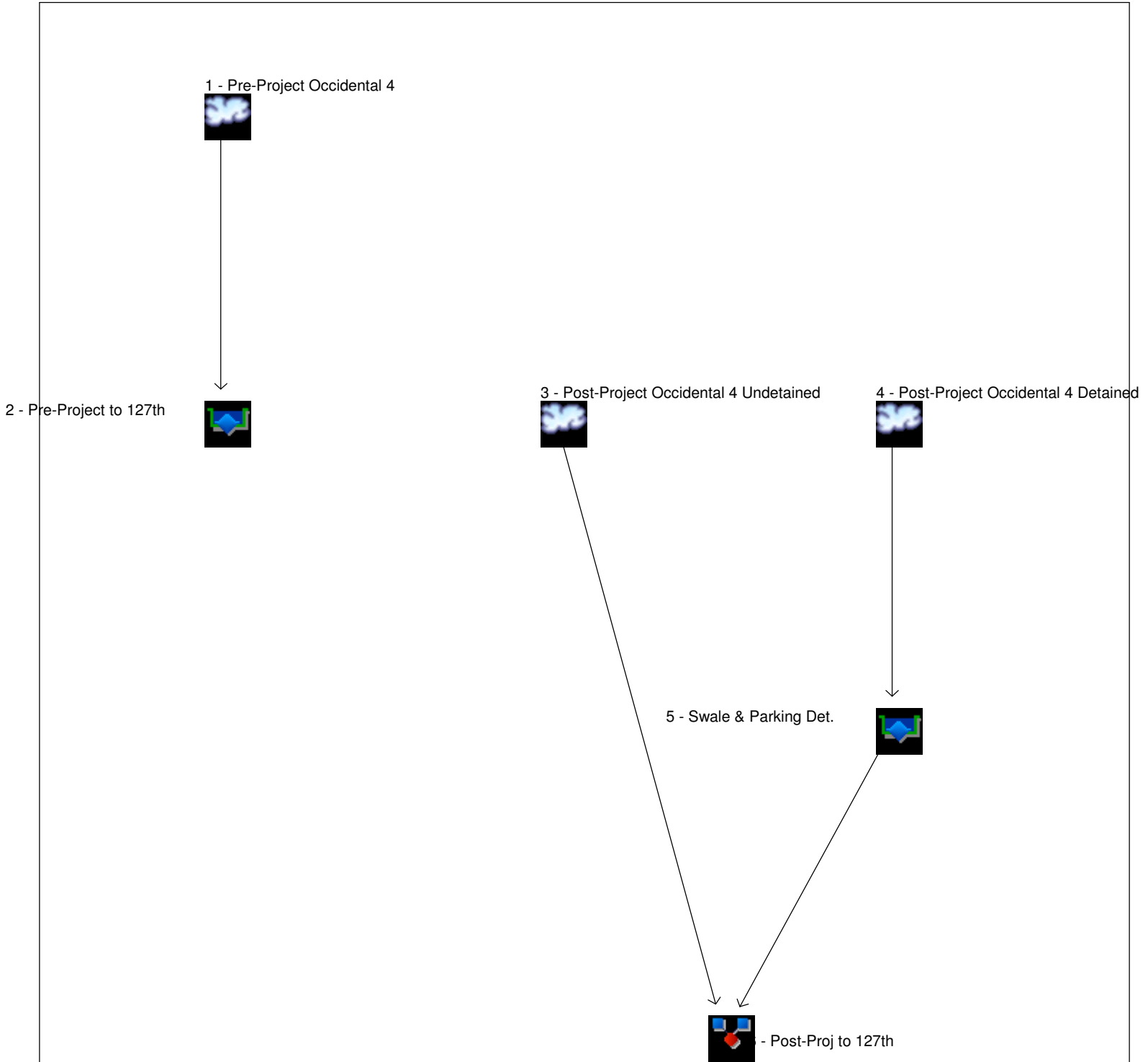


# Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066



## Legend

<u>Hyd.</u>	<u>Origin</u>	<u>Description</u>
1	SCS Runoff	Pre-Project Occidental 4
2	Reservoir	Pre-Project to 127th
3	SCS Runoff	Post-Project Occidental 4 Undetained
4	SCS Runoff	Post-Project Occidental 4 Detained
5	Reservoir	Swale & Parking Det.
6	Combine	Post-Proj to 127th

# Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-----	-----	40.23	-----	59.93	73.03	92.80	-----	121.06	Pre-Project Occidental 4
2	Reservoir	1	-----	31.87	-----	48.10	59.33	77.33	-----	107.73	Pre-Project to 127th
3	SCS Runoff	-----	-----	29.54	-----	39.50	45.97	55.63	-----	69.36	Post-Project Occidental 4 Undetained
4	SCS Runoff	-----	-----	9.847	-----	13.17	15.32	18.54	-----	23.12	Post-Project Occidental 4 Detained
5	Reservoir	4	-----	2.296	-----	6.278	8.975	12.83	-----	17.89	Swale & Parking Det.
6	Combine	3, 5	-----	31.30	-----	41.47	49.97	63.95	-----	83.16	Post-Proj to 127th

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph description
1	SCS Runoff	40.23	2	726	3.191	-----	-----	-----	Pre-Project Occidental 4
2	Reservoir	31.87	2	734	3.191	1	1351.12	0.508	Pre-Project to 127th
3	SCS Runoff	29.54	2	720	1.882	-----	-----	-----	Post-Project Occidental 4 Undetained
4	SCS Runoff	9.847	2	720	0.627	-----	-----	-----	Post-Project Occidental 4 Detained
5	Reservoir	2.296	2	734	0.624	4	1351.13	0.281	Swale & Parking Det.
6	Combine	31.30	2	720	2.506	3, 5	-----	-----	Post-Proj to 127th
Northeast Drainage - revised with detention. Return Period: 2 Year							Wednesday, Jun 23, 2010		

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph description
1	SCS Runoff	59.93	2	726	4.757	-----	-----	-----	Pre-Project Occidental 4
2	Reservoir	48.10	2	734	4.757	1	1351.32	0.725	Pre-Project to 127th
3	SCS Runoff	39.50	2	720	2.561	-----	-----	-----	Post-Project Occidental 4 Undetained
4	SCS Runoff	13.17	2	720	0.854	-----	-----	-----	Post-Project Occidental 4 Detained
5	Reservoir	6.278	2	730	0.851	4	1351.34	0.338	Swale & Parking Det.
6	Combine	41.47	2	720	3.412	3, 5	-----	-----	Post-Proj to 127th
Northeast Drainage - revised with detention. g							Return Period: 5 Year		Wednesday, Jun 23, 2010

