

STORMWATER MANAGEMENT ADDENDUM – EXISTING DETENTION BASIN**MONTGOMERY SENIOR AFFORDABLE HOUSING****BLOCK 20001, LOT 10.05****MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY****I. INTRODUCTION**

The purpose of this addendum is to examine the effect of removing all proposed modifications regarding the large existing detention basin – it would remain in its current state and not converted to a bioretention basin.

The proposed development and new Lot 10.07 will be unaffected by this change. The stormwater analysis was performed analyzing flows *into* the large existing basin, which will not change. The two basins proposed on Lot 10.07 will not change.

Thus, this addendum will focus on changes to the hydraulic characteristics and resulting water surface elevation in the large existing detention basin to ensure it continues to operate in a safe and efficient manner.

II. DISCUSSION

Table 2 below, taken from the Stormwater Management Report last revised November 13, 2023, summarizes characteristics of the existing basin in the pre-development condition.

Storm Event (YR)	Basin Inflow (cfs)	Basin Outflow (cfs)	Max. Basin Storage (cu-ft)	Water Surface Elevation
2	11.31	6.78	49,694	82.56
10	22.74	17.39	70,916	83.19
100	44.28	38.63	104,935	84.14

Table 2: Existing Basin Summary

Table 7 below, also taken from the aforementioned Stormwater Management Report, summarizes characteristics of that same basin following conversion to a bioretention basin, which included regrading of the basin bottom and modification to its outlet structure.

Storm Event (YR)	Basin Inflow (cfs)	Basin Outflow (cfs)	Max. Basin Storage (cu-ft)	Water Surface Elevation
WQ	3.57	0.30	22,294	80.89
2	11.06	5.64	67,666	82.48
10	22.57	16.07	89,099	83.13
100	44.06	38.01	124,514	84.12

Table 7: Converted Bioretention Basin Summary

Table 8 below, newly presented herein, details the resulting changes to the basin characteristics by removing those previously proposed modifications.

Storm Event (YR)	Basin Inflow (cfs)	Basin Outflow (cfs)	Max. Basin Storage (cu-ft)	Water Surface Elevation
WQ	3.57	0.63	18,569	81.45
2	11.06	6.81	49,748	82.56
10	22.57	17.30	70,758	83.19
100	44.06	38.28	104,422	84.13

Table 8: Converted Bioretention Basin Summary

Following a comparison of Tables 7 & 8, it is evident that no significant changes will result in the hydraulic operation of the existing basin. The critical element to note is that the 100-yr water surface elevation changes by only 0.01', a negligible amount.

III. CONCLUSION

The removal of all previously proposed modifications regarding the large existing detention basin will result in no significant changes regarding the hydraulic operation or water surface elevation of the existing basin, which will continue to operate in a safe and efficient manner.



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2024-01-26 Post-Development

NJ DEP 2-hr .WQ Rainfall=1.25"

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Summary for Pond 7P: Existing Basin

Inflow Area = 35.620 ac, 19.74% Impervious, Inflow Depth = 0.22" for .WQ event
 Inflow = 3.57 cfs @ 1.87 hrs, Volume= 0.639 af
 Outflow = 0.63 cfs @ 4.61 hrs, Volume= 0.639 af, Atten= 82%, Lag= 164.3 min
 Primary = 0.63 cfs @ 4.61 hrs, Volume= 0.639 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 81.45' @ 4.61 hrs Surf.Area= 21,864 sf Storage= 18,569 cf

Plug-Flow detention time= 326.6 min calculated for 0.639 af (100% of inflow)
 Center-of-Mass det. time= 326.6 min (493.1 - 166.5)

Volume	Invert	Avail.Storage	Storage Description
#1	78.80'	223,129 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.80	1	0	0
79.00	16	2	2
80.00	2,181	1,099	1,100
81.00	15,895	9,038	10,138
82.00	29,262	22,579	32,717
83.00	34,004	31,633	64,350
84.00	36,834	35,419	99,769
85.00	39,677	38,256	138,024
86.00	42,533	41,105	179,129
87.00	45,467	44,000	223,129

Device	Routing	Invert	Outlet Devices
#1	Primary	76.60'	48.0" Round 48" Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.60' / 76.10' S= 0.0100 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Device 1	76.60'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	81.90'	42.0" W x 38.5" H Vert. 42" Weir C= 0.600 Limited to weir flow at low heads
#4	Device 1	85.44'	16.0' long x 16.0' breadth Outlet Structure Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	78.80'	15.0" Round Headwall Outlet (15" RCP) L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 78.80' / 78.30' S= 0.1250 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#6	Device 5	78.80'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 2	78.80'	0.500 in/hr Underdrain over Surface area

