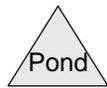
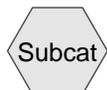
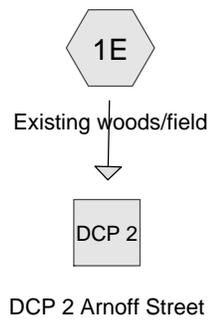
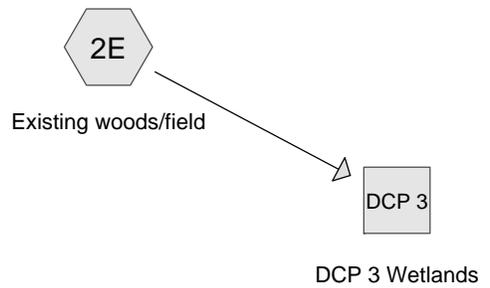


DCP 1 Achushnet Ave

POND #1



**Routing Diagram for NORTHSIDE FARM ECON - 5-23-16**  
 Prepared by Microsoft, Printed 5/23/2016  
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1B: Bank Roof** Runoff Area=3,300 sf 100.00% Impervious Runoff Depth>2.77"  
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.018 af

**Subcatchment 1E: Existing woods/field** Runoff Area=185,628 sf 1.83% Impervious Runoff Depth>0.94"  
Flow Length=600' Tc=14.5 min CN=74 Runoff=3.72 cfs 0.335 af

**Subcatchment 2B: Bank Parking Lot** Runoff Area=36,670 sf 59.99% Impervious Runoff Depth>1.87"  
Tc=5.0 min CN=88 Runoff=1.96 cfs 0.131 af

**Subcatchment 2E: Existing woods/field** Runoff Area=417,719 sf 1.18% Impervious Runoff Depth>0.94"  
Flow Length=1,200' Tc=16.7 min CN=74 Runoff=7.93 cfs 0.753 af

**Subcatchment 3B: landscape** Runoff Area=3,128 sf 0.00% Impervious Runoff Depth>0.95"  
Tc=5.0 min CN=74 Runoff=0.08 cfs 0.006 af

**Reach 3R: 24" RCP** Avg. Flow Depth=0.46' Max Vel=3.60 fps Inflow=1.96 cfs 0.131 af  
24.0" Round Pipe n=0.013 L=35.0' S=0.0057 '/' Capacity=17.10 cfs Outflow=1.95 cfs 0.131 af

**Reach DCP 1: DCP 1 Achushnet Ave** Inflow=0.08 cfs 0.006 af  
Outflow=0.08 cfs 0.006 af

**Reach DCP 2: DCP 2 Arnoff Street** Inflow=3.72 cfs 0.335 af  
Outflow=3.72 cfs 0.335 af

**Reach DCP 3: DCP 3 Wetlands** Inflow=7.93 cfs 0.753 af  
Outflow=7.93 cfs 0.753 af

**Pond 1P: POND #1** Peak Elev=95.51' Storage=604 cf Inflow=1.95 cfs 0.131 af  
Discarded=1.02 cfs 0.131 af Primary=0.00 cfs 0.000 af Outflow=1.02 cfs 0.131 af

**Pond 2P: RC** Peak Elev=91.26' Storage=156 cf Inflow=0.24 cfs 0.018 af  
Discarded=0.08 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.018 af

**Summary for Subcatchment 1B: Bank Roof**

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2 Year Event Rainfall=3.20"

Area (sf)	CN	Description
* 3,300	98	Bank Roof
3,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, DIRECT</b>

**Summary for Subcatchment 1E: Existing woods/field**

Runoff = 3.72 cfs @ 12.22 hrs, Volume= 0.335 af, Depth> 0.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2 Year Event Rainfall=3.20"

Area (sf)	CN	Description
130,145	73	Woods, Fair, HSG C
49,442	76	Woods/grass comb., Fair, HSG C
* 0	74	Lawn adj. Phillips
* 1,290	98	Roofs Achushnet Ave
* 0	98	Roofs Phillips Ave west
* 0	98	Roofs Phillips Ave East
* 2,651	76	grass adj. to Monson St
* 2,100	98	drive adj. to Monson st
185,628	74	Weighted Average
182,238		98.17% Pervious Area
3,390		1.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
4.0	550	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
14.5	600	Total			

**Summary for Subcatchment 2B: Bank Parking Lot**

Runoff = 1.96 cfs @ 12.08 hrs, Volume= 0.131 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2 Year Event Rainfall=3.20"

**NORTHSIDE FARM ECON - 5-23-16**

Type III 24-hr 2 Year Event Rainfall=3.20"

Prepared by Microsoft

Printed 5/23/2016

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Page 4

Area (sf)	CN	Description
22,000	98	Paved parking & roofs
14,670	74	>75% Grass cover, Good, HSG C
36,670	88	Weighted Average
14,670		40.01% Pervious Area
22,000		59.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, direct</b>

**Summary for Subcatchment 2E: Existing woods/field**

Runoff = 7.93 cfs @ 12.25 hrs, Volume= 0.753 af, Depth> 0.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2 Year Event Rainfall=3.20"