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph description
1	SCS Runoff	73.03	2	726	5.819	-----	-----	-----	Pre-Project Occidental 4
2	Reservoir	59.33	2	734	5.819	1	1351.44	0.861	Pre-Project to 127th
3	SCS Runoff	45.97	2	720	3.008	-----	-----	-----	Post-Project Occidental 4 Undetained
4	SCS Runoff	15.32	2	720	1.003	-----	-----	-----	Post-Project Occidental 4 Detained
5	Reservoir	8.975	2	728	1.000	4	1351.43	0.364	Swale & Parking Det.
6	Combine	49.97	2	722	4.008	3, 5	-----	-----	Post-Proj to 127th
Northeast Drainage - revised with detention.							Return Period: 10 Year		Wednesday, Jun 23, 2010

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph description
1	SCS Runoff	92.80	2	726	7.445	-----	-----	-----	Pre-Project Occidental 4
2	Reservoir	77.33	2	732	7.445	1	1351.62	1.06	Pre-Project to 127th
3	SCS Runoff	55.63	2	720	3.680	-----	-----	-----	Post-Project Occidental 4 Undetained
4	SCS Runoff	18.54	2	720	1.227	-----	-----	-----	Post-Project Occidental 4 Detained
5	Reservoir	12.83	2	726	1.224	4	1351.55	0.398	Swale & Parking Det.
6	Combine	63.95	2	722	4.904	3, 5	-----	-----	Post-Proj to 127th
Northeast Drainage - revised with detention.							Return Period: 25 Year		Wednesday, Jun 23, 2010

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph description
1	SCS Runoff	121.06	2	726	9.814	-----	-----	-----	Pre-Project Occidental 4
2	Reservoir	107.73	2	732	9.814	1	1351.80	1.26	Pre-Project to 127th
3	SCS Runoff	69.36	2	720	4.642	-----	-----	-----	Post-Project Occidental 4 Undetained
4	SCS Runoff	23.12	2	720	1.547	-----	-----	-----	Post-Project Occidental 4 Detained
5	Reservoir	17.89	2	726	1.544	4	1351.69	0.437	Swale & Parking Det.
6	Combine	83.16	2	722	6.186	3, 5	-----	-----	Post-Proj to 127th
Northeast Drainage - revised with detention.						Return Period: 100 Year		Wednesday, Jun 23, 2010	

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Wednesday, Jun 23, 2010

## Hyd. No. 1

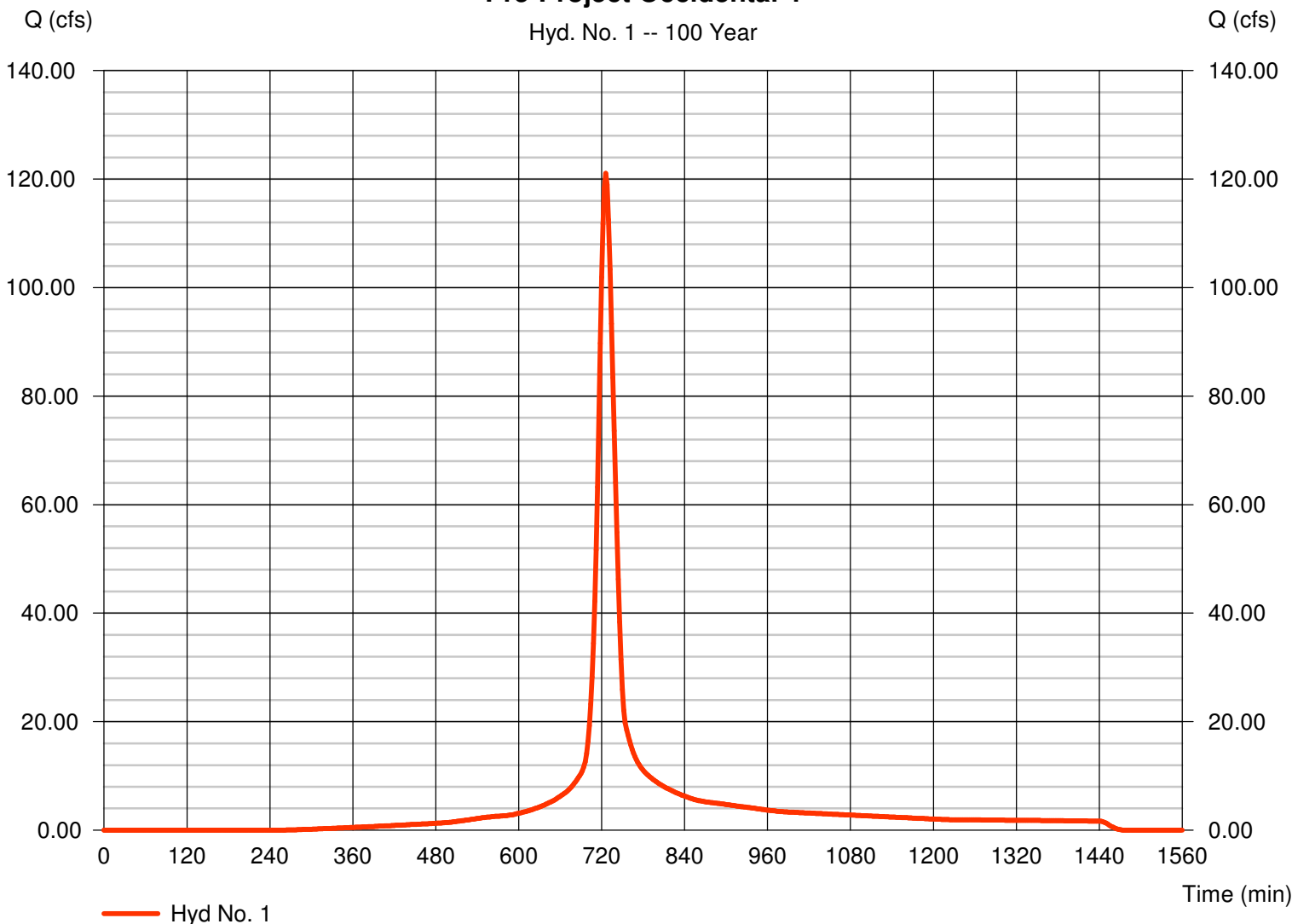
Pre-Project Occidental 4

Hydrograph type = SCS Runoff  
 Storm frequency = 100 yrs  
 Time interval = 2 min  
 Drainage area = 19.600 ac  
 Basin Slope = 0.0 %  
 Tc method = TR55  
 Total precip. = 7.80 in  
 Storm duration = 24 hrs

