Fallon, MO Development Standards was used to determine the volume of sediment storage required for this detention basin. The area tributary

to the basin is 0.66 acres of pervious surface and 0.62 acres of impervious surface. The "C" value for 5% impervious, 0.37, and the "C" value for 100% impervious, 0.77, were obtained from the Metropolitan St. Louis Sewer District Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities Table 4-36. The prorated "C" value for this development was determined

$$\begin{aligned} \text{by: } & 0.66 \text{ acres @ 5\% impervious} * 0.37 = 0.2442 \\ & + 0.62 \text{ acres @ 100\% impervious} * 0.77 = \underline{0.4774} \\ & \qquad \qquad \qquad 0.7216 / (.66 + .62) = .56 \end{aligned}$$

Figure 1 was entered using 1.28 acres tributary area and a "C" value of 0.56 to determine the annual sediment storage requirement per acre of 180 cu. ft. The sediment storage requirement for 2 years is: 1.28 acres * 180 cu. ft. per acre per year * 2 years = 460 cu. ft.

STORMWATER MANAGEMENT: The attached Table 1 summarizes the differential runoff for each of the storms to be detained. The attached Table 2 summarizes the runoff to the basin for the each of storms to be detained.

For Water quality, a bioretention system six feet wide by 35 feet long will be constructed in the bottom of the detention basin per the Metropolitan St. Louis Sewer District Detail 5 for bioretention with internal water storage for retrofit typical section. This system has 40% voids to hold the water and to act as a filter to remove pollutants from the water. The detention basin will be constructed to store the differential runoff from each of the storms. The low flow opening is set at elevation 534.45 which is above the level which will store all of the Water quality volume and the sediment storage. The storage volume below elevation 534.5 is 5346 cu. ft. and the WQv is 4738 cu. ft. and the 2 year sediment storage is 460 cu. ft. for a total of 5198 cu. ft. Table 3 summarizes the runoff to the basin, the flow out of the basin, and the differential runoff required and provided. Table 4 summarizes the Q bypassing the bioretention basin in each of the storms, and Table 5 summarizes the total flow leaving the site to the Northeast and to the Highway P roadway ditch both before any development and after the proposed development with detention. The four storms were modeled using HydroCAD version 10. Summary printouts from HydroCAD from each of the four models are attached. Drainage area maps showing undeveloped drainage areas and developed drainage areas to the bioretention basin and bypassing the bioretention basin.

SUMMARY: The stormwater management system as designed meets the water quality volume, sediment storage and differential runoff requirements of the City of O'Fallon, Missouri for each of the four storms analyzed.

TABLE 1 DIFFERENTIAL RUNOFF					
STORM FREQUENCY	UNDEVELOPED		DEVELOPED		DIFFERENTIAL RUNOFF
	PI	Q	PI	Q	
		cfs		cfs	cfs
2 year	1.15	2.63	1.74	3.98	1.35
15 year	1.87	4.28	2.84	6.50	2.22
25 year	2.31	5.29	3.50	8.02	2.73
100 year	2.95	6.76	4.34	9.94	3.18

TABLE 2 RUNOFF TO BASIN			
STORM FREQUENCY		1.28 ACRES 50 % IMPERVIOUS	
		PI	Q
2 year		1.74	2.23
15 year		2.84	3.64
25 year		3.50	4.48
100 year		4.34	5.56

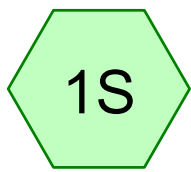
TABLE 3				
STORM FREQUENCY	RUNOFF TO BASIN	Q OUT	DIFFERENTIAL RUNOFF	
			PROVIDED	REQUIRED
	cfs	cfs	cfs	cfs
2 year	2.23	0	2.23	1.35
15 year	3.64	0	3.64	2.22
25 year	4.48	0.25	4.23	2.73
100 year	5.56	1.83	3.73	3.18

**TABLE 4
Q BYPASSING BASIN**

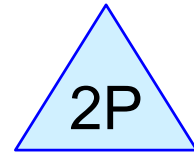
		2 Year		15 Year		25 Year		100 Year	
	Acres	PI	Q cfs	PI	Q cfs	PI	Q cfs	PI	Q cfs
AREA B	0.20	1.47	0.29	2.42	0.48	2.71	0.54	3.48	0.70
AREA C	0.08	1.74	0.14	2.84	0.23	3.50	0.28	4.34	0.35
AREA E	0.70	1.74	1.22	2.84	1.99	3.50	2.45	4.34	3.04
Total to Northeast			1.65		2.70		3.27		4.08
AREA C	0.03	2.39	0.07	3.85	0.12	4.75	0.14	6.08	0.18
Total to Highway P ditch			0.07		0.12		0.14		0.18

TABLE 5**SUMMARY OF FLOWS LEAVING SITE**

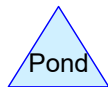
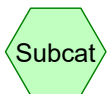
Storm Frequency	Bypassing Detention Basin	Detention Basin Peak Outflow	Developed Q leaving site to Northeast	Undeveloped Q to Northeast
	cfs	cfs	cfs	cfs
2 Year	1.65	0.00	1.65	2.57
15 Year	2.70	0.00	2.70	4.19
25 Year	3.27	0.06	3.33	5.17
100 Year	4.08	1.41	5.49	6.61
			Developed Q leaving site to Road Ditch	Undeveloped Q to Road Ditch
2 Year			0.07	0.06
15 Year			0.12	0.09
25 Year			0.14	0.12
100 Year			0.18	0.15



To Basin



Detention basin



2 yr detention

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Area Listing (all nodes)

Area (acres)	C	Description (subcatchment-numbers)
1.280	0.98	(1S)
1.280	0.98	TOTAL AREA

2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc

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

Subcatchment 1S: To Basin

Runoff Area=1.280 ac 100.00% Impervious Runoff Depth=0.59"

Tc=0.0 min C=0.98 Runoff=2.23 cfs 0.063 af

Pond 2P: Detention basin

Peak Elev=533.18' Storage=2,725 cf Inflow=2.23 cfs 0.063 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 1.280 ac Runoff Volume = 0.063 af Average Runoff Depth = 0.59"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.280 ac

2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Summary for Subcatchment 1S: To Basin

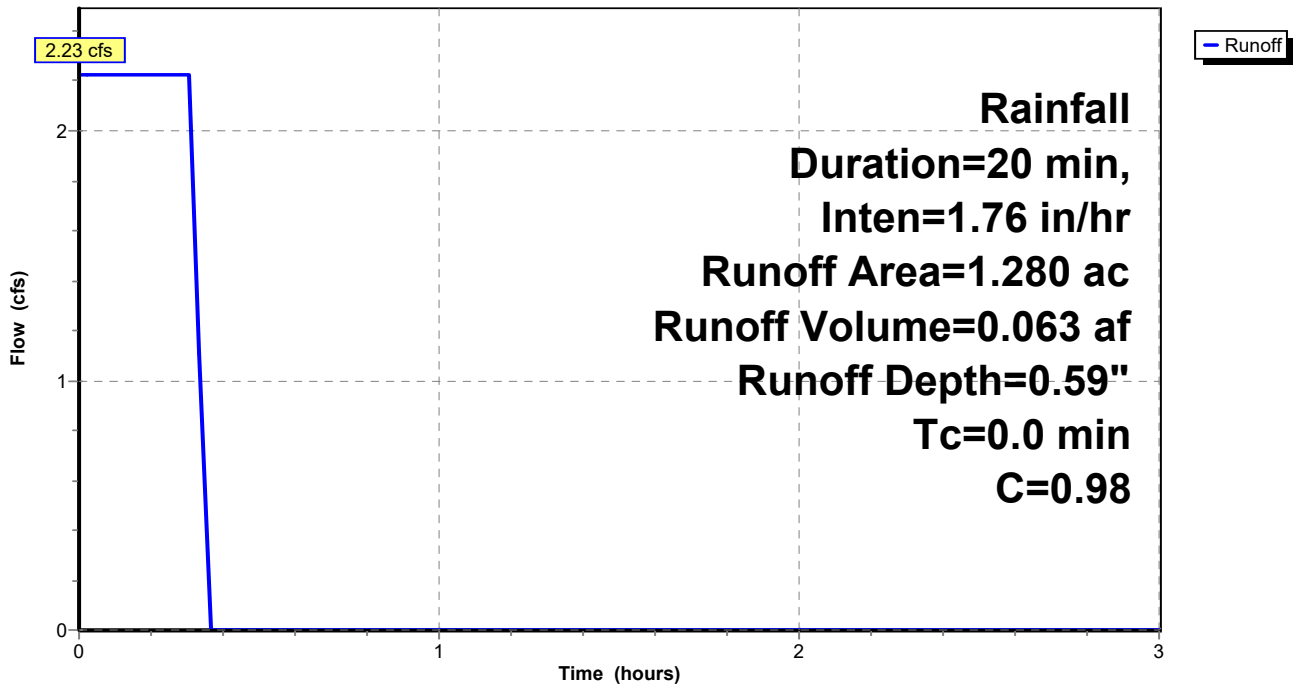
Runoff = 2.23 cfs @ 0.00 hrs, Volume= 0.063 af, Depth= 0.59"

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Rainfall Duration=20 min, Inten=1.76 in/hr

Area (ac)	C	Description
1.280	0.98	
1.280		100.00% Impervious Area

Subcatchment 1S: To Basin

Hydrograph



2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Hydrograph for Subcatchment 1S: To Basin

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	2.23	1.04	0.00	2.08	0.00
0.02	2.23	1.06	0.00	2.10	0.00
0.04	2.23	1.08	0.00	2.12	0.00
0.06	2.23	1.10	0.00	2.14	0.00
0.08	2.23	1.12	0.00	2.16	0.00
0.10	2.23	1.14	0.00	2.18	0.00
0.12	2.23	1.16	0.00	2.20	0.00
0.14	2.23	1.18	0.00	2.22	0.00
0.16	2.23	1.20	0.00	2.24	0.00
0.18	2.23	1.22	0.00	2.26	0.00
0.20	2.23	1.24	0.00	2.28	0.00
0.22	2.23	1.26	0.00	2.30	0.00
0.24	2.23	1.28	0.00	2.32	0.00
0.26	2.23	1.30	0.00	2.34	0.00
0.28	2.23	1.32	0.00	2.36	0.00
0.30	2.23	1.34	0.00	2.38	0.00
0.32	2.23	1.36	0.00	2.40	0.00
0.34	0.00	1.38	0.00	2.42	0.00
0.36	0.00	1.40	0.00	2.44	0.00
0.38	0.00	1.42	0.00	2.46	0.00
0.40	0.00	1.44	0.00	2.48	0.00
0.42	0.00	1.46	0.00	2.50	0.00
0.44	0.00	1.48	0.00	2.52	0.00
0.46	0.00	1.50	0.00	2.54	0.00
0.48	0.00	1.52	0.00	2.56	0.00
0.50	0.00	1.54	0.00	2.58	0.00
0.52	0.00	1.56	0.00	2.60	0.00
0.54	0.00	1.58	0.00	2.62	0.00
0.56	0.00	1.60	0.00	2.64	0.00
0.58	0.00	1.62	0.00	2.66	0.00
0.60	0.00	1.64	0.00	2.68	0.00
0.62	0.00	1.66	0.00	2.70	0.00
0.64	0.00	1.68	0.00	2.72	0.00
0.66	0.00	1.70	0.00	2.74	0.00
0.68	0.00	1.72	0.00	2.76	0.00
0.70	0.00	1.74	0.00	2.78	0.00
0.72	0.00	1.76	0.00	2.80	0.00
0.74	0.00	1.78	0.00	2.82	0.00
0.76	0.00	1.80	0.00	2.84	0.00
0.78	0.00	1.82	0.00	2.86	0.00
0.80	0.00	1.84	0.00	2.88	0.00
0.82	0.00	1.86	0.00	2.90	0.00
0.84	0.00	1.88	0.00	2.92	0.00
0.86	0.00	1.90	0.00	2.94	0.00
0.88	0.00	1.92	0.00	2.96	0.00
0.90	0.00	1.94	0.00	2.98	0.00
0.92	0.00	1.96	0.00	3.00	0.00
0.94	0.00	1.98	0.00		
0.96	0.00	2.00	0.00		
0.98	0.00	2.02	0.00		
1.00	0.00	2.04	0.00		
1.02	0.00	2.06	0.00		

2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Summary for Pond 2P: Detention basin

Inflow Area = 1.280 ac, 100.00% Impervious, Inflow Depth = 0.59"
Inflow = 2.23 cfs @ 0.00 hrs, Volume= 0.063 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Peak Elev= 533.18' @ 0.34 hrs Surf.Area= 1,653 sf Storage= 2,725 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	
#1	527.50'	11,305 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
527.50	210	0.0	0	0
531.00	210	40.0	294	294
531.50	926	100.0	284	578
532.00	1,125	100.0	513	1,091
533.00	1,564	100.0	1,345	2,435
534.00	2,060	100.0	1,812	4,247
535.00	2,612	100.0	2,336	6,583
536.00	3,221	100.0	2,917	9,500
536.50	4,000	100.0	1,805	11,305

Device	Routing	Invert	Outlet Devices
#1	Primary	535.10'	36.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	534.50'	1.3' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=527.98' (Free Discharge)

1=Orifice/Grate (Controls 0.00 cfs)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

2 yr detention

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Creative Corner 2 Year storm

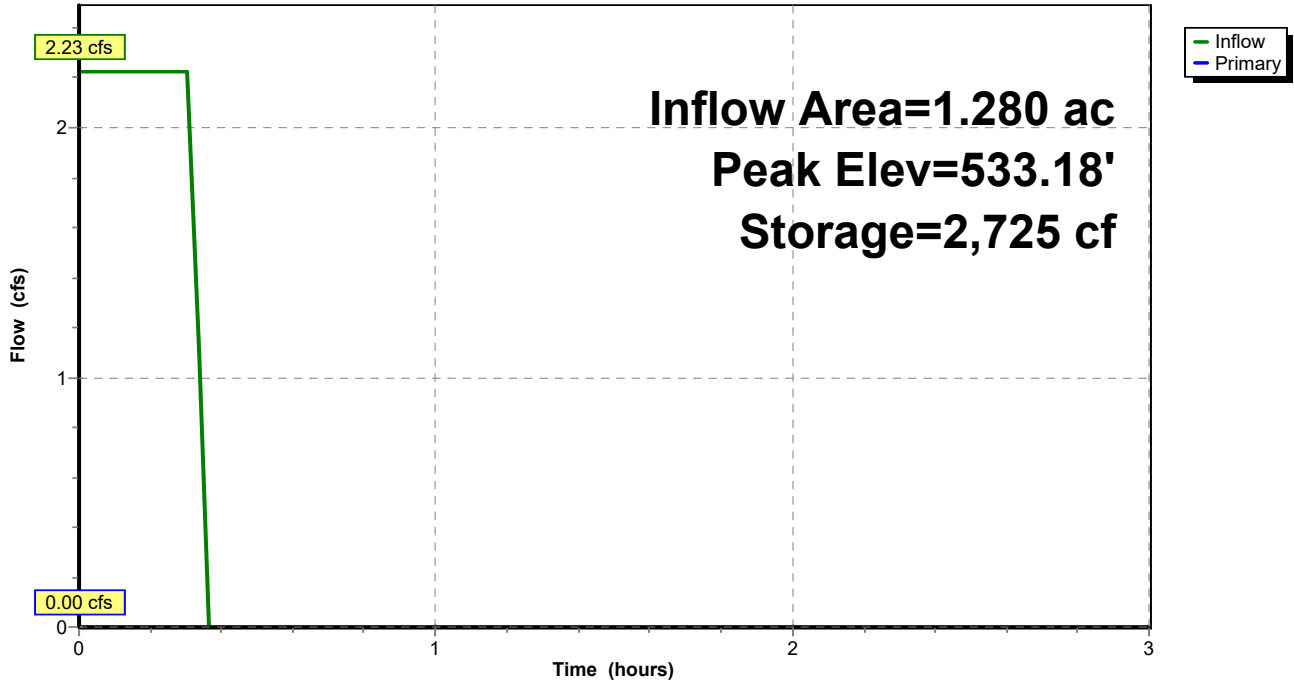
Rainfall Duration=20 min, Inten=1.76 in/hr

