

20029 1S

Type II 24-hr 25yr Rainfall=4.22"

Prepared by {enter your company name here}

Printed 4/11/2023

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Summary for Subcatchment 8S: Pre Dev 1S 25yr

Runoff = 0.03 cfs @ 13.36 hrs, Volume= 0.022 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type II 24-hr 25yr Rainfall=4.22"

Area (ac)	CN	Description
* 2.265	41	
2.265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	341	0.1381	0.56		Lag/CN Method,

Summary for Pond 7P: 1S Pond

Inflow Area = 2.265 ac, 0.00% Impervious, Inflow Depth = 0.57" for 25yr event
 Inflow = 1.75 cfs @ 12.01 hrs, Volume= 0.108 af
 Outflow = 0.11 cfs @ 14.50 hrs, Volume= 0.108 af, Atten= 94%, Lag= 149.4 min
 Discarded = 0.07 cfs @ 14.50 hrs, Volume= 0.103 af
 Primary = 0.04 cfs @ 14.50 hrs, **Volume= 0.005 af**

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Peak Elev= 647.57' @ 14.50 hrs Surf.Area= 1,341 sf Storage= 1,981 cf
Flood Elev= 648.00' Surf.Area= 1,852 sf Storage= 2,576 cf

Plug-Flow detention time= 370.6 min calculated for 0.108 af (100% of inflow)
 Center-of-Mass det. time= 370.7 min (1,286.2 - 915.5)

Volume	Invert	Avail.Storage	Storage Description
#1	645.50'	2,124 cf	Pond (Prismatic) Listed below (Recalc)
#2	645.50'	452 cf	Forebay (Prismatic) Listed below (Recalc)
		2,576 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
645.50	511	0	0
646.00	624	284	284
647.00	867	746	1,029
647.70	1,054	672	1,702
647.75	1,380	61	1,762
648.00	1,515	362	2,124

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
645.50	88	0	0
646.50	187	138	138
647.70	337	314	452

Device	Routing	Invert	Outlet Devices
#1	Primary	647.55'	4.0' long x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	645.50'	1.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 640.44'

Discarded OutFlow Max=0.07 cfs @ 14.50 hrs HW=647.57' (Free Discharge)
 ↳2=Exfiltration (Controls 0.07 cfs)

Primary OutFlow Max=0.04 cfs @ 14.50 hrs HW=647.57' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.37 fps)

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Type II 24-hr 100yr Rainfall=5.33"

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Summary for Subcatchment 6S: Pre Dev 1S 100yr

Runoff = 0.41 cfs @ 12.08 hrs, Volume= 0.067 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type II 24-hr 100yr Rainfall=5.33"

Area (ac)	CN	Description
* 2.265	41	
2.265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	341	0.1381	0.56		Lag/CN Method,

Summary for Pond 7P: 1S Pond

Inflow Area = 2.265 ac, 0.00% Impervious, Inflow Depth = 1.08" for 100yr event
 Inflow = 3.88 cfs @ 12.00 hrs, Volume= 0.204 af
 Outflow = 1.40 cfs @ 12.12 hrs, Volume= 0.204 af, Atten= 64%, Lag= 7.2 min
 Discarded = 0.09 cfs @ 12.12 hrs, Volume= 0.115 af
 Primary = 1.31 cfs @ 12.12 hrs, Volume= 0.089 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 647.81' @ 12.12 hrs Surf.Area= 1,749 sf Storage= 2,296 cf
 Flood Elev= 648.00' Surf.Area= 1,852 sf Storage= 2,576 cf

Plug-Flow detention time= 230.2 min calculated for 0.204 af (100% of inflow)
 Center-of-Mass det. time= 230.2 min (1,118.8 - 888.6)