Peak discharge = 121.06 cfs  
 Time to peak = 726 min  
 Hyd. volume = 9.814 acft  
 Curve number = 84  
 Hydraulic length = 0 ft  
 Time of conc. (Tc) = 22.70 min  
 Distribution = Type II  
 Shape factor = 484

### Pre-Project Occidental 4

Hyd. No. 1 -- 100 Year



# TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

## Hyd. No. 1

Pre-Project Occidental 4

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
<b>Sheet Flow</b>				
Manning's n-value	= 0.240	0.011	0.011	
Flow length (ft)	= 100.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 3.48	3.48	0.00	
Land slope (%)	= 1.00	0.00	0.00	
<b>Travel Time (min)</b>	<b>= 18.06</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 18.06</b>
<b>Shallow Concentrated Flow</b>				
Flow length (ft)	= 550.00	0.00	0.00	
Watercourse slope (%)	= 1.50	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	= 1.98	0.00	0.00	
<b>Travel Time (min)</b>	<b>= 4.64</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 4.64</b>
<b>Channel Flow</b>				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Total Travel Time, Tc .....</b>				<b>22.70 min</b>

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Wednesday, Jun 23, 2010

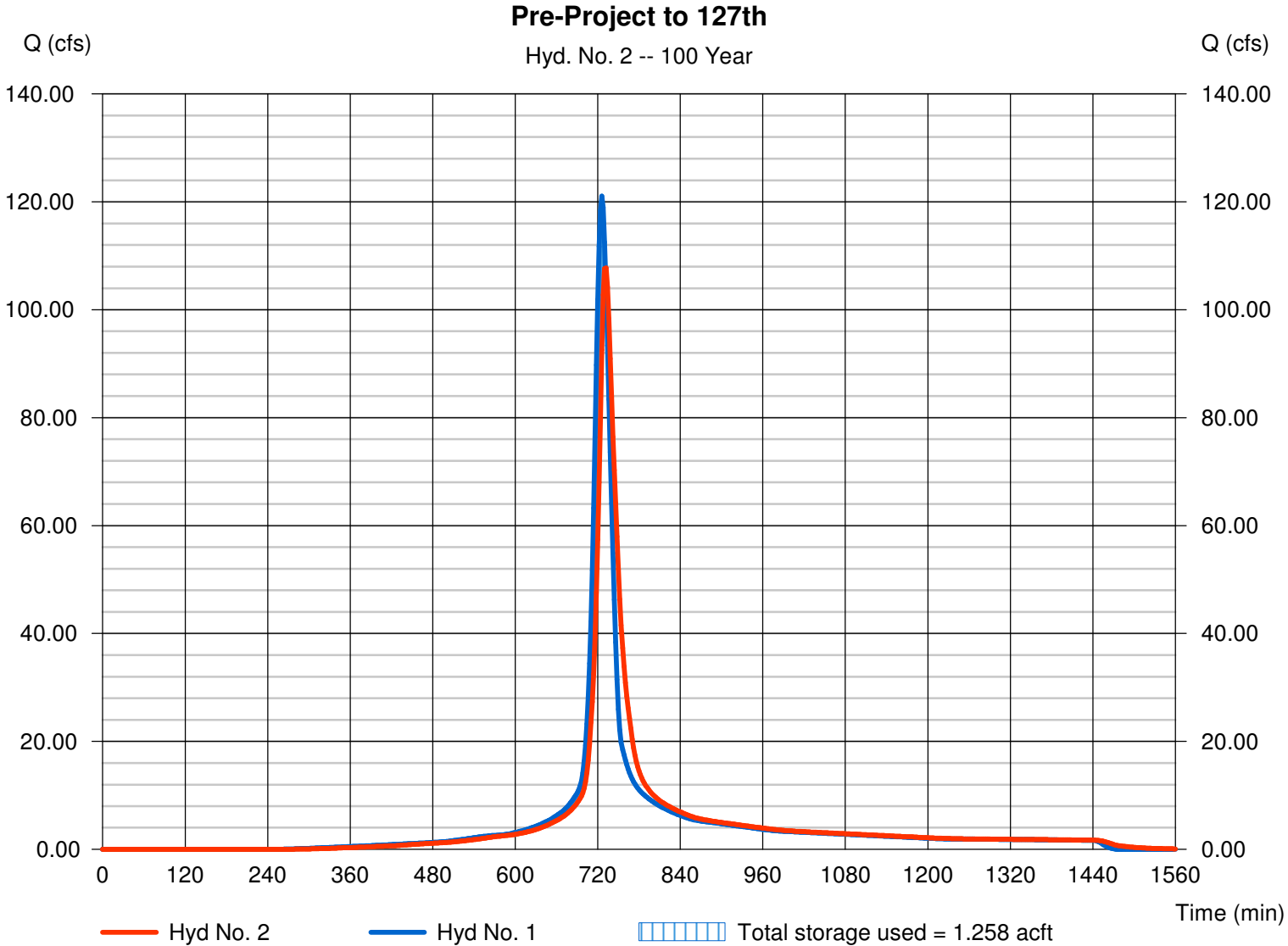
## Hyd. No. 2

Pre-Project to 127th

Hydrograph type = Reservoir  
Storm frequency = 100 yrs  
Time interval = 2 min  
Inflow hyd. No. = 1 - Pre-Project Occidental 4  
Reservoir name = Existing Pond

Peak discharge = 107.73 cfs  
Time to peak = 732 min  
Hyd. volume = 9.814 acft  
Max. Elevation = 1351.80 ft  
Max. Storage = 1.258 acft

Storage Indication method used.



