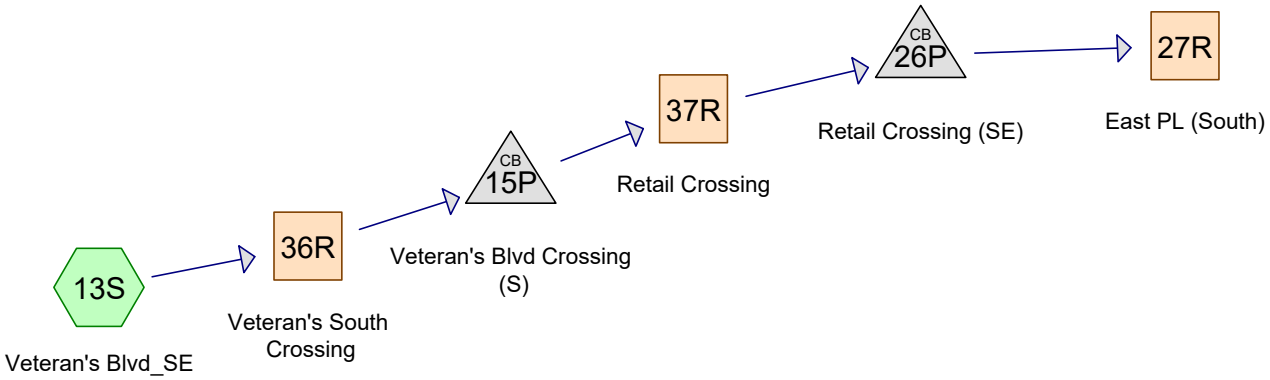


Subcat Reach Pond Link

Routing Diagram for Culvert SE
Prepared by HP Inc., Printed 8/18/2021
HydroCAD® 10.00-26 s/n 10100 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 13S: Veteran's Blvd_SE

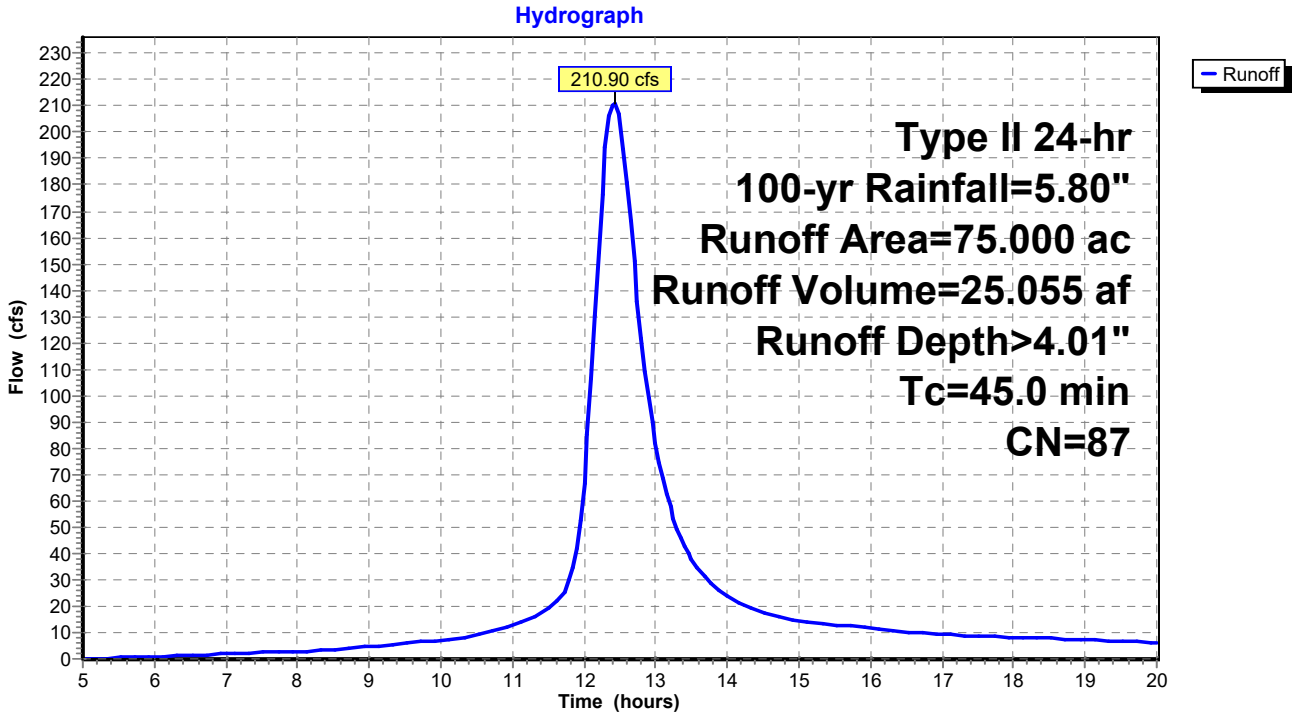
Runoff = 210.90 cfs @ 12.42 hrs, Volume= 25.055 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.80"