Area (sf)	CN	Description
283,267	73	Woods, Fair, HSG C
90,464	76	Woods/grass comb., Fair, HSG C
* 39,058	74	Lawn adj. Phillips
* 0	98	Roofs Achushnet Ave
* 2,059	98	Roofs Phillips Ave west
* 2,871	98	Roofs Phillips Ave East
* 0	76	grass adj. to Monson St
* 0	98	drive adj. to Monson st
417,719	74	Weighted Average
412,789		98.82% Pervious Area
4,930		1.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
5.1	700	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
1.1	450	0.0200	6.67	40.03	<b>Channel Flow, CHANNEL</b> Area= 6.0 sf Perim= 8.0' r= 0.75' n= 0.026
16.7	1,200	Total			

**Summary for Subcatchment 3B: landscape**

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 0.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2 Year Event Rainfall=3.20"

Area (sf)	CN	Description
3,128	74	>75% Grass cover, Good, HSG C
3,128		100.00% Pervious Area

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

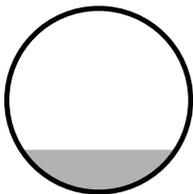
**Summary for Reach 3R: 24" RCP**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 1.87" for 2 Year Event event  
 Inflow = 1.96 cfs @ 12.08 hrs, Volume= 0.131 af  
 Outflow = 1.95 cfs @ 12.08 hrs, Volume= 0.131 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 3.60 fps, Min. Travel Time= 0.2 min  
 Avg. Velocity= 1.32 fps, Avg. Travel Time= 0.4 min

Peak Storage= 19 cf @ 12.08 hrs  
 Average Depth at Peak Storage= 0.46'  
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.10 cfs

24.0" Round Pipe  
 n= 0.013  
 Length= 35.0' Slope= 0.0057 '/'  
 Inlet Invert= 95.65', Outlet Invert= 95.45'



**Summary for Reach DCP 1: DCP 1 Achushnet Ave**

Inflow Area = 0.989 ac, 58.70% Impervious, Inflow Depth > 0.07" for 2 Year Event event  
 Inflow = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af  
 Outflow = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 2: DCP 2 Arnoff Street**

Inflow Area = 4.261 ac, 1.83% Impervious, Inflow Depth > 0.94" for 2 Year Event event  
 Inflow = 3.72 cfs @ 12.22 hrs, Volume= 0.335 af  
 Outflow = 3.72 cfs @ 12.22 hrs, Volume= 0.335 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 3: DCP 3 Wetlands**

Inflow Area = 9.590 ac, 1.18% Impervious, Inflow Depth > 0.94" for 2 Year Event event  
 Inflow = 7.93 cfs @ 12.25 hrs, Volume= 0.753 af  
 Outflow = 7.93 cfs @ 12.25 hrs, Volume= 0.753 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond 1P: POND #1**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 1.87" for 2 Year Event event  
 Inflow = 1.95 cfs @ 12.08 hrs, Volume= 0.131 af  
 Outflow = 1.02 cfs @ 12.05 hrs, Volume= 0.131 af, Atten= 48%, Lag= 0.0 min  
 Discarded = 1.02 cfs @ 12.05 hrs, Volume= 0.131 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 95.51' @ 12.22 hrs Surf.Area= 5,325 sf Storage= 604 cf

Plug-Flow detention time= 4.5 min calculated for 0.131 af (100% of inflow)  
 Center-of-Mass det. time= 4.1 min ( 785.1 - 781.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	95.40'	11,746 cf	<b>Custom Stage Data (Irregular)</b> Listed below 18,638 cf Overall - 6,891 cf Embedded = 11,746 cf
#2	95.90'	6,891 cf	<b>StormTech SC-740</b> x 150 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		18,638 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.40	5,325	292.0	0	0	5,325
98.90	5,325	292.0	18,638	18,638	6,347

Device	Routing	Invert	Outlet Devices
#1	Primary	95.90'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	96.30'	<b>11.0" Vert. Orifice/Grate</b> C= 0.600
#3	Discarded	95.40'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=1.02 cfs @ 12.05 hrs HW=95.45' (Free Discharge)  
 ↳ **3=Exfiltration** (Exfiltration Controls 1.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=95.40' (Free Discharge)  
 ↳ **1=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

**Summary for Pond 2P: RC**

Inflow Area = 0.076 ac, 100.00% Impervious, Inflow Depth > 2.77" for 2 Year Event event  
 Inflow = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af  
 Outflow = 0.08 cfs @ 12.85 hrs, Volume= 0.018 af, Atten= 67%, Lag= 46.8 min  
 Discarded = 0.08 cfs @ 12.85 hrs, Volume= 0.018 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 91.26' @ 12.35 hrs Surf.Area= 408 sf Storage= 156 cf

Plug-Flow detention time= 13.3 min calculated for 0.017 af (100% of inflow)  
 Center-of-Mass det. time= 13.0 min ( 750.8 - 737.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	90.00'	320 cf	<b>Custom Stage Data (Irregular)</b> Listed below 800 cf Overall x 40.0% Voids
#2	91.00'	368 cf	<b>StormTech SC-740</b> x 8 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		688 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
90.00	200	60.0	0	0	200
94.00	200	60.0	800	800	440