# Pond Report

## Pond No. 1 - Existing Pond

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1350.50 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1350.50	23,699	0.000	0.000
0.50	1351.00	42,307	0.374	0.374
1.50	1352.00	54,355	1.107	1.480

### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

### Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 25.00	50.00	Inactive	0.00
Crest El. (ft)	= 1350.50	1351.60	1350.50	0.00
Weir Coeff.	= 2.60	2.60	4.40	3.33
Weir Type	= Broad	Broad	120degV	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

### Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0.000	1350.50	---	---	---	---	0.00	0.00	---	---	---	---	0.000
0.05	0.037	1350.55	---	---	---	---	0.73	0.00	---	---	---	---	0.728
0.10	0.075	1350.60	---	---	---	---	2.06	0.00	---	---	---	---	2.058
0.15	0.112	1350.65	---	---	---	---	3.78	0.00	---	---	---	---	3.782
0.20	0.149	1350.70	---	---	---	---	5.82	0.00	---	---	---	---	5.822
0.25	0.187	1350.75	---	---	---	---	8.14	0.00	---	---	---	---	8.137
0.30	0.224	1350.80	---	---	---	---	10.70	0.00	---	---	---	---	10.70
0.35	0.262	1350.85	---	---	---	---	13.48	0.00	---	---	---	---	13.48
0.40	0.299	1350.90	---	---	---	---	16.47	0.00	---	---	---	---	16.47
0.45	0.336	1350.95	---	---	---	---	19.65	0.00	---	---	---	---	19.65
0.50	0.374	1351.00	---	---	---	---	22.98	0.00	---	---	---	---	22.98
0.60	0.484	1351.10	---	---	---	---	30.21	0.00	---	---	---	---	30.21
0.70	0.595	1351.20	---	---	---	---	38.06	0.00	---	---	---	---	38.06
0.80	0.706	1351.30	---	---	---	---	46.50	0.00	---	---	---	---	46.50
0.90	0.816	1351.40	---	---	---	---	55.49	0.00	---	---	---	---	55.49
1.00	0.927	1351.50	---	---	---	---	64.99	0.00	---	---	---	---	64.99
1.10	1.038	1351.60	---	---	---	---	74.97	0.00	---	---	---	---	74.97
1.20	1.148	1351.70	---	---	---	---	85.43	4.10	---	---	---	---	89.53
1.30	1.259	1351.80	---	---	---	---	96.32	11.61	---	---	---	---	107.94
1.40	1.370	1351.90	---	---	---	---	107.65	21.34	---	---	---	---	128.99
1.50	1.480	1352.00	---	---	---	---	119.41	32.89	---	---	---	---	152.30

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Wednesday, Jun 23, 2010

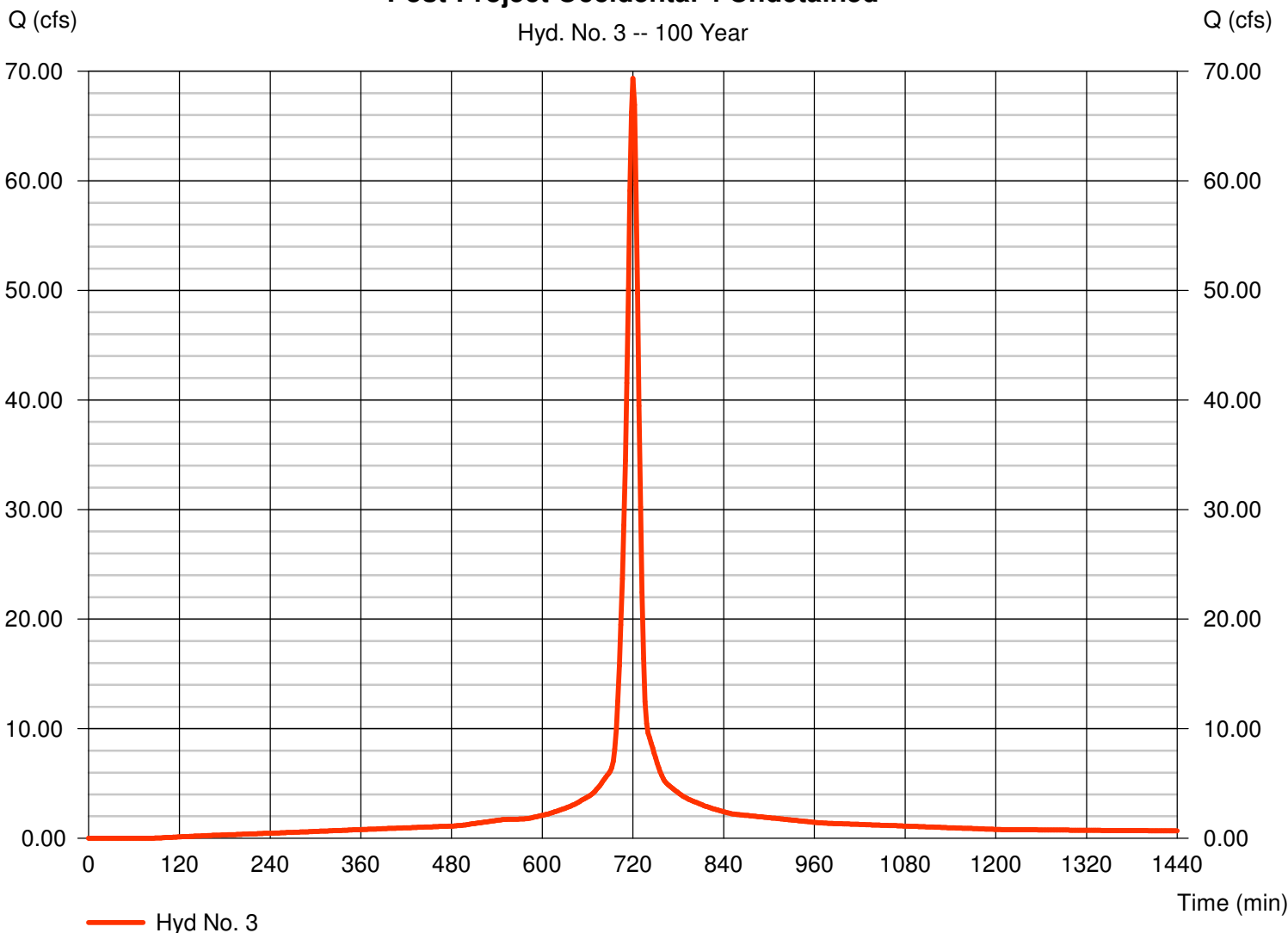
## Hyd. No. 3

Post-Project Occidental 4 Undetained

Hydrograph type = SCS Runoff  
 Storm frequency = 100 yrs  
 Time interval = 2 min  
 Drainage area = 7.500 ac  
 Basin Slope = 0.0 %  
 Tc method = TR55  
 Total precip. = 7.80 in  
 Storm duration = 24 hrs

Peak discharge = 69.36 cfs  
 Time to peak = 720 min  
 Hyd. volume = 4.642 acft  
 Curve number = 95  
 Hydraulic length = 0 ft  
 Time of conc. (Tc) = 10.40 min  
 Distribution = Type II  
 Shape factor = 484