	Area (ac)	CN	Description
*	75.000	87	
	75.000		100.00% Pervious Area

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

Subcatchment 13S: Veteran's Blvd_SE



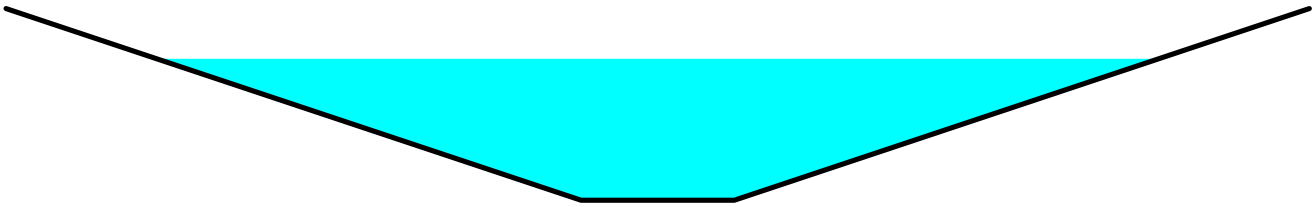
Summary for Reach 27R: East PL (South)

Inflow Area = 75.000 ac, 0.00% Impervious, Inflow Depth > 4.00" for 100-yr event
Inflow = 210.59 cfs @ 12.44 hrs, Volume= 25.010 af
Outflow = 210.48 cfs @ 12.46 hrs, Volume= 24.987 af, Atten= 0%, Lag= 0.8 min

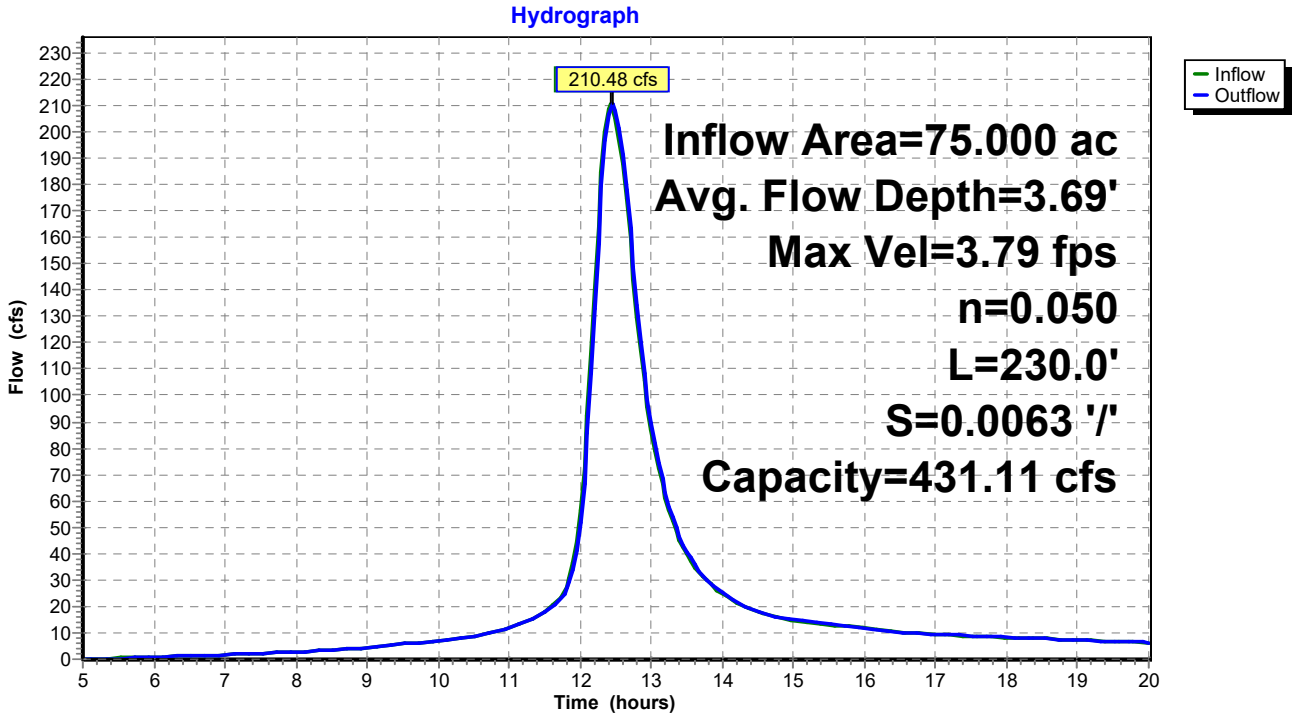
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.79 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.67 fps, Avg. Travel Time= 2.3 min

