Baughman

NOV 21 2013

TRANSMITTAL

TO:	