019-A-001-001

1-1 India St, Portland, ME

The Longfellow at Ocean Gateway

Riverwalk, LLC

Pond D2: Commercial Street Storm System

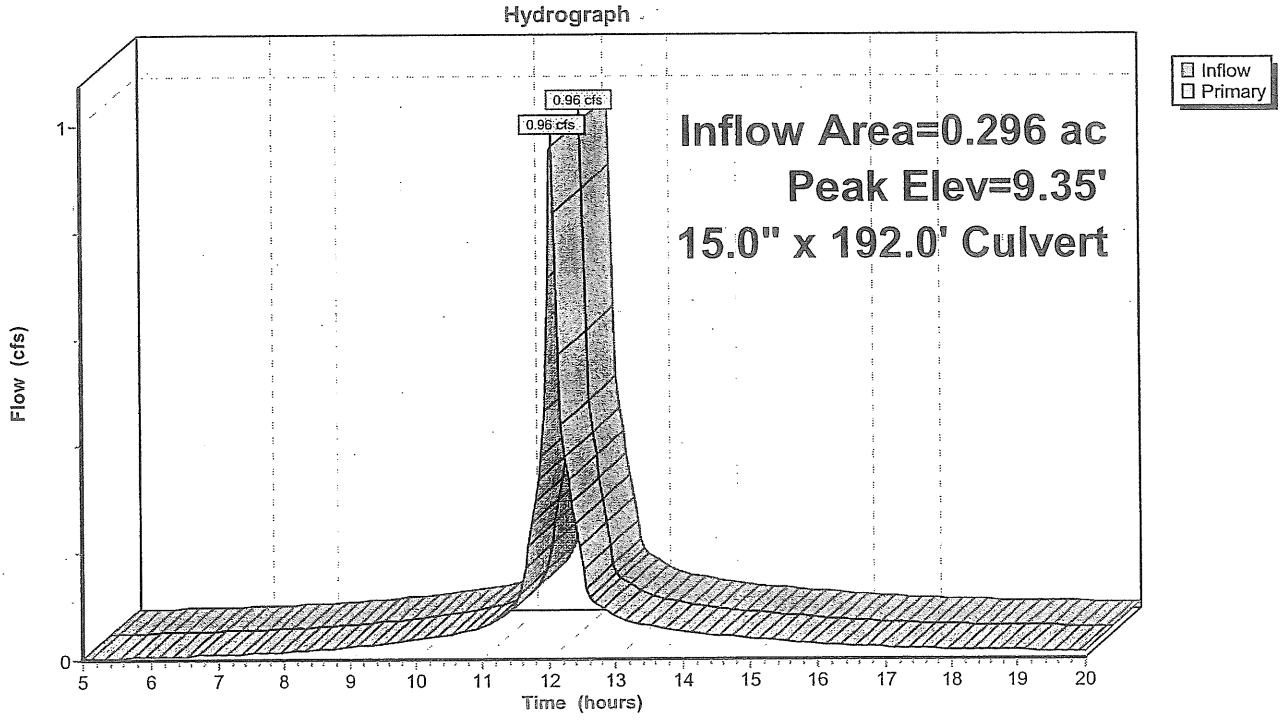
Inflow Area = 0.296 ac, Inflow Depth > 2.67" for 10-Year Storm event
Inflow = 0.96 cfs @ 12.06 hrs, Volume= 0.066 af
Outflow = 0.96 cfs @ 12.06 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.06 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.35' @ 12.07 hrs
Flood Elev= 14.95'

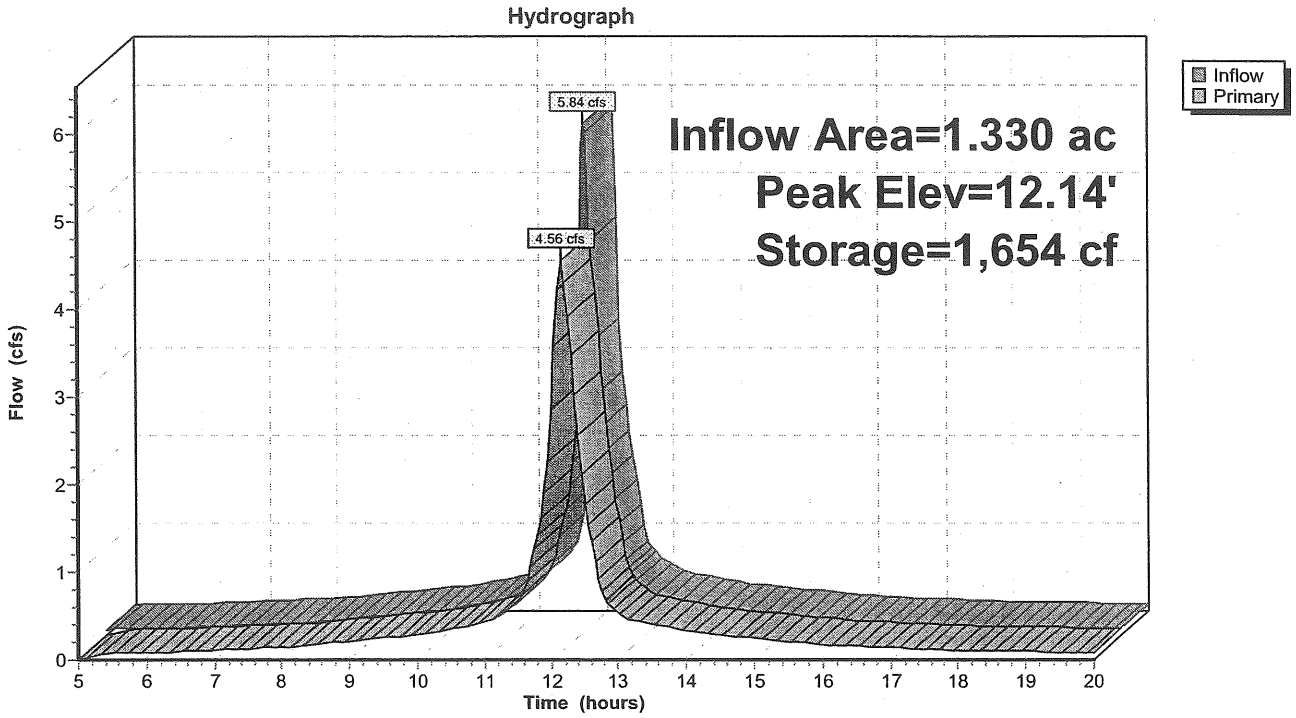
Device	Routing	Invert	Outlet Devices
#1	Primary	8.74'	**15.0" x 192.0' long Culvert** Ke= 0.500 Outlet Invert= 8.45' S= 0.0015 '/' Cc= 0.900 n= 0.010

Primary OutFlow Max=0.90 cfs @ 12.06 hrs HW=9.34' TW=8.95' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.90 cfs @ 2.23 fps)

Pond D2: Commercial Street Storm System



Pond 5C: Subsurface Detention for Plaza



Pond 5C: Subsurface Detention for Plaza

Inflow Area = 1.330 ac, Inflow Depth > 4.15" for 10-Year Storm event
Inflow = 5.84 cfs @ 12.08 hrs, Volume= 0.459 af
Outflow = 4.56 cfs @ 12.15 hrs, Volume= 0.458 af, Atten= 22%, Lag= 4.4 min
Primary = 4.56 cfs @ 12.15 hrs, Volume= 0.458 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 12.14' @ 12.15 hrs Surf.Area= 988 sf Storage= 1,654 cf

Plug-Flow detention time= 6.9 min calculated for 0.458 af (100% of inflow)
Center-of-Mass det. time= 5.2 min (740.4 - 735.2)

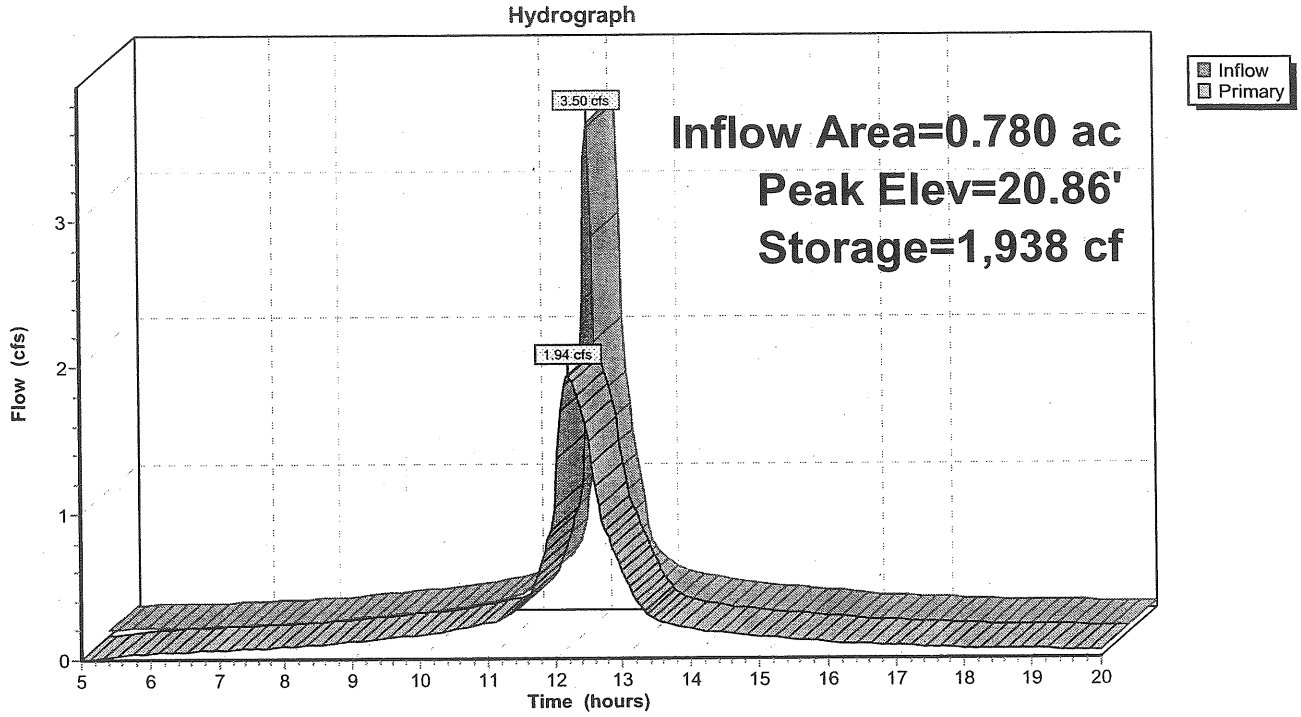
Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	1,085 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 3,952 cf Overall - 1,240 cf Embedded = 2,712 cf x 40.0% Voids
#2	10.50'	1,240 cf	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 27 Inside #1
		2,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	988	0	0
13.50	988	3,952	3,952

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	**12.0" x 50.0' long Culvert** CMP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 9.00' S= 0.0100 '/' Cc= 0.900 n= 0.011
#2	Device 1	9.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	10.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	12.00'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=4.53 cfs @ 12.15 hrs HW=12.13' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Passes 4.53 cfs of 5.52 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 2.55 cfs @ 7.30 fps)
3=Orifice/Grate (Orifice Controls 1.91 cfs @ 5.48 fps)
4=Orifice/Grate (Orifice Controls 0.07 cfs @ 1.23 fps)

Pond 1B: Subsurface Detention for Parking Garage



Pond 1B: Subsurface Detention for Parking Garage

Inflow Area = 0.780 ac, Inflow Depth > 4.15" for 10-Year Storm event
Inflow = 3.50 cfs @ 12.09 hrs, Volume= 0.270 af
Outflow = 1.94 cfs @ 12.22 hrs, Volume= 0.267 af, Atten= 45%, Lag= 7.8 min
Primary = 1.94 cfs @ 12.22 hrs, Volume= 0.267 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 20.86' @ 12.22 hrs Surf.Area= 1,770 sf Storage= 1,938 cf

Plug-Flow detention time= 17.7 min calculated for 0.267 af (99% of inflow)
Center-of-Mass det. time= 13.8 min (749.3 - 735.5)

Volume	Invert	Avail.Storage	Storage Description
#1	19.00'	1,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 7,080 cf Overall - 2,205 cf Embedded = 4,875 cf x 40.0% Voids
#2	20.00'	2,205 cf	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 48 Inside #1
		4,155 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.00	1,770	0	0
23.00	1,770	7,080	7,080

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**12.0" x 150.0' long Culvert** CMP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 18.00' S= 0.0067 '/' Cc= 0.900 n= 0.011
#2	Device 1	20.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	19.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	21.50'	**12.0" Vert. Orifice/Grate** C= 0.600

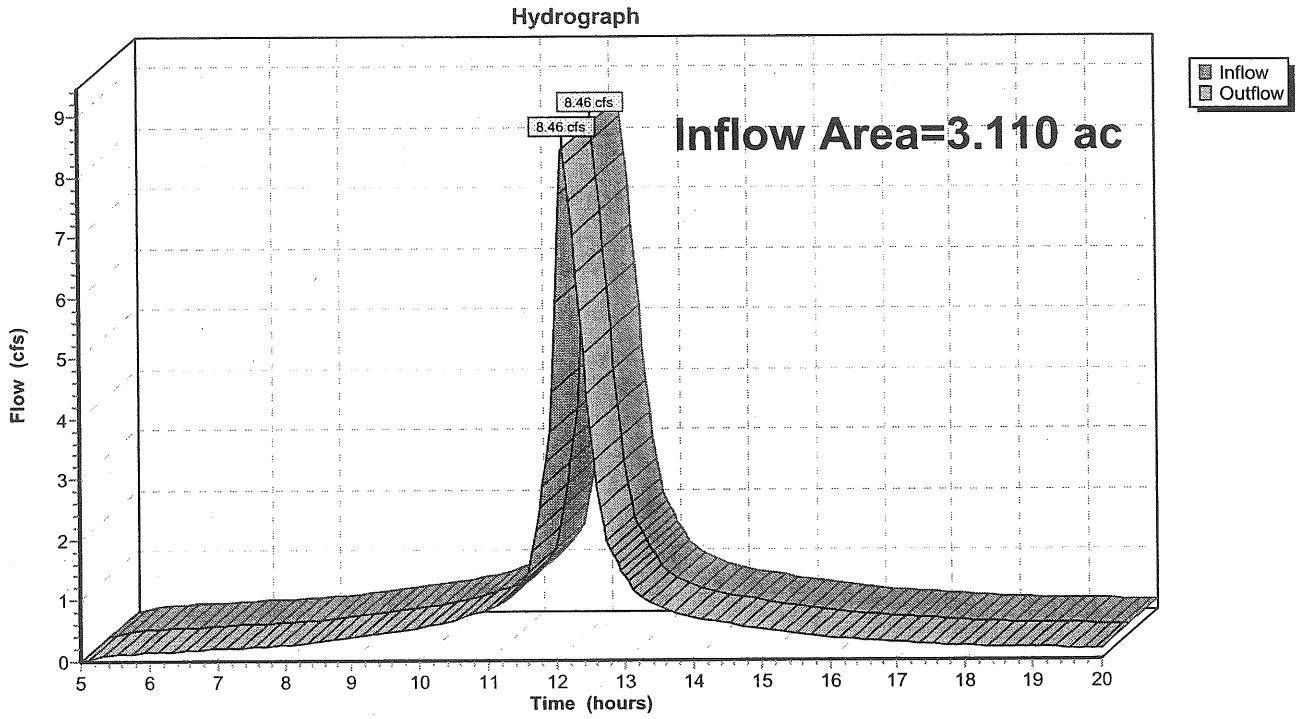
Primary OutFlow Max=1.93 cfs @ 12.22 hrs HW=20.85' TW=16.98' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 1.93 cfs of 3.88 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.73 cfs @ 3.73 fps)
—**3=Orifice/Grate** (Orifice Controls 1.20 cfs @ 6.09 fps)
—**4=Orifice/Grate** (Controls 0.00 cfs)

Reach TOT: (new node)

Inflow Area = 3.110 ac, Inflow Depth > 3.56" for 10-Year Storm event
Inflow = 8.46 cfs @ 12.11 hrs, Volume= 0.922 af
Outflow = 8.46 cfs @ 12.11 hrs, Volume= 0.922 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)

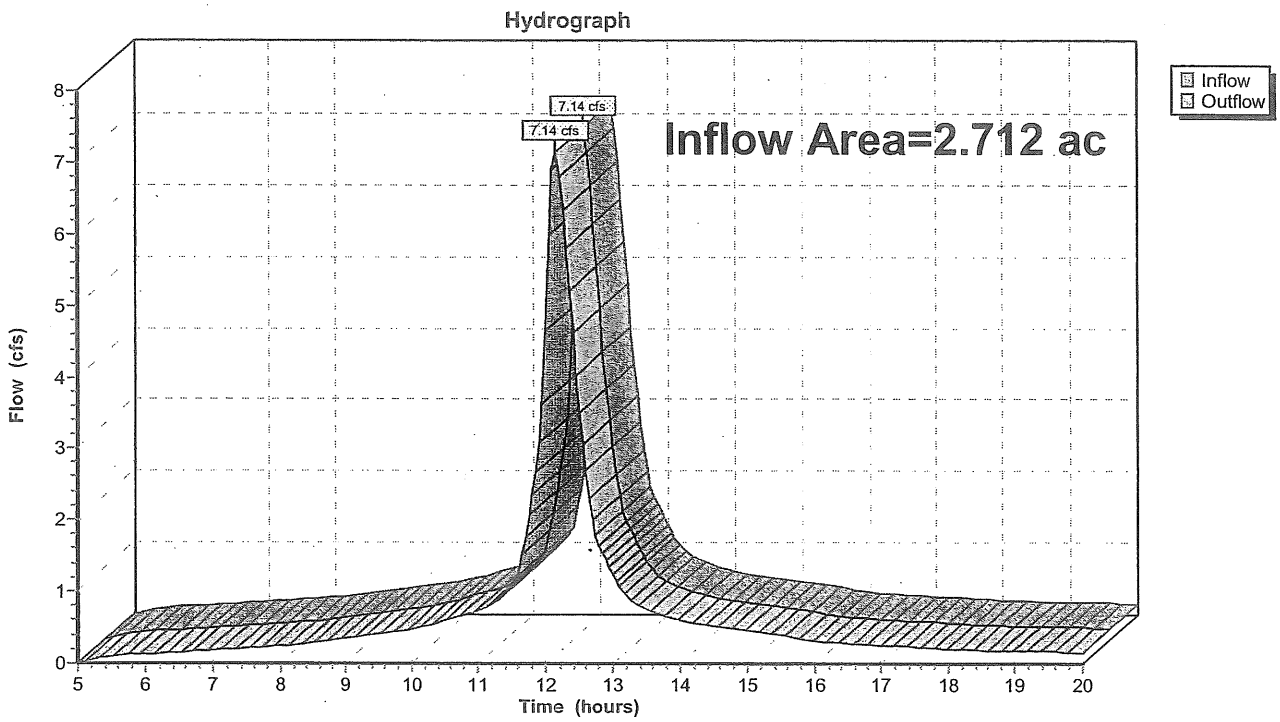


Reach FR: Fore River

Inflow Area = 2.712 ac, Inflow Depth > 3.57" for 10-Year Storm event
Inflow = 7.14 cfs @ 12.15 hrs, Volume= 0.806 af
Outflow = 7.14 cfs @ 12.15 hrs, Volume= 0.806 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

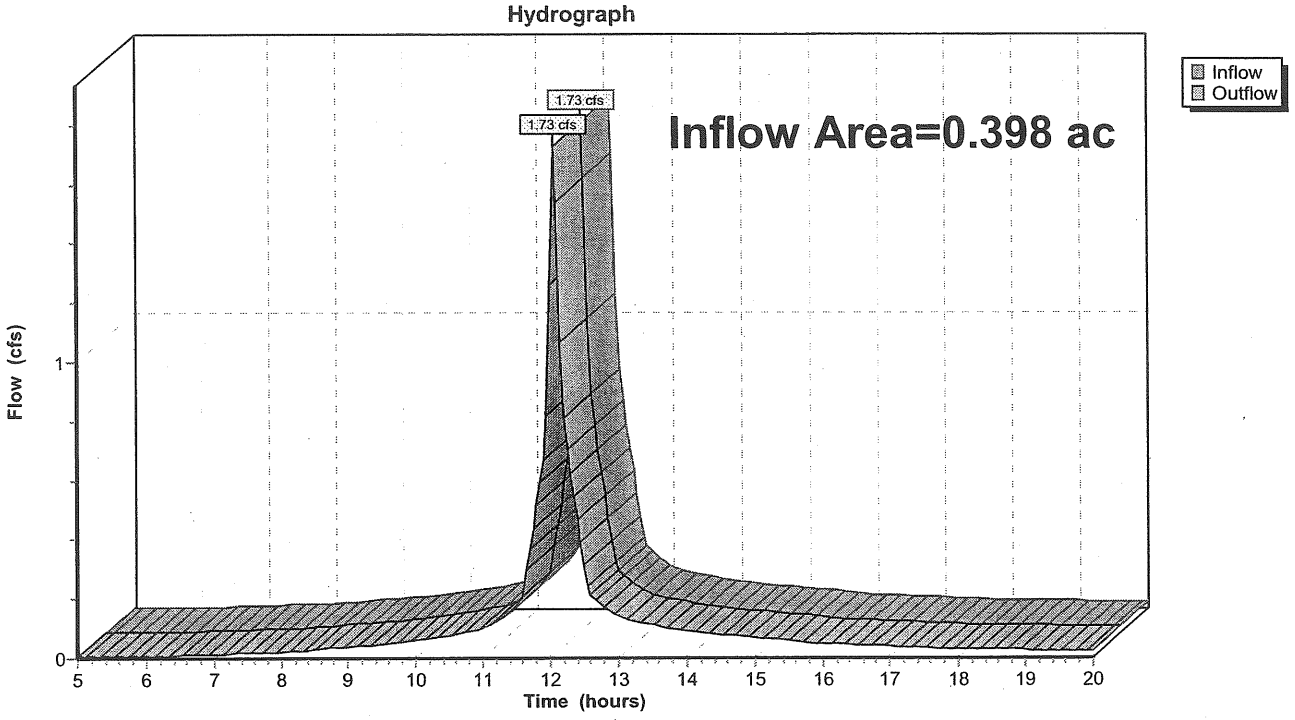


Reach CS: Combined Sewer

Inflow Area = 0.398 ac, Inflow Depth > 3.49" for 10-Year Storm event
Inflow = 1.73 cfs @ 12.06 hrs, Volume= 0.116 af
Outflow = 1.73 cfs @ 12.06 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer



Subcatchment 5CP: Plaza

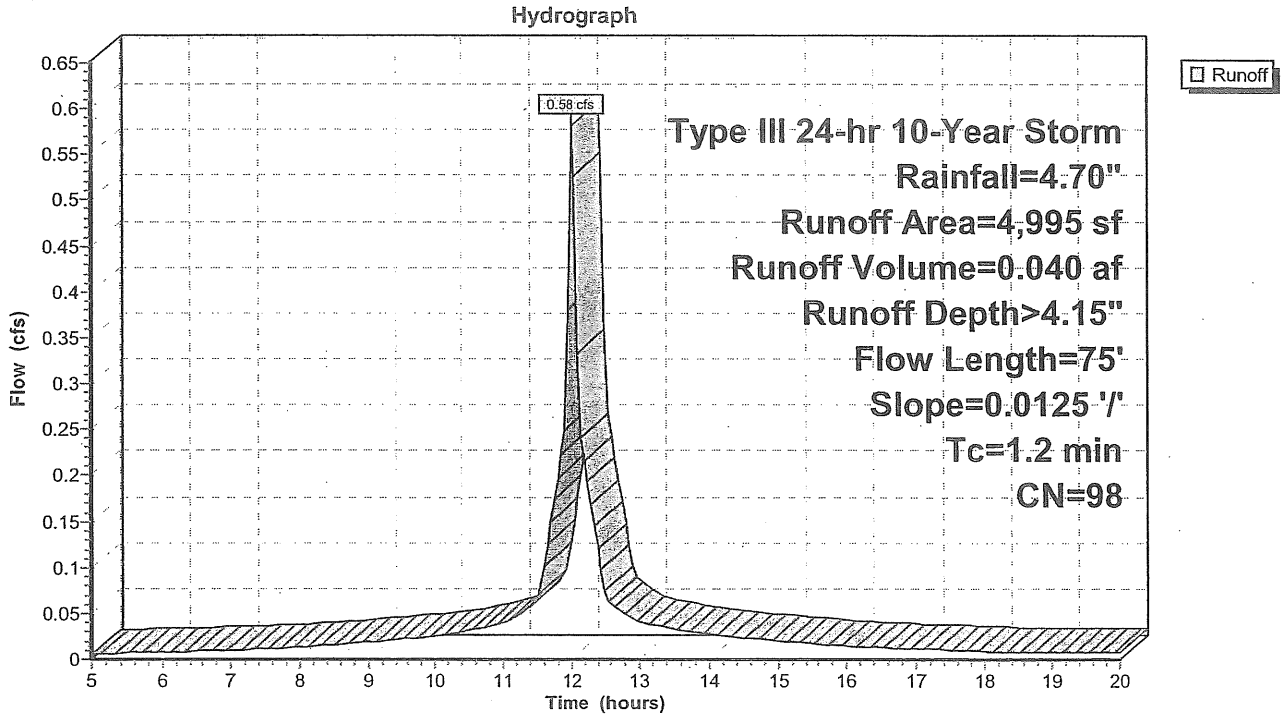
Runoff = 0.58 cfs @ 12.02 hrs, Volume= 0.040 af, Depth> 4.15"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
4,995	98	Paved parking & roofs
4,995		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	75	0.0125	1.04		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 5CP: Plaza



Subcatchment 5BP: East Half of Complex

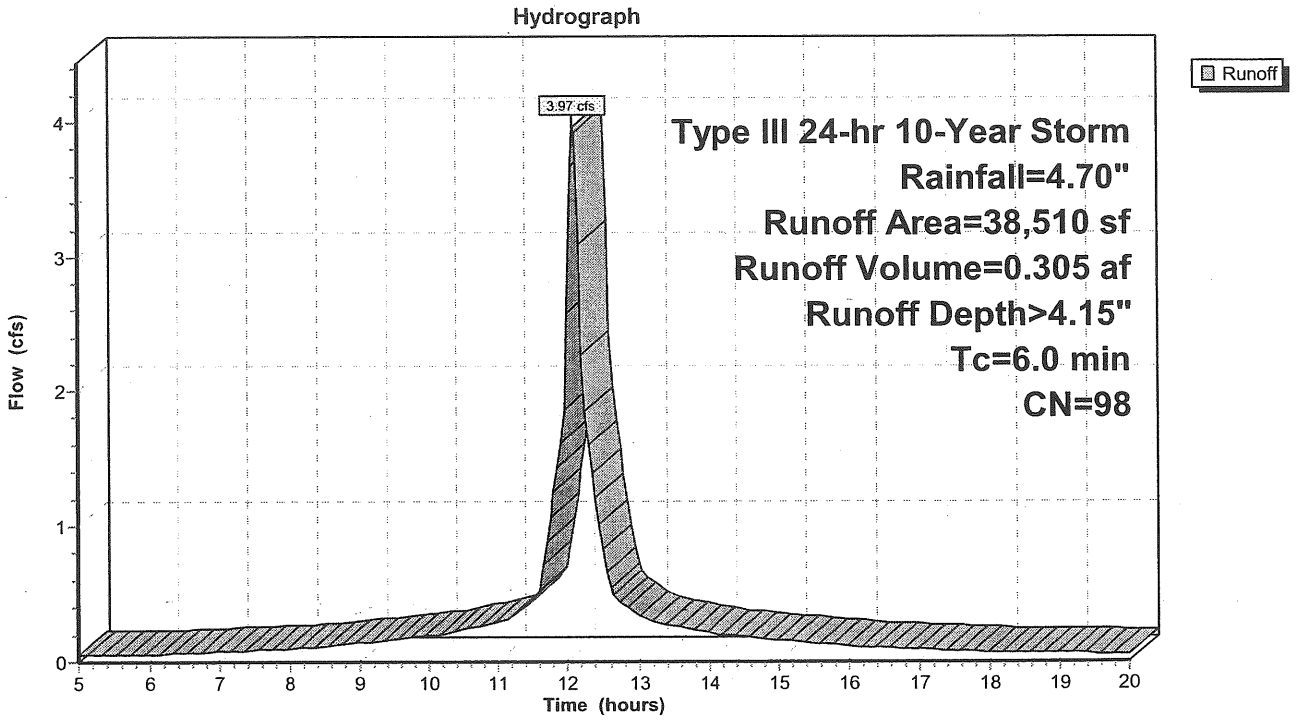
Runoff = 3.97 cfs @ 12.09 hrs, Volume= 0.305 af, Depth> 4.15"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
32,915	98	Paved parking & roofs
5,595	98	Plaza
38,510	98	Weighted Average
38,510		Impervious Area

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

Subcatchment 5BP: East Half of Complex



Subcatchment 5AP: West Half of Complex

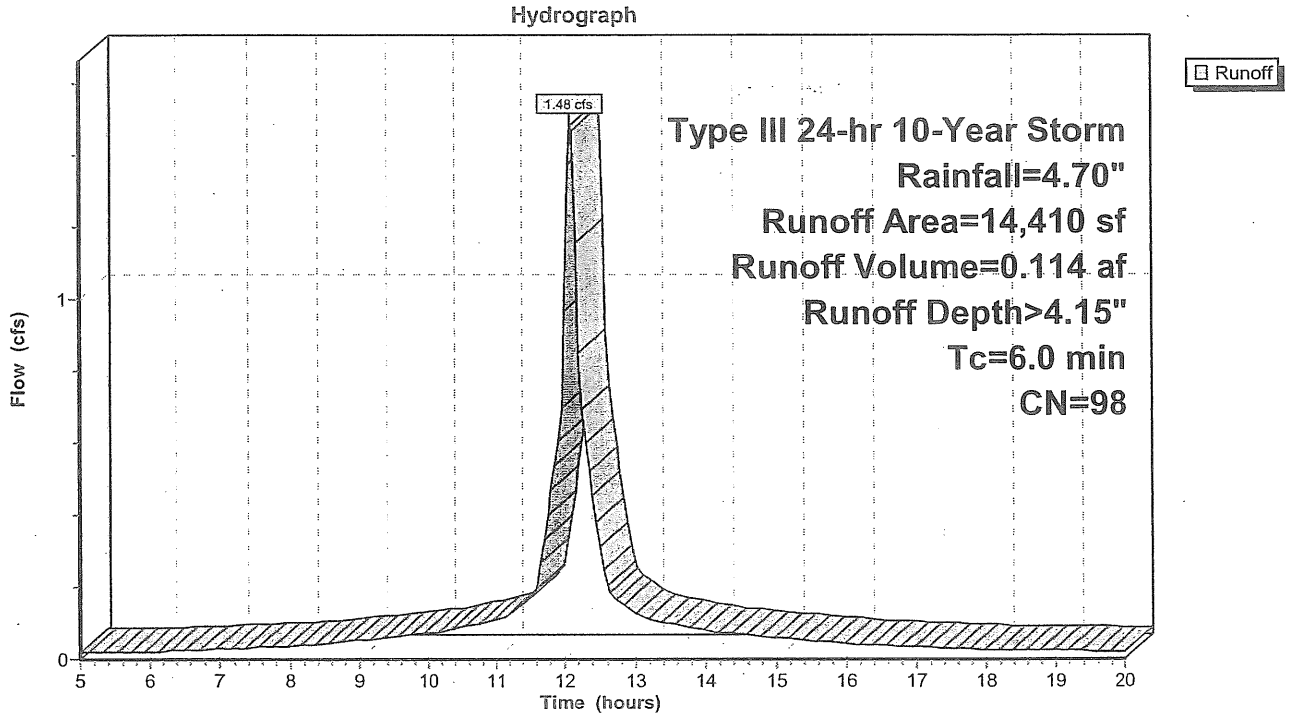
Runoff = 1.48 cfs @ 12.09 hrs, Volume= 0.114 af, Depth> 4.15"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
13,840	98	Buildings
570	98	Paved
14,410	98	Weighted Average
14,410		Impervious Area

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

Subcatchment 5AP: West Half of Complex



Subcatchment 4P: Back of PS

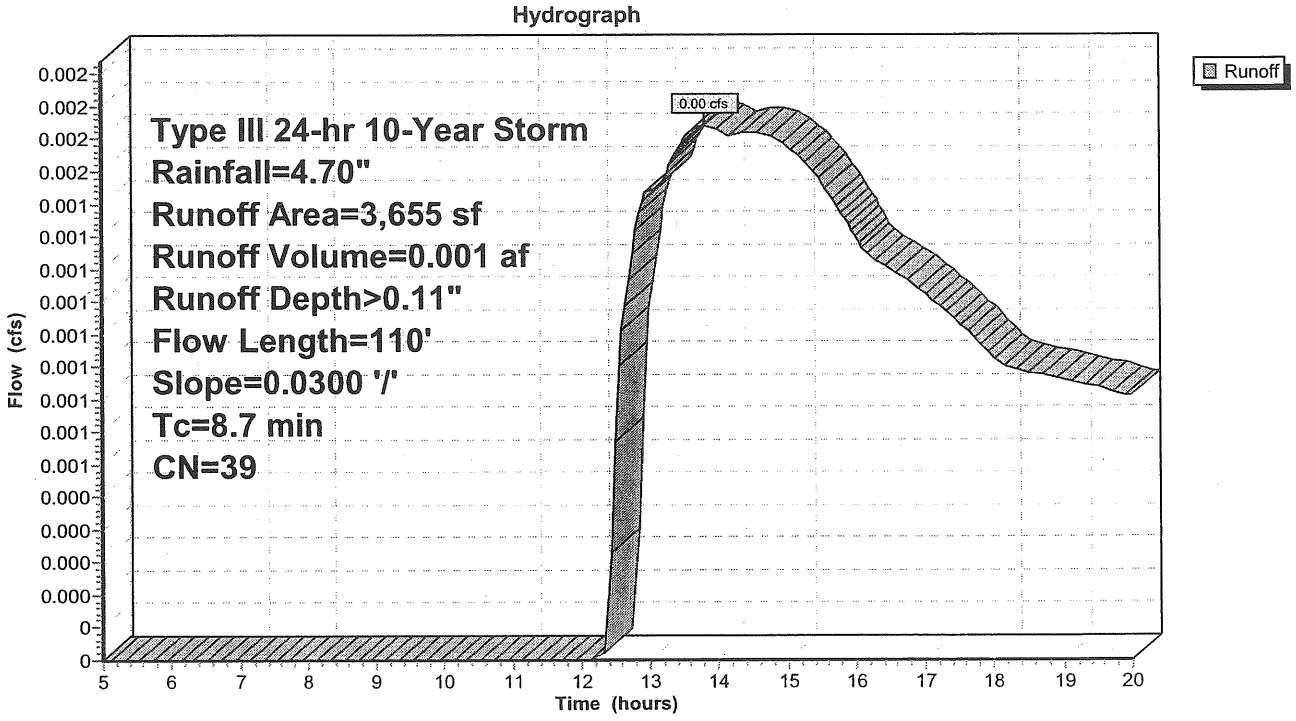
Runoff = 0.00 cfs @ 13.81 hrs, Volume= 0.001 af, Depth> 0.11"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
3,655	39	>75% Grass cover, Good, HSG A
3,655		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0300	0.19		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.1	10	0.0300	1.21		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
8.7	110	Total			

Subcatchment 4P: Back of PS



Subcatchment 3P: Turner Barker

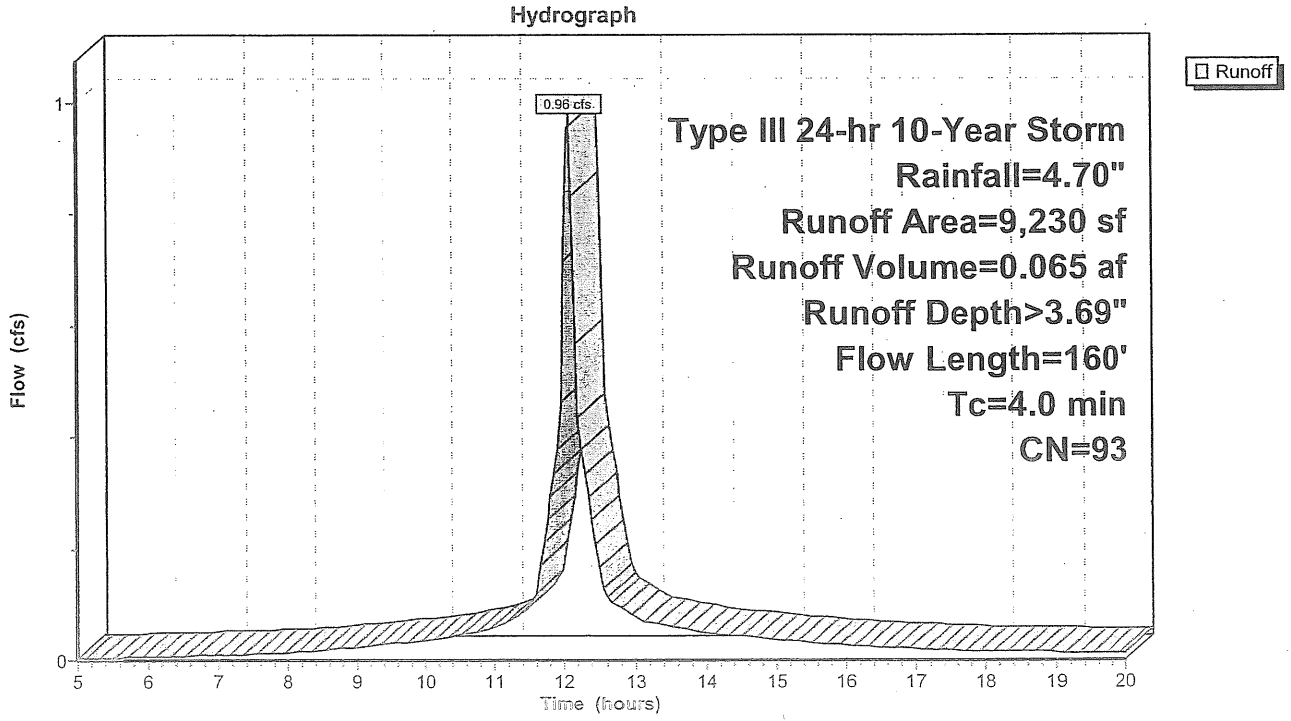
Runoff = 0.96 cfs @ 12.06 hrs, Volume= 0.065 af, Depth> 3.69"

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 Storm Rainfall=4.70"

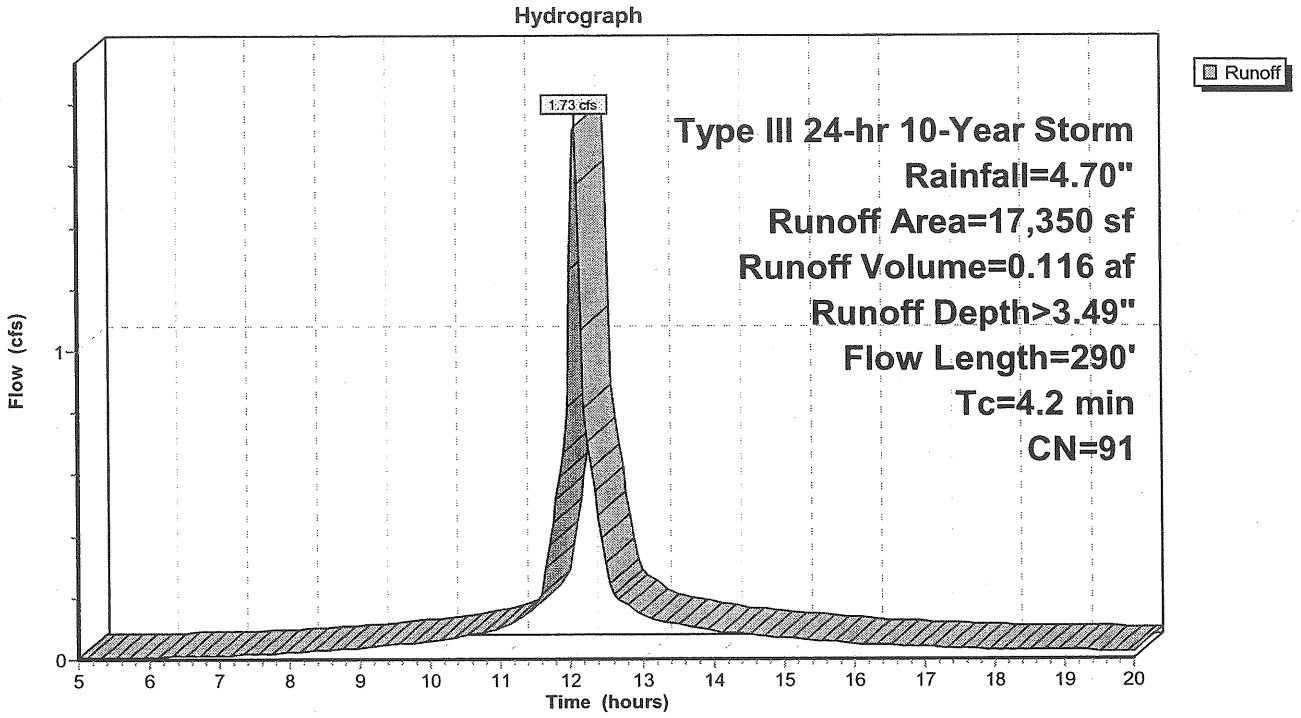
Area (sf)	CN	Description
4,000	98	Building
4,380	98	Paved parking & roofs
850	39	>75% Grass cover, Good, HSG A
9,230	93	Weighted Average
850		Pervious Area
8,380		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	10	0.0050	0.06		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.8	30	0.0050	0.60		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.4	120	0.0100	5.36	4.21	**Circular Channel (pipe), CDE** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011
4.0	160	Total			

Subcatchment 3P: Turner Barker



Subcatchment 2P: Office Building



Subcatchment 2P: Office Building

Runoff = 1.73 cfs @ 12.06 hrs, Volume= 0.116 af, Depth> 3.49"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
5,810	98	Building
1,110	98	Paved roads w/curbs & sewers
2,130	39	>75% Grass cover, Good, HSG A
8,300	98	Gravel Parking
17,350	91	Weighted Average
2,130		Pervious Area
15,220		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	90	0.0250	1.43		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
2.1	90	0.0100	0.70		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.2000	3.13		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
0.9	85	0.0060	1.57		**Shallow Concentrated Flow, DE** Paved Kv= 20.3 fps
4.2	290	Total			

Subcatchment 1BP: Parking Garage

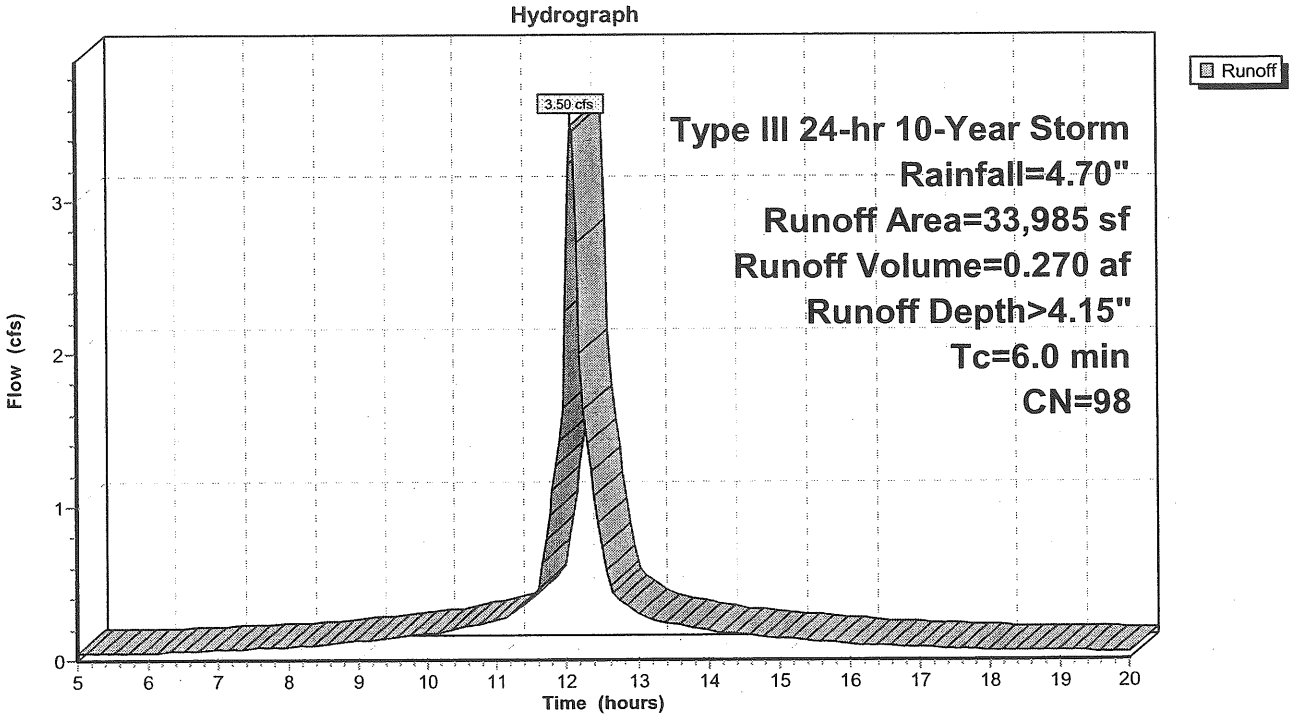
Runoff = 3.50 cfs @ 12.09 hrs, Volume= 0.270 af, Depth> 4.15"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
30,730	98	Building
3,255	98	Paved
33,985	98	Weighted Average
33,985		Impervious Area

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

Subcatchment 1BP: Parking Garage



Subcatchment 1AP: Open Space

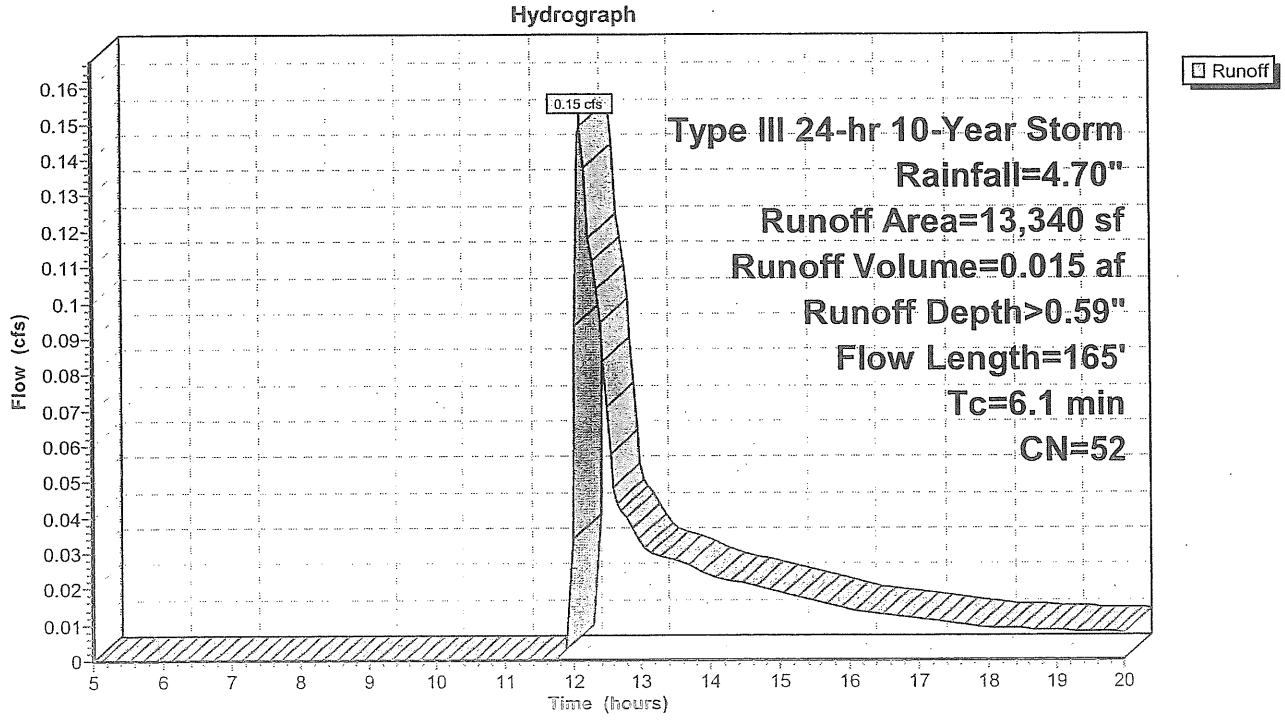
Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.015 af, Depth> 0.59"

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 Storm Rainfall=4.70"

Area (sf)	CN	Description
10,440	39	>75% Grass cover, Good, HSG A
2,900	98	Paved parking & roofs
13,340	52	Weighted Average
10,440		Pervious Area
2,900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	45	0.0200	1.14		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
4.8	55	0.0400	0.19		**Sheet Flow, BC** Grass: Short n= 0.150 P2= 3.00"
0.6	65	0.0600	1.71		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
6.1	165	Total			

Subcatchment 1AP: Open Space



Pond D7: Hancock
Peak Elev=8.84' Inflow=2.06 cfs 0.282 af
30.0" x 36.0' Culvert Outflow=2.06 cfs 0.282 af

Pond D8: Hancock Street Storm System
Peak Elev=10.38' Inflow=2.06 cfs 0.282 af
24.0" x 196.0' Culvert Outflow=2.06 cfs 0.282 af

Pond UH1: Hancock Link DMH1
Peak Elev=12.23' Inflow=2.06 cfs 0.282 af
24.0" x 125.0' Culvert Outflow=2.06 cfs 0.282 af

Pond UH2: Hancock Link DMH2
Peak Elev=16.99' Inflow=2.06 cfs 0.282 af
24.0" x 106.0' Culvert Outflow=2.06 cfs 0.282 af

Total Runoff Area = 3.110 ac Runoff Volume = 0.926 af Average Runoff Depth = 3.57"
12.60% Pervious Area = 0.392 ac 87.40% Impervious Area = 2.718 ac