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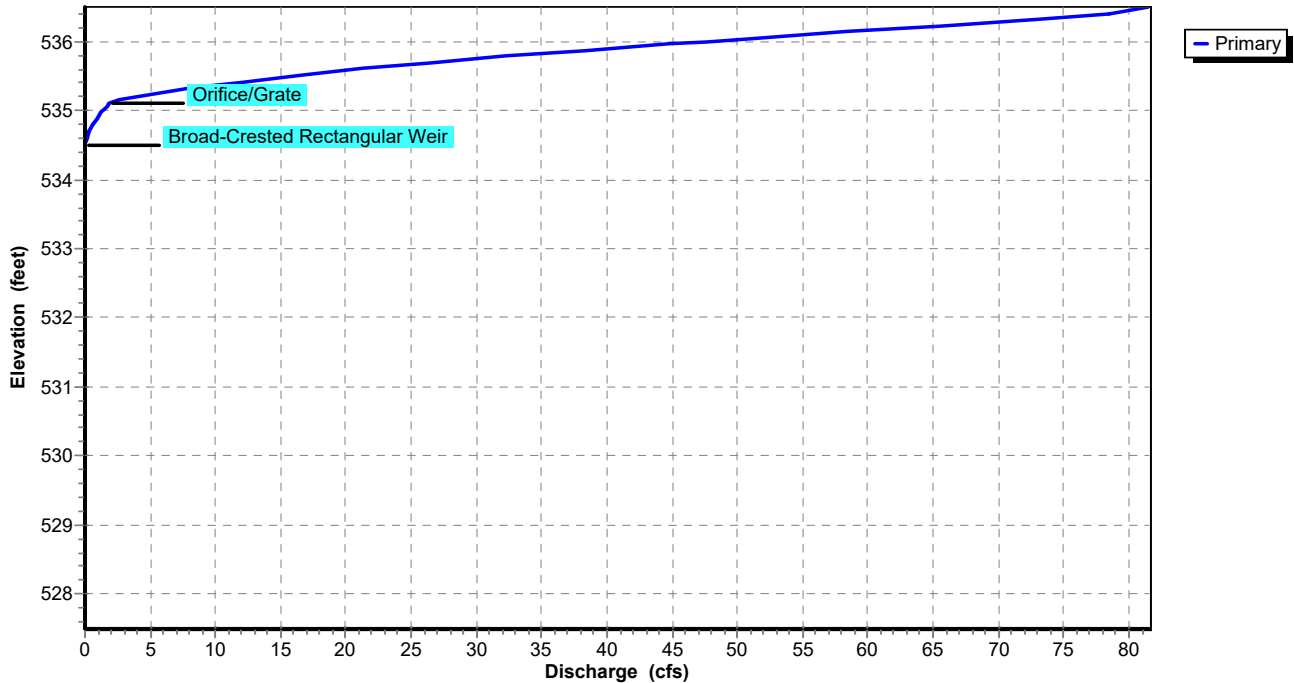
Pond 2P: Detention basin

Hydrograph



Pond 2P: Detention basin

Stage-Discharge



2 yr detention

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Creative Corner 2 Year storm

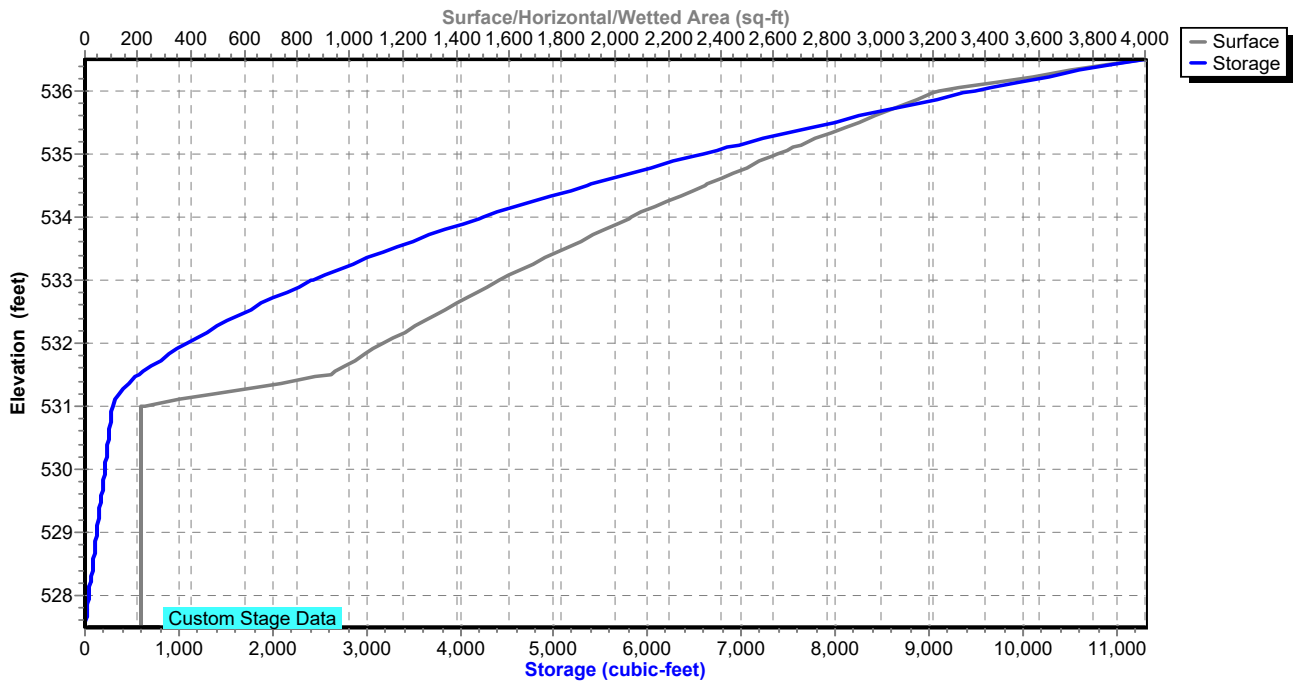
Rainfall Duration=20 min, Inten=1.76 in/hr

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Pond 2P: Detention basin

Stage-Area-Storage



2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Hydrograph for Pond 2P: Detention basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	2.23	40	527.98	0.00
0.02	2.23	200	529.89	0.00
0.04	2.23	361	531.19	0.00
0.06	2.23	521	531.43	0.00
0.08	2.23	681	531.61	0.00
0.10	2.23	841	531.77	0.00
0.12	2.23	1,002	531.92	0.00
0.14	2.23	1,162	532.06	0.00
0.16	2.23	1,322	532.20	0.00
0.18	2.23	1,483	532.33	0.00
0.20	2.23	1,643	532.45	0.00
0.22	2.23	1,803	532.57	0.00
0.24	2.23	1,963	532.68	0.00
0.26	2.23	2,124	532.79	0.00
0.28	2.23	2,284	532.90	0.00
0.30	2.23	2,444	533.01	0.00
0.32	2.23	2,605	533.11	0.00
0.34	0.00	2,725	533.18	0.00
0.36	0.00	2,725	533.18	0.00
0.38	0.00	2,725	533.18	0.00
0.40	0.00	2,725	533.18	0.00
0.42	0.00	2,725	533.18	0.00
0.44	0.00	2,725	533.18	0.00
0.46	0.00	2,725	533.18	0.00
0.48	0.00	2,725	533.18	0.00
0.50	0.00	2,725	533.18	0.00
0.52	0.00	2,725	533.18	0.00
0.54	0.00	2,725	533.18	0.00
0.56	0.00	2,725	533.18	0.00
0.58	0.00	2,725	533.18	0.00
0.60	0.00	2,725	533.18	0.00
0.62	0.00	2,725	533.18	0.00
0.64	0.00	2,725	533.18	0.00
0.66	0.00	2,725	533.18	0.00
0.68	0.00	2,725	533.18	0.00
0.70	0.00	2,725	533.18	0.00
0.72	0.00	2,725	533.18	0.00
0.74	0.00	2,725	533.18	0.00
0.76	0.00	2,725	533.18	0.00
0.78	0.00	2,725	533.18	0.00
0.80	0.00	2,725	533.18	0.00
0.82	0.00	2,725	533.18	0.00
0.84	0.00	2,725	533.18	0.00
0.86	0.00	2,725	533.18	0.00
0.88	0.00	2,725	533.18	0.00
0.90	0.00	2,725	533.18	0.00
0.92	0.00	2,725	533.18	0.00
0.94	0.00	2,725	533.18	0.00
0.96	0.00	2,725	533.18	0.00
0.98	0.00	2,725	533.18	0.00
1.00	0.00	2,725	533.18	0.00
1.02	0.00	2,725	533.18	0.00

2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.04	0.00	2,725	533.18	0.00
1.06	0.00	2,725	533.18	0.00
1.08	0.00	2,725	533.18	0.00
1.10	0.00	2,725	533.18	0.00
1.12	0.00	2,725	533.18	0.00
1.14	0.00	2,725	533.18	0.00
1.16	0.00	2,725	533.18	0.00
1.18	0.00	2,725	533.18	0.00
1.20	0.00	2,725	533.18	0.00
1.22	0.00	2,725	533.18	0.00
1.24	0.00	2,725	533.18	0.00
1.26	0.00	2,725	533.18	0.00
1.28	0.00	2,725	533.18	0.00
1.30	0.00	2,725	533.18	0.00
1.32	0.00	2,725	533.18	0.00
1.34	0.00	2,725	533.18	0.00
1.36	0.00	2,725	533.18	0.00
1.38	0.00	2,725	533.18	0.00
1.40	0.00	2,725	533.18	0.00
1.42	0.00	2,725	533.18	0.00
1.44	0.00	2,725	533.18	0.00
1.46	0.00	2,725	533.18	0.00
1.48	0.00	2,725	533.18	0.00
1.50	0.00	2,725	533.18	0.00
1.52	0.00	2,725	533.18	0.00
1.54	0.00	2,725	533.18	0.00
1.56	0.00	2,725	533.18	0.00
1.58	0.00	2,725	533.18	0.00
1.60	0.00	2,725	533.18	0.00
1.62	0.00	2,725	533.18	0.00
1.64	0.00	2,725	533.18	0.00
1.66	0.00	2,725	533.18	0.00
1.68	0.00	2,725	533.18	0.00
1.70	0.00	2,725	533.18	0.00
1.72	0.00	2,725	533.18	0.00
1.74	0.00	2,725	533.18	0.00
1.76	0.00	2,725	533.18	0.00
1.78	0.00	2,725	533.18	0.00
1.80	0.00	2,725	533.18	0.00
1.82	0.00	2,725	533.18	0.00
1.84	0.00	2,725	533.18	0.00
1.86	0.00	2,725	533.18	0.00
1.88	0.00	2,725	533.18	0.00
1.90	0.00	2,725	533.18	0.00
1.92	0.00	2,725	533.18	0.00
1.94	0.00	2,725	533.18	0.00
1.96	0.00	2,725	533.18	0.00
1.98	0.00	2,725	533.18	0.00
2.00	0.00	2,725	533.18	0.00
2.02	0.00	2,725	533.18	0.00
2.04	0.00	2,725	533.18	0.00
2.06	0.00	2,725	533.18	0.00

2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
2.08	0.00	2,725	533.18	0.00
2.10	0.00	2,725	533.18	0.00
2.12	0.00	2,725	533.18	0.00
2.14	0.00	2,725	533.18	0.00
2.16	0.00	2,725	533.18	0.00
2.18	0.00	2,725	533.18	0.00
2.20	0.00	2,725	533.18	0.00
2.22	0.00	2,725	533.18	0.00
2.24	0.00	2,725	533.18	0.00
2.26	0.00	2,725	533.18	0.00
2.28	0.00	2,725	533.18	0.00
2.30	0.00	2,725	533.18	0.00
2.32	0.00	2,725	533.18	0.00
2.34	0.00	2,725	533.18	0.00
2.36	0.00	2,725	533.18	0.00
2.38	0.00	2,725	533.18	0.00
2.40	0.00	2,725	533.18	0.00
2.42	0.00	2,725	533.18	0.00
2.44	0.00	2,725	533.18	0.00
2.46	0.00	2,725	533.18	0.00
2.48	0.00	2,725	533.18	0.00
2.50	0.00	2,725	533.18	0.00
2.52	0.00	2,725	533.18	0.00
2.54	0.00	2,725	533.18	0.00
2.56	0.00	2,725	533.18	0.00
2.58	0.00	2,725	533.18	0.00
2.60	0.00	2,725	533.18	0.00
2.62	0.00	2,725	533.18	0.00
2.64	0.00	2,725	533.18	0.00
2.66	0.00	2,725	533.18	0.00
2.68	0.00	2,725	533.18	0.00
2.70	0.00	2,725	533.18	0.00
2.72	0.00	2,725	533.18	0.00
2.74	0.00	2,725	533.18	0.00
2.76	0.00	2,725	533.18	0.00
2.78	0.00	2,725	533.18	0.00
2.80	0.00	2,725	533.18	0.00
2.82	0.00	2,725	533.18	0.00
2.84	0.00	2,725	533.18	0.00
2.86	0.00	2,725	533.18	0.00
2.88	0.00	2,725	533.18	0.00
2.90	0.00	2,725	533.18	0.00
2.92	0.00	2,725	533.18	0.00
2.94	0.00	2,725	533.18	0.00
2.96	0.00	2,725	533.18	0.00
2.98	0.00	2,725	533.18	0.00
3.00	0.00	2,725	533.18	0.00

2 yr detention

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Creative Corner 2 Year storm

Rainfall Duration=20 min, Inten=1.76 in/hr

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Stage-Discharge for Pond 2P: Detention basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
527.50	0.00	532.70	0.00
527.60	0.00	532.80	0.00
527.70	0.00	532.90	0.00
527.80	0.00	533.00	0.00
527.90	0.00	533.10	0.00
528.00	0.00	533.20	0.00
528.10	0.00	533.30	0.00
528.20	0.00	533.40	0.00
528.30	0.00	533.50	0.00
528.40	0.00	533.60	0.00
528.50	0.00	533.70	0.00
528.60	0.00	533.80	0.00
528.70	0.00	533.90	0.00
528.80	0.00	534.00	0.00
528.90	0.00	534.10	0.00
529.00	0.00	534.20	0.00
529.10	0.00	534.30	0.00
529.20	0.00	534.40	0.00
529.30	0.00	534.50	0.00
529.40	0.00	534.60	0.12
529.50	0.00	534.70	0.34
529.60	0.00	534.80	0.62
529.70	0.00	534.90	0.96
529.80	0.00	535.00	1.35
529.90	0.00	535.10	1.83
530.00	0.00	535.20	3.82
530.10	0.00	535.30	7.08
530.20	0.00	535.40	11.18
530.30	0.00	535.50	15.97
530.40	0.00	535.60	21.32
530.50	0.00	535.70	27.20
530.60	0.00	535.80	33.58
530.70	0.00	535.90	40.41
530.80	0.00	536.00	47.66
530.90	0.00	536.10	55.23
531.00	0.00	536.20	63.16
531.10	0.00	536.30	71.45
531.20	0.00	536.40	78.10
531.30	0.00	536.50	81.57
531.40	0.00		
531.50	0.00		
531.60	0.00		
531.70	0.00		
531.80	0.00		
531.90	0.00		
532.00	0.00		
532.10	0.00		
532.20	0.00		
532.30	0.00		
532.40	0.00		
532.50	0.00		
532.60	0.00		

2 yr detention

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Creative Corner 2 Year storm

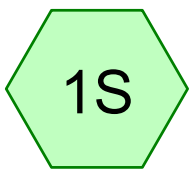
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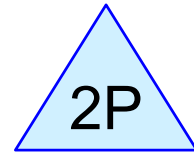
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Stage-Area-Storage for Pond 2P: Detention basin