Peak Storage= 12,781 cf @ 12.46 hrs
Average Depth at Peak Storage= 3.69'
Bank-Full Depth= 5.00' Flow Area= 95.0 sf, Capacity= 431.11 cfs

4.00' x 5.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 34.00'
Length= 230.0' Slope= 0.0063 '/'
Inlet Invert= 866.15', Outlet Invert= 864.70'



Reach 27R: East PL (South)



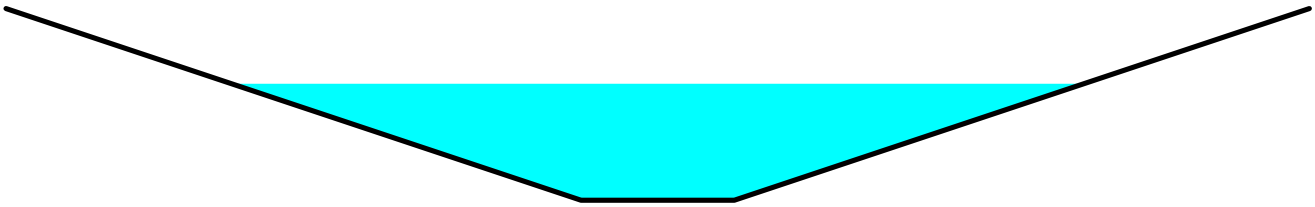
Summary for Reach 36R: Veteran's South Crossing

Inflow Area = 75.000 ac, 0.00% Impervious, Inflow Depth > 4.01" for 100-yr event
Inflow = 210.90 cfs @ 12.42 hrs, Volume= 25.055 af
Outflow = 210.85 cfs @ 12.43 hrs, Volume= 25.037 af, Atten= 0%, Lag= 0.5 min