Volume	Invert	Avail.Storage	Storage Description
#1	645.50'	2,124 cf	Pond (Prismatic) Listed below (Recalc)
#2	645.50'	452 cf	Forebay (Prismatic) Listed below (Recalc)
		2,576 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
645.50	511	0	0
646.00	624	284	284
647.00	867	746	1,029
647.70	1,054	672	1,702
647.75	1,380	61	1,762
648.00	1,515	362	2,124

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
645.50	88	0	0
646.50	187	138	138
647.70	337	314	452

Device	Routing	Invert	Outlet Devices
#1	Primary	647.55'	4.0' long x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	645.50'	1.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 640.44'

Discarded OutFlow Max=0.09 cfs @ 12.12 hrs HW=647.81' (Free Discharge)
 ↳2=Exfiltration (Controls 0.09 cfs)

Primary OutFlow Max=1.30 cfs @ 12.12 hrs HW=647.81' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 1.30 cfs @ 1.26 fps)

20029 2S

Type II 24-hr 25yr Rainfall=4.22"

Prepared by {enter your company name here}

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Summary for Subcatchment 8S: Pre Dev 2S 25yr

Runoff = 14.52 cfs @ 11.96 hrs, Volume= 0.646 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type II 24-hr 25yr Rainfall=4.22"

Area (ac)	CN	Description
* 3.905	77	
3.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	473	0.1587	1.64		Lag/CN Method,

Summary for Pond 7P: 2S Pond

Inflow Area = 3.905 ac, 0.00% Impervious, Inflow Depth = 2.39" for 25yr event
Inflow = 17.95 cfs @ 11.95 hrs, Volume= 0.778 af
 Outflow = 7.07 cfs @ 12.03 hrs, Volume= 0.778 af, Atten= 61%, Lag= 5.3 min
Primary = 7.07 cfs @ 12.03 hrs, Volume= 0.778 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Starting Elev= 631.25' Surf.Area= 2,681 sf Storage= 1,008 cf
Peak Elev= 635.11' @ 12.03 hrs Surf.Area= 5,136 sf Storage= 12,769 cf (11,761 cf above start)
Flood Elev= 635.75' Surf.Area= 5,514 sf Storage= 15,556 cf (14,548 cf above start)

Plug-Flow detention time= 298.4 min calculated for 0.755 af (97% of inflow)
 Center-of-Mass det. time= 268.7 min (1,087.0 - 818.3)

Volume	Invert	Avail.Storage	Storage Description
#1	627.75'	1,008 cf	Gravel Cell (Prismatic) Listed below (Recalc) 2,520 cf Overall x 40.0% Voids
#2	631.25'	14,257 cf	Pond (Prismatic) Listed below (Recalc)
#3	631.25'	292 cf	Forebay 1 (Prismatic) Listed below (Recalc)
		15,556 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
627.75	720	0	0
631.25	720	2,520	2,520

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
631.25	1,895	0	0
632.00	2,235	1,549	1,549
633.00	2,708	2,472	4,020
633.20	2,805	551	4,572
633.25	3,056	147	4,718
634.00	3,536	2,472	7,190
635.00	4,106	3,821	11,011
635.75	4,549	3,246	14,257

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
631.25	66	0	0
632.00	124	71	71
633.00	223	174	245
633.20	245	47	292

Device	Routing	Invert	Outlet Devices
#1	Primary	629.00'	12.0" Round Culvert L= 44.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 629.00' / 628.00' S= 0.0227 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	631.25'	1.0" Vert. WQv C= 0.600 Limited to weir flow at low heads

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#3	Device 1	632.00'	1.7" Vert. CPv	C= 0.600	Limited to weir flow at low heads
#4	Device 1	633.55'	1.7" x 1.7" Horiz. Grate X 12.00 columns		X 12 rows C= 0.600 in 30.0" x 30.0" Grate (46% open area) Limited to weir flow at low heads
#5	Primary	635.15'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=7.07 cfs @ 12.03 hrs HW=635.11' (Free Discharge)

