Summary for Subcatchment S-1: Tributary toward BVW

Runoff = 0.11 cfs @ 13.78 hrs, Volume= 0.065 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	150,613	30	Woods, Good, HSG A
	43,177	55	Woods, Good, HSG B
	50,419	68	<50% Grass cover, Poor, HSG A
	2,419	79	<50% Grass cover, Poor, HSG B
*	20,948	98	Existing Pavement
*	899	98	Existing Roof
*	1,574	98	Existing Concrete
*	1,421	77	Gravel & Rubble Stockpiles
	271,470	48	Weighted Average
	248,049		Pervious Area
	23,421		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
4.0	120	0.0100	0.50		**Shallow Concentrated Flow, bc** Woodland Kv= 5.0 fps
18.7	170	Total			

Summary for Subcatchment S-1A: Tributary to Culvert at North Side of Building

Runoff = 0.11 cfs @ 12.53 hrs, Volume= 0.033 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	43,289	30	Woods, Good, HSG A
	32,140	68	<50% Grass cover, Poor, HSG A
*	1,901	98	Existing Roof
*	11,009	77	Gravel & Rubble Stockpiles
	88,339	51	Weighted Average
	86,438		Pervious Area
	1,901		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0500	0.10		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
6.7	200	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
15.0	250	Total			

Summary for Subcatchment S-1B: Tributary to Small Depression at NE Corner of Building

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.009 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	3,457	68	<50% Grass cover, Poor, HSG A
*	656	98	Existing Concrete
	4,113	73	Weighted Average
	3,457		Pervious Area
	656		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Subcatchment S-1C: Tributary to Depression at NW corner of Building

Runoff = 0.24 cfs @ 12.37 hrs, Volume= 0.037 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	17,356	45	Woods, Poor, HSG A
	15,021	68	<50% Grass cover, Poor, HSG A
*	1,901	98	Existing Roof
*	5,087	77	Gravel & Rubble Stockpiles
	39,365	60	Weighted Average
	37,464		Pervious Area
	1,901		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
3.3	100	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
19.1	150	Total			

Summary for Subcatchment S-2: Tributary to Existing Drain Basin Resource Area

Runoff = 19.35 cfs @ 12.08 hrs, Volume= 1.511 af, Depth= 3.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	7,500	68	<50% Grass cover, Poor, HSG A
	4,321	79	<50% Grass cover, Poor, HSG B
*	92,147	98	Exisitng Pavement/Concrete
*	94,397	98	Existing Roof
*	60,155	98	Existing Basin @ Elev=71.7
	258,520	97	Weighted Average
	11,821		Pervious Area
	246,699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Subcatchment S-2A: Tributary to Depression at SE Corner of Building

Runoff = 2.83 cfs @ 12.20 hrs, Volume= 0.267 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	20,817	30	Woods, Good, HSG A
	24,816	68	<50% Grass cover, Poor, HSG A
*	57,081	98	Rooftop
	102,714	77	Weighted Average
	45,633		Pervious Area
	57,081		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.40"
1.3	80	0.0200	0.99		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
4.9	190	0.0170	0.65		**Shallow Concentrated Flow, CD** Woodland Kv= 5.0 fps
14.2	320	Total			

Summary for Subcatchment S-2B: Tributary to Depression at SW Corner of Building

Runoff = 0.60 cfs @ 12.11 hrs, Volume= 0.048 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	25,300	68	<50% Grass cover, Poor, HSG A
*	1,410	98	Existing Concrete
	26,710	70	Weighted Average
	25,300		Pervious Area
	1,410		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0250	0.17		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.40"
1.8	130	0.0280	1.17		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
6.8	180	Total			

Summary for Subcatchment S-2C: Tributary to Depression West of Building

Runoff = 0.12 cfs @ 12.14 hrs, Volume= 0.017 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	7,393	30	Woods, Good, HSG A
	15,827	68	<50% Grass cover, Poor, HSG A
*	384	98	Existing Roof
	23,604	57	Weighted Average
	23,220		Pervious Area
	384		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Reach SR: Site Runoff to BVW

Inflow Area = 18.706 ac, 40.92% Impervious, Inflow Depth > 0.62" for 2-yr event
Inflow = 0.97 cfs @ 15.06 hrs, Volume= 0.969 af
Outflow = 0.97 cfs @ 15.06 hrs, Volume= 0.969 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 1A: Storage Behind Culvert

Inflow Area = 2.028 ac, 2.15% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.11 cfs @ 12.53 hrs, Volume= 0.033 af
Outflow = 0.11 cfs @ 12.53 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.01 cfs @ 12.53 hrs, Volume= 0.004 af
Primary = 0.10 cfs @ 12.53 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.76' @ 12.53 hrs Surf.Area= 54 sf Storage= 1 cf

Plug-Flow detention time= 0.1 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (987.6 - 987.5)

Volume	Invert	Avail.Storage	Storage Description
#1	75.70'	11,295 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.70	2	2.0	0	0	2
76.00	954	345.0	100	100	9,474
77.00	27,508	674.0	11,195	11,295	36,157

Device	Routing	Invert	Outlet Devices
#1	Primary	75.70'	**4.00' W x 2.00' H x 31.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 75.66' S= 0.0013 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	75.70'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 12.53 hrs HW=75.76' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.10 cfs @ 12.53 hrs HW=75.76' TW=75.63' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.10 cfs @ 0.56 fps)