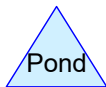
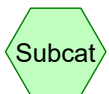
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
527.50	210	0	532.70	1,432	1,986
527.60	210	8	532.80	1,476	2,131
527.70	210	17	532.90	1,520	2,281
527.80	210	25	533.00	1,564	2,435
527.90	210	34	533.10	1,614	2,594
528.00	210	42	533.20	1,663	2,758
528.10	210	50	533.30	1,713	2,927
528.20	210	59	533.40	1,762	3,101
528.30	210	67	533.50	1,812	3,279
528.40	210	76	533.60	1,862	3,463
528.50	210	84	533.70	1,911	3,652
528.60	210	92	533.80	1,961	3,845
528.70	210	101	533.90	2,010	4,044
528.80	210	109	534.00	2,060	4,247
528.90	210	118	534.10	2,115	4,456
529.00	210	126	534.20	2,170	4,670
529.10	210	134	534.30	2,226	4,890
529.20	210	143	534.40	2,281	5,115
529.30	210	151	534.50	2,336	5,346
529.40	210	160	534.60	2,391	5,583
529.50	210	168	534.70	2,446	5,824
529.60	210	176	534.80	2,502	6,072
529.70	210	185	534.90	2,557	6,325
529.80	210	193	535.00	2,612	6,583
529.90	210	202	535.10	2,673	6,847
530.00	210	210	535.20	2,734	7,118
530.10	210	218	535.30	2,795	7,394
530.20	210	227	535.40	2,856	7,677
530.30	210	235	535.50	2,917	7,965
530.40	210	244	535.60	2,977	8,260
530.50	210	252	535.70	3,038	8,561
530.60	210	260	535.80	3,099	8,868
530.70	210	269	535.90	3,160	9,181
530.80	210	277	536.00	3,221	9,500
530.90	210	286	536.10	3,377	9,830
531.00	210	294	536.20	3,533	10,175
531.10	353	322	536.30	3,688	10,536
531.20	496	365	536.40	3,844	10,913
531.30	640	421	536.50	4,000	11,305
531.40	783	493			
531.50	926	578			
531.60	966	673			
531.70	1,006	771			
531.80	1,045	874			
531.90	1,085	980			
532.00	1,125	1,091			
532.10	1,169	1,205			
532.20	1,213	1,325			
532.30	1,257	1,448			
532.40	1,301	1,576			
532.50	1,345	1,708			
532.60	1,388	1,845			



To Basin



Detention basin



15 yr detention

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Area Listing (all nodes)

Area (acres)	C	Description (subcatchment-numbers)
1.280	0.98	(1S)
1.280	0.98	TOTAL AREA

15 yr detention

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Creative Corner 15 Year storm

Rainfall Duration=20 min, Inten=2.88 in/hr

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Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc

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

Subcatchment 1S: To Basin

Runoff Area=1.280 ac 100.00% Impervious Runoff Depth=0.96"

Tc=0.0 min C=0.98 Runoff=3.64 cfs 0.102 af

Pond 2P: Detention basin

Peak Elev=534.10' Storage=4,458 cf Inflow=3.64 cfs 0.102 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 1.280 ac Runoff Volume = 0.102 af Average Runoff Depth = 0.96"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.280 ac

15 yr detention

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Creative Corner 15 Year storm

Rainfall Duration=20 min, Inten=2.88 in/hr

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Summary for Subcatchment 1S: To Basin

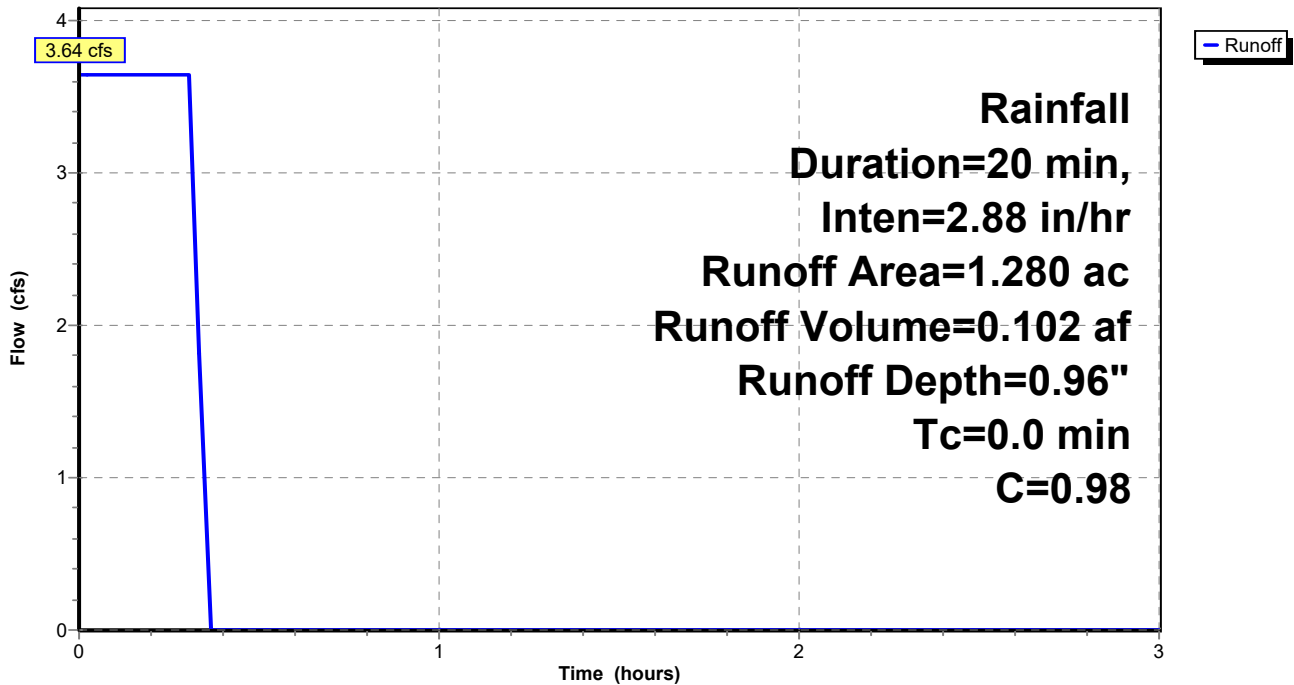
Runoff = 3.64 cfs @ 0.00 hrs, Volume= 0.102 af, Depth= 0.96"

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Rainfall Duration=20 min, Inten=2.88 in/hr

Area (ac)	C	Description
1.280	0.98	
1.280		100.00% Impervious Area

Subcatchment 1S: To Basin

Hydrograph



15 yr detention

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Creative Corner 15 Year storm

Rainfall Duration=20 min, Inten=2.88 in/hr

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Hydrograph for Subcatchment 1S: To Basin

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	3.64	1.04	0.00	2.08	0.00
0.02	3.64	1.06	0.00	2.10	0.00
0.04	3.64	1.08	0.00	2.12	0.00
0.06	3.64	1.10	0.00	2.14	0.00
0.08	3.64	1.12	0.00	2.16	0.00
0.10	3.64	1.14	0.00	2.18	0.00
0.12	3.64	1.16	0.00	2.20	0.00
0.14	3.64	1.18	0.00	2.22	0.00
0.16	3.64	1.20	0.00	2.24	0.00
0.18	3.64	1.22	0.00	2.26	0.00
0.20	3.64	1.24	0.00	2.28	0.00
0.22	3.64	1.26	0.00	2.30	0.00
0.24	3.64	1.28	0.00	2.32	0.00
0.26	3.64	1.30	0.00	2.34	0.00
0.28	3.64	1.32	0.00	2.36	0.00
0.30	3.64	1.34	0.00	2.38	0.00
0.32	3.64	1.36	0.00	2.40	0.00
0.34	0.00	1.38	0.00	2.42	0.00
0.36	0.00	1.40	0.00	2.44	0.00
0.38	0.00	1.42	0.00	2.46	0.00
0.40	0.00	1.44	0.00	2.48	0.00
0.42	0.00	1.46	0.00	2.50	0.00
0.44	0.00	1.48	0.00	2.52	0.00
0.46	0.00	1.50	0.00	2.54	0.00
0.48	0.00	1.52	0.00	2.56	0.00
0.50	0.00	1.54	0.00	2.58	0.00
0.52	0.00	1.56	0.00	2.60	0.00
0.54	0.00	1.58	0.00	2.62	0.00
0.56	0.00	1.60	0.00	2.64	0.00
0.58	0.00	1.62	0.00	2.66	0.00
0.60	0.00	1.64	0.00	2.68	0.00
0.62	0.00	1.66	0.00	2.70	0.00
0.64	0.00	1.68	0.00	2.72	0.00
0.66	0.00	1.70	0.00	2.74	0.00
0.68	0.00	1.72	0.00	2.76	0.00
0.70	0.00	1.74	0.00	2.78	0.00
0.72	0.00	1.76	0.00	2.80	0.00
0.74	0.00	1.78	0.00	2.82	0.00
0.76	0.00	1.80	0.00	2.84	0.00
0.78	0.00	1.82	0.00	2.86	0.00
0.80	0.00	1.84	0.00	2.88	0.00
0.82	0.00	1.86	0.00	2.90	0.00
0.84	0.00	1.88	0.00	2.92	0.00
0.86	0.00	1.90	0.00	2.94	0.00
0.88	0.00	1.92	0.00	2.96	0.00
0.90	0.00	1.94	0.00	2.98	0.00
0.92	0.00	1.96	0.00	3.00	0.00
0.94	0.00	1.98	0.00		
0.96	0.00	2.00	0.00		
0.98	0.00	2.02	0.00		
1.00	0.00	2.04	0.00		
1.02	0.00	2.06	0.00		

15 yr detention

Prepared by E. Krussel, LLC

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Creative Corner 15 Year storm
Rainfall Duration=20 min, Inten=2.88 in/hr

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Summary for Pond 2P: Detention basin

Inflow Area = 1.280 ac, 100.00% Impervious, Inflow Depth = 0.96"
 Inflow = 3.64 cfs @ 0.00 hrs, Volume= 0.102 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 534.10' @ 0.34 hrs Surf.Area= 2,116 sf Storage= 4,458 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	
#1	527.50'	11,305 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
527.50	210	0.0	0	0
531.00	210	40.0	294	294
531.50	926	100.0	284	578
532.00	1,125	100.0	513	1,091
533.00	1,564	100.0	1,345	2,435
534.00	2,060	100.0	1,812	4,247
535.00	2,612	100.0	2,336	6,583
536.00	3,221	100.0	2,917	9,500
536.50	4,000	100.0	1,805	11,305

Device	Routing	Invert	Outlet Devices
#1	Primary	535.10'	36.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	534.50'	1.3' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=528.28' (Free Discharge)

- 1=Orifice/Grate (Controls 0.00 cfs)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

15 yr detention

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Creative Corner 15 Year storm

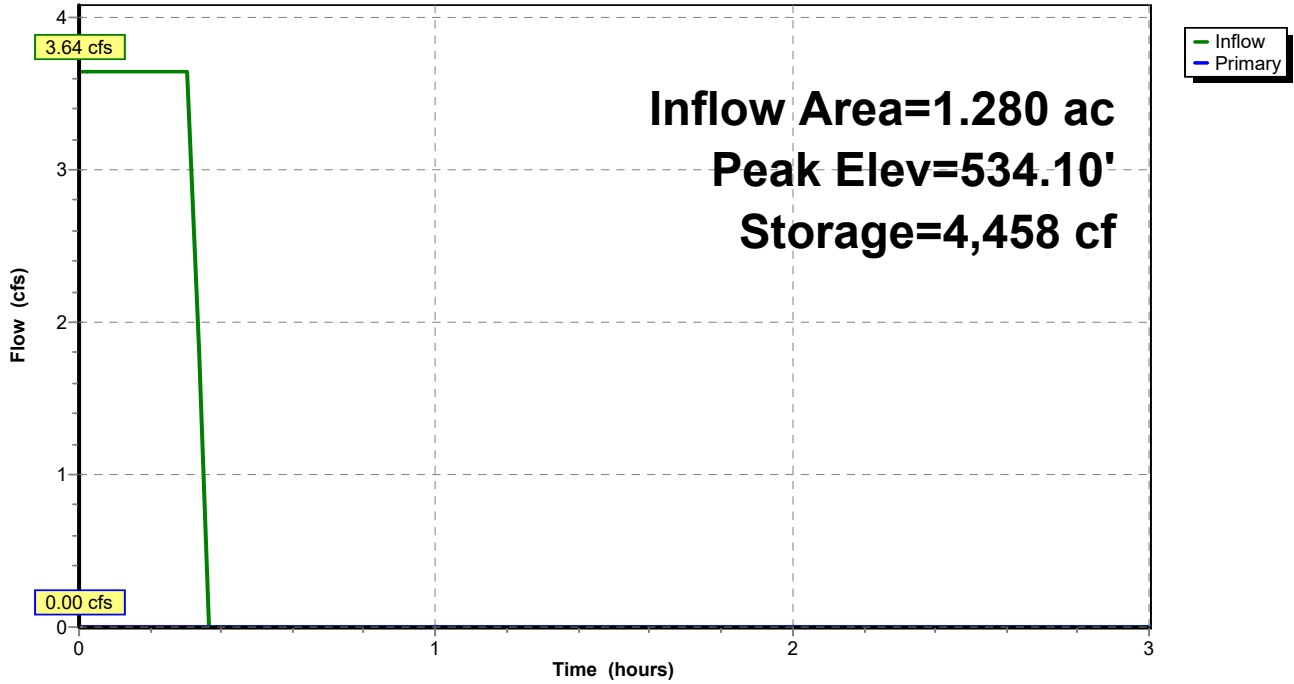
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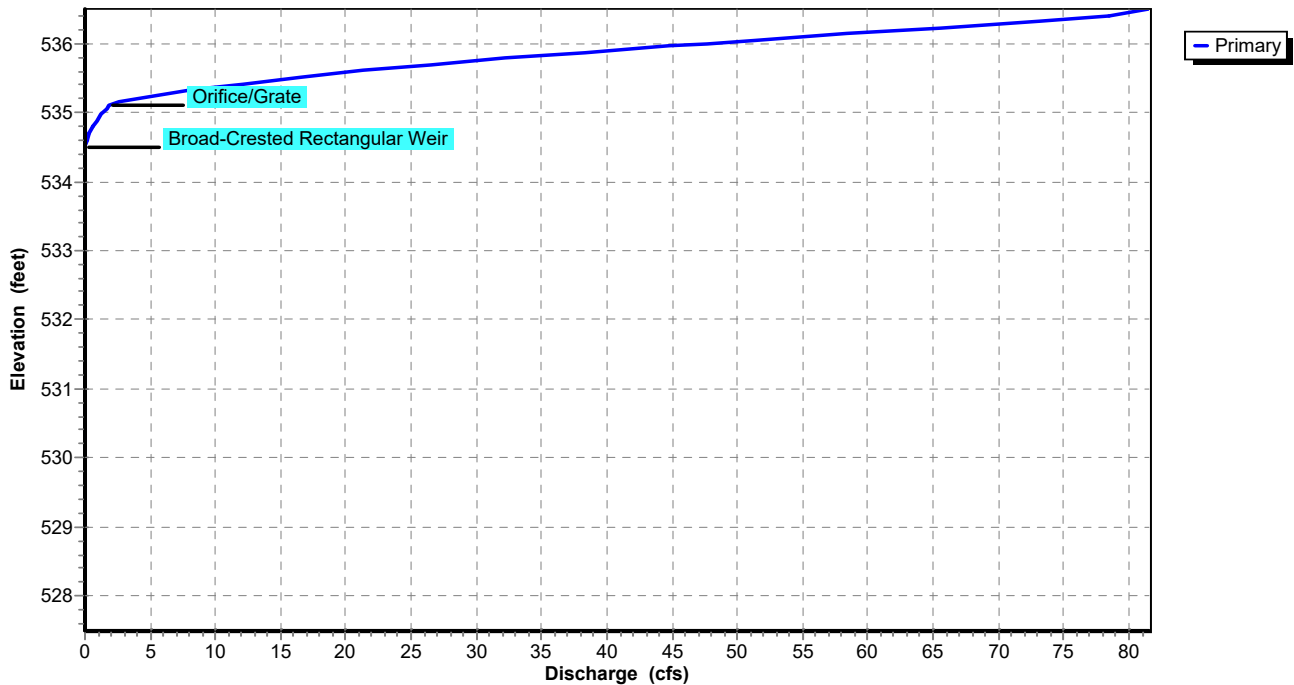
Pond 2P: Detention basin