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

Subcatchment 1AP: Open Space Runoff Area=13,340 sf Runoff Depth>0.59"
Flow Length=165' Tc=6.1 min CN=52 Runoff=0.15 cfs 0.015 af

Subcatchment 1BP: Parking Garage Runoff Area=33,985 sf Runoff Depth>4.15"
Tc=6.0 min CN=98 Runoff=3.50 cfs 0.270 af

Subcatchment 2P: Office Building Runoff Area=17,350 sf Runoff Depth>3.49"
Flow Length=290' Tc=4.2 min CN=91 Runoff=1.73 cfs 0.116 af

Subcatchment 3P: Turner Barker Runoff Area=9,230 sf Runoff Depth>3.69"
Flow Length=160' Tc=4.0 min CN=93 Runoff=0.96 cfs 0.065 af

Subcatchment 4P: Back of PS Runoff Area=3,655 sf Runoff Depth>0.11"
Flow Length=110' Slope=0.0300 '/' Tc=8.7 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 5AP: West Half of Complex Runoff Area=14,410 sf Runoff Depth>4.15"
Tc=6.0 min CN=98 Runoff=1.48 cfs 0.114 af

Subcatchment 5BP: East Half of Complex Runoff Area=38,510 sf Runoff Depth>4.15"
Tc=6.0 min CN=98 Runoff=3.97 cfs 0.305 af

Subcatchment 5CP: Plaza Runoff Area=4,995 sf Runoff Depth>4.15"
Flow Length=75' Slope=0.0125 '/' Tc=1.2 min CN=98 Runoff=0.58 cfs 0.040 af

Reach CS: Combined Sewer Inflow=1.73 cfs 0.116 af
Outflow=1.73 cfs 0.116 af

Reach FR: Fore River Inflow=7.14 cfs 0.806 af
Outflow=7.14 cfs 0.806 af

Reach TOT: (new node) Inflow=8.46 cfs 0.922 af
Outflow=8.46 cfs 0.922 af

Pond 1B: Subsurface Detention for Parking G Peak Elev=20.86' Storage=1,938 cf Inflow=3.50 cfs 0.270 af
Outflow=1.94 cfs 0.267 af

Pond 5C: Subsurface Detention for Plaza Peak Elev=12.14' Storage=1,654 cf Inflow=5.84 cfs 0.459 af
Outflow=4.56 cfs 0.458 af

Pond D2: Commercial Street Storm System Peak Elev=9.35' Inflow=0.96 cfs 0.066 af
15.0" x 192.0' Culvert Outflow=0.96 cfs 0.066 af

Pond D3: Commercial Peak Elev=8.96' Inflow=0.96 cfs 0.066 af
15.0" x 192.0' Culvert Outflow=0.96 cfs 0.066 af

Pond UH2: Hancock Link DMH2

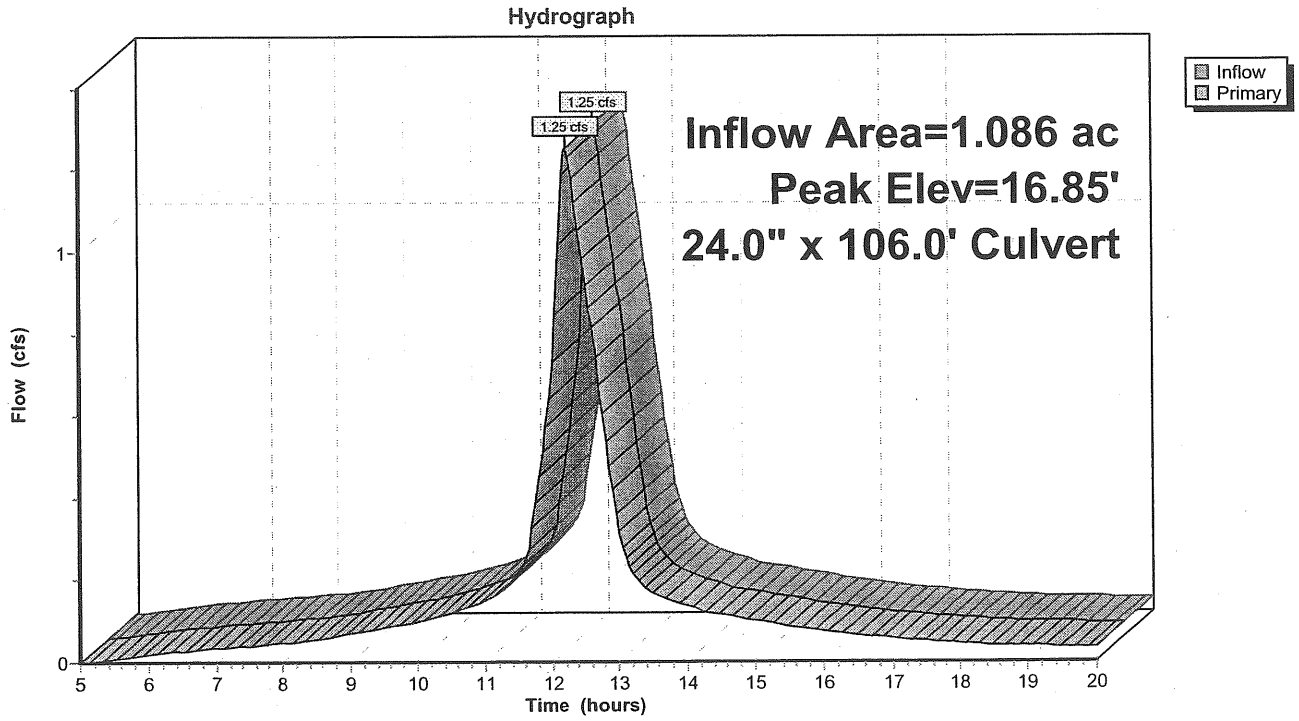
Inflow Area = 1.086 ac, Inflow Depth > 1.87" for 2-Year Storm event
Inflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.85' @ 12.21 hrs
Flood Elev= 22.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.39'	**24.0" x 106.0' long Culvert** RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 11.73' S= 0.0440 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=16.85' TW=12.09' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.25 cfs @ 2.30 fps)

Pond UH2: Hancock Link DMH2



Pond UH1: Hancock Link DMH1

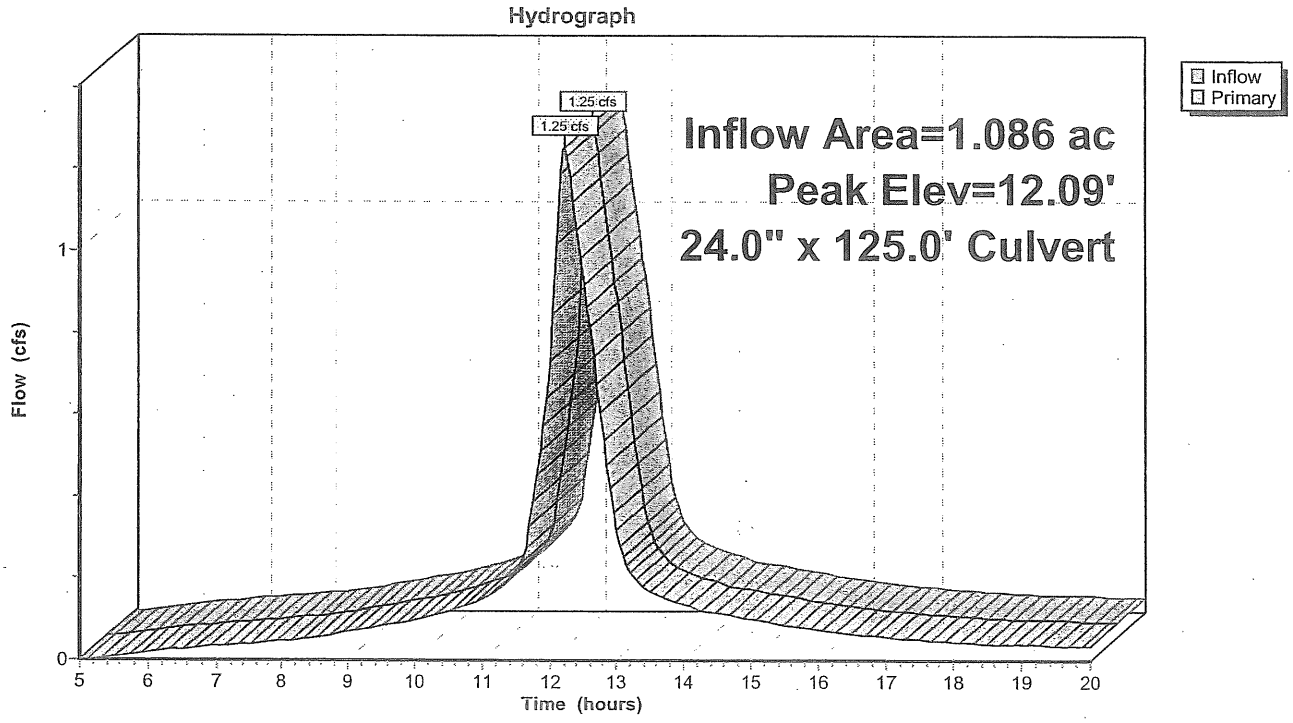
Inflow Area = 1.086 ac, Inflow Depth > 1.87" for 2-Year Storm event
Inflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 12.09' @ 12.21 hrs
Flood Elev= 16.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	11.63'	**24.0" x 125.0' long Culvert** RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 9.88' S= 0.0140 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=12.09' TW=10.24' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.25 cfs @ 2.30 fps)

Pond UH1: Hancock Link DMH1



Pond D8: Hancock Street Storm System

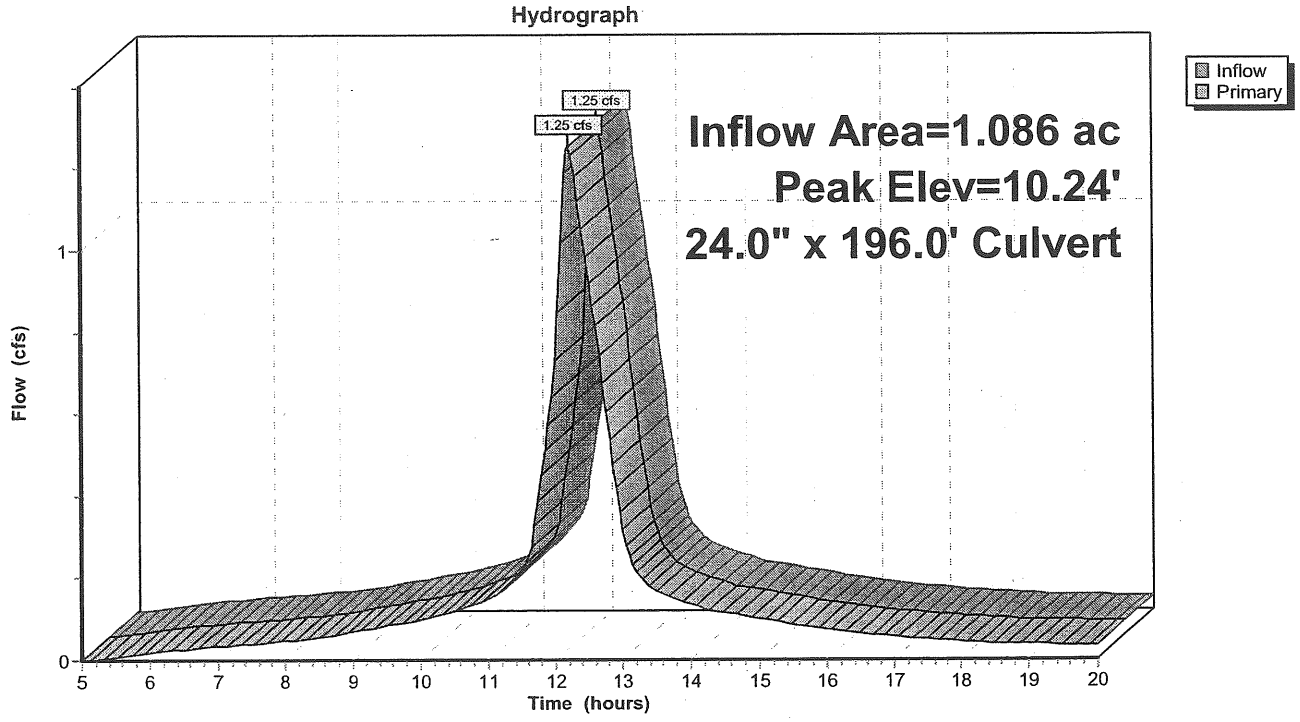
Inflow Area = 1.086 ac, Inflow Depth > 1.87" for 2-Year Storm event
Inflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.24' @ 12.21 hrs
Flood Elev= 15.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	9.78'	**24.0" x 196.0' long Culvert** Ke= 0.500 Outlet Invert= 8.18' S= 0.0082 '/' Cc= 0.900 n= 0.011

Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=10.24' TW=8.68' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.25 cfs @ 2.30 fps)

Pond D8: Hancock Street Storm System



Pond D7: Hancock

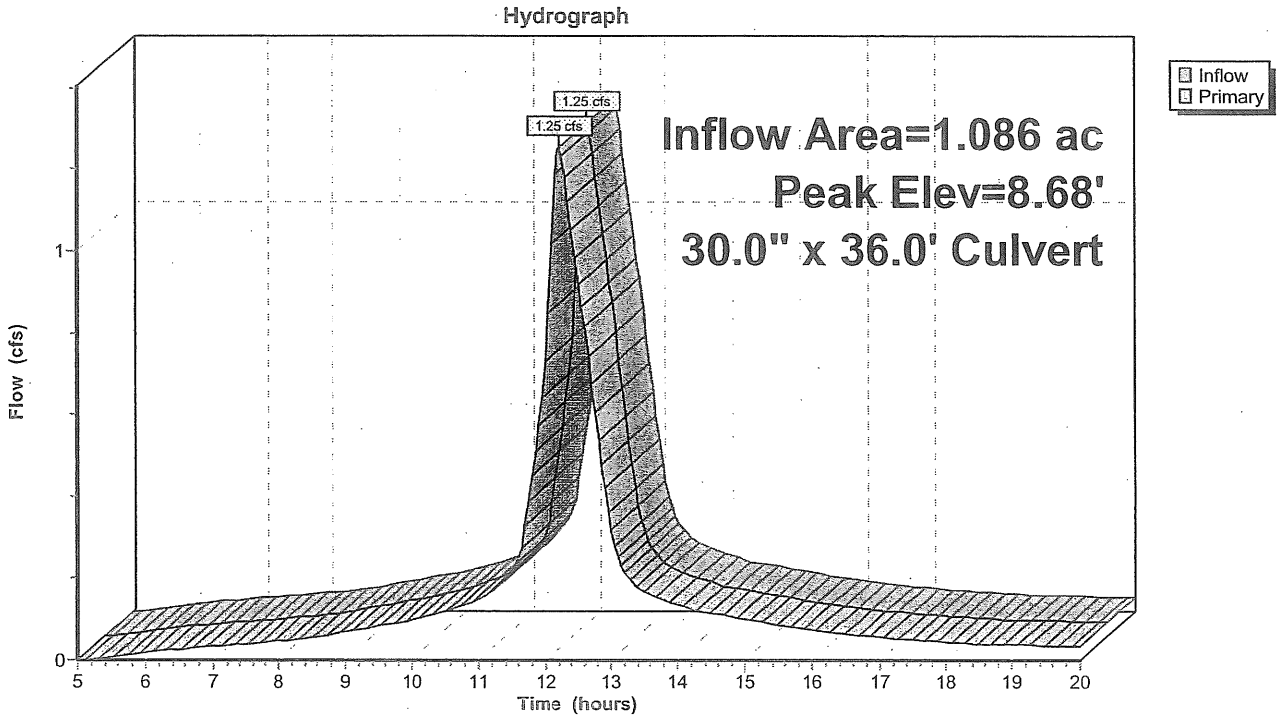
Inflow Area = 1.086 ac, Inflow Depth > 1.87" for 2-Year Storm event
Inflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 0.169 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 8.68' @ 12.21 hrs
Flood Elev= 13.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	8.08'	**30.0" x 36.0' long Culvert** Ke= 0.500 Outlet Invert= 8.07' S= 0.0003 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=8.68' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.25 cfs @ 2.09 fps)

Pond D7: Hancock



Pond D3: Commercial

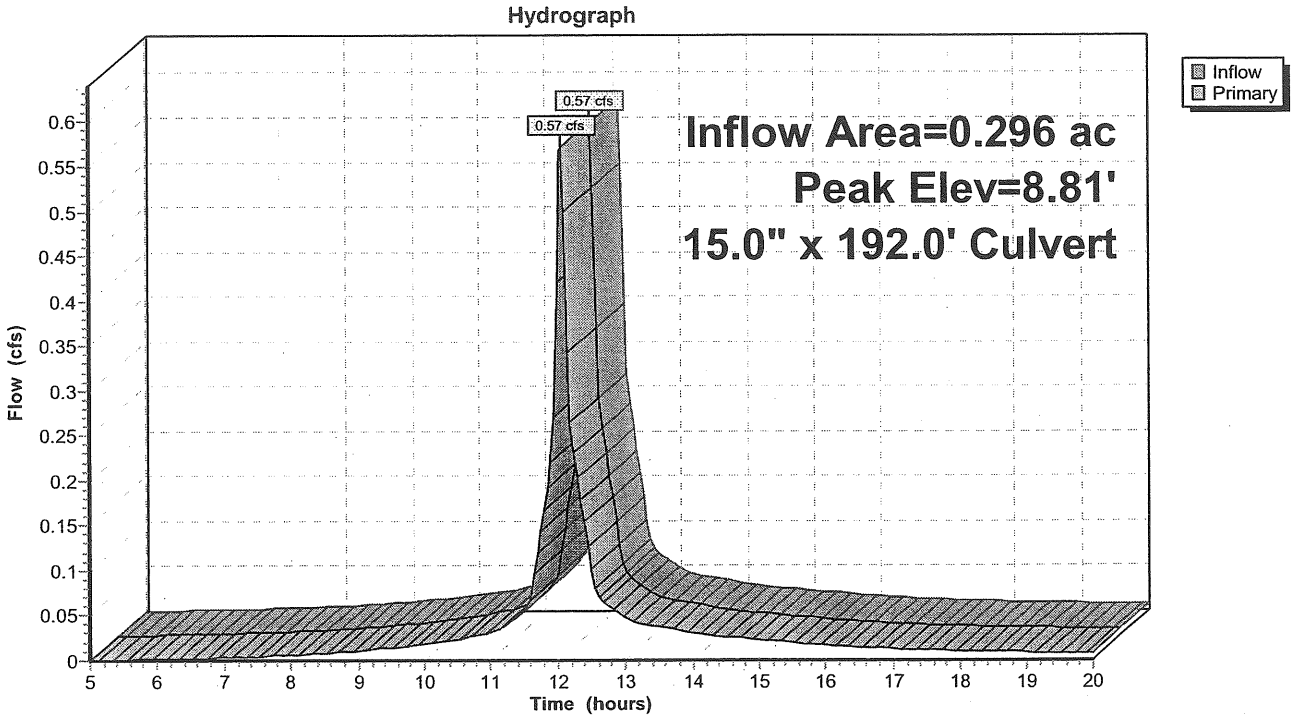
Inflow Area = 0.296 ac, Inflow Depth > 1.53" for 2-Year Storm event
Inflow = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af
Outflow = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 8.81' @ 12.06 hrs
Flood Elev= 13.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	8.35'	**15.0" x 192.0' long Culvert** Ke= 0.500 Outlet Invert= 8.06' S= 0.0015 '/' Cc= 0.900 n= 0.010

Primary OutFlow Max=0.56 cfs @ 12.06 hrs HW=8.81' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.56 cfs @ 2.03 fps)

Pond D3: Commercial



Pond D2: Commercial Street Storm System

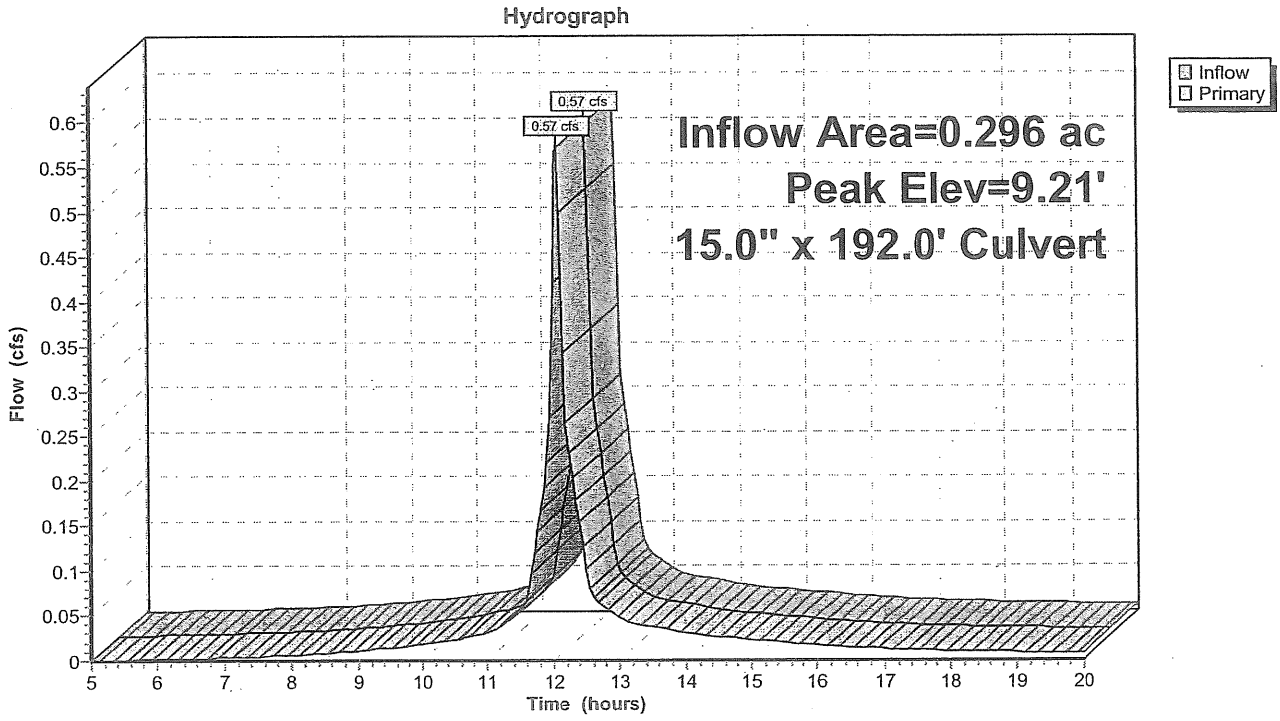
Inflow Area = 0.296 ac, Inflow Depth > 1.53" for 2-Year Storm event
Inflow = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af
Outflow = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.21' @ 12.06 hrs
Flood Elev= 14.95'

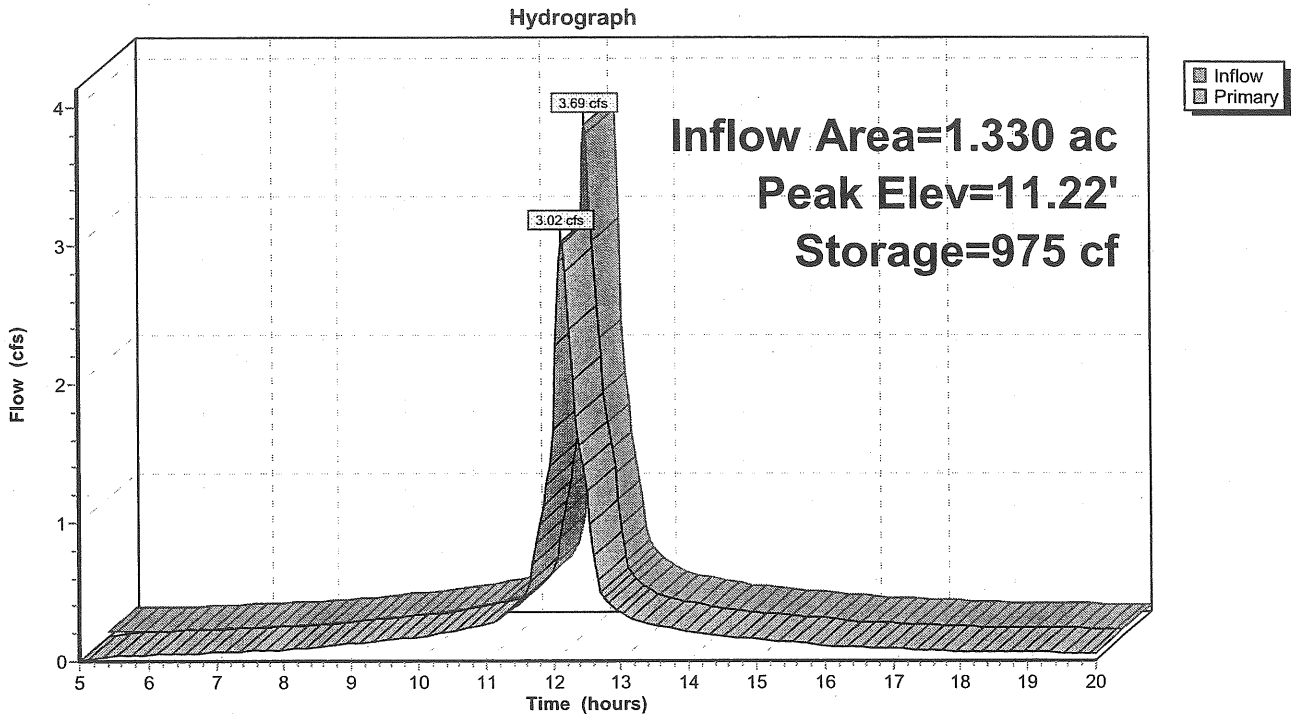
Device	Routing	Invert	Outlet Devices
#1	Primary	8.74'	**15.0" x 192.0' long Culvert** Ke= 0.500 Outlet Invert= 8.45' S= 0.0015 '/' Cc= 0.900 n= 0.010

Primary OutFlow Max=0.55 cfs @ 12.06 hrs HW=9.20' TW=8.81' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 0.55 cfs @ 2.00 fps)

Pond D2: Commercial Street Storm System



Pond 5C: Subsurface Detention for Plaza



Pond 5C: Subsurface Detention for Plaza

Inflow Area = 1.330 ac, Inflow Depth > 2.59" for 2-Year Storm event
Inflow = 3.69 cfs @ 12.08 hrs, Volume= 0.287 af
Outflow = 3.02 cfs @ 12.14 hrs, Volume= 0.286 af, Atten= 18%, Lag= 3.8 min
Primary = 3.02 cfs @ 12.14 hrs, Volume= 0.286 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.22' @ 12.14 hrs Surf.Area= 988 sf Storage= 975 cf

Plug-Flow detention time= 7.6 min calculated for 0.285 af (99% of inflow)
Center-of-Mass det. time= 5.6 min (744.5 - 738.9)

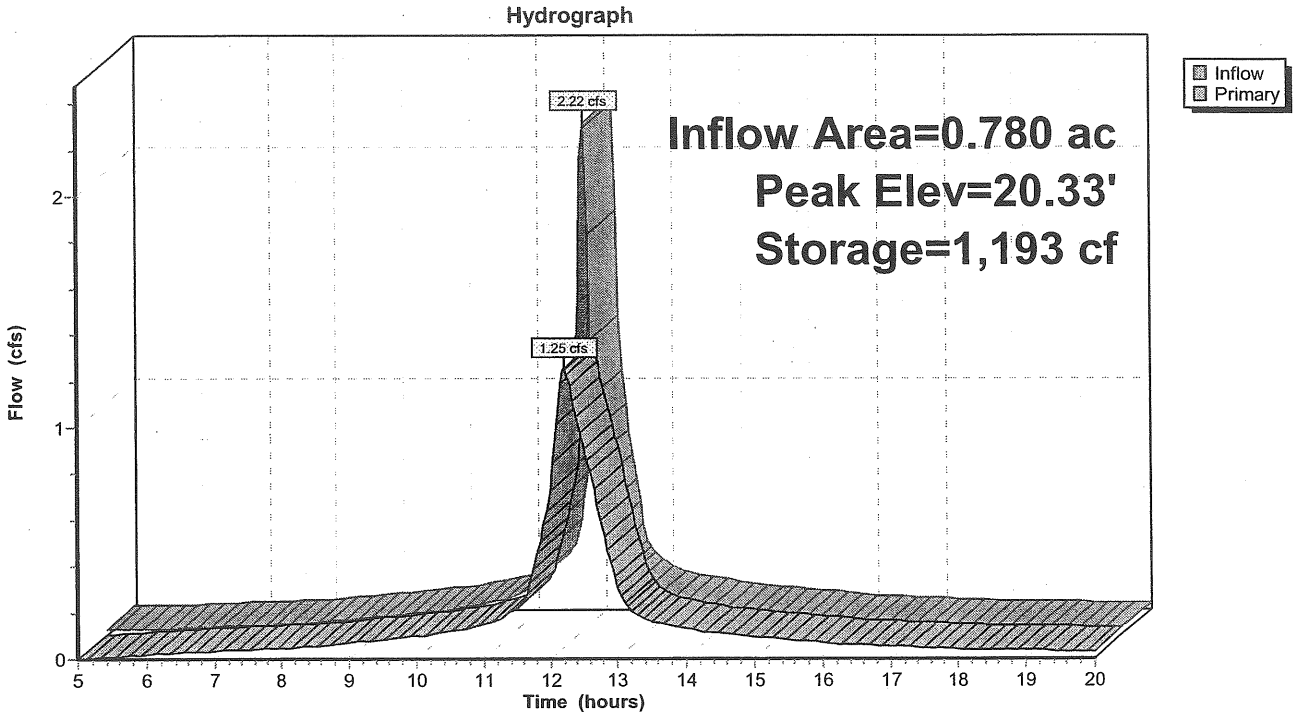
Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	1,085 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 3,952 cf Overall - 1,240 cf Embedded = 2,712 cf x 40.0% Voids
#2	10.50'	1,240 cf	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 27 Inside #1
		2,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	988	0	0
13.50	988	3,952	3,952

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	**12.0" x 50.0' long Culvert** CMP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 9.00' S= 0.0100 '/' Cc= 0.900 n= 0.011
#2	Device 1	9.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	10.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	12.00'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=3.00 cfs @ 12.14 hrs HW=11.21' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 3.00 cfs of 4.16 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 1.97 cfs @ 5.65 fps)
—**3=Orifice/Grate** (Orifice Controls 1.03 cfs @ 2.95 fps)
—**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 1B: Subsurface Detention for Parking Garage



Pond 1B: Subsurface Detention for Parking Garage

Inflow Area = 0.780 ac, Inflow Depth > 2.59" for 2-Year Storm event
Inflow = 2.22 cfs @ 12.09 hrs, Volume= 0.168 af
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 0.167 af, Atten= 43%, Lag= 7.6 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 0.167 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 20.33' @ 12.21 hrs Surf.Area= 1,770 sf Storage= 1,193 cf

Plug-Flow detention time= 19.5 min calculated for 0.167 af (99% of inflow)
Center-of-Mass det. time= 14.8 min (754.0 - 739.2)

Volume	Invert	Avail.Storage	Storage Description
#1	19.00'	1,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
			7,080 cf Overall - 2,205 cf Embedded = 4,875 cf x 40.0% Voids
#2	20.00'	2,205 cf	**44.6"W x 30.0"H x 7.12'L StormTech SC-740** x 48 Inside #1
		4,155 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.00	1,770	0	0
23.00	1,770	7,080	7,080

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**12.0" x 150.0' long Culvert**
			CMP, end-section conforming to fill, Ke= 0.500
			Outlet Invert= 18.00' S= 0.0067 '/' Cc= 0.900 n= 0.011
#2	Device 1	20.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	19.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	21.50'	**12.0" Vert. Orifice/Grate** C= 0.600

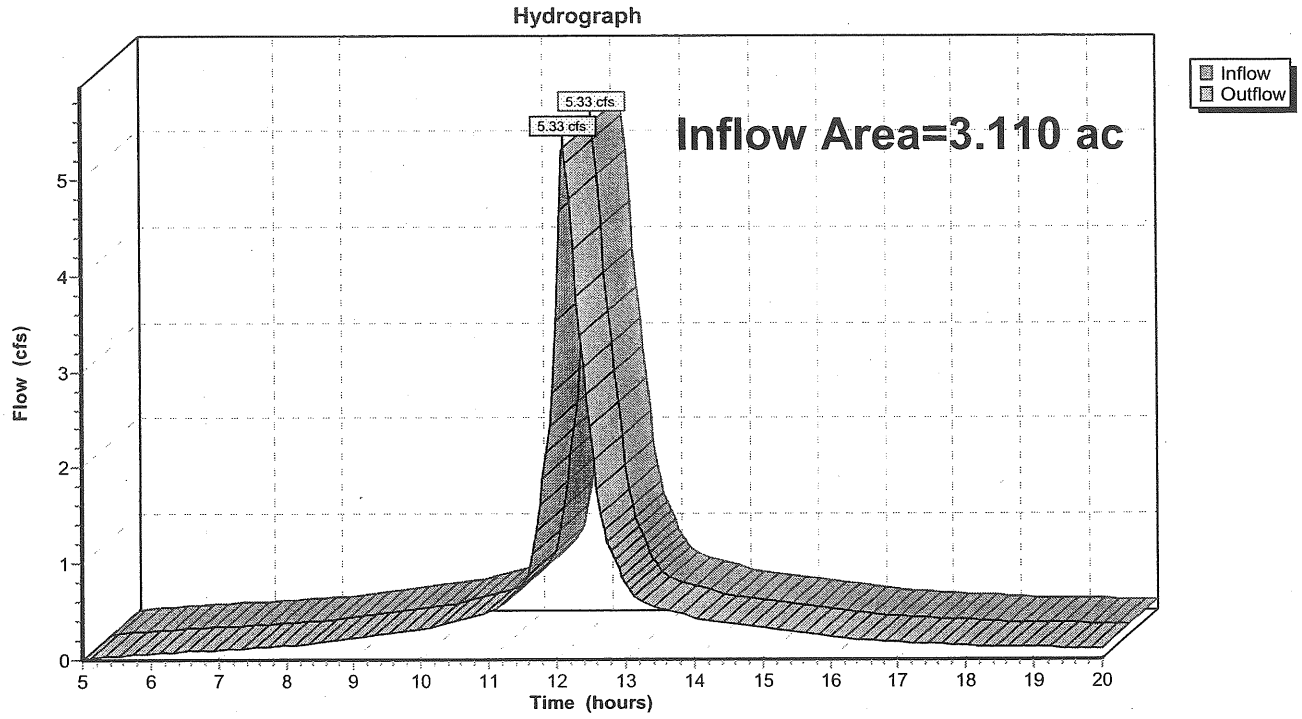
Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=20.33' TW=16.85' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 1.25 cfs of 3.36 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.27 cfs @ 1.95 fps)
—**3=Orifice/Grate** (Orifice Controls 0.98 cfs @ 5.00 fps)
—**4=Orifice/Grate** (Controls 0.00 cfs)

Reach TOT: (new node)

Inflow Area = 3.110 ac, Inflow Depth > 2.15" for 2-Year Storm event
Inflow = 5.33 cfs @ 12.12 hrs, Volume= 0.557 af
Outflow = 5.33 cfs @ 12.12 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)

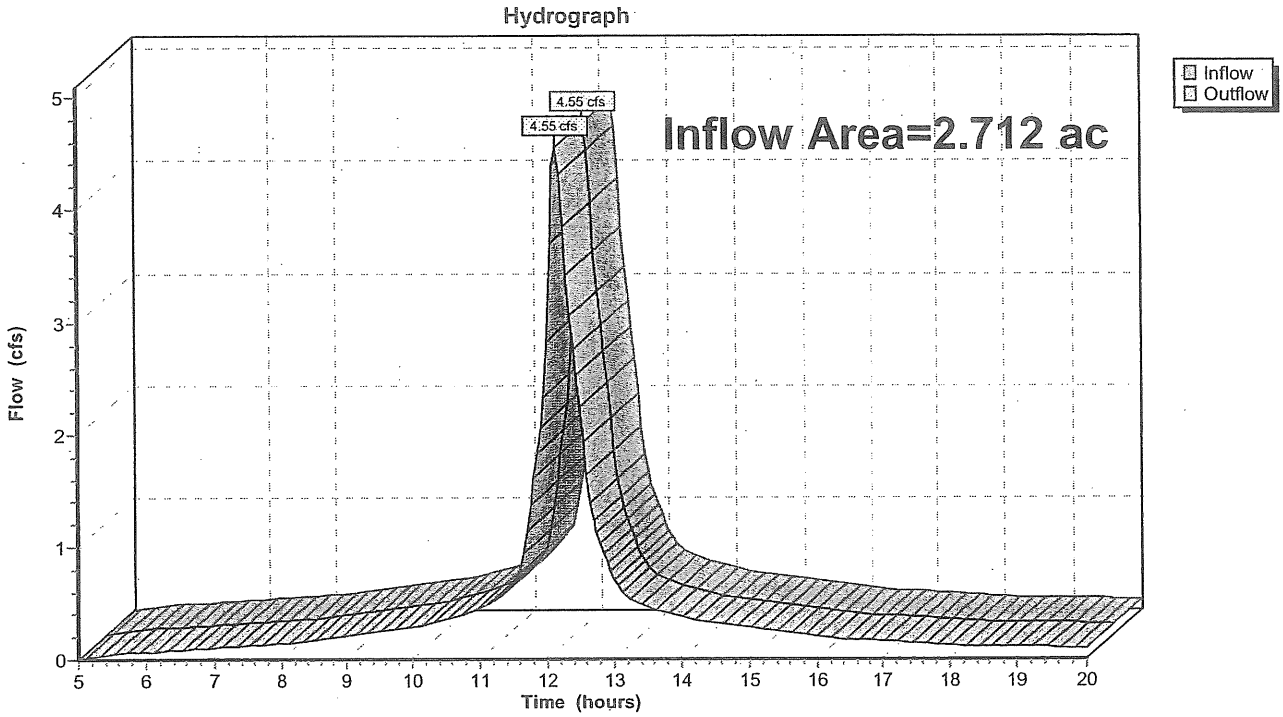


Reach FR: Fore River

Inflow Area = 2.712 ac, Inflow Depth > 2.18" for 2-Year Storm event
Inflow = 4.55 cfs @ 12.14 hrs, Volume= 0.493 af
Outflow = 4.55 cfs @ 12.14 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

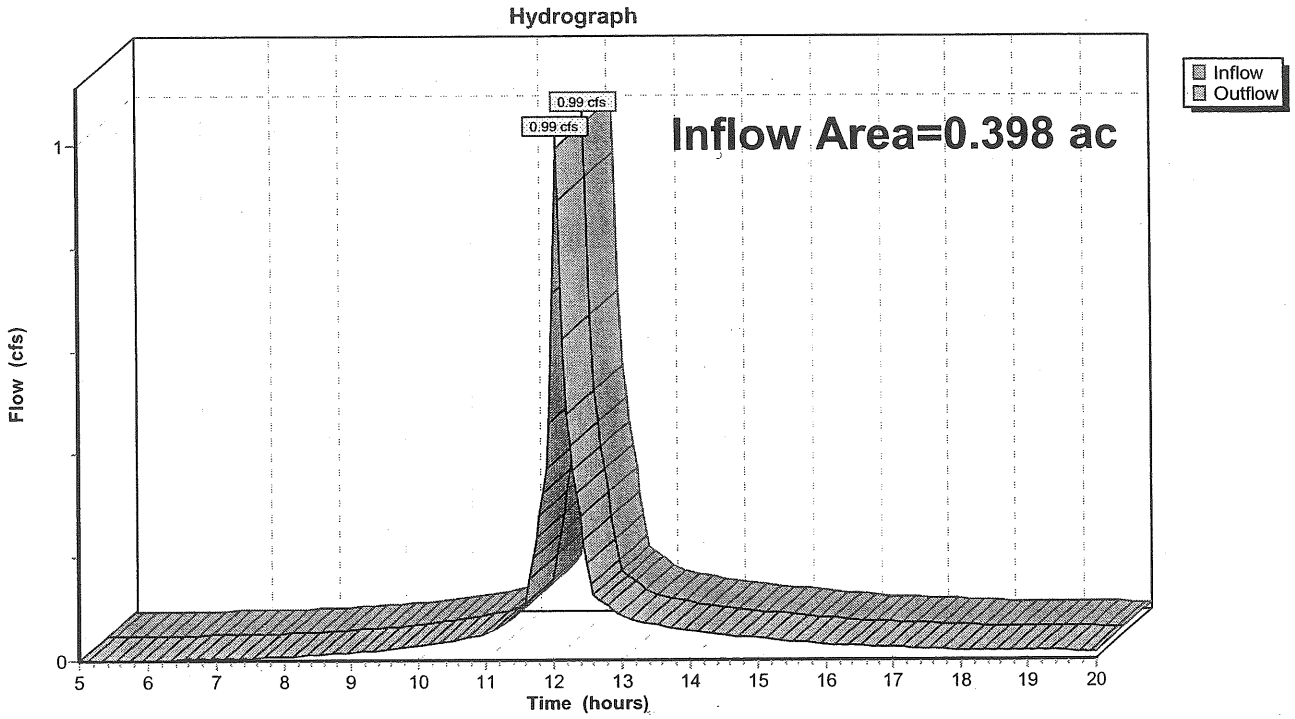


Reach CS: Combined Sewer

Inflow Area = 0.398 ac, Inflow Depth > 1.95" for 2-Year Storm event
Inflow = 0.99 cfs @ 12.06 hrs, Volume= 0.065 af
Outflow = 0.99 cfs @ 12.06 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer



Subcatchment 5CP: Plaza

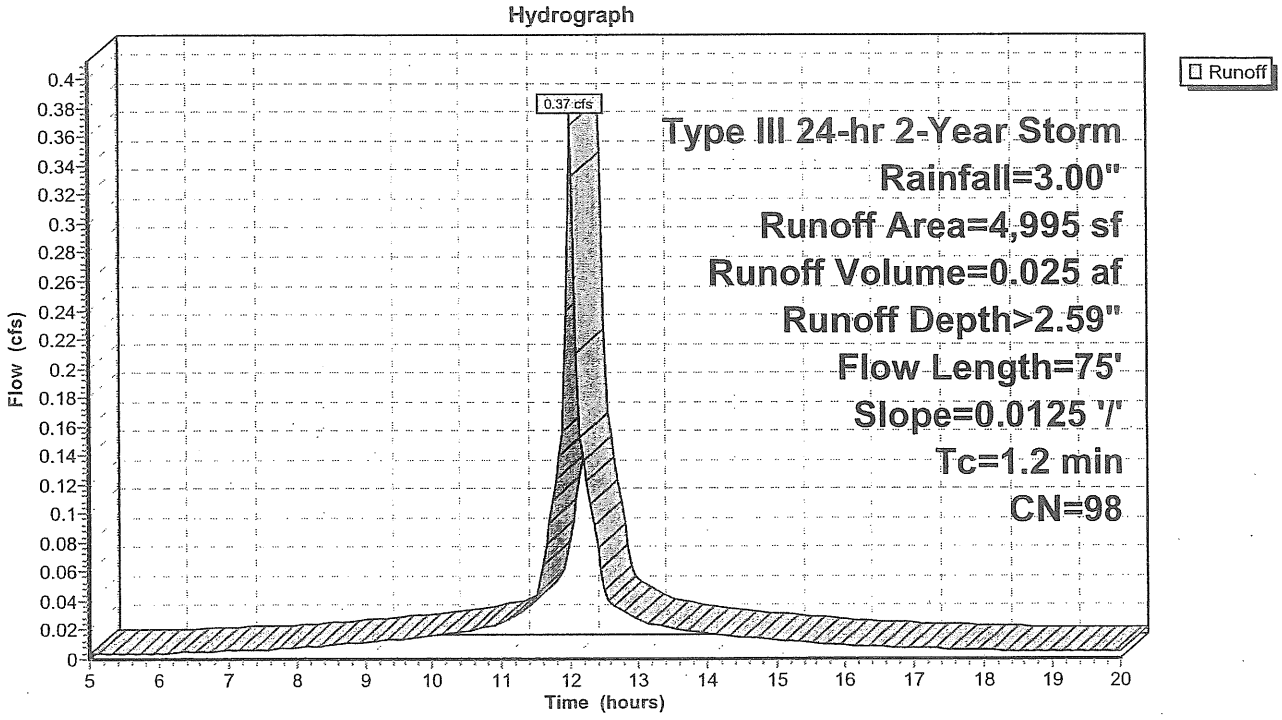
Runoff = 0.37 cfs @ 12.02 hrs, Volume= 0.025 af, Depth> 2.59"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
4,995	98	Paved parking & roofs
4,995		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	75	0.0125	1.04		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 5CP: Plaza



Subcatchment 5BP: East Half of Complex

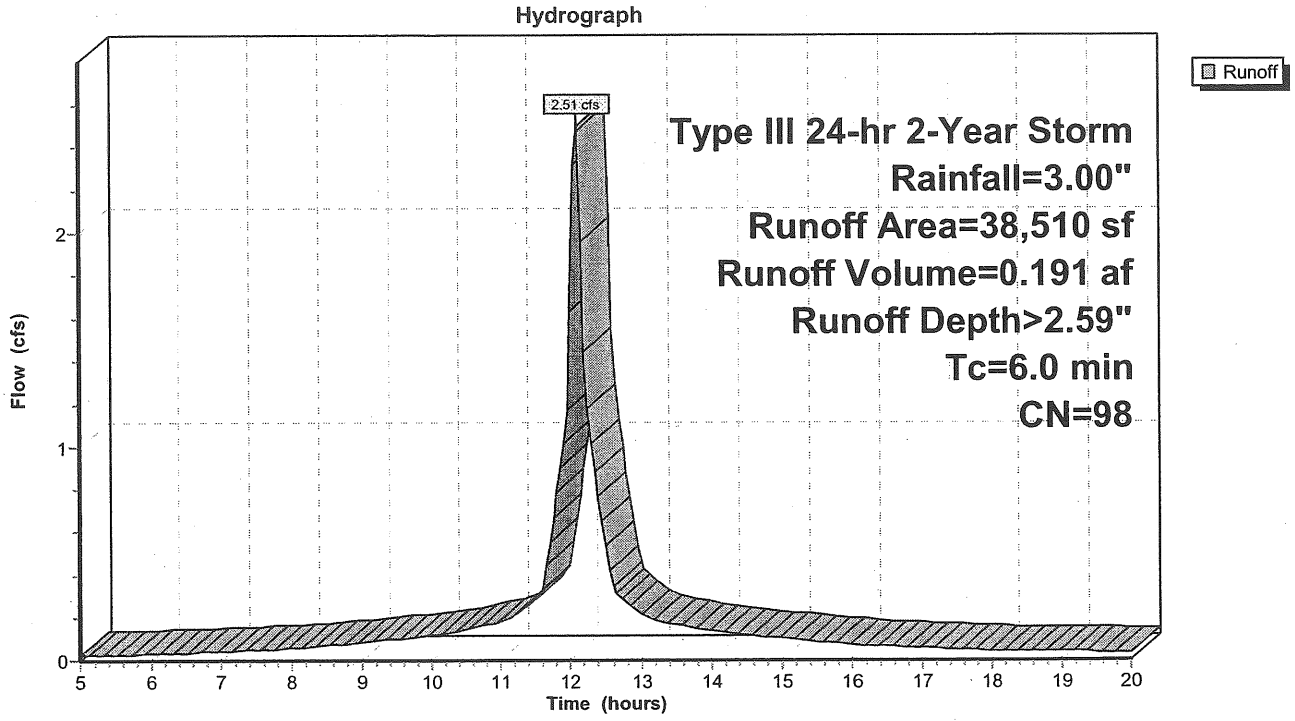
Runoff = 2.51 cfs @ 12.09 hrs, Volume= 0.191 af, Depth> 2.59"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
32,915	98	Paved parking & roofs
5,595	98	Plaza
38,510	98	Weighted Average
38,510		Impervious Area

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

Subcatchment 5BP: East Half of Complex



Subcatchment 5AP: West Half of Complex

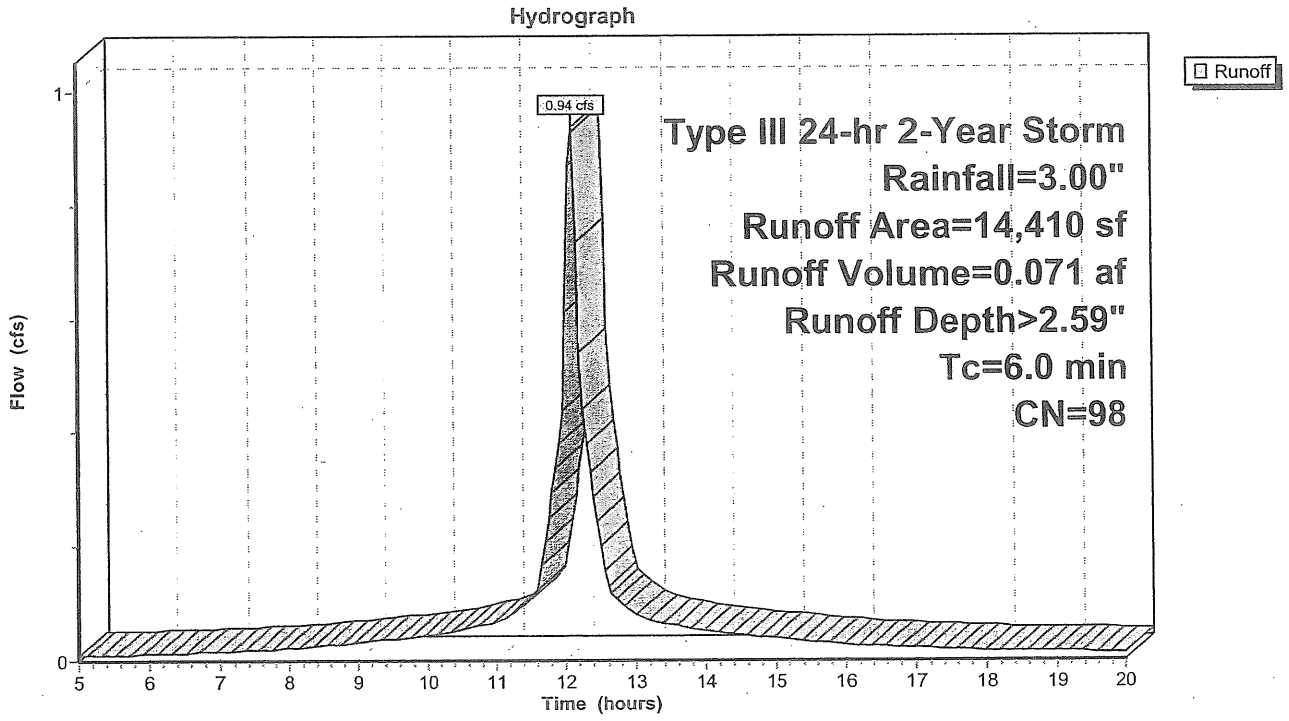
Runoff = 0.94 cfs @ 12.09 hrs, Volume= 0.071 af, Depth> 2.59"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
13,840	98	Buildings
570	98	Paved
14,410	98	Weighted Average
14,410		Impervious Area