Summary for Pond 1B: Small Depression at NE Corner of Building

Inflow Area = 2.122 ac, 2.77% Impervious, Inflow Depth = 0.22" for 2-yr event
Inflow = 0.13 cfs @ 12.49 hrs, Volume= 0.039 af
Outflow = 0.13 cfs @ 12.49 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.1 min
Discarded = 0.00 cfs @ 12.49 hrs, Volume= 0.001 af
Primary = 0.13 cfs @ 12.49 hrs, Volume= 0.037 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.63' @ 12.49 hrs Surf.Area= 15 sf Storage= 1 cf

Plug-Flow detention time= 0.1 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (957.1 - 957.0)

Volume	Invert	Avail.Storage	Storage Description
#1	75.54'	457 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.54	2	2.0	0	0	2
76.00	193	85.0	33	33	577
77.00	709	107.0	424	457	927

Device	Routing	Invert	Outlet Devices
#1	Primary	75.54'	**4.00' W x 2.00' H x 45.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 75.53' S= 0.0002 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	75.54'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.49 hrs HW=75.63' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 12.49 hrs HW=75.63' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.13 cfs @ 0.47 fps)

Summary for Pond 1C: Storage Behind Culvert

Inflow Area = 0.904 ac, 4.83% Impervious, Inflow Depth = 0.49" for 2-yr event
Inflow = 0.24 cfs @ 12.37 hrs, Volume= 0.037 af
Outflow = 0.24 cfs @ 12.39 hrs, Volume= 0.037 af, Atten= 0%, Lag= 1.2 min
Discarded = 0.06 cfs @ 12.39 hrs, Volume= 0.009 af
Primary = 0.18 cfs @ 12.39 hrs, Volume= 0.027 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 77.67' @ 12.39 hrs Surf.Area= 310 sf Storage= 10 cf

Plug-Flow detention time= 0.4 min calculated for 0.037 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (924.9 - 924.5)

Volume	Invert	Avail.Storage	Storage Description
#1	77.58'	4,907 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.58	2	2.0	0	0	2
78.00	5,752	313.0	821	821	7,798
78.50	10,860	398.0	4,086	4,907	12,611

Device	Routing	Invert	Outlet Devices
#1	Primary	77.58'	**4.00' W x 2.00' H x 45.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 77.54' S= 0.0009 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	77.58'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 12.39 hrs HW=77.67' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.18 cfs @ 12.39 hrs HW=77.67' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.18 cfs @ 0.65 fps)

Summary for Pond 2A: Depression at SE Corner of Building

Inflow Area = 2.358 ac, 55.57% Impervious, Inflow Depth = 1.36" for 2-yr event
Inflow = 2.83 cfs @ 12.20 hrs, Volume= 0.267 af
Outflow = 2.27 cfs @ 12.32 hrs, Volume= 0.267 af, Atten= 20%, Lag= 7.3 min
Discarded = 0.68 cfs @ 12.32 hrs, Volume= 0.056 af
Primary = 1.59 cfs @ 12.32 hrs, Volume= 0.211 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 74.64' @ 12.32 hrs Surf.Area= 3,559 sf Storage= 805 cf

Plug-Flow detention time= 2.5 min calculated for 0.266 af (100% of inflow)
Center-of-Mass det. time= 2.5 min (859.1 - 856.6)

Volume	Invert	Avail.Storage	Storage Description
#1	73.90'	33,995 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.90	2	2.0	0	0	2
74.00	10	10.0	1	1	10
75.00	8,304	644.0	2,867	2,868	33,007
76.00	16,851	655.0	12,328	15,196	34,316
77.00	20,817	705.0	18,799	33,995	39,770

Device	Routing	Invert	Outlet Devices
#1	Primary	73.90'	**12.0" x 44.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 73.55' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	73.91'	**8.270 in/hr Exfiltration over Surface area above invert** Excluded Surface area = 3 sf

Discarded OutFlow Max=0.68 cfs @ 12.32 hrs HW=74.64' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.68 cfs)

Primary OutFlow Max=1.59 cfs @ 12.32 hrs HW=74.64' TW=72.36' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.59 cfs @ 3.53 fps)

Summary for Pond 2B: Depression at SW Corner of Building

Inflow Area = 0.613 ac, 5.28% Impervious, Inflow Depth = 0.95" for 2-yr event
Inflow = 0.60 cfs @ 12.11 hrs, Volume= 0.048 af
Outflow = 0.53 cfs @ 12.16 hrs, Volume= 0.048 af, Atten= 12%, Lag= 2.8 min
Discarded = 0.13 cfs @ 12.16 hrs, Volume= 0.013 af
Primary = 0.41 cfs @ 12.16 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 74.69' @ 12.16 hrs Surf.Area= 657 sf Storage= 79 cf

Plug-Flow detention time= 1.4 min calculated for 0.048 af (100% of inflow)
Center-of-Mass det. time= 1.4 min (873.4 - 872.0)

Volume	Invert	Avail.Storage	Storage Description
#1	74.35'	14,436 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.35	2	2.0	0	0	2
75.00	2,273	200.0	508	508	3,185
76.00	5,058	288.0	3,574	4,081	6,612
77.00	7,587	358.0	6,280	10,361	10,224
77.50	8,725	416.0	4,075	14,436	13,802