### Post-Project Occidental 4 Undetained



# TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

## Hyd. No. 3

Post-Project Occidental 4 Undetained

<u>Description</u>	<u>A</u>		<u>B</u>		<u>C</u>		<u>Totals</u>	
<b>Sheet Flow</b>								
Manning's n-value	= 0.013		0.011		0.011			
Flow length (ft)	= 150.0		0.0		0.0			
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00			
Land slope (%)	= 1.00		0.00		0.00			
<b>Travel Time (min)</b>	<b>= 2.42</b>	<b>+</b>	<b>0.00</b>	<b>+</b>	<b>0.00</b>	<b>=</b>	<b>2.42</b>	
<b>Shallow Concentrated Flow</b>								
Flow length (ft)	= 750.00		0.00		0.00			
Watercourse slope (%)	= 0.60		0.00		0.00			
Surface description	= Paved		Paved		Paved			
Average velocity (ft/s)	= 1.57		0.00		0.00			
<b>Travel Time (min)</b>	<b>= 7.94</b>	<b>+</b>	<b>0.00</b>	<b>+</b>	<b>0.00</b>	<b>=</b>	<b>7.94</b>	
<b>Channel Flow</b>								
X sectional flow area (sqft)	= 0.00		0.00		0.00			
Wetted perimeter (ft)	= 0.00		0.00		0.00			
Channel slope (%)	= 0.00		0.00		0.00			
Manning's n-value	= 0.015		0.015		0.015			
Velocity (ft/s)	= 0.00		0.00		0.00			
Flow length (ft)	= 0.0		0.0		0.0			
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+</b>	<b>0.00</b>	<b>+</b>	<b>0.00</b>	<b>=</b>	<b>0.00</b>	
<b>Total Travel Time, Tc .....</b>							<b>=</b>	<b>10.40 min</b>

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Wednesday, Jun 23, 2010

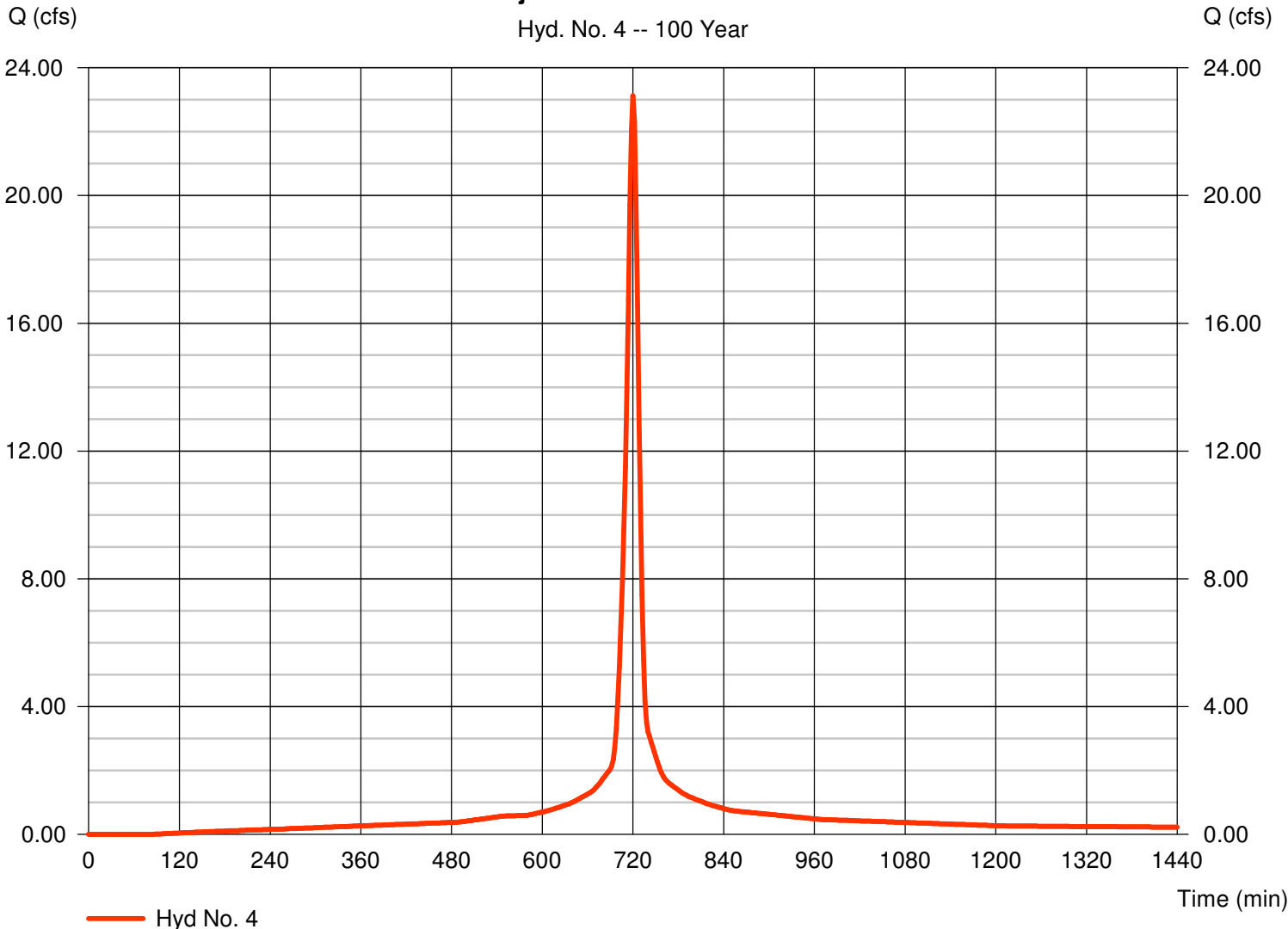
## Hyd. No. 4

### Post-Project Occidental 4 Detained

Hydrograph type = SCS Runoff  
 Storm frequency = 100 yrs  
 Time interval = 2 min  
 Drainage area = 2.500 ac  
 Basin Slope = 0.0 %  
 Tc method = TR55  
 Total precip. = 7.80 in  
 Storm duration = 24 hrs

Peak discharge = 23.12 cfs  
 Time to peak = 720 min  
 Hyd. volume = 1.547 acft  
 Curve number = 95  
 Hydraulic length = 0 ft  
 Time of conc. (Tc) = 10.40 min  
 Distribution = Type II  
 Shape factor = 484