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600
#2	Discarded	90.00'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.08 cfs @ 12.85 hrs HW=91.01' (Free Discharge)  
 ↑**2=Exfiltration** (Exfiltration Controls 0.08 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=90.00' (Free Discharge)  
 ↑**1=Orifice/Grate** ( Controls 0.00 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1B: Bank Roof** Runoff Area=3,300 sf 100.00% Impervious Runoff Depth>4.05"  
Tc=5.0 min CN=98 Runoff=0.34 cfs 0.026 af

**Subcatchment 1E: Existing woods/field** Runoff Area=185,628 sf 1.83% Impervious Runoff Depth>1.89"  
Flow Length=600' Tc=14.5 min CN=74 Runoff=7.72 cfs 0.671 af

**Subcatchment 2B: Bank Parking Lot** Runoff Area=36,670 sf 59.99% Impervious Runoff Depth>3.10"  
Tc=5.0 min CN=88 Runoff=3.21 cfs 0.218 af

**Subcatchment 2E: Existing woods/field** Runoff Area=417,719 sf 1.18% Impervious Runoff Depth>1.89"  
Flow Length=1,200' Tc=16.7 min CN=74 Runoff=16.42 cfs 1.508 af

**Subcatchment 3B: landscape** Runoff Area=3,128 sf 0.00% Impervious Runoff Depth>1.90"  
Tc=5.0 min CN=74 Runoff=0.17 cfs 0.011 af

**Reach 3R: 24" RCP** Avg. Flow Depth=0.59' Max Vel=4.13 fps Inflow=3.21 cfs 0.218 af  
24.0" Round Pipe n=0.013 L=35.0' S=0.0057 '/' Capacity=17.10 cfs Outflow=3.17 cfs 0.218 af

**Reach DCP 1: DCP 1 Achushnet Ave** Inflow=0.17 cfs 0.011 af  
Outflow=0.17 cfs 0.011 af

**Reach DCP 2: DCP 2 Arnoff Street** Inflow=7.72 cfs 0.671 af  
Outflow=7.72 cfs 0.671 af

**Reach DCP 3: DCP 3 Wetlands** Inflow=16.42 cfs 1.508 af  
Outflow=16.42 cfs 1.508 af

**Pond 1P: POND #1** Peak Elev=95.72' Storage=1,718 cf Inflow=3.17 cfs 0.218 af  
Discarded=1.02 cfs 0.217 af Primary=0.00 cfs 0.000 af Outflow=1.02 cfs 0.217 af

**Pond 2P: RC** Peak Elev=91.73' Storage=289 cf Inflow=0.34 cfs 0.026 af  
Discarded=0.08 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.026 af

**Summary for Subcatchment 1B: Bank Roof**

Runoff = 0.34 cfs @ 12.07 hrs, Volume= 0.026 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Event Rainfall=4.60"

Area (sf)	CN	Description
* 3,300	98	Bank Roof
3,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, DIRECT</b>

**Summary for Subcatchment 1E: Existing woods/field**

Runoff = 7.72 cfs @ 12.21 hrs, Volume= 0.671 af, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Event Rainfall=4.60"

Area (sf)	CN	Description
130,145	73	Woods, Fair, HSG C
49,442	76	Woods/grass comb., Fair, HSG C
* 0	74	Lawn adj. Phillips
* 1,290	98	Roofs Achushnet Ave
* 0	98	Roofs Phillips Ave west
* 0	98	Roofs Phillips Ave East
* 2,651	76	grass adj. to Monson St
* 2,100	98	drive adj. to Monson st
185,628	74	Weighted Average
182,238		98.17% Pervious Area
3,390		1.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
4.0	550	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
14.5	600	Total			

**Summary for Subcatchment 2B: Bank Parking Lot**

Runoff = 3.21 cfs @ 12.07 hrs, Volume= 0.218 af, Depth> 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Event Rainfall=4.60"

Area (sf)	CN	Description
22,000	98	Paved parking & roofs
14,670	74	>75% Grass cover, Good, HSG C
36,670	88	Weighted Average
14,670		40.01% Pervious Area
22,000		59.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, direct</b>

**Summary for Subcatchment 2E: Existing woods/field**

Runoff = 16.42 cfs @ 12.24 hrs, Volume= 1.508 af, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Event Rainfall=4.60"

Area (sf)	CN	Description
283,267	73	Woods, Fair, HSG C
90,464	76	Woods/grass comb., Fair, HSG C
* 39,058	74	Lawn adj. Phillips
* 0	98	Roofs Achushnet Ave
* 2,059	98	Roofs Phillips Ave west
* 2,871	98	Roofs Phillips Ave East
* 0	76	grass adj. to Monson St
* 0	98	drive adj. to Monson st
417,719	74	Weighted Average
412,789		98.82% Pervious Area
4,930		1.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
5.1	700	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
1.1	450	0.0200	6.67	40.03	<b>Channel Flow, CHANNEL</b> Area= 6.0 sf Perim= 8.0' r= 0.75' n= 0.026
16.7	1,200	Total			