Hydrograph



Pond 2P: Detention basin

Stage-Discharge



15 yr detention

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Creative Corner 15 Year storm

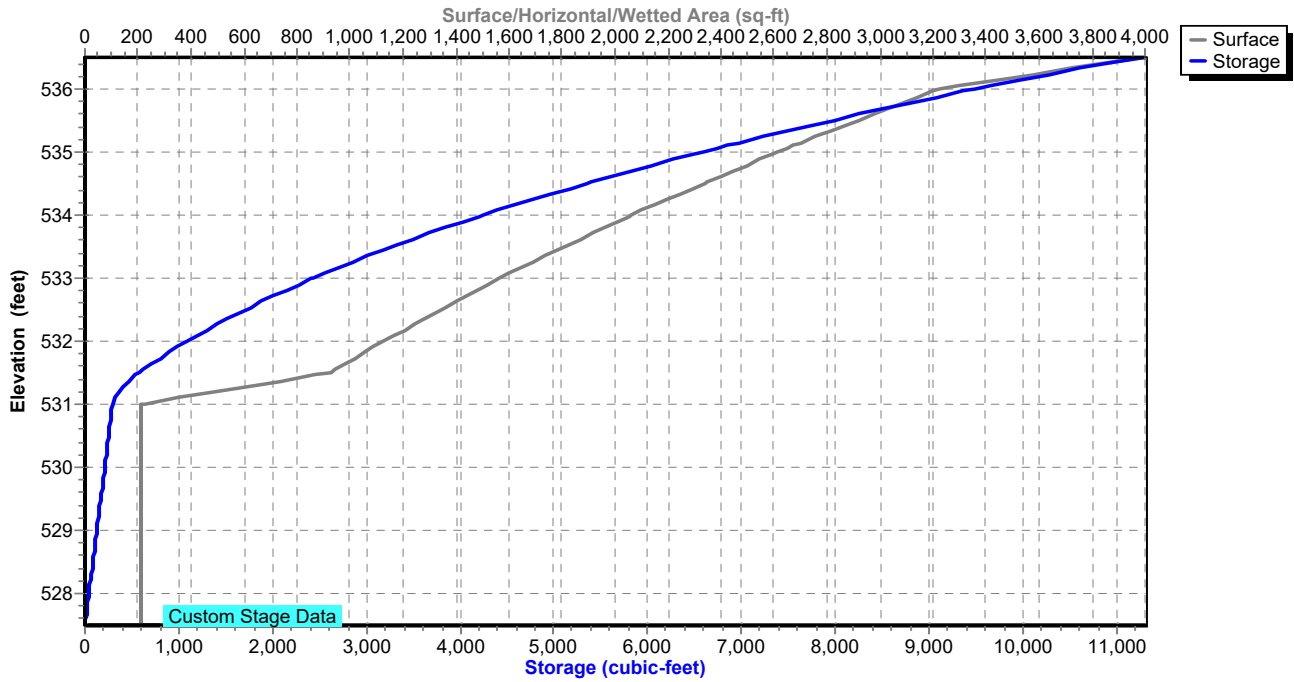
Rainfall Duration=20 min, Inten=2.88 in/hr

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Pond 2P: Detention basin

Stage-Area-Storage



15 yr detention

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Rainfall Duration=20 min, Inten=2.88 in/hr

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Hydrograph for Pond 2P: Detention basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	3.64	66	528.28	0.00
0.02	3.64	328	531.11	0.00
0.04	3.64	590	531.51	0.00
0.06	3.64	852	531.78	0.00
0.08	3.64	1,115	532.02	0.00
0.10	3.64	1,377	532.24	0.00
0.12	3.64	1,639	532.45	0.00
0.14	3.64	1,902	532.64	0.00
0.16	3.64	2,164	532.82	0.00
0.18	3.64	2,426	532.99	0.00
0.20	3.64	2,688	533.16	0.00
0.22	3.64	2,951	533.31	0.00
0.24	3.64	3,213	533.46	0.00
0.26	3.64	3,475	533.61	0.00
0.28	3.64	3,737	533.74	0.00
0.30	3.64	4,000	533.88	0.00
0.32	3.64	4,262	534.01	0.00
0.34	0.00	4,459	534.10	0.00
0.36	0.00	4,459	534.10	0.00
0.38	0.00	4,459	534.10	0.00
0.40	0.00	4,459	534.10	0.00
0.42	0.00	4,459	534.10	0.00
0.44	0.00	4,459	534.10	0.00
0.46	0.00	4,459	534.10	0.00
0.48	0.00	4,459	534.10	0.00
0.50	0.00	4,459	534.10	0.00
0.52	0.00	4,459	534.10	0.00
0.54	0.00	4,459	534.10	0.00
0.56	0.00	4,459	534.10	0.00
0.58	0.00	4,459	534.10	0.00
0.60	0.00	4,459	534.10	0.00
0.62	0.00	4,459	534.10	0.00
0.64	0.00	4,459	534.10	0.00
0.66	0.00	4,459	534.10	0.00
0.68	0.00	4,459	534.10	0.00
0.70	0.00	4,459	534.10	0.00
0.72	0.00	4,459	534.10	0.00
0.74	0.00	4,459	534.10	0.00
0.76	0.00	4,459	534.10	0.00
0.78	0.00	4,459	534.10	0.00
0.80	0.00	4,459	534.10	0.00
0.82	0.00	4,459	534.10	0.00
0.84	0.00	4,459	534.10	0.00
0.86	0.00	4,459	534.10	0.00
0.88	0.00	4,459	534.10	0.00
0.90	0.00	4,459	534.10	0.00
0.92	0.00	4,459	534.10	0.00
0.94	0.00	4,459	534.10	0.00
0.96	0.00	4,459	534.10	0.00
0.98	0.00	4,459	534.10	0.00
1.00	0.00	4,459	534.10	0.00
1.02	0.00	4,459	534.10	0.00

15 yr detention

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Rainfall Duration=20 min, Inten=2.88 in/hr

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.04	0.00	4,459	534.10	0.00
1.06	0.00	4,459	534.10	0.00
1.08	0.00	4,459	534.10	0.00
1.10	0.00	4,459	534.10	0.00
1.12	0.00	4,459	534.10	0.00
1.14	0.00	4,459	534.10	0.00
1.16	0.00	4,459	534.10	0.00
1.18	0.00	4,459	534.10	0.00
1.20	0.00	4,459	534.10	0.00
1.22	0.00	4,459	534.10	0.00
1.24	0.00	4,459	534.10	0.00
1.26	0.00	4,459	534.10	0.00
1.28	0.00	4,459	534.10	0.00
1.30	0.00	4,459	534.10	0.00
1.32	0.00	4,459	534.10	0.00
1.34	0.00	4,459	534.10	0.00
1.36	0.00	4,459	534.10	0.00
1.38	0.00	4,459	534.10	0.00
1.40	0.00	4,459	534.10	0.00
1.42	0.00	4,459	534.10	0.00
1.44	0.00	4,459	534.10	0.00
1.46	0.00	4,459	534.10	0.00
1.48	0.00	4,459	534.10	0.00
1.50	0.00	4,459	534.10	0.00
1.52	0.00	4,459	534.10	0.00
1.54	0.00	4,459	534.10	0.00
1.56	0.00	4,459	534.10	0.00
1.58	0.00	4,459	534.10	0.00
1.60	0.00	4,459	534.10	0.00
1.62	0.00	4,459	534.10	0.00
1.64	0.00	4,459	534.10	0.00
1.66	0.00	4,459	534.10	0.00
1.68	0.00	4,459	534.10	0.00
1.70	0.00	4,459	534.10	0.00
1.72	0.00	4,459	534.10	0.00
1.74	0.00	4,459	534.10	0.00
1.76	0.00	4,459	534.10	0.00
1.78	0.00	4,459	534.10	0.00
1.80	0.00	4,459	534.10	0.00
1.82	0.00	4,459	534.10	0.00
1.84	0.00	4,459	534.10	0.00
1.86	0.00	4,459	534.10	0.00
1.88	0.00	4,459	534.10	0.00
1.90	0.00	4,459	534.10	0.00
1.92	0.00	4,459	534.10	0.00
1.94	0.00	4,459	534.10	0.00
1.96	0.00	4,459	534.10	0.00
1.98	0.00	4,459	534.10	0.00
2.00	0.00	4,459	534.10	0.00
2.02	0.00	4,459	534.10	0.00
2.04	0.00	4,459	534.10	0.00
2.06	0.00	4,459	534.10	0.00

15 yr detention

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
2.08	0.00	4,459	534.10	0.00
2.10	0.00	4,459	534.10	0.00
2.12	0.00	4,459	534.10	0.00
2.14	0.00	4,459	534.10	0.00
2.16	0.00	4,459	534.10	0.00
2.18	0.00	4,459	534.10	0.00
2.20	0.00	4,459	534.10	0.00
2.22	0.00	4,459	534.10	0.00
2.24	0.00	4,459	534.10	0.00
2.26	0.00	4,459	534.10	0.00
2.28	0.00	4,459	534.10	0.00
2.30	0.00	4,459	534.10	0.00
2.32	0.00	4,459	534.10	0.00
2.34	0.00	4,459	534.10	0.00
2.36	0.00	4,459	534.10	0.00
2.38	0.00	4,459	534.10	0.00
2.40	0.00	4,459	534.10	0.00
2.42	0.00	4,459	534.10	0.00
2.44	0.00	4,459	534.10	0.00
2.46	0.00	4,459	534.10	0.00
2.48	0.00	4,459	534.10	0.00
2.50	0.00	4,459	534.10	0.00
2.52	0.00	4,459	534.10	0.00
2.54	0.00	4,459	534.10	0.00
2.56	0.00	4,459	534.10	0.00
2.58	0.00	4,459	534.10	0.00
2.60	0.00	4,459	534.10	0.00
2.62	0.00	4,459	534.10	0.00
2.64	0.00	4,459	534.10	0.00
2.66	0.00	4,459	534.10	0.00
2.68	0.00	4,459	534.10	0.00
2.70	0.00	4,459	534.10	0.00
2.72	0.00	4,459	534.10	0.00
2.74	0.00	4,459	534.10	0.00
2.76	0.00	4,459	534.10	0.00
2.78	0.00	4,459	534.10	0.00
2.80	0.00	4,459	534.10	0.00
2.82	0.00	4,459	534.10	0.00
2.84	0.00	4,459	534.10	0.00
2.86	0.00	4,459	534.10	0.00
2.88	0.00	4,459	534.10	0.00
2.90	0.00	4,459	534.10	0.00
2.92	0.00	4,459	534.10	0.00
2.94	0.00	4,459	534.10	0.00
2.96	0.00	4,459	534.10	0.00
2.98	0.00	4,459	534.10	0.00
3.00	0.00	4,459	534.10	0.00

15 yr detention

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Rainfall Duration=20 min, Inten=2.88 in/hr

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Stage-Discharge for Pond 2P: Detention basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
527.50	0.00	532.70	0.00
527.60	0.00	532.80	0.00
527.70	0.00	532.90	0.00
527.80	0.00	533.00	0.00
527.90	0.00	533.10	0.00
528.00	0.00	533.20	0.00
528.10	0.00	533.30	0.00
528.20	0.00	533.40	0.00
528.30	0.00	533.50	0.00
528.40	0.00	533.60	0.00
528.50	0.00	533.70	0.00
528.60	0.00	533.80	0.00
528.70	0.00	533.90	0.00
528.80	0.00	534.00	0.00
528.90	0.00	534.10	0.00
529.00	0.00	534.20	0.00
529.10	0.00	534.30	0.00
529.20	0.00	534.40	0.00
529.30	0.00	534.50	0.00
529.40	0.00	534.60	0.12
529.50	0.00	534.70	0.34
529.60	0.00	534.80	0.62
529.70	0.00	534.90	0.96
529.80	0.00	535.00	1.35
529.90	0.00	535.10	1.83
530.00	0.00	535.20	3.82
530.10	0.00	535.30	7.08
530.20	0.00	535.40	11.18
530.30	0.00	535.50	15.97
530.40	0.00	535.60	21.32
530.50	0.00	535.70	27.20
530.60	0.00	535.80	33.58
530.70	0.00	535.90	40.41
530.80	0.00	536.00	47.66
530.90	0.00	536.10	55.23
531.00	0.00	536.20	63.16
531.10	0.00	536.30	71.45
531.20	0.00	536.40	78.10
531.30	0.00	536.50	81.57
531.40	0.00		
531.50	0.00		
531.60	0.00		
531.70	0.00		
531.80	0.00		
531.90	0.00		
532.00	0.00		
532.10	0.00		
532.20	0.00		
532.30	0.00		
532.40	0.00		
532.50	0.00		
532.60	0.00		

15 yr detention

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Creative Corner 15 Year storm

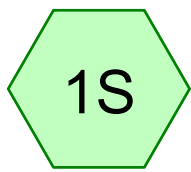
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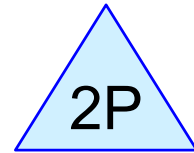
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Stage-Area-Storage for Pond 2P: Detention basin

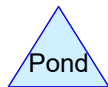
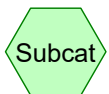
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
527.50	210	0	532.70	1,432	1,986
527.60	210	8	532.80	1,476	2,131
527.70	210	17	532.90	1,520	2,281
527.80	210	25	533.00	1,564	2,435
527.90	210	34	533.10	1,614	2,594
528.00	210	42	533.20	1,663	2,758
528.10	210	50	533.30	1,713	2,927
528.20	210	59	533.40	1,762	3,101
528.30	210	67	533.50	1,812	3,279
528.40	210	76	533.60	1,862	3,463
528.50	210	84	533.70	1,911	3,652
528.60	210	92	533.80	1,961	3,845
528.70	210	101	533.90	2,010	4,044
528.80	210	109	534.00	2,060	4,247
528.90	210	118	534.10	2,115	4,456
529.00	210	126	534.20	2,170	4,670
529.10	210	134	534.30	2,226	4,890
529.20	210	143	534.40	2,281	5,115
529.30	210	151	534.50	2,336	5,346
529.40	210	160	534.60	2,391	5,583
529.50	210	168	534.70	2,446	5,824
529.60	210	176	534.80	2,502	6,072
529.70	210	185	534.90	2,557	6,325
529.80	210	193	535.00	2,612	6,583
529.90	210	202	535.10	2,673	6,847
530.00	210	210	535.20	2,734	7,118
530.10	210	218	535.30	2,795	7,394
530.20	210	227	535.40	2,856	7,677
530.30	210	235	535.50	2,917	7,965
530.40	210	244	535.60	2,977	8,260
530.50	210	252	535.70	3,038	8,561
530.60	210	260	535.80	3,099	8,868
530.70	210	269	535.90	3,160	9,181
530.80	210	277	536.00	3,221	9,500
530.90	210	286	536.10	3,377	9,830
531.00	210	294	536.20	3,533	10,175
531.10	353	322	536.30	3,688	10,536
531.20	496	365	536.40	3,844	10,913
531.30	640	421	536.50	4,000	11,305
531.40	783	493			
531.50	926	578			
531.60	966	673			
531.70	1,006	771			
531.80	1,045	874			
531.90	1,085	980			
532.00	1,125	1,091			
532.10	1,169	1,205			
532.20	1,213	1,325			
532.30	1,257	1,448			
532.40	1,301	1,576			
532.50	1,345	1,708			
532.60	1,388	1,845			



To Basin



Detention basin



25 yr detention

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Area Listing (all nodes)