Device	Routing	Invert	Outlet Devices
#1	Primary	74.35'	**12.0" x 45.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 73.99' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	74.35'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.13 cfs @ 12.16 hrs HW=74.69' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.41 cfs @ 12.16 hrs HW=74.69' TW=72.26' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.41 cfs @ 2.58 fps)

Summary for Pond 2C: Depression West of Building

Inflow Area = 0.542 ac, 1.63% Impervious, Inflow Depth = 0.38" for 2-yr event
Inflow = 0.12 cfs @ 12.14 hrs, Volume= 0.017 af
Outflow = 0.11 cfs @ 12.22 hrs, Volume= 0.017 af, Atten= 8%, Lag= 4.5 min
Discarded = 0.07 cfs @ 12.22 hrs, Volume= 0.012 af
Primary = 0.04 cfs @ 12.22 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.71' @ 12.22 hrs Surf.Area= 343 sf Storage= 13 cf

Plug-Flow detention time= 1.2 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 1.2 min (930.9 - 929.7)

Volume	Invert	Avail.Storage	Storage Description
#1	75.60'	15,028 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.60	2	2.0	0	0	2
76.00	4,193	270.0	572	572	5,803
77.00	7,571	341.0	5,799	6,371	9,269
78.00	9,791	412.0	8,657	15,028	13,540

Device	Routing	Invert	Outlet Devices
#1	Primary	75.60'	**12.0" x 37.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 75.30' S= 0.0081 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections

#2 Discarded 75.60' **8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 12.22 hrs HW=75.71' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.04 cfs @ 12.22 hrs HW=75.71' TW=72.30' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.04 cfs @ 1.39 fps)

Summary for Pond EDB: Existing Detention Basin

Inflow Area = 9.448 ac, 74.25% Impervious, Inflow Depth = 2.24" for 2-yr event
Inflow = 20.57 cfs @ 12.09 hrs, Volume= 1.762 af
Outflow = 0.79 cfs @ 15.71 hrs, Volume= 0.839 af, Atten= 96%, Lag= 217.7 min
Primary = 0.79 cfs @ 15.71 hrs, Volume= 0.839 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 72.58' @ 15.71 hrs Surf.Area= 66,451 sf Storage= 56,255 cf

Plug-Flow detention time= 540.5 min calculated for 0.839 af (48% of inflow)
Center-of-Mass det. time= 412.1 min (1,191.9 - 779.8)

Volume	Invert	Avail.Storage	Storage Description
#1	71.70'	155,808 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.70	60,155	952.0	0	0	60,155
72.00	63,529	1,023.0	18,550	18,550	71,318
73.00	68,606	1,069.0	66,051	84,602	79,047
74.00	73,838	1,080.0	71,206	155,808	81,213

Device	Routing	Invert	Outlet Devices
#1	Primary	72.01'	**12.0" x 3.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 72.00' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Primary	73.30'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.79 cfs @ 15.71 hrs HW=72.58' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.79 cfs @ 2.47 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Subcatchment S-1: Tributary toward BVW

Runoff = 1.43 cfs @ 12.45 hrs, Volume= 0.267 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	150,613	30	Woods, Good, HSG A
	43,177	55	Woods, Good, HSG B
	50,419	68	<50% Grass cover, Poor, HSG A
	2,419	79	<50% Grass cover, Poor, HSG B
*	20,948	98	Existing Pavement
*	899	98	Existing Roof
*	1,574	98	Existing Concrete
*	1,421	77	Gravel & Rubble Stockpiles
	271,470	48	Weighted Average
	248,049		Pervious Area
	23,421		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
4.0	120	0.0100	0.50		**Shallow Concentrated Flow, bc** Woodland Kv= 5.0 fps
18.7	170	Total			

Summary for Subcatchment S-1A: Tributary to Culvert at North Side of Building

Runoff = 0.75 cfs @ 12.29 hrs, Volume= 0.112 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	43,289	30	Woods, Good, HSG A
	32,140	68	<50% Grass cover, Poor, HSG A
*	1,901	98	Existing Roof
*	11,009	77	Gravel & Rubble Stockpiles
	88,339	51	Weighted Average
	86,438		Pervious Area
	1,901		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0500	0.10		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
6.7	200	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
15.0	250	Total			

Summary for Subcatchment S-1B: Tributary to Small Depression at NE Corner of Building

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.017 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	3,457	68	<50% Grass cover, Poor, HSG A
*	656	98	Existing Concrete
	4,113	73	Weighted Average
	3,457		Pervious Area
	656		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Subcatchment S-1C: Tributary to Depression at NW corner of Building

Runoff = 0.75 cfs @ 12.29 hrs, Volume= 0.089 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	17,356	45	Woods, Poor, HSG A
	15,021	68	<50% Grass cover, Poor, HSG A
*	1,901	98	Existing Roof
*	5,087	77	Gravel & Rubble Stockpiles
	39,365	60	Weighted Average
	37,464		Pervious Area
	1,901		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
3.3	100	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
19.1	150	Total			