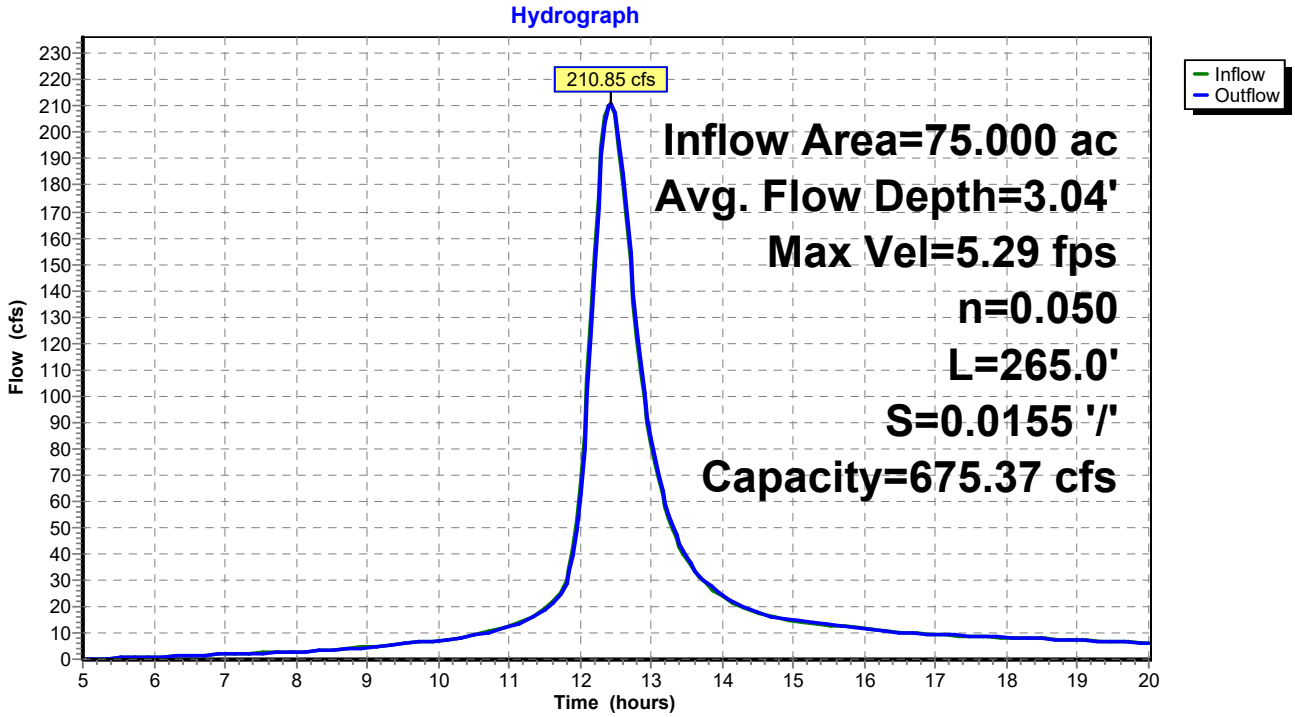
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.29 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.32 fps, Avg. Travel Time= 1.9 min

Peak Storage= 10,547 cf @ 12.43 hrs
Average Depth at Peak Storage= 3.04'
Bank-Full Depth= 5.00' Flow Area= 95.0 sf, Capacity= 675.37 cfs

4.00' x 5.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 34.00'
Length= 265.0' Slope= 0.0155 '/'
Inlet Invert= 872.50', Outlet Invert= 868.40'



Reach 36R: Veteran's South Crossing



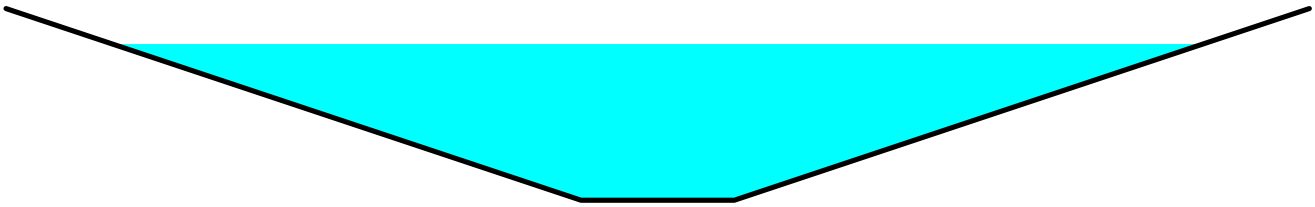
Summary for Reach 37R: Retail Crossing

Inflow Area = 75.000 ac, 0.00% Impervious, Inflow Depth > 4.01" for 100-yr event
Inflow = 210.85 cfs @ 12.43 hrs, Volume= 25.037 af
Outflow = 210.59 cfs @ 12.44 hrs, Volume= 25.010 af, Atten= 0%, Lag= 1.0 min