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NJ DEP 2-hr .WQ Rainfall=1.25"

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Primary OutFlow Max=0.63 cfs @ 4.61 hrs HW=81.45' (Free Discharge)

1=48" Culvert (Passes 0.63 cfs of 97.51 cfs potential flow)

2=3" Orifice (Passes 0.25 cfs of 0.51 cfs potential flow)

7=Underdrain (Exfiltration Controls 0.25 cfs)

3=42" Weir (Controls 0.00 cfs)

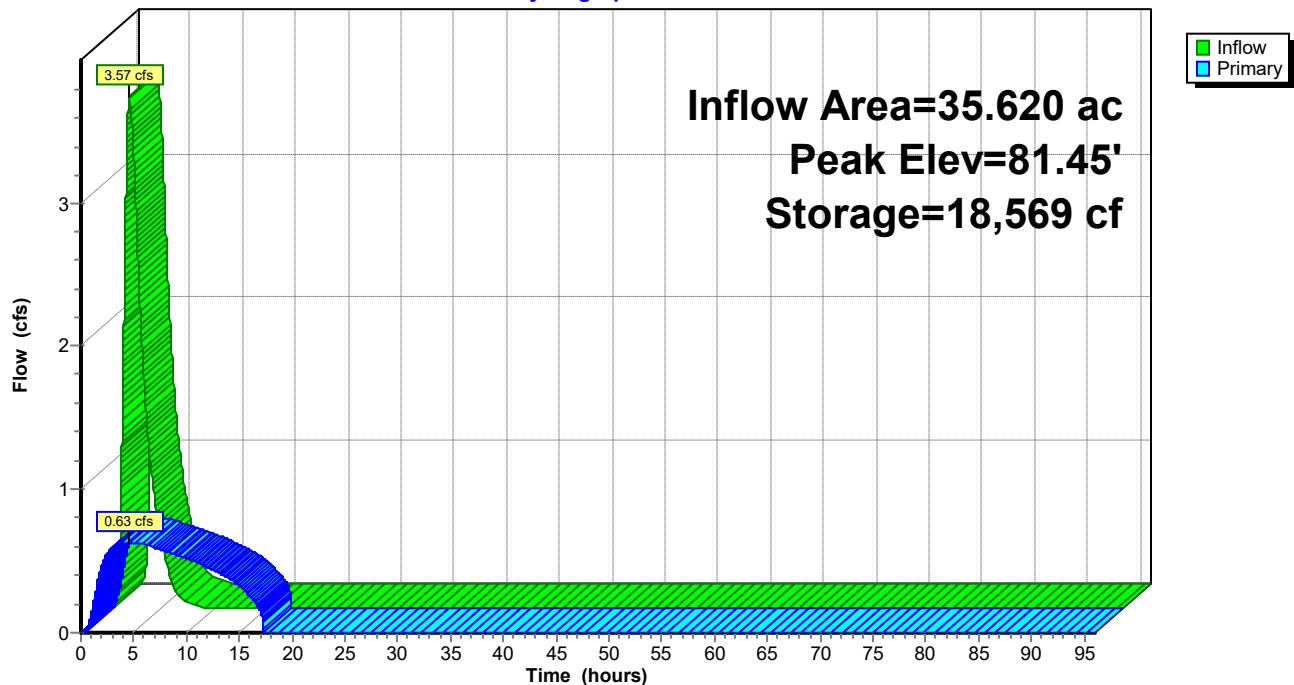
4=Outlet Structure Overflow (Controls 0.00 cfs)

5=Headwall Outlet (15" RCP) (Passes 0.38 cfs of 8.40 cfs potential flow)

6=3" Orifice (Orifice Controls 0.38 cfs @ 7.65 fps)

Pond 7P: Existing Basin

Hydrograph



2024-01-26 Post-Development

NJ DEP 2-hr .WQ Rainfall=1.25"