Summary for Subcatchment S-2: Tributary to Existing Drain Basin Resource Area

Runoff = 27.65 cfs @ 12.08 hrs, Volume= 2.200 af, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	7,500	68	<50% Grass cover, Poor, HSG A
	4,321	79	<50% Grass cover, Poor, HSG B
*	92,147	98	Exisitng Pavement/Concrete
*	94,397	98	Existing Roof
*	60,155	98	Existing Basin @ Elev=71.7
	258,520	97	Weighted Average
	11,821		Pervious Area
	246,699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Subcatchment S-2A: Tributary to Depression at SE Corner of Building

Runoff = 5.24 cfs @ 12.20 hrs, Volume= 0.483 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	20,817	30	Woods, Good, HSG A
	24,816	68	<50% Grass cover, Poor, HSG A
*	57,081	98	Rooftop
	102,714	77	Weighted Average
	45,633		Pervious Area
	57,081		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.40"
1.3	80	0.0200	0.99		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
4.9	190	0.0170	0.65		**Shallow Concentrated Flow, CD** Woodland Kv= 5.0 fps
14.2	320	Total			

Summary for Subcatchment S-2B: Tributary to Depression at SW Corner of Building

Runoff = 1.29 cfs @ 12.10 hrs, Volume= 0.097 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	25,300	68	<50% Grass cover, Poor, HSG A
*	1,410	98	Existing Concrete
	26,710	70	Weighted Average
	25,300		Pervious Area
	1,410		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0250	0.17		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.40"
1.8	130	0.0280	1.17		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
6.8	180	Total			

Summary for Subcatchment S-2C: Tributary to Depression West of Building

Runoff = 0.52 cfs @ 12.11 hrs, Volume= 0.045 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	7,393	30	Woods, Good, HSG A
	15,827	68	<50% Grass cover, Poor, HSG A
*	384	98	Existing Roof
	23,604	57	Weighted Average
	23,220		Pervious Area
	384		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Reach SR: Site Runoff to BVW

Inflow Area = 18.706 ac, 40.92% Impervious, Inflow Depth > 1.33" for 10-yr event
Inflow = 3.88 cfs @ 12.45 hrs, Volume= 2.069 af
Outflow = 3.88 cfs @ 12.45 hrs, Volume= 2.069 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 1A: Storage Behind Culvert

Inflow Area = 2.028 ac, 2.15% Impervious, Inflow Depth = 0.66" for 10-yr event
Inflow = 0.75 cfs @ 12.29 hrs, Volume= 0.112 af
Outflow = 0.75 cfs @ 12.32 hrs, Volume= 0.112 af, Atten= 0%, Lag= 1.3 min
Discarded = 0.07 cfs @ 12.32 hrs, Volume= 0.011 af
Primary = 0.68 cfs @ 12.32 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.88' @ 12.32 hrs Surf.Area= 384 sf Storage= 25 cf

Plug-Flow detention time= 0.3 min calculated for 0.112 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (923.6 - 923.4)

Volume	Invert	Avail.Storage	Storage Description
#1	75.70'	11,295 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.70	2	2.0	0	0	2
76.00	954	345.0	100	100	9,474
77.00	27,508	674.0	11,195	11,295	36,157

Device	Routing	Invert	Outlet Devices
#1	Primary	75.70'	**4.00' W x 2.00' H x 31.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 75.66' S= 0.0013 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	75.70'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 12.32 hrs HW=75.88' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.68 cfs @ 12.32 hrs HW=75.88' TW=75.78' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.68 cfs @ 1.22 fps)

Summary for Pond 1B: Small Depression at NE Corner of Building

Inflow Area = 2.122 ac, 2.77% Impervious, Inflow Depth = 0.67" for 10-yr event
Inflow = 0.78 cfs @ 12.30 hrs, Volume= 0.118 af
Outflow = 0.78 cfs @ 12.30 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.2 min
Discarded = 0.01 cfs @ 12.30 hrs, Volume= 0.003 af
Primary = 0.77 cfs @ 12.30 hrs, Volume= 0.115 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.78' @ 12.30 hrs Surf.Area= 62 sf Storage= 6 cf

Plug-Flow detention time= 0.1 min calculated for 0.118 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (911.7 - 911.6)

Volume	Invert	Avail.Storage	Storage Description
#1	75.54'	457 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.54	2	2.0	0	0	2
76.00	193	85.0	33	33	577
77.00	709	107.0	424	457	927

Device	Routing	Invert	Outlet Devices
#1	Primary	75.54'	**4.00' W x 2.00' H x 45.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 75.53' S= 0.0002 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	75.54'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 12.30 hrs HW=75.78' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.77 cfs @ 12.30 hrs HW=75.78' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.77 cfs @ 1.08 fps)

Summary for Pond 1C: Storage Behind Culvert

Inflow Area = 0.904 ac, 4.83% Impervious, Inflow Depth = 1.19" for 10-yr event
Inflow = 0.75 cfs @ 12.29 hrs, Volume= 0.089 af
Outflow = 0.74 cfs @ 12.34 hrs, Volume= 0.089 af, Atten= 2%, Lag= 2.8 min
Discarded = 0.20 cfs @ 12.34 hrs, Volume= 0.023 af
Primary = 0.54 cfs @ 12.34 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 77.75' @ 12.34 hrs Surf.Area= 1,044 sf Storage= 63 cf

Plug-Flow detention time= 0.7 min calculated for 0.089 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (891.4 - 890.7)