**Post-Project Occidental 4 Detained**



# TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

## Hyd. No. 4

Post-Project Occidental 4 Detained

<u>Description</u>	<u>A</u>		<u>B</u>		<u>C</u>		<u>Totals</u>	
<b>Sheet Flow</b>								
Manning's n-value	= 0.013		0.011		0.011			
Flow length (ft)	= 150.0		0.0		0.0			
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00			
Land slope (%)	= 1.00		0.00		0.00			
<b>Travel Time (min)</b>	<b>= 2.42</b>	<b>+</b>	<b>0.00</b>	<b>+</b>	<b>0.00</b>	<b>=</b>	<b>2.42</b>	
<b>Shallow Concentrated Flow</b>								
Flow length (ft)	= 750.00		0.00		0.00			
Watercourse slope (%)	= 0.60		0.00		0.00			
Surface description	= Paved		Paved		Paved			
Average velocity (ft/s)	= 1.57		0.00		0.00			
<b>Travel Time (min)</b>	<b>= 7.94</b>	<b>+</b>	<b>0.00</b>	<b>+</b>	<b>0.00</b>	<b>=</b>	<b>7.94</b>	
<b>Channel Flow</b>								
X sectional flow area (sqft)	= 0.00		0.00		0.00			
Wetted perimeter (ft)	= 0.00		0.00		0.00			
Channel slope (%)	= 0.00		0.00		0.00			
Manning's n-value	= 0.015		0.015		0.015			
Velocity (ft/s)	= 0.00		0.00		0.00			
Flow length (ft)	= 0.0		0.0		0.0			
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+</b>	<b>0.00</b>	<b>+</b>	<b>0.00</b>	<b>=</b>	<b>0.00</b>	
<b>Total Travel Time, Tc .....</b>							<b>=</b>	<b>10.40 min</b>

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Wednesday, Jun 23, 2010

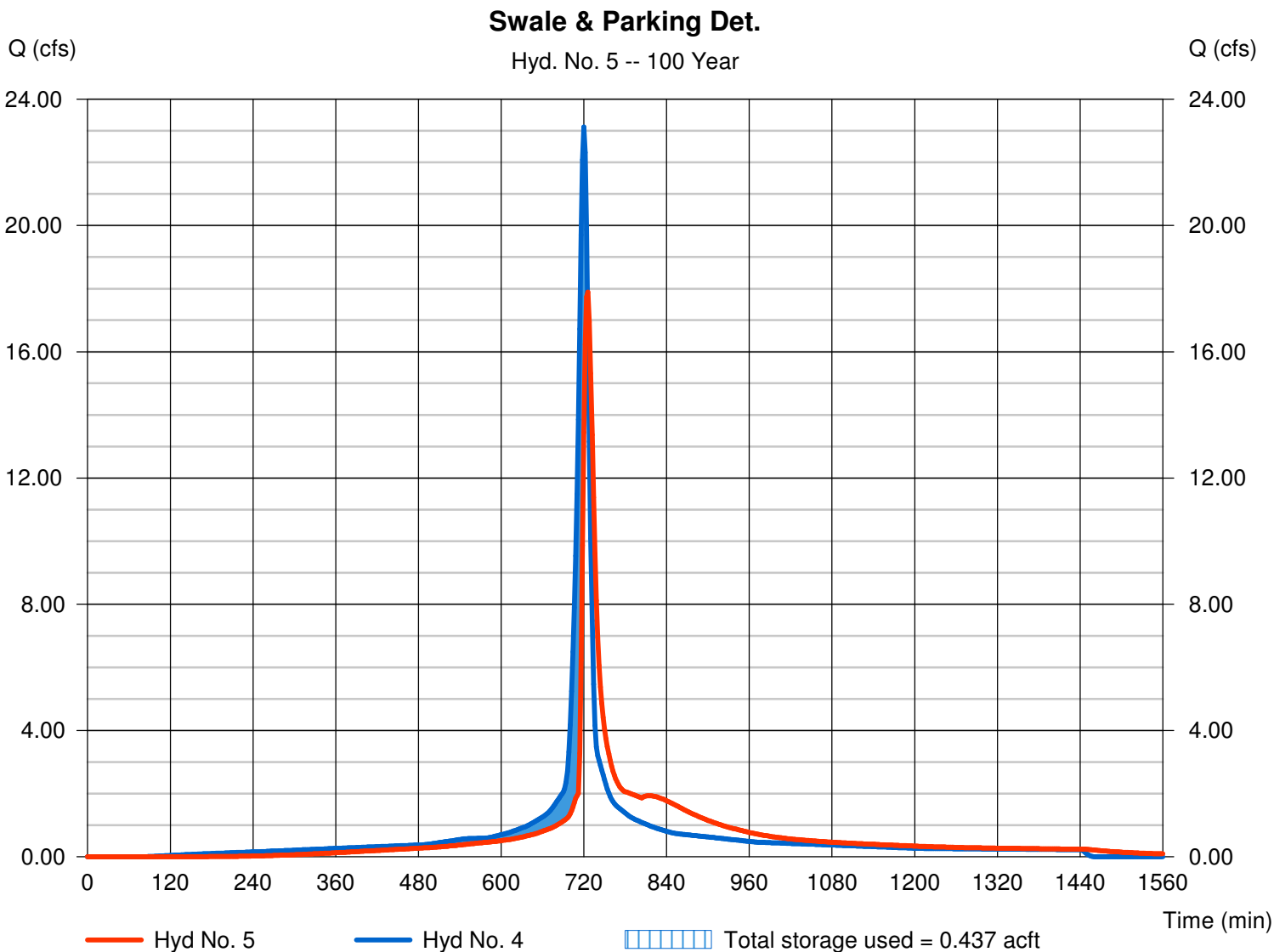
## Hyd. No. 5

Swale & Parking Det.

Hydrograph type = Reservoir  
 Storm frequency = 100 yrs  
 Time interval = 2 min  
 Inflow hyd. No. = 4 - Post-Project Occidental 4 Detained  
 Reservoir name = Swale & Parking Detention

Peak discharge = 17.89 cfs  
 Time to peak = 726 min  
 Hyd. volume = 1.544 acft  
 Max. Elevation = 1351.69 ft  
 Max. Storage = 0.437 acft

Storage Indication method used.