**Summary for Subcatchment 3B: landscape**

Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.011 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Event Rainfall=4.60"

Area (sf)	CN	Description
3,128	74	>75% Grass cover, Good, HSG C
3,128		100.00% Pervious Area

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

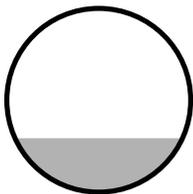
**Summary for Reach 3R: 24" RCP**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 3.10" for 10 Year Event event  
 Inflow = 3.21 cfs @ 12.07 hrs, Volume= 0.218 af  
 Outflow = 3.17 cfs @ 12.08 hrs, Volume= 0.218 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 4.13 fps, Min. Travel Time= 0.1 min  
 Avg. Velocity= 1.47 fps, Avg. Travel Time= 0.4 min

Peak Storage= 27 cf @ 12.08 hrs  
 Average Depth at Peak Storage= 0.59'  
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.10 cfs

24.0" Round Pipe  
 n= 0.013  
 Length= 35.0' Slope= 0.0057 '/'  
 Inlet Invert= 95.65', Outlet Invert= 95.45'



**Summary for Reach DCP 1: DCP 1 Achushnet Ave**

Inflow Area = 0.989 ac, 58.70% Impervious, Inflow Depth > 0.14" for 10 Year Event event  
 Inflow = 0.17 cfs @ 12.08 hrs, Volume= 0.011 af  
 Outflow = 0.17 cfs @ 12.08 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 2: DCP 2 Arnoff Street**

Inflow Area = 4.261 ac, 1.83% Impervious, Inflow Depth > 1.89" for 10 Year Event event  
 Inflow = 7.72 cfs @ 12.21 hrs, Volume= 0.671 af  
 Outflow = 7.72 cfs @ 12.21 hrs, Volume= 0.671 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 3: DCP 3 Wetlands**

Inflow Area = 9.590 ac, 1.18% Impervious, Inflow Depth > 1.89" for 10 Year Event event  
 Inflow = 16.42 cfs @ 12.24 hrs, Volume= 1.508 af  
 Outflow = 16.42 cfs @ 12.24 hrs, Volume= 1.508 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond 1P: POND #1**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 3.10" for 10 Year Event event  
 Inflow = 3.17 cfs @ 12.08 hrs, Volume= 0.218 af  
 Outflow = 1.02 cfs @ 11.90 hrs, Volume= 0.217 af, Atten= 68%, Lag= 0.0 min  
 Discarded = 1.02 cfs @ 11.90 hrs, Volume= 0.217 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 95.72' @ 12.38 hrs Surf.Area= 5,325 sf Storage= 1,718 cf

Plug-Flow detention time= 10.0 min calculated for 0.217 af (100% of inflow)  
 Center-of-Mass det. time= 9.6 min ( 778.6 - 769.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	95.40'	11,746 cf	<b>Custom Stage Data (Irregular)</b> Listed below 18,638 cf Overall - 6,891 cf Embedded = 11,746 cf
#2	95.90'	6,891 cf	<b>StormTech SC-740</b> x 150 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		18,638 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.40	5,325	292.0	0	0	5,325
98.90	5,325	292.0	18,638	18,638	6,347

Device	Routing	Invert	Outlet Devices
#1	Primary	95.90'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	96.30'	<b>11.0" Vert. Orifice/Grate</b> C= 0.600
#3	Discarded	95.40'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=1.02 cfs @ 11.90 hrs HW=95.44' (Free Discharge)  
 ↳ **3=Exfiltration** (Exfiltration Controls 1.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=95.40' (Free Discharge)  
 ↳ **1=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

**Summary for Pond 2P: RC**

Inflow Area = 0.076 ac, 100.00% Impervious, Inflow Depth > 4.05" for 10 Year Event event  
 Inflow = 0.34 cfs @ 12.07 hrs, Volume= 0.026 af  
 Outflow = 0.08 cfs @ 11.95 hrs, Volume= 0.026 af, Atten= 77%, Lag= 0.0 min  
 Discarded = 0.08 cfs @ 11.95 hrs, Volume= 0.026 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 91.73' @ 12.47 hrs Surf.Area= 392 sf Storage= 289 cf

Plug-Flow detention time= 23.1 min calculated for 0.026 af (100% of inflow)  
 Center-of-Mass det. time= 22.8 min ( 757.6 - 734.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	90.00'	320 cf	<b>Custom Stage Data (Irregular)</b> Listed below 800 cf Overall x 40.0% Voids
#2	91.00'	368 cf	<b>StormTech SC-740</b> x 8 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		688 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
90.00	200	60.0	0	0	200
94.00	200	60.0	800	800	440