- 1=Culvert (Inlet Controls 7.07 cfs @ 9.00 fps)
- 2=WQv (Passes < 0.05 cfs potential flow)
- 3=CPv (Passes < 0.13 cfs potential flow)
- 4=Grate (Passes < 17.38 cfs potential flow)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

20029 2S

Type II 24-hr 100yr Rainfall=5.33"

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Summary for Subcatchment 6S: Pre Dev 2S 100yr

Runoff = 21.02 cfs @ 11.96 hrs, Volume= 0.944 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type II 24-hr 100yr Rainfall=5.33"

Area (ac)	CN	Description
* 3.905	77	
3.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	473	0.1587	1.64		Lag/CN Method,

Summary for Pond 7P: 2S Pond

Inflow Area = 3.905 ac, 0.00% Impervious, Inflow Depth = 3.38" for 100yr event
Inflow = 24.92 cfs @ 11.94 hrs, Volume= 1.099 af
 Outflow = 17.94 cfs @ 12.00 hrs, Volume= 1.098 af, Atten= 28%, Lag= 3.2 min
Primary = 17.94 cfs @ 12.00 hrs, Volume= 1.098 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Starting Elev= 631.25' Surf.Area= 2,681 sf Storage= 1,008 cf
Peak Elev= 635.69' @ 12.00 hrs Surf.Area= 5,481 sf Storage= 15,305 cf (14,297 cf above start)
Flood Elev= 635.75' Surf.Area= 5,514 sf Storage= 15,556 cf (14,548 cf above start)

Plug-Flow detention time= 216.8 min calculated for 1.075 af (98% of inflow)
 Center-of-Mass det. time= 197.2 min (1,005.6 - 808.5)

Volume	Invert	Avail.Storage	Storage Description
#1	627.75'	1,008 cf	Gravel Cell (Prismatic) Listed below (Recalc) 2,520 cf Overall x 40.0% Voids
#2	631.25'	14,257 cf	Pond (Prismatic) Listed below (Recalc)
#3	631.25'	292 cf	Forebay 1 (Prismatic) Listed below (Recalc)
		15,556 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
627.75	720	0	0
631.25	720	2,520	2,520

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
631.25	1,895	0	0
632.00	2,235	1,549	1,549
633.00	2,708	2,472	4,020
633.20	2,805	551	4,572
633.25	3,056	147	4,718
634.00	3,536	2,472	7,190
635.00	4,106	3,821	11,011
635.75	4,549	3,246	14,257

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
631.25	66	0	0
632.00	124	71	71
633.00	223	174	245
633.20	245	47	292

Device	Routing	Invert	Outlet Devices
#1	Primary	629.00'	12.0" Round Culvert L= 44.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 629.00' / 628.00' S= 0.0227 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	631.25'	1.0" Vert. WQv C= 0.600 Limited to weir flow at low heads

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Type II 24-hr 100yr Rainfall=5.33"

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#3	Device 1	632.00'	1.7" Vert. CPv	C= 0.600	Limited to weir flow at low heads
#4	Device 1	633.55'	1.7" x 1.7" Horiz. Grate X 12.00 columns		X 12 rows C= 0.600 in 30.0" x 30.0" Grate (46% open area) Limited to weir flow at low heads
#5	Primary	635.15'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=17.87 cfs @ 12.00 hrs HW=635.69' (Free Discharge)

- 1=Culvert (Inlet Controls 7.43 cfs @ 9.46 fps)
- 2=WQv (Passes < 0.06 cfs potential flow)
- 3=CPv (Passes < 0.14 cfs potential flow)
- 4=Grate (Passes < 20.37 cfs potential flow)
- 5=Broad-Crested Rectangular Weir (Weir Controls 10.44 cfs @ 1.92 fps)

20029 3S-4S

Type II 24-hr **25yr Rainfall=4.22"**

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Summary for Subcatchment 13S: Pre Dev 3S-4S 25yr

Runoff = 1.70 cfs @ 12.08 hrs, Volume= 0.154 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type II 24-hr 25yr Rainfall=4.22"