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Hydrograph for Pond 7P: Existing Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	78.80	0.00
2.00	3.56	6,983	80.78	0.47
4.00	0.97	18,229	81.43	0.62
6.00	0.18	17,344	81.39	0.62
8.00	0.02	13,597	81.20	0.57
10.00	0.00	9,701	80.97	0.52
12.00	0.00	6,196	80.72	0.46
14.00	0.00	3,179	80.41	0.38
16.00	0.00	852	79.88	0.25
18.00	0.00	0	78.80	0.00
20.00	0.00	0	78.80	0.00
22.00	0.00	0	78.80	0.00
24.00	0.00	0	78.80	0.00
26.00	0.00	0	78.80	0.00
28.00	0.00	0	78.80	0.00
30.00	0.00	0	78.80	0.00
32.00	0.00	0	78.80	0.00
34.00	0.00	0	78.80	0.00
36.00	0.00	0	78.80	0.00
38.00	0.00	0	78.80	0.00
40.00	0.00	0	78.80	0.00
42.00	0.00	0	78.80	0.00
44.00	0.00	0	78.80	0.00
46.00	0.00	0	78.80	0.00
48.00	0.00	0	78.80	0.00
50.00	0.00	0	78.80	0.00
52.00	0.00	0	78.80	0.00
54.00	0.00	0	78.80	0.00
56.00	0.00	0	78.80	0.00
58.00	0.00	0	78.80	0.00
60.00	0.00	0	78.80	0.00
62.00	0.00	0	78.80	0.00
64.00	0.00	0	78.80	0.00
66.00	0.00	0	78.80	0.00
68.00	0.00	0	78.80	0.00
70.00	0.00	0	78.80	0.00
72.00	0.00	0	78.80	0.00
74.00	0.00	0	78.80	0.00
76.00	0.00	0	78.80	0.00
78.00	0.00	0	78.80	0.00
80.00	0.00	0	78.80	0.00
82.00	0.00	0	78.80	0.00
84.00	0.00	0	78.80	0.00
86.00	0.00	0	78.80	0.00
88.00	0.00	0	78.80	0.00
90.00	0.00	0	78.80	0.00
92.00	0.00	0	78.80	0.00
94.00	0.00	0	78.80	0.00
96.00	0.00	0	78.80	0.00

2024-01-26 Post-Development

Somerset 2_yr_tbl 2_yr_stm Rainfall=3.34"

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Summary for Pond 7P: Existing Basin

Inflow Area = 35.620 ac, 19.74% Impervious, Inflow Depth = 1.29" for 2_yr_stm event
 Inflow = 11.06 cfs @ 12.88 hrs, Volume= 3.843 af
 Outflow = 6.81 cfs @ 14.33 hrs, Volume= 3.843 af, Atten= 38%, Lag= 86.9 min
 Primary = 6.81 cfs @ 14.33 hrs, Volume= 3.843 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 82.56' @ 14.33 hrs Surf.Area= 31,903 sf Storage= 49,748 cf

Plug-Flow detention time= 251.1 min calculated for 3.843 af (100% of inflow)
 Center-of-Mass det. time= 251.1 min (1,162.0 - 910.9)

Volume	Invert	Avail.Storage	Storage Description
#1	78.80'	223,129 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.80	1	0	0
79.00	16	2	2
80.00	2,181	1,099	1,100
81.00	15,895	9,038	10,138
82.00	29,262	22,579	32,717
83.00	34,004	31,633	64,350
84.00	36,834	35,419	99,769
85.00	39,677	38,256	138,024
86.00	42,533	41,105	179,129
87.00	45,467	44,000	223,129