# Pond Report

## Pond No. 3 - Swale & Parking Detention

### Pond Data

Trapezoid - Bottom L x W = 50.0 x 200.0 ft, Side slope = 3.00:1, Bottom elev. = 1350.00 ft, Depth = 2.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1350.00	10,000	0.000	0.000
0.20	1350.20	10,301	0.047	0.047
0.40	1350.40	10,606	0.048	0.095
0.60	1350.60	10,913	0.049	0.144
0.80	1350.80	11,223	0.051	0.195
1.00	1351.00	11,536	0.052	0.247
1.20	1351.20	11,852	0.054	0.301
1.40	1351.40	12,171	0.055	0.356
1.60	1351.60	12,492	0.057	0.413
1.80	1351.80	12,817	0.058	0.471
2.00	1352.00	13,144	0.060	0.530

### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1350.00	0.00	0.00	0.00
Length (ft)	= 100.00	0.00	0.00	0.00
Slope (%)	= 0.40	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

### Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	Inactive	0.00	0.00
Crest El. (ft)	= 1351.10	1350.80	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	Rect	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

### Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0.000	1350.00	0.00	---	---	---	0.00	0.00	---	---	---	---	0.000
0.02	0.005	1350.02	0.00 oc	---	---	---	0.00	0.00	---	---	---	---	0.002
0.04	0.009	1350.04	0.01 oc	---	---	---	0.00	0.00	---	---	---	---	0.007
0.06	0.014	1350.06	0.02 oc	---	---	---	0.00	0.00	---	---	---	---	0.016
0.08	0.019	1350.08	0.03 ic	---	---	---	0.00	0.00	---	---	---	---	0.029
0.10	0.023	1350.10	0.04 ic	---	---	---	0.00	0.00	---	---	---	---	0.044
0.12	0.028	1350.12	0.06 ic	---	---	---	0.00	0.00	---	---	---	---	0.063
0.14	0.033	1350.14	0.09 ic	---	---	---	0.00	0.00	---	---	---	---	0.086
0.16	0.037	1350.16	0.11 ic	---	---	---	0.00	0.00	---	---	---	---	0.111
0.18	0.042	1350.18	0.14 ic	---	---	---	0.00	0.00	---	---	---	---	0.140
0.20	0.047	1350.20	0.17 ic	---	---	---	0.00	0.00	---	---	---	---	0.171
0.22	0.051	1350.22	0.20 ic	---	---	---	0.00	0.00	---	---	---	---	0.205
0.24	0.056	1350.24	0.24 ic	---	---	---	0.00	0.00	---	---	---	---	0.242
0.26	0.061	1350.26	0.28 ic	---	---	---	0.00	0.00	---	---	---	---	0.282
0.28	0.066	1350.28	0.32 ic	---	---	---	0.00	0.00	---	---	---	---	0.324
0.30	0.071	1350.30	0.37 ic	---	---	---	0.00	0.00	---	---	---	---	0.371
0.32	0.075	1350.32	0.42 ic	---	---	---	0.00	0.00	---	---	---	---	0.418
0.34	0.080	1350.34	0.47 ic	---	---	---	0.00	0.00	---	---	---	---	0.468
0.36	0.085	1350.36	0.52 ic	---	---	---	0.00	0.00	---	---	---	---	0.521
0.38	0.090	1350.38	0.58 ic	---	---	---	0.00	0.00	---	---	---	---	0.575
0.40	0.095	1350.40	0.63 ic	---	---	---	0.00	0.00	---	---	---	---	0.632
0.42	0.100	1350.42	0.69 ic	---	---	---	0.00	0.00	---	---	---	---	0.691
0.44	0.104	1350.44	0.75 ic	---	---	---	0.00	0.00	---	---	---	---	0.753
0.46	0.109	1350.46	0.82 ic	---	---	---	0.00	0.00	---	---	---	---	0.816
0.48	0.114	1350.48	0.87 oc	---	---	---	0.00	0.00	---	---	---	---	0.873
0.50	0.119	1350.50	0.93 oc	---	---	---	0.00	0.00	---	---	---	---	0.932
0.52	0.124	1350.52	0.99 oc	---	---	---	0.00	0.00	---	---	---	---	0.989
0.54	0.129	1350.54	1.05 oc	---	---	---	0.00	0.00	---	---	---	---	1.048
0.56	0.134	1350.56	1.10 oc	---	---	---	0.00	0.00	---	---	---	---	1.105
0.58	0.139	1350.58	1.16 oc	---	---	---	0.00	0.00	---	---	---	---	1.163
0.60	0.144	1350.60	1.22 oc	---	---	---	0.00	0.00	---	---	---	---	1.221
0.62	0.149	1350.62	1.28 oc	---	---	---	0.00	0.00	---	---	---	---	1.278
0.64	0.154	1350.64	1.33 oc	---	---	---	0.00	0.00	---	---	---	---	1.333

Continues on next page...