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600
#2	Discarded	90.00'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.08 cfs @ 11.95 hrs HW=91.01' (Free Discharge)  
 ↑**2=Exfiltration** (Exfiltration Controls 0.08 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=90.00' (Free Discharge)  
 ↑**1=Orifice/Grate** ( Controls 0.00 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1B: Bank Roof** Runoff Area=3,300 sf 100.00% Impervious Runoff Depth>4.97"  
Tc=5.0 min CN=98 Runoff=0.42 cfs 0.031 af

**Subcatchment 1E: Existing woods/field** Runoff Area=185,628 sf 1.83% Impervious Runoff Depth>2.64"  
Flow Length=600' Tc=14.5 min CN=74 Runoff=10.84 cfs 0.938 af

**Subcatchment 2B: Bank Parking Lot** Runoff Area=36,670 sf 59.99% Impervious Runoff Depth>4.01"  
Tc=5.0 min CN=88 Runoff=4.09 cfs 0.281 af

**Subcatchment 2E: Existing woods/field** Runoff Area=417,719 sf 1.18% Impervious Runoff Depth>2.64"  
Flow Length=1,200' Tc=16.7 min CN=74 Runoff=23.06 cfs 2.110 af

**Subcatchment 3B: landscape** Runoff Area=3,128 sf 0.00% Impervious Runoff Depth>2.65"  
Tc=5.0 min CN=74 Runoff=0.24 cfs 0.016 af

**Reach 3R: 24" RCP** Avg. Flow Depth=0.66' Max Vel=4.42 fps Inflow=4.09 cfs 0.281 af  
24.0" Round Pipe n=0.013 L=35.0' S=0.0057 '/' Capacity=17.10 cfs Outflow=4.04 cfs 0.281 af

**Reach DCP 1: DCP 1 Achushnet Ave** Inflow=0.24 cfs 0.016 af  
Outflow=0.24 cfs 0.016 af

**Reach DCP 2: DCP 2 Arnoff Street** Inflow=10.84 cfs 0.938 af  
Outflow=10.84 cfs 0.938 af

**Reach DCP 3: DCP 3 Wetlands** Inflow=23.06 cfs 2.110 af  
Outflow=23.06 cfs 2.110 af

**Pond 1P: POND #1** Peak Elev=95.92' Storage=2,764 cf Inflow=4.04 cfs 0.281 af  
Discarded=1.02 cfs 0.281 af Primary=0.00 cfs 0.000 af Outflow=1.02 cfs 0.281 af

**Pond 2P: RC** Peak Elev=92.16' Storage=400 cf Inflow=0.42 cfs 0.031 af  
Discarded=0.08 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.031 af

**Summary for Subcatchment 1B: Bank Roof**

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 0.031 af, Depth> 4.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 Year Event Rainfall=5.60"

Area (sf)	CN	Description
* 3,300	98	Bank Roof
3,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, DIRECT</b>

**Summary for Subcatchment 1E: Existing woods/field**

Runoff = 10.84 cfs @ 12.21 hrs, Volume= 0.938 af, Depth> 2.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 Year Event Rainfall=5.60"

Area (sf)	CN	Description
130,145	73	Woods, Fair, HSG C
49,442	76	Woods/grass comb., Fair, HSG C
* 0	74	Lawn adj. Phillips
* 1,290	98	Roofs Achushnet Ave
* 0	98	Roofs Phillips Ave west
* 0	98	Roofs Phillips Ave East
* 2,651	76	grass adj. to Monson St
* 2,100	98	drive adj. to Monson st
185,628	74	Weighted Average
182,238		98.17% Pervious Area
3,390		1.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
4.0	550	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
14.5	600	Total			

**Summary for Subcatchment 2B: Bank Parking Lot**

Runoff = 4.09 cfs @ 12.07 hrs, Volume= 0.281 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 Year Event Rainfall=5.60"

Area (sf)	CN	Description
22,000	98	Paved parking & roofs
14,670	74	>75% Grass cover, Good, HSG C
36,670	88	Weighted Average
14,670		40.01% Pervious Area
22,000		59.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, direct</b>

**Summary for Subcatchment 2E: Existing woods/field**

Runoff = 23.06 cfs @ 12.24 hrs, Volume= 2.110 af, Depth> 2.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 Year Event Rainfall=5.60"

Area (sf)	CN	Description
283,267	73	Woods, Fair, HSG C
90,464	76	Woods/grass comb., Fair, HSG C
* 39,058	74	Lawn adj. Phillips
* 0	98	Roofs Achushnet Ave
* 2,059	98	Roofs Phillips Ave west
* 2,871	98	Roofs Phillips Ave East
* 0	76	grass adj. to Monson St
* 0	98	drive adj. to Monson st
417,719	74	Weighted Average
412,789		98.82% Pervious Area
4,930		1.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
5.1	700	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
1.1	450	0.0200	6.67	40.03	<b>Channel Flow, CHANNEL</b> Area= 6.0 sf Perim= 8.0' r= 0.75' n= 0.026
16.7	1,200	Total			

**Summary for Subcatchment 3B: landscape**

Runoff = 0.24 cfs @ 12.08 hrs, Volume= 0.016 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 Year Event Rainfall=5.60"

Area (sf)	CN	Description
3,128	74	>75% Grass cover, Good, HSG C
3,128		100.00% Pervious Area

