



Routing Diagram for 18131 - OSRD (Post)
 Prepared by Hancock Associates
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18131 - OSRD (Post)

Type III 24-hr 2-year Rainfall=3.03"

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Time span=4.00-72.00 hrs, dt=0.02 hrs, 3401 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10: Off Site	Runoff Area=137,500 sf Runoff Depth=0.78" Flow Length=640' Tc=18.5 min CN=71 Runoff=1.77 cfs 8,911 cf
Subcatchment 20: OSRD - Lots 1 & 2	Runoff Area=15,300 sf Runoff Depth=0.98" Flow Length=150' Tc=14.2 min CN=75 Runoff=0.29 cfs 1,250 cf
Subcatchment 21: OSRD - Lots 1-3	Runoff Area=12,700 sf Runoff Depth=0.98" Flow Length=120' Tc=14.0 min CN=75 Runoff=0.24 cfs 1,038 cf
Subcatchment 22: OSRD - Lot 4	Runoff Area=10,400 sf Runoff Depth=1.09" Flow Length=100' Tc=7.4 min CN=77 Runoff=0.28 cfs 946 cf
Subcatchment 23: OSRD - Lot 5	Runoff Area=8,700 sf Runoff Depth=1.15" Flow Length=30' Slope=0.0600 '/' Tc=6.0 min CN=78 Runoff=0.26 cfs 834 cf
Subcatchment 24: OSRD - Lot 6	Runoff Area=9,100 sf Runoff Depth=1.21" Flow Length=50' Slope=0.0600 '/' Tc=6.0 min CN=79 Runoff=0.29 cfs 918 cf
Subcatchment 25: OSRD - Lot 7	Runoff Area=6,300 sf Runoff Depth=1.21" Tc=6.0 min CN=79 Runoff=0.20 cfs 635 cf
Subcatchment 26: OSRD - Lots 8-9	Runoff Area=20,800 sf Runoff Depth=1.15" Flow Length=115' Tc=6.0 min CN=78 Runoff=0.63 cfs 1,994 cf
Subcatchment 27: OSRD - Lots 6-9	Runoff Area=26,850 sf Runoff Depth=1.21" Flow Length=160' Tc=8.8 min CN=79 Runoff=0.78 cfs 2,708 cf
Subcatchment 28: OSRD Lots 7-9	Runoff Area=59,300 sf Runoff Depth=0.88" Flow Length=440' Tc=14.4 min CN=73 Runoff=0.98 cfs 4,328 cf
Subcatchment 30: OSRD Lots 1-8	Runoff Area=195,650 sf Runoff Depth=0.78" Flow Length=280' Tc=11.0 min CN=71 Runoff=3.06 cfs 12,680 cf
Subcatchment 40: Proposed Road & OSRD Lots 1-3	Runoff Area=73,000 sf Runoff Depth=1.47" Flow Length=150' Slope=0.0600 '/' Tc=9.5 min CN=83 Runoff=2.55 cfs 8,947 cf
Pond C1: Cross Culvert	Peak Elev=863.11' Inflow=1.77 cfs 8,911 cf 18.0" Round Culvert n=0.013 L=36.0' S=0.0417 '/' Outflow=1.77 cfs 8,911 cf
Pond P1: OnSite Stormwater Measure	Peak Elev=850.01' Storage=440 cf Inflow=0.29 cfs 1,250 cf Discarded=0.06 cfs 1,250 cf Primary=0.00 cfs 0 cf Outflow=0.06 cfs 1,250 cf
Pond P2: OnSite Stormwater Measure	Peak Elev=849.74' Storage=369 cf Inflow=0.24 cfs 1,038 cf Discarded=0.03 cfs 1,038 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 1,038 cf
Pond P3: OnSite Stormwater Measure	Peak Elev=849.59' Storage=334 cf Inflow=0.28 cfs 946 cf Discarded=0.03 cfs 947 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 947 cf
Pond P4: OnSite Stormwater Measure	Peak Elev=849.38' Storage=283 cf Inflow=0.26 cfs 834 cf Discarded=0.03 cfs 834 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 834 cf
Pond P5: OnSite Stormwater Measure	Peak Elev=849.55' Storage=325 cf Inflow=0.29 cfs 918 cf Discarded=0.03 cfs 919 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 919 cf
Pond P6: OnSite Stormwater Measure	Peak Elev=848.98' Storage=194 cf Inflow=0.20 cfs 635 cf Discarded=0.03 cfs 636 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 636 cf
Pond P7: OnSite Stormwater Measure	Peak Elev=850.80' Storage=795 cf Inflow=0.63 cfs 1,994 cf Discarded=0.06 cfs 1,994 cf Primary=0.00 cfs 0 cf Outflow=0.06 cfs 1,994 cf