Volume	Invert	Avail.Storage	Storage Description
#1	77.58'	4,907 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.58	2	2.0	0	0	2
78.00	5,752	313.0	821	821	7,798
78.50	10,860	398.0	4,086	4,907	12,611

Device	Routing	Invert	Outlet Devices
#1	Primary	77.58'	**4.00' W x 2.00' H x 45.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 77.54' S= 0.0009 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	77.58'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.20 cfs @ 12.34 hrs HW=77.75' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=0.54 cfs @ 12.34 hrs HW=77.75' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.54 cfs @ 1.03 fps)

Summary for Pond 2A: Depression at SE Corner of Building

Inflow Area = 2.358 ac, 55.57% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 5.24 cfs @ 12.20 hrs, Volume= 0.483 af
Outflow = 3.72 cfs @ 12.36 hrs, Volume= 0.483 af, Atten= 29%, Lag= 9.6 min
Discarded = 1.29 cfs @ 12.36 hrs, Volume= 0.119 af
Primary = 2.44 cfs @ 12.36 hrs, Volume= 0.364 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 74.90' @ 12.36 hrs Surf.Area= 6,729 sf Storage= 2,092 cf

Plug-Flow detention time= 4.2 min calculated for 0.483 af (100% of inflow)
Center-of-Mass det. time= 4.1 min (843.4 - 839.2)

Volume	Invert	Avail.Storage	Storage Description
#1	73.90'	33,995 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.90	2	2.0	0	0	2
74.00	10	10.0	1	1	10
75.00	8,304	644.0	2,867	2,868	33,007
76.00	16,851	655.0	12,328	15,196	34,316
77.00	20,817	705.0	18,799	33,995	39,770

Device	Routing	Invert	Outlet Devices
#1	Primary	73.90'	**12.0" x 44.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 73.55' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	73.91'	**8.270 in/hr Exfiltration over Surface area above invert** Excluded Surface area = 3 sf

Discarded OutFlow Max=1.29 cfs @ 12.36 hrs HW=74.90' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 1.29 cfs)

Primary OutFlow Max=2.44 cfs @ 12.36 hrs HW=74.90' TW=72.70' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.44 cfs @ 3.87 fps)

Summary for Pond 2B: Depression at SW Corner of Building

Inflow Area = 0.613 ac, 5.28% Impervious, Inflow Depth = 1.89" for 10-yr event
Inflow = 1.29 cfs @ 12.10 hrs, Volume= 0.097 af
Outflow = 1.06 cfs @ 12.16 hrs, Volume= 0.097 af, Atten= 18%, Lag= 3.6 min
Discarded = 0.26 cfs @ 12.16 hrs, Volume= 0.025 af
Primary = 0.80 cfs @ 12.16 hrs, Volume= 0.071 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 74.84' @ 12.16 hrs Surf.Area= 1,339 sf Storage= 229 cf

Plug-Flow detention time= 1.9 min calculated for 0.097 af (100% of inflow)
Center-of-Mass det. time= 1.9 min (852.5 - 850.6)

Volume	Invert	Avail.Storage	Storage Description
#1	74.35'	14,436 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.35	2	2.0	0	0	2
75.00	2,273	200.0	508	508	3,185
76.00	5,058	288.0	3,574	4,081	6,612
77.00	7,587	358.0	6,280	10,361	10,224
77.50	8,725	416.0	4,075	14,436	13,802

Device	Routing	Invert	Outlet Devices
#1	Primary	74.35'	**12.0" x 45.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 73.99' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	74.35'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.26 cfs @ 12.16 hrs HW=74.84' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=0.80 cfs @ 12.16 hrs HW=74.84' TW=72.55' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.80 cfs @ 3.04 fps)

Summary for Pond 2C: Depression West of Building

Inflow Area = 0.542 ac, 1.63% Impervious, Inflow Depth = 1.00" for 10-yr event
Inflow = 0.52 cfs @ 12.11 hrs, Volume= 0.045 af
Outflow = 0.42 cfs @ 12.17 hrs, Volume= 0.045 af, Atten= 20%, Lag= 4.0 min
Discarded = 0.25 cfs @ 12.17 hrs, Volume= 0.029 af
Primary = 0.17 cfs @ 12.17 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.82' @ 12.17 hrs Surf.Area= 1,286 sf Storage= 97 cf

Plug-Flow detention time= 2.1 min calculated for 0.045 af (100% of inflow)
Center-of-Mass det. time= 2.1 min (891.0 - 888.9)

Volume	Invert	Avail.Storage	Storage Description
#1	75.60'	15,028 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.60	2	2.0	0	0	2
76.00	4,193	270.0	572	572	5,803
77.00	7,571	341.0	5,799	6,371	9,269
78.00	9,791	412.0	8,657	15,028	13,540

Device	Routing	Invert	Outlet Devices
#1	Primary	75.60'	**12.0" x 37.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 75.30' S= 0.0081 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections

#2 Discarded 75.60' **8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.25 cfs @ 12.17 hrs HW=75.82' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=0.17 cfs @ 12.17 hrs HW=75.82' TW=72.56' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.17 cfs @ 2.05 fps)