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

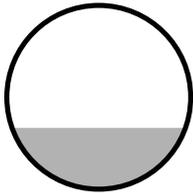
**Summary for Reach 3R: 24" RCP**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 4.01" for 25 Year Event event  
 Inflow = 4.09 cfs @ 12.07 hrs, Volume= 0.281 af  
 Outflow = 4.04 cfs @ 12.08 hrs, Volume= 0.281 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 4.42 fps, Min. Travel Time= 0.1 min  
 Avg. Velocity= 1.59 fps, Avg. Travel Time= 0.4 min

Peak Storage= 32 cf @ 12.08 hrs  
 Average Depth at Peak Storage= 0.66'  
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.10 cfs

24.0" Round Pipe  
 n= 0.013  
 Length= 35.0' Slope= 0.0057 '/'  
 Inlet Invert= 95.65', Outlet Invert= 95.45'



**Summary for Reach DCP 1: DCP 1 Achushnet Ave**

Inflow Area = 0.989 ac, 58.70% Impervious, Inflow Depth > 0.19" for 25 Year Event event  
 Inflow = 0.24 cfs @ 12.08 hrs, Volume= 0.016 af  
 Outflow = 0.24 cfs @ 12.08 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 2: DCP 2 Arnoff Street**

Inflow Area = 4.261 ac, 1.83% Impervious, Inflow Depth > 2.64" for 25 Year Event event  
 Inflow = 10.84 cfs @ 12.21 hrs, Volume= 0.938 af  
 Outflow = 10.84 cfs @ 12.21 hrs, Volume= 0.938 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 3: DCP 3 Wetlands**

Inflow Area = 9.590 ac, 1.18% Impervious, Inflow Depth > 2.64" for 25 Year Event event  
 Inflow = 23.06 cfs @ 12.24 hrs, Volume= 2.110 af  
 Outflow = 23.06 cfs @ 12.24 hrs, Volume= 2.110 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond 1P: POND #1**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 4.01" for 25 Year Event event  
 Inflow = 4.04 cfs @ 12.08 hrs, Volume= 0.281 af  
 Outflow = 1.02 cfs @ 12.45 hrs, Volume= 0.281 af, Atten= 75%, Lag= 22.5 min  
 Discarded = 1.02 cfs @ 11.85 hrs, Volume= 0.281 af  
 Primary = 0.00 cfs @ 12.45 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 95.92' @ 12.45 hrs Surf.Area= 5,325 sf Storage= 2,764 cf

Plug-Flow detention time= 15.9 min calculated for 0.281 af (100% of inflow)  
 Center-of-Mass det. time= 15.5 min ( 778.4 - 762.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	95.40'	11,746 cf	<b>Custom Stage Data (Irregular)</b> Listed below 18,638 cf Overall - 6,891 cf Embedded = 11,746 cf
#2	95.90'	6,891 cf	<b>StormTech SC-740</b> x 150 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		18,638 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.40	5,325	292.0	0	0	5,325
98.90	5,325	292.0	18,638	18,638	6,347

Device	Routing	Invert	Outlet Devices
#1	Primary	95.90'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	96.30'	<b>11.0" Vert. Orifice/Grate</b> C= 0.600
#3	Discarded	95.40'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=1.02 cfs @ 11.85 hrs HW=95.44' (Free Discharge)  
 ↳ **3=Exfiltration** (Exfiltration Controls 1.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 12.45 hrs HW=95.92' (Free Discharge)  
 ↳ **1=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.47 fps)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

**Summary for Pond 2P: RC**

Inflow Area = 0.076 ac, 100.00% Impervious, Inflow Depth > 4.97" for 25 Year Event event  
 Inflow = 0.42 cfs @ 12.07 hrs, Volume= 0.031 af  
 Outflow = 0.08 cfs @ 14.45 hrs, Volume= 0.031 af, Atten= 81%, Lag= 142.8 min  
 Discarded = 0.08 cfs @ 14.45 hrs, Volume= 0.031 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 92.16' @ 12.53 hrs Surf.Area= 371 sf Storage= 400 cf

Plug-Flow detention time= 33.7 min calculated for 0.031 af (100% of inflow)  
 Center-of-Mass det. time= 33.4 min ( 767.2 - 733.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	90.00'	320 cf	<b>Custom Stage Data (Irregular)</b> Listed below 800 cf Overall x 40.0% Voids
#2	91.00'	368 cf	<b>StormTech SC-740</b> x 8 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		688 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
90.00	200	60.0	0	0	200
94.00	200	60.0	800	800	440

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600
#2	Discarded	90.00'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.08 cfs @ 14.45 hrs HW=91.02' (Free Discharge)  
 ↑**2=Exfiltration** (Exfiltration Controls 0.08 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=90.00' (Free Discharge)  
 ↑**1=Orifice/Grate** ( Controls 0.00 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1B: Bank Roof** Runoff Area=3,300 sf 100.00% Impervious Runoff Depth>6.06"  
Tc=5.0 min CN=98 Runoff=0.51 cfs 0.038 af