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

Subcatchment 5AP: West Half of Complex



Subcatchment 4P: Back of PS

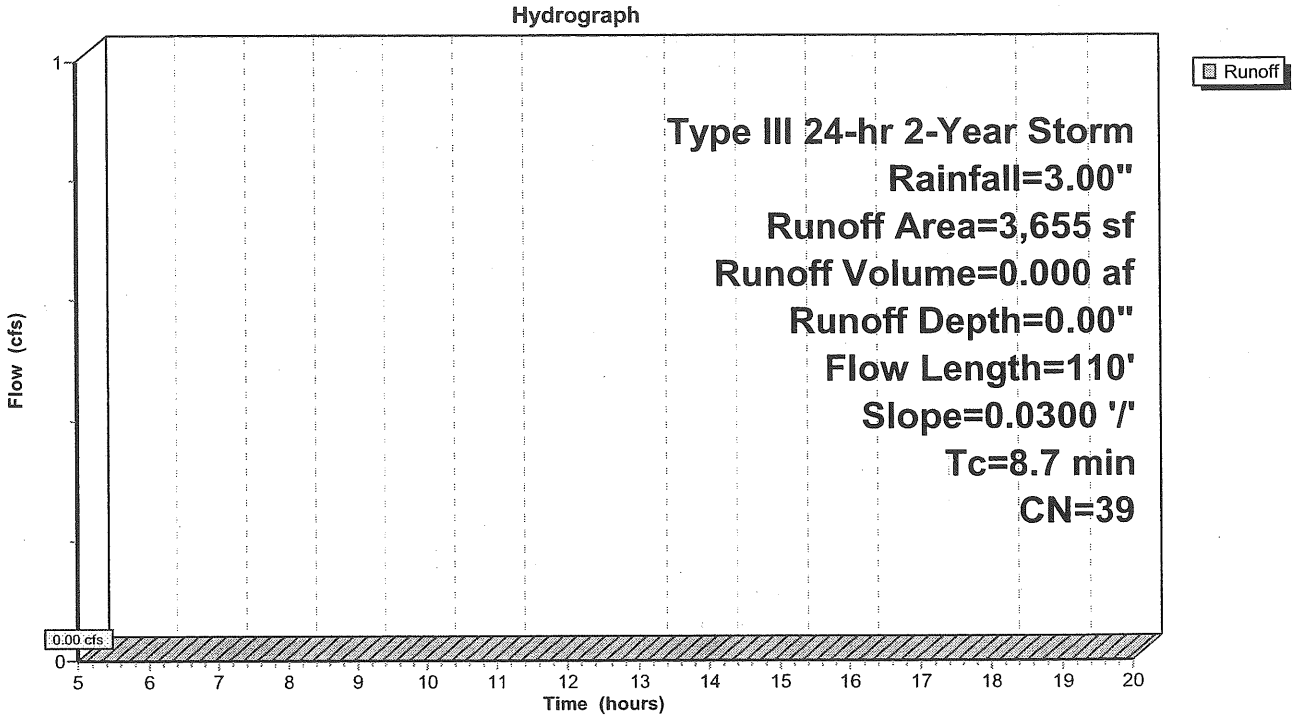
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
3,655	39	>75% Grass cover, Good, HSG A
3,655		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0300	0.19		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.1	10	0.0300	1.21		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
8.7	110	Total			

Subcatchment 4P: Back of PS



Subcatchment 3P: Turner Barker

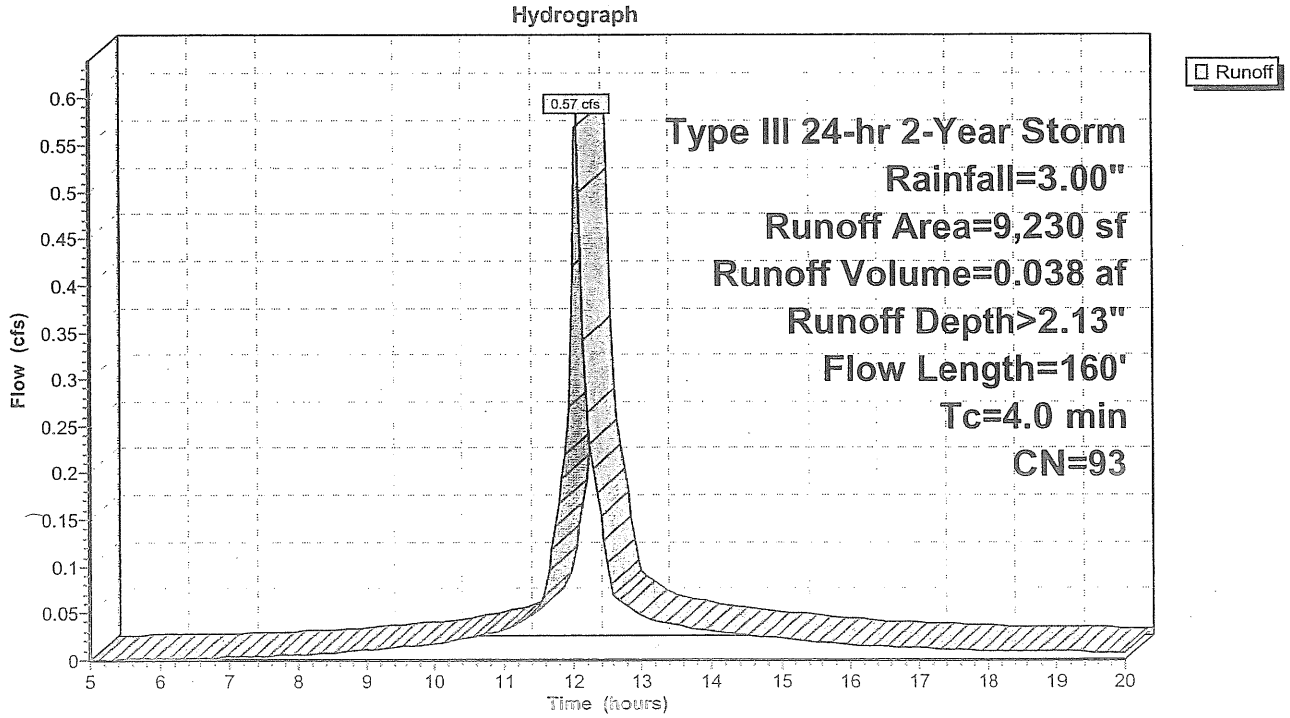
Runoff = 0.57 cfs @ 12.06 hrs, Volume= 0.038 af, Depth> 2.13"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
4,000	98	Building
4,380	98	Paved parking & roofs
850	39	>75% Grass cover, Good, HSG A
9,230	93	Weighted Average
850		Pervious Area
8,380		Impervious Area

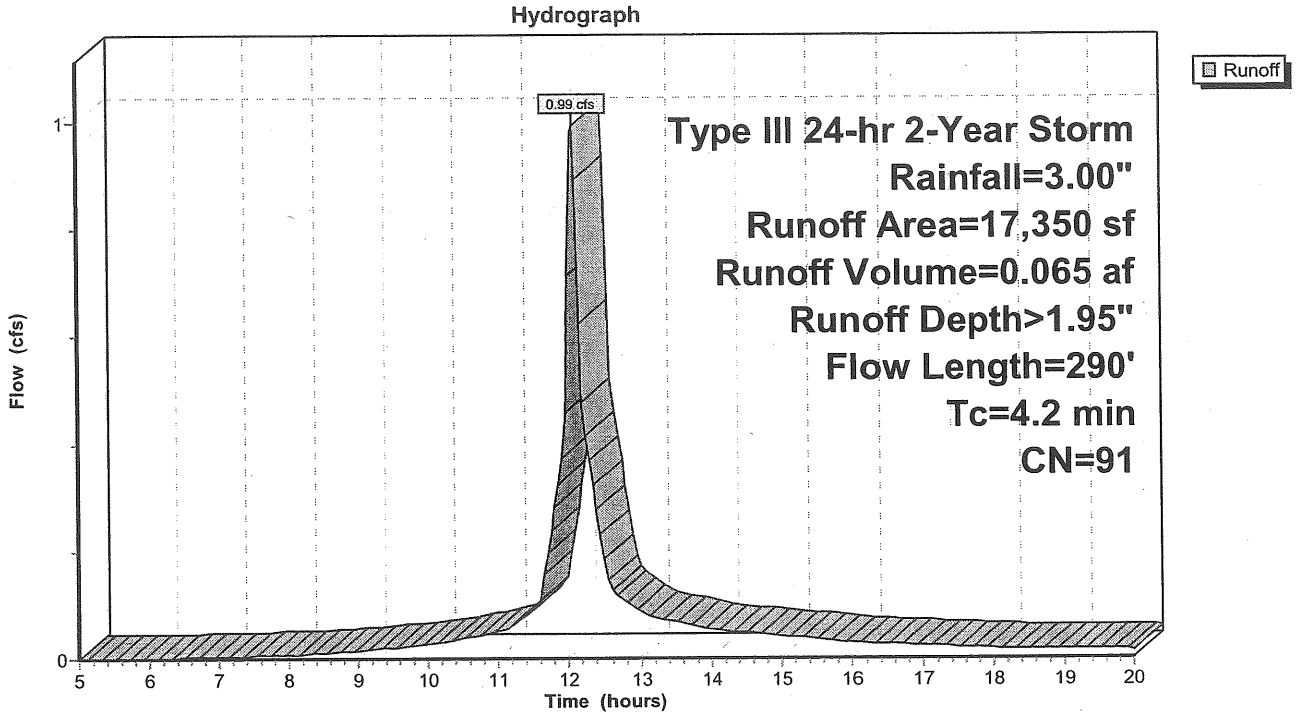
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	10	0.0050	0.06		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.8	30	0.0050	0.60		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.4	120	0.0100	5.36	4.21	**Circular Channel (pipe), CDE** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011
4.0	160	Total			

Subcatchment 3P: Turner Barker



Post-Development-ST
Prepared by Woodard & Curran

Subcatchment 2P: Office Building



Subcatchment 2P: Office Building

Runoff = 0.99 cfs @ 12.06 hrs, Volume= 0.065 af, Depth> 1.95"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
5,810	98	Building
1,110	98	Paved roads w/curbs & sewers
2,130	39	>75% Grass cover, Good, HSG A
8,300	98	Gravel Parking
17,350	91	Weighted Average
2,130		Pervious Area
15,220		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	90	0.0250	1.43		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
2.1	90	0.0100	0.70		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.2000	3.13		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
0.9	85	0.0060	1.57		**Shallow Concentrated Flow, DE** Paved Kv= 20.3 fps
4.2	290	Total			

Subcatchment 1BP: Parking Garage

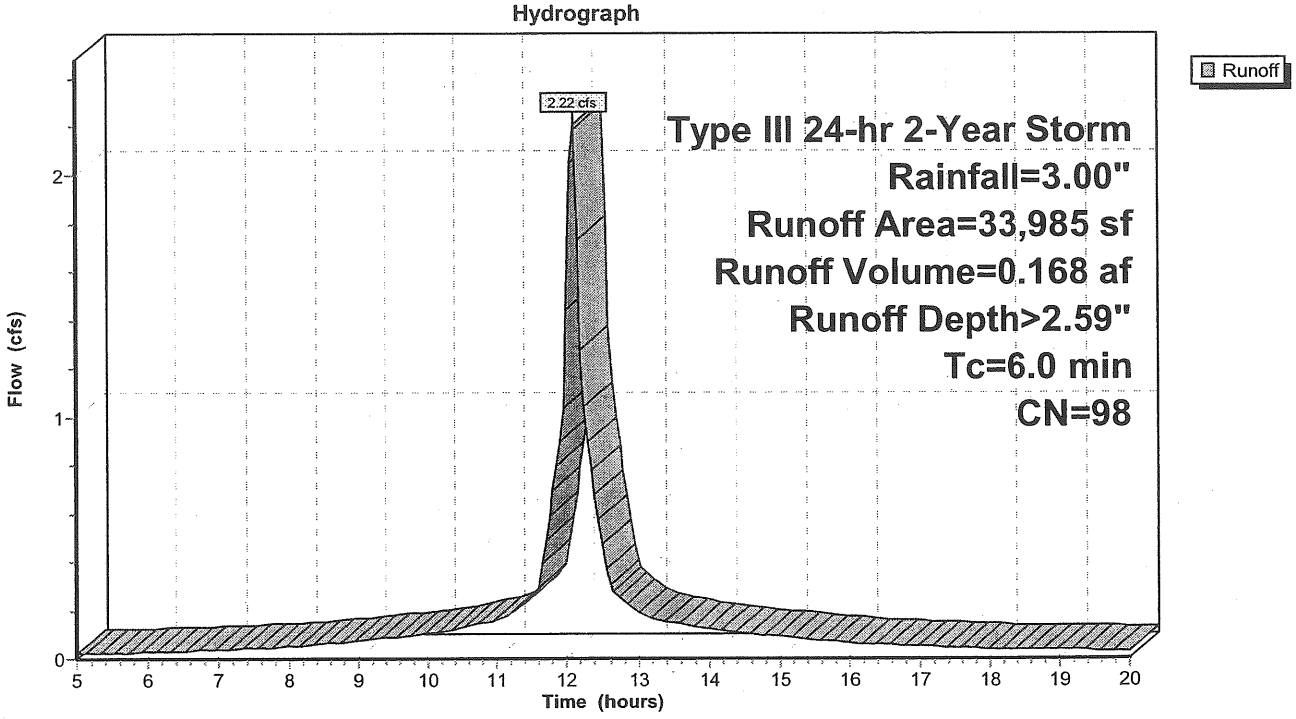
Runoff = 2.22 cfs @ 12.09 hrs, Volume= 0.168 af, Depth> 2.59"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
30,730	98	Building
3,255	98	Paved
33,985	98	Weighted Average
33,985		Impervious Area

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

Subcatchment 1BP: Parking Garage



Subcatchment 1AP: Open Space

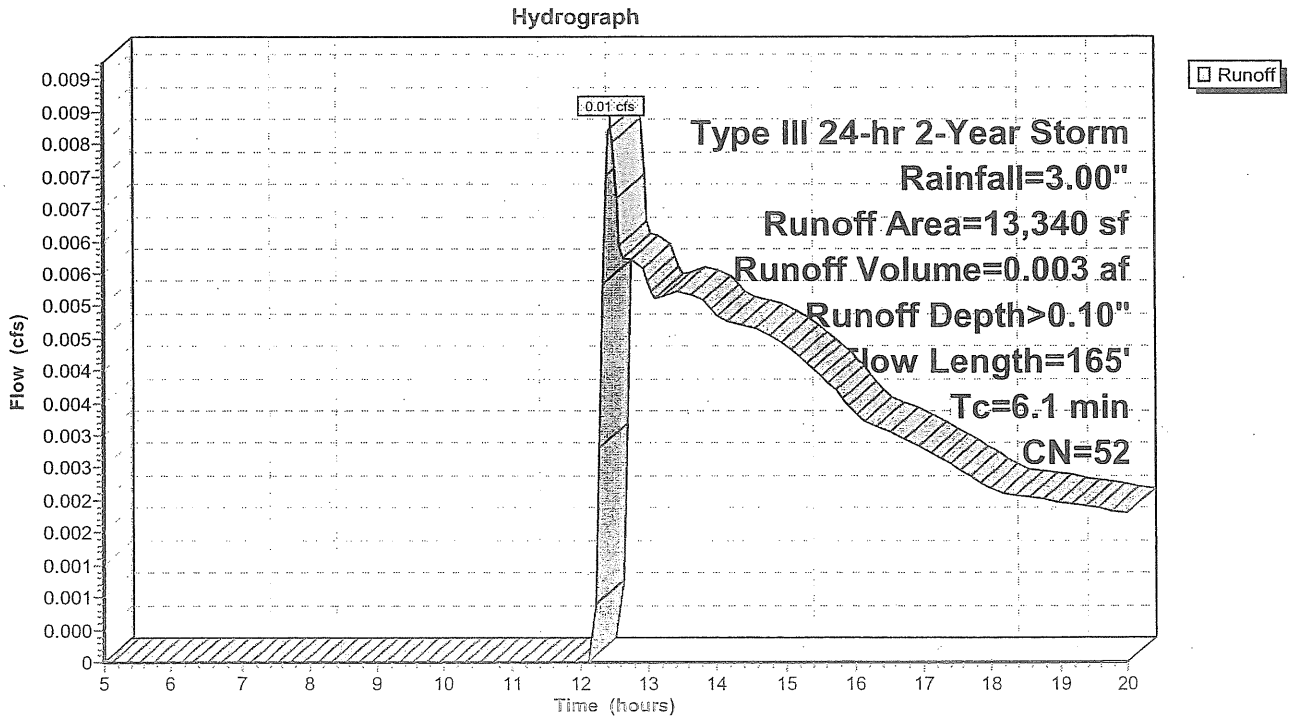
Runoff = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af, Depth> 0.10"

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 Storm Rainfall=3.00"

Area (sf)	CN	Description
10,440	39	>75% Grass cover, Good, HSG A
2,900	98	Paved parking & roofs
13,340	52	Weighted Average
10,440		Pervious Area
2,900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	45	0.0200	1.14		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
4.8	55	0.0400	0.19		**Sheet Flow, BC** Grass: Short n= 0.150 P2= 3.00"
0.6	65	0.0600	1.71		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
6.1	165	Total			

Subcatchment 1AP: Open Space



Pond D7: Hancock Peak Elev=8.68' Inflow=1.25 cfs 0.169 af
30.0" x 36.0' Culvert Outflow=1.25 cfs 0.169 af

Pond D8: Hancock Street Storm System Peak Elev=10.24' Inflow=1.25 cfs 0.169 af
24.0" x 196.0' Culvert Outflow=1.25 cfs 0.169 af

Pond UH1: Hancock Link DMH1 Peak Elev=12.09' Inflow=1.25 cfs 0.169 af
24.0" x 125.0' Culvert Outflow=1.25 cfs 0.169 af

Pond UH2: Hancock Link DMH2 Peak Elev=16.85' Inflow=1.25 cfs 0.169 af
24.0" x 106.0' Culvert Outflow=1.25 cfs 0.169 af

Total Runoff Area = 3.110 ac Runoff Volume = 0.560 af Average Runoff Depth = 2.16"
12.60% Pervious Area = 0.392 ac 87.40% Impervious Area = 2.718 ac

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

Subcatchment 1AP: Open Space Runoff Area=13,340 sf Runoff Depth>0.10"
Flow Length=165' Tc=6.1 min CN=52 Runoff=0.01 cfs 0.003 af

Subcatchment 1BP: Parking Garage Runoff Area=33,985 sf Runoff Depth>2.59"
Tc=6.0 min CN=98 Runoff=2.22 cfs 0.168 af

Subcatchment 2P: Office Building Runoff Area=17,350 sf Runoff Depth>1.95"
Flow Length=290' Tc=4.2 min CN=91 Runoff=0.99 cfs 0.065 af

Subcatchment 3P: Turner Barker Runoff Area=9,230 sf Runoff Depth>2.13"
Flow Length=160' Tc=4.0 min CN=93 Runoff=0.57 cfs 0.038 af

Subcatchment 4P: Back of PS Runoff Area=3,655 sf Runoff Depth=0.00"
Flow Length=110' Slope=0.0300 '/' Tc=8.7 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 5AP: West Half of Complex Runoff Area=14,410 sf Runoff Depth>2.59"
Tc=6.0 min CN=98 Runoff=0.94 cfs 0.071 af

Subcatchment 5BP: East Half of Complex Runoff Area=38,510 sf Runoff Depth>2.59"
Tc=6.0 min CN=98 Runoff=2.51 cfs 0.191 af

Subcatchment 5CP: Plaza Runoff Area=4,995 sf Runoff Depth>2.59"
Flow Length=75' Slope=0.0125 '/' Tc=1.2 min CN=98 Runoff=0.37 cfs 0.025 af

Reach CS: Combined Sewer Inflow=0.99 cfs 0.065 af
Outflow=0.99 cfs 0.065 af

Reach FR: Fore River Inflow=4.55 cfs 0.493 af
Outflow=4.55 cfs 0.493 af

Reach TOT: (new node) Inflow=5.33 cfs 0.557 af
Outflow=5.33 cfs 0.557 af

Pond 1B: Subsurface Detention for Parking G Peak Elev=20.33' Storage=1,193 cf Inflow=2.22 cfs 0.168 af
Outflow=1.25 cfs 0.167 af

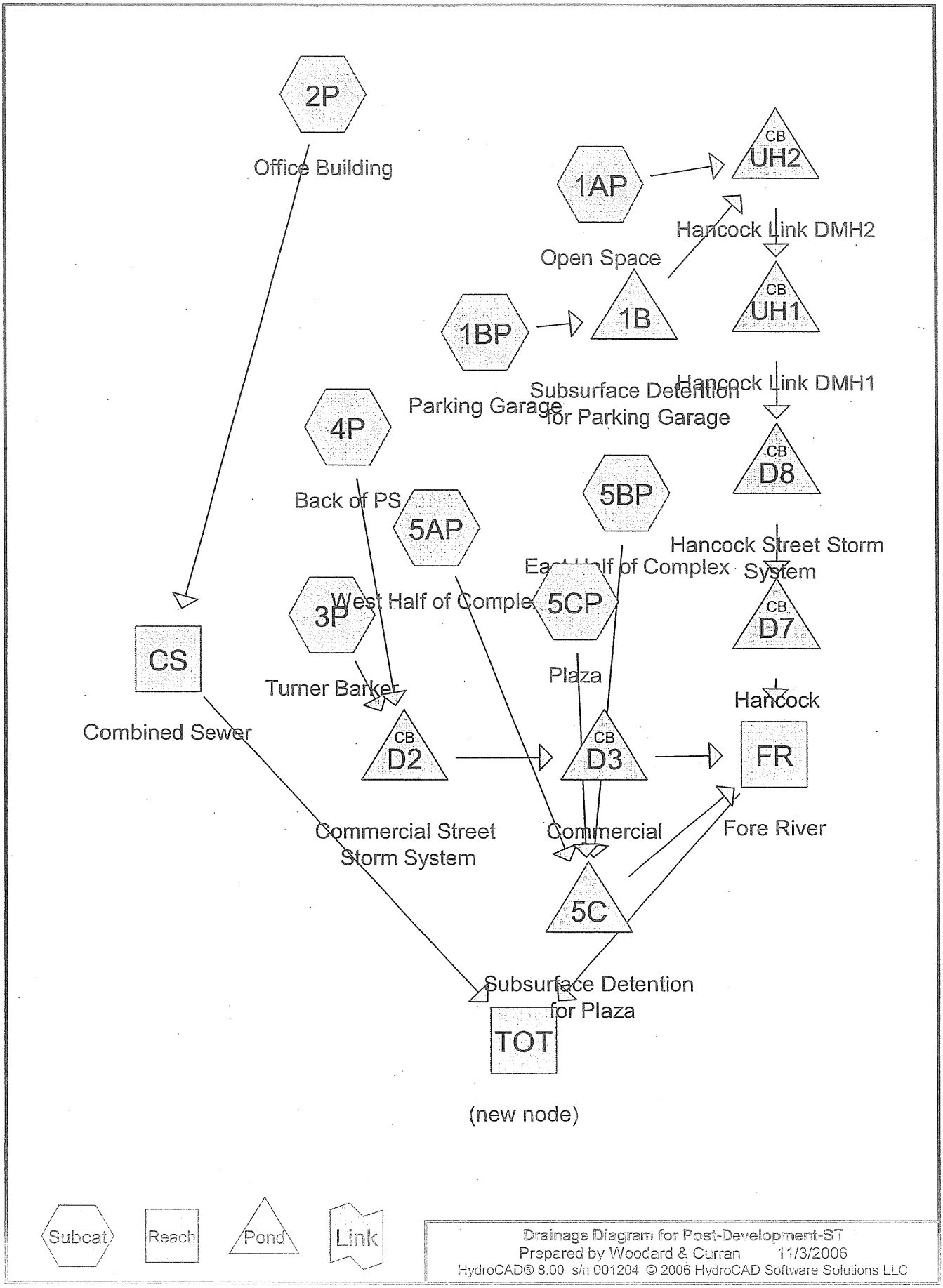
Pond 5C: Subsurface Detention for Plaza Peak Elev=11.22' Storage=975 cf Inflow=3.69 cfs 0.287 af
Outflow=3.02 cfs 0.286 af

Pond D2: Commercial Street Storm System Peak Elev=9.21' Inflow=0.57 cfs 0.038 af
15.0" x 192.0' Culvert Outflow=0.57 cfs 0.038 af

Pond D3: Commercial Peak Elev=8.81' Inflow=0.57 cfs 0.038 af
15.0" x 192.0' Culvert Outflow=0.57 cfs 0.038 af

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
0.392	39	>75% Grass cover, Good, HSG A (1AP,2P,3P,4P)
0.931	98	Building (1BP,2P,3P)
0.318	98	Buildings (5AP)
0.191	98	Gravel Parking (2P)
0.088	98	Paved (1BP,5AP)
1.037	98	Paved parking & roofs (1AP,3P,5BP,5CP)
0.025	98	Paved roads w/curbs & sewers (2P)
0.128	98	Plaza (5BP)
3.110		


2P
Office Building
1AP
CB
UH2
Hancock Link DMH2
Open Space
1B
CB
UH1
1BP
Hancock Link DMH1
Subsurface Detention
for Parking Garage
Parking Garage
4P
CB
D8
5BP
Back of PS
5AP
Hancock Street Storm
System
Ea lf of Complex
West Half of Comple
5CP
3P
CB
D7
CS
Plaza
Turner Barker
Hancock
Combined Sewer
CB
D2
CB
D3
FR
Commercial Street
Storm System
Commercial
Fore River
5C
Subsurface Detention
for Plaza
TOT
(new node)
Subcat
Reach
Pond
Link
Drainage Diagram for Post-Development-ST
Prepared by Woodard & Curran 11/3/2006
HydroCAD® 8.00 s/n 001204 © 2006 HydroCAD Software Solutions LLC

issues with the development as it affects the Turner Barker property would be raised in early workshop sessions of the Historic Preservation Committee and/or the Planning Board to allow for coordinated review. Numerous development projects have gone through this type of simultaneous review without conflicts or undue delays.

I hope this sufficiently clarifies the review process. Contact me if you have questions.

Sincerely,

Donna M. Katsiaficas
Associate Corporation Counsel

DMK
cc:Deb Andrews
William Needleman

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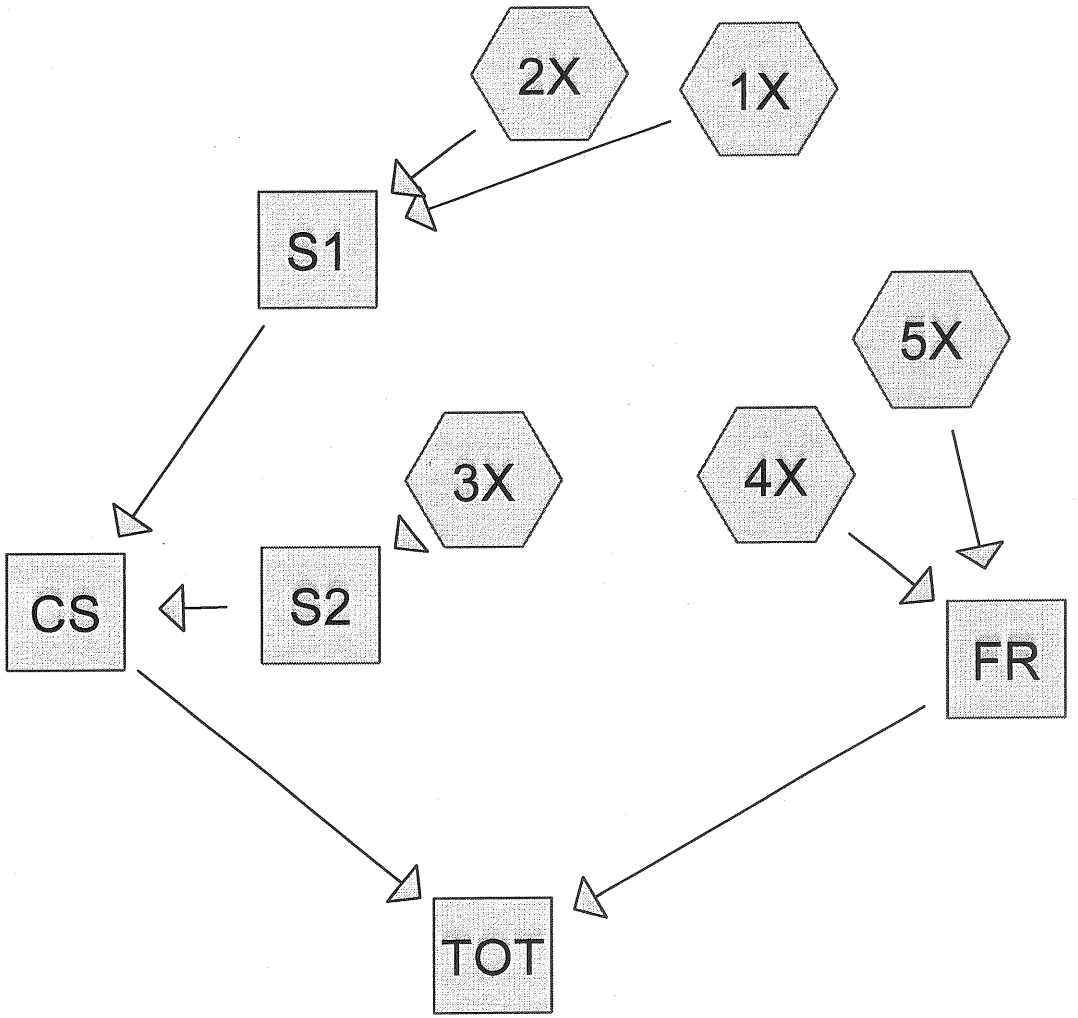


Subcat Reach Pond Link

Drainage Diagram for Pre-Development

Prepared by {enter your company name here} 12/16/2005

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1X: Shipyard Gravel Lot
Tc=2.4 min CN=98 Area=57,855 sf Runoff= 4.20 cfs 0.287 af

Subcatchment 2X: Breakaway
Tc=0.9 min CN=98 Area=6,820 sf Runoff= 0.51 cfs 0.034 af

Subcatchment 3X: Turner Barker
Tc=3.6 min CN=95 Area=7,810 sf Runoff= 0.52 cfs 0.035 af

Subcatchment 4X: Turner Barker Gravel Lot
Tc=4.2 min CN=96 Area=19,110 sf Runoff= 1.28 cfs 0.088 af

Subcatchment 5X: Ocean Gateway Gravel Lot
Tc=5.9 min CN=97 Area=46,280 sf Runoff= 2.97 cfs 0.222 af

Reach CS: Combined Sewer
Inflow= 5.17 cfs 0.355 af
Outflow= 5.17 cfs 0.355 af

Reach FR: Fore River
Inflow= 4.18 cfs 0.310 af
Outflow= 4.18 cfs 0.310 af

Reach S1: (new node)
Inflow= 4.66 cfs 0.321 af
Outflow= 4.66 cfs 0.321 af

Reach S2: (new node)
Inflow= 0.52 cfs 0.035 af
Outflow= 0.52 cfs 0.035 af

Reach TOT: (new node)
Inflow= 9.16 cfs 0.665 af
Outflow= 9.16 cfs 0.665 af

Runoff Area = 3.165 ac Volume = 0.665 af Average Depth = 2.52"

Subcatchment 1X: Shipyard Gravel Lot

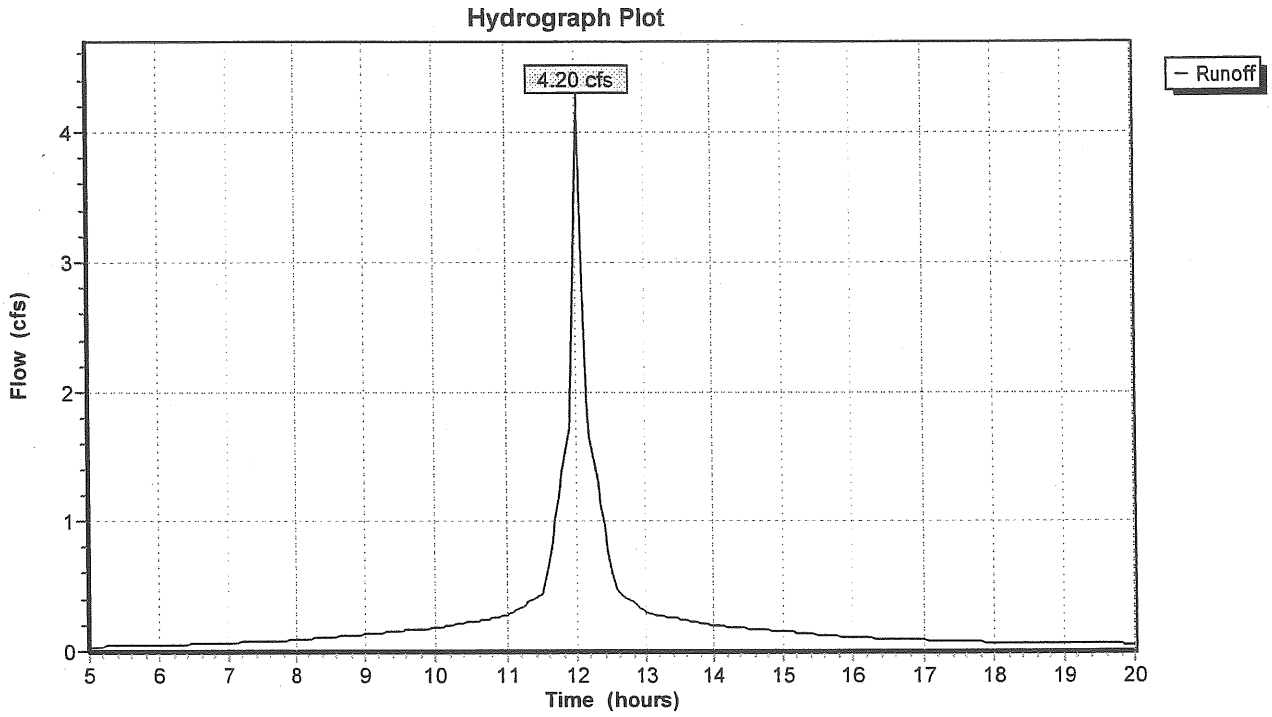
Runoff = 4.20 cfs @ 12.04 hrs, Volume= 0.287 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
2,635	98	Building
29,940	98	Gravel Parking
25,280	98	Paved
57,855	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	60	0.0333	1.5		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.1000	2.1		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.2	40	0.0500	3.6		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
0.9	90	0.0111	1.7		**Shallow Concentrated Flow, DE** Unpaved Kv= 16.1 fps
0.2	40	0.0625	4.0		**Shallow Concentrated Flow, EF** Unpaved Kv= 16.1 fps
0.1	32	0.0100	5.9	4.63	**Circular Channel (pipe), FG** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.010
2.4	302	Total			

Subcatchment 1X: Shipyard Gravel Lot



Subcatchment 2X: Breakaway

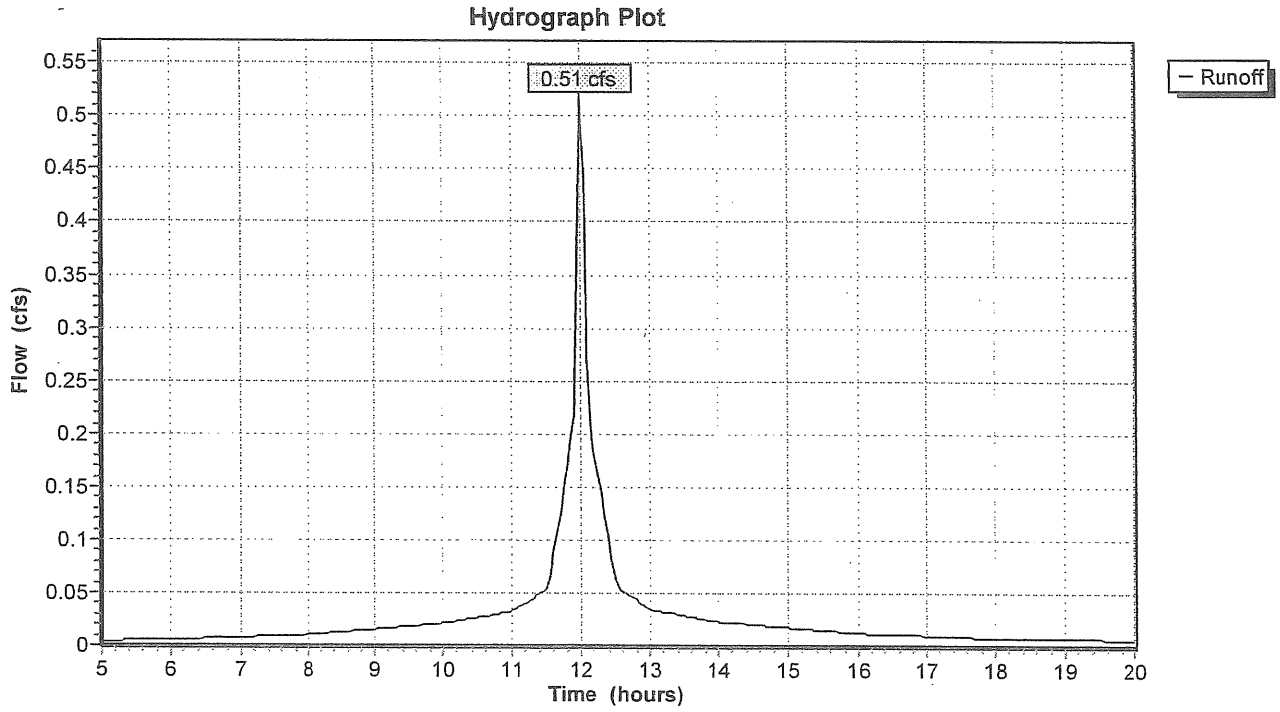
Runoff = 0.51 cfs @ 12.01 hrs, Volume= 0.034 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
5,870	98	Building
950	98	Gravel Parking
6,820	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0200	1.2		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2X: Breakaway



Subcatchment 3X: Turner Barker

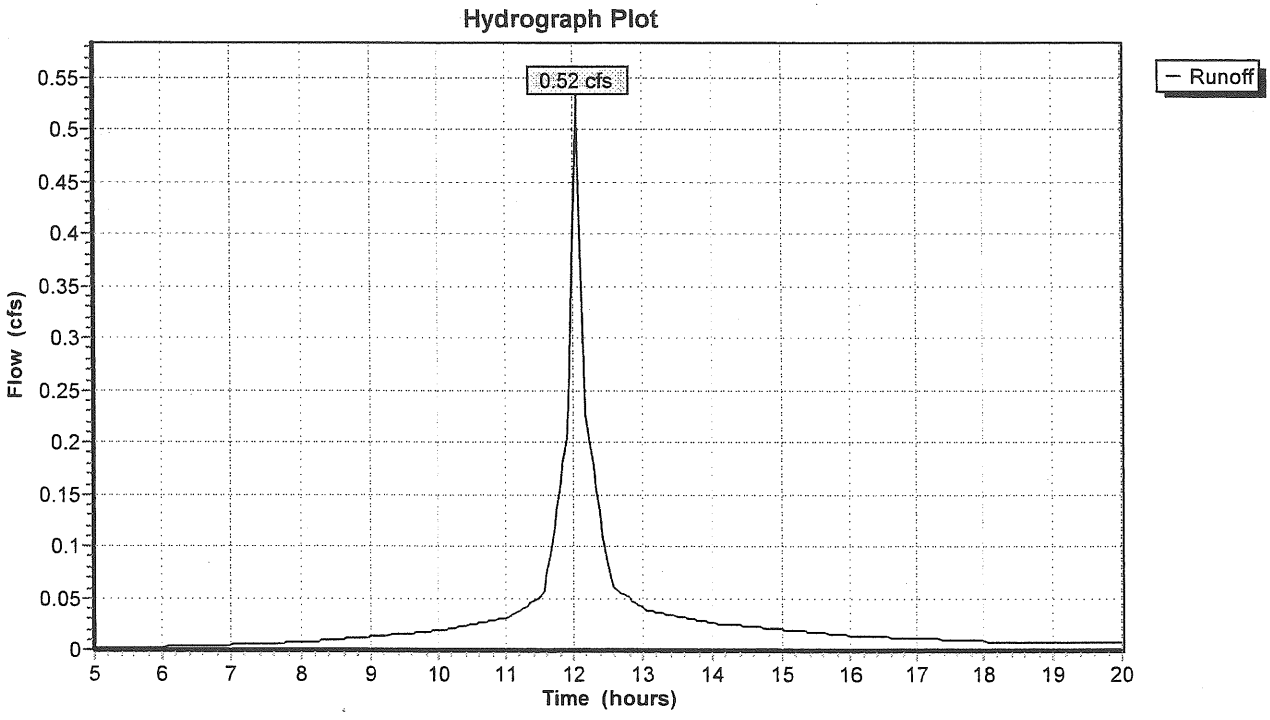
Runoff = 0.52 cfs @ 12.05 hrs, Volume= 0.035 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
4,000	98	Building
2,980	98	Gravel Parking
830	68	<50% Grass cover, Poor, HSG A
7,810	95	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.0200	2.3		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
3.6	140	Total			

Subcatchment 3X: Turner Barker



Subcatchment 4X: Turner Barker Gravel Lot

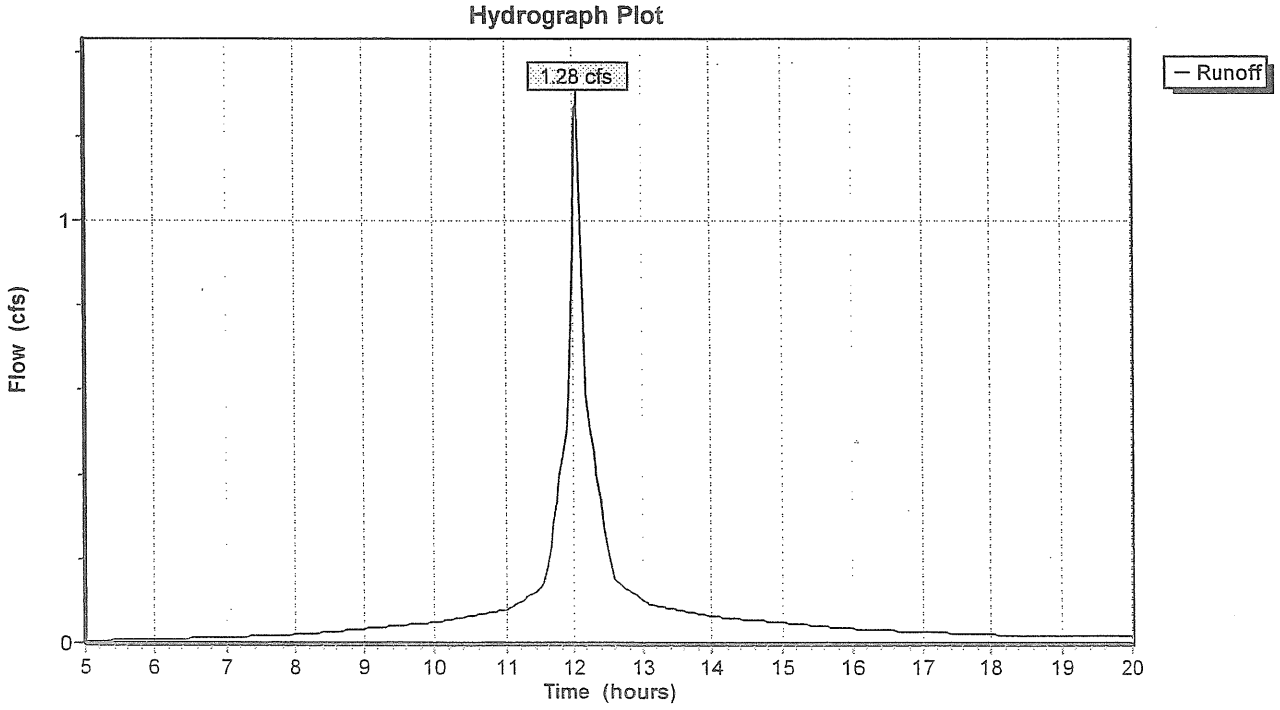
Runoff = 1.28 cfs @ 12.06 hrs, Volume= 0.088 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
1,030	98	Buildings
365	98	Paved
16,215	98	Gravel Parking
1,500	68	<50% Grass cover, Poor, HSG A
19,110	96	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0150	2.0		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
4.2	210	Total			

Subcatchment 4X: Turner Barker Gravel Lot



Subcatchment 5X: Ocean Gateway Gravel Lot

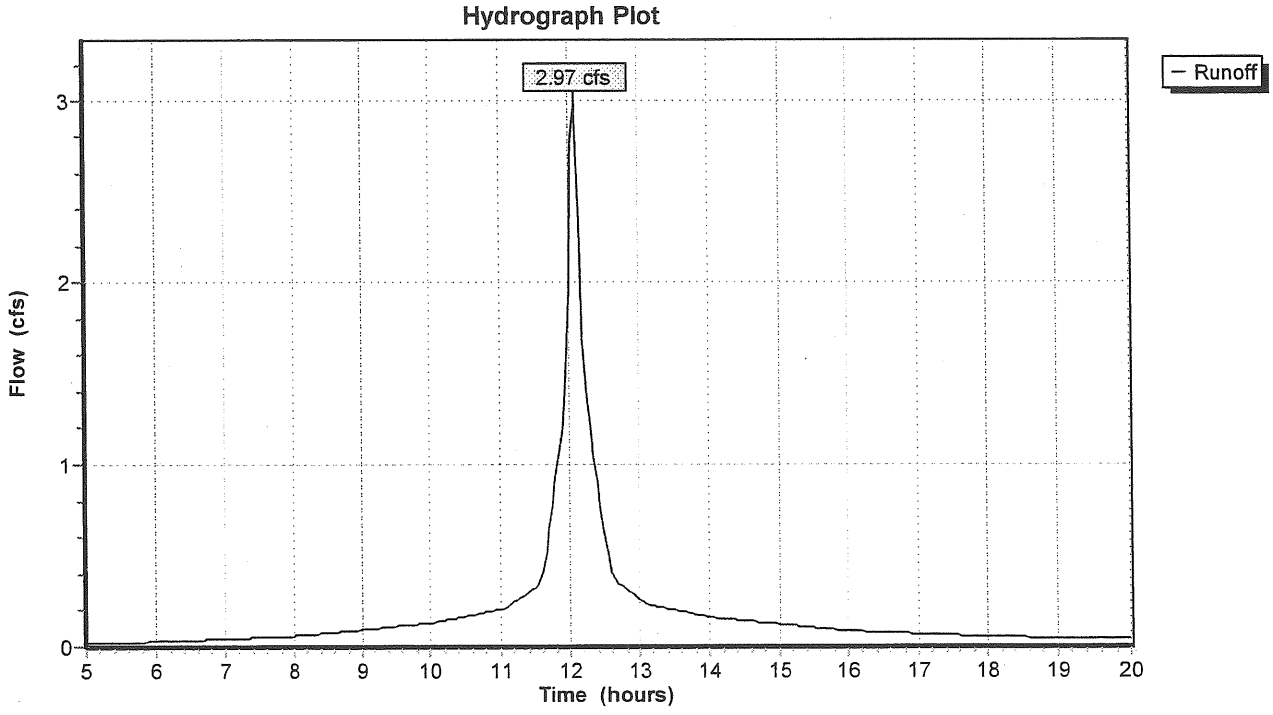
Runoff = 2.97 cfs @ 12.09 hrs, Volume= 0.222 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
675	98	Buildings
2,530	98	Paved
41,375	98	Gravel Parking
1,700	68	<50% Grass cover, Poor, HSG A
46,280	97	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	15	0.0100	0.7		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
2.9	15	0.0100	0.1		**Sheet Flow, BC** Grass: Short n= 0.150 P2= 3.00"
1.2	70	0.0100	0.9		**Sheet Flow, CD** Smooth surfaces n= 0.011 P2= 3.00"
1.4	175	0.0171	2.1		**Shallow Concentrated Flow, DE** Unpaved Kv= 16.1 fps
5.9	275	Total			