Area (ac)	CN	Description
* 3.494	53	
3.494		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	443	0.0717	0.58		Lag/CN Method,

Summary for Pond 7P: 3S Pond

Inflow Area = 1.423 ac, 0.00% Impervious, Inflow Depth = 0.72" for 25yr event
Inflow = 1.55 cfs @ 12.00 hrs, Volume= 0.085 af
 Outflow = 0.05 cfs @ 17.88 hrs, Volume= 0.085 af, Atten= 97%, Lag= 352.8 min
Primary = 0.05 cfs @ 17.88 hrs, Volume= 0.085 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Starting Elev= 636.00' Surf.Area= 2,519 sf Storage= 546 cf
Peak Elev= 637.00' @ 17.88 hrs Surf.Area= 3,023 sf Storage= 2,934 cf (2,388 cf above start)
Flood Elev= 637.50' Surf.Area= 3,463 sf Storage= 4,305 cf (3,759 cf above start)

Plug-Flow detention time= 1,370.2 min calculated for 0.072 af (85% of inflow)
 Center-of-Mass det. time= 1,111.3 min (2,011.3 - 900.0)

Volume	Invert	Avail.Storage	Storage Description
#1	632.50'	546 cf	Gravel Cell (Prismatic) Listed below (Recalc) 1,365 cf Overall x 40.0% Voids
#2	636.00'	3,608 cf	Pond (Prismatic) Listed below (Recalc)
#3	636.00'	151 cf	Forebay (Prismatic) Listed below (Recalc)
		4,305 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
632.50	390	0	0
636.00	390	1,365	1,365

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
636.00	2,079	0	0
637.00	2,508	2,294	2,294
637.45	2,709	1,174	3,467
637.50	2,909	140	3,608

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
636.00	50	0	0
637.00	123	87	87
637.45	164	65	151

Device	Routing	Invert	Outlet Devices
#1	Primary	634.50'	12.0" Round Culvert L= 32.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 634.50' / 633.00' S= 0.0469 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	636.00'	1.0" Vert. WQv C= 0.600 Limited to weir flow at low heads
#3	Device 1	637.00'	1.7" x 1.7" Horiz. Grate X 12.00 columns X 12 rows C= 0.600 in 30.0" x 30.0" Grate (46% open area) Limited to weir flow at low heads

20029 3S-4S

Type II 24-hr 25yr Rainfall=4.22"

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Primary OutFlow Max=0.03 cfs @ 17.88 hrs HW=637.00' (Free Discharge)

↑ **1=Culvert** (Passes 0.03 cfs of 4.23 cfs potential flow)

↑ **2=WQv** (Orifice Controls 0.03 cfs @ 4.72 fps)

↑ **3=Gate** (Weir Controls 0.01 cfs @ 0.18 fps)

Summary for Pond 15P: 4S Pond

Inflow Area = 2.071 ac, 0.00% Impervious, Inflow Depth = 1.48" for 25yr event
Inflow = 5.70 cfs @ 11.97 hrs, Volume= 0.255 af
 Outflow = 3.13 cfs @ 12.04 hrs, Volume= 0.255 af, Atten= 45%, Lag= 4.5 min
Primary = 3.13 cfs @ 12.04 hrs, Volume= 0.255 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Starting Elev= 640.75' Surf.Area= 2,347 sf Storage= 504 cf
Peak Elev= 642.33' @ 12.04 hrs Surf.Area= 3,065 sf Storage= 4,186 cf (3,682 cf above start)
Flood Elev= 643.25' Surf.Area= 3,710 sf Storage= 6,903 cf (6,399 cf above start)

Plug-Flow detention time= 479.3 min calculated for 0.244 af (95% of inflow)
 Center-of-Mass det. time= 427.9 min (1,280.7 - 852.9)