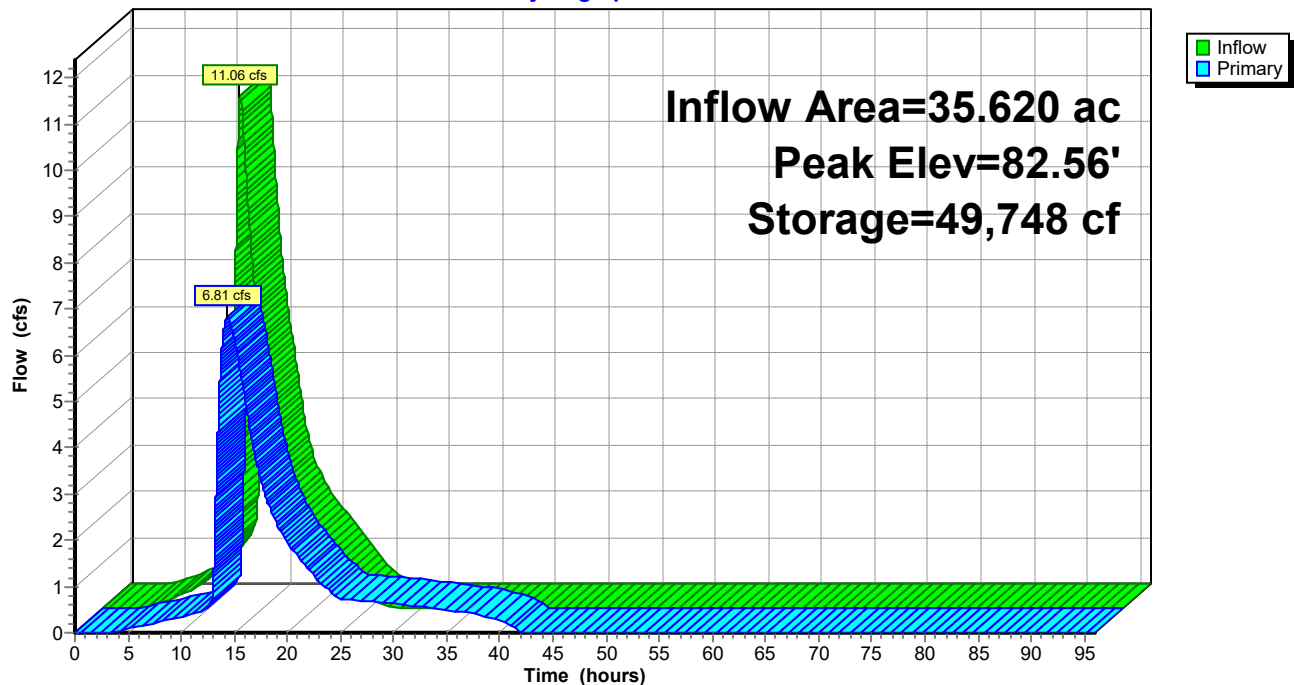
Device	Routing	Invert	Outlet Devices
#1	Primary	76.60'	48.0" Round 48" Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.60' / 76.10' S= 0.0100 ' S= 0.0100 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Device 1	76.60'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	81.90'	42.0" W x 38.5" H Vert. 42" Weir C= 0.600 Limited to weir flow at low heads
#4	Device 1	85.44'	16.0' long x 16.0' breadth Outlet Structure Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	78.80'	15.0" Round Headwall Outlet (15" RCP) L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 78.80' / 78.30' S= 0.1250 ' S= 0.1250 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#6	Device 5	78.80'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 2	78.80'	0.500 in/hr Underdrain over Surface area

Primary OutFlow Max=6.80 cfs @ 14.33 hrs HW=82.56' (Free Discharge)

- 1=48" Culvert (Passes 6.80 cfs of 120.36 cfs potential flow)
- 2=3" Orifice (Passes 0.37 cfs of 0.57 cfs potential flow)
- 7=Underdrain (Exfiltration Controls 0.37 cfs)
- 3=42" Weir (Orifice Controls 5.98 cfs @ 2.60 fps)
- 4=Outlet Structure Overflow (Controls 0.00 cfs)
- 5=Headwall Outlet (15" RCP) (Passes 0.45 cfs of 10.46 cfs potential flow)
- 6=3" Orifice (Orifice Controls 0.45 cfs @ 9.18 fps)

Pond 7P: Existing Basin

Hydrograph



2024-01-26 Post-Development

Somerset 2_yr_tbl 2_yr_stm Rainfall=3.34"