Subcatchment 5X: Ocean Gateway Gravel Lot

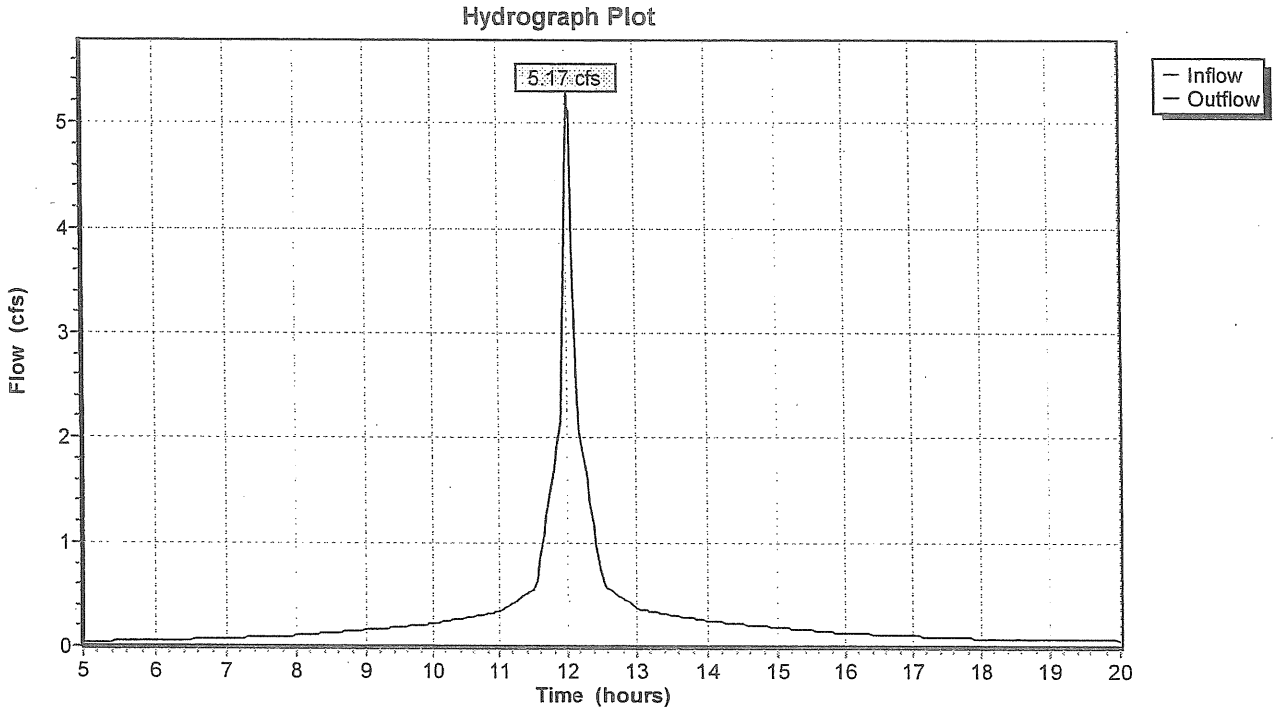


Reach CS: Combined Sewer

Inflow	=	5.17 cfs @	12.04 hrs, Volume=	0.355 af
Outflow	=	5.17 cfs @	12.04 hrs, Volume=	0.355 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer

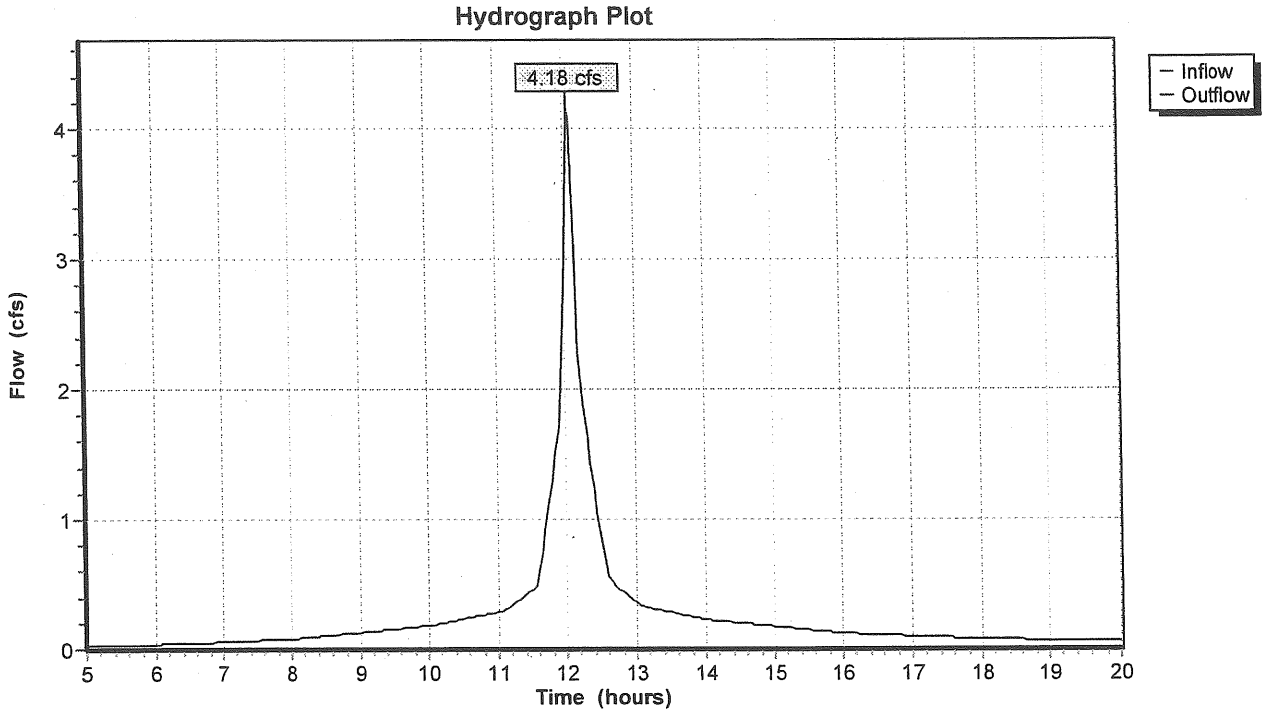


Reach FR: Fore River

Inflow = 4.18 cfs @ 12.08 hrs, Volume= 0.310 af
Outflow = 4.18 cfs @ 12.08 hrs, Volume= 0.310 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

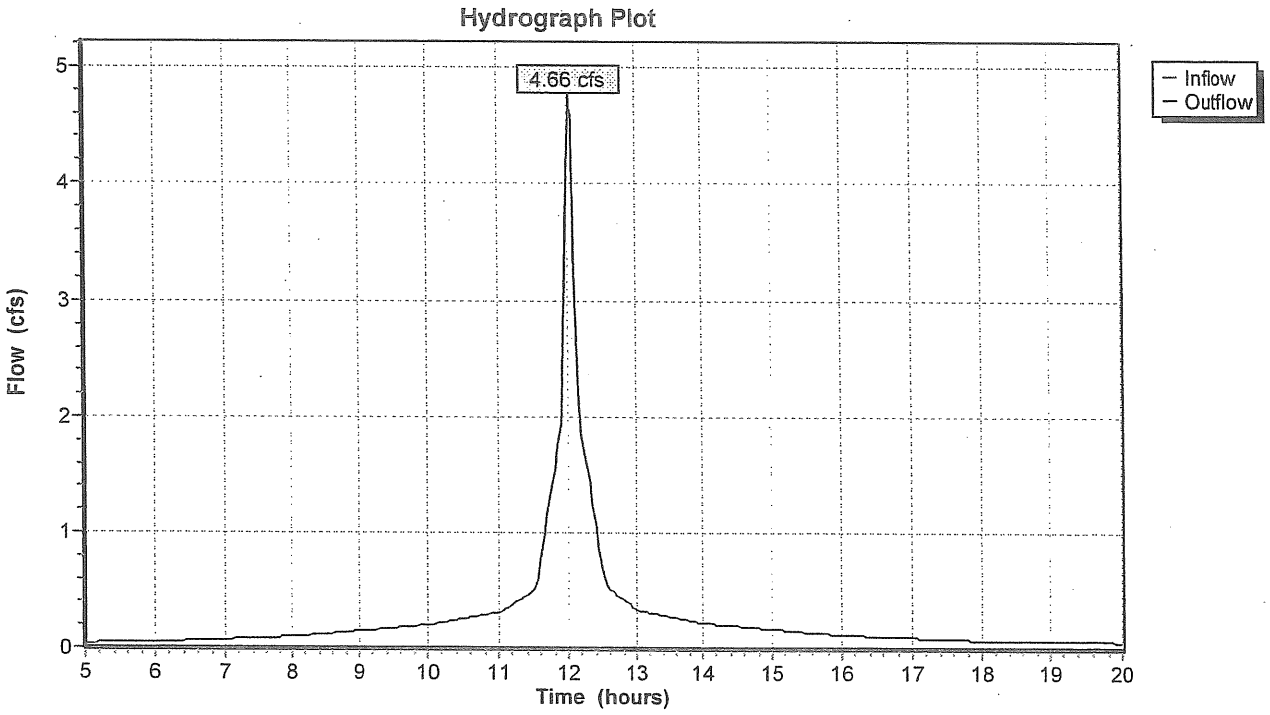


Reach S1: (new node)

Inflow = 4.66 cfs @ 12.04 hrs, Volume= 0.321 af
Outflow = 4.66 cfs @ 12.04 hrs, Volume= 0.321 af, Atten= 0%, Lag= 0.0 min

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

Reach S1: (new node)

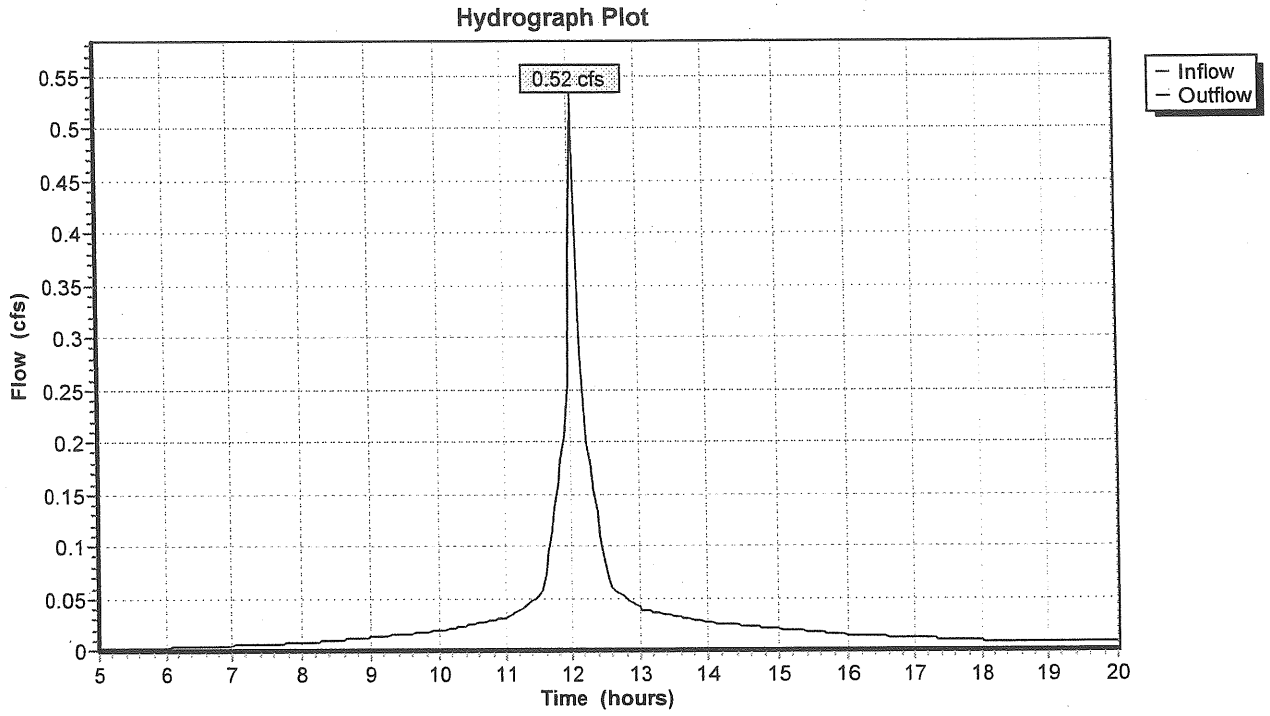


Reach S2: (new node)

Inflow = 0.52 cfs @ 12.05 hrs, Volume= 0.035 af
Outflow = 0.52 cfs @ 12.05 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

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

Reach S2: (new node)

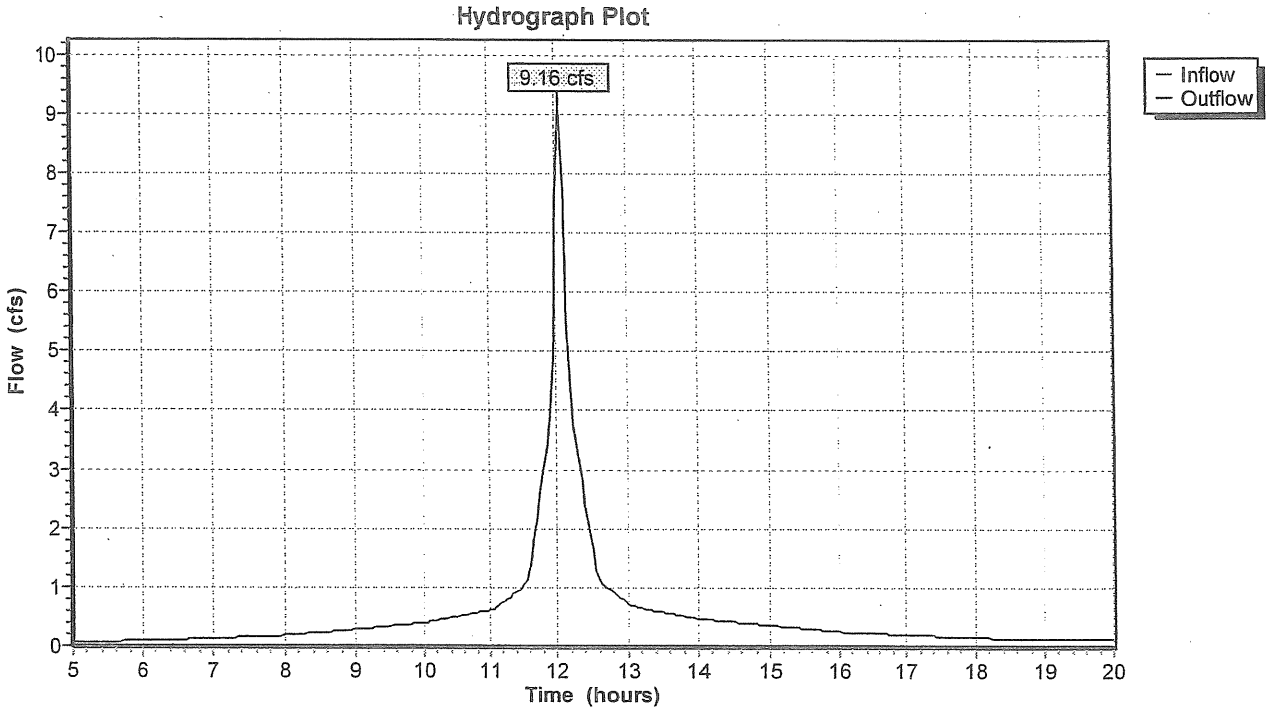


Reach TOT: (new node)

Inflow = 9.16 cfs @ 12.05 hrs, Volume= 0.665 af
Outflow = 9.16 cfs @ 12.05 hrs, Volume= 0.665 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1X: Shipyard Gravel Lot
Tc=2.4 min CN=98 Area=57,855 sf Runoff= 6.63 cfs 0.459 af

Subcatchment 2X: Breakaway
Tc=0.9 min CN=98 Area=6,820 sf Runoff= 0.81 cfs 0.054 af

Subcatchment 3X: Turner Barker
Tc=3.6 min CN=95 Area=7,810 sf Runoff= 0.85 cfs 0.058 af

Subcatchment 4X: Turner Barker Gravel Lot
Tc=4.2 min CN=96 Area=19,110 sf Runoff= 2.06 cfs 0.145 af

Subcatchment 5X: Ocean Gateway Gravel Lot
Tc=5.9 min CN=97 Area=46,280 sf Runoff= 4.74 cfs 0.360 af

Reach CS: Combined Sewer
Inflow= 8.20 cfs 0.571 af
Outflow= 8.20 cfs 0.571 af

Reach FR: Fore River
Inflow= 6.69 cfs 0.505 af
Outflow= 6.69 cfs 0.505 af

Reach S1: (new node)
Inflow= 7.37 cfs 0.513 af
Outflow= 7.37 cfs 0.513 af

Reach S2: (new node)
Inflow= 0.85 cfs 0.058 af
Outflow= 0.85 cfs 0.058 af

Reach TOT: (new node)
Inflow= 14.58 cfs 1.076 af
Outflow= 14.58 cfs 1.076 af

Runoff Area = 3.165 ac Volume = 1.076 af Average Depth = 4.08"

Subcatchment 1X: Shipyard Gravel Lot

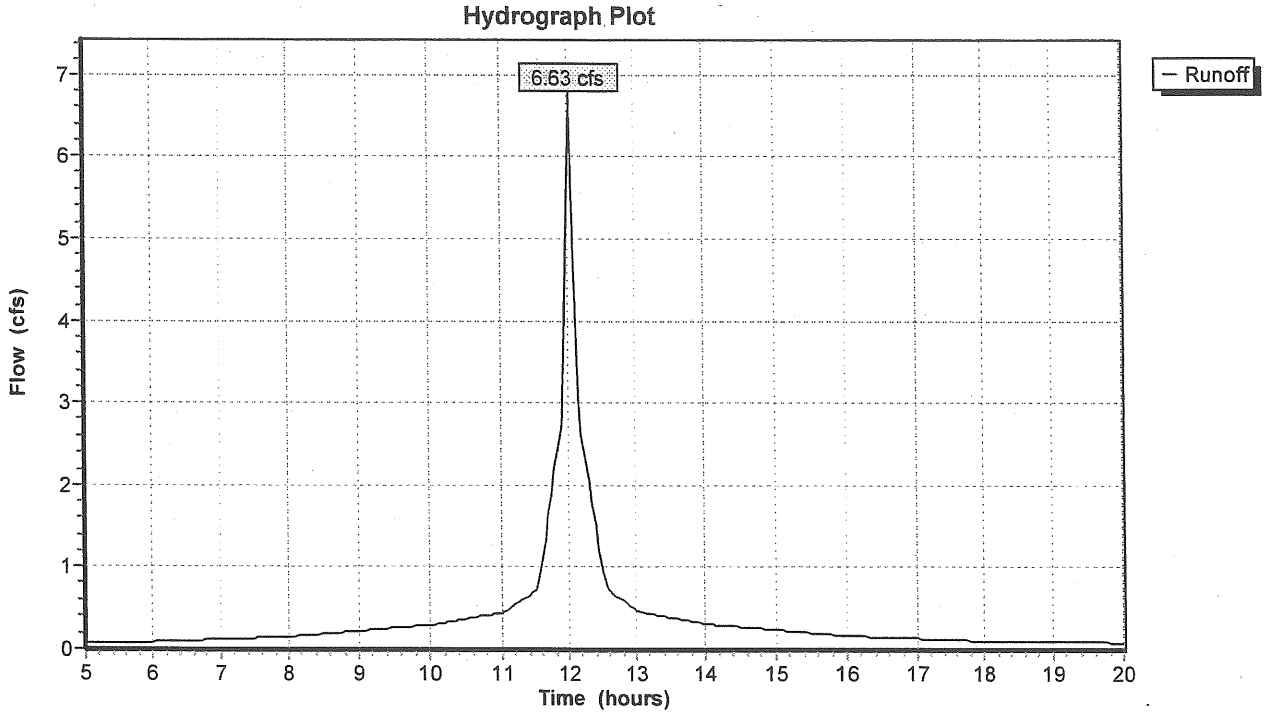
Runoff = 6.63 cfs @ 12.04 hrs, Volume= 0.459 af

Runoff by SCS TR-20 method, UH=SCS, Time Span=.5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
2,635	98	Building
29,940	98	Gravel Parking
25,280	98	Paved
57,855	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	60	0.0333	1.5		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.1000	2.1		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.2	40	0.0500	3.6		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
0.9	90	0.0111	1.7		**Shallow Concentrated Flow, DE** Unpaved Kv= 16.1 fps
0.2	40	0.0625	4.0		**Shallow Concentrated Flow, EF** Unpaved Kv= 16.1 fps
0.1	32	0.0100	5.9	4.63	**Circular Channel (pipe), FG** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.010
2.4	302	Total			

Subcatchment 1X: Shipyard Gravel Lot



Subcatchment 2X: Breakaway

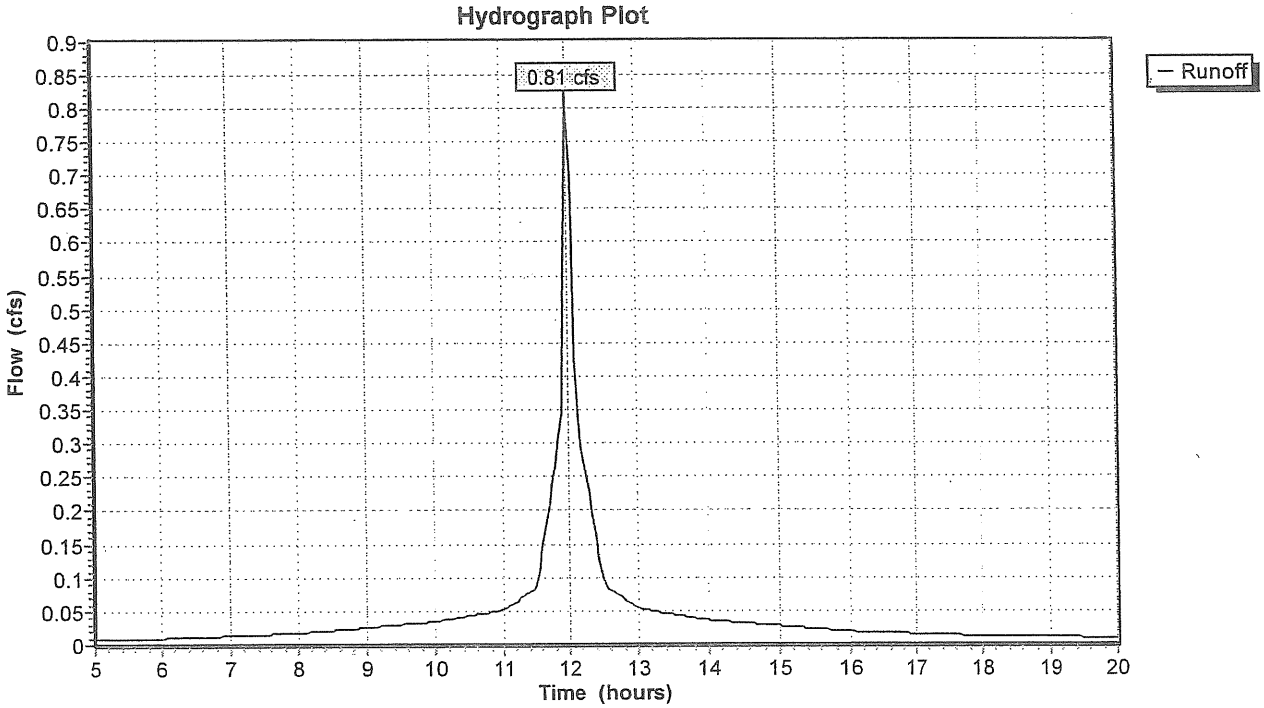
Runoff = 0.81 cfs @ 12.01 hrs, Volume= 0.054 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
5,870	98	Building
950	98	Gravel Parking
6,820	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0200	1.2		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2X: Breakaway



Subcatchment 3X: Turner Barker

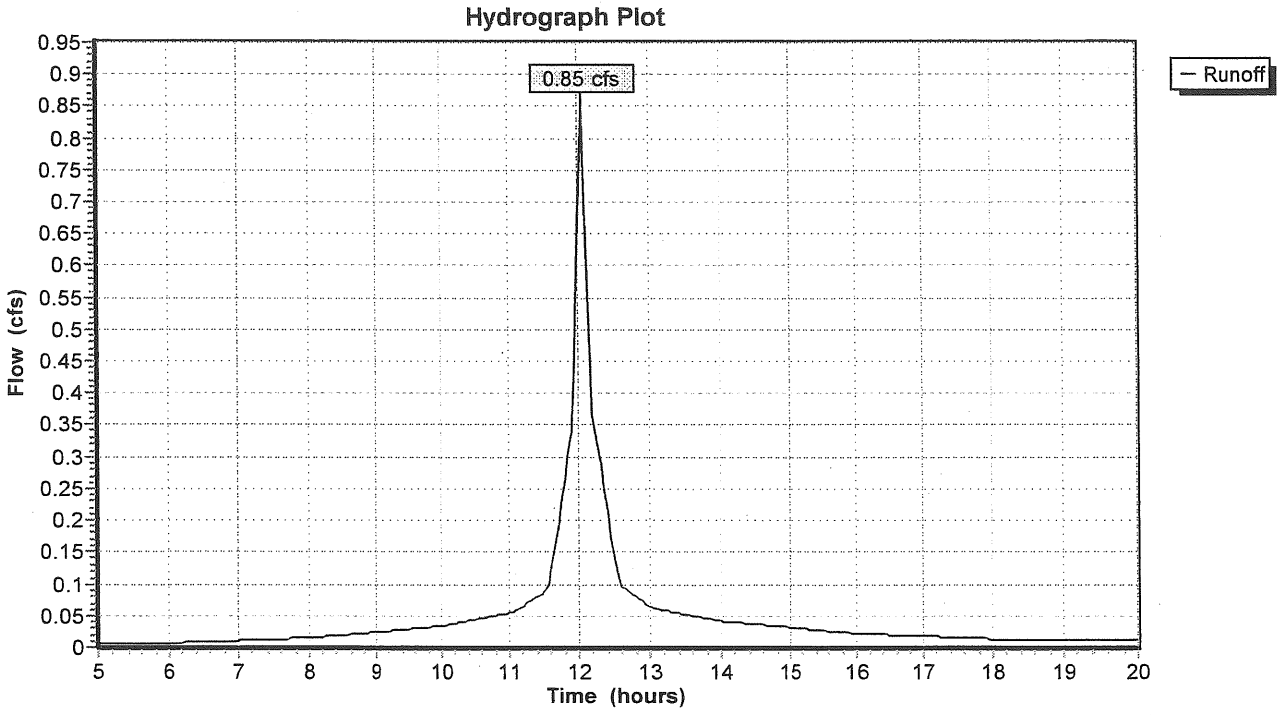
Runoff = 0.85 cfs @ 12.05 hrs, Volume= 0.058 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
4,000	98	Building
2,980	98	Gravel Parking
830	68	<50% Grass cover, Poor, HSG A
7,810	95	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.0200	2.3		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
3.6	140	Total			

Subcatchment 3X: Turner Barker



Subcatchment 4X: Turner Barker Gravel Lot

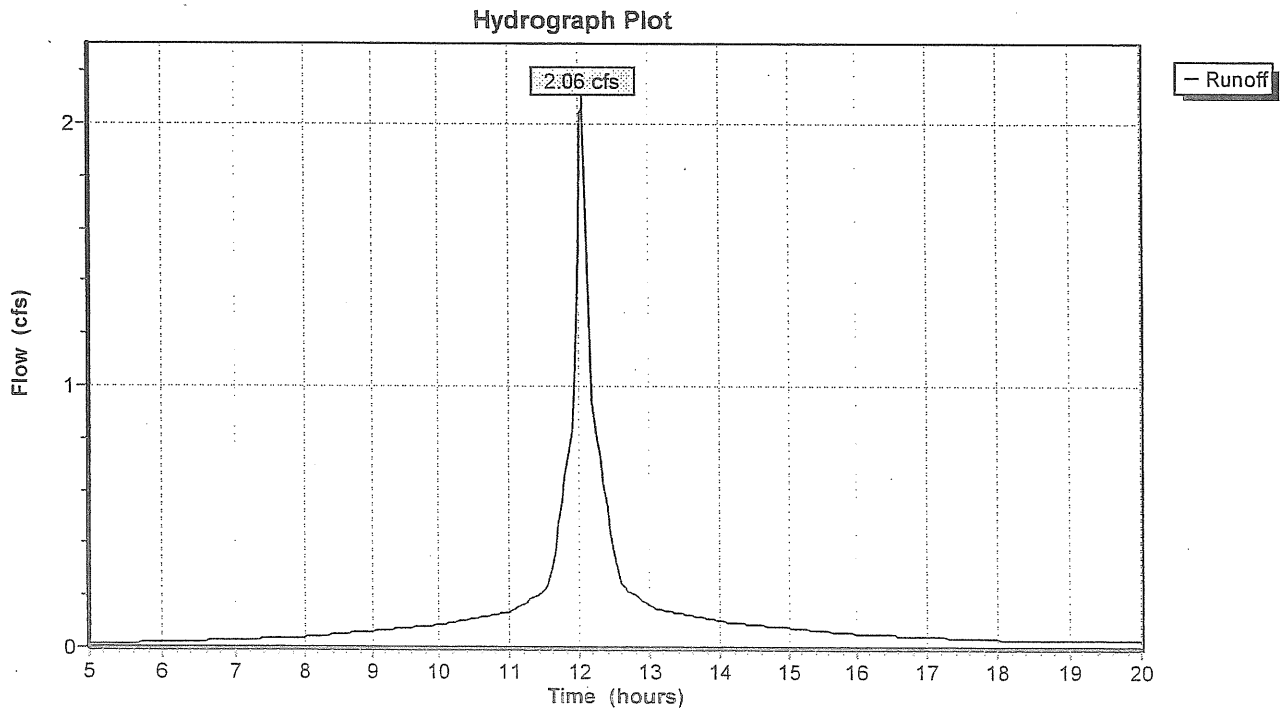
Runoff = 2.06 cfs @ 12.06 hrs, Volume= 0.145 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
1,030	98	Buildings
365	98	Paved
16,215	98	Gravel Parking
1,500	68	<50% Grass cover, Poor, HSG A
19,110	96	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0150	2.0		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
4.2	210	Total			

Subcatchment 4X: Turner Barker Gravel Lot



Subcatchment 5X: Ocean Gateway Gravel Lot

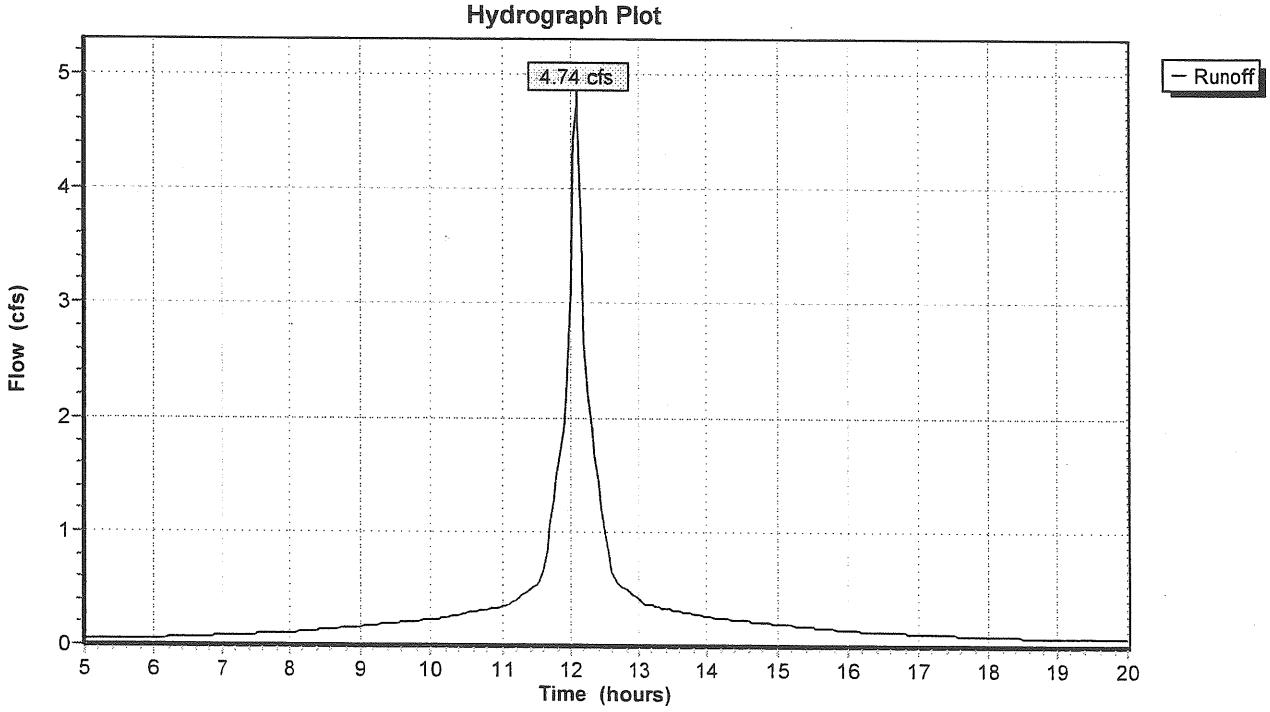
Runoff = 4.74 cfs @ 12.09 hrs, Volume= 0.360 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
675	98	Buildings
2,530	98	Paved
41,375	98	Gravel Parking
1,700	68	<50% Grass cover, Poor, HSG A
46,280	97	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	15	0.0100	0.7		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
2.9	15	0.0100	0.1		**Sheet Flow, BC** Grass: Short n= 0.150 P2= 3.00"
1.2	70	0.0100	0.9		**Sheet Flow, CD** Smooth surfaces n= 0.011 P2= 3.00"
1.4	175	0.0171	2.1		**Shallow Concentrated Flow, DE** Unpaved Kv= 16.1 fps
5.9	275	Total			

Subcatchment 5X: Ocean Gateway Gravel Lot

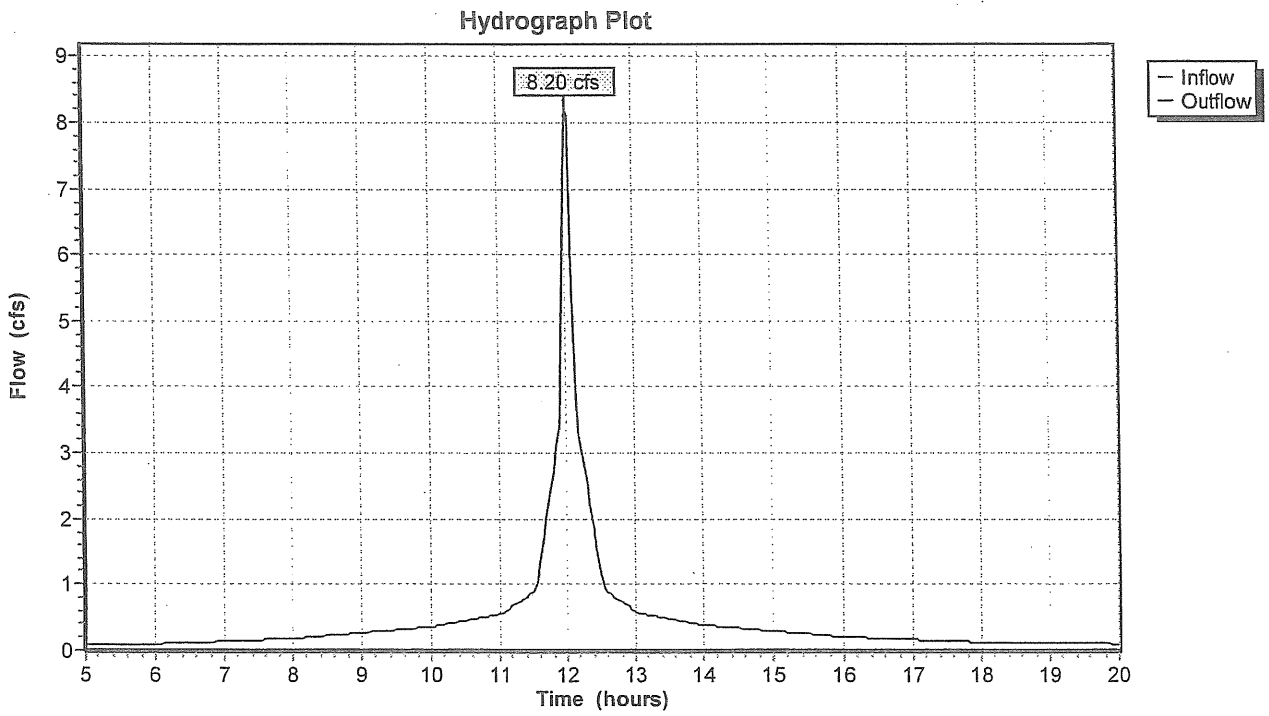


Reach CS: Combined Sewer

Inflow = 8.20 cfs @ 12.04 hrs, Volume= 0.571 af
Outflow = 8.20 cfs @ 12.04 hrs, Volume= 0.571 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer

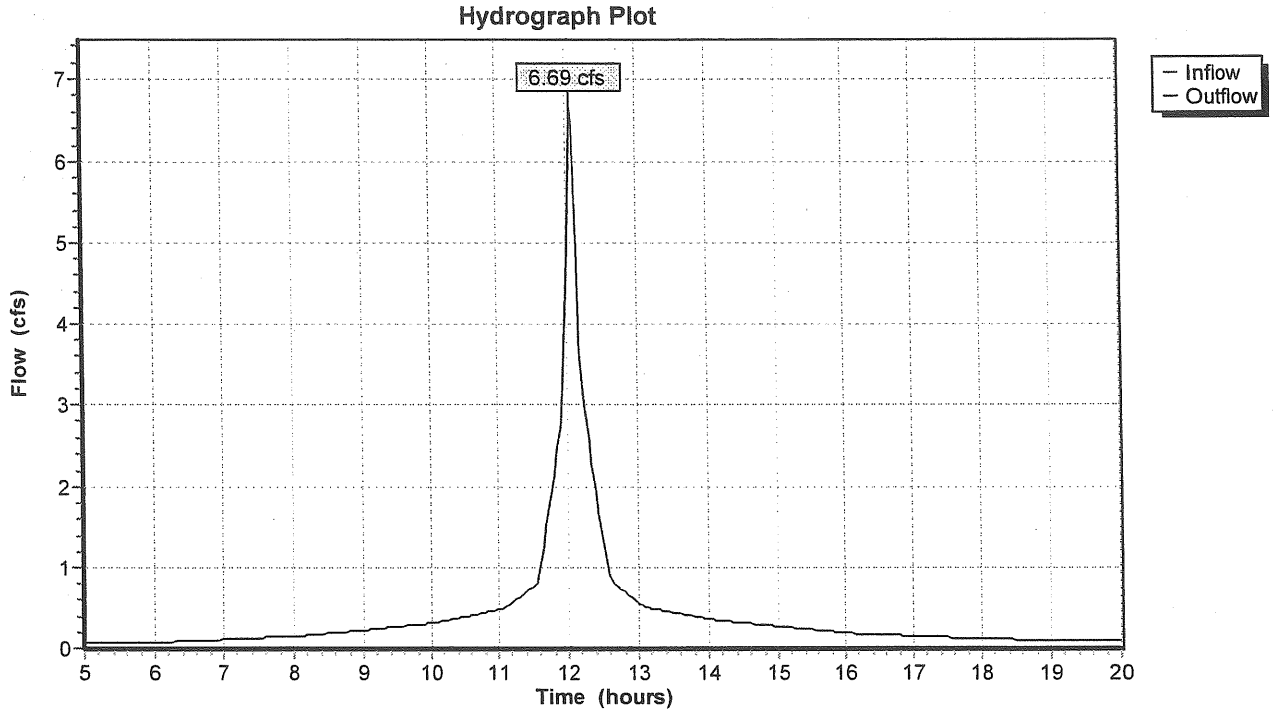


Reach FR: Fore River

Inflow	=	6.69 cfs @	12.08 hrs, Volume=	0.505 af
Outflow	=	6.69 cfs @	12.08 hrs, Volume=	0.505 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

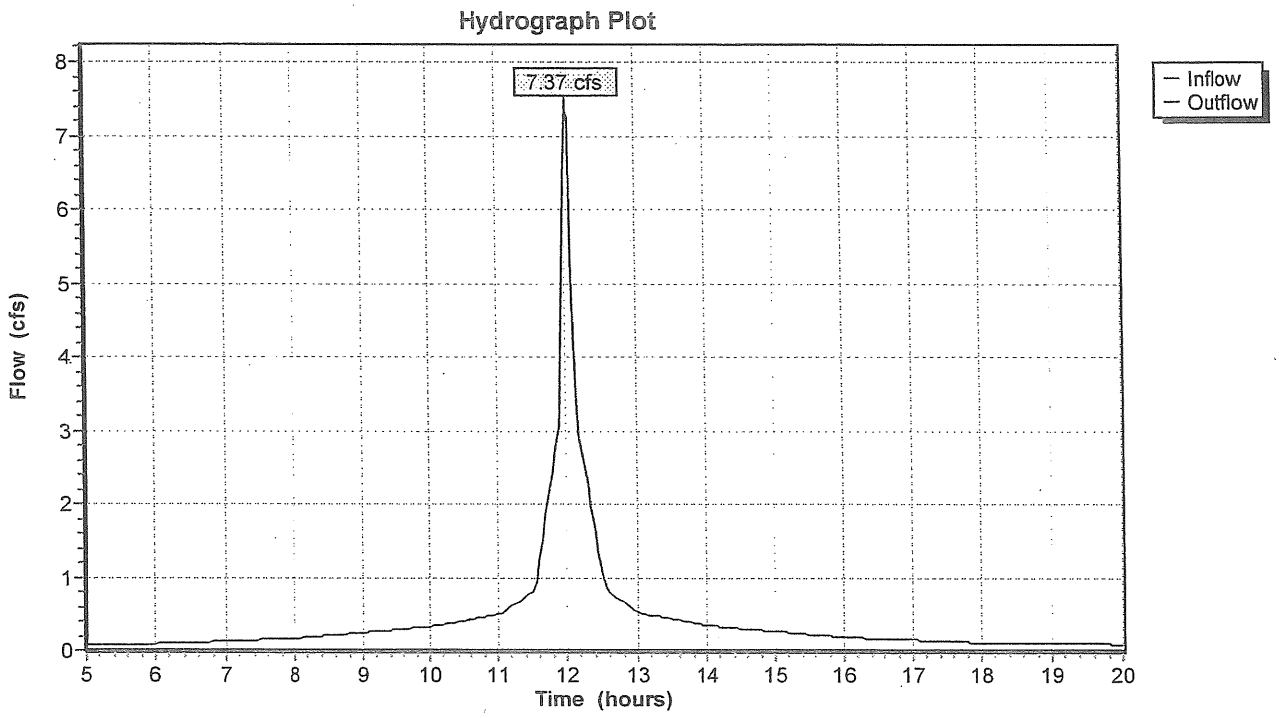


Reach S1: (new node)

Inflow = 7.37 cfs @ 12.04 hrs, Volume= 0.513 af
Outflow = 7.37 cfs @ 12.04 hrs, Volume= 0.513 af, Atten= 0%, Lag= 0.0 min

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

Reach S1: (new node)

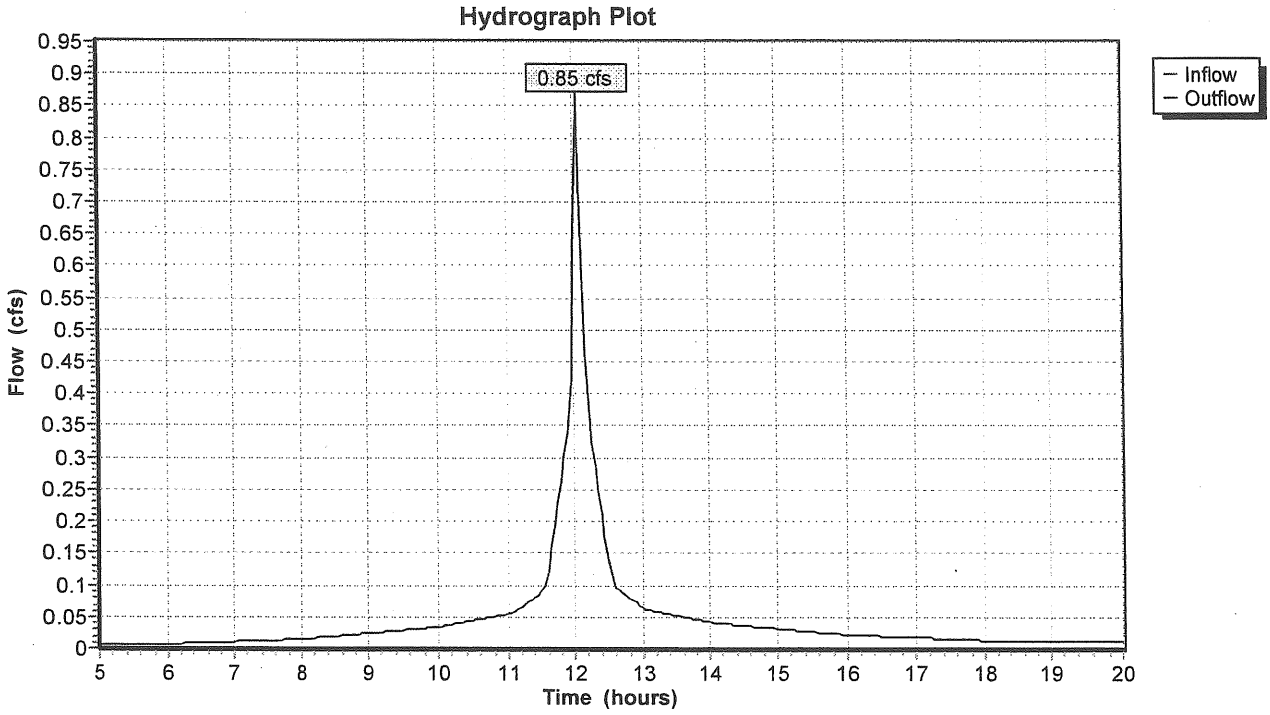


Reach S2: (new node)

Inflow = 0.85 cfs @ 12.05 hrs, Volume= 0.058 af
Outflow = 0.85 cfs @ 12.05 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min

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

Reach S2: (new node)

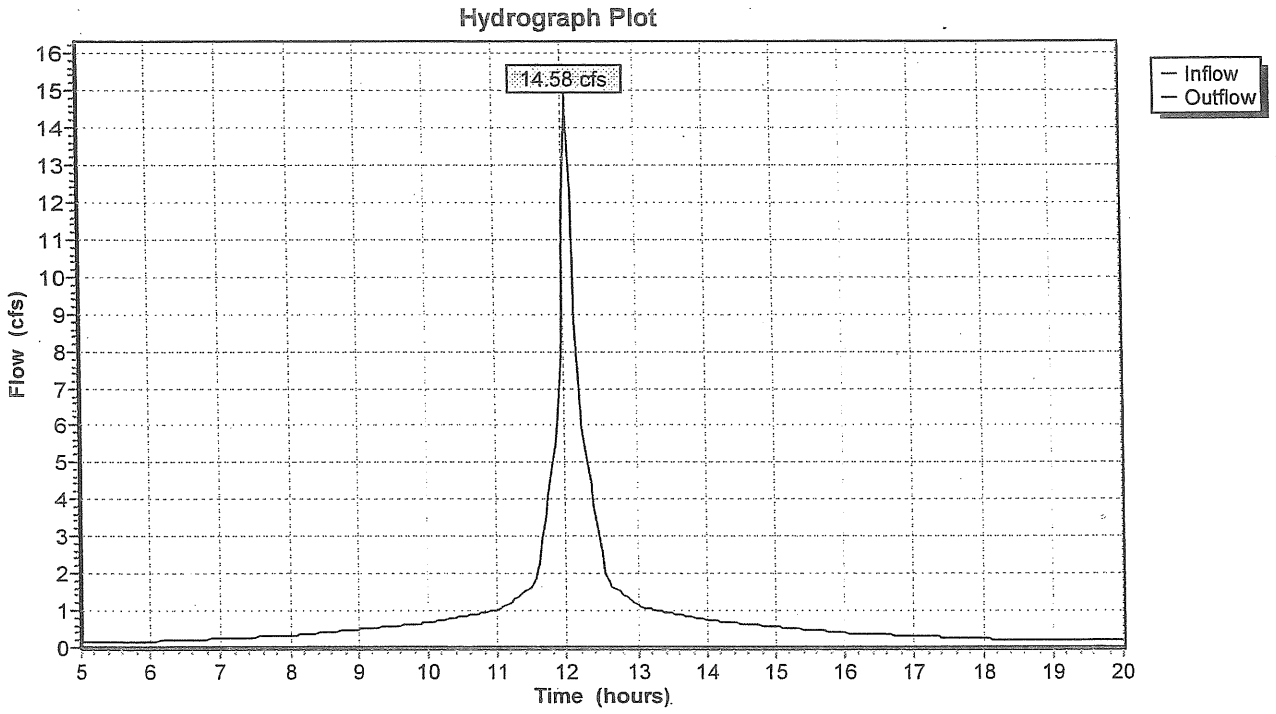


Reach TOT: (new node)

Inflow = 14.58 cfs @ 12.05 hrs, Volume= 1.076 af
Outflow = 14.58 cfs @ 12.05 hrs, Volume= 1.076 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1X: Shipyard Gravel Lot
Tc=2.4 min CN=98 Area=57,855 sf Runoff= 7.78 cfs 0.540 af

Subcatchment 2X: Breakaway
Tc=0.9 min CN=98 Area=6,820 sf Runoff= 0.94 cfs 0.064 af

Subcatchment 3X: Turner Barker
Tc=3.6 min CN=95 Area=7,810 sf Runoff= 1.00 cfs 0.069 af

Subcatchment 4X: Turner Barker Gravel Lot
Tc=4.2 min CN=96 Area=19,110 sf Runoff= 2.43 cfs 0.172 af

Subcatchment 5X: Ocean Gateway Gravel Lot
Tc=5.9 min CN=97 Area=46,280 sf Runoff= 5.57 cfs 0.425 af

Reach CS: Combined Sewer
Inflow= 9.62 cfs 0.672 af
Outflow= 9.62 cfs 0.672 af

Reach FR: Fore River
Inflow= 7.86 cfs 0.597 af
Outflow= 7.86 cfs 0.597 af

Reach S1: (new node)
Inflow= 8.64 cfs 0.603 af
Outflow= 8.64 cfs 0.603 af

Reach S2: (new node)
Inflow= 1.00 cfs 0.069 af
Outflow= 1.00 cfs 0.069 af

Reach TOT: (new node)
Inflow= 17.12 cfs 1.269 af
Outflow= 17.12 cfs 1.269 af

Runoff Area = 3.165 ac Volume = 1.269 af Average Depth = 4.81"