Area (acres)	C	Description (subcatchment-numbers)
1.280	0.98	(1S)
1.280	0.98	TOTAL AREA

25 yr detention

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Rainfall Duration=20 min, Inten=3.54 in/hr

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Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc

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

Subcatchment 1S: To Basin

Runoff Area=1.280 ac 100.00% Impervious Runoff Depth=1.18"

Tc=0.0 min C=0.98 Runoff=4.48 cfs 0.126 af

Pond 2P: Detention basin

Peak Elev=534.56' Storage=5,478 cf Inflow=4.48 cfs 0.126 af

Outflow=0.06 cfs 0.003 af

Total Runoff Area = 1.280 ac Runoff Volume = 0.126 af Average Runoff Depth = 1.18"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.280 ac

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Rainfall Duration=20 min, Inten=3.54 in/hr

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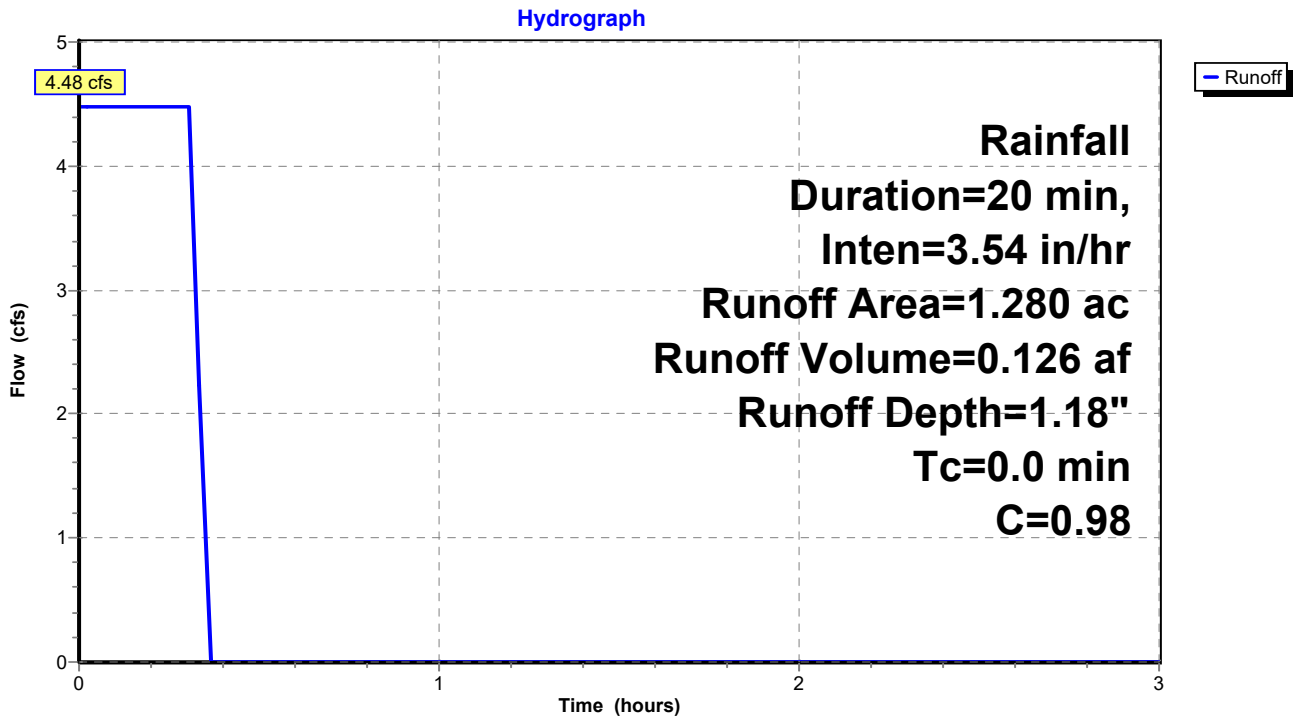
Summary for Subcatchment 1S: To Basin

Runoff = 4.48 cfs @ 0.00 hrs, Volume= 0.126 af, Depth= 1.18"

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Rainfall Duration=20 min, Inten=3.54 in/hr

Area (ac)	C	Description
1.280	0.98	
1.280		100.00% Impervious Area

Subcatchment 1S: To Basin



25 yr detention

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Rainfall Duration=20 min, Inten=3.54 in/hr

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Hydrograph for Subcatchment 1S: To Basin

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	4.48	1.04	0.00	2.08	0.00
0.02	4.48	1.06	0.00	2.10	0.00
0.04	4.48	1.08	0.00	2.12	0.00
0.06	4.48	1.10	0.00	2.14	0.00
0.08	4.48	1.12	0.00	2.16	0.00
0.10	4.48	1.14	0.00	2.18	0.00
0.12	4.48	1.16	0.00	2.20	0.00
0.14	4.48	1.18	0.00	2.22	0.00
0.16	4.48	1.20	0.00	2.24	0.00
0.18	4.48	1.22	0.00	2.26	0.00
0.20	4.48	1.24	0.00	2.28	0.00
0.22	4.48	1.26	0.00	2.30	0.00
0.24	4.48	1.28	0.00	2.32	0.00
0.26	4.48	1.30	0.00	2.34	0.00
0.28	4.48	1.32	0.00	2.36	0.00
0.30	4.48	1.34	0.00	2.38	0.00
0.32	4.48	1.36	0.00	2.40	0.00
0.34	0.00	1.38	0.00	2.42	0.00
0.36	0.00	1.40	0.00	2.44	0.00
0.38	0.00	1.42	0.00	2.46	0.00
0.40	0.00	1.44	0.00	2.48	0.00
0.42	0.00	1.46	0.00	2.50	0.00
0.44	0.00	1.48	0.00	2.52	0.00
0.46	0.00	1.50	0.00	2.54	0.00
0.48	0.00	1.52	0.00	2.56	0.00
0.50	0.00	1.54	0.00	2.58	0.00
0.52	0.00	1.56	0.00	2.60	0.00
0.54	0.00	1.58	0.00	2.62	0.00
0.56	0.00	1.60	0.00	2.64	0.00
0.58	0.00	1.62	0.00	2.66	0.00
0.60	0.00	1.64	0.00	2.68	0.00
0.62	0.00	1.66	0.00	2.70	0.00
0.64	0.00	1.68	0.00	2.72	0.00
0.66	0.00	1.70	0.00	2.74	0.00
0.68	0.00	1.72	0.00	2.76	0.00
0.70	0.00	1.74	0.00	2.78	0.00
0.72	0.00	1.76	0.00	2.80	0.00
0.74	0.00	1.78	0.00	2.82	0.00
0.76	0.00	1.80	0.00	2.84	0.00
0.78	0.00	1.82	0.00	2.86	0.00
0.80	0.00	1.84	0.00	2.88	0.00
0.82	0.00	1.86	0.00	2.90	0.00
0.84	0.00	1.88	0.00	2.92	0.00
0.86	0.00	1.90	0.00	2.94	0.00
0.88	0.00	1.92	0.00	2.96	0.00
0.90	0.00	1.94	0.00	2.98	0.00
0.92	0.00	1.96	0.00	3.00	0.00
0.94	0.00	1.98	0.00		
0.96	0.00	2.00	0.00		
0.98	0.00	2.02	0.00		
1.00	0.00	2.04	0.00		
1.02	0.00	2.06	0.00		

25 yr detention

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Summary for Pond 2P: Detention basin

Inflow Area = 1.280 ac, 100.00% Impervious, Inflow Depth = 1.18"
 Inflow = 4.48 cfs @ 0.00 hrs, Volume= 0.126 af
 Outflow = 0.06 cfs @ 0.34 hrs, Volume= 0.003 af, Atten= 99%, Lag= 20.4 min
 Primary = 0.06 cfs @ 0.34 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 534.56' @ 0.34 hrs Surf.Area= 2,367 sf Storage= 5,478 cf

Plug-Flow detention time= 104.0 min calculated for 0.001 af (1% of inflow)
 Center-of-Mass det. time= 49.5 min (59.4 - 9.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	527.50'	11,305 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
527.50	210	0.0	0	0
531.00	210	40.0	294	294
531.50	926	100.0	284	578
532.00	1,125	100.0	513	1,091
533.00	1,564	100.0	1,345	2,435
534.00	2,060	100.0	1,812	4,247
535.00	2,612	100.0	2,336	6,583
536.00	3,221	100.0	2,917	9,500
536.50	4,000	100.0	1,805	11,305

Device	Routing	Invert	Outlet Devices
#1	Primary	535.10'	36.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	534.50'	1.3' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.05 cfs @ 0.34 hrs HW=534.56' (Free Discharge)

1=Orifice/Grate (Controls 0.00 cfs)

2=Broad-Crested Rectangular Weir (Weir Controls 0.05 cfs @ 0.69 fps)

25 yr detention

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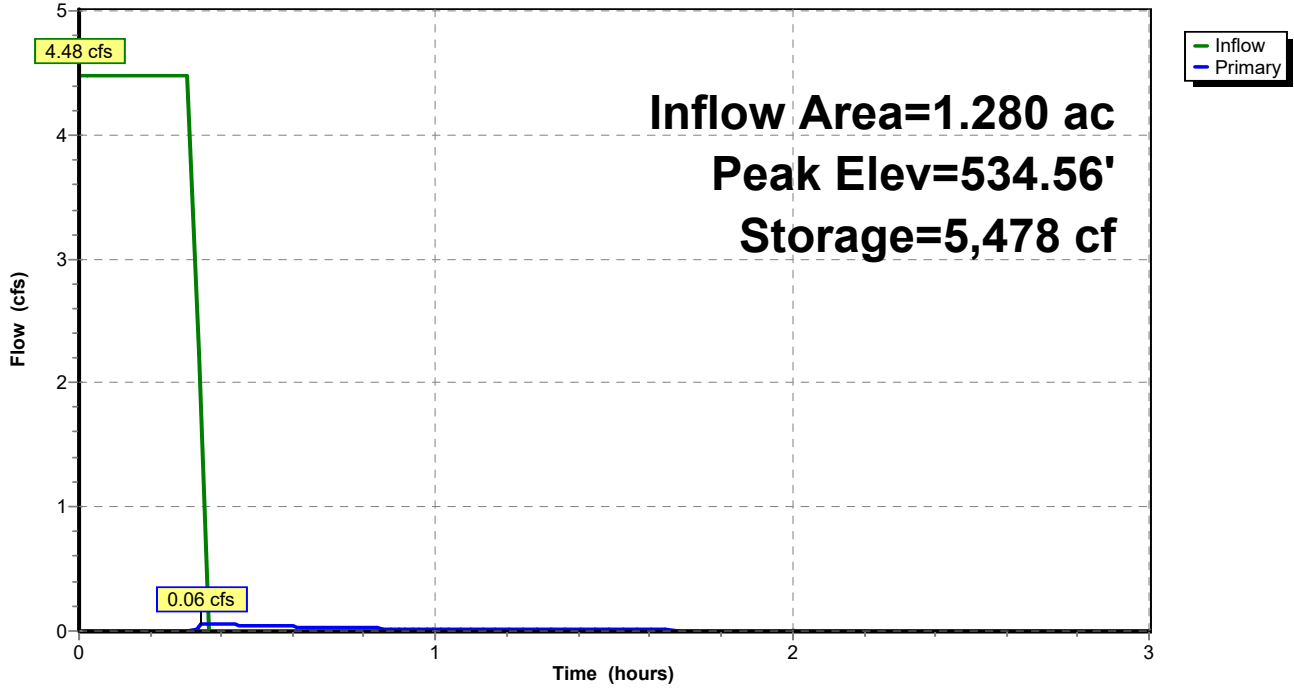
Rainfall Duration=20 min, Inten=3.54 in/hr

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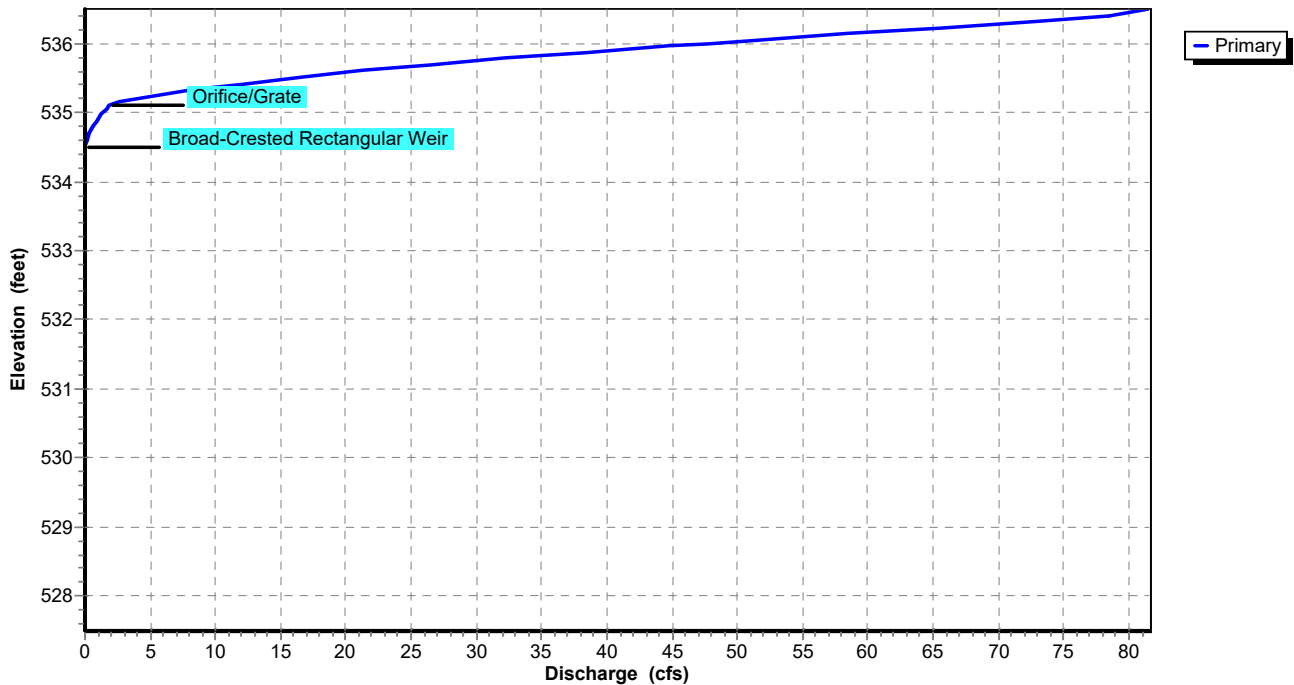
Pond 2P: Detention basin

Hydrograph



Pond 2P: Detention basin

Stage-Discharge



25 yr detention

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Creative Corner 25 Year storm