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Hydrograph for Pond 7P: Existing Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	78.80	0.00
2.00	0.00	0	78.80	0.00
4.00	0.02	1	78.90	0.02
6.00	0.17	65	79.23	0.14
8.00	0.37	651	79.77	0.24
10.00	0.70	2,159	80.26	0.34
12.00	2.03	6,729	80.76	0.47
14.00	7.64	49,183	82.54	6.57
16.00	4.07	45,531	82.42	5.06
18.00	2.33	39,557	82.23	2.91
20.00	1.61	36,357	82.12	1.97
22.00	1.04	33,969	82.04	1.38
24.00	0.46	31,259	81.95	0.90
26.00	0.09	27,532	81.81	0.71
28.00	0.02	22,881	81.63	0.67
30.00	0.01	18,282	81.43	0.63
32.00	0.00	13,984	81.22	0.58
34.00	0.00	10,042	80.99	0.52
36.00	0.00	6,504	80.74	0.46
38.00	0.00	3,444	80.45	0.39
40.00	0.00	1,037	79.97	0.27
42.00	0.00	0	78.80	0.00
44.00	0.00	0	78.80	0.00
46.00	0.00	0	78.80	0.00
48.00	0.00	0	78.80	0.00
50.00	0.00	0	78.80	0.00
52.00	0.00	0	78.80	0.00
54.00	0.00	0	78.80	0.00
56.00	0.00	0	78.80	0.00
58.00	0.00	0	78.80	0.00
60.00	0.00	0	78.80	0.00
62.00	0.00	0	78.80	0.00
64.00	0.00	0	78.80	0.00
66.00	0.00	0	78.80	0.00
68.00	0.00	0	78.80	0.00
70.00	0.00	0	78.80	0.00
72.00	0.00	0	78.80	0.00
74.00	0.00	0	78.80	0.00
76.00	0.00	0	78.80	0.00
78.00	0.00	0	78.80	0.00
80.00	0.00	0	78.80	0.00
82.00	0.00	0	78.80	0.00
84.00	0.00	0	78.80	0.00
86.00	0.00	0	78.80	0.00
88.00	0.00	0	78.80	0.00
90.00	0.00	0	78.80	0.00
92.00	0.00	0	78.80	0.00
94.00	0.00	0	78.80	0.00
96.00	0.00	0	78.80	0.00

2024-01-26 Post-Development

Somerset 10_yr_tbl 10_yr_stm Rainfall=5.02"

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Summary for Pond 7P: Existing Basin

Inflow Area = 35.620 ac, 19.74% Impervious, Inflow Depth = 2.52" for 10_yr_stm event
 Inflow = 22.57 cfs @ 12.88 hrs, Volume= 7.477 af
 Outflow = 17.30 cfs @ 13.68 hrs, Volume= 7.477 af, Atten= 23%, Lag= 47.8 min
 Primary = 17.30 cfs @ 13.68 hrs, Volume= 7.477 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 83.19' @ 13.68 hrs Surf.Area= 34,533 sf Storage= 70,758 cf

Plug-Flow detention time= 160.7 min calculated for 7.476 af (100% of inflow)
 Center-of-Mass det. time= 160.7 min (1,064.9 - 904.1)

Volume	Invert	Avail.Storage	Storage Description
#1	78.80'	223,129 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.80	1	0	0
79.00	16	2	2
80.00	2,181	1,099	1,100
81.00	15,895	9,038	10,138
82.00	29,262	22,579	32,717
83.00	34,004	31,633	64,350
84.00	36,834	35,419	99,769
85.00	39,677	38,256	138,024
86.00	42,533	41,105	179,129
87.00	45,467	44,000	223,129

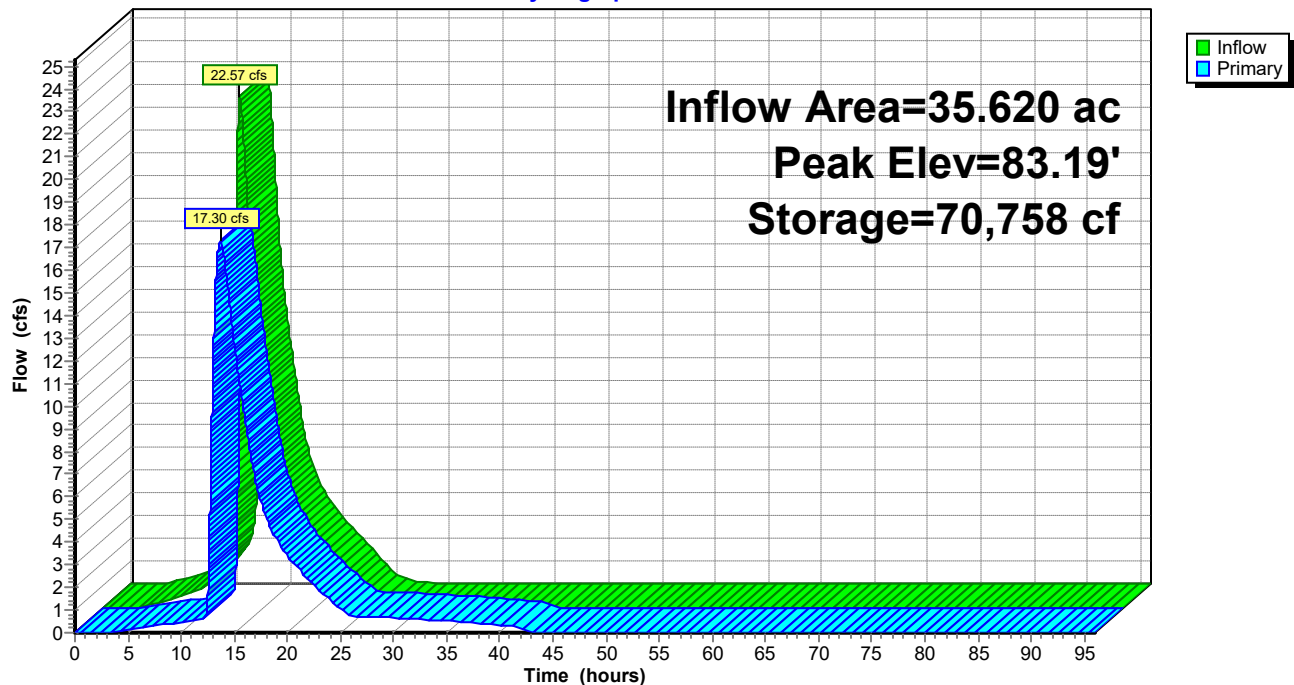
Device	Routing	Invert	Outlet Devices
#1	Primary	76.60'	48.0" Round 48" Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.60' / 76.10' S= 0.0100 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Device 1	76.60'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	81.90'	42.0" W x 38.5" H Vert. 42" Weir C= 0.600 Limited to weir flow at low heads
#4	Device 1	85.44'	16.0' long x 16.0' breadth Outlet Structure Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	78.80'	15.0" Round Headwall Outlet (15" RCP) L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 78.80' / 78.30' S= 0.1250 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#6	Device 5	78.80'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 2	78.80'	0.500 in/hr Underdrain over Surface area