Subcatchment 1X: Shipyard Gravel Lot

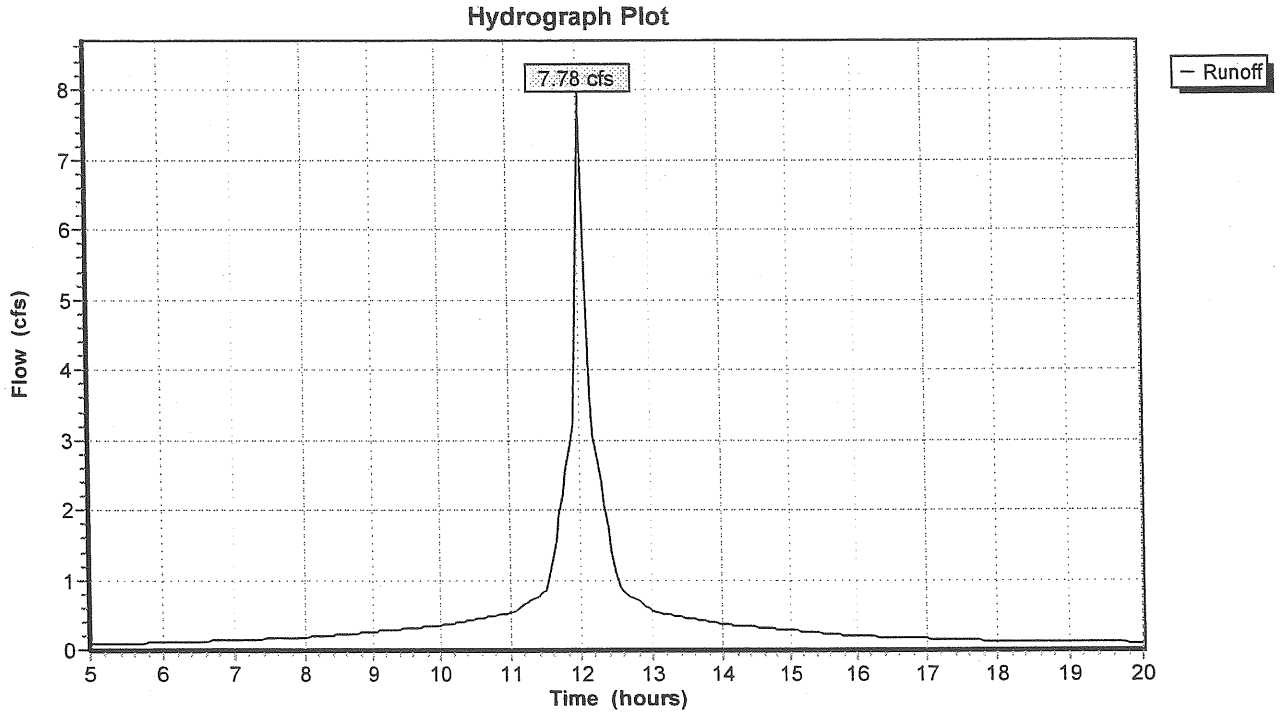
Runoff = 7.78 cfs @ 12.04 hrs, Volume= 0.540 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
2,635	98	Building
29,940	98	Gravel Parking
25,280	98	Paved
57,855	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	60	0.0333	1.5		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.1000	2.1		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.2	40	0.0500	3.6		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
0.9	90	0.0111	1.7		**Shallow Concentrated Flow, DE** Unpaved Kv= 16.1 fps
0.2	40	0.0625	4.0		**Shallow Concentrated Flow, EF** Unpaved Kv= 16.1 fps
0.1	32	0.0100	5.9	4.63	**Circular Channel (pipe), FG** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.010
2.4	302	Total			

Subcatchment 1X: Shipyard Gravel Lot



Subcatchment 2X: Breakaway

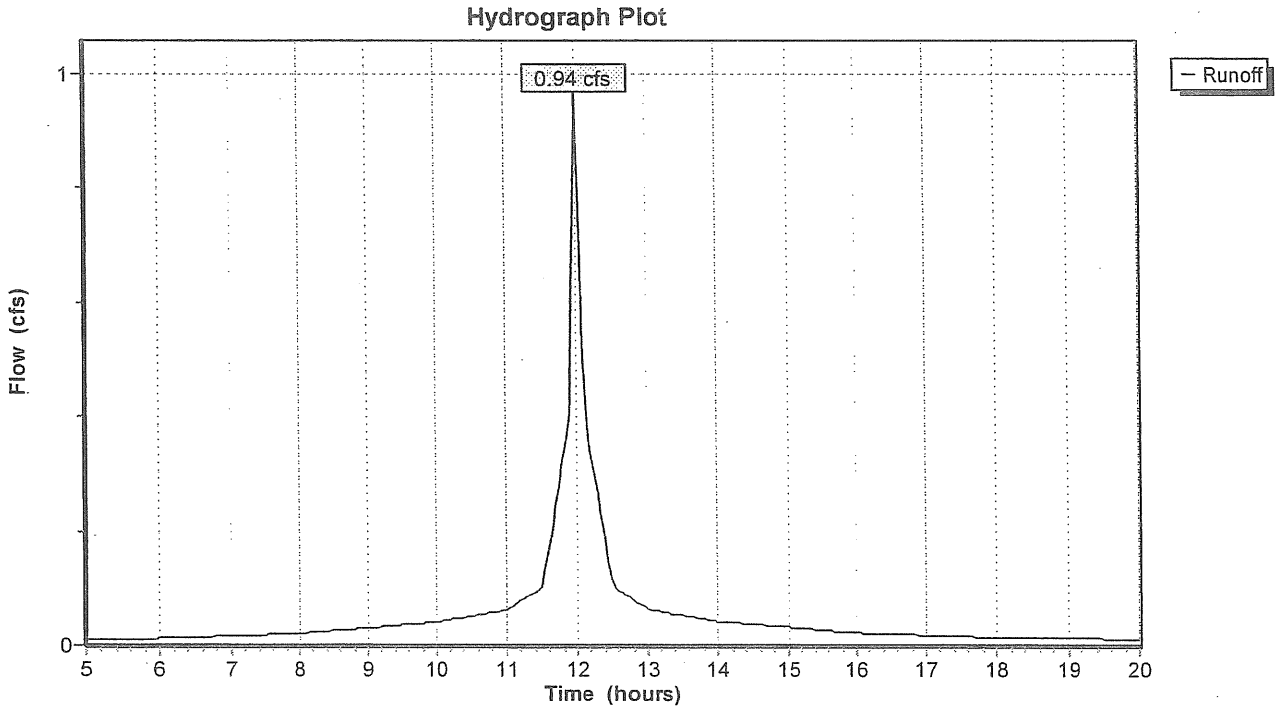
Runoff = 0.94 cfs @ 12.01 hrs, Volume= 0.064 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
5,870	98	Building
950	98	Gravel Parking
6,820	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0200	1.2		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 2X: Breakaway



Subcatchment 3X: Turner Barker

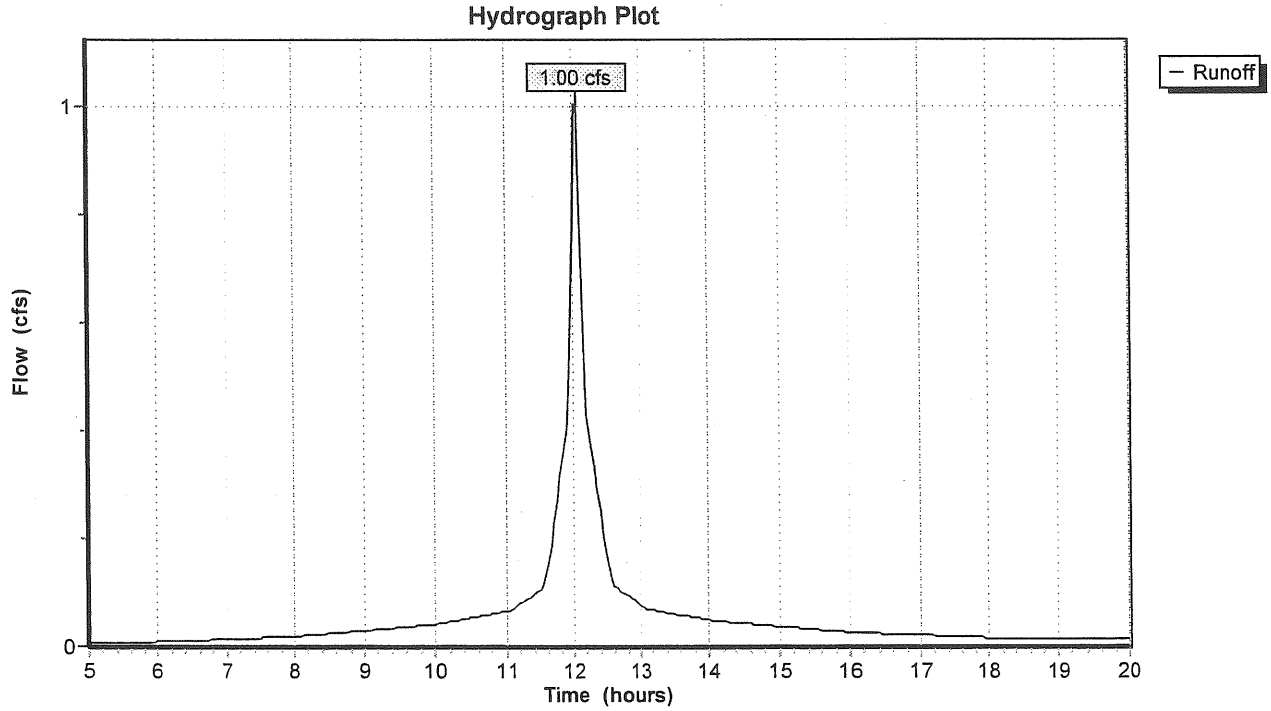
Runoff = 1.00 cfs @ 12.05 hrs, Volume= 0.069 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
4,000	98	Building
2,980	98	Gravel Parking
830	68	<50% Grass cover, Poor, HSG A
7,810	95	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.3	40	0.0200	2.3		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
3.6	140	Total			

Subcatchment 3X: Turner Barker



Subcatchment 4X: Turner Barker Gravel Lot

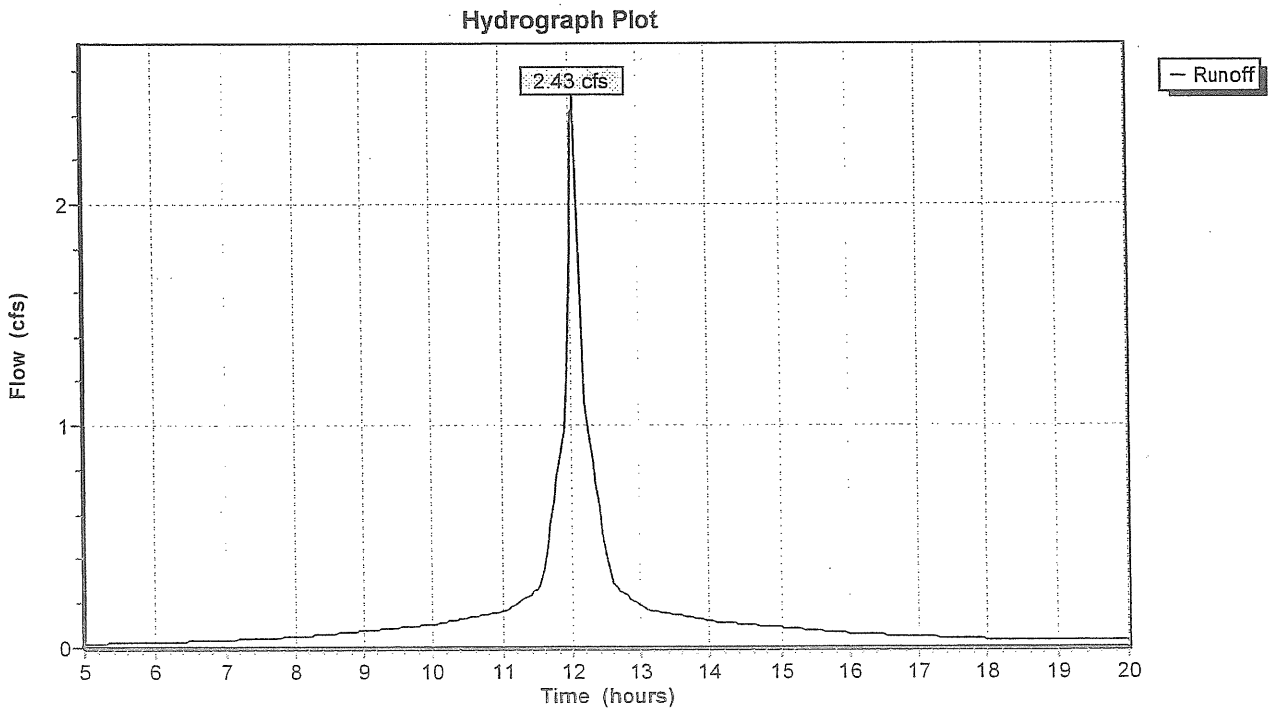
Runoff = 2.43 cfs @ 12.06 hrs, Volume= 0.172 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
1,030	98	Buildings
365	98	Paved
16,215	98	Gravel Parking
1,500	68	<50% Grass cover, Poor, HSG A
19,110	96	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0150	2.0		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
4.2	210	Total			

Subcatchment 4X: Turner Barker Gravel Lot



Subcatchment 5X: Ocean Gateway Gravel Lot

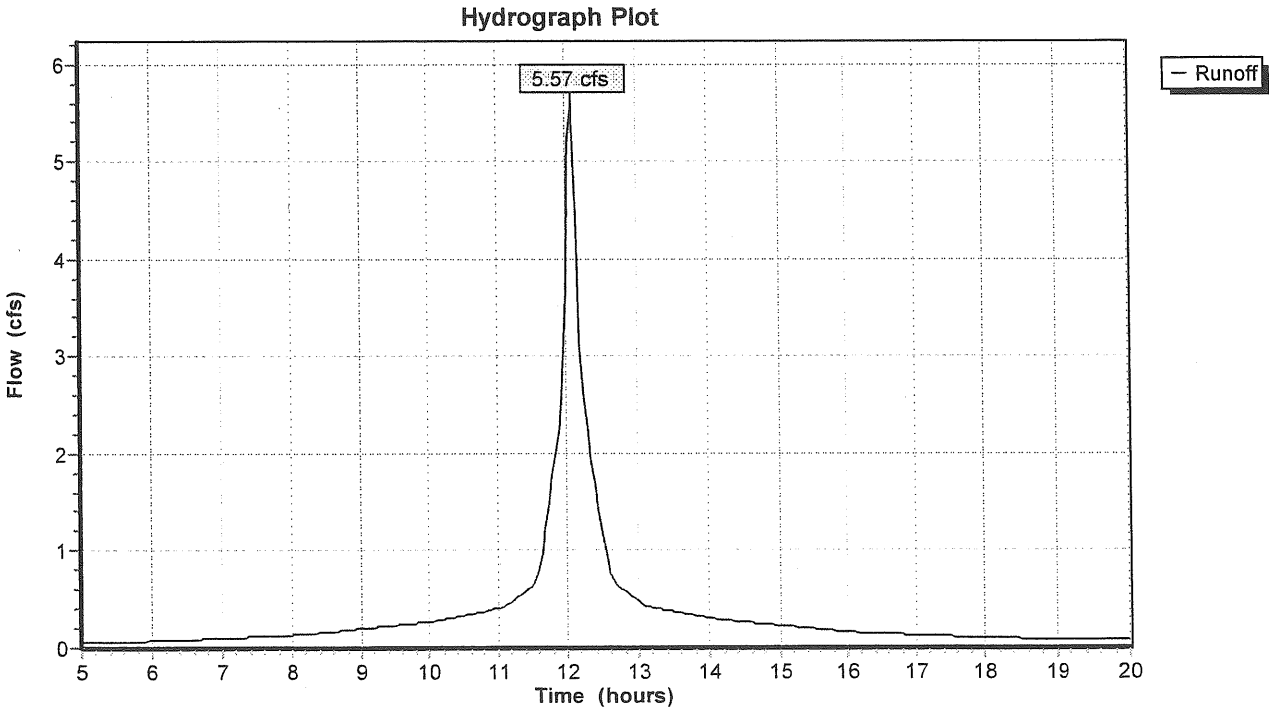
Runoff = 5.57 cfs @ 12.09 hrs, Volume= 0.425 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
675	98	Buildings
2,530	98	Paved
41,375	98	Gravel Parking
1,700	68	<50% Grass cover, Poor, HSG A
46,280	97	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	15	0.0100	0.7		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
2.9	15	0.0100	0.1		**Sheet Flow, BC** Grass: Short n= 0.150 P2= 3.00"
1.2	70	0.0100	0.9		**Sheet Flow, CD** Smooth surfaces n= 0.011 P2= 3.00"
1.4	175	0.0171	2.1		**Shallow Concentrated Flow, DE** Unpaved Kv= 16.1 fps
5.9	275	Total			

Subcatchment 5X: Ocean Gateway Gravel Lot

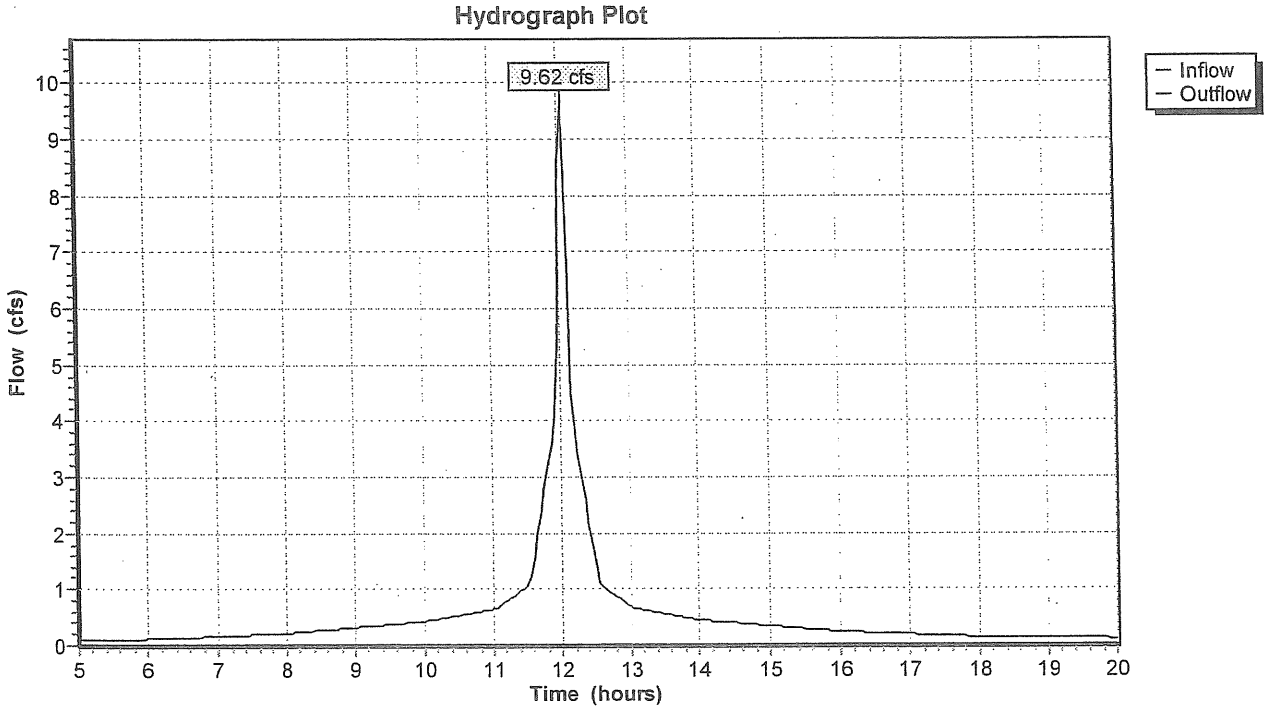


Reach CS: Combined Sewer

Inflow	=	9.62 cfs @	12.04 hrs, Volume=	0.672 af
Outflow	=	9.62 cfs @	12.04 hrs, Volume=	0.672 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer

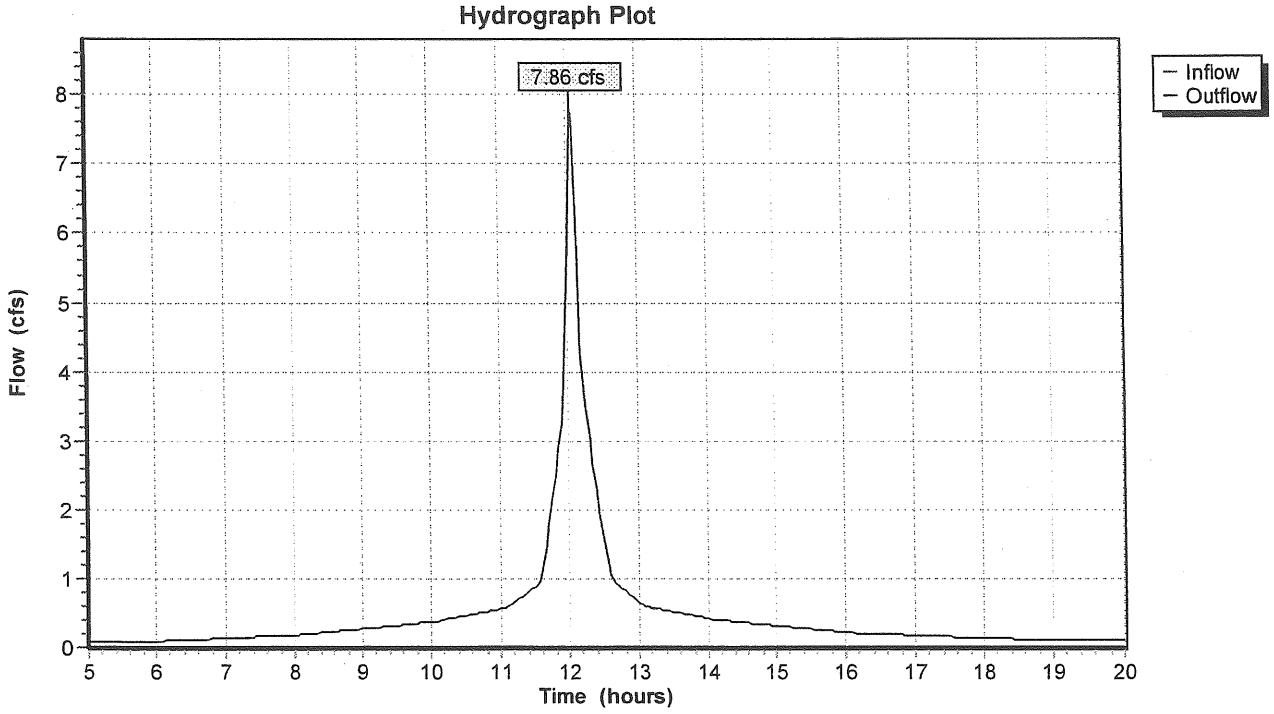


Reach FR: Fore River

Inflow	=	7.86 cfs @	12.08 hrs, Volume=	0.597 af
Outflow	=	7.86 cfs @	12.08 hrs, Volume=	0.597 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

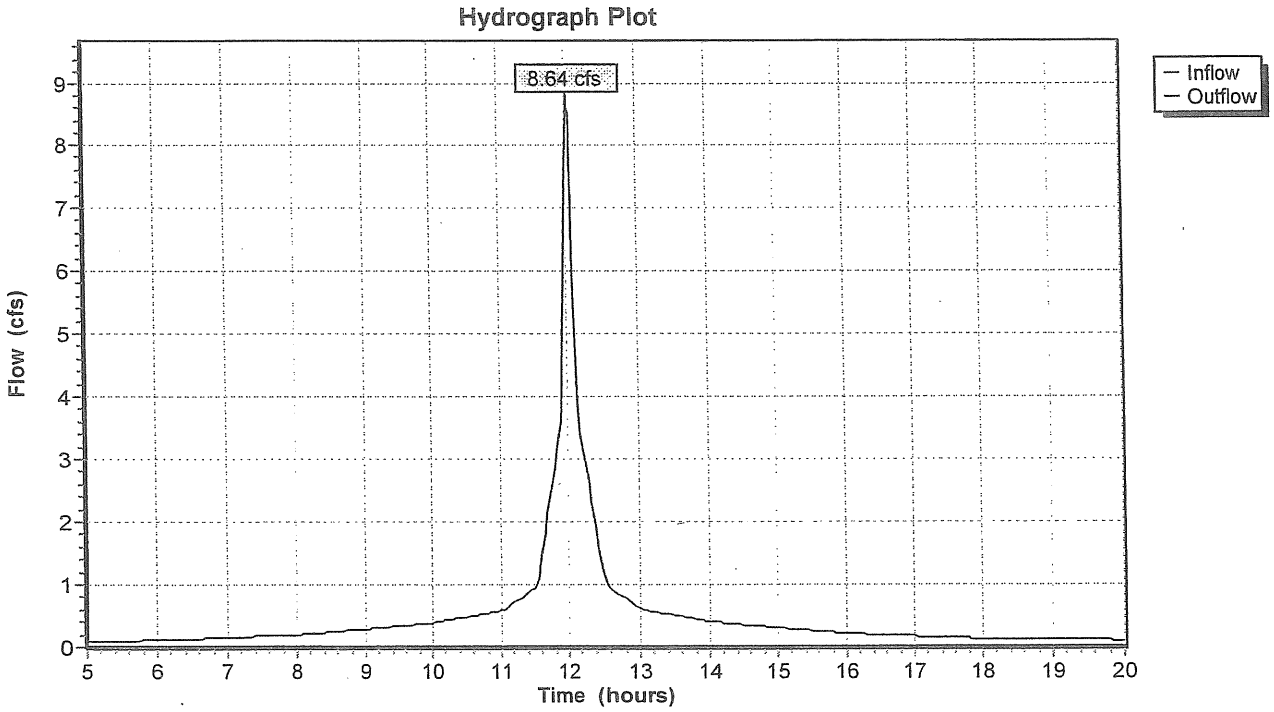


Reach S1: (new node)

Inflow = 8.64 cfs @ 12.04 hrs, Volume= 0.603 af
Outflow = 8.64 cfs @ 12.04 hrs, Volume= 0.603 af, Atten= 0%, Lag= 0.0 min

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

Reach S1: (new node)

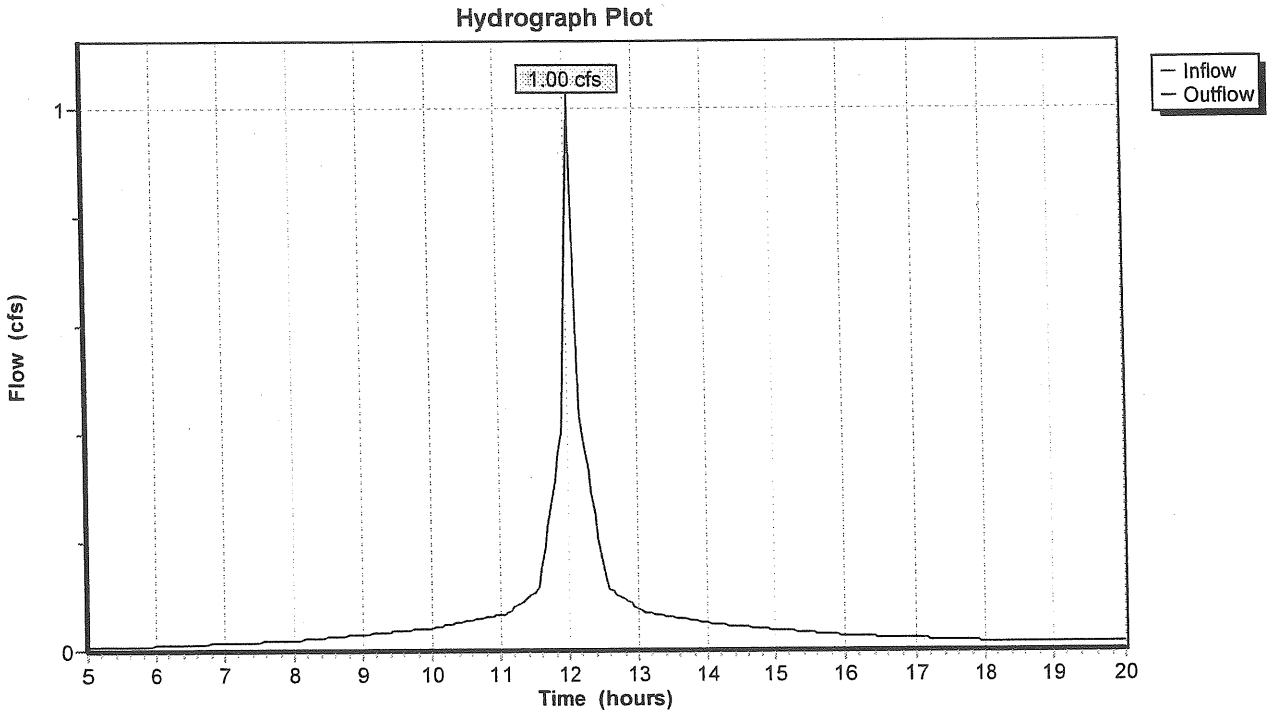


Reach S2: (new node)

Inflow = 1.00 cfs @ 12.05 hrs, Volume= 0.069 af
Outflow = 1.00 cfs @ 12.05 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

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

Reach S2: (new node)

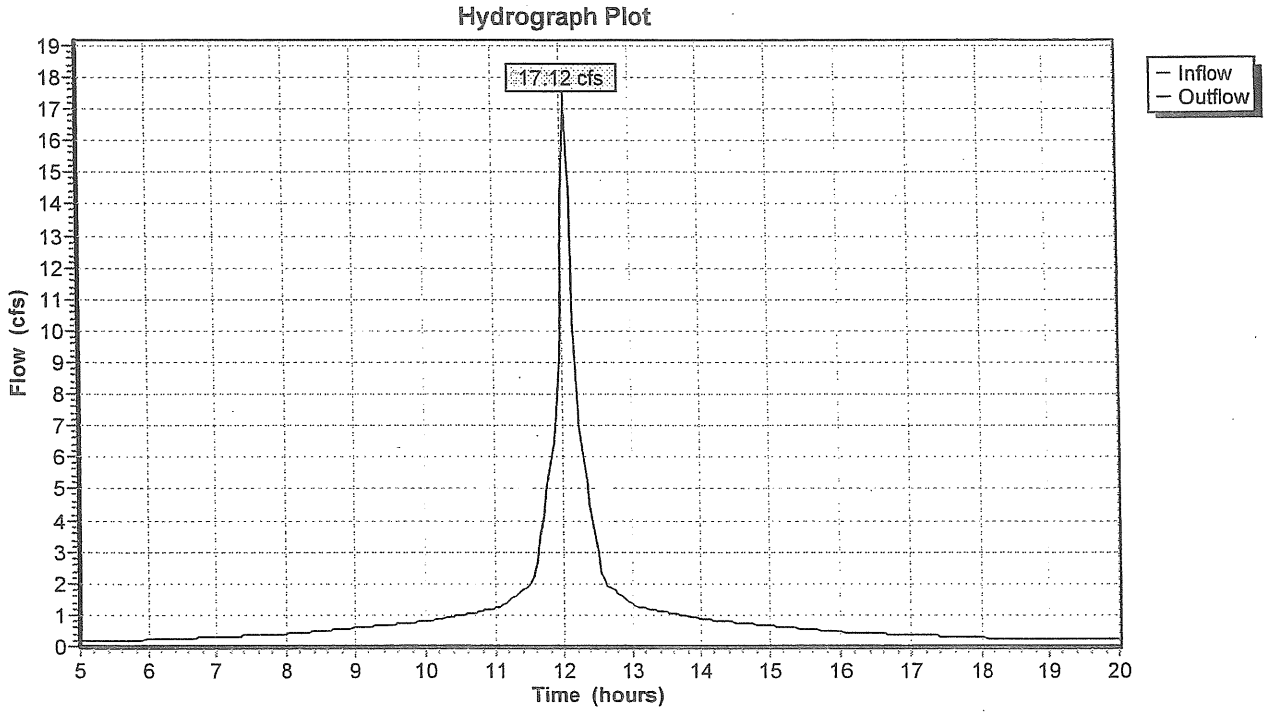


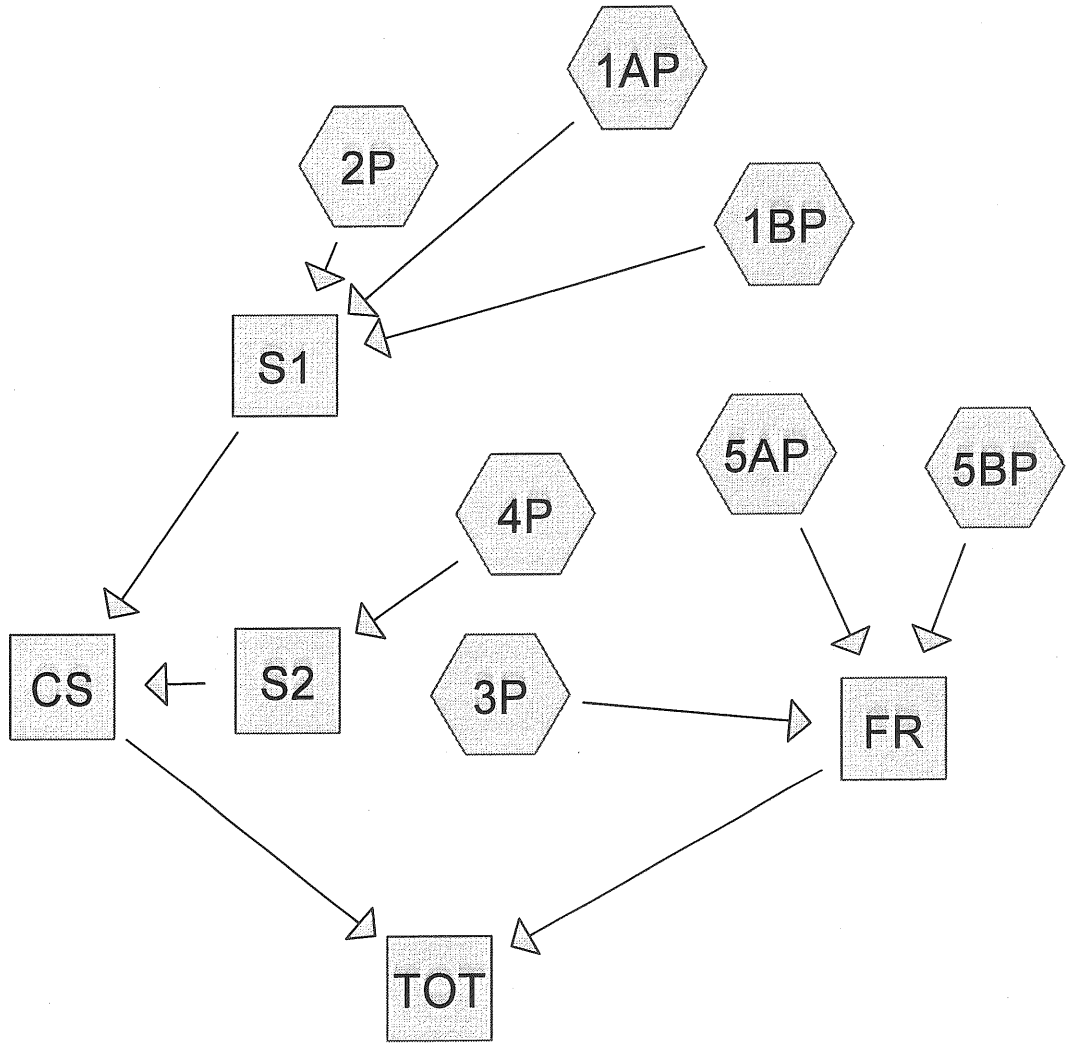
Reach TOT: (new node)

Inflow = 17.12 cfs @ 12.05 hrs, Volume= 1.269 af
Outflow = 17.12 cfs @ 12.05 hrs, Volume= 1.269 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)





Subcat Reach Pond Link

Drainage Diagram for Post-Development
Prepared by {enter your company name here} 12/16/2005

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1AP: Open Space
Tc=4.9 min CN=68 Area=22,420 sf Runoff= 0.32 cfs 0.024 af

Subcatchment 1BP: Parking Garage
Tc=5.0 min CN=98 Area=33,985 sf Runoff= 2.28 cfs 0.168 af

Subcatchment 2P: Office Building
Tc=3.6 min CN=88 Area=8,270 sf Runoff= 0.43 cfs 0.027 af

Subcatchment 3P: Turner Barker
Tc=2.3 min CN=93 Area=9,230 sf Runoff= 0.59 cfs 0.038 af

Subcatchment 4P: Back of PS
Tc=4.2 min CN=50 Area=6,350 sf Runoff= 0.00 cfs 0.001 af

Subcatchment 5AP: Luxury Complex
Tc=5.0 min CN=98 Area=47,030 sf Runoff= 3.16 cfs 0.233 af

Subcatchment 5BP: Plaza
Tc=1.9 min CN=98 Area=10,590 sf Runoff= 0.77 cfs 0.052 af

Reach CS: Combined Sewer
Inflow= 3.01 cfs 0.220 af
Outflow= 3.01 cfs 0.220 af

Reach FR: Fore River
Inflow= 4.43 cfs 0.323 af
Outflow= 4.43 cfs 0.323 af

Reach S1: (new node)
Inflow= 3.01 cfs 0.219 af
Outflow= 3.01 cfs 0.219 af

Reach S2: (new node)
Inflow= 0.00 cfs 0.001 af
Outflow= 0.00 cfs 0.001 af

Reach TOT: (new node)
Inflow= 7.42 cfs 0.543 af
Outflow= 7.42 cfs 0.543 af

Runoff Area = 3.165 ac Volume = 0.543 af Average Depth = 2.06"

Subcatchment 1AP: Open Space

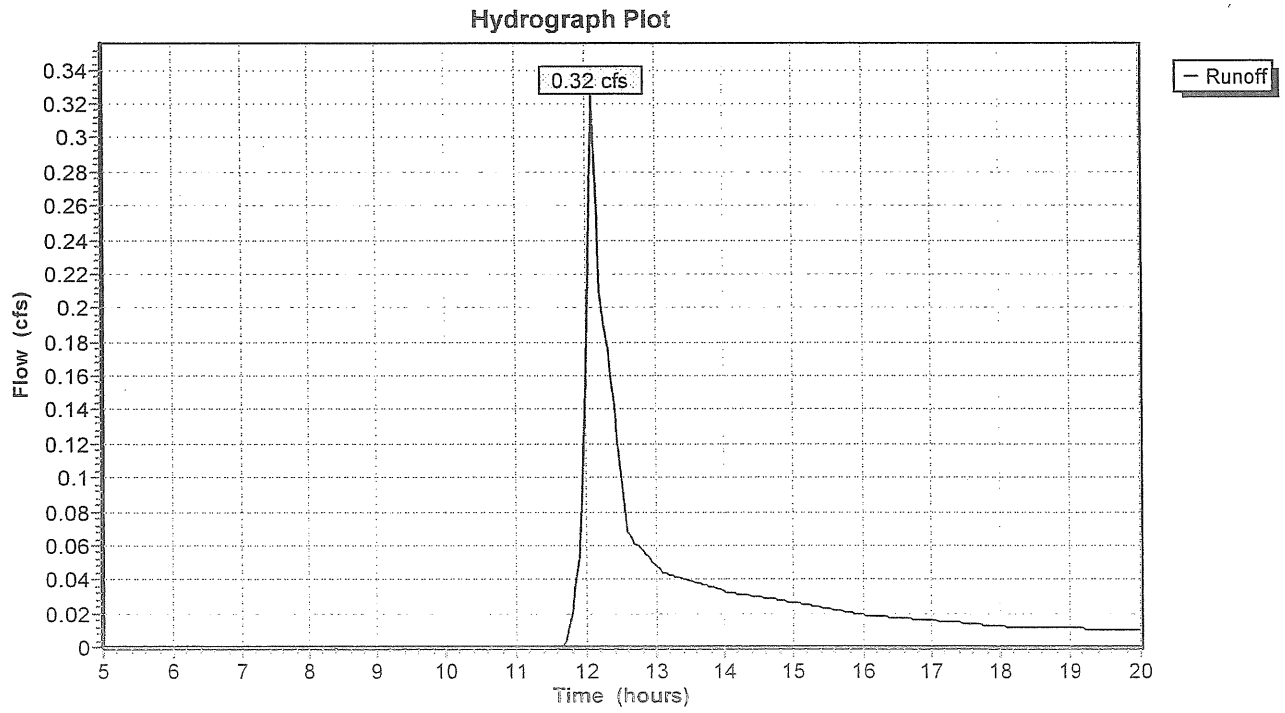
Runoff = 0.32 cfs @ 12.10 hrs, Volume= 0.024 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
8,300	98	Gravel Parking
11,220	39	>75% Grass cover, Good, HSG A
2,900	98	Paved parking & roofs
22,420	68	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	60	0.0333	1.5		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.5	40	0.0250	1.2		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0400	3.2		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
3.6	150	0.0100	0.7		**Shallow Concentrated Flow, DE** Short Grass Pasture Kv= 7.0 fps
4.9	275	Total			

Subcatchment 1AP: Open Space



Subcatchment 1BP: Parking Garage

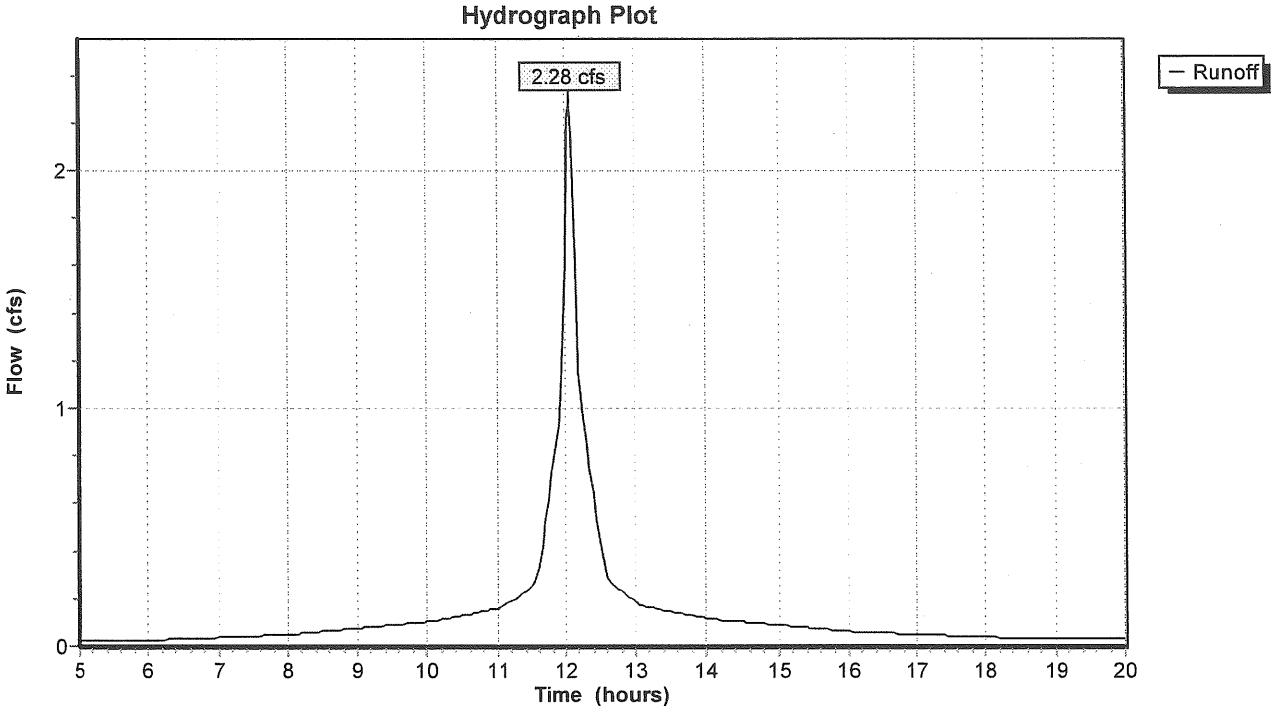
Runoff = 2.28 cfs @ 12.07 hrs, Volume= 0.168 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
33,315	98	Building
670	98	Paved
33,985	98	Weighted Average

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

Subcatchment 1BP: Parking Garage



Subcatchment 2P: Office Building

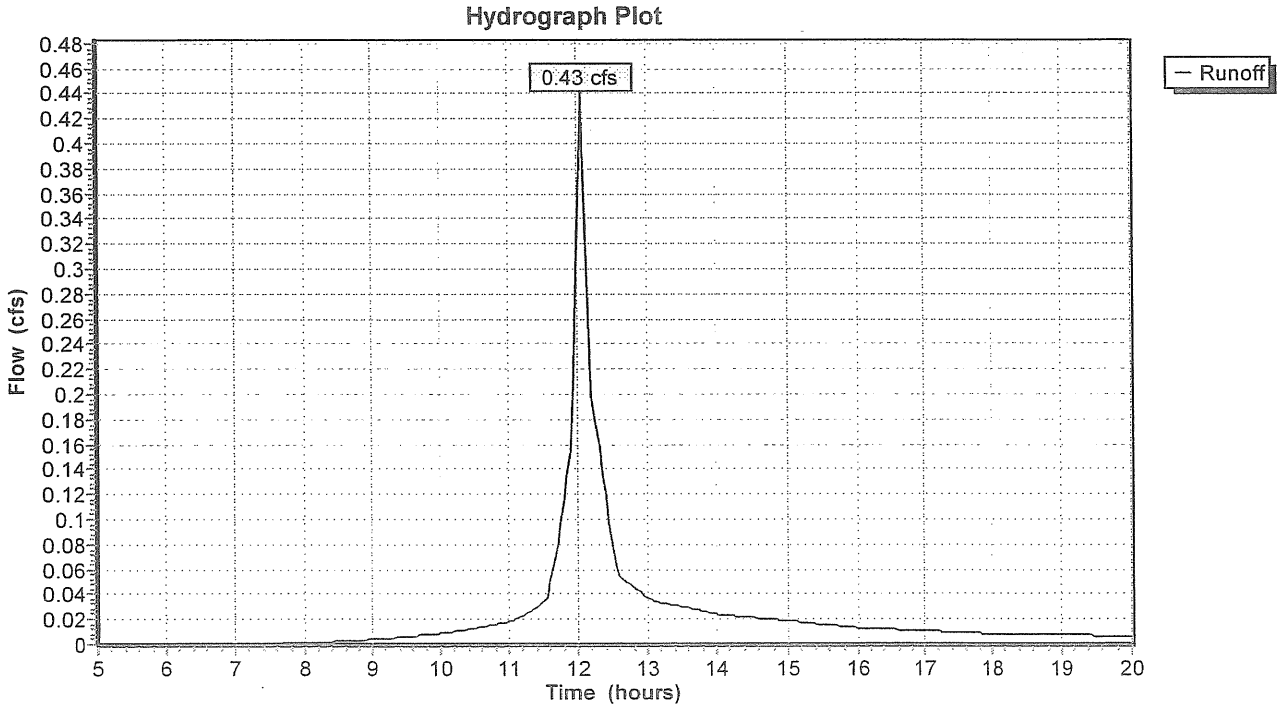
Runoff = 0.43 cfs @ 12.06 hrs, Volume= 0.027 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
5,810	98	Building
1,110	98	Paved roads w/curbs & sewers
1,350	39	>75% Grass cover, Good, HSG A
8,270	88	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	35	0.0560	0.2		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.6	65	0.0560	1.8		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0560	4.8		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
3.6	125	Total			

Subcatchment 2P: Office Building



Subcatchment 3P: Turner Barker

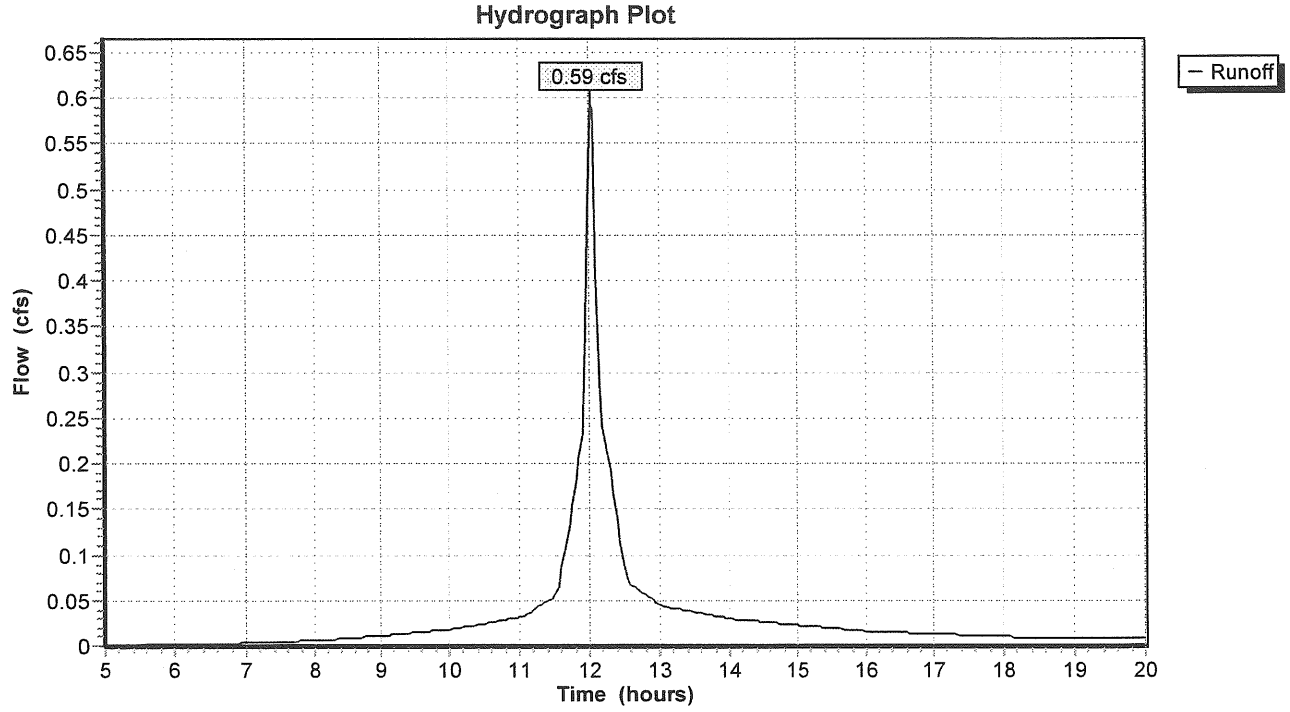
Runoff = 0.59 cfs @ 12.04 hrs, Volume= 0.038 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
4,000	98	Building
4,380	98	Paved parking & roofs
850	39	>75% Grass cover, Good, HSG A
9,230	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	5	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.2	95	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.2	40	0.0200	2.9		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
2.3	140	Total			