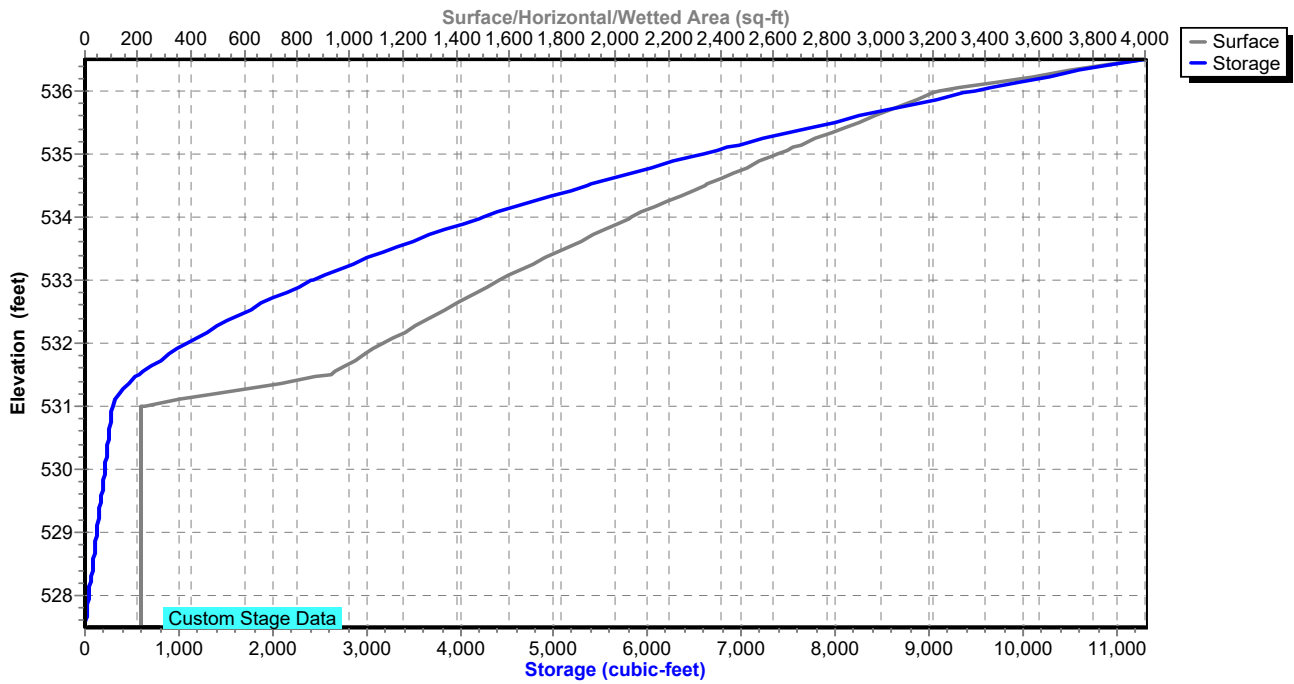
Rainfall Duration=20 min, Inten=3.54 in/hr

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Pond 2P: Detention basin

Stage-Area-Storage



25 yr detention

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Creative Corner 25 Year storm

Rainfall Duration=20 min, Inten=3.54 in/hr

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Hydrograph for Pond 2P: Detention basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	4.48	81	528.46	0.00
0.02	4.48	403	531.27	0.00
0.04	4.48	725	531.65	0.00
0.06	4.48	1,048	531.96	0.00
0.08	4.48	1,370	532.24	0.00
0.10	4.48	1,693	532.49	0.00
0.12	4.48	2,015	532.72	0.00
0.14	4.48	2,337	532.94	0.00
0.16	4.48	2,660	533.14	0.00
0.18	4.48	2,982	533.33	0.00
0.20	4.48	3,304	533.51	0.00
0.22	4.48	3,627	533.69	0.00
0.24	4.48	3,949	533.85	0.00
0.26	4.48	4,272	534.01	0.00
0.28	4.48	4,594	534.16	0.00
0.30	4.48	4,916	534.31	0.00
0.32	4.48	5,239	534.45	0.00
0.34	0.00	5,479	534.56	0.06
0.36	0.00	5,475	534.55	0.06
0.38	0.00	5,470	534.55	0.06
0.40	0.00	5,466	534.55	0.05
0.42	0.00	5,462	534.55	0.05
0.44	0.00	5,459	534.55	0.05
0.46	0.00	5,455	534.55	0.05
0.48	0.00	5,452	534.54	0.05
0.50	0.00	5,449	534.54	0.04
0.52	0.00	5,446	534.54	0.04
0.54	0.00	5,443	534.54	0.04
0.56	0.00	5,440	534.54	0.04
0.58	0.00	5,437	534.54	0.04
0.60	0.00	5,434	534.54	0.04
0.62	0.00	5,432	534.54	0.03
0.64	0.00	5,430	534.54	0.03
0.66	0.00	5,427	534.53	0.03
0.68	0.00	5,425	534.53	0.03
0.70	0.00	5,423	534.53	0.03
0.72	0.00	5,421	534.53	0.03
0.74	0.00	5,419	534.53	0.03
0.76	0.00	5,417	534.53	0.03
0.78	0.00	5,415	534.53	0.02
0.80	0.00	5,414	534.53	0.02
0.82	0.00	5,412	534.53	0.02
0.84	0.00	5,410	534.53	0.02
0.86	0.00	5,409	534.53	0.02
0.88	0.00	5,408	534.53	0.02
0.90	0.00	5,406	534.53	0.02
0.92	0.00	5,405	534.52	0.02
0.94	0.00	5,404	534.52	0.02
0.96	0.00	5,402	534.52	0.02
0.98	0.00	5,401	534.52	0.02
1.00	0.00	5,400	534.52	0.01
1.02	0.00	5,399	534.52	0.01

25 yr detention

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Creative Corner 25 Year storm

Rainfall Duration=20 min, Inten=3.54 in/hr

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.04	0.00	5,398	534.52	0.01
1.06	0.00	5,397	534.52	0.01
1.08	0.00	5,396	534.52	0.01
1.10	0.00	5,395	534.52	0.01
1.12	0.00	5,394	534.52	0.01
1.14	0.00	5,394	534.52	0.01
1.16	0.00	5,393	534.52	0.01
1.18	0.00	5,392	534.52	0.01
1.20	0.00	5,391	534.52	0.01
1.22	0.00	5,391	534.52	0.01
1.24	0.00	5,390	534.52	0.01
1.26	0.00	5,389	534.52	0.01
1.28	0.00	5,388	534.52	0.01
1.30	0.00	5,388	534.52	0.01
1.32	0.00	5,387	534.52	0.01
1.34	0.00	5,386	534.52	0.01
1.36	0.00	5,386	534.52	0.01
1.38	0.00	5,385	534.52	0.01
1.40	0.00	5,384	534.52	0.01
1.42	0.00	5,384	534.52	0.01
1.44	0.00	5,383	534.52	0.01
1.46	0.00	5,383	534.52	0.01
1.48	0.00	5,382	534.52	0.01
1.50	0.00	5,381	534.52	0.01
1.52	0.00	5,381	534.51	0.01
1.54	0.00	5,380	534.51	0.01
1.56	0.00	5,380	534.51	0.01
1.58	0.00	5,379	534.51	0.01
1.60	0.00	5,379	534.51	0.01
1.62	0.00	5,378	534.51	0.01
1.64	0.00	5,378	534.51	0.01
1.66	0.00	5,377	534.51	0.01
1.68	0.00	5,377	534.51	0.01
1.70	0.00	5,376	534.51	0.01
1.72	0.00	5,376	534.51	0.01
1.74	0.00	5,375	534.51	0.01
1.76	0.00	5,375	534.51	0.01
1.78	0.00	5,374	534.51	0.01
1.80	0.00	5,374	534.51	0.01
1.82	0.00	5,373	534.51	0.01
1.84	0.00	5,373	534.51	0.01
1.86	0.00	5,372	534.51	0.01
1.88	0.00	5,372	534.51	0.01
1.90	0.00	5,372	534.51	0.01
1.92	0.00	5,371	534.51	0.01
1.94	0.00	5,371	534.51	0.01
1.96	0.00	5,370	534.51	0.01
1.98	0.00	5,370	534.51	0.01
2.00	0.00	5,370	534.51	0.01
2.02	0.00	5,369	534.51	0.01
2.04	0.00	5,369	534.51	0.01
2.06	0.00	5,368	534.51	0.01

25 yr detention

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Creative Corner 25 Year storm

Rainfall Duration=20 min, Inten=3.54 in/hr

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
2.08	0.00	5,368	534.51	0.01
2.10	0.00	5,368	534.51	0.00
2.12	0.00	5,367	534.51	0.00
2.14	0.00	5,367	534.51	0.00
2.16	0.00	5,367	534.51	0.00
2.18	0.00	5,366	534.51	0.00
2.20	0.00	5,366	534.51	0.00
2.22	0.00	5,366	534.51	0.00
2.24	0.00	5,365	534.51	0.00
2.26	0.00	5,365	534.51	0.00
2.28	0.00	5,365	534.51	0.00
2.30	0.00	5,364	534.51	0.00
2.32	0.00	5,364	534.51	0.00
2.34	0.00	5,364	534.51	0.00
2.36	0.00	5,364	534.51	0.00
2.38	0.00	5,363	534.51	0.00
2.40	0.00	5,363	534.51	0.00
2.42	0.00	5,363	534.51	0.00
2.44	0.00	5,362	534.51	0.00
2.46	0.00	5,362	534.51	0.00
2.48	0.00	5,362	534.51	0.00
2.50	0.00	5,362	534.51	0.00
2.52	0.00	5,361	534.51	0.00
2.54	0.00	5,361	534.51	0.00
2.56	0.00	5,361	534.51	0.00
2.58	0.00	5,361	534.51	0.00
2.60	0.00	5,360	534.51	0.00
2.62	0.00	5,360	534.51	0.00
2.64	0.00	5,360	534.51	0.00
2.66	0.00	5,360	534.51	0.00
2.68	0.00	5,360	534.51	0.00
2.70	0.00	5,359	534.51	0.00
2.72	0.00	5,359	534.51	0.00
2.74	0.00	5,359	534.51	0.00
2.76	0.00	5,359	534.51	0.00
2.78	0.00	5,358	534.51	0.00
2.80	0.00	5,358	534.51	0.00
2.82	0.00	5,358	534.51	0.00
2.84	0.00	5,358	534.50	0.00
2.86	0.00	5,358	534.50	0.00
2.88	0.00	5,358	534.50	0.00
2.90	0.00	5,357	534.50	0.00
2.92	0.00	5,357	534.50	0.00
2.94	0.00	5,357	534.50	0.00
2.96	0.00	5,357	534.50	0.00
2.98	0.00	5,357	534.50	0.00
3.00	0.00	5,356	534.50	0.00

25 yr detention

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Creative Corner 25 Year storm

Rainfall Duration=20 min, Inten=3.54 in/hr

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Stage-Discharge for Pond 2P: Detention basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
527.50	0.00	532.70	0.00
527.60	0.00	532.80	0.00
527.70	0.00	532.90	0.00
527.80	0.00	533.00	0.00
527.90	0.00	533.10	0.00
528.00	0.00	533.20	0.00
528.10	0.00	533.30	0.00
528.20	0.00	533.40	0.00
528.30	0.00	533.50	0.00
528.40	0.00	533.60	0.00
528.50	0.00	533.70	0.00
528.60	0.00	533.80	0.00
528.70	0.00	533.90	0.00
528.80	0.00	534.00	0.00
528.90	0.00	534.10	0.00
529.00	0.00	534.20	0.00
529.10	0.00	534.30	0.00
529.20	0.00	534.40	0.00
529.30	0.00	534.50	0.00
529.40	0.00	534.60	0.12
529.50	0.00	534.70	0.34
529.60	0.00	534.80	0.62
529.70	0.00	534.90	0.96
529.80	0.00	535.00	1.35
529.90	0.00	535.10	1.83
530.00	0.00	535.20	3.82
530.10	0.00	535.30	7.08
530.20	0.00	535.40	11.18
530.30	0.00	535.50	15.97
530.40	0.00	535.60	21.32
530.50	0.00	535.70	27.20
530.60	0.00	535.80	33.58
530.70	0.00	535.90	40.41
530.80	0.00	536.00	47.66
530.90	0.00	536.10	55.23
531.00	0.00	536.20	63.16
531.10	0.00	536.30	71.45
531.20	0.00	536.40	78.10
531.30	0.00	536.50	81.57
531.40	0.00		
531.50	0.00		
531.60	0.00		
531.70	0.00		
531.80	0.00		
531.90	0.00		
532.00	0.00		
532.10	0.00		
532.20	0.00		
532.30	0.00		
532.40	0.00		
532.50	0.00		
532.60	0.00		

25 yr detention

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Creative Corner 25 Year storm

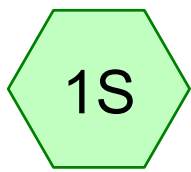
Rainfall Duration=20 min, Inten=3.54 in/hr

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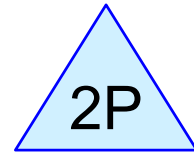
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Stage-Area-Storage for Pond 2P: Detention basin

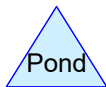
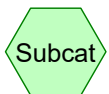
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
527.50	210	0	532.70	1,432	1,986
527.60	210	8	532.80	1,476	2,131
527.70	210	17	532.90	1,520	2,281
527.80	210	25	533.00	1,564	2,435
527.90	210	34	533.10	1,614	2,594
528.00	210	42	533.20	1,663	2,758
528.10	210	50	533.30	1,713	2,927
528.20	210	59	533.40	1,762	3,101
528.30	210	67	533.50	1,812	3,279
528.40	210	76	533.60	1,862	3,463
528.50	210	84	533.70	1,911	3,652
528.60	210	92	533.80	1,961	3,845
528.70	210	101	533.90	2,010	4,044
528.80	210	109	534.00	2,060	4,247
528.90	210	118	534.10	2,115	4,456
529.00	210	126	534.20	2,170	4,670
529.10	210	134	534.30	2,226	4,890
529.20	210	143	534.40	2,281	5,115
529.30	210	151	534.50	2,336	5,346
529.40	210	160	534.60	2,391	5,583
529.50	210	168	534.70	2,446	5,824
529.60	210	176	534.80	2,502	6,072
529.70	210	185	534.90	2,557	6,325
529.80	210	193	535.00	2,612	6,583
529.90	210	202	535.10	2,673	6,847
530.00	210	210	535.20	2,734	7,118
530.10	210	218	535.30	2,795	7,394
530.20	210	227	535.40	2,856	7,677
530.30	210	235	535.50	2,917	7,965
530.40	210	244	535.60	2,977	8,260
530.50	210	252	535.70	3,038	8,561
530.60	210	260	535.80	3,099	8,868
530.70	210	269	535.90	3,160	9,181
530.80	210	277	536.00	3,221	9,500
530.90	210	286	536.10	3,377	9,830
531.00	210	294	536.20	3,533	10,175
531.10	353	322	536.30	3,688	10,536
531.20	496	365	536.40	3,844	10,913
531.30	640	421	536.50	4,000	11,305
531.40	783	493			
531.50	926	578			
531.60	966	673			
531.70	1,006	771			
531.80	1,045	874			
531.90	1,085	980			
532.00	1,125	1,091			
532.10	1,169	1,205			
532.20	1,213	1,325			
532.30	1,257	1,448			
532.40	1,301	1,576			
532.50	1,345	1,708			
532.60	1,388	1,845			



To Basin



Detention basin



100 yr detention

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Area Listing (all nodes)

Area (acres)	C	Description (subcatchment-numbers)
1.280	0.98	(1S)
1.280	0.98	TOTAL AREA

100 yr detention

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Creative Corner 100 Year storm
Rainfall Duration=20 min, Inten=4.40 in/hr

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Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: To Basin

Runoff Area=1.280 ac 100.00% Impervious Runoff Depth=1.47"
Tc=0.0 min C=0.98 Runoff=5.57 cfs 0.156 af

Pond 2P: Detention basin

Peak Elev=535.01' Storage=6,620 cf Inflow=5.57 cfs 0.156 af
Outflow=1.41 cfs 0.033 af

Total Runoff Area = 1.280 ac Runoff Volume = 0.156 af Average Runoff Depth = 1.47"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.280 ac

100 yr detention

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Creative Corner 100 Year storm

Rainfall Duration=20 min, Inten=4.40 in/hr

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Summary for Subcatchment 1S: To Basin