Primary OutFlow Max=17.29 cfs @ 13.68 hrs HW=83.19' (Free Discharge)

- 1=48" Culvert (Passes 17.29 cfs of 129.59 cfs potential flow)
- 2=3" Orifice (Passes 0.40 cfs of 0.60 cfs potential flow)
- 7=Underdrain (Exfiltration Controls 0.40 cfs)
- 3=42" Weir (Orifice Controls 16.40 cfs @ 3.64 fps)
- 4=Outlet Structure Overflow (Controls 0.00 cfs)
- 5=Headwall Outlet (15" RCP) (Passes 0.49 cfs of 11.46 cfs potential flow)
- 6=3" Orifice (Orifice Controls 0.49 cfs @ 9.94 fps)

Pond 7P: Existing Basin

Hydrograph



2024-01-26 Post-Development

Somerset 10_yr_tbl 10_yr_stm Rainfall=5.02"

Prepared by HP Inc.

Printed 2/13/2024

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Hydrograph for Pond 7P: Existing Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	78.80	0.00
2.00	0.00	0	78.80	0.00
4.00	0.08	4	79.03	0.08
6.00	0.35	433	79.62	0.21
8.00	0.65	2,075	80.25	0.34
10.00	1.14	5,273	80.64	0.44
12.00	5.11	16,530	81.35	0.61
14.00	15.11	69,704	83.16	16.71
16.00	7.56	55,454	82.73	9.39
18.00	4.22	45,574	82.42	5.08
20.00	2.89	40,980	82.28	3.39
22.00	1.91	37,752	82.17	2.35
24.00	0.91	34,296	82.05	1.45
26.00	0.20	30,188	81.91	0.75
28.00	0.04	25,715	81.75	0.70
30.00	0.01	20,991	81.55	0.65
32.00	0.00	16,505	81.35	0.61
34.00	0.00	12,350	81.13	0.56
36.00	0.00	8,566	80.90	0.50
38.00	0.00	5,211	80.63	0.43
40.00	0.00	2,379	80.30	0.35
42.00	0.00	354	79.56	0.20
44.00	0.00	0	78.80	0.00
46.00	0.00	0	78.80	0.00
48.00	0.00	0	78.80	0.00
50.00	0.00	0	78.80	0.00
52.00	0.00	0	78.80	0.00
54.00	0.00	0	78.80	0.00
56.00	0.00	0	78.80	0.00
58.00	0.00	0	78.80	0.00
60.00	0.00	0	78.80	0.00
62.00	0.00	0	78.80	0.00
64.00	0.00	0	78.80	0.00
66.00	0.00	0	78.80	0.00
68.00	0.00	0	78.80	0.00
70.00	0.00	0	78.80	0.00
72.00	0.00	0	78.80	0.00
74.00	0.00	0	78.80	0.00
76.00	0.00	0	78.80	0.00
78.00	0.00	0	78.80	0.00
80.00	0.00	0	78.80	0.00
82.00	0.00	0	78.80	0.00
84.00	0.00	0	78.80	0.00
86.00	0.00	0	78.80	0.00
88.00	0.00	0	78.80	0.00
90.00	0.00	0	78.80	0.00
92.00	0.00	0	78.80	0.00
94.00	0.00	0	78.80	0.00
96.00	0.00	0	78.80	0.00