Subcatchment 3P: Turner Barker



Subcatchment 4P: Back of PS

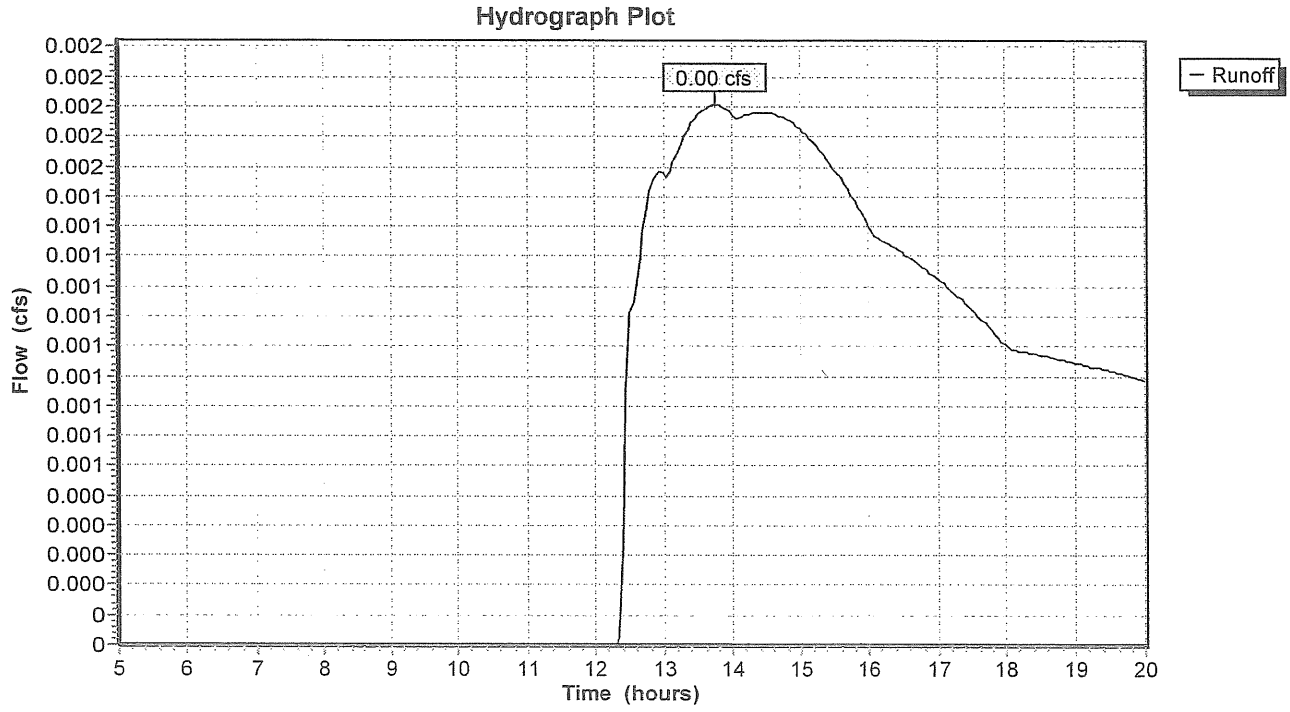
Runoff = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
1,195	98	Paved
5,155	39	>75% Grass cover, Good, HSG A
6,350	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0150	2.0		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
4.2	210	Total			

Subcatchment 4P: Back of PS



Subcatchment 5AP: Luxury Complex

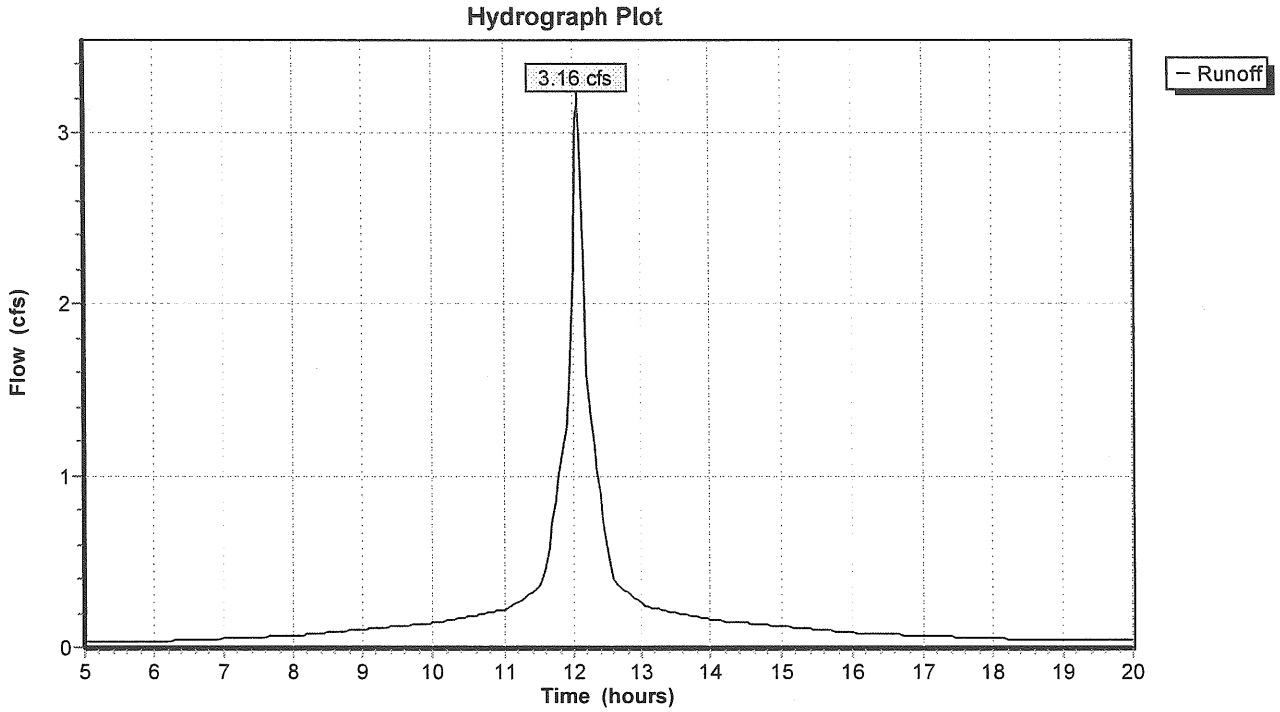
Runoff = 3.16 cfs @ 12.07 hrs, Volume= 0.233 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
46,460	98	Buildings
570	98	Paved
47,030	98	Weighted Average

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

Subcatchment 5AP: Luxury Complex



Subcatchment 5BP: Plaza

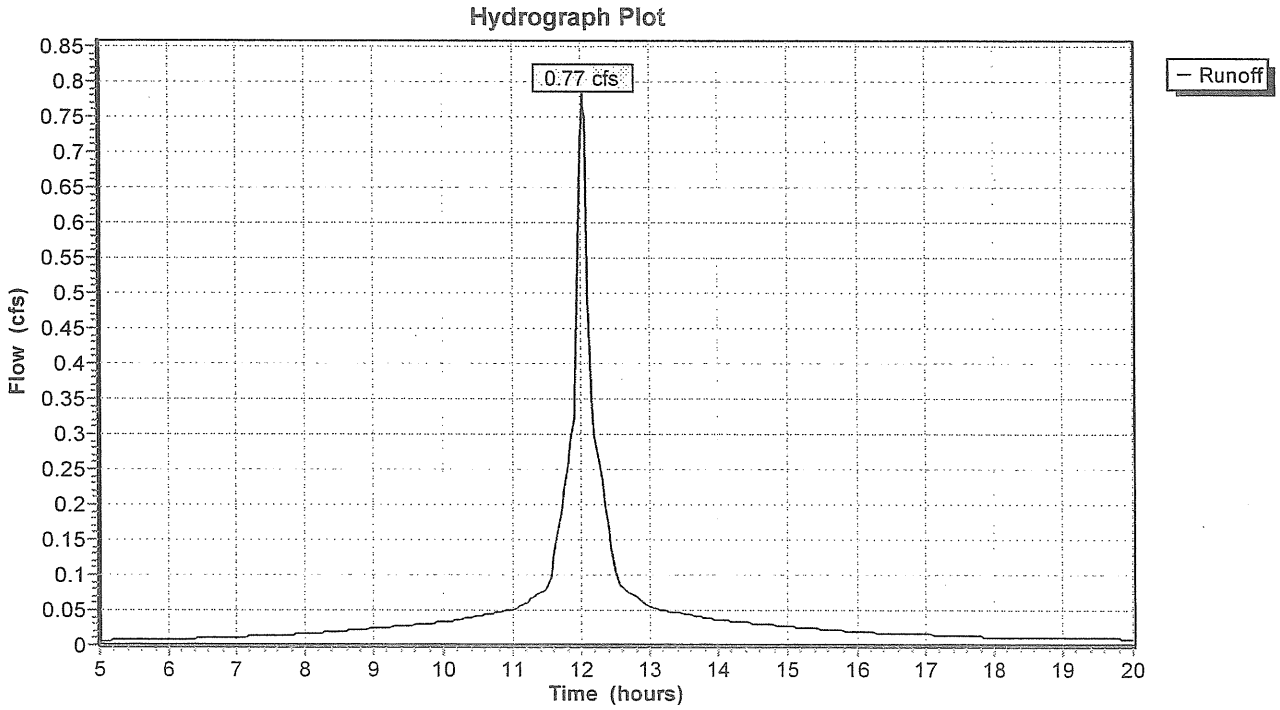
Runoff = 0.77 cfs @ 12.03 hrs, Volume= 0.052 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=3.00"

Area (sf)	CN	Description
10,520	98	Paved parking & roofs
70	39	>75% Grass cover, Good, HSG A
10,590	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0125	1.1		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.4	60	0.0125	2.3		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
1.9	160	Total			

Subcatchment 5BP: Plaza

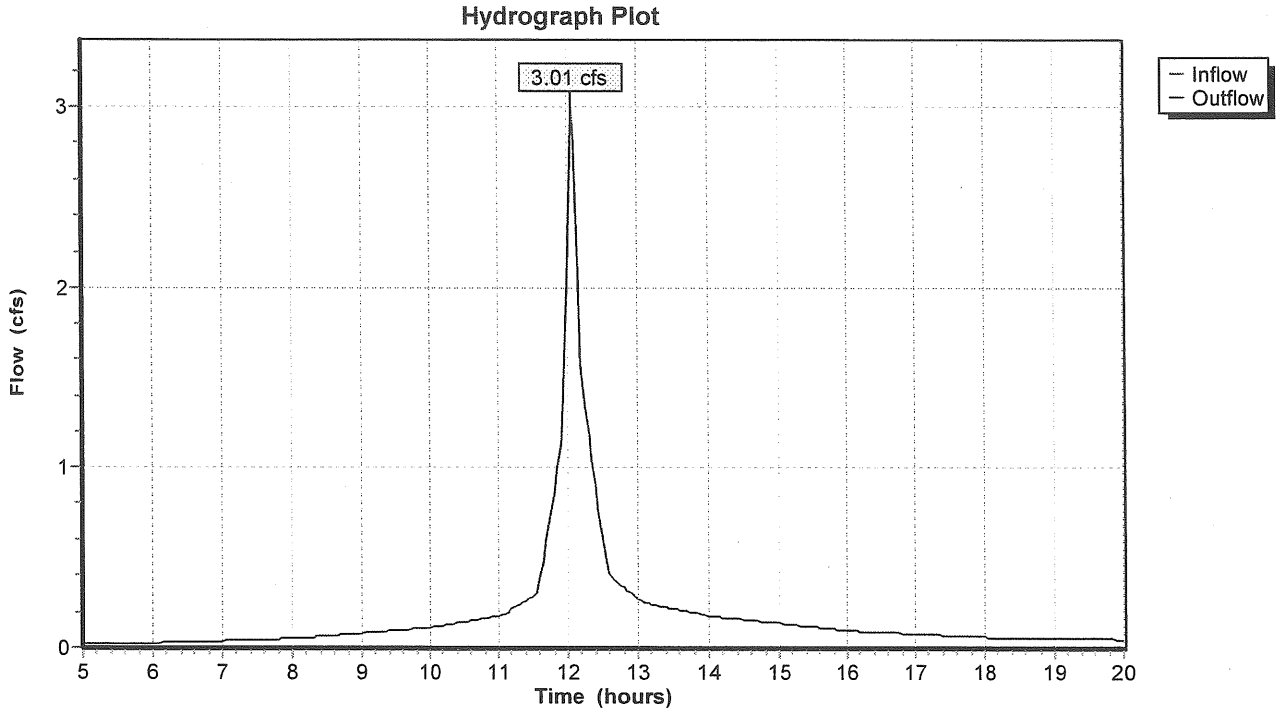


Reach CS: Combined Sewer

Inflow = 3.01 cfs @ 12.07 hrs, Volume= 0.220 af
Outflow = 3.01 cfs @ 12.07 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer

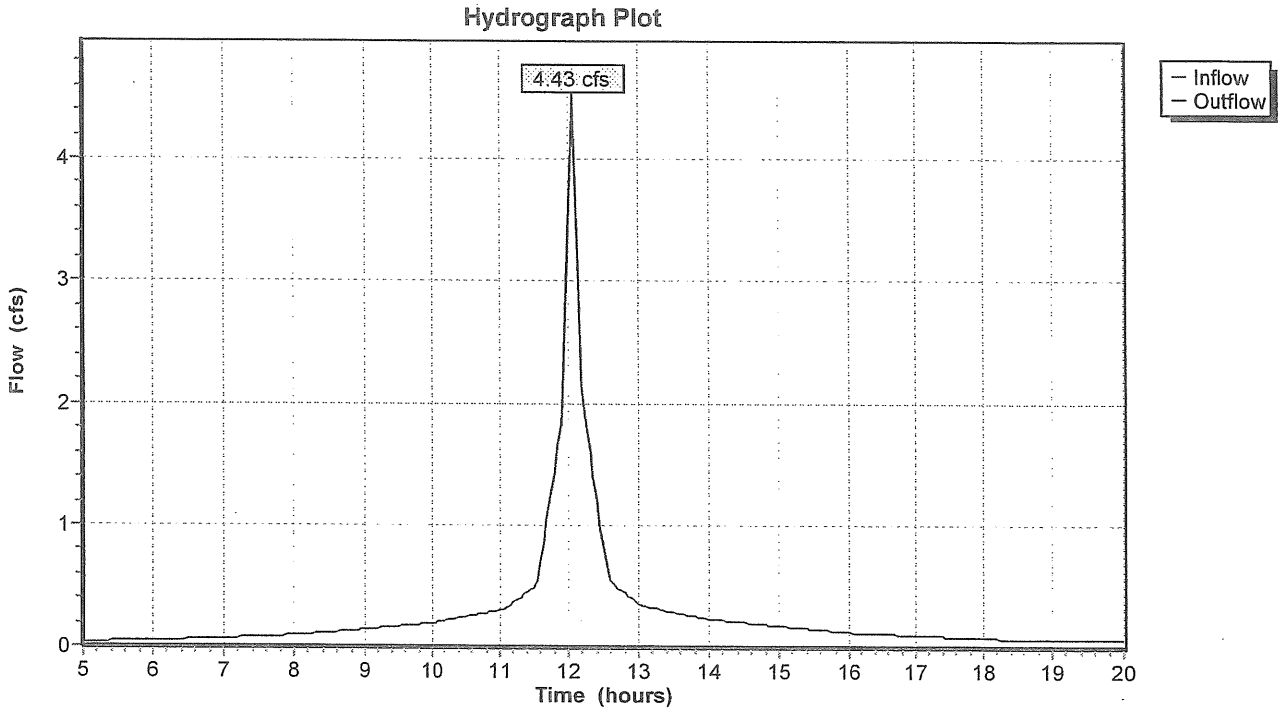


Reach FR: Fore River

Inflow	=	4.43 cfs @	12.06 hrs, Volume=	0.323 af
Outflow	=	4.43 cfs @	12.06 hrs, Volume=	0.323 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

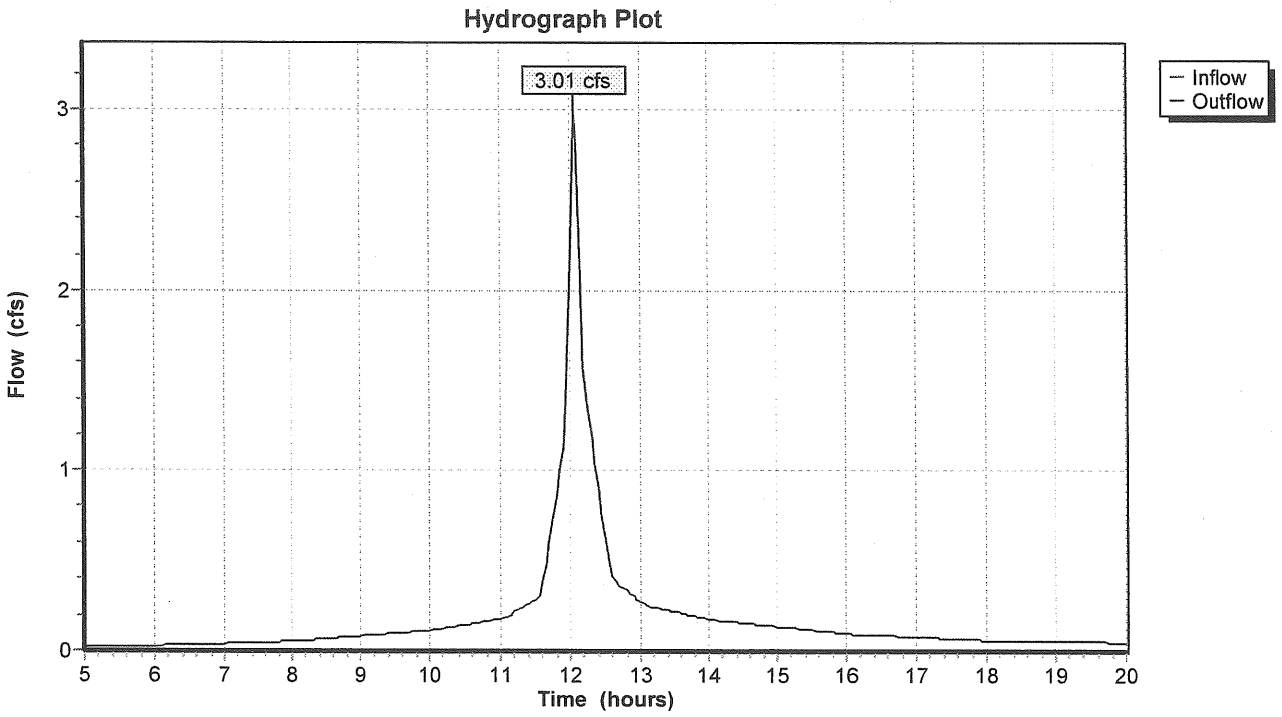


Reach S1: (new node)

Inflow = 3.01 cfs @ 12.07 hrs, Volume= 0.219 af
Outflow = 3.01 cfs @ 12.07 hrs, Volume= 0.219 af, Atten= 0%, Lag= 0.0 min

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

Reach S1: (new node)

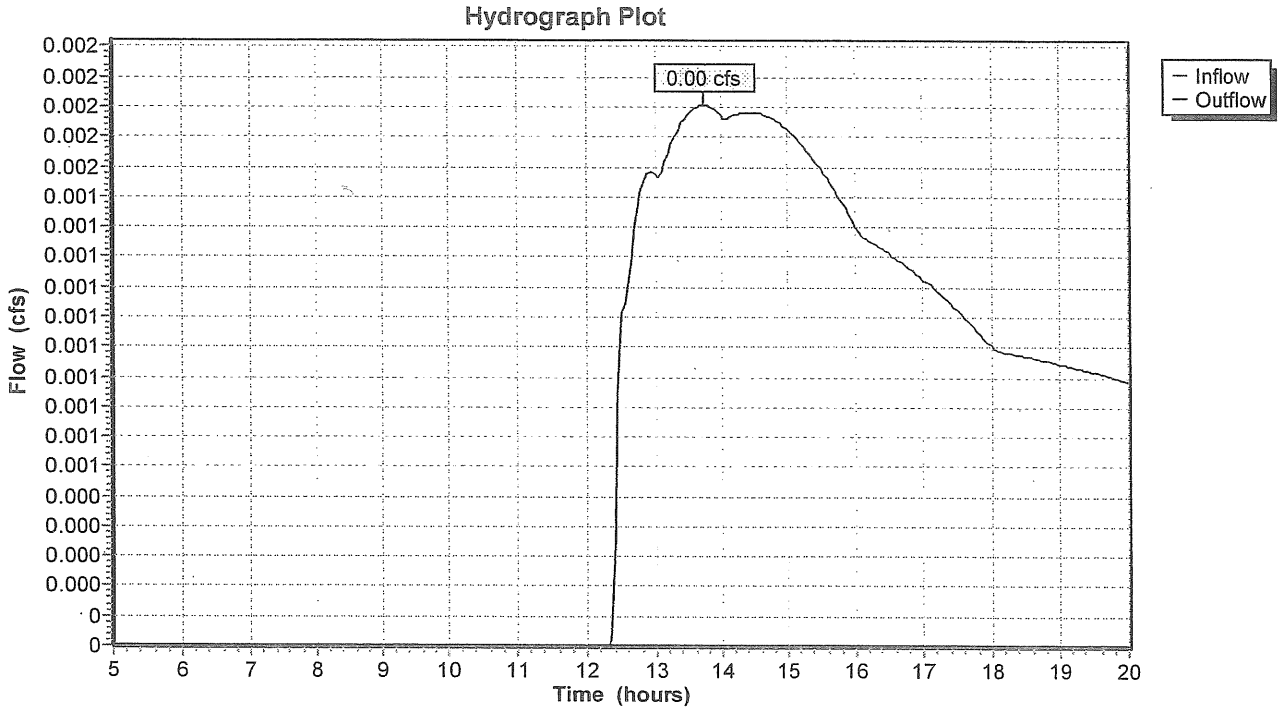


Reach S2: (new node)

Inflow = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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

Reach S2: (new node)

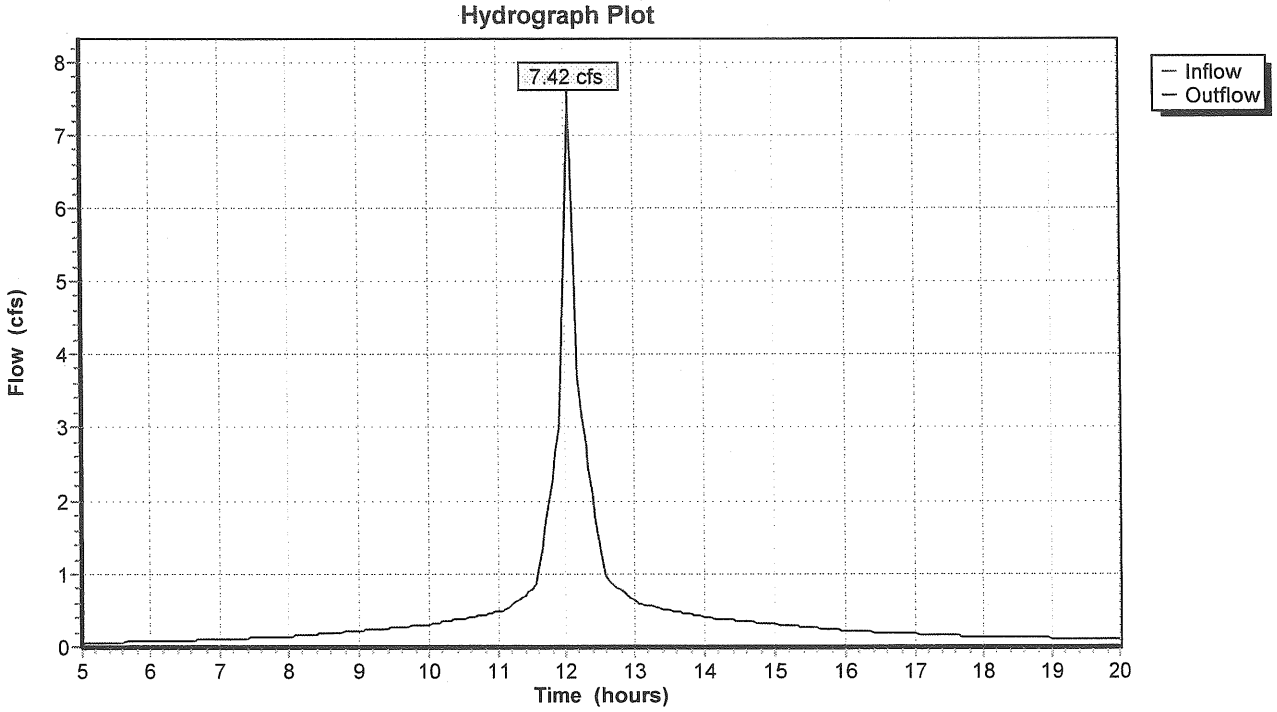


Reach TOT: (new node)

Inflow = 7.42 cfs @ 12.06 hrs, Volume= 0.543 af
Outflow = 7.42 cfs @ 12.06 hrs, Volume= 0.543 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=4.70"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1AP: Open Space
Tc=4.9 min CN=68 Area=22,420 sf Runoff= 0.98 cfs 0.066 af

Subcatchment 1BP: Parking Garage
Tc=5.0 min CN=98 Area=33,985 sf Runoff= 3.61 cfs 0.270 af

Subcatchment 2P: Office Building
Tc=3.6 min CN=88 Area=8,270 sf Runoff= 0.79 cfs 0.051 af

Subcatchment 3P: Turner Barker
Tc=2.3 min CN=93 Area=9,230 sf Runoff= 1.00 cfs 0.065 af

Subcatchment 4P: Back of PS
Tc=4.2 min CN=50 Area=6,350 sf Runoff= 0.06 cfs 0.006 af

Subcatchment 5AP: Luxury Complex
Tc=5.0 min CN=98 Area=47,030 sf Runoff= 4.99 cfs 0.373 af

Subcatchment 5BP: Plaza
Tc=1.9 min CN=98 Area=10,590 sf Runoff= 1.21 cfs 0.084 af

Reach CS: Combined Sewer
Inflow= 5.40 cfs 0.392 af
Outflow= 5.40 cfs 0.392 af

Reach FR: Fore River
Inflow= 7.06 cfs 0.522 af
Outflow= 7.06 cfs 0.522 af

Reach S1: (new node)
Inflow= 5.35 cfs 0.386 af
Outflow= 5.35 cfs 0.386 af

Reach S2: (new node)
Inflow= 0.06 cfs 0.006 af
Outflow= 0.06 cfs 0.006 af

Reach TOT: (new node)
Inflow= 12.43 cfs 0.914 af
Outflow= 12.43 cfs 0.914 af

Runoff Area = 3.165 ac Volume = 0.914 af Average Depth = 3.46"

Subcatchment 1AP: Open Space

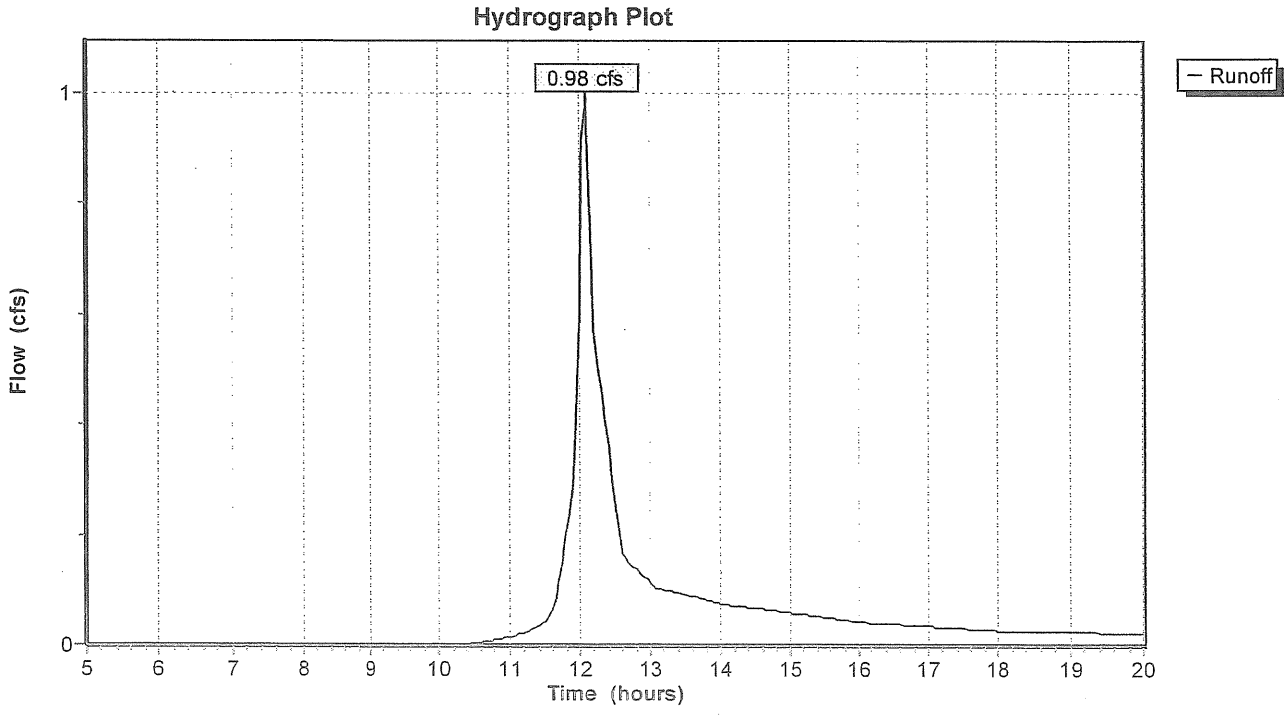
Runoff = 0.98 cfs @ 12.08 hrs, Volume= 0.066 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
8,300	98	Gravel Parking
11,220	39	>75% Grass cover, Good, HSG A
2,900	98	Paved parking & roofs
22,420	68	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	60	0.0333	1.5		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.5	40	0.0250	1.2		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0400	3.2		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
3.6	150	0.0100	0.7		**Shallow Concentrated Flow, DE** Short Grass Pasture Kv= 7.0 fps
4.9	275	Total			

Subcatchment 1AP: Open Space



Subcatchment 1BP: Parking Garage

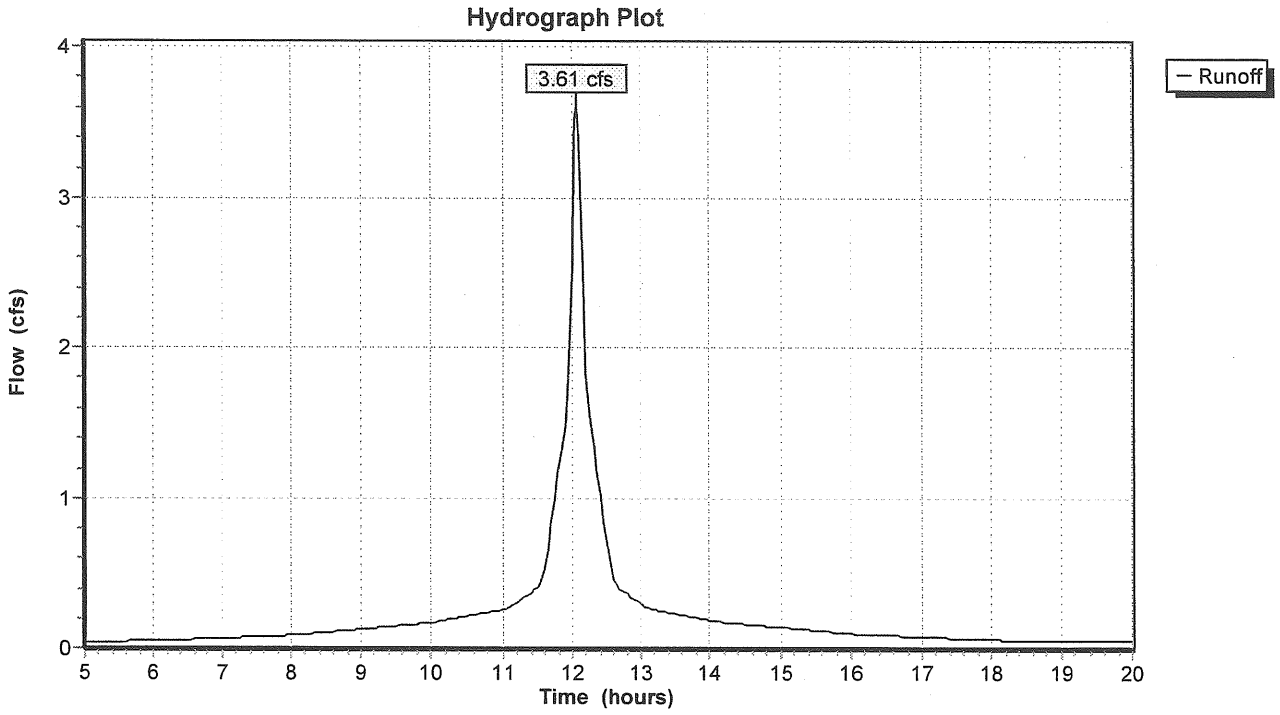
Runoff = 3.61 cfs @ 12.07 hrs, Volume= 0.270 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
33,315	98	Building
670	98	Paved
33,985	98	Weighted Average

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

Subcatchment 1BP: Parking Garage



Subcatchment 2P: Office Building

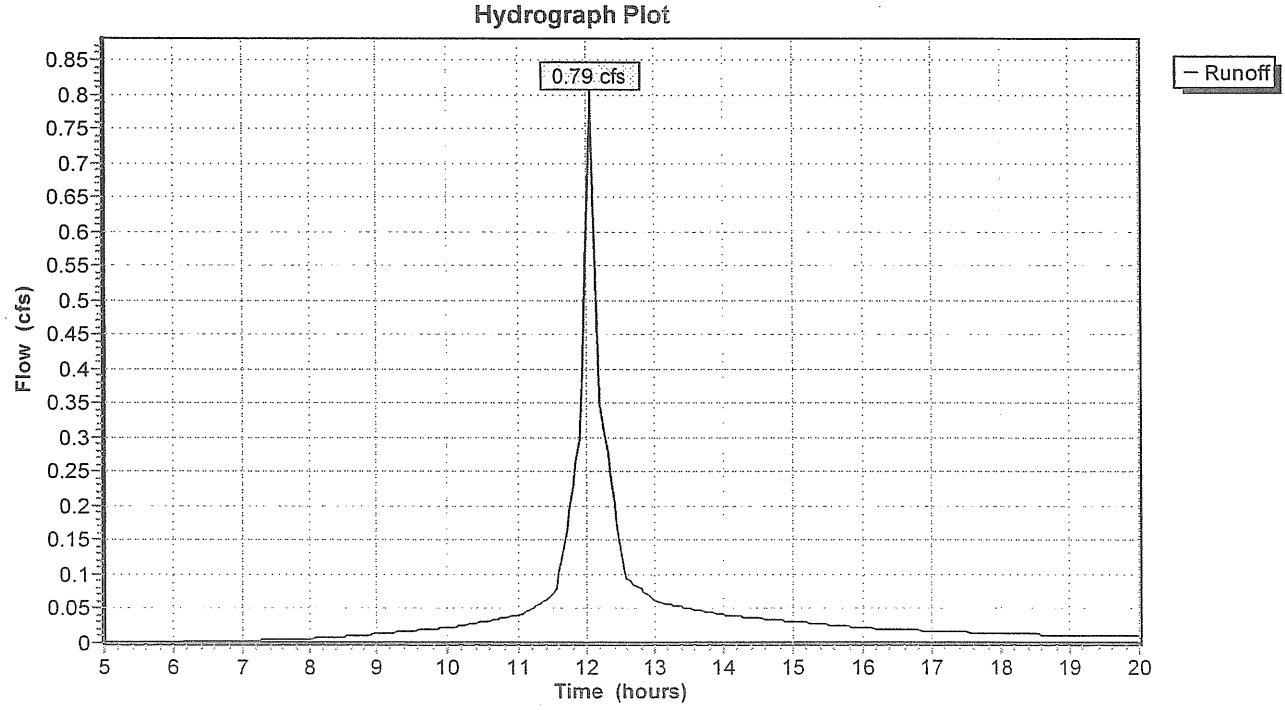
Runoff = 0.79 cfs @ 12.05 hrs, Volume= 0.051 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
5,810	98	Building
1,110	98	Paved roads w/curbs & sewers
1,350	39	>75% Grass cover, Good, HSG A
8,270	88	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	35	0.0560	0.2		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.6	65	0.0560	1.8		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0560	4.8		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
3.6	125	Total			

Subcatchment 2P: Office Building



Subcatchment 3P: Turner Barker

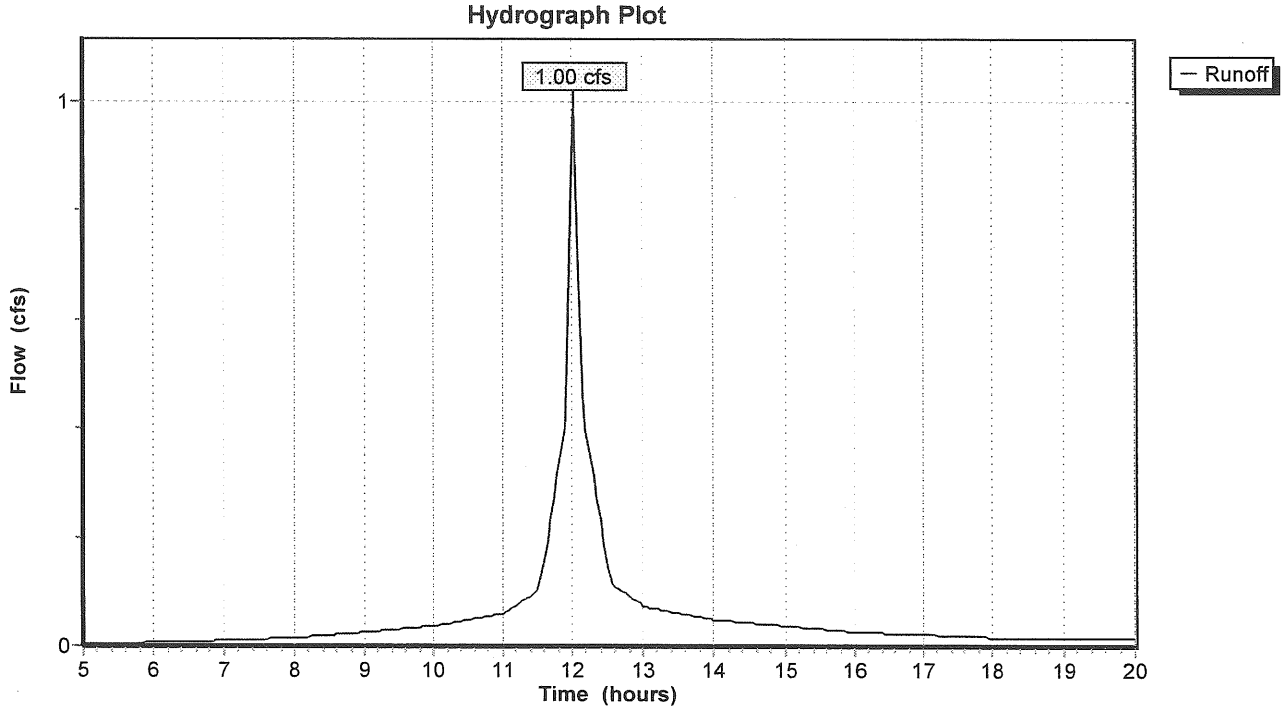
Runoff = 1.00 cfs @ 12.04 hrs, Volume= 0.065 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
4,000	98	Building
4,380	98	Paved parking & roofs
850	39	>75% Grass cover, Good, HSG A
9,230	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	5	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.2	95	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.2	40	0.0200	2.9		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
2.3	140	Total			

Subcatchment 3P: Turner Barker



Subcatchment 4P: Back of PS

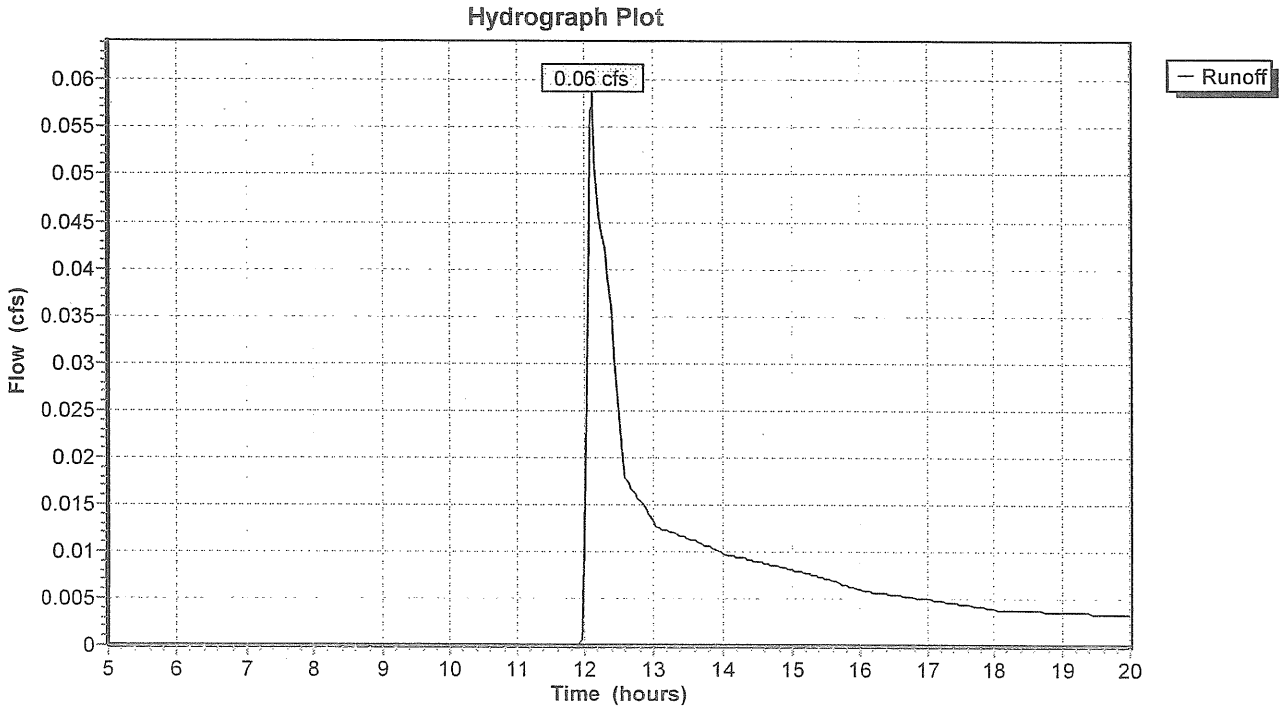
Runoff = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
1,195	98	Paved
5,155	39	>75% Grass cover, Good, HSG A
6,350	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0150	2.0		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
4.2	210	Total			

Subcatchment 4P: Back of PS



Subcatchment 5AP: Luxury Complex

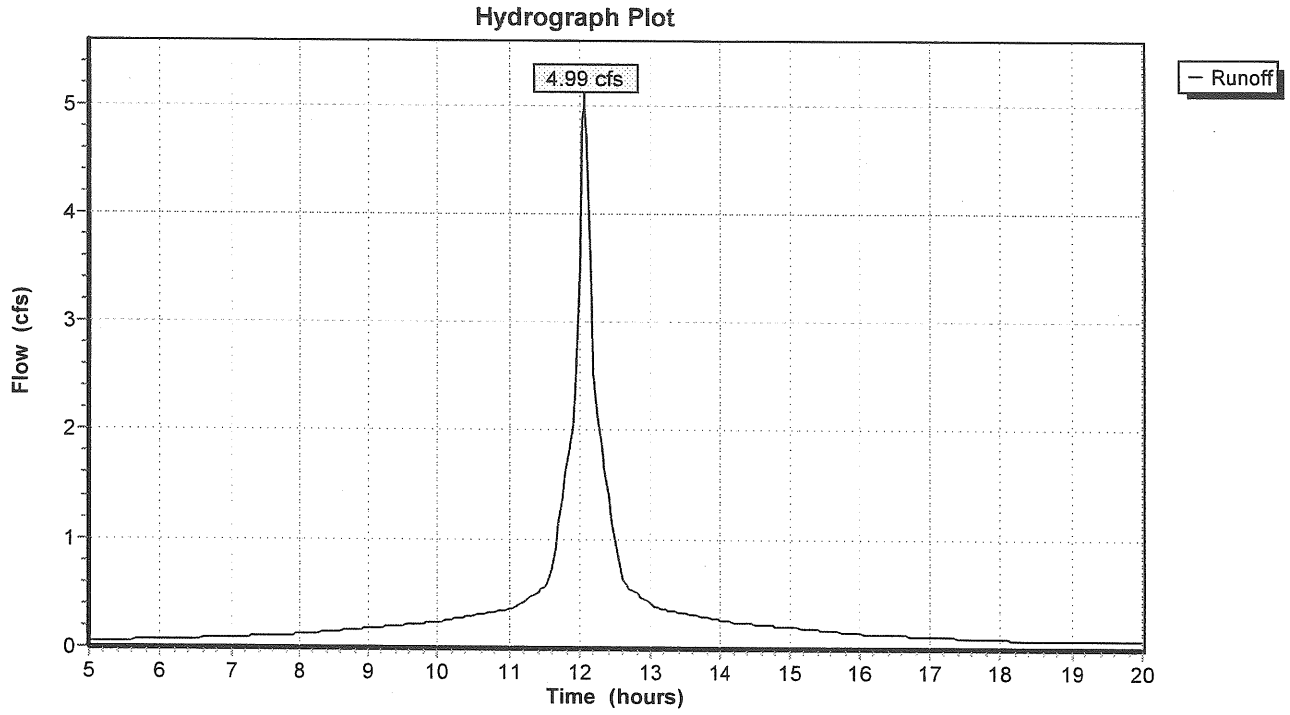
Runoff = 4.99 cfs @ 12.07 hrs, Volume= 0.373 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
46,460	98	Buildings
570	98	Paved
47,030	98	Weighted Average

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

Subcatchment 5AP: Luxury Complex



Subcatchment 5BP: Plaza

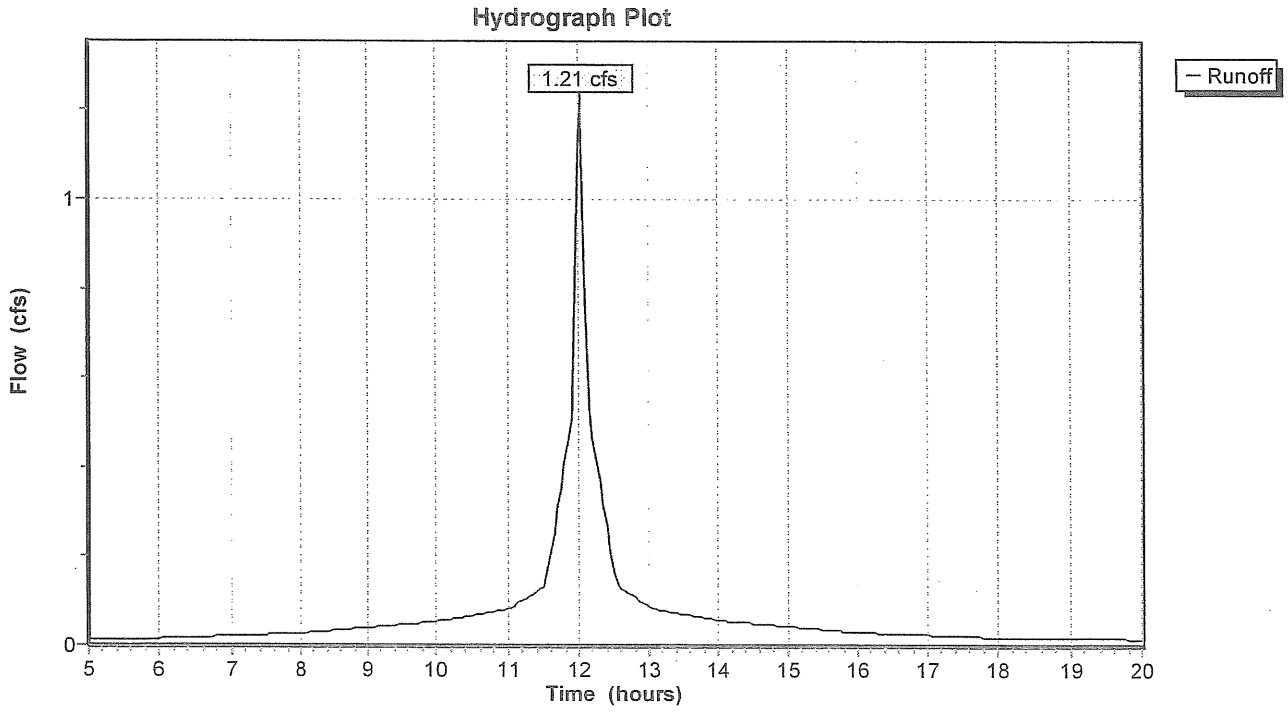
Runoff = 1.21 cfs @ 12.03 hrs, Volume= 0.084 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=4.70"

Area (sf)	CN	Description
10,520	98	Paved parking & roofs
70	39	>75% Grass cover, Good, HSG A
10,590	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0125	1.1		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.4	60	0.0125	2.3		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
1.9	160	Total			