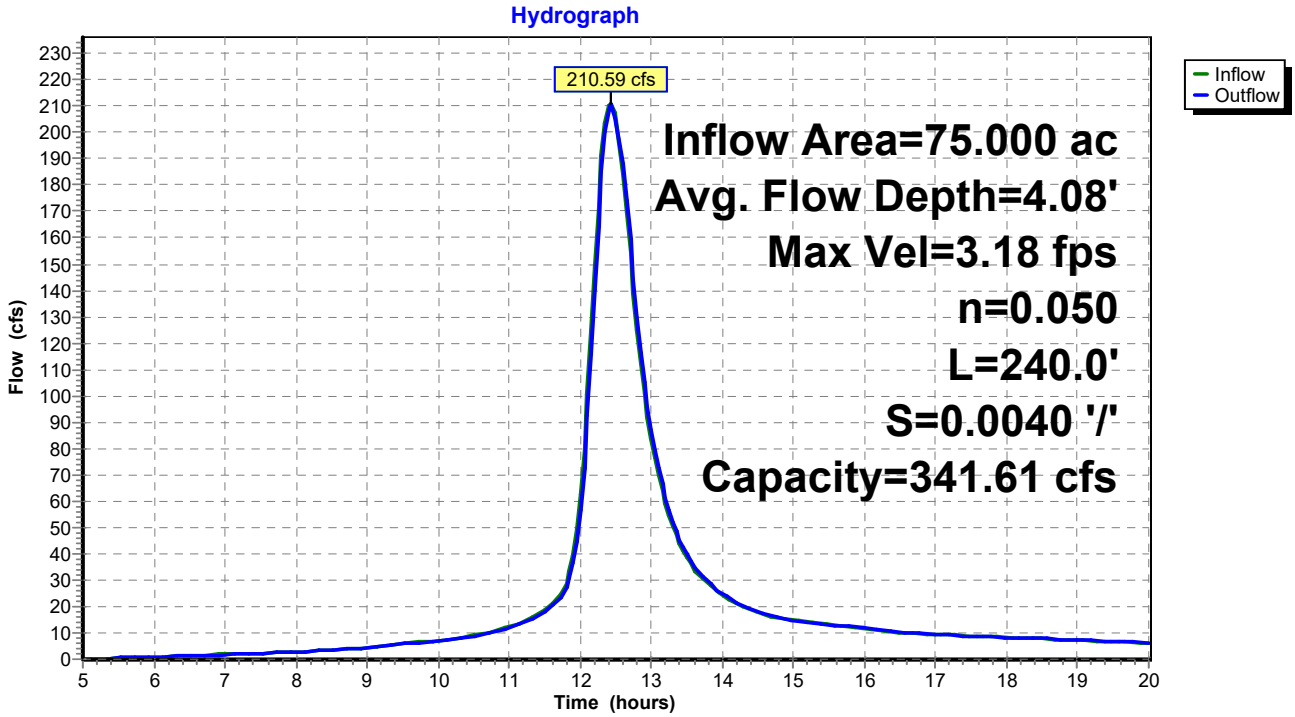
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.18 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 1.42 fps, Avg. Travel Time= 2.8 min

Peak Storage= 15,877 cf @ 12.44 hrs
Average Depth at Peak Storage= 4.08'
Bank-Full Depth= 5.00' Flow Area= 95.0 sf, Capacity= 341.61 cfs

4.00' x 5.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 34.00'
Length= 240.0' Slope= 0.0040 '/'
Inlet Invert= 867.30', Outlet Invert= 866.35'



Reach 37R: Retail Crossing



Summary for Pond 15P: Veteran's Blvd Crossing (S)

[57] Hint: Peaked at 872.83' (Flood elevation advised)
[62] Hint: Exceeded Reach 36R OUTLET depth by 1.40' @ 12.45 hrs