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Type III 24-hr 2-year Rainfall=3.03"

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Pond PA: (Dry) Infiltration Basin

Peak Elev=827.04' Storage=3,992 cf Inflow=3.32 cfs 11,655 cf
Discarded=0.21 cfs 7,800 cf Primary=0.51 cfs 3,860 cf Secondary=0.00 cfs 0 cf Outflow=0.72 cfs 11,659 cf

Link A: Natural Channel - (Map 15, Lot 9.6)

Inflow=1.77 cfs 8,911 cf
Primary=1.77 cfs 8,911 cf

Link B: Property Limits - (Map 15, Lot 1A)

Inflow=1.23 cfs 8,188 cf
Primary=1.23 cfs 8,188 cf

Link C: Project Limits - (Open Space)

Inflow=3.06 cfs 12,680 cf
Primary=3.06 cfs 12,680 cf

Total Runoff Area = 575,600 sf Runoff Volume = 45,190 cf Average Runoff Depth = 0.94"

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Summary for Subcatchment 10: Off Site

Runoff = 1.77 cfs @ 12.29 hrs, Volume= 8,911 cf, Depth= 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs

Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
129,600	70	Woods, Good, HSG C
7,900	92	Paved roads w/open ditches, 50% imp, HSG C
137,500	71	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0900	0.14		Sheet Flow, Tc-1: ROW Woods: Light underbrush n= 0.400 P2= 3.10"
5.4	460	0.0800	1.41		Shallow Concentrated Flow, Tc-2: Woods Woodland Kv= 5.0 fps
1.1	80	0.0600	1.22		Shallow Concentrated Flow, Tc-3: Woods Woodland Kv= 5.0 fps
18.5	640	Total			

Summary for Subcatchment 20: OSRD - Lots 1 & 2

Runoff = 0.29 cfs @ 12.21 hrs, Volume= 1,250 cf, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs

Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
6,500	70	Woods, Good, HSG C
8,800	79	1 acre lots, 20% imp, HSG C
15,300	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	90	0.0500	0.11		Sheet Flow, Tc-1: Woods Woods: Light underbrush n= 0.400 P2= 3.10"
0.3	60	0.0600	3.67		Shallow Concentrated Flow, Tc-2: Developed Lots Grassed Waterway Kv= 15.0 fps
14.2	150	Total			

Summary for Subcatchment 21: OSRD - Lots 1-3

Runoff = 0.24 cfs @ 12.21 hrs, Volume= 1,038 cf, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs

Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
6,300	70	Woods, Good, HSG C
6,400	79	1 acre lots, 20% imp, HSG C
12,700	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	90	0.0500	0.11		Sheet Flow, Tc-1: Woods Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	30	0.0600	3.67		Shallow Concentrated Flow, Tc-2: Developed Lots (1-3) Grassed Waterway Kv= 15.0 fps
14.0	120	Total			

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Summary for Subcatchment 22: OSRD - Lot 4

Runoff = 0.28 cfs @ 12.11 hrs, Volume= 946 cf, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
2,000	70	Woods, Good, HSG C
8,400	79	1 acre lots, 20% imp, HSG C
10,400	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0800	0.12		Sheet Flow, Tc-1: Woods Woods: Light underbrush n= 0.400 P2= 3.10"
0.2	50	0.0600	3.67		Shallow Concentrated Flow, Tc-2: Developed Lots (1-3) Grassed Waterway Kv= 15.0 fps
7.4	100	Total			

Summary for Subcatchment 23: OSRD - Lot 5

Runoff = 0.26 cfs @ 12.09 hrs, Volume= 834 cf, Depth= 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
1,000	70	Woods, Good, HSG C
7,700	79	1 acre lots, 20% imp, HSG C
8,700	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	30	0.0600	0.14		Sheet Flow, Tc-1: Site Grading Grass: Dense n= 0.240 P2= 3.10"
3.6	30	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 24: OSRD - Lot 6

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 918 cf, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
9,100	79	1 acre lots, 20% imp, HSG C

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.0600	0.16		Sheet Flow, Tc-1: Site Grading Grass: Dense n= 0.240 P2= 3.10"
5.4	50	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 25: OSRD - Lot 7

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 635 cf, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
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Area (sf)	CN	Description
6,300	79	1 acre lots, 20% imp, HSG C