Volume	Invert	Avail.Storage	Storage Description
#1	637.25'	504 cf	Gravel Cell (Prismatic) Listed below (Recalc) 1,260 cf Overall x 40.0% Voids
#2	640.75'	188 cf	Forebay (Prismatic) Listed below (Recalc)
#3	640.75'	6,210 cf	Pond (Prismatic) Listed below (Recalc)
		6,903 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
637.25	360	0	0
640.75	360	1,260	1,260

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
640.75	32	0	0
641.00	45	10	10
642.00	112	79	88
642.70	174	100	188

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
640.75	1,955	0	0
641.00	2,047	500	500
642.00	2,432	2,240	2,740
642.70	2,717	1,802	4,542
642.75	2,926	141	4,683
643.00	3,059	748	5,431
643.25	3,176	779	6,210

Device	Routing	Invert	Outlet Devices
#1	Primary	637.50'	12.0" Round Culvert L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 637.50' / 636.00' S= 0.0278 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	640.75'	1.0" Vert. WQ C= 0.600 Limited to weir flow at low heads
#3	Device 1	641.15'	1.0" Vert. CP C= 0.600 Limited to weir flow at low heads

20029 3S-4S

Type II 24-hr 25yr Rainfall=4.22"

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#4 Device 1 642.12' **1.7" x 1.7" Horiz. Grate X 12.00 columns**
X 12 rows C= 0.600 in 30.0" x 30.0" Grate (46% open area)
Limited to weir flow at low heads

Primary OutFlow Max=3.10 cfs @ 12.04 hrs HW=642.33' (Free Discharge)

- ↑ 1=Culvert (Passes 3.10 cfs of 6.21 cfs potential flow)
- ↑ 2=WQ (Orifice Controls 0.03 cfs @ 5.96 fps)
- ↑ 3=CP (Orifice Controls 0.03 cfs @ 5.13 fps)
- ↑ 4=Grate (Weir Controls 3.04 cfs @ 1.48 fps)

20029 3S-4S

Type II 24-hr **100yr Rainfall=5.33"**

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Summary for Subcatchment 6S: Pre Dev 3S-4S 100yr

Runoff = 4.18 cfs @ 12.07 hrs, Volume= 0.296 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type II 24-hr 100yr Rainfall=5.33"

Area (ac)	CN	Description
* 3.494	53	
3.494		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	443	0.0717	0.58		Lag/CN Method,

Summary for Pond 7P: 3S Pond

Inflow Area = 1.423 ac, 0.00% Impervious, Inflow Depth = 1.28" for 100yr event
Inflow = 3.05 cfs @ 11.99 hrs, Volume= 0.152 af
 Outflow = 0.41 cfs @ 12.41 hrs, Volume= 0.152 af, Atten= 87%, Lag= 25.2 min
Primary = 0.41 cfs @ 12.41 hrs, Volume= 0.152 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Starting Elev= 636.00' Surf.Area= 2,519 sf Storage= 546 cf
Peak Elev= 637.05' @ 12.41 hrs Surf.Area= 3,049 sf Storage= 3,062 cf (2,516 cf above start)
Flood Elev= 637.50' Surf.Area= 3,463 sf Storage= 4,305 cf (3,759 cf above start)

Plug-Flow detention time= 757.9 min calculated for 0.140 af (92% of inflow)
 Center-of-Mass det. time= 645.8 min (1,523.3 - 877.5)

Volume	Invert	Avail.Storage	Storage Description
#1	632.50'	546 cf	Gravel Cell (Prismatic) Listed below (Recalc) 1,365 cf Overall x 40.0% Voids
#2	636.00'	3,608 cf	Pond (Prismatic) Listed below (Recalc)
#3	636.00'	151 cf	Forebay (Prismatic) Listed below (Recalc)
		4,305 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
632.50	390	0	0
636.00	390	1,365	1,365

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
636.00	2,079	0	0
637.00	2,508	2,294	2,294
637.45	2,709	1,174	3,467
637.50	2,909	140	3,608