Swale & Parking Detention

**Stage / Storage / Discharge Table**

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.66	0.159	1350.66	1.39 oc	---	---	---	0.00	0.00	---	---	---	---	1.389
0.68	0.164	1350.68	1.44 oc	---	---	---	0.00	0.00	---	---	---	---	1.444
0.70	0.169	1350.70	1.50 oc	---	---	---	0.00	0.00	---	---	---	---	1.497
0.72	0.174	1350.72	1.55 oc	---	---	---	0.00	0.00	---	---	---	---	1.549
0.74	0.180	1350.74	1.60 oc	---	---	---	0.00	0.00	---	---	---	---	1.598
0.76	0.185	1350.76	1.65 oc	---	---	---	0.00	0.00	---	---	---	---	1.646
0.78	0.190	1350.78	1.69 oc	---	---	---	0.00	0.00	---	---	---	---	1.692
0.80	0.195	1350.80	1.73 oc	---	---	---	0.00	0.00	---	---	---	---	1.735
0.82	0.200	1350.82	1.78 oc	---	---	---	0.00	0.00	---	---	---	---	1.776
0.84	0.205	1350.84	1.81 oc	---	---	---	0.00	0.00	---	---	---	---	1.813
0.86	0.210	1350.86	1.85 oc	---	---	---	0.00	0.00	---	---	---	---	1.846
0.88	0.216	1350.88	1.88 oc	---	---	---	0.00	0.00	---	---	---	---	1.876
0.90	0.221	1350.90	1.90 oc	---	---	---	0.00	0.00	---	---	---	---	1.901
0.92	0.226	1350.92	1.92 oc	---	---	---	0.00	0.00	---	---	---	---	1.921
0.94	0.231	1350.94	1.93 oc	---	---	---	0.00	0.00	---	---	---	---	1.933
0.96	0.237	1350.96	1.94 oc	---	---	---	0.00	0.00	---	---	---	---	1.936
0.98	0.242	1350.98	1.92 oc	---	---	---	0.00	0.00	---	---	---	---	1.924
1.00	0.247	1351.00	1.86 oc	---	---	---	0.00	0.00	---	---	---	---	1.859
1.02	0.252	1351.02	1.90 oc	---	---	---	0.00	0.00	---	---	---	---	1.905
1.04	0.258	1351.04	1.95 oc	---	---	---	0.00	0.00	---	---	---	---	1.950
1.06	0.263	1351.06	1.99 oc	---	---	---	0.00	0.00	---	---	---	---	1.993
1.08	0.269	1351.08	2.04 oc	---	---	---	0.00	0.00	---	---	---	---	2.036
1.10	0.274	1351.10	2.08 oc	---	---	---	0.00	0.00	---	---	---	---	2.078
1.12	0.279	1351.12	2.12 oc	---	---	---	0.10	0.00	---	---	---	---	2.215
1.14	0.285	1351.14	2.16 oc	---	---	---	0.27	0.00	---	---	---	---	2.428
1.16	0.290	1351.16	2.20 oc	---	---	---	0.49	0.00	---	---	---	---	2.691
1.18	0.295	1351.18	2.24 oc	---	---	---	0.76	0.00	---	---	---	---	2.995
1.20	0.301	1351.20	2.28 oc	---	---	---	1.05	0.00	---	---	---	---	3.329
1.22	0.306	1351.22	2.31 oc	---	---	---	1.38	0.00	---	---	---	---	3.698
1.24	0.312	1351.24	2.35 oc	---	---	---	1.74	0.00	---	---	---	---	4.096
1.26	0.317	1351.26	2.39 oc	---	---	---	2.13	0.00	---	---	---	---	4.520
1.28	0.323	1351.28	2.42 oc	---	---	---	2.54	0.00	---	---	---	---	4.968
1.30	0.328	1351.30	2.46 oc	---	---	---	2.98	0.00	---	---	---	---	5.439
1.32	0.334	1351.32	2.49 oc	---	---	---	3.44	0.00	---	---	---	---	5.932
1.34	0.339	1351.34	2.53 oc	---	---	---	3.92	0.00	---	---	---	---	6.446
1.36	0.345	1351.36	2.56 oc	---	---	---	4.42	0.00	---	---	---	---	6.980
1.38	0.350	1351.38	2.60 oc	---	---	---	4.94	0.00	---	---	---	---	7.534
1.40	0.356	1351.40	2.63 oc	---	---	---	5.47	0.00	---	---	---	---	8.102
1.42	0.362	1351.42	2.66 oc	---	---	---	6.03	0.00	---	---	---	---	8.691
1.44	0.367	1351.44	2.69 oc	---	---	---	6.60	0.00	---	---	---	---	9.298
1.46	0.373	1351.46	2.73 oc	---	---	---	7.20	0.00	---	---	---	---	9.922
1.48	0.379	1351.48	2.76 oc	---	---	---	7.80	0.00	---	---	---	---	10.56
1.50	0.384	1351.50	2.79 oc	---	---	---	8.43	0.00	---	---	---	---	11.22
1.52	0.390	1351.52	2.82 oc	---	---	---	9.07	0.00	---	---	---	---	11.89
1.54	0.396	1351.54	2.85 oc	---	---	---	9.73	0.00	---	---	---	---	12.57
1.56	0.401	1351.56	2.88 oc	---	---	---	10.40	0.00	---	---	---	---	13.28
1.58	0.407	1351.58	2.91 oc	---	---	---	11.08	0.00	---	---	---	---	13.99
1.60	0.413	1351.60	2.94 oc	---	---	---	11.77	0.00	---	---	---	---	14.71
1.62	0.418	1351.62	2.97 oc	---	---	---	12.49	0.00	---	---	---	---	15.46
1.64	0.424	1351.64	3.00 oc	---	---	---	13.22	0.00	---	---	---	---	16.21
1.66	0.430	1351.66	3.03 oc	---	---	---	13.96	0.00	---	---	---	---	16.98
1.68	0.436	1351.68	3.05 oc	---	---	---	14.71	0.00	---	---	---	---	17.77
1.70	0.442	1351.70	3.08 oc	---	---	---	15.48	0.00	---	---	---	---	18.56
1.72	0.447	1351.72	3.11 oc	---	---	---	16.26	0.00	---	---	---	---	19.37
1.74	0.453	1351.74	3.14 oc	---	---	---	17.06	0.00	---	---	---	---	20.19
1.76	0.459	1351.76	3.17 oc	---	---	---	17.86	0.00	---	---	---	---	21.03
1.78	0.465	1351.78	3.19 oc	---	---	---	18.68	0.00	---	---	---	---	21.87
1.80	0.471	1351.80	3.22 oc	---	---	---	19.51	0.00	---	---	---	---	22.73
1.82	0.477	1351.82	3.25 oc	---	---	---	20.35	0.00	---	---	---	---	23.59
1.84	0.483	1351.84	3.27 oc	---	---	---	21.20	0.00	---	---	---	---	24.48
1.86	0.488	1351.86	3.30 oc	---	---	---	22.07	0.00	---	---	---	---	25.37
1.88	0.494	1351.88	3.33 oc	---	---	---	22.95	0.00	---	---	---	---	26.27
1.90	0.500	1351.90	3.35 oc	---	---	---	23.84	0.00	---	---	---	---	27.19
1.92	0.506	1351.92	3.38 oc	---	---	---	24.74	0.00	---	---	---	---	28.11
1.94	0.512	1351.94	3.40 oc	---	---	---	25.65	0.00	---	---	---	---	29.05
1.96	0.518	1351.96	3.43 oc	---	---	---	26.57	0.00	---	---	---	---	30.00
1.98	0.524	1351.98	3.45 oc	---	---	---	27.50	0.00	---	---	---	---	30.95
2.00	0.530	1352.00	3.48 oc	---	---	---	28.43	0.00	---	---	---	---	31.91

...End

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Wednesday, Jun 23, 2010

## Hyd. No. 6

Post-Proj to 127th

Hydrograph type = Combine  
 Storm frequency = 100 yrs  
 Time interval = 2 min  
 Inflow hyds. = 3, 5

Peak discharge = 83.16 cfs  
 Time to peak = 722 min  
 Hyd. volume = 6.186 acft  
 Contrib. drain. area = 7.500 ac