Subcatchment 5BP: Plaza

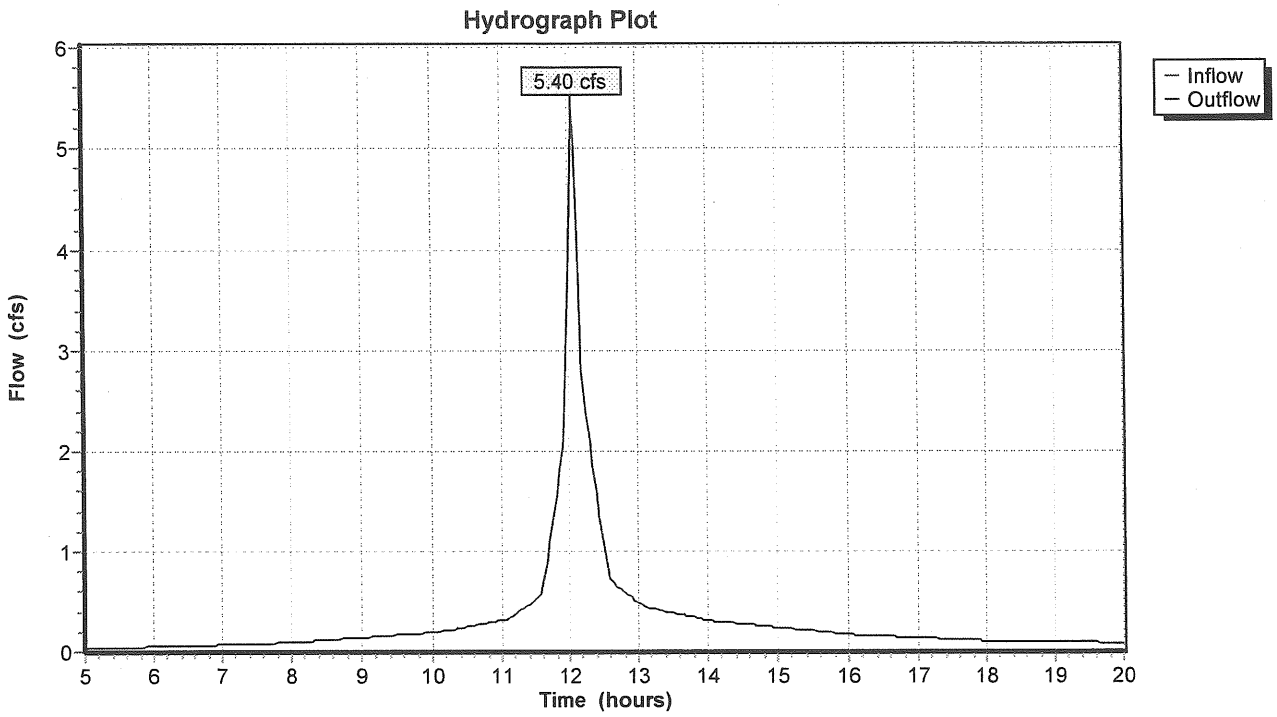


Reach CS: Combined Sewer

Inflow = 5.40 cfs @ 12.07 hrs, Volume= 0.392 af
Outflow = 5.40 cfs @ 12.07 hrs, Volume= 0.392 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer

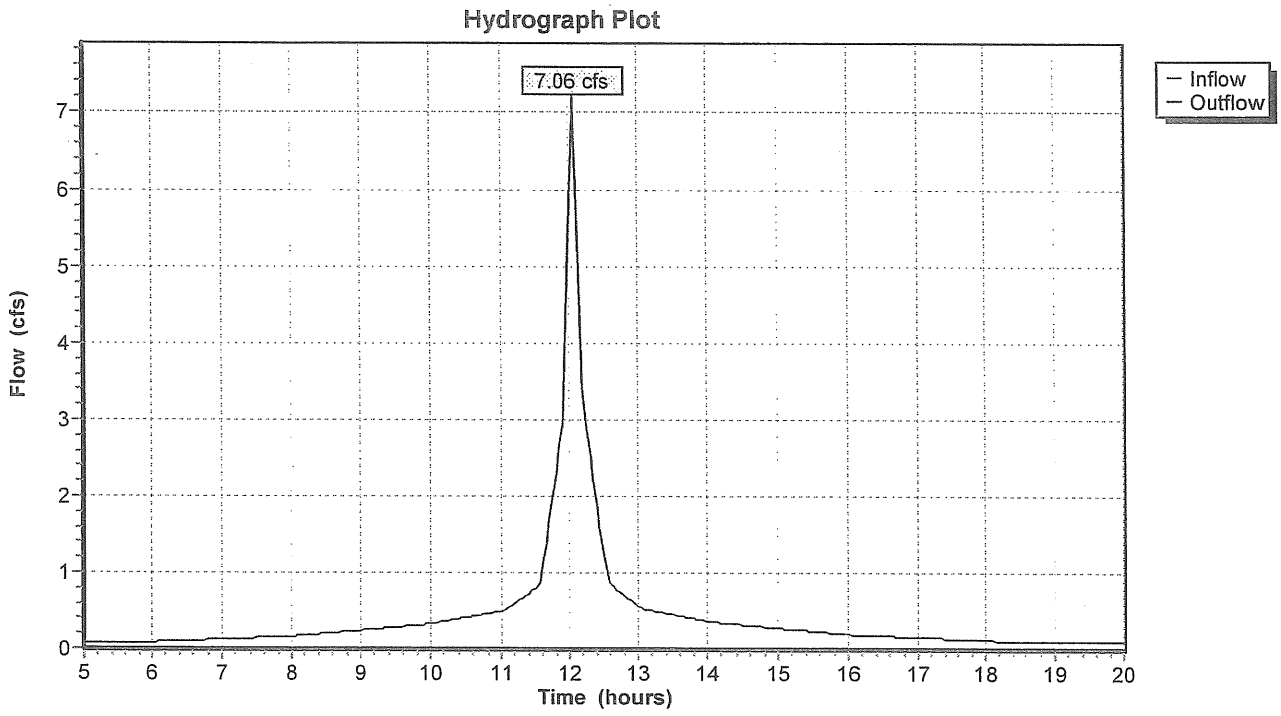


Reach FR: Fore River

Inflow = 7.06 cfs @ 12.06 hrs, Volume= 0.522 af
Outflow = 7.06 cfs @ 12.06 hrs, Volume= 0.522 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

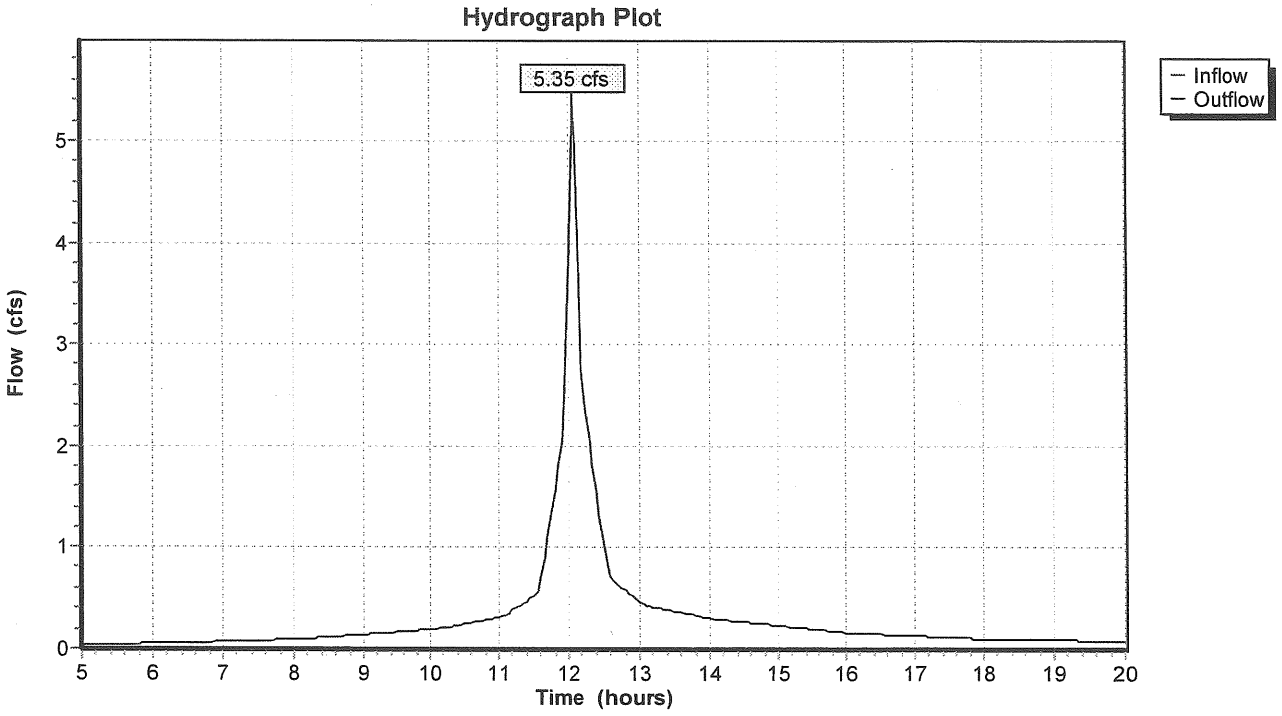


Reach S1: (new node)

Inflow = 5.35 cfs @ 12.07 hrs, Volume= 0.386 af
Outflow = 5.35 cfs @ 12.07 hrs, Volume= 0.386 af, Atten= 0%, Lag= 0.0 min

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

Reach S1: (new node)

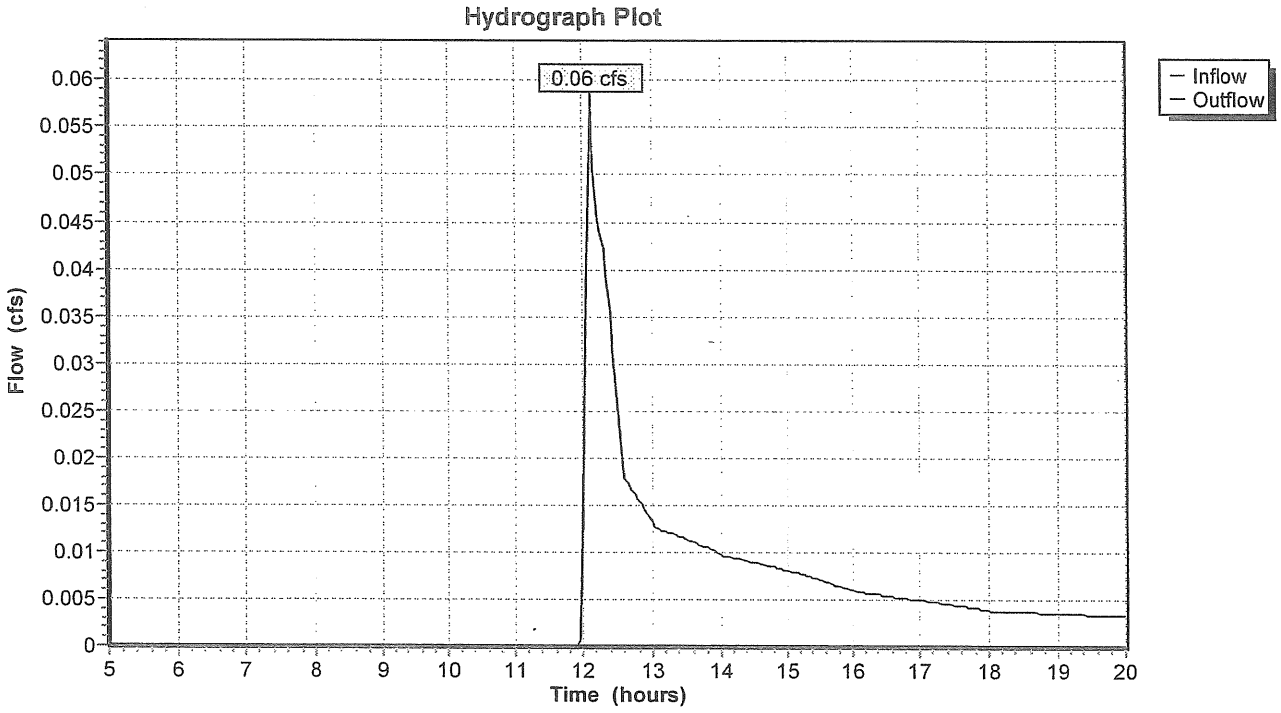


Reach S2: (new node)

Inflow = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af
Outflow = 0.06 cfs @ 12.11 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

Reach S2: (new node)

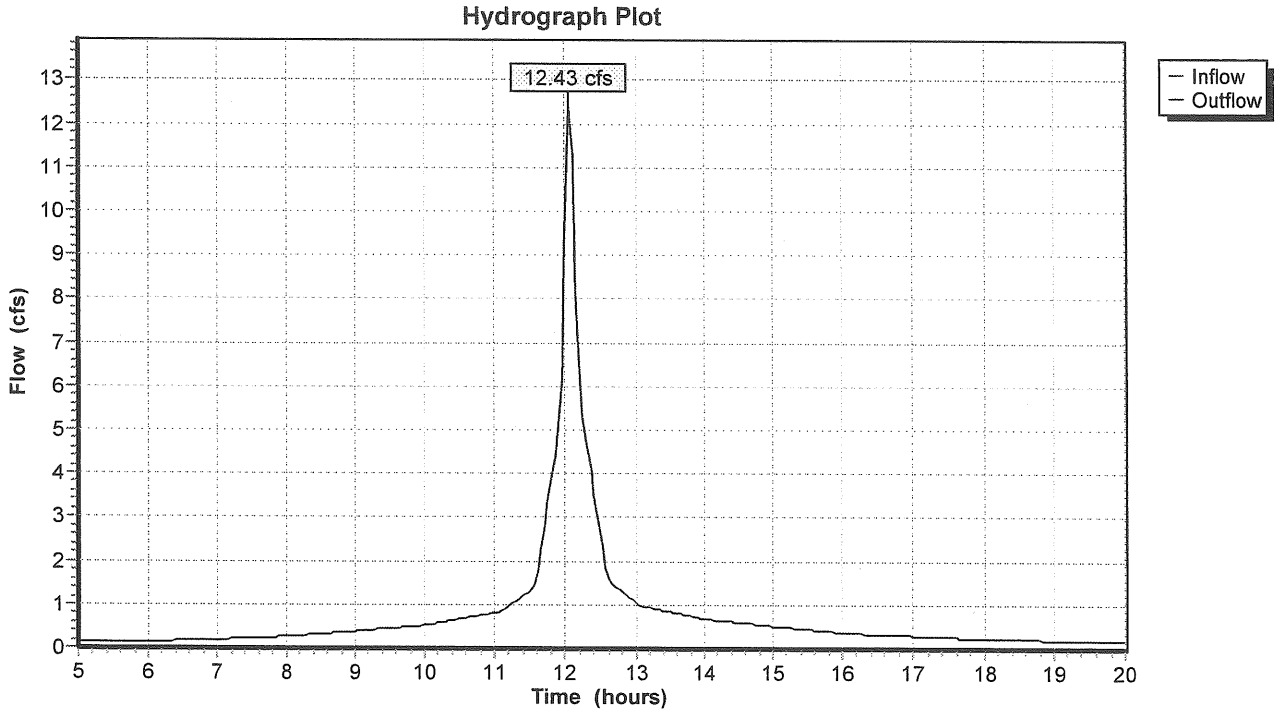


Reach TOT: (new node)

Inflow = 12.43 cfs @ 12.06 hrs, Volume= 0.914 af
Outflow = 12.43 cfs @ 12.06 hrs, Volume= 0.914 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1AP: Open Space
Tc=4.9 min CN=68 Area=22,420 sf Runoff= 1.34 cfs 0.089 af

Subcatchment 1BP: Parking Garage
Tc=5.0 min CN=98 Area=33,985 sf Runoff= 4.23 cfs 0.317 af

Subcatchment 2P: Office Building
Tc=3.6 min CN=88 Area=8,270 sf Runoff= 0.96 cfs 0.062 af

Subcatchment 3P: Turner Barker
Tc=2.3 min CN=93 Area=9,230 sf Runoff= 1.18 cfs 0.078 af

Subcatchment 4P: Back of PS
Tc=4.2 min CN=50 Area=6,350 sf Runoff= 0.12 cfs 0.010 af

Subcatchment 5AP: Luxury Complex
Tc=5.0 min CN=98 Area=47,030 sf Runoff= 5.85 cfs 0.439 af

Subcatchment 5BP: Plaza
Tc=1.9 min CN=98 Area=10,590 sf Runoff= 1.42 cfs 0.099 af

Reach CS: Combined Sewer
Inflow= 6.61 cfs 0.477 af
Outflow= 6.61 cfs 0.477 af

Reach FR: Fore River
Inflow= 8.29 cfs 0.616 af
Outflow= 8.29 cfs 0.616 af

Reach S1: (new node)
Inflow= 6.50 cfs 0.468 af
Outflow= 6.50 cfs 0.468 af

Reach S2: (new node)
Inflow= 0.12 cfs 0.010 af
Outflow= 0.12 cfs 0.010 af

Reach TOT: (new node)
Inflow= 14.87 cfs 1.093 af
Outflow= 14.87 cfs 1.093 af

Runoff Area = 3.165 ac Volume = 1.093 af Average Depth = 4.14"

Subcatchment 1AP: Open Space

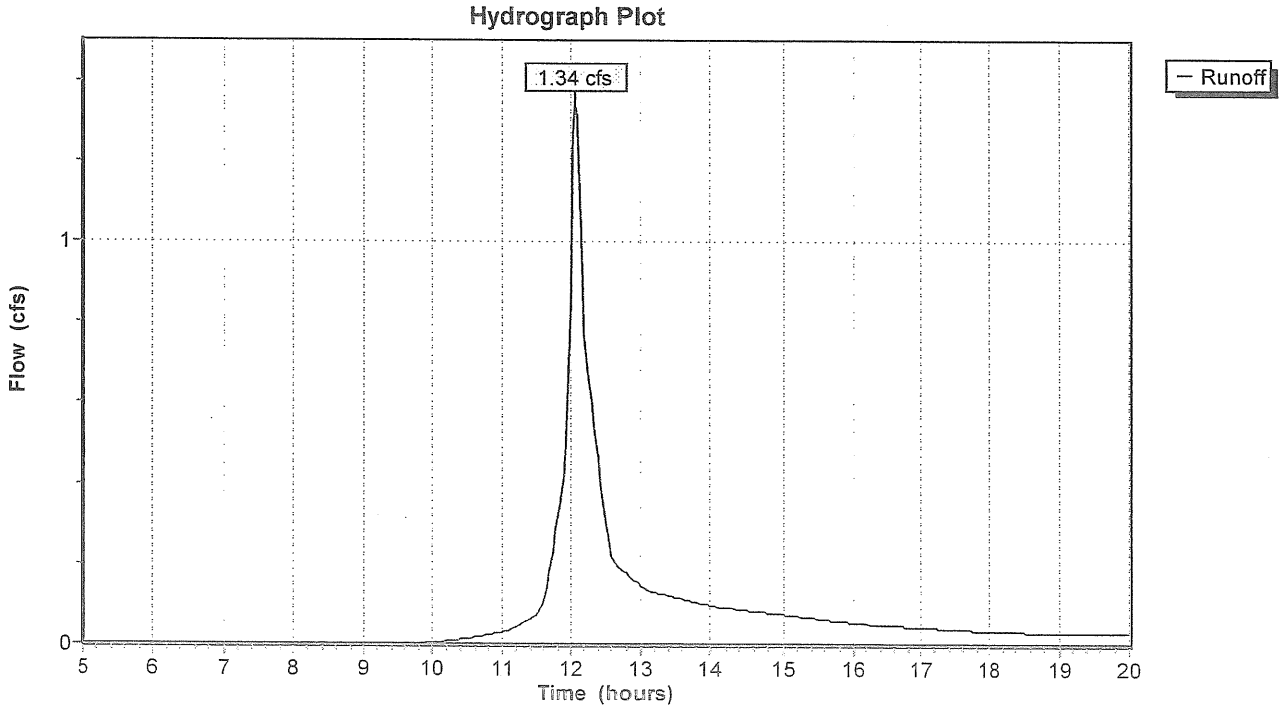
Runoff = 1.34 cfs @ 12.08 hrs, Volume= 0.089 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
8,300	98	Gravel Parking
11,220	39	>75% Grass cover, Good, HSG A
2,900	98	Paved parking & roofs
22,420	68	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	60	0.0333	1.5		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.5	40	0.0250	1.2		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0400	3.2		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
3.6	150	0.0100	0.7		**Shallow Concentrated Flow, DE** Short Grass Pasture Kv= 7.0 fps
4.9	275	Total			

Subcatchment 1AP: Open Space



Subcatchment 1BP: Parking Garage

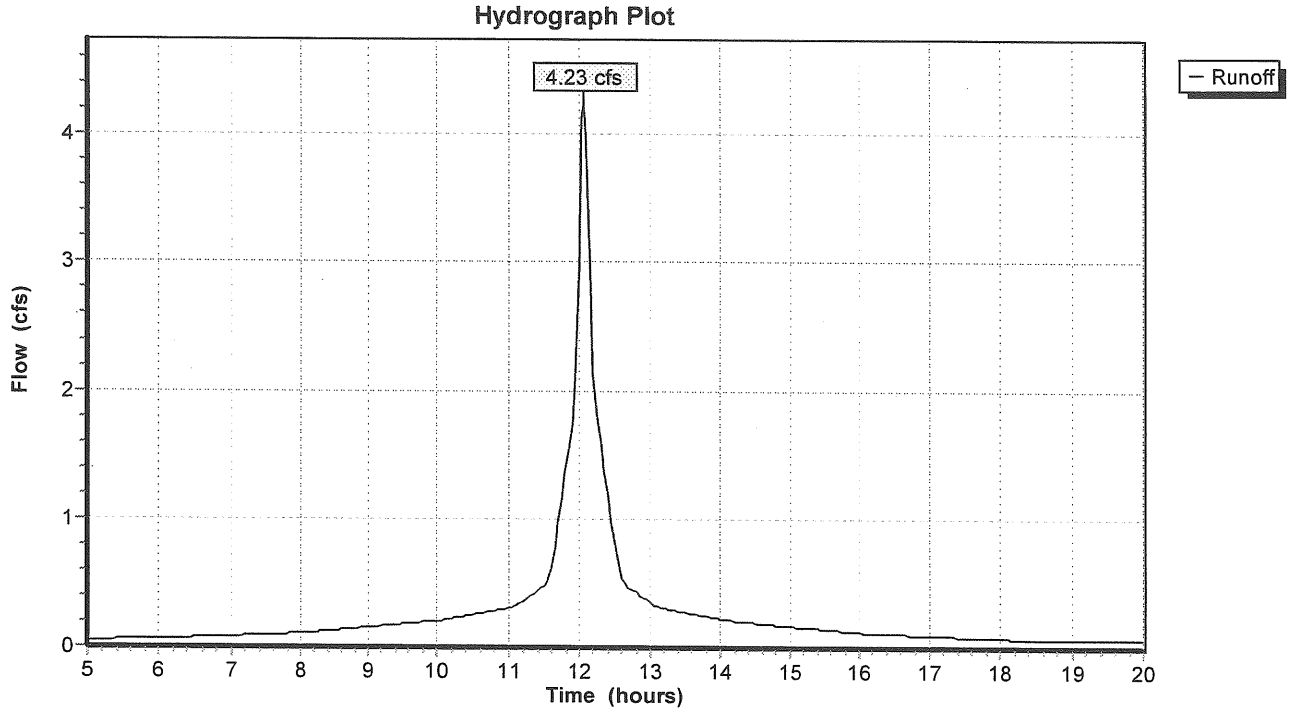
Runoff = 4.23 cfs @ 12.07 hrs, Volume= 0.317 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
33,315	98	Building
670	98	Paved
33,985	98	Weighted Average

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

Subcatchment 1BP: Parking Garage



Subcatchment 2P: Office Building

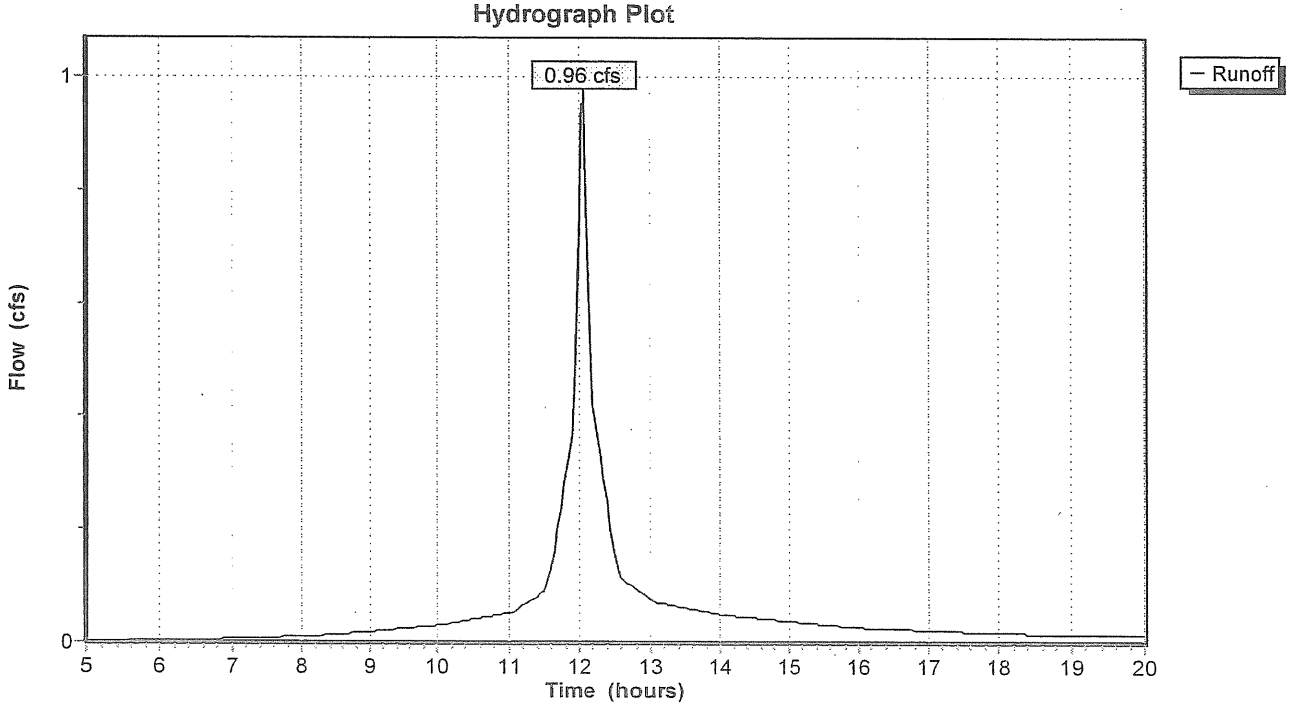
Runoff = 0.96 cfs @ 12.05 hrs, Volume= 0.062 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
5,810	98	Building
1,110	98	Paved roads w/curbs & sewers
1,350	39	>75% Grass cover, Good, HSG A
8,270	88	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	35	0.0560	0.2		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
0.6	65	0.0560	1.8		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0560	4.8		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
3.6	125	Total			

Subcatchment 2P: Office Building



Subcatchment 3P: Turner Barker

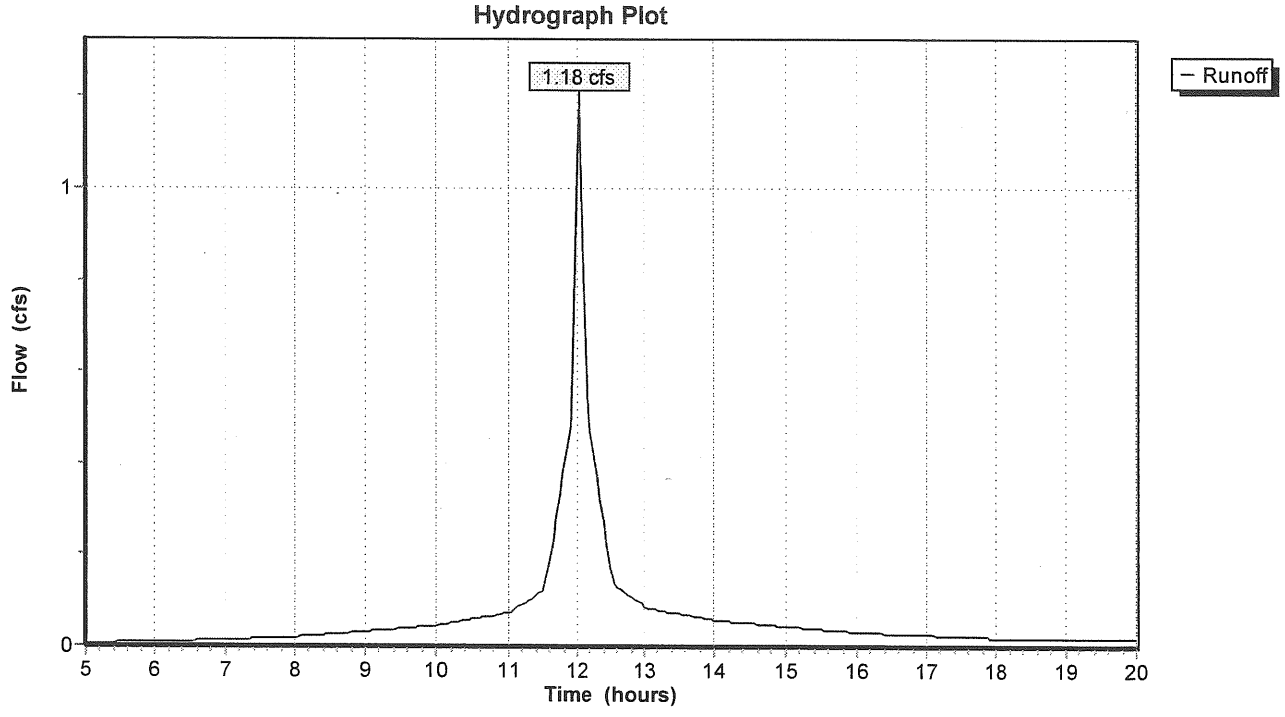
Runoff = 1.18 cfs @ 12.04 hrs, Volume= 0.078 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
4,000	98	Building
4,380	98	Paved parking & roofs
850	39	>75% Grass cover, Good, HSG A
9,230	93	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	5	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.2	95	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.2	40	0.0200	2.9		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
2.3	140	Total			

Subcatchment 3P: Turner Barker



Subcatchment 4P: Back of PS

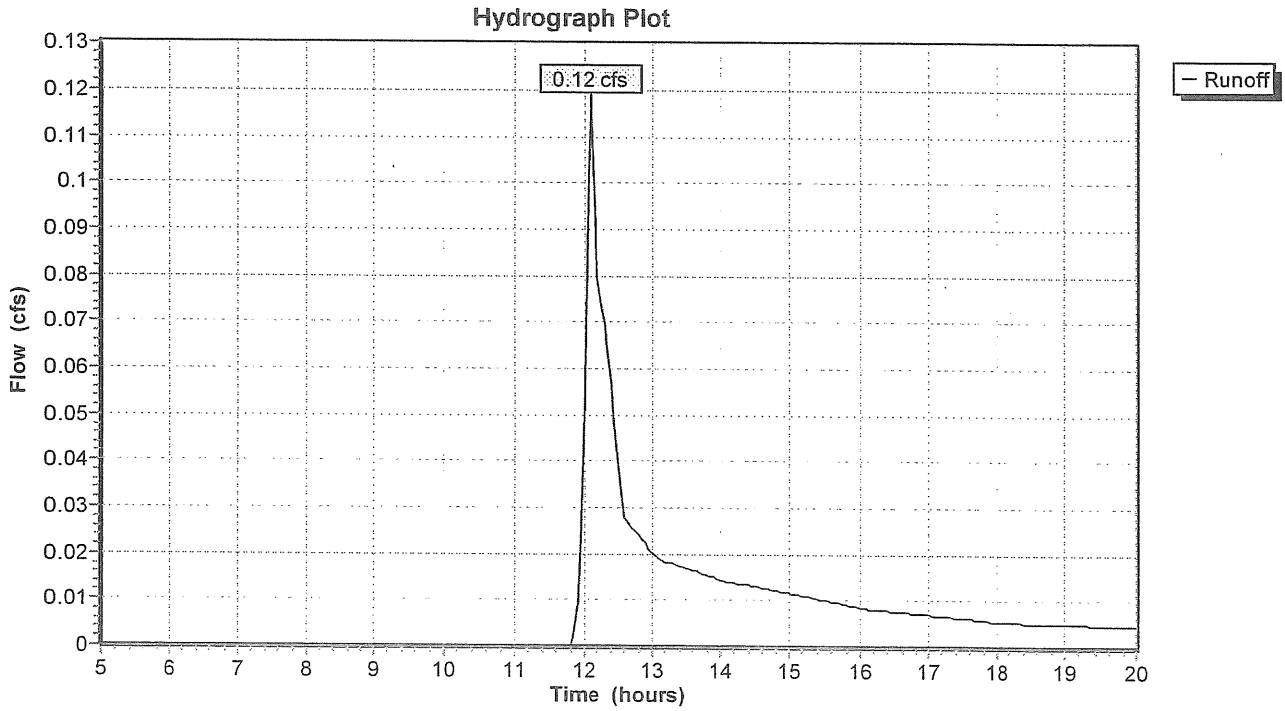
Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
1,195	98	Paved
5,155	39	>75% Grass cover, Good, HSG A
6,350	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	15	0.0200	0.1		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.00"
1.1	85	0.0200	1.3		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0150	2.0		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
4.2	210	Total			

Subcatchment 4P: Back of PS



Subcatchment 5AP: Luxury Complex

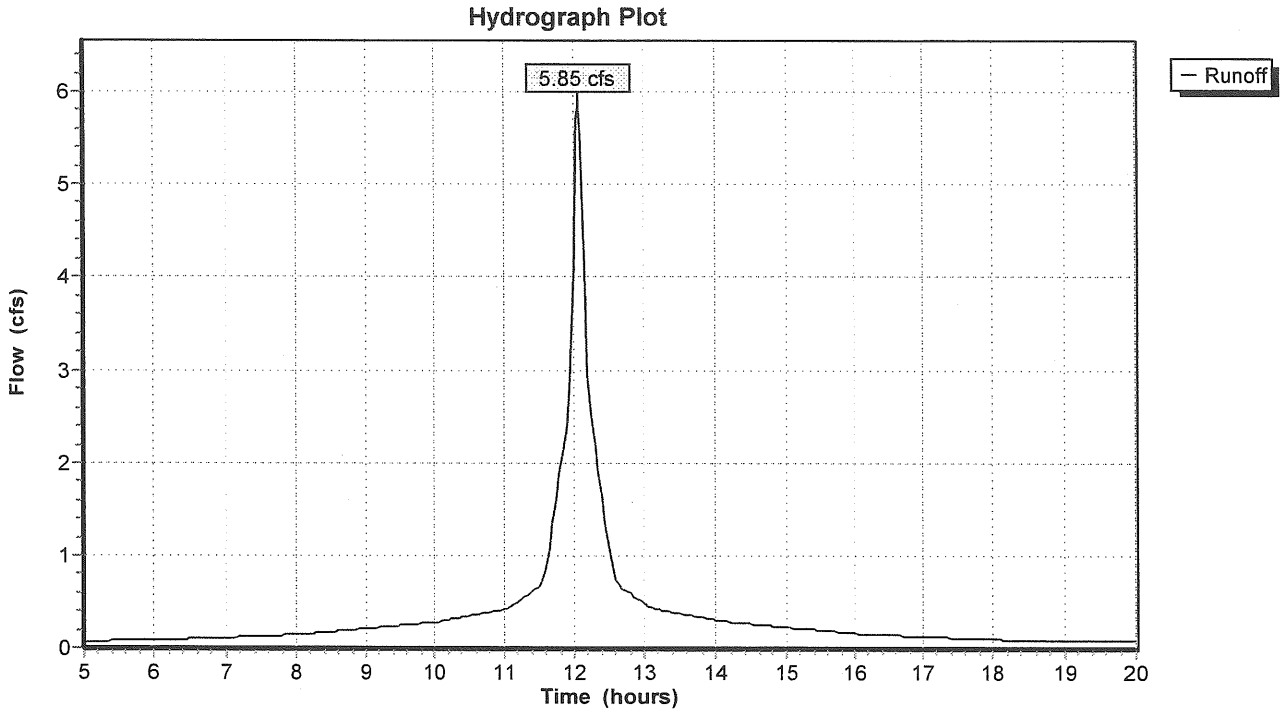
Runoff = 5.85 cfs @ 12.07 hrs, Volume= 0.439 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
46,460	98	Buildings
570	98	Paved
47,030	98	Weighted Average

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

Subcatchment 5AP: Luxury Complex



Subcatchment 5BP: Plaza

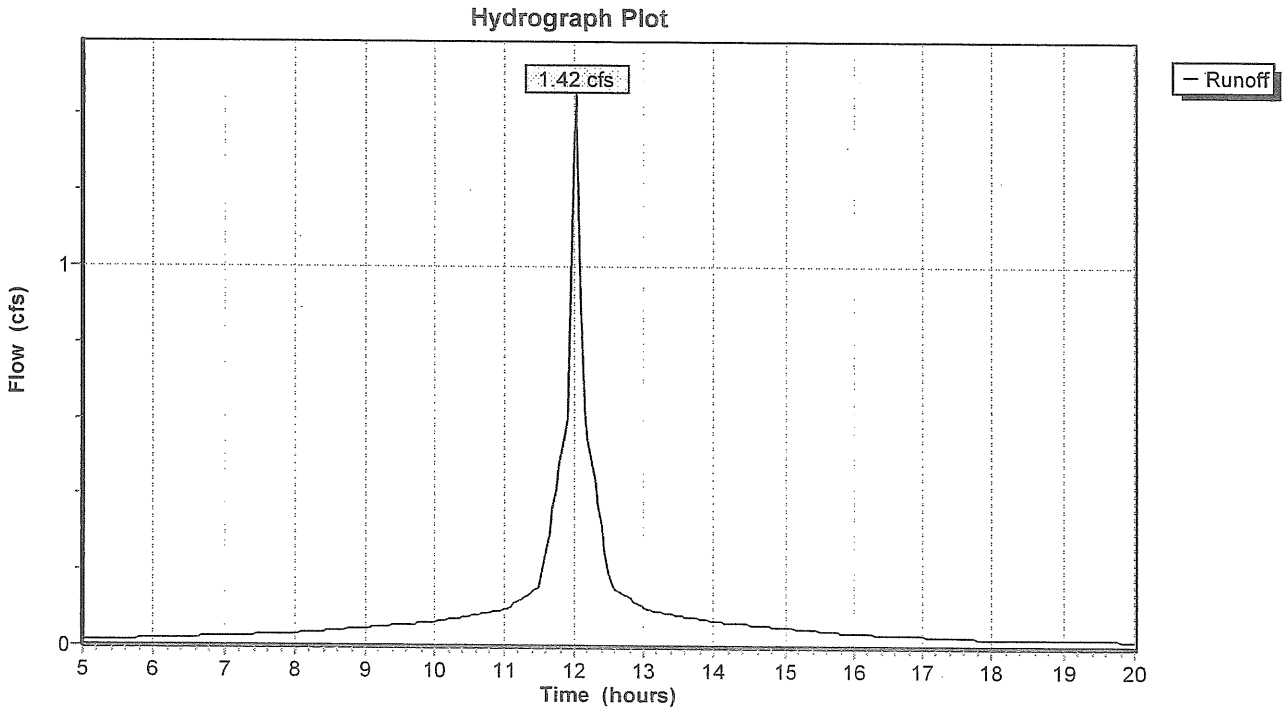
Runoff = 1.42 cfs @ 12.03 hrs, Volume= 0.099 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=5.50"

Area (sf)	CN	Description
10,520	98	Paved parking & roofs
70	39	>75% Grass cover, Good, HSG A
10,590	98	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0125	1.1		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.00"
0.4	60	0.0125	2.3		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
1.9	160	Total			

Subcatchment 5BP: Plaza

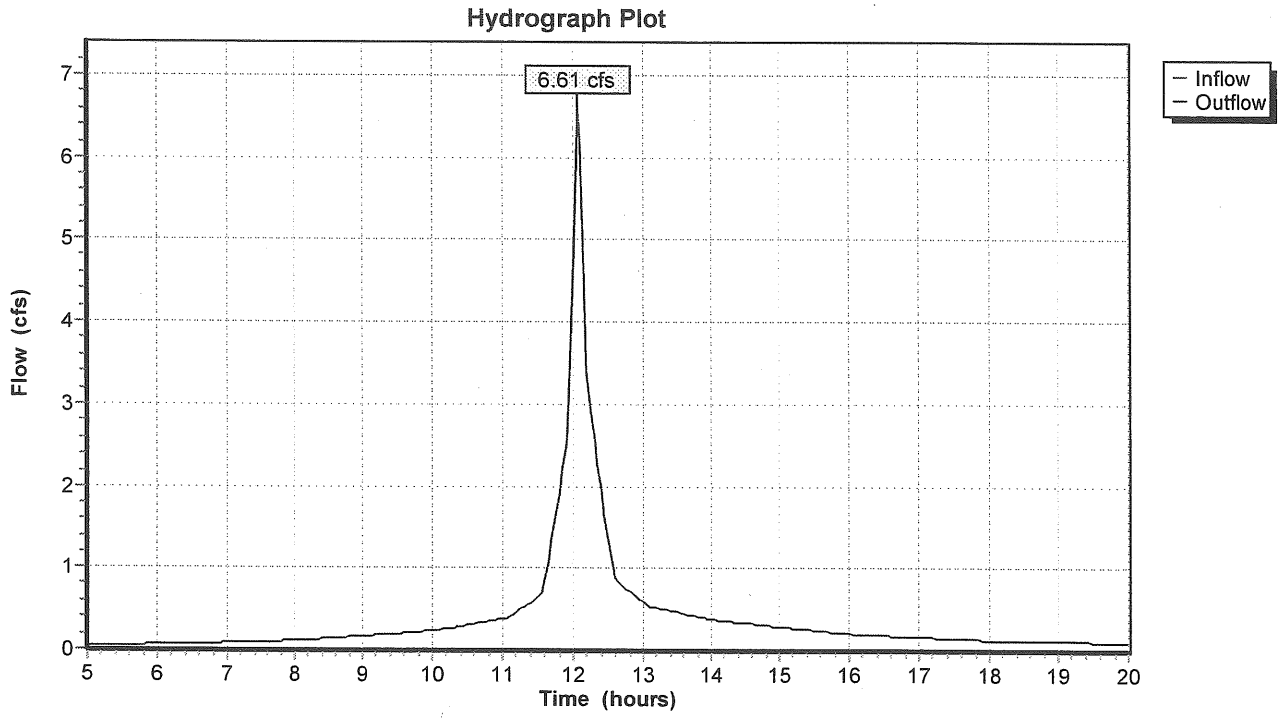


Reach CS: Combined Sewer

Inflow	=	6.61 cfs @	12.07 hrs, Volume=	0.477 af
Outflow	=	6.61 cfs @	12.07 hrs, Volume=	0.477 af, Atten= 0%, Lag= 0.0 min

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

Reach CS: Combined Sewer

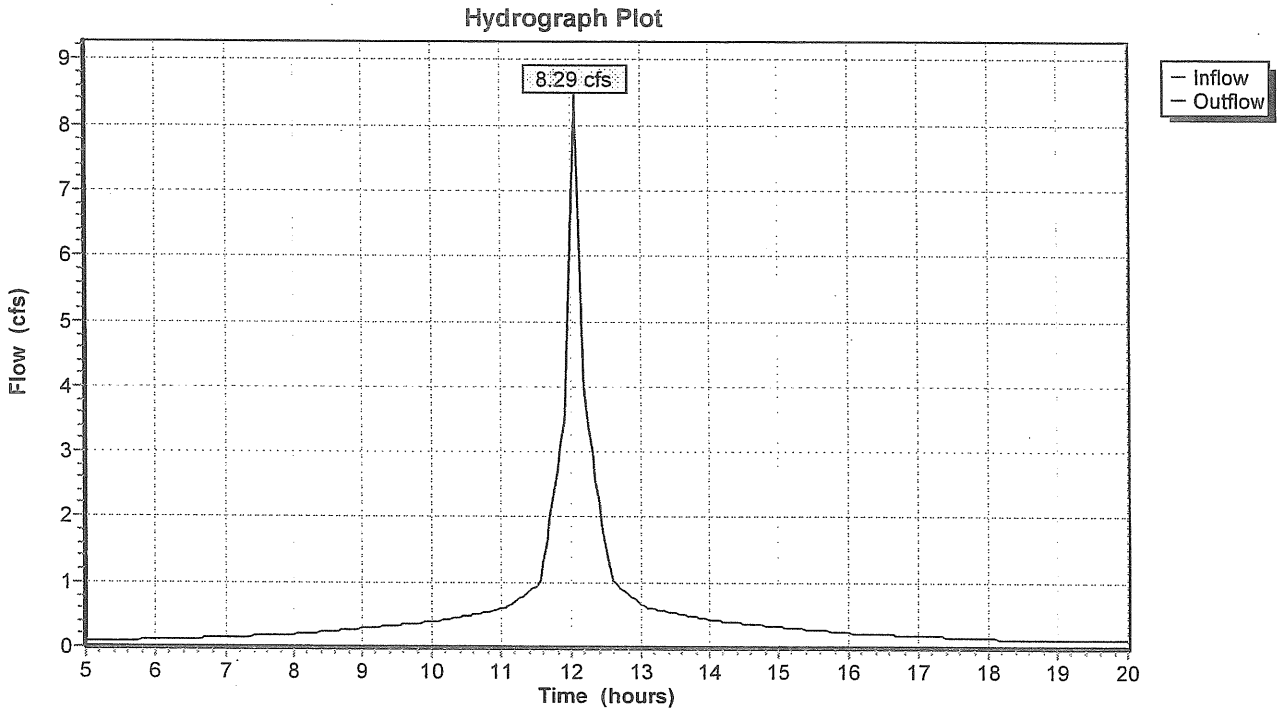


Reach FR: Fore River

Inflow = 8.29 cfs @ 12.06 hrs, Volume= 0.616 af
Outflow = 8.29 cfs @ 12.06 hrs, Volume= 0.616 af, Atten= 0%, Lag= 0.0 min

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

Reach FR: Fore River

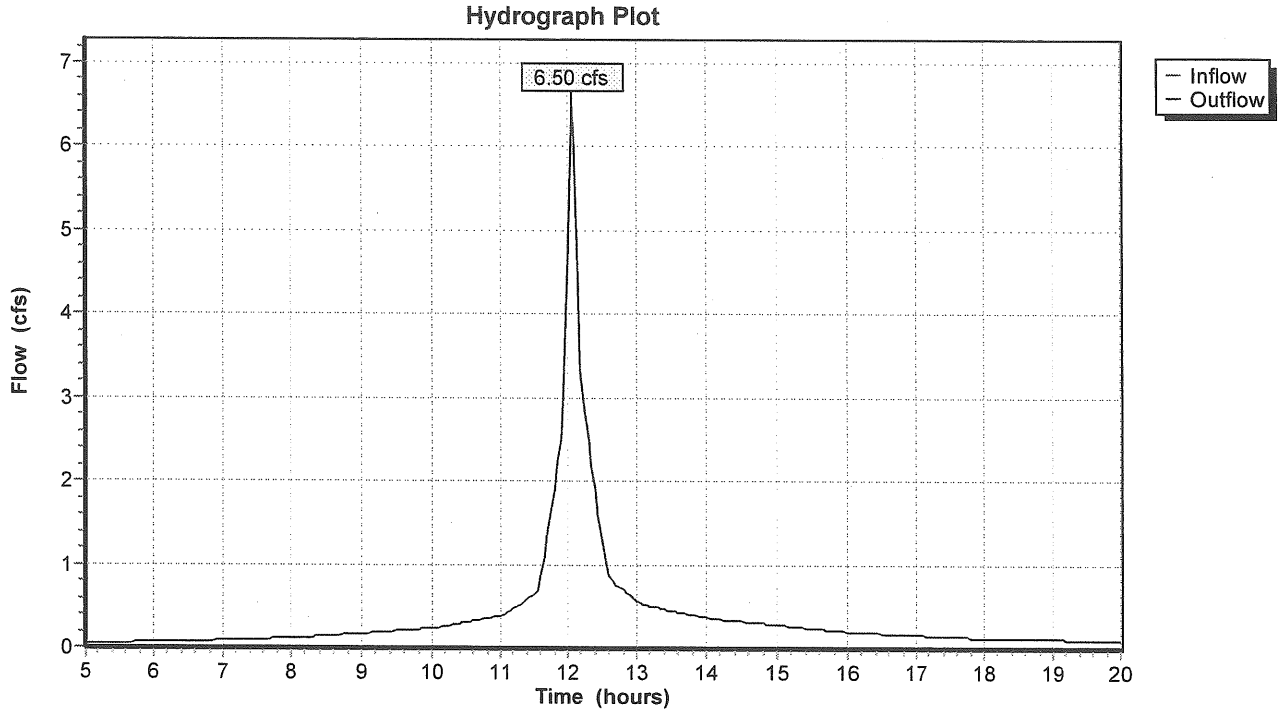


Reach S1: (new node)

Inflow = 6.50 cfs @ 12.07 hrs, Volume= 0.468 af
Outflow = 6.50 cfs @ 12.07 hrs, Volume= 0.468 af, Atten= 0%, Lag= 0.0 min

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

Reach S1: (new node)

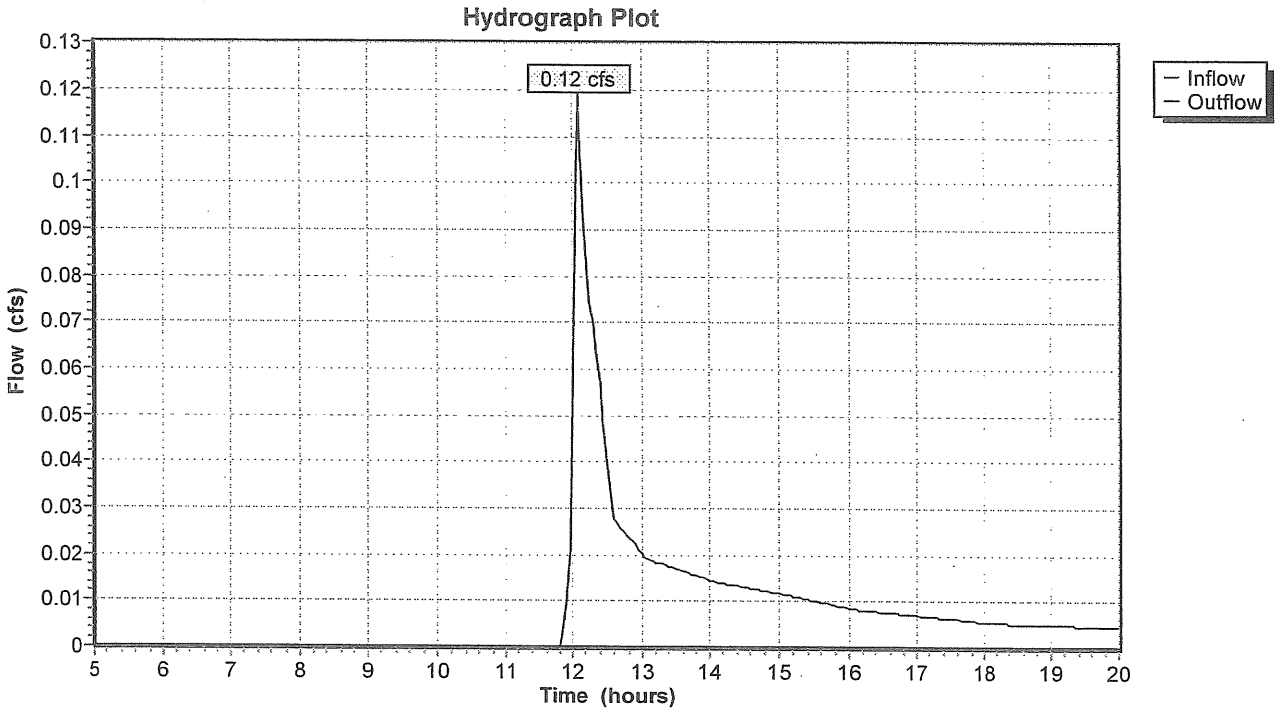


Reach S2: (new node)

Inflow = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

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

Reach S2: (new node)

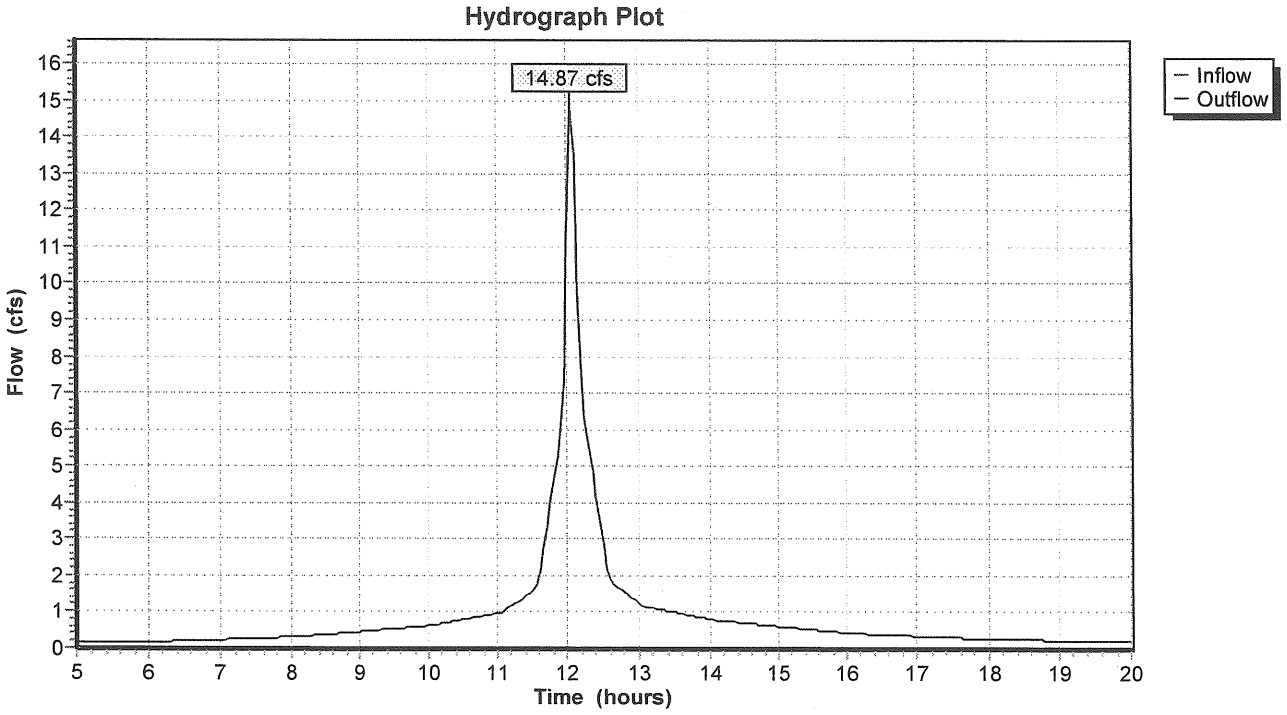


Reach TOT: (new node)

Inflow = 14.87 cfs @ 12.06 hrs, Volume= 1.093 af
Outflow = 14.87 cfs @ 12.06 hrs, Volume= 1.093 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)



Temporary Erosion Control:

Measure	Dates for use	Timing, Activity, and Location
Sedimentation Barrier	All	Before soil disturbance, install downhill of disturbed areas and around material stockpiles.
Up–slope Diversion	All	Before soil disturbance, install uphill of disturbed areas and around material stockpiles.
Dust Control	All	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 1	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days. If grass growth provides less than 95% soil coverage by Nov. 1, apply mulch and anchor with netting or hydraulically applied bonded fiber matrix.
Mulch	April 15 to Sept. 15	On all areas of exposed soil that are not temporarily seeded or that will not be disturbed again within 14 days, apply 70 to 90 lbs. mulch (2 bales) per 1,000 sq. ft. within the 21 day period.
Winter Mulch	Sept. 16 to Oct. 31	On all areas of exposed soil that are not temporarily seeded or that will not be disturbed again within 7 days, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. within the 7 day period. Erosion control blanket may be used as a substitute for winter mulch.
	Nov. 1 to April 14	On all areas of exposed soil that are not temporarily seeded, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. and anchor with netting, at the end of each working day. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and maintain and repair as necessary

Permanent Erosion Control:

Measure	Dates for use	Timing, Activity, and Location
Pavement – Base Course – Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation. prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil. Apply seed at double the specified rate on bare soil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	All	Install with final landscaping.