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
636.00	50	0	0
637.00	123	87	87
637.45	164	65	151

Device	Routing	Invert	Outlet Devices
#1	Primary	634.50'	12.0" Round Culvert L= 32.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 634.50' / 633.00' S= 0.0469 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	636.00'	1.0" Vert. WQv C= 0.600 Limited to weir flow at low heads
#3	Device 1	637.00'	1.7" x 1.7" Horiz. Grate X 12.00 columns X 12 rows C= 0.600 in 30.0" x 30.0" Grate (46% open area) Limited to weir flow at low heads

20029 3S-4S

Type II 24-hr 100yr Rainfall=5.33"

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Primary OutFlow Max=0.41 cfs @ 12.41 hrs HW=637.05' (Free Discharge)

↑ **1=Culvert** (Passes 0.41 cfs of 4.28 cfs potential flow)

↑ **2=WQv** (Orifice Controls 0.03 cfs @ 4.84 fps)

↑ **3=Gate** (Weir Controls 0.38 cfs @ 0.74 fps)

Summary for Pond 15P: 4S Pond

Inflow Area = 2.071 ac, 0.00% Impervious, Inflow Depth = 2.28" for 100yr event
Inflow = 8.85 cfs @ 11.96 hrs, Volume= 0.394 af
 Outflow = 6.41 cfs @ 12.02 hrs, Volume= 0.394 af, Atten= 28%, Lag= 3.3 min
Primary = 6.41 cfs @ 12.02 hrs, Volume= 0.394 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Starting Elev= 640.75' Surf.Area= 2,347 sf Storage= 504 cf
Peak Elev= 642.61' @ 12.02 hrs Surf.Area= 3,204 sf Storage= 4,965 cf (4,461 cf above start)
Flood Elev= 643.25' Surf.Area= 3,710 sf Storage= 6,903 cf (6,399 cf above start)

Plug-Flow detention time= 309.7 min calculated for 0.383 af (97% of inflow)
 Center-of-Mass det. time= 280.7 min (1,120.7 - 839.9)

Volume	Invert	Avail.Storage	Storage Description
#1	637.25'	504 cf	Gravel Cell (Prismatic) Listed below (Recalc) 1,260 cf Overall x 40.0% Voids
#2	640.75'	188 cf	Forebay (Prismatic) Listed below (Recalc)
#3	640.75'	6,210 cf	Pond (Prismatic) Listed below (Recalc)
		6,903 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
637.25	360	0	0
640.75	360	1,260	1,260

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
640.75	32	0	0
641.00	45	10	10
642.00	112	79	88
642.70	174	100	188

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
640.75	1,955	0	0
641.00	2,047	500	500
642.00	2,432	2,240	2,740
642.70	2,717	1,802	4,542
642.75	2,926	141	4,683
643.00	3,059	748	5,431
643.25	3,176	779	6,210

Device	Routing	Invert	Outlet Devices
#1	Primary	637.50'	12.0" Round Culvert L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 637.50' / 636.00' S= 0.0278 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	640.75'	1.0" Vert. WQ C= 0.600 Limited to weir flow at low heads
#3	Device 1	641.15'	1.0" Vert. CP C= 0.600 Limited to weir flow at low heads

20029 3S-4S

Type II 24-hr 100yr Rainfall=5.33"

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#4 Device 1 642.12' **1.7" x 1.7" Horiz. Grate X 12.00 columns**
X 12 rows C= 0.600 in 30.0" x 30.0" Grate (46% open area)
Limited to weir flow at low heads

Primary OutFlow Max=6.41 cfs @ 12.02 hrs HW=642.61' (Free Discharge)

- ↑ 1=Culvert (Inlet Controls 6.41 cfs @ 8.16 fps)
- ↑ 2=WQ (Passes < 0.04 cfs potential flow)
- ↑ 3=CP (Passes < 0.03 cfs potential flow)
- ↑ 4=Grate (Passes < 9.69 cfs potential flow)