Summary for Pond EDB: Existing Detention Basin

Inflow Area = 9.448 ac, 74.25% Impervious, Inflow Depth = 3.37" for 10-yr event
Inflow = 29.90 cfs @ 12.09 hrs, Volume= 2.651 af
Outflow = 1.74 cfs @ 14.35 hrs, Volume= 1.620 af, Atten= 94%, Lag= 135.8 min
Primary = 1.74 cfs @ 14.35 hrs, Volume= 1.620 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 72.91' @ 14.35 hrs Surf.Area= 68,130 sf Storage= 78,298 cf

Plug-Flow detention time= 480.8 min calculated for 1.619 af (61% of inflow)
Center-of-Mass det. time= 371.1 min (1,144.4 - 773.3)

Volume	Invert	Avail.Storage	Storage Description
#1	71.70'	155,808 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.70	60,155	952.0	0	0	60,155
72.00	63,529	1,023.0	18,550	18,550	71,318
73.00	68,606	1,069.0	66,051	84,602	79,047
74.00	73,838	1,080.0	71,206	155,808	81,213

Device	Routing	Invert	Outlet Devices
#1	Primary	72.01'	**12.0" x 3.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 72.00' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Primary	73.30'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.74 cfs @ 14.35 hrs HW=72.91' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.74 cfs @ 3.09 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment S-1: Tributary toward BVW

Runoff = 6.22 cfs @ 12.31 hrs, Volume= 0.774 af, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	150,613	30	Woods, Good, HSG A
	43,177	55	Woods, Good, HSG B
	50,419	68	<50% Grass cover, Poor, HSG A
	2,419	79	<50% Grass cover, Poor, HSG B
*	20,948	98	Existing Pavement
*	899	98	Existing Roof
*	1,574	98	Existing Concrete
*	1,421	77	Gravel & Rubble Stockpiles
	271,470	48	Weighted Average
	248,049		Pervious Area
	23,421		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
4.0	120	0.0100	0.50		**Shallow Concentrated Flow, bc** Woodland Kv= 5.0 fps
18.7	170	Total			

Summary for Subcatchment S-1A: Tributary to Culvert at North Side of Building

Runoff = 2.76 cfs @ 12.23 hrs, Volume= 0.297 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	43,289	30	Woods, Good, HSG A
	32,140	68	<50% Grass cover, Poor, HSG A
*	1,901	98	Existing Roof
*	11,009	77	Gravel & Rubble Stockpiles
	88,339	51	Weighted Average
	86,438		Pervious Area
	1,901		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0500	0.10		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
6.7	200	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
15.0	250	Total			

Summary for Subcatchment S-1B: Tributary to Small Depression at NE Corner of Building

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.031 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	3,457	68	<50% Grass cover, Poor, HSG A
*	656	98	Existing Concrete
	4,113	73	Weighted Average
	3,457		Pervious Area
	656		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Subcatchment S-1C: Tributary to Depression at NW corner of Building

Runoff = 1.83 cfs @ 12.28 hrs, Volume= 0.196 af, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	17,356	45	Woods, Poor, HSG A
	15,021	68	<50% Grass cover, Poor, HSG A
*	1,901	98	Existing Roof
*	5,087	77	Gravel & Rubble Stockpiles
	39,365	60	Weighted Average
	37,464		Pervious Area
	1,901		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.40"
3.3	100	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
19.1	150	Total			

Summary for Subcatchment S-2: Tributary to Existing Drain Basin Resource Area

Runoff = 40.60 cfs @ 12.08 hrs, Volume= 3.285 af, Depth= 6.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	7,500	68	<50% Grass cover, Poor, HSG A
	4,321	79	<50% Grass cover, Poor, HSG B
*	92,147	98	Exisitng Pavement/Concrete
*	94,397	98	Existing Roof
*	60,155	98	Existing Basin @ Elev=71.7
	258,520	97	Weighted Average
	11,821		Pervious Area
	246,699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Subcatchment S-2A: Tributary to Depression at SE Corner of Building

Runoff = 9.31 cfs @ 12.19 hrs, Volume= 0.858 af, Depth= 4.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	20,817	30	Woods, Good, HSG A
	24,816	68	<50% Grass cover, Poor, HSG A
*	57,081	98	Rooftop
	102,714	77	Weighted Average
	45,633		Pervious Area
	57,081		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.40"
1.3	80	0.0200	0.99		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
4.9	190	0.0170	0.65		**Shallow Concentrated Flow, CD** Woodland Kv= 5.0 fps
14.2	320	Total			

Summary for Subcatchment S-2B: Tributary to Depression at SW Corner of Building

Runoff = 2.53 cfs @ 12.10 hrs, Volume= 0.185 af, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	25,300	68	<50% Grass cover, Poor, HSG A
*	1,410	98	Existing Concrete
	26,710	70	Weighted Average
	25,300		Pervious Area
	1,410		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0250	0.17		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.40"
1.8	130	0.0280	1.17		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
6.8	180	Total			

Summary for Subcatchment S-2C: Tributary to Depression West of Building

Runoff = 1.40 cfs @ 12.10 hrs, Volume= 0.104 af, Depth= 2.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	7,393	30	Woods, Good, HSG A
	15,827	68	<50% Grass cover, Poor, HSG A
*	384	98	Existing Roof
	23,604	57	Weighted Average
	23,220		Pervious Area
	384		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Minimum**