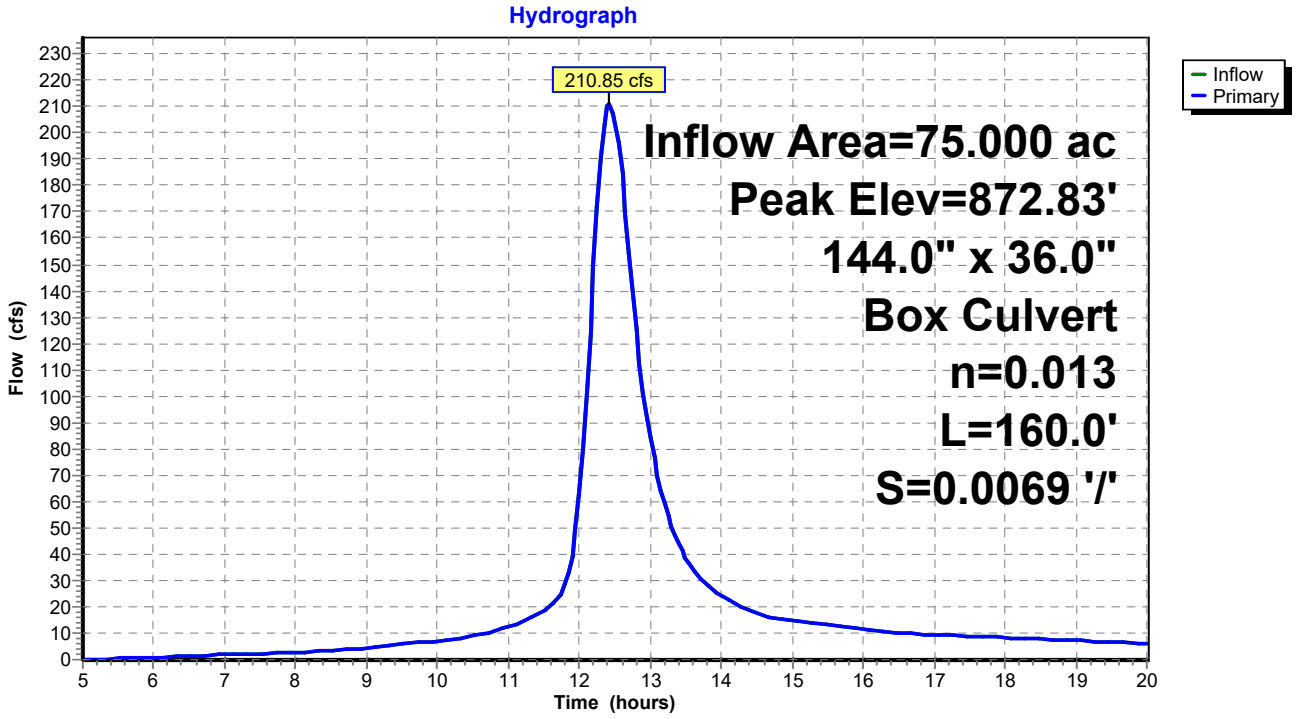
Inflow Area = 75.000 ac, 0.00% Impervious, Inflow Depth > 4.01" for 100-yr event
Inflow = 210.85 cfs @ 12.43 hrs, Volume= 25.037 af
Outflow = 210.85 cfs @ 12.43 hrs, Volume= 25.037 af, Atten= 0%, Lag= 0.0 min
Primary = 210.85 cfs @ 12.43 hrs, Volume= 25.037 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 872.83' @ 12.45 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	868.40'	**144.0" W x 36.0" H Box Culvert** L= 160.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 868.40' / 867.30' S= 0.0069 '/' Cc= 0.900 n= 0.013, Flow Area= 36.00 sf

Primary OutFlow Max=207.26 cfs @ 12.43 hrs HW=872.80' TW=871.37' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 207.26 cfs @ 5.76 fps)

Pond 15P: Veteran's Blvd Crossing (S)



Summary for Pond 26P: Retail Crossing (SE)

[57] Hint: Peaked at 871.29' (Flood elevation advised)
[62] Hint: Exceeded Reach 37R OUTLET depth by 0.87' @ 12.50 hrs

Inflow Area = 75.000 ac, 0.00% Impervious, Inflow Depth > 4.00" for 100-yr event
Inflow = 210.59 cfs @ 12.44 hrs, Volume= 25.010 af
Outflow = 210.59 cfs @ 12.44 hrs, Volume= 25.010 af, Atten= 0%, Lag= 0.0 min
Primary = 210.59 cfs @ 12.44 hrs, Volume= 25.010 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 871.29' @ 12.47 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	866.35'	**144.0" W x 36.0" H Box Culvert** L= 65.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 866.35' / 866.15' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 36.00 sf

Primary OutFlow Max=207.81 cfs @ 12.44 hrs HW=871.27' TW=869.83' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 207.81 cfs @ 5.77 fps)

Pond 26P: Retail Crossing (SE)