Summary for Pond 7P: Existing Basin

[79] Warning: Submerged Pond 1P Primary device # 1 INLET by 0.13'

Inflow Area = 35.620 ac, 19.74% Impervious, Inflow Depth = 5.23" for 100_yr_stm event
 Inflow = 44.06 cfs @ 12.88 hrs, Volume= 15.516 af
 Outflow = 38.28 cfs @ 13.39 hrs, Volume= 15.516 af, Atten= 13%, Lag= 30.5 min
 Primary = 38.28 cfs @ 13.39 hrs, Volume= 15.516 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 84.13' @ 13.39 hrs Surf.Area= 37,191 sf Storage= 104,422 cf

Plug-Flow detention time= 105.0 min calculated for 15.514 af (100% of inflow)
 Center-of-Mass det. time= 105.0 min (1,001.7 - 896.7)

Volume	Invert	Avail.Storage	Storage Description
#1	78.80'	223,129 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.80	1	0	0
79.00	16	2	2
80.00	2,181	1,099	1,100
81.00	15,895	9,038	10,138
82.00	29,262	22,579	32,717
83.00	34,004	31,633	64,350
84.00	36,834	35,419	99,769
85.00	39,677	38,256	138,024
86.00	42,533	41,105	179,129
87.00	45,467	44,000	223,129

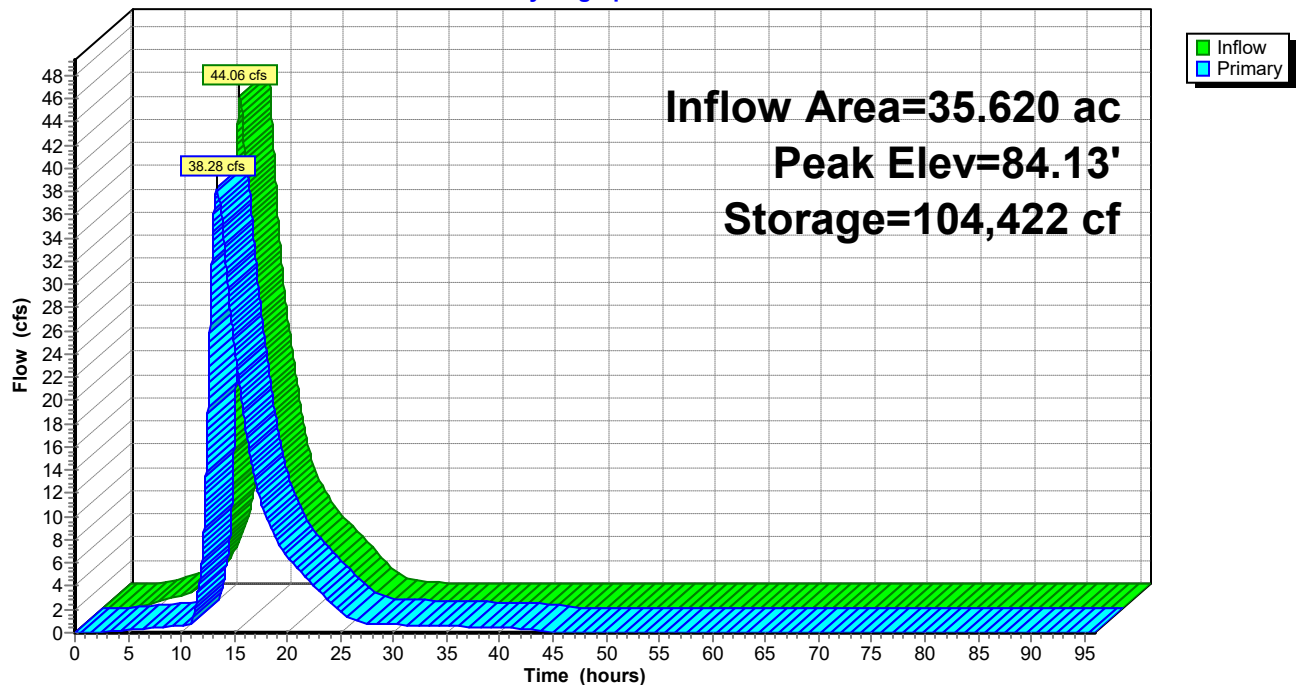
Device	Routing	Invert	Outlet Devices
#1	Primary	76.60'	48.0" Round 48" Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.60' / 76.10' S= 0.0100 ' S= 0.0100 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Device 1	76.60'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	81.90'	42.0" W x 38.5" H Vert. 42" Weir C= 0.600 Limited to weir flow at low heads
#4	Device 1	85.44'	16.0' long x 16.0' breadth Outlet Structure Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	78.80'	15.0" Round Headwall Outlet (15" RCP) L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 78.80' / 78.30' S= 0.1250 ' S= 0.1250 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#6	Device 5	78.80'	3.0" Vert. 3" Orifice C= 0.600 Limited to weir flow at low heads
#7	Device 2	78.80'	0.500 in/hr Underdrain over Surface area