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

Summary for Subcatchment 26: OSRD - Lots 8-9

Runoff = 0.63 cfs @ 12.09 hrs, Volume= 1,994 cf, Depth= 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
2,800	70	Woods, Good, HSG C
18,000	79	1 acre lots, 20% imp, HSG C
20,800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	35	0.0800	0.11		Sheet Flow, Tc-1: Woods Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	80	0.0600	3.67		Shallow Concentrated Flow, Tc-2: Site Grading Grassed Waterway Kv= 15.0 fps
5.8	115	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 27: OSRD - Lots 6-9

Runoff = 0.78 cfs @ 12.13 hrs, Volume= 2,708 cf, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
26,850	79	1 acre lots, 20% imp, HSG C

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	90	0.0600	0.17		Sheet Flow, Tc-1: Site Grading Grass: Dense n= 0.240 P2= 3.10"
0.2	70	0.1000	4.74		Shallow Concentrated Flow, Tc-2: Site Grading Grassed Waterway Kv= 15.0 fps
8.8	160	Total			

Summary for Subcatchment 28: OSRD Lots 7-9

Runoff = 0.98 cfs @ 12.22 hrs, Volume= 4,328 cf, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
36,600	70	Woods, Good, HSG C
22,700	79	1 acre lots, 20% imp, HSG C
59,300	73	Weighted Average

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	70	0.0600	0.11		Sheet Flow, Tc-1: Woods Woods: Light underbrush n= 0.400 P2= 3.10"
3.1	290	0.1000	1.58		Shallow Concentrated Flow, Tc-2: Woods Woodland Kv= 5.0 fps
0.7	80	0.1500	1.94		Shallow Concentrated Flow, Tc-3: Woods Woodland Kv= 5.0 fps
14.4	440	Total			

Summary for Subcatchment 30: OSRD Lots 1-8

Runoff = 3.06 cfs @ 12.17 hrs, Volume= 12,680 cf, Depth= 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
165,650	70	Woods, Good, HSG C
30,000	79	1 acre lots, 20% imp, HSG C
195,650	71	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	60	0.0600	0.11		Sheet Flow, Tc-1: Site Grading Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	80	0.1000	1.58		Shallow Concentrated Flow, Tc-2: Woods Woodland Kv= 5.0 fps
0.9	140	0.2700	2.60		Shallow Concentrated Flow, Tc-3: Woods Woodland Kv= 5.0 fps
11.0	280	Total			

Summary for Subcatchment 40: Proposed Road & OSRD Lots 1-3

Runoff = 2.55 cfs @ 12.14 hrs, Volume= 8,947 cf, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.03"

Area (sf)	CN	Description
22,200	74	>75% Grass cover, Good, HSG C
20,800	98	Paved roads w/curbs & sewers, HSG C
27,000	79	1 acre lots, 20% imp, HSG C
3,000	70	Woods, Good, HSG C
73,000	83	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0600	0.18		Sheet Flow, Tc-1: Site Grading Grass: Dense n= 0.240 P2= 3.10"
0.2	50	0.0600	3.67		Shallow Concentrated Flow, Tc-2: Site Grading Grassed Waterway Kv= 15.0 fps
9.5	150	Total			

Summary for Pond C1: Cross Culvert

Inflow Area = 137,500 sf, Inflow Depth = 0.78" for 2-year event
 Inflow = 1.77 cfs @ 12.29 hrs, Volume= 8,911 cf
 Outflow = 1.77 cfs @ 12.29 hrs, Volume= 8,911 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.77 cfs @ 12.29 hrs, Volume= 8,911 cf

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Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3

Peak Elev= 863.11' @ 12.29 hrs

Flood Elev= 867.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	862.50'	18.0" Round Culvert L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 862.50' / 861.00' S= 0.0417' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.77 cfs @ 12.29 hrs HW=863.11' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 1.77 cfs @ 2.65 fps)**Summary for Pond P1: OnSite Stormwater Measure**

Inflow Area = 15,300 sf, Inflow Depth = 0.98" for 2-year event
 Inflow = 0.29 cfs @ 12.21 hrs, Volume= 1,250 cf
 Outflow = 0.06 cfs @ 12.76 hrs, Volume= 1,250 cf, Atten= 79%, Lag= 33.0 min
 Discarded = 0.06 cfs @ 12.76 hrs, Volume= 1,250 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3

Peak Elev= 850.01' @ 12.89 hrs Surf.Area= 1,096 sf Storage= 440 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 122.8 min (992.6 - 869.8)

Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0 1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 12.76 hrs HW=850.00' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.06 cfs)**Primary OutFlow** Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=826.00' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)**Summary for Pond P2: OnSite Stormwater Measure**

Inflow Area = 12,700 sf, Inflow Depth = 0.98" for 2-year event
 Inflow = 0.24 cfs @ 12.21 hrs, Volume= 1,038 cf
 Outflow = 0.03 cfs @ 13.35 hrs, Volume= 1,038 cf, Atten= 86%, Lag= 68.5 min
 Discarded = 0.03 cfs @ 13.35 hrs, Volume= 1,038 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3

Peak Elev= 849.74' @ 13.35 hrs Surf.Area= 618 sf Storage= 369 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 105.6 min (975.3 - 869.6)

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Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0
			1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 13.35 hrs HW=849.74' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=826.00' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P3: OnSite Stormwater Measure

Inflow Area = 10,400 sf, Inflow Depth = 1.09" for 2-year event
 Inflow = 0.28 cfs @ 12.11 hrs, Volume= 946 cf
 Outflow = 0.03 cfs @ 13.05 hrs, Volume= 947 cf, Atten= 88%, Lag= 56.5 min
 Discarded = 0.03 cfs @ 13.05 hrs, Volume= 947 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3
 Peak Elev= 849.59' @ 13.05 hrs Surf.Area= 603 sf Storage= 334 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 93.4 min (950.2 - 856.8)

Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0
			1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 13.05 hrs HW=849.59' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=826.00' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond P4: OnSite Stormwater Measure

Inflow Area = 8,700 sf, Inflow Depth = 1.15" for 2-year event
 Inflow = 0.26 cfs @ 12.09 hrs, Volume= 834 cf
 Outflow = 0.03 cfs @ 12.93 hrs, Volume= 834 cf, Atten= 88%, Lag= 50.3 min
 Discarded = 0.03 cfs @ 12.93 hrs, Volume= 834 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3
 Peak Elev= 849.38' @ 12.93 hrs Surf.Area= 581 sf Storage= 283 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 77.6 min (929.8 - 852.2)

Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0
			1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.93 hrs HW=849.38' (Free Discharge)
 ↳2=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=0.00' (Dynamic Tailwater)
 ↳1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond P5: OnSite Stormwater Measure

Inflow Area = 9,100 sf, Inflow Depth = 1.21" for 2-year event
 Inflow = 0.29 cfs @ 12.09 hrs, Volume= 918 cf
 Outflow = 0.03 cfs @ 12.98 hrs, Volume= 919 cf, Atten= 88%, Lag= 53.4 min
 Discarded = 0.03 cfs @ 12.98 hrs, Volume= 919 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3
 Peak Elev= 849.55' @ 12.98 hrs Surf.Area= 600 sf Storage= 325 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 89.2 min (938.1 - 848.9)

Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0
			1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

18131 - OSRD (Post)

Type III 24-hr 2-year Rainfall=3.03"

Prepared by Hancock Associates

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Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.98 hrs HW=849.55' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)**Primary OutFlow** Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=0.00' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)**Summary for Pond P6: OnSite Stormwater Measure**

Inflow Area = 6,300 sf, Inflow Depth = 1.21" for 2-year event
 Inflow = 0.20 cfs @ 12.09 hrs, Volume= 635 cf
 Outflow = 0.03 cfs @ 12.69 hrs, Volume= 636 cf, Atten= 85%, Lag= 35.8 min
 Discarded = 0.03 cfs @ 12.69 hrs, Volume= 636 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3

Peak Elev= 848.98' @ 12.69 hrs Surf.Area= 542 sf Storage= 194 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 50.2 min (899.1 - 848.9)

Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0 1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.69 hrs HW=848.98' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)**Primary OutFlow** Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=826.00' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)**Summary for Pond P7: OnSite Stormwater Measure**

Inflow Area = 20,800 sf, Inflow Depth = 1.15" for 2-year event
 Inflow = 0.63 cfs @ 12.09 hrs, Volume= 1,994 cf
 Outflow = 0.06 cfs @ 12.16 hrs, Volume= 1,994 cf, Atten= 90%, Lag= 4.0 min
 Discarded = 0.06 cfs @ 12.16 hrs, Volume= 1,994 cf
 Primary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3

Peak Elev= 850.80' @ 13.32 hrs Surf.Area= 1,096 sf Storage= 795 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 150.1 min (1,002.3 - 852.2)

18131 - OSRD (Post)

Type III 24-hr 2-year Rainfall=3.03"