Summary for Reach SR: Site Runoff to BVW

Inflow Area = 18.706 ac, 40.92% Impervious, Inflow Depth > 2.65" for 100-yr event
Inflow = 12.31 cfs @ 12.32 hrs, Volume= 4.135 af
Outflow = 12.31 cfs @ 12.32 hrs, Volume= 4.135 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 1A: Storage Behind Culvert

Inflow Area = 2.028 ac, 2.15% Impervious, Inflow Depth = 1.76" for 100-yr event
Inflow = 2.76 cfs @ 12.23 hrs, Volume= 0.297 af
Outflow = 2.65 cfs @ 12.28 hrs, Volume= 0.297 af, Atten= 4%, Lag= 3.2 min
Discarded = 0.40 cfs @ 12.28 hrs, Volume= 0.032 af
Primary = 2.24 cfs @ 12.28 hrs, Volume= 0.265 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 76.11' @ 12.28 hrs Surf.Area= 2,112 sf Storage= 267 cf

Plug-Flow detention time= 0.7 min calculated for 0.297 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (886.6 - 886.0)

Volume	Invert	Avail.Storage	Storage Description
#1	75.70'	11,295 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.70	2	2.0	0	0	2
76.00	954	345.0	100	100	9,474
77.00	27,508	674.0	11,195	11,295	36,157

Device	Routing	Invert	Outlet Devices
#1	Primary	75.70'	**4.00' W x 2.00' H x 31.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 75.66' S= 0.0013 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	75.70'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.40 cfs @ 12.28 hrs HW=76.11' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.40 cfs)

Primary OutFlow Max=2.24 cfs @ 12.28 hrs HW=76.11' TW=75.99' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.24 cfs @ 1.82 fps)

Summary for Pond 1B: Small Depression at NE Corner of Building

Inflow Area = 2.122 ac, 2.77% Impervious, Inflow Depth = 1.67" for 100-yr event
Inflow = 2.44 cfs @ 12.27 hrs, Volume= 0.296 af
Outflow = 2.44 cfs @ 12.28 hrs, Volume= 0.296 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.04 cfs @ 12.28 hrs, Volume= 0.005 af
Primary = 2.41 cfs @ 12.28 hrs, Volume= 0.290 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.99' @ 12.28 hrs Surf.Area= 189 sf Storage= 32 cf

Plug-Flow detention time= 0.1 min calculated for 0.296 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (882.4 - 882.3)

Volume	Invert	Avail.Storage	Storage Description
#1	75.54'	457 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.54	2	2.0	0	0	2
76.00	193	85.0	33	33	577
77.00	709	107.0	424	457	927

Device	Routing	Invert	Outlet Devices
#1	Primary	75.54'	**4.00' W x 2.00' H x 45.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 75.53' S= 0.0002 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	75.54'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.04 cfs @ 12.28 hrs HW=75.99' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=2.41 cfs @ 12.28 hrs HW=75.99' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.41 cfs @ 1.77 fps)

Summary for Pond 1C: Storage Behind Culvert

Inflow Area = 0.904 ac, 4.83% Impervious, Inflow Depth = 2.60" for 100-yr event
Inflow = 1.83 cfs @ 12.28 hrs, Volume= 0.196 af
Outflow = 1.74 cfs @ 12.34 hrs, Volume= 0.196 af, Atten= 5%, Lag= 3.7 min
Discarded = 0.51 cfs @ 12.34 hrs, Volume= 0.052 af
Primary = 1.23 cfs @ 12.34 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 77.86' @ 12.34 hrs Surf.Area= 2,662 sf Storage= 258 cf

Plug-Flow detention time= 1.2 min calculated for 0.196 af (100% of inflow)
Center-of-Mass det. time= 1.2 min (866.9 - 865.7)

Volume	Invert	Avail.Storage	Storage Description
#1	77.58'	4,907 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.58	2	2.0	0	0	2
78.00	5,752	313.0	821	821	7,798
78.50	10,860	398.0	4,086	4,907	12,611

Device	Routing	Invert	Outlet Devices
#1	Primary	77.58'	**4.00' W x 2.00' H x 45.0' long Culvert** Box, 30-75° wingwalls, square crown, Ke= 0.400 Outlet Invert= 77.54' S= 0.0009 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	77.58'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.51 cfs @ 12.34 hrs HW=77.86' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.51 cfs)

Primary OutFlow Max=1.23 cfs @ 12.34 hrs HW=77.86' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.23 cfs @ 1.45 fps)

Summary for Pond 2A: Depression at SE Corner of Building

Inflow Area = 2.358 ac, 55.57% Impervious, Inflow Depth = 4.37" for 100-yr event
Inflow = 9.31 cfs @ 12.19 hrs, Volume= 0.858 af
Outflow = 5.14 cfs @ 12.44 hrs, Volume= 0.858 af, Atten= 45%, Lag= 14.8 min
Discarded = 1.98 cfs @ 12.44 hrs, Volume= 0.243 af
Primary = 3.16 cfs @ 12.44 hrs, Volume= 0.615 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.27' @ 12.44 hrs Surf.Area= 10,355 sf Storage= 5,427 cf

Plug-Flow detention time= 7.2 min calculated for 0.858 af (100% of inflow)
Center-of-Mass det. time= 7.2 min (829.9 - 822.7)