**Subcatchment 1E: Existing woods/field** Runoff Area=185,628 sf 1.83% Impervious Runoff Depth>3.60"  
Flow Length=600' Tc=14.5 min CN=74 Runoff=14.74 cfs 1.279 af

**Subcatchment 2B: Bank Parking Lot** Runoff Area=36,670 sf 59.99% Impervious Runoff Depth>5.10"  
Tc=5.0 min CN=88 Runoff=5.14 cfs 0.358 af

**Subcatchment 2E: Existing woods/field** Runoff Area=417,719 sf 1.18% Impervious Runoff Depth>3.60"  
Flow Length=1,200' Tc=16.7 min CN=74 Runoff=31.37 cfs 2.875 af

**Subcatchment 3B: landscape** Runoff Area=3,128 sf 0.00% Impervious Runoff Depth>3.61"  
Tc=5.0 min CN=74 Runoff=0.33 cfs 0.022 af

**Reach 3R: 24" RCP** Avg. Flow Depth=0.75' Max Vel=4.71 fps Inflow=5.14 cfs 0.358 af  
24.0" Round Pipe n=0.013 L=35.0' S=0.0057 '/' Capacity=17.10 cfs Outflow=5.07 cfs 0.358 af

**Reach DCP 1: DCP 1 Achushnet Ave** Inflow=0.32 cfs 0.030 af  
Outflow=0.32 cfs 0.030 af

**Reach DCP 2: DCP 2 Arnoff Street** Inflow=14.74 cfs 1.279 af  
Outflow=14.74 cfs 1.279 af

**Reach DCP 3: DCP 3 Wetlands** Inflow=31.37 cfs 2.875 af  
Outflow=31.37 cfs 2.875 af

**Pond 1P: POND #1** Peak Elev=96.15' Storage=3,989 cf Inflow=5.07 cfs 0.358 af  
Discarded=1.02 cfs 0.349 af Primary=0.20 cfs 0.008 af Outflow=1.22 cfs 0.358 af

**Pond 2P: RC** Peak Elev=92.78' Storage=543 cf Inflow=0.51 cfs 0.038 af  
Discarded=0.08 cfs 0.038 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.038 af

**Summary for Subcatchment 1B: Bank Roof**

Runoff = 0.51 cfs @ 12.07 hrs, Volume= 0.038 af, Depth> 6.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100 Year Event Rainfall=6.80"

Area (sf)	CN	Description
* 3,300	98	Bank Roof
3,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, DIRECT</b>

**Summary for Subcatchment 1E: Existing woods/field**

Runoff = 14.74 cfs @ 12.20 hrs, Volume= 1.279 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100 Year Event Rainfall=6.80"

Area (sf)	CN	Description
130,145	73	Woods, Fair, HSG C
49,442	76	Woods/grass comb., Fair, HSG C
* 0	74	Lawn adj. Phillips
* 1,290	98	Roofs Achushnet Ave
* 0	98	Roofs Phillips Ave west
* 0	98	Roofs Phillips Ave East
* 2,651	76	grass adj. to Monson St
* 2,100	98	drive adj. to Monson st
185,628	74	Weighted Average
182,238		98.17% Pervious Area
3,390		1.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
4.0	550	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
14.5	600	Total			

**Summary for Subcatchment 2B: Bank Parking Lot**

Runoff = 5.14 cfs @ 12.07 hrs, Volume= 0.358 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100 Year Event Rainfall=6.80"

Area (sf)	CN	Description
22,000	98	Paved parking & roofs
14,670	74	>75% Grass cover, Good, HSG C
36,670	88	Weighted Average
14,670		40.01% Pervious Area
22,000		59.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					<b>Direct Entry, direct</b>

**Summary for Subcatchment 2E: Existing woods/field**

Runoff = 31.37 cfs @ 12.23 hrs, Volume= 2.875 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100 Year Event Rainfall=6.80"

Area (sf)	CN	Description
283,267	73	Woods, Fair, HSG C
90,464	76	Woods/grass comb., Fair, HSG C
* 39,058	74	Lawn adj. Phillips
* 0	98	Roofs Achushnet Ave
* 2,059	98	Roofs Phillips Ave west
* 2,871	98	Roofs Phillips Ave East
* 0	76	grass adj. to Monson St
* 0	98	drive adj. to Monson st
417,719	74	Weighted Average
412,789		98.82% Pervious Area
4,930		1.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		<b>Sheet Flow, SHEET</b> Woods: Light underbrush n= 0.400 P2= 3.20"
5.1	700	0.0200	2.28		<b>Shallow Concentrated Flow, SHALLOW</b> Unpaved Kv= 16.1 fps
1.1	450	0.0200	6.67	40.03	<b>Channel Flow, CHANNEL</b> Area= 6.0 sf Perim= 8.0' r= 0.75' n= 0.026
16.7	1,200	Total			

**Summary for Subcatchment 3B: landscape**

Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.022 af, Depth> 3.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100 Year Event Rainfall=6.80"

Area (sf)	CN	Description
3,128	74	>75% Grass cover, Good, HSG C
3,128		100.00% Pervious Area