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Volume	Invert	Avail.Storage	Storage Description
#1	850.00'	450 cf	Infiltration Practice - Surface Storage (Irregular) listed below (Recalc)
#2	848.00'	436 cf	15.00'W x 30.00'L x 2.00'H Infiltration Practice (Bio) Z=1.0
			1,091 cf Overall x 40.0% Voids
		886 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
850.00	450	85.0	0	0	450
851.00	450	85.0	450	450	535

Device	Routing	Invert	Outlet Devices
#1	Primary	851.00'	15.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	848.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 12.16 hrs HW=850.02' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 4.00 hrs HW=848.00' TW=826.00' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond PA: (Dry) Infiltration Basin

Inflow Area = 165,350 sf, Inflow Depth = 0.85" for 2-year event
 Inflow = 3.32 cfs @ 12.13 hrs, Volume= 11,655 cf
 Outflow = 0.72 cfs @ 12.62 hrs, Volume= 11,659 cf, Atten= 78%, Lag= 29.1 min
 Discarded = 0.21 cfs @ 12.62 hrs, Volume= 7,800 cf
 Primary = 0.51 cfs @ 12.62 hrs, Volume= 3,860 cf
 Secondary = 0.00 cfs @ 4.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs / 3
 Peak Elev= 827.04' @ 12.62 hrs Surf.Area= 4,274 sf Storage= 3,992 cf
 Flood Elev= 831.00' Surf.Area= 7,400 sf Storage= 27,310 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 79.4 min (921.1 - 841.7)

Volume	Invert	Avail.Storage	Storage Description
#1	826.00'	1,298 cf	Basin - Sediment Forebay (Irregular) listed below (Recalc) Inside #2
#2	826.00'	28,336 cf	Basin - Infiltration Basin (Irregular) listed below (Recalc)
			29,635 cf Overall - 1,298 cf Embedded = 28,336 cf
		29,635 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
826.00	690	100.0	0	0	690
827.00	925	120.0	805	805	1,057
827.50	1,050	125.0	493	1,298	1,172

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
826.00	3,450	310.0	0	0	3,450
828.00	5,120	315.0	8,515	8,515	4,123
830.00	6,675	335.0	11,761	20,276	5,344
831.00	7,400	350.0	7,034	27,310	6,231
831.30	8,100	360.0	2,324	29,635	6,806

18131 - OSRD (Post)

Type III 24-hr 2-year Rainfall=3.03"

Prepared by Hancock Associates

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Device	Routing	Invert	Outlet Devices
#1	Primary	823.00'	15.0" Round Culvert L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 823.00' / 822.00' S= 0.0385 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	826.30'	3.0" W x 52.0" H Vert. Weir C= 0.600
#3	Device 1	830.60'	48.0" x 48.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads
#4	Secondary	831.00'	12.0' long x 6.0' breadth Emergency Spillway 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 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#5	Discarded	826.00'	2.410 in/hr Exfiltration over Wetted area

Discarded OutFlow Max=0.21 cfs @ 12.62 hrs HW=827.04' (Free Discharge)↑**5=Exfiltration** (Exfiltration Controls 0.21 cfs)**Primary OutFlow** Max=0.51 cfs @ 12.62 hrs HW=827.04' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Passes 0.51 cfs of 10.91 cfs potential flow)↑**2=Weir** (Orifice Controls 0.51 cfs @ 2.75 fps)↑**3=Top Grate** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 4.00 hrs HW=826.00' TW=0.00' (Dynamic Tailwater)↑**4=Emergency Spillway** (Controls 0.00 cfs)**Summary for Link A: Natural Channel - (Map 15, Lot 9.6)**

Inflow Area = 137,500 sf, Inflow Depth = 0.78" for 2-year event
 Inflow = 1.77 cfs @ 12.29 hrs, Volume= 8,911 cf
 Primary = 1.77 cfs @ 12.29 hrs, Volume= 8,911 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs

Summary for Link B: Property Limits - (Map 15, Lot 1A)

Inflow Area = 224,650 sf, Inflow Depth = 0.44" for 2-year event
 Inflow = 1.23 cfs @ 12.26 hrs, Volume= 8,188 cf
 Primary = 1.23 cfs @ 12.26 hrs, Volume= 8,188 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs

Summary for Link C: Project Limits - (Open Space)

Inflow Area = 213,450 sf, Inflow Depth = 0.71" for 2-year event
 Inflow = 3.06 cfs @ 12.17 hrs, Volume= 12,680 cf
 Primary = 3.06 cfs @ 12.17 hrs, Volume= 12,680 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 4.00-72.00 hrs, dt= 0.02 hrs