Volume	Invert	Avail.Storage	Storage Description
#1	73.90'	33,995 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.90	2	2.0	0	0	2
74.00	10	10.0	1	1	10
75.00	8,304	644.0	2,867	2,868	33,007
76.00	16,851	655.0	12,328	15,196	34,316
77.00	20,817	705.0	18,799	33,995	39,770

Device	Routing	Invert	Outlet Devices
#1	Primary	73.90'	**12.0" x 44.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 73.55' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	73.91'	**8.270 in/hr Exfiltration over Surface area above invert** Excluded Surface area = 3 sf

Discarded OutFlow Max=1.98 cfs @ 12.44 hrs HW=75.27' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.98 cfs)

Primary OutFlow Max=3.16 cfs @ 12.44 hrs HW=75.27' TW=73.25' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.16 cfs @ 4.02 fps)

Summary for Pond 2B: Depression at SW Corner of Building

Inflow Area = 0.613 ac, 5.28% Impervious, Inflow Depth = 3.62" for 100-yr event
Inflow = 2.53 cfs @ 12.10 hrs, Volume= 0.185 af
Outflow = 1.87 cfs @ 12.18 hrs, Volume= 0.185 af, Atten= 26%, Lag= 4.7 min
Discarded = 0.45 cfs @ 12.18 hrs, Volume= 0.047 af
Primary = 1.42 cfs @ 12.18 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.04' @ 12.18 hrs Surf.Area= 2,364 sf Storage= 601 cf

Plug-Flow detention time= 2.6 min calculated for 0.185 af (100% of inflow)
Center-of-Mass det. time= 2.6 min (834.2 - 831.6)

Volume	Invert	Avail.Storage	Storage Description
#1	74.35'	14,436 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.35	2	2.0	0	0	2
75.00	2,273	200.0	508	508	3,185
76.00	5,058	288.0	3,574	4,081	6,612
77.00	7,587	358.0	6,280	10,361	10,224
77.50	8,725	416.0	4,075	14,436	13,802

Device	Routing	Invert	Outlet Devices
#1	Primary	74.35'	**12.0" x 45.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 73.99' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Discarded	74.35'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.45 cfs @ 12.18 hrs HW=75.04' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.45 cfs)

Primary OutFlow Max=1.42 cfs @ 12.18 hrs HW=75.04' TW=73.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.42 cfs @ 3.46 fps)

Summary for Pond 2C: Depression West of Building

Inflow Area = 0.542 ac, 1.63% Impervious, Inflow Depth = 2.31" for 100-yr event
Inflow = 1.40 cfs @ 12.10 hrs, Volume= 0.104 af
Outflow = 1.00 cfs @ 12.18 hrs, Volume= 0.104 af, Atten= 29%, Lag= 5.0 min
Discarded = 0.59 cfs @ 12.18 hrs, Volume= 0.064 af
Primary = 0.41 cfs @ 12.18 hrs, Volume= 0.041 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.94' @ 12.18 hrs Surf.Area= 3,085 sf Storage= 361 cf

Plug-Flow detention time= 3.2 min calculated for 0.104 af (100% of inflow)
Center-of-Mass det. time= 3.2 min (864.1 - 860.9)

Volume	Invert	Avail.Storage	Storage Description
#1	75.60'	15,028 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.60	2	2.0	0	0	2
76.00	4,193	270.0	572	572	5,803
77.00	7,571	341.0	5,799	6,371	9,269
78.00	9,791	412.0	8,657	15,028	13,540

Device	Routing	Invert	Outlet Devices
#1	Primary	75.60'	**12.0" x 37.0' long Culvert** RCP, sq.cut end projecting, Ke= 0.500 Outlet Invert= 75.30' S= 0.0081 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections

#2 Discarded 75.60' **8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.59 cfs @ 12.18 hrs HW=75.94' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.59 cfs)

Primary OutFlow Max=0.41 cfs @ 12.18 hrs HW=75.94' TW=73.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.41 cfs @ 2.56 fps)

Summary for Pond EDB: Existing Detention Basin

Inflow Area = 9.448 ac, 74.25% Impervious, Inflow Depth = 5.18" for 100-yr event
Inflow = 44.31 cfs @ 12.09 hrs, Volume= 4.079 af
Outflow = 4.63 cfs @ 13.17 hrs, Volume= 2.926 af, Atten= 90%, Lag= 65.1 min
Primary = 4.63 cfs @ 13.17 hrs, Volume= 2.926 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 73.40' @ 13.17 hrs Surf.Area= 70,657 sf Storage= 112,206 cf

Plug-Flow detention time= 429.2 min calculated for 2.925 af (72% of inflow)
Center-of-Mass det. time= 334.8 min (1,101.9 - 767.0)

Volume	Invert	Avail.Storage	Storage Description
#1	71.70'	155,808 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.70	60,155	952.0	0	0	60,155
72.00	63,529	1,023.0	18,550	18,550	71,318
73.00	68,606	1,069.0	66,051	84,602	79,047
74.00	73,838	1,080.0	71,206	155,808	81,213

Device	Routing	Invert	Outlet Devices
#1	Primary	72.01'	**12.0" x 3.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 72.00' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections
#2	Primary	73.30'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.63 cfs @ 13.17 hrs HW=73.40' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.14 cfs @ 4.00 fps)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.49 cfs @ 0.77 fps)