Table (Cont'd)
Pass-By Trips and Diverted Linked Trips
Weekday, P.M. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FEET GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE DAILY TRAFFIC	SOURCE
921	Albany, NY	Jul. & Aug. 1985	196	4-6 P.M.	42	-	35	23	n/a	60,950	Raymond Keyes Assoc.
108	Overland Park, KS	Jul. 1988	111	4:30-5:30 P.M.	61	-	13	26	n/a	34,000	n/a
118	Overland Park, KS	Aug. 1988	123	4:30-5:30 P.M.	55	-	20	25	n/a	-	n/a
256	Greece, NY	Jun. 1988	120	4-6 P.M.	62	-	-	38	n/a	23,410	Sear Brown
160	Greece, NY	Jun. 1988	78	4-6 P.M.	71	-	-	29	n/a	57,306	Sear Brown
550	Greece, NY	Jun. 1988	117	4-6 P.M.	52	-	-	48	n/a	40,763	Sear Brown
51	Boca Raton, FL	Dec. 1987	110	4-6 P.M.	34	-	33	33	n/a	42,225	Kimley-Horn and Assoc.
1,090	Ross Twp, PA	Jul. 1988	411	2-8 P.M.	56	-	10	34	n/a	51,500	Wilbur Smith and Assoc.
97	Upper Dublin Twp, PA	Winter 1988/89	n/a	4-6 P.M.	-	59	-	41	n/a	34,000	McMahon Associates
118	Tredyffrin Twp, PA	Winter 1988/89	n/a	4-6 P.M.	-	76	-	24	n/a	10,000	Booz Allen & Hamilton
122	Lawnside, NJ	Winter 1988/89	n/a	4-6 P.M.	-	63	-	37	n/a	20,000	Pennoni Associates
126	Boca Raton, FL	Winter 1988/89	n/a	4-6 P.M.	-	57	-	43	n/a	40,000	McMahon Associates
150	Willow Grove, PA	Winter 1988/89	n/a	4-6 P.M.	-	61	-	39	n/a	26,000	Booz Allen & Hamilton
153	Broward Cnty, FL	Winter 1988/89	n/a	4-6 P.M.	-	50	-	50	n/a	85,000	McMahon Associates
153	Arden, DE	Winter 1988/89	n/a	4-6 P.M.	-	70	-	30	n/a	26,000	Orth Rodgers
154	Doylestown, PA	Winter 1988/89	n/a	4-6 P.M.	-	68	-	32	n/a	29,000	Orth Rodgers
164	Middletown Twp, PA	Winter 1988/89	n/a	4-6 P.M.	-	67	-	33	n/a	25,000	Booz Allen & Hamilton
166	Haddon Twp, NJ	Winter 1988/89	n/a	4-6 P.M.	-	80	-	20	n/a	6,000	Pennoni Associates
205	Broward Cnty, FL	Winter 1988/89	n/a	4-6 P.M.	-	45	-	55	n/a	62,000	McMahon Associates
				AVG	54	63	[illegible]	35			

Table 5.4 (Cont'd)
Pass-By Trips and Diverted Linked Trips
Weekday, P.M. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FEET GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE DAILY TRAFFIC	SOURCE
237	W Windsor Twp, NJ	Winter 1988/89	n/a	4-6 P.M.	-	52	-	48	n/a	46,000	Booz Allen & Hamilton
242	Willow Grove, PA	Winter 1988/89	n/a	4-6 P.M.	-	63	-	37	n/a	26,000	McMahon Associates
297	Whitehall, PA	Winter 1988/89	n/a	4-6 P.M.	-	67	-	33	n/a	26,000	Orth Rodgers
360	Broward County, FL	Winter 1988/89	n/a	4-6 P.M.	-	56	-	44	n/a	73,000	McMahon Associates
370	Pittsburgh, PA	Winter 1988/89	n/a	4-6 P.M.	-	81	-	19	n/a	33,000	Wilbur Smith
150	Portland, OR	n/a	519	4-6 P.M.	6	-	26	68	n/a	25,000	Kittleson and Associates
150	Portland, OR	n/a	655	4-6 P.M.	7	-	28	65	n/a	30,000	Kittleson and Associates
760	Calgary, Alberta	Oct-Dec 1987	15,436	4-6 P.M.	39	-	41	20	n/a	n/a	City of Calgary DOT
178	Bordentown, NJ	Apr. 1989	154	2-6 P.M.	-	65	-	35	n/a	37,980	Raymond Keyes Assoc.
144	Manalapan, NJ	Jul. 1990	176	3:30-6:15 P.M.	44	-	24	32	n/a	69,347	Raymond Keyes Assoc.
549	Natick, MA	Feb. 1989	n/a	4:45-5:45 P.M.	26	-	41	33	n/a	48,782	Raymond Keyes Assoc.
				AVG	24	64	32	34			

Average Pass-By Trip Percentage: 34

TOTAL AVG: 40.6 62 27 35

Table 5.6
Pass-By Trips and Diverted Linked Trips
Weekday, P.M. Peak Period

Land Use 831—Quality Restaurant

SEATS	SIZE (1,000 SQ. FEET GFA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	SOURCE
240	12	Louisville area, KY	Jul. 1993	38	4-6 P.M.	36	-	38	26	4,145	Barton-Aschman Assoc.
n/a	8	Orlando, FL	1992	168	4-8 P.M.	-	55	-	45	n/a	TPD, Inc.
n/a	8.8	Orlando, FL	1992	84	2-6 P.M.	40	-	16	44	n/a	TPD, Inc.
n/a	6.5	Orlando, FL	1995	173	2-6 P.M.	-	38	-	62	n/a	TPD, Inc.

Average Pass-By Trip Percentage: 44

36% 47% 27% 44%

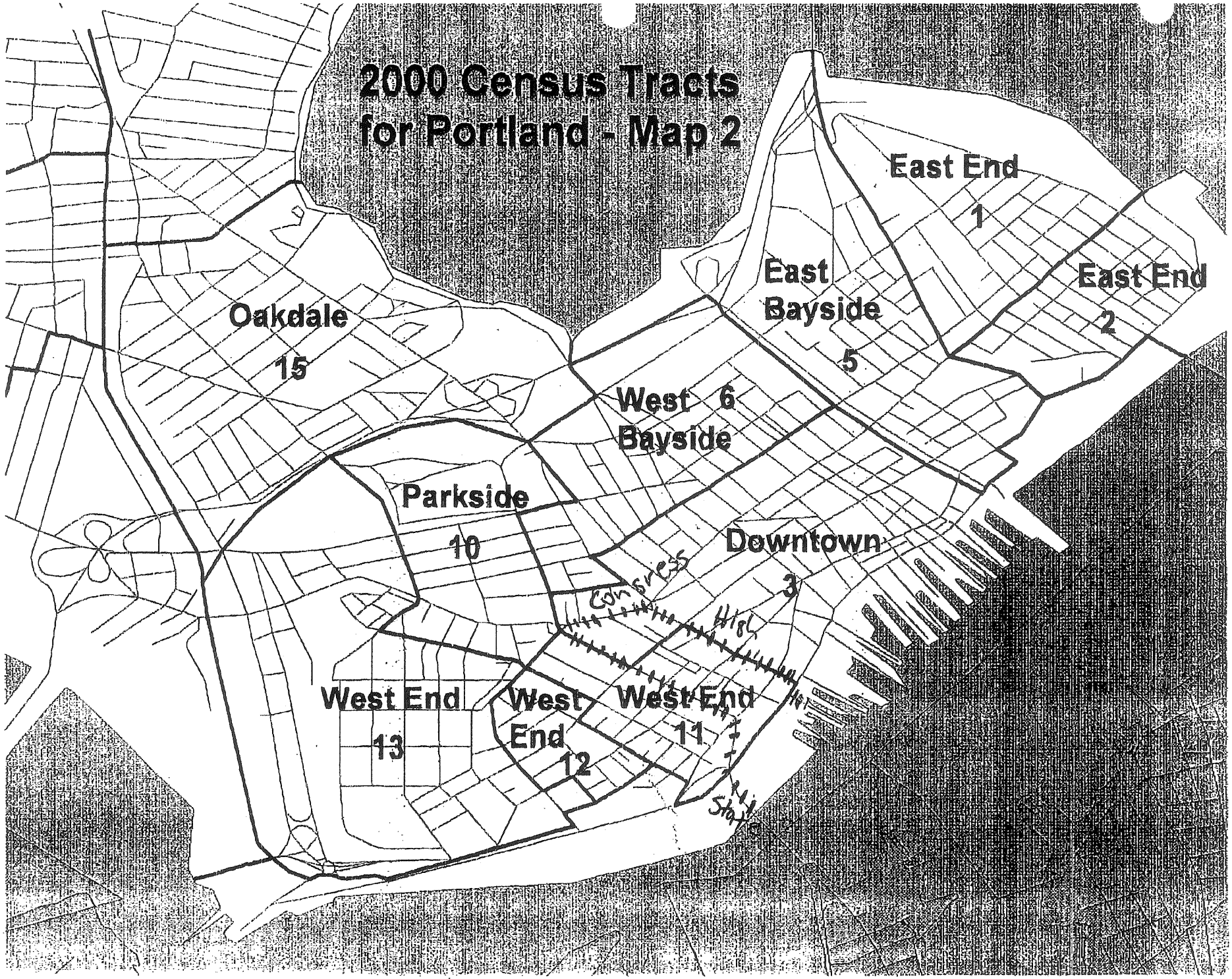
COUNTY	CNTYNAME		TRACT	PLACEFP	PLACENM	POP	AFACT
000000 3/16/2002							
000000 3 3.00 Rev. 98 Process: 10678 (SEDAC-CIESIN, Columbia University, Run 1 August 2002							
23005	Cumberland M	E	1	60545	Portland	2561	1
23005	Cumberland M	E	2	60545	Portland	2762	1
23005	Cumberland M	E	3	60545	Portland	331	1
23005	Cumberland M	E	3.99	60545	Portland	0	
23005	Cumberland M	E	4	60545	Portland	2918	1
23005	Cumberland M	E	5	60545	Portland	2289	1
23005	Cumberland M	E	6	60545	Portland	799	1
23005	Cumberland M	E	9	60545	Portland	1645	1
23005	Cumberland M	E	10	60545	Portland	2644	1
23005	Cumberland M	E	11	60545	Portland	2441	1
23005	Cumberland M	E	12	60545	Portland	1656	1
23005	Cumberland M	E	13	60545	Portland	2053	1
23005	Cumberland M	E	14	60545	Portland	1304	1
23005	Cumberland M	E	15	60545	Portland	3315	1
23005	Cumberland M	E	16	60545	Portland	1758	1
23005	Cumberland M	E	17	60545	Portland	4572	1
23005	Cumberland M	E	18	60545	Portland	3785	1
23005	Cumberland M	E	19	60545	Portland	4581	1
23005	Cumberland M	E	20.01	60545	Portland	3734	1
23005	Cumberland M	E	20.02	60545	Portland	601	1
23005	Cumberland M	E	21.01	60545	Portland	5464	1
23005	Cumberland M	E	21.02	60545	Portland	4372	1
23005	Cumberland M	E	22	60545	Portland	4162	1
23005	Cumberland M	E	23	60545	Portland	3520	1
23005	Cumberland M	E	24	60545	Portland	1091	1
23005	Cumberland M	E	25.01	24530	Falmouth Foreside		0.539
23005	Cumberland M	E	25.01	99999		1458	0.461
23005	Cumberland M	E	25.02	99999		4444	1
23005	Cumberland M	E	26	82105	Westbrook	3517	1
23005	Cumberland M	E	27	82105	Westbrook	3836	1
23005	Cumberland M	E	28	82105	Westbrook	2978	1
23005	Cumberland M	E	29	82105	Westbrook	5790	1
23005	Cumberland M	E	30	71990	South Portland		1
23005	Cumberland M	E	31	71990	South Portland		1
23005	Cumberland M	E	32	71990	South Portland		1
23005	Cumberland M	E	33	71990	South Portland		1
23005	Cumberland M	E	34	71990	South Portland		1
23005	Cumberland M	E	35	71990	South Portland		1
23005	Cumberland M	E	35.99	71990	South Portland		1
23005	Cumberland M	E	36	71990	South Portland		1
23005	Cumberland M	E	37.01	71990	South Portland		0.004
23005	Cumberland M	E	37.01	99999		3865	0.996
23005	Cumberland M	E	37.02	99999		4989	1
23005	Cumberland M	E	38	99999		5993	1
23005	Cumberland M	E	39	66110	Scarborough		0.396
23005	Cumberland M	E	39	71990	South Portland		0
23005	Cumberland M	E	39	99999		3939	0.604
23005	Cumberland M	E	40.01	28205	Gorham	32	0.015
23005	Cumberland M	E	40.01	99999		2138	0.985

23005	Cumberland	M	E	40.02	28205	Gorham	3586	0.665
23005	Cumberland	M	E	40.02	99999		1805	0.335
23005	Cumberland	M	E	41	40367	Little Fal	ls-South W	0.149
23005	Cumberland	M	E	41	99999		3657	0.851
23005	Cumberland	M	E	42	15500	Cumberlar	Center	0.322
23005	Cumberland	M	E	42	87810	Yarmouth	0	0
23005	Cumberland	M	E	42	99999		3977	0.678
23005	Cumberland	M	E	44.01	87810	Yarmouth	2267	0.494
23005	Cumberland	M	E	44.01	99999		2318	0.506
23005	Cumberland	M	E	44.02	87810	Yarmouth	1071	0.327
23005	Cumberland	M	E	44.02	99999		2206	0.673
23005	Cumberland	M	E	45	26490	Freeport	1829	0.265
23005	Cumberland	M	E	45	99999		5076	0.735
23005	Cumberland	M	E	46	87810	Yarmouth	0	0
23005	Cumberland	M	E	46	99999		2398	1
23005	Cumberland	M	E	47	99999		5904	1
23005	Cumberland	M	E	48.01	53685	North Win	ham	0.664
23005	Cumberland	M	E	48.01	99999		1893	0.336
23005	Cumberland	M	E	48.02	53685	North Win	ham	0.108
23005	Cumberland	M	E	48.02	99999		2748	0.892
23005	Cumberland	M	E	48.03	40367	Little Fal	ls-South W	0.25
23005	Cumberland	M	E	48.03	99999		3225	0.75
23005	Cumberland	M	E	100	99999		5012	1
23005	Cumberland	M	E	111	8395	Brunswick	1939	0.38
23005	Cumberland	M	E	111	8500	Brunswick	Station	0.358
23005	Cumberland	M	E	111	99999		1338	0.262
23005	Cumberland	M	E	112	8395	Brunswick	166	1
23005	Cumberland	M	E	112.01	8395	Brunswick	5461	0.786
23005	Cumberland	M	E	112.01	8500	Brunswick	Station	0
23005	Cumberland	M	E	112.01	99999		1489	0.214
23005	Cumberland	M	E	112.02	8395	Brunswick	7117	1
23005	Cumberland	M	E	112.02	8500	Brunswick	Station	0
23005	Cumberland	M	E	113	8395	Brunswick	0	0
23005	Cumberland	M	E	113	99999		1567	1
23005	Cumberland	M	E	115	99999		5178	1
23005	Cumberland	M	E	120	99999		3311	1
23005	Cumberland	M	E	130	99999		3018	1
23005	Cumberland	M	E	140	99999		2860	1
23005	Cumberland	M	E	150.98	99999		1951	1
23005	Cumberland	M	E	160.98	7135	Bridgton	2195	0.51
23005	Cumberland	M	E	160.98	99999		2108	0.49
23005	Cumberland	M	E	165	99999		2478	1
23005	Cumberland	M	E	170	99999		7678	1
23005	Cumberland	M	E	171.97	99999		4	1
23005	Cumberland	M	E	171.98	99999		0	.

COUNTY CNTYNAME TRACT PLACEFP PLACENM POP AFACT

000000 3/16/2002

000000 3 3.00 Rev. 98 Process: 10678 (SEDAC-CIESIN, Columbia University, Run 1 August 2002



U.S. Census Bureau
American FactFinder

Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

Result contains 1 row.

	P030001	P030002	P030003	P030004	P030005	P030006	P030007	P030008	P030009	P030010	P030011	P030012	P03(
	Workers 16 years and over: Total	Workers 16 years and over: Means of transportation to work; Car; truck; or van	Workers 16 years and over: Means of transportation to work; Car; truck; or van; Drove alone	Workers 16 years and over: Means of transportation to work; Car; truck; or van; Carpooled	Workers 16 years and over: Means of transportation to work; Public transportation	Workers 16 years and over: Means of transportation to work; Public transportation; Bus or trolley bus	Workers 16 years and over: Means of transportation to work; Public transportation; Streetcar or trolley car (p·blico in Puerto Rico)	Workers 16 years and over: Means of transportation to work; Public transportation; Subway or elevated	Workers 16 years and over: Means of transportation to work; Public transportation; Railroad	Workers 16 years and over: Means of transportation to work; Public transportation; Ferryboat	Workers 16 years and over: Means of transportation to work; Public transportation; Taxicab	Workers 16 years and over: Means of transportation to work; Motorcycle	Work(years over: I (transp(to w Bic
Maine	615,144	552,525	483,317	69,208	5,217	3,220	84	135	77	451	1,250	234	

NOTE: A hyphen (-) indicates that data are not available for this geographic area for the selected data element (column) in your custom table. Please consult the Census 2000 Summary File 3 (SF 3) - Sample Data Technical Documentation (PDF 6.92MB) for more information.

96% drove to work

U.S. Census Bureau
American FactFinder

Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

Result contains 9 rows.

	P030001	P030002	P030003	P030004	P030005	P030006	P030007	P030008	P030009	P030010	P030011	P030012
	Workers 16 years and over: Total	Workers 16 years and over: Means of transportation to work; Car; truck; or van	Workers 16 years and over: Means of transportation to work; Car; truck; or van; Drove alone	Workers 16 years and over: Means of transportation to work; Car; truck; or van; Carpooled	Workers 16 years and over: Means of transportation to work; Public transportation	Workers 16 years and over: Means of transportation to work; Public transportation; Bus or trolley bus	Workers 16 years and over: Means of transportation to work; Public transportation; Streetcar or trolley car (p·blico in Puerto Rico)	Workers 16 years and over: Means of transportation to work; Public transportation; Subway or elevated	Workers 16 years and over: Means of transportation to work; Public transportation; Railroad	Workers 16 years and over: Means of transportation to work; Public transportation; Ferryboat	Workers 16 years and over: Means of transportation to work; Public transportation; Taxicab	Workers 16 years and over: Means of transportation to work; Motorcycle
Census Tract 1, Cumberland County, Maine	1,201	943	759	184	67	51	0	0	0	0	16	0
Census Tract 2, Cumberland County, Maine	1,489	1,199	1,048	151	68	51	0	0	0	0	17	0
Census Tract 3, Cumberland County, Maine	1,644	876	812	64	166	131	0	9	0	0	26	0
Census Tract 5, Cumberland County, Maine	871	682	530	152	59	59	0	0	0	0	0	0
Census Tract 6, Cumberland County, Maine	1,316	867	682	185	109	84	0	0	0	0	25	0
Census Tract 10, Cumberland County, Maine	1,766	1,144	865	279	121	102	0	0	0	0	19	8

	P030001	P030002	P030003	P030004	P030005	P030006	P030007	P030008	P030009	P030010	P030011	P030012
	Workers 16 years and over: Total	Workers 16 years and over: Means of transportation to work; Car; truck; or van	Workers 16 years and over: Means of transportation to work; Car; truck; or van; Drove alone	Workers 16 years and over: Means of transportation to work; Car; truck; or van; Carpooled	Workers 16 years and over: Means of transportation to work; Public transportation	Workers 16 years and over: Means of transportation to work; Public transportation; Bus or trolley bus	Workers 16 years and over: Means of transportation to work; Public transportation; Streetcar or trolley car (p·blico in Puerto Rico)	Workers 16 years and over: Means of transportation to work; Public transportation; Subway or elevated	Workers 16 years and over: Means of transportation to work; Public transportation; Railroad	Workers 16 years and over: Means of transportation to work; Public transportation; Ferryboat	Workers 16 years and over: Means of transportation to work; Public transportation; Taxicab	Workers 16 years and over: Means of transportation to work; Motorcycle
Census Tract 11, Cumberland County, Maine	1,432	957	819	138	33	33	0	0	0	0	0	8
Census Tract 12, Cumberland County, Maine	792	565	446	119	6	6	0	0	0	0	0	0
Census Tract 13, Cumberland County, Maine	2,037	1,365	1,161	204	121	107	0	0	0	0	14	0

12,548 8,608

NOTE: A hyphen (-) indicates that data are not available for this geographic area for the selected data element (column) in your custom table. Please consult the Census 2000 Summary File 3 (SF 3) - Sample Data Technical Documentation (PDF 6.92MB) for more information.

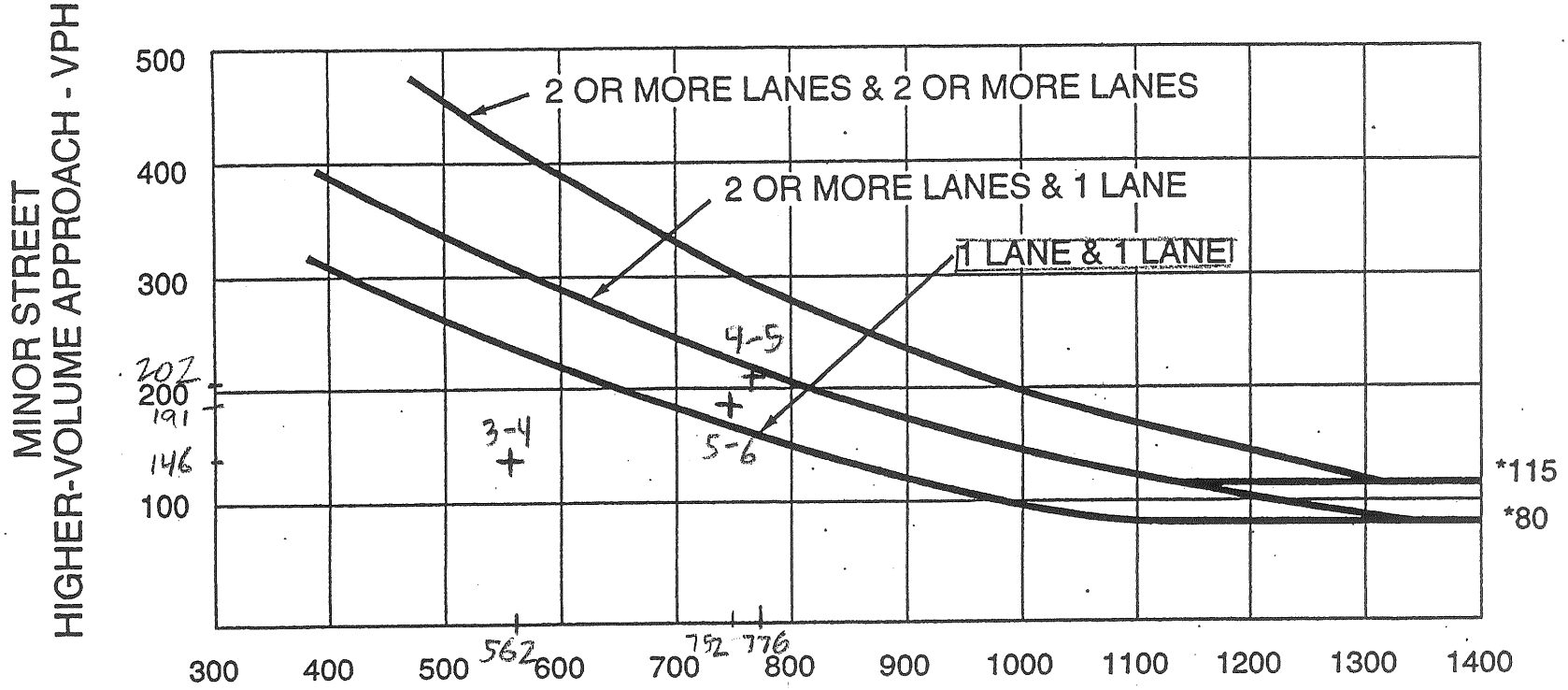
69% drove to work (23% reduction)

JN 9'4
Feb 2006

The Longfellow
Portland, Maine

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

India Street at Middle Street



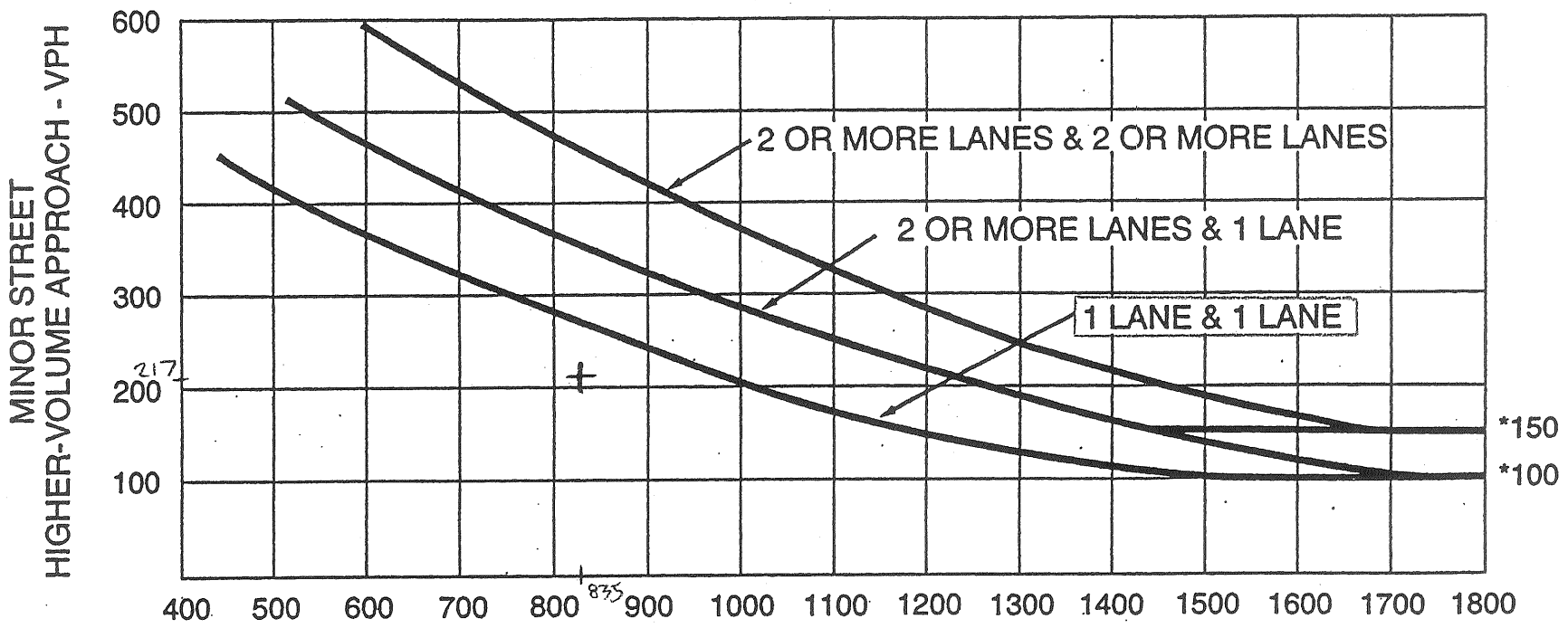
*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

JN 9 1
Feb 2006

The Long Row
Portland, ME

Figure 4C-3. Warrant 3, Peak Hour

India Street at Middle Street
Based on forecast 2007 Volumes
PM Peak: 4:30-5:30 PM



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Gorrill-Palmer Consulting Engineers, Inc.

15 Shaker Road
P.O. Box 1237
Gray, Maine 04039
Traffic and Civil Engineering Services

ation: PORTLAND
Counter: EB
DB-400
Weather: RAIN

File Name : FRANKLINART@MIDDLE_PM
Site Code : 00001317
Start Date : 10/25/2005
Page No : 1

Groups Printed- Cars - Single Unit Trucks - Combintation Vehicles

	FRANKLIN ART From North					MIDDLE ST From East					FRANKLIN ART From South					MIDDLE ST From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	14	63	11	6	94	7	12	2	0	21	0	57	6	2	65	5	16	30	3	54	234
03:15 PM	10	60	3	6	79	6	17	0	5	28	6	63	2	6	77	7	22	27	0	56	240
03:30 PM	20	49	11	7	87	10	19	5	2	36	1	97	4	4	106	5	13	32	0	50	279
03:45 PM	23	58	13	5	99	19	16	1	1	37	4	78	5	3	90	12	23	41	0	76	302
Total	67	230	38	24	359	42	64	8	8	122	11	295	17	15	338	29	74	130	3	236	1055
04:00 PM	16	52	16	2	86	4	13	2	0	19	3	82	4	2	91	6	28	74	0	108	304
04:15 PM	21	64	7	6	98	9	13	3	3	28	3	91	3	4	101	5	26	56	1	88	315
04:30 PM	21	49	6	3	79	7	28	2	1	38	4	102	9	7	122	10	24	56	0	90	329
04:45 PM	11	57	6	2	76	7	19	3	0	29	1	101	3	4	109	9	30	43	0	82	296
Total	69	222	35	13	339	27	73	10	4	114	11	376	19	17	423	30	108	229	1	368	1244
05:00 PM	19	62	5	1	87	19	21	2	1	43	4	144	3	7	158	10	46	71	0	127	415
05:15 PM	15	75	8	2	100	7	20	2	3	32	1	109	5	6	121	7	35	35	0	77	330
05:30 PM	17	68	14	1	100	8	20	3	0	31	2	93	6	2	103	6	22	44	0	72	306
05:45 PM	16	67	12	5	100	9	16	1	0	26	4	64	9	0	77	8	22	28	0	58	261
Total	67	272	39	9	387	43	77	8	4	132	11	410	23	15	459	31	125	178	0	334	1312
Grand Total	203	724	112	46	1085	112	214	26	16	368	33	1081	59	47	1220	90	307	537	4	938	3611
Arch %	18.7	66.7	10.3	4.2		30.4	58.2	7.1	4.3		2.7	88.6	4.8	3.9		9.6	32.7	57.2	0.4		
Total %	5.6	20	3.1	1.3	30	3.1	5.9	0.7	0.4	10.2	0.9	29.9	1.6	1.3	33.8	2.5	8.5	14.9	0.1	26	
Cars	198	714	112	43	1067	106	213	25	16	360	31	1056	58	46	1191	83	305	531	4	923	3541
% Cars	97.5	98.6	100	93.5	98.3	94.6	99.5	96.2	100	97.8	93.9	97.7	98.3	97.9	97.6	92.2	99.3	98.9	100	98.4	98.1
Single Unit Trucks	5	9	0	3	17	4	1	1	0	6	2	14	1	1	18	7	2	5	0	14	55
% Single Unit Trucks	2.5	1.2	0	6.5	1.6	3.6	0.5	3.8	0	1.6	6.1	1.3	1.7	2.1	1.5	7.8	0.7	0.9	0	1.5	1.5
Combintation Vehicles	0	1	0	0	1	2	0	0	0	2	0	11	0	0	11	0	0	1	0	1	15
% Combintation Vehicles	0	0.1	0	0	0.1	1.8	0	0	0	0.5	0	1	0	0	0.9	0	0	0.2	0	0.1	0.4

Gorrill-Palmer Consulting Engineers, Inc.

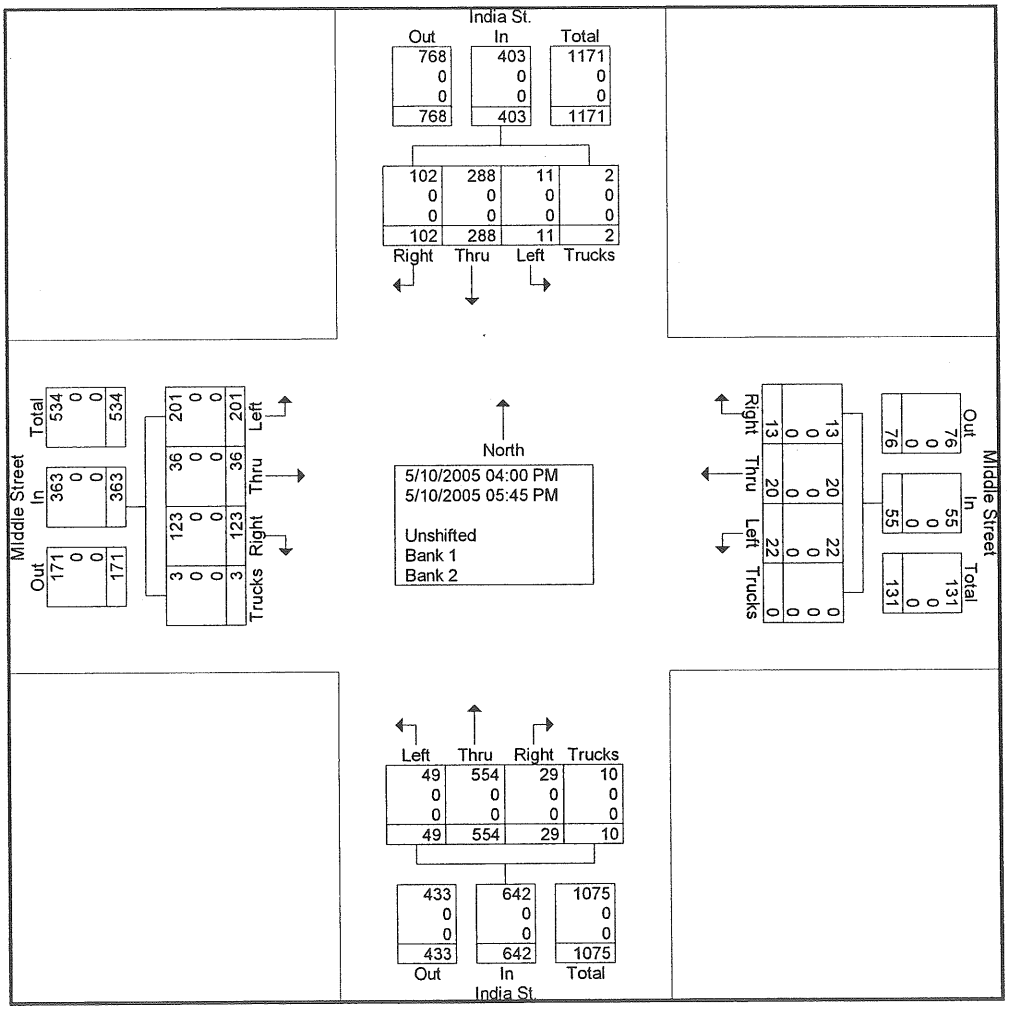
15 Shaker Road
P.O. Box 1237
Gray, Maine 04039
Traffic and Civil Engineering Services

5/10/05 PM TMC
a St/Fore St
Portland, ME

File Name : India@MiddlePMAdj
Site Code : 05014004
Start Date : 5/10/2005
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	India St. From North					Middle Street From East					India St. From South					Middle Street From West					
Start Time	Right	Thru	Left	Trucks	App. Total	Right	Thru	Left	Trucks	App. Total	Right	Thru	Left	Trucks	App. Total	Right	Thru	Left	Trucks	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	10	38	2	0	50	2	2	2	0	6	3	76	5	2	86	14	6	30	1	51	193
04:15 PM	9	34	1	0	44	0	4	1	0	5	4	56	6	1	67	15	2	20	0	37	153
04:30 PM	7	38	3	0	48	4	2	4	0	10	2	85	8	1	96	20	4	29	0	53	207
04:45 PM	22	40	2	0	64	1	1	7	0	9	4	65	5	1	75	13	4	25	0	42	190
Total	48	150	8	0	206	7	9	14	0	30	13	282	24	5	324	62	16	104	1	183	743
05:00 PM	13	40	2	0	55	1	4	1	0	6	3	90	5	1	99	12	4	24	0	40	200
05:15 PM	13	46	1	2	62	2	3	3	0	8	6	66	9	1	82	11	8	30	1	50	202
05:30 PM	11	24	0	0	35	1	2	1	0	4	2	73	5	2	82	21	5	27	1	54	175
05:45 PM	17	28	0	0	45	2	2	3	0	7	5	43	6	1	55	17	3	16	0	36	143
Total	54	138	3	2	197	6	11	8	0	25	16	272	25	5	318	61	20	97	2	180	720
Grand Total	102	288	11	2	403	13	20	22	0	55	29	554	49	10	642	123	36	201	3	363	1463
Apprch %	25.3	71.5	2.7	0.5		23.6	36.4	40	0		4.5	86.3	7.6	1.6		33.9	9.9	55.4	0.8		
Total %	7	19.7	0.8	0.1	27.5	0.9	1.4	1.5	0	3.8	2	37.9	3.3	0.7	43.9	8.4	2.5	13.7	0.2	24.8	
Unshifted	102	288	11	2	403	13	20	22	0	55	29	554	49	10	642	123	36	201	3	363	1463
% Unshifted	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Gorrill-Palmer Consulting Engineers, Inc.

15 Shaker Road
P.O. Box 1237
Gray, Maine 04039
Traffic and Civil Engineering Services

Location: Portland, Maine
Counted by: R. Cyr
DB-400
Weather: Sunny

File Name : India@ForePM
Site Code : 00004261
Start Date : 9/17/2002
Page No : 1

Groups Printed- Cars - Trucks - Combination Vehicles

	India Street From North					Fore Street From East					India Street From South					Fore Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	8	24	12	8	52	15	35	20	3	73	40	36	4	5	85	5	34	14	5	58	268
03:15 PM	7	29	9	3	48	10	28	16	3	57	34	28	4	2	68	1	33	12	7	53	226
03:30 PM	7	24	14	2	47	9	35	31	1	76	34	31	2	9	76	5	34	10	4	53	252
03:45 PM	15	17	21	0	53	14	19	22	2	57	38	30	1	10	79	3	36	14	2	55	244
Total	37	94	56	13	200	48	117	89	9	263	146	125	11	26	308	14	137	50	18	219	990
04:00 PM	9	32	18	1	60	14	30	32	3	79	44	47	2	7	100	2	46	13	6	67	306
04:15 PM	8	23	26	1	58	11	30	33	1	75	40	32	6	3	81	0	36	15	9	60	274
04:30 PM	8	35	15	3	61	9	42	26	4	81	45	37	10	4	96	4	45	33	7	89	327
04:45 PM	11	23	25	1	60	9	43	25	3	80	44	43	3	19	109	0	55	15	11	81	330
Total	36	113	84	6	239	43	145	116	11	315	173	159	21	33	386	6	182	76	33	297	1237
05:00 PM	9	30	25	2	66	16	62	22	4	104	71	56	7	44	178	5	62	31	4	102	450
05:15 PM	8	28	21	0	57	13	44	24	1	82	50	57	8	8	123	4	61	29	8	102	364
05:30 PM	13	28	19	0	60	12	37	32	1	82	33	39	4	6	82	2	42	21	13	78	302
05:45 PM	12	30	21	0	63	14	36	30	0	80	46	34	4	3	87	3	33	13	10	59	289
Total	42	116	86	2	246	55	179	108	6	348	200	186	23	61	470	14	198	94	35	341	1405
Grand Total	115	323	226	21	685	146	441	313	26	926	519	470	55	120	1164	34	517	220	86	857	3632
Apprch %	16.8	47.2	33	3.1		15.8	47.6	33.8	2.8		44.6	40.4	4.7	10.3		4	60.3	25.7	10		
Total %	3.2	8.9	6.2	0.6	18.9	4	12.1	8.6	0.7	25.5	14.3	12.9	1.5	3.3	32	0.9	14.2	6.1	2.4	23.6	
Cars	110	316	221	18	665	142	430	304	21	897	512	449	55	110	1126	33	507	216	79	835	3523
% Cars	95.7	97.8	97.8	85.7	97.1	97.3	97.5	97.1	80.8	96.9	98.7	95.5	100	91.7	96.7	97.1	98.1	98.2	91.9	97.4	97
Trucks	5	7	4	3	19	4	9	8	5	26	5	17	0	10	32	1	9	4	7	21	98
% Trucks	4.3	2.2	1.8	14.3	2.8	2.7	2	2.6	19.2	2.8	1	3.6	0	8.3	2.7	2.9	1.7	1.8	8.1	2.5	2.7
Combination Vehicles	0	0	1	0	1	0	2	1	0	3	2	4	0	0	6	0	1	0	0	1	11
% Combination Vehicles	0	0	0.4	0	0.1	0	0.5	0.3	0	0.3	0.4	0.9	0	0	0.5	0	0.2	0	0	0.1	0.3

Gorrill-Palmer Consulting Engineers, Inc.

15 Shaker Road
P.O. Box 1237
Gray, Maine 04039
Traffic and Civil Engineering Services

Location: Portland
Counter: EB
DB-400
Weather: Clear

File Name : India@Middle_am
Site Code : 00001317
Start Date : 1/24/2006
Page No : 1

Groups Printed- Cars - Single Unit Trucks - Combintation Vehicles

	INDIA ST From North					MIDDLE ST From East					INDIA ST From South					MIDDLE ST From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	30	1	2	35	0	0	1	0	1	2	10	3	1	16	2	0	3	1	6	58
07:15 AM	8	53	1	0	62	0	1	0	2	3	2	11	2	3	18	4	1	5	6	16	99
07:30 AM	23	70	0	2	95	0	1	0	4	5	1	22	4	2	29	3	3	9	3	18	147
07:45 AM	29	62	2	3	96	0	0	2	4	6	2	23	4	2	31	4	3	9	0	16	149
Total	62	215	4	7	288	0	2	3	10	15	7	66	13	8	94	13	7	26	10	56	453
08:00 AM	27	85	2	2	116	1	0	0	1	2	1	35	1	6	43	6	1	8	2	17	178
08:15 AM	26	69	0	1	96	0	2	1	3	6	1	26	5	4	36	9	4	12	0	25	163
08:30 AM	23	75	1	1	100	1	2	2	4	9	0	38	5	1	44	11	3	14	1	29	182
08:45 AM	15	63	1	0	79	0	1	1	0	2	2	48	3	3	56	13	3	14	1	31	168
Total	91	292	4	4	391	2	5	4	8	19	4	147	14	14	179	39	11	48	4	102	691
Grand Total	153	507	8	11	679	2	7	7	18	34	11	213	27	22	273	52	18	74	14	158	1144
Apprch %	22.5	74.7	1.2	1.6		5.9	20.6	20.6	52.9		4	78	9.9	8.1		32.9	11.4	46.8	8.9		
Total %	13.4	44.3	0.7	1	59.4	0.2	0.6	0.6	1.6	3	1	18.6	2.4	1.9	23.9	4.5	1.6	6.5	1.2	13.8	
Cars	152	490	7	11	660	0	6	7	18	31	10	199	26	21	256	51	17	71	13	152	1099
% Cars	99.3	96.6	87.5	100	97.2	0	85.7	100	100	91.2	90.9	93.4	96.3	95.5	93.8	98.1	94.4	95.9	92.9	96.2	96.1
Single Unit Trucks	1	15	1	0	17	2	1	0	0	3	1	13	1	1	16	1	1	3	1	6	42
e Unit Trucks	0.7	3	12.5	0	2.5	100	14.3	0	0	8.8	9.1	6.1	3.7	4.5	5.9	1.9	5.6	4.1	7.1	3.8	3.7
tation Vehicles	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% Combintation Vehicles	0	0.4	0	0	0.3	0	0	0	0	0	0	0.5	0	0	0.4	0	0	0	0	0	0.3

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*J. Bartlett*	Intersection	*India Street at Middle Street*
Agency/Co.	*Gorrill-Palmer*	Jurisdiction	*Portland, Maine*
Date Performed	*2/24/2006*	Analysis Year	*2007*
Analysis Time Period	*PM Peak*		
Project Description	*JN 934: Peak Hour Analysis for RT Volume Determination*		
East/West Street:	*Middle Street*	North/South Street:	*India Street*
Intersection Orientation:	*North-South*	Study Period (hrs):	*1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*98*	*334*	*78*	*35*	*181*	*109*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*98*	*334*	*78*	*35*	*181*	*109*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*42*	*132*	*56*	*119*	*98*	*178*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*42*	*132*	*56*	*119*	*98*	*178*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*98*	*35*		*230*			*395*	
C (m) (vph)	*1283*	*1158*		*220*			*228*	
v/c	*0.08*	*0.03*		*1.05*			*1.73*	
95% queue length	*0.25*	*0.09*		*21.24*			*90.08*	
Control Delay	*8.0*	*8.2*		*242.5*			*1376*	
LOS	*A*	*A*		*F*			*F*	
Approach Delay	--	--	*242.5*			*1376*		
Approach LOS	--	--	*F*			*F*		

RT Discount = 0.85(220) = 187 > 178 ∴ No RT for analysis