Primary OutFlow Max=38.28 cfs @ 13.39 hrs HW=84.13' (Free Discharge)

- 1=48" Culvert (Passes 38.28 cfs of 142.23 cfs potential flow)
- 2=3" Orifice (Passes 0.43 cfs of 0.64 cfs potential flow)
- 7=Underdrain (Exfiltration Controls 0.43 cfs)
- 3=42" Weir (Orifice Controls 37.31 cfs @ 4.79 fps)
- 4=Outlet Structure Overflow (Controls 0.00 cfs)
- 5=Headwall Outlet (15" RCP) (Passes 0.54 cfs of 12.81 cfs potential flow)
- 6=3" Orifice (Orifice Controls 0.54 cfs @ 10.98 fps)

Pond 7P: Existing Basin

Hydrograph



2024-01-26 Post-Development

Somerset 100_yr_tbl 100_yr_stm Rainfall=8.24"

Prepared by HP Inc.

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Hydrograph for Pond 7P: Existing Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	78.80	0.00
2.00	0.00	0	78.81	0.00
4.00	0.27	167	79.38	0.17
6.00	0.78	2,106	80.25	0.34
8.00	1.31	6,687	80.76	0.47
10.00	3.45	17,461	81.39	0.62
12.00	14.67	49,838	82.56	6.84
14.00	29.58	98,095	83.95	34.04
16.00	15.07	72,126	83.23	18.06
18.00	8.52	56,433	82.76	9.86
20.00	5.80	49,234	82.54	6.59
22.00	3.81	44,095	82.38	4.51
24.00	1.83	38,702	82.20	2.65
26.00	0.51	33,003	82.01	1.17
28.00	0.18	28,981	81.87	0.72
30.00	0.06	24,707	81.71	0.69
32.00	0.01	20,096	81.51	0.64
34.00	0.01	15,683	81.31	0.60
36.00	0.00	11,599	81.09	0.55
38.00	0.00	7,894	80.85	0.49
40.00	0.00	4,629	80.57	0.42
42.00	0.00	1,916	80.22	0.33
44.00	0.00	109	79.31	0.15
46.00	0.00	0	78.80	0.00
48.00	0.00	0	78.80	0.00
50.00	0.00	0	78.80	0.00
52.00	0.00	0	78.80	0.00
54.00	0.00	0	78.80	0.00
56.00	0.00	0	78.80	0.00
58.00	0.00	0	78.80	0.00
60.00	0.00	0	78.80	0.00
62.00	0.00	0	78.80	0.00
64.00	0.00	0	78.80	0.00
66.00	0.00	0	78.80	0.00
68.00	0.00	0	78.80	0.00
70.00	0.00	0	78.80	0.00
72.00	0.00	0	78.80	0.00
74.00	0.00	0	78.80	0.00
76.00	0.00	0	78.80	0.00
78.00	0.00	0	78.80	0.00
80.00	0.00	0	78.80	0.00
82.00	0.00	0	78.80	0.00
84.00	0.00	0	78.80	0.00
86.00	0.00	0	78.80	0.00
88.00	0.00	0	78.80	0.00
90.00	0.00	0	78.80	0.00
92.00	0.00	0	78.80	0.00
94.00	0.00	0	78.80	0.00
96.00	0.00	0	78.80	0.00