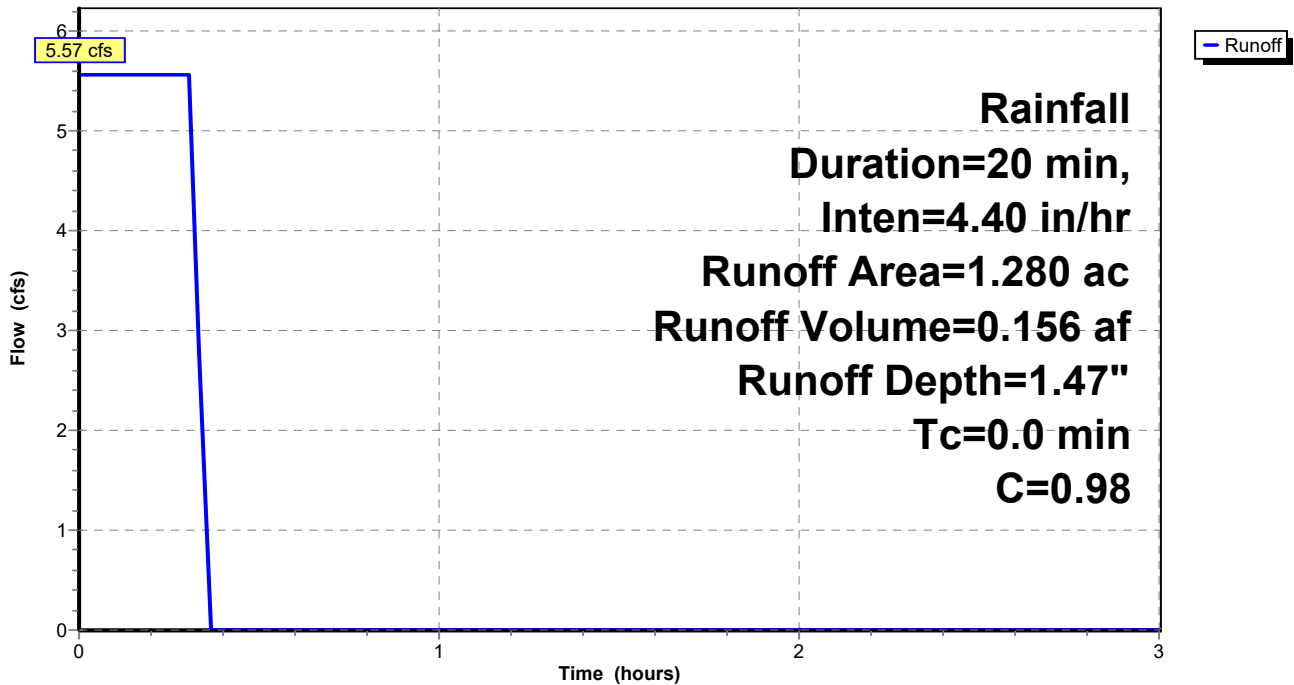
Runoff = 5.57 cfs @ 0.00 hrs, Volume= 0.156 af, Depth= 1.47"

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Rainfall Duration=20 min, Inten=4.40 in/hr

Area (ac)	C	Description
1.280	0.98	
1.280		100.00% Impervious Area

Subcatchment 1S: To Basin

Hydrograph



100 yr detention

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Creative Corner 100 Year storm

Rainfall Duration=20 min, Inten=4.40 in/hr

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Hydrograph for Subcatchment 1S: To Basin

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	5.57	1.04	0.00	2.08	0.00
0.02	5.57	1.06	0.00	2.10	0.00
0.04	5.57	1.08	0.00	2.12	0.00
0.06	5.57	1.10	0.00	2.14	0.00
0.08	5.57	1.12	0.00	2.16	0.00
0.10	5.57	1.14	0.00	2.18	0.00
0.12	5.57	1.16	0.00	2.20	0.00
0.14	5.57	1.18	0.00	2.22	0.00
0.16	5.57	1.20	0.00	2.24	0.00
0.18	5.57	1.22	0.00	2.26	0.00
0.20	5.57	1.24	0.00	2.28	0.00
0.22	5.57	1.26	0.00	2.30	0.00
0.24	5.57	1.28	0.00	2.32	0.00
0.26	5.57	1.30	0.00	2.34	0.00
0.28	5.57	1.32	0.00	2.36	0.00
0.30	5.57	1.34	0.00	2.38	0.00
0.32	5.57	1.36	0.00	2.40	0.00
0.34	0.00	1.38	0.00	2.42	0.00
0.36	0.00	1.40	0.00	2.44	0.00
0.38	0.00	1.42	0.00	2.46	0.00
0.40	0.00	1.44	0.00	2.48	0.00
0.42	0.00	1.46	0.00	2.50	0.00
0.44	0.00	1.48	0.00	2.52	0.00
0.46	0.00	1.50	0.00	2.54	0.00
0.48	0.00	1.52	0.00	2.56	0.00
0.50	0.00	1.54	0.00	2.58	0.00
0.52	0.00	1.56	0.00	2.60	0.00
0.54	0.00	1.58	0.00	2.62	0.00
0.56	0.00	1.60	0.00	2.64	0.00
0.58	0.00	1.62	0.00	2.66	0.00
0.60	0.00	1.64	0.00	2.68	0.00
0.62	0.00	1.66	0.00	2.70	0.00
0.64	0.00	1.68	0.00	2.72	0.00
0.66	0.00	1.70	0.00	2.74	0.00
0.68	0.00	1.72	0.00	2.76	0.00
0.70	0.00	1.74	0.00	2.78	0.00
0.72	0.00	1.76	0.00	2.80	0.00
0.74	0.00	1.78	0.00	2.82	0.00
0.76	0.00	1.80	0.00	2.84	0.00
0.78	0.00	1.82	0.00	2.86	0.00
0.80	0.00	1.84	0.00	2.88	0.00
0.82	0.00	1.86	0.00	2.90	0.00
0.84	0.00	1.88	0.00	2.92	0.00
0.86	0.00	1.90	0.00	2.94	0.00
0.88	0.00	1.92	0.00	2.96	0.00
0.90	0.00	1.94	0.00	2.98	0.00
0.92	0.00	1.96	0.00	3.00	0.00
0.94	0.00	1.98	0.00		
0.96	0.00	2.00	0.00		
0.98	0.00	2.02	0.00		
1.00	0.00	2.04	0.00		
1.02	0.00	2.06	0.00		

100 yr detention

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Rainfall Duration=20 min, Inten=4.40 in/hr

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Summary for Pond 2P: Detention basin

Inflow Area = 1.280 ac, 100.00% Impervious, Inflow Depth = 1.47"
 Inflow = 5.57 cfs @ 0.00 hrs, Volume= 0.156 af
 Outflow = 1.41 cfs @ 0.34 hrs, Volume= 0.033 af, Atten= 75%, Lag= 20.4 min
 Primary = 1.41 cfs @ 0.34 hrs, Volume= 0.033 af

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 535.01' @ 0.34 hrs Surf.Area= 2,621 sf Storage= 6,620 cf

Plug-Flow detention time= 37.9 min calculated for 0.031 af (20% of inflow)
 Center-of-Mass det. time= 28.6 min (38.5 - 9.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	527.50'	11,305 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
527.50	210	0.0	0	0
531.00	210	40.0	294	294
531.50	926	100.0	284	578
532.00	1,125	100.0	513	1,091
533.00	1,564	100.0	1,345	2,435
534.00	2,060	100.0	1,812	4,247
535.00	2,612	100.0	2,336	6,583
536.00	3,221	100.0	2,917	9,500
536.50	4,000	100.0	1,805	11,305

Device	Routing	Invert	Outlet Devices
#1	Primary	535.10'	36.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	534.50'	1.3' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=1.41 cfs @ 0.34 hrs HW=535.01' (Free Discharge)

1=Orifice/Grate (Controls 0.00 cfs)

2=Broad-Crested Rectangular Weir (Weir Controls 1.41 cfs @ 2.11 fps)

100 yr detention

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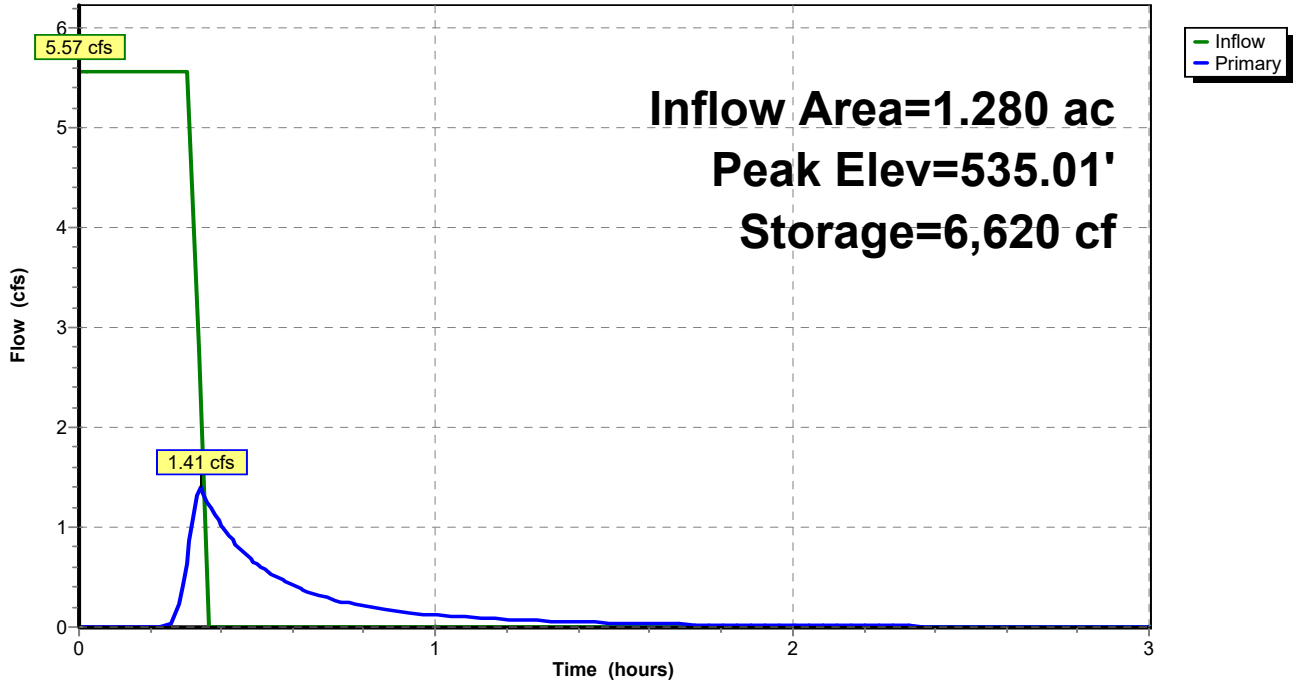
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Rainfall Duration=20 min, Inten=4.40 in/hr

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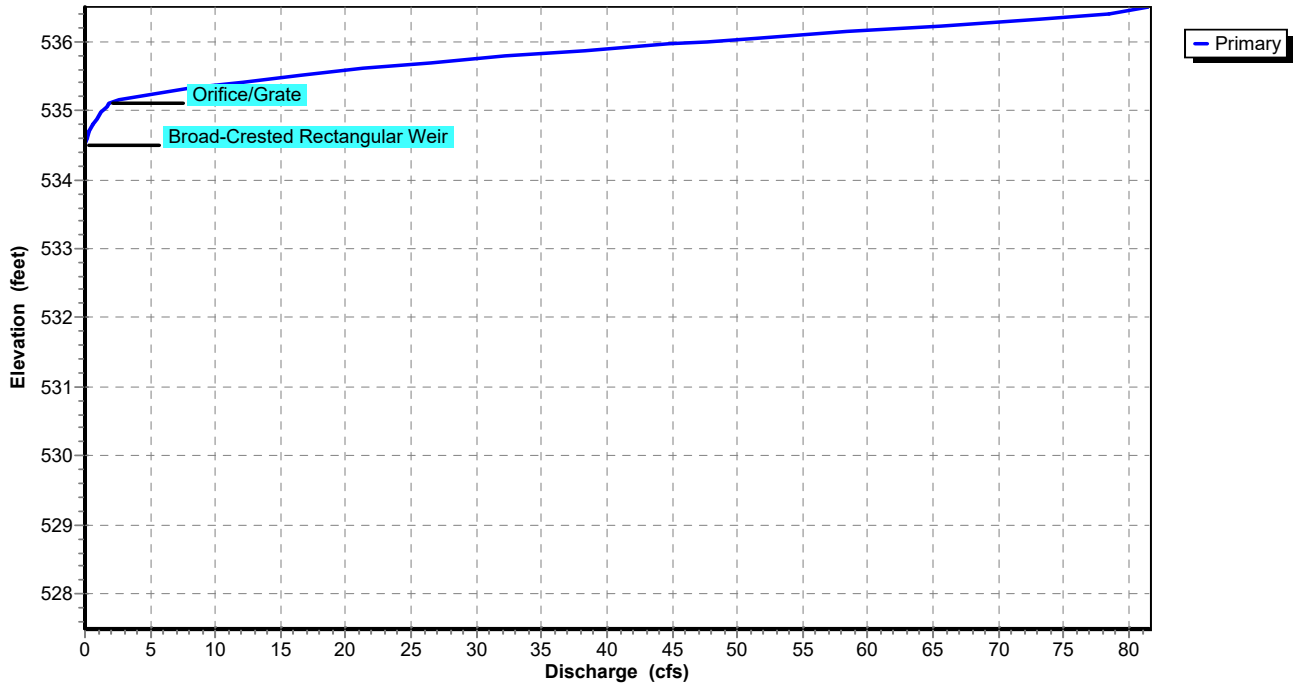
Pond 2P: Detention basin

Hydrograph



Pond 2P: Detention basin

Stage-Discharge



100 yr detention

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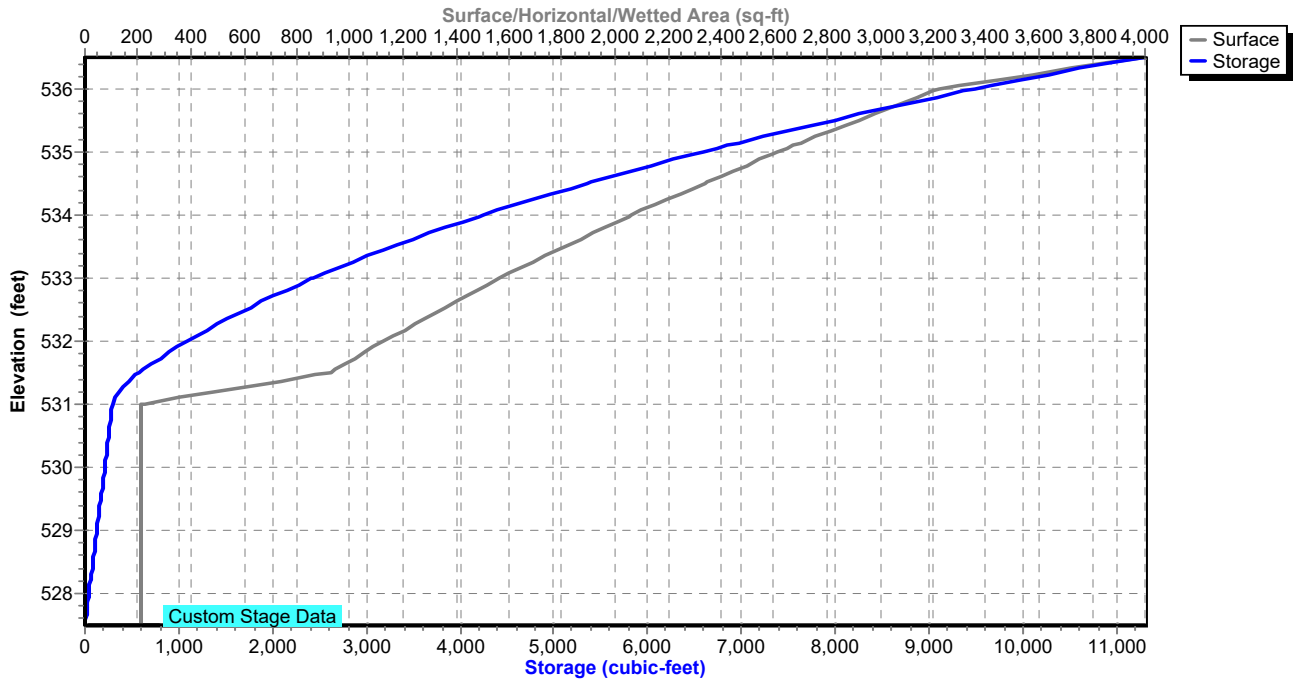
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Pond 2P: Detention basin