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

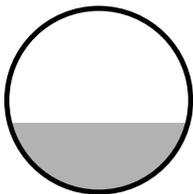
**Summary for Reach 3R: 24" RCP**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 5.10" for 100 Year Event event  
 Inflow = 5.14 cfs @ 12.07 hrs, Volume= 0.358 af  
 Outflow = 5.07 cfs @ 12.08 hrs, Volume= 0.358 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 4.71 fps, Min. Travel Time= 0.1 min  
 Avg. Velocity = 1.73 fps, Avg. Travel Time= 0.3 min

Peak Storage= 38 cf @ 12.07 hrs  
 Average Depth at Peak Storage= 0.75'  
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.10 cfs

24.0" Round Pipe  
 n= 0.013  
 Length= 35.0' Slope= 0.0057 '/'  
 Inlet Invert= 95.65', Outlet Invert= 95.45'



**Summary for Reach DCP 1: DCP 1 Achushnet Ave**

Inflow Area = 0.989 ac, 58.70% Impervious, Inflow Depth > 0.36" for 100 Year Event event  
 Inflow = 0.32 cfs @ 12.08 hrs, Volume= 0.030 af  
 Outflow = 0.32 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 2: DCP 2 Arnoff Street**

Inflow Area = 4.261 ac, 1.83% Impervious, Inflow Depth > 3.60" for 100 Year Event event  
 Inflow = 14.74 cfs @ 12.20 hrs, Volume= 1.279 af  
 Outflow = 14.74 cfs @ 12.20 hrs, Volume= 1.279 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach DCP 3: DCP 3 Wetlands**

Inflow Area = 9.590 ac, 1.18% Impervious, Inflow Depth > 3.60" for 100 Year Event event  
 Inflow = 31.37 cfs @ 12.23 hrs, Volume= 2.875 af  
 Outflow = 31.37 cfs @ 12.23 hrs, Volume= 2.875 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond 1P: POND #1**

Inflow Area = 0.842 ac, 59.99% Impervious, Inflow Depth > 5.10" for 100 Year Event event  
 Inflow = 5.07 cfs @ 12.08 hrs, Volume= 0.358 af  
 Outflow = 1.22 cfs @ 12.46 hrs, Volume= 0.358 af, Atten= 76%, Lag= 23.1 min  
 Discarded = 1.02 cfs @ 11.75 hrs, Volume= 0.349 af  
 Primary = 0.20 cfs @ 12.46 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 96.15' @ 12.46 hrs Surf.Area= 5,325 sf Storage= 3,989 cf

Plug-Flow detention time= 22.2 min calculated for 0.358 af (100% of inflow)  
 Center-of-Mass det. time= 21.8 min ( 779.4 - 757.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	95.40'	11,746 cf	<b>Custom Stage Data (Irregular)</b> Listed below 18,638 cf Overall - 6,891 cf Embedded = 11,746 cf
#2	95.90'	6,891 cf	<b>StormTech SC-740</b> x 150 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		18,638 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.40	5,325	292.0	0	0	5,325
98.90	5,325	292.0	18,638	18,638	6,347

Device	Routing	Invert	Outlet Devices
#1	Primary	95.90'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	96.30'	<b>11.0" Vert. Orifice/Grate</b> C= 0.600
#3	Discarded	95.40'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=1.02 cfs @ 11.75 hrs HW=95.44' (Free Discharge)  
 ↳ **3=Exfiltration** (Exfiltration Controls 1.02 cfs)

**Primary OutFlow** Max=0.20 cfs @ 12.46 hrs HW=96.15' (Free Discharge)  
 ↳ **1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 1.70 fps)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

**Summary for Pond 2P: RC**

Inflow Area = 0.076 ac, 100.00% Impervious, Inflow Depth > 6.06" for 100 Year Event event  
 Inflow = 0.51 cfs @ 12.07 hrs, Volume= 0.038 af  
 Outflow = 0.08 cfs @ 11.80 hrs, Volume= 0.038 af, Atten= 84%, Lag= 0.0 min  
 Discarded = 0.08 cfs @ 11.80 hrs, Volume= 0.038 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 92.78' @ 12.62 hrs Surf.Area= 323 sf Storage= 543 cf

Plug-Flow detention time= 52.5 min calculated for 0.038 af (100% of inflow)  
 Center-of-Mass det. time= 52.0 min ( 784.9 - 732.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	90.00'	320 cf	<b>Custom Stage Data (Irregular)</b> Listed below 800 cf Overall x 40.0% Voids
#2	91.00'	368 cf	<b>StormTech SC-740</b> x 8 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		688 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
90.00	200	60.0	0	0	200
94.00	200	60.0	800	800	440

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600
#2	Discarded	90.00'	<b>8.270 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.08 cfs @ 11.80 hrs HW=91.00' (Free Discharge)  
 ↑**2=Exfiltration** (Exfiltration Controls 0.08 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=90.00' (Free Discharge)  
 ↑**1=Orifice/Grate** ( Controls 0.00 cfs)