Stage-Area-Storage



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Hydrograph for Pond 2P: Detention basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	5.57	100	528.69	0.00
0.02	5.57	501	531.41	0.00
0.04	5.57	902	531.83	0.00
0.06	5.57	1,302	532.18	0.00
0.08	5.57	1,703	532.50	0.00
0.10	5.57	2,104	532.78	0.00
0.12	5.57	2,504	533.04	0.00
0.14	5.57	2,905	533.29	0.00
0.16	5.57	3,306	533.51	0.00
0.18	5.57	3,707	533.73	0.00
0.20	5.57	4,107	533.93	0.00
0.22	5.57	4,508	534.12	0.00
0.24	5.57	4,909	534.31	0.00
0.26	5.57	5,309	534.48	0.00
0.28	5.57	5,703	534.65	0.23
0.30	5.57	6,073	534.80	0.63
0.32	5.57	6,412	534.93	1.09
0.34	0.00	6,620	535.01	1.41
0.36	0.00	6,525	534.98	1.25
0.38	0.00	6,439	534.94	1.13
0.40	0.00	6,362	534.91	1.02
0.42	0.00	6,292	534.89	0.92
0.44	0.00	6,229	534.86	0.83
0.46	0.00	6,172	534.84	0.76
0.48	0.00	6,120	534.82	0.69
0.50	0.00	6,073	534.80	0.63
0.52	0.00	6,030	534.78	0.57
0.54	0.00	5,990	534.77	0.53
0.56	0.00	5,954	534.75	0.49
0.58	0.00	5,920	534.74	0.45
0.60	0.00	5,889	534.73	0.41
0.62	0.00	5,860	534.71	0.38
0.64	0.00	5,834	534.70	0.35
0.66	0.00	5,810	534.69	0.33
0.68	0.00	5,787	534.68	0.31
0.70	0.00	5,766	534.68	0.29
0.72	0.00	5,746	534.67	0.27
0.74	0.00	5,727	534.66	0.25
0.76	0.00	5,710	534.65	0.23
0.78	0.00	5,694	534.65	0.22
0.80	0.00	5,678	534.64	0.20
0.82	0.00	5,664	534.63	0.19
0.84	0.00	5,651	534.63	0.18
0.86	0.00	5,638	534.62	0.17
0.88	0.00	5,627	534.62	0.16
0.90	0.00	5,616	534.61	0.15
0.92	0.00	5,605	534.61	0.14
0.94	0.00	5,596	534.61	0.13
0.96	0.00	5,586	534.60	0.13
0.98	0.00	5,578	534.60	0.12
1.00	0.00	5,569	534.59	0.12
1.02	0.00	5,561	534.59	0.11

100 yr detention

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Rainfall Duration=20 min, Inten=4.40 in/hr

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.04	0.00	5,553	534.59	0.11
1.06	0.00	5,545	534.58	0.10
1.08	0.00	5,538	534.58	0.10
1.10	0.00	5,531	534.58	0.09
1.12	0.00	5,525	534.58	0.09
1.14	0.00	5,519	534.57	0.09
1.16	0.00	5,512	534.57	0.08
1.18	0.00	5,507	534.57	0.08
1.20	0.00	5,501	534.57	0.08
1.22	0.00	5,496	534.56	0.07
1.24	0.00	5,491	534.56	0.07
1.26	0.00	5,486	534.56	0.07
1.28	0.00	5,481	534.56	0.06
1.30	0.00	5,477	534.56	0.06
1.32	0.00	5,472	534.55	0.06
1.34	0.00	5,468	534.55	0.06
1.36	0.00	5,464	534.55	0.05
1.38	0.00	5,461	534.55	0.05
1.40	0.00	5,457	534.55	0.05
1.42	0.00	5,454	534.55	0.05
1.44	0.00	5,450	534.54	0.04
1.46	0.00	5,447	534.54	0.04
1.48	0.00	5,444	534.54	0.04
1.50	0.00	5,441	534.54	0.04
1.52	0.00	5,438	534.54	0.04
1.54	0.00	5,436	534.54	0.04
1.56	0.00	5,433	534.54	0.03
1.58	0.00	5,431	534.54	0.03
1.60	0.00	5,428	534.53	0.03
1.62	0.00	5,426	534.53	0.03
1.64	0.00	5,424	534.53	0.03
1.66	0.00	5,422	534.53	0.03
1.68	0.00	5,420	534.53	0.03
1.70	0.00	5,418	534.53	0.03
1.72	0.00	5,416	534.53	0.02
1.74	0.00	5,414	534.53	0.02
1.76	0.00	5,413	534.53	0.02
1.78	0.00	5,411	534.53	0.02
1.80	0.00	5,410	534.53	0.02
1.82	0.00	5,408	534.53	0.02
1.84	0.00	5,407	534.53	0.02
1.86	0.00	5,406	534.53	0.02
1.88	0.00	5,404	534.52	0.02
1.90	0.00	5,403	534.52	0.02
1.92	0.00	5,402	534.52	0.02
1.94	0.00	5,401	534.52	0.02
1.96	0.00	5,400	534.52	0.01
1.98	0.00	5,399	534.52	0.01
2.00	0.00	5,398	534.52	0.01
2.02	0.00	5,397	534.52	0.01
2.04	0.00	5,396	534.52	0.01
2.06	0.00	5,395	534.52	0.01

100 yr detention

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Hydrograph for Pond 2P: Detention basin (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
2.08	0.00	5,394	534.52	0.01
2.10	0.00	5,393	534.52	0.01
2.12	0.00	5,392	534.52	0.01
2.14	0.00	5,392	534.52	0.01
2.16	0.00	5,391	534.52	0.01
2.18	0.00	5,390	534.52	0.01
2.20	0.00	5,390	534.52	0.01
2.22	0.00	5,389	534.52	0.01
2.24	0.00	5,388	534.52	0.01
2.26	0.00	5,387	534.52	0.01
2.28	0.00	5,387	534.52	0.01
2.30	0.00	5,386	534.52	0.01
2.32	0.00	5,385	534.52	0.01
2.34	0.00	5,385	534.52	0.01
2.36	0.00	5,384	534.52	0.01
2.38	0.00	5,384	534.52	0.01
2.40	0.00	5,383	534.52	0.01
2.42	0.00	5,382	534.52	0.01
2.44	0.00	5,382	534.52	0.01
2.46	0.00	5,381	534.51	0.01
2.48	0.00	5,381	534.51	0.01
2.50	0.00	5,380	534.51	0.01
2.52	0.00	5,379	534.51	0.01
2.54	0.00	5,379	534.51	0.01
2.56	0.00	5,378	534.51	0.01
2.58	0.00	5,378	534.51	0.01
2.60	0.00	5,377	534.51	0.01
2.62	0.00	5,377	534.51	0.01
2.64	0.00	5,376	534.51	0.01
2.66	0.00	5,376	534.51	0.01
2.68	0.00	5,375	534.51	0.01
2.70	0.00	5,375	534.51	0.01
2.72	0.00	5,374	534.51	0.01
2.74	0.00	5,374	534.51	0.01
2.76	0.00	5,374	534.51	0.01
2.78	0.00	5,373	534.51	0.01
2.80	0.00	5,373	534.51	0.01
2.82	0.00	5,372	534.51	0.01
2.84	0.00	5,372	534.51	0.01
2.86	0.00	5,371	534.51	0.01
2.88	0.00	5,371	534.51	0.01
2.90	0.00	5,371	534.51	0.01
2.92	0.00	5,370	534.51	0.01
2.94	0.00	5,370	534.51	0.01
2.96	0.00	5,369	534.51	0.01
2.98	0.00	5,369	534.51	0.01
3.00	0.00	5,369	534.51	0.01

100 yr detention

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Rainfall Duration=20 min, Inten=4.40 in/hr

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Stage-Discharge for Pond 2P: Detention basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
527.50	0.00	532.70	0.00
527.60	0.00	532.80	0.00
527.70	0.00	532.90	0.00
527.80	0.00	533.00	0.00
527.90	0.00	533.10	0.00
528.00	0.00	533.20	0.00
528.10	0.00	533.30	0.00
528.20	0.00	533.40	0.00
528.30	0.00	533.50	0.00
528.40	0.00	533.60	0.00
528.50	0.00	533.70	0.00
528.60	0.00	533.80	0.00
528.70	0.00	533.90	0.00
528.80	0.00	534.00	0.00
528.90	0.00	534.10	0.00
529.00	0.00	534.20	0.00
529.10	0.00	534.30	0.00
529.20	0.00	534.40	0.00
529.30	0.00	534.50	0.00
529.40	0.00	534.60	0.12
529.50	0.00	534.70	0.34
529.60	0.00	534.80	0.62
529.70	0.00	534.90	0.96
529.80	0.00	535.00	1.35
529.90	0.00	535.10	1.83
530.00	0.00	535.20	3.82
530.10	0.00	535.30	7.08
530.20	0.00	535.40	11.18
530.30	0.00	535.50	15.97
530.40	0.00	535.60	21.32
530.50	0.00	535.70	27.20
530.60	0.00	535.80	33.58
530.70	0.00	535.90	40.41
530.80	0.00	536.00	47.66
530.90	0.00	536.10	55.23
531.00	0.00	536.20	63.16
531.10	0.00	536.30	71.45
531.20	0.00	536.40	78.10
531.30	0.00	536.50	81.57
531.40	0.00		
531.50	0.00		
531.60	0.00		
531.70	0.00		
531.80	0.00		
531.90	0.00		
532.00	0.00		
532.10	0.00		
532.20	0.00		
532.30	0.00		
532.40	0.00		
532.50	0.00		
532.60	0.00		

100 yr detention

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Creative Corner 100 Year storm

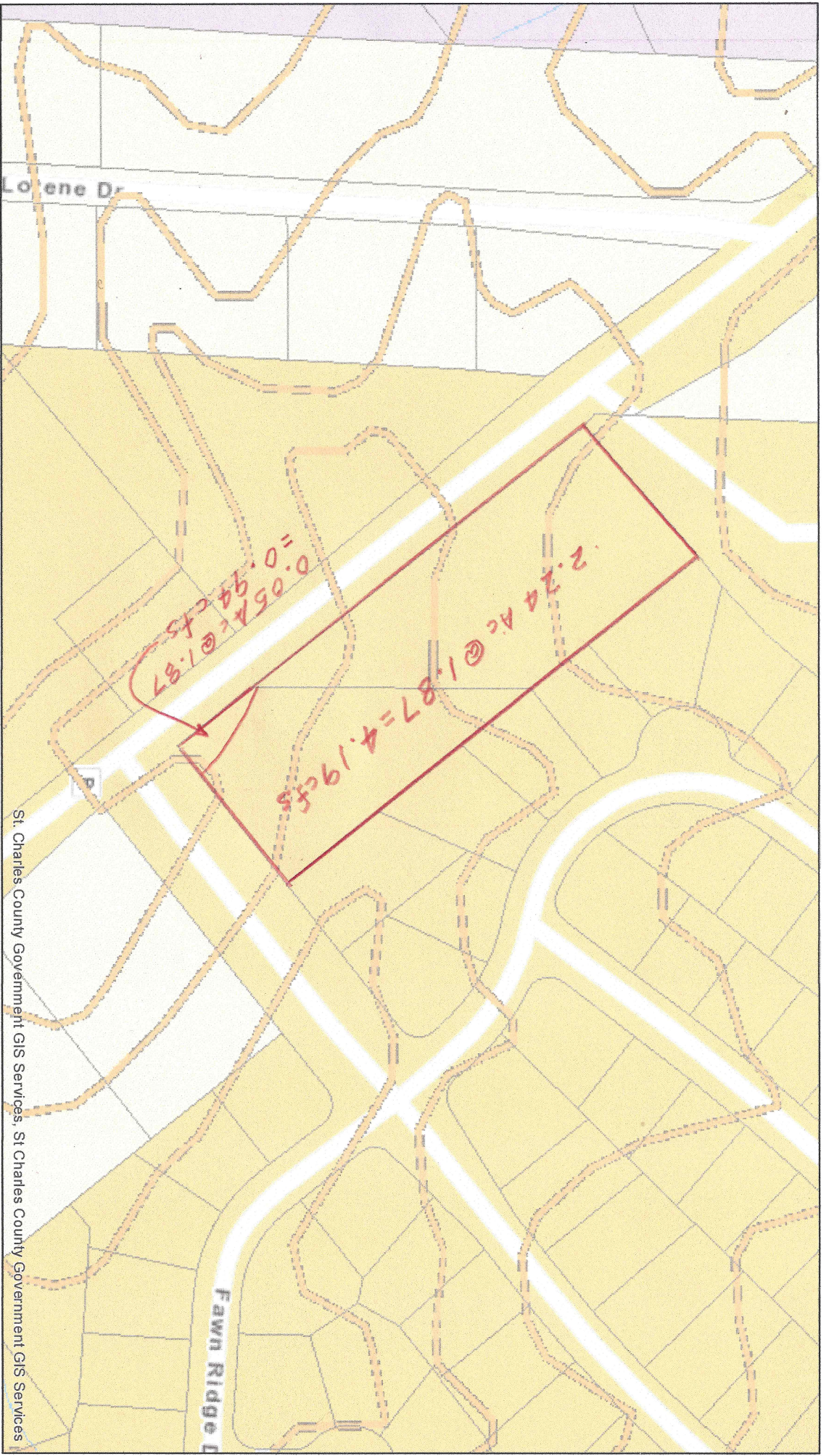
Rainfall Duration=20 min, Inten=4.40 in/hr

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Stage-Area-Storage for Pond 2P: Detention basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
527.50	210	0	532.70	1,432	1,986
527.60	210	8	532.80	1,476	2,131
527.70	210	17	532.90	1,520	2,281
527.80	210	25	533.00	1,564	2,435
527.90	210	34	533.10	1,614	2,594
528.00	210	42	533.20	1,663	2,758
528.10	210	50	533.30	1,713	2,927
528.20	210	59	533.40	1,762	3,101
528.30	210	67	533.50	1,812	3,279
528.40	210	76	533.60	1,862	3,463
528.50	210	84	533.70	1,911	3,652
528.60	210	92	533.80	1,961	3,845
528.70	210	101	533.90	2,010	4,044
528.80	210	109	534.00	2,060	4,247
528.90	210	118	534.10	2,115	4,456
529.00	210	126	534.20	2,170	4,670
529.10	210	134	534.30	2,226	4,890
529.20	210	143	534.40	2,281	5,115
529.30	210	151	534.50	2,336	5,346
529.40	210	160	534.60	2,391	5,583
529.50	210	168	534.70	2,446	5,824
529.60	210	176	534.80	2,502	6,072
529.70	210	185	534.90	2,557	6,325
529.80	210	193	535.00	2,612	6,583
529.90	210	202	535.10	2,673	6,847
530.00	210	210	535.20	2,734	7,118
530.10	210	218	535.30	2,795	7,394
530.20	210	227	535.40	2,856	7,677
530.30	210	235	535.50	2,917	7,965
530.40	210	244	535.60	2,977	8,260
530.50	210	252	535.70	3,038	8,561
530.60	210	260	535.80	3,099	8,868
530.70	210	269	535.90	3,160	9,181
530.80	210	277	536.00	3,221	9,500
530.90	210	286	536.10	3,377	9,830
531.00	210	294	536.20	3,533	10,175
531.10	353	322	536.30	3,688	10,536
531.20	496	365	536.40	3,844	10,913
531.30	640	421	536.50	4,000	11,305
531.40	783	493			
531.50	926	578			
531.60	966	673			
531.70	1,006	771			
531.80	1,045	874			
531.90	1,085	980			
532.00	1,125	1,091			
532.10	1,169	1,205			
532.20	1,213	1,325			
532.30	1,257	1,448			
532.40	1,301	1,576			
532.50	1,345	1,708			
532.60	1,388	1,845			



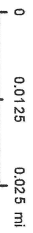
St. Charles County Government GIS Services, St. Charles County Government GIS Services

Creative Corner

Pre-development Drainage Area Map

Parcel Situs Addresses 10 ft elevation contours (scale 1:4800)

1:1,749



Parcels

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February 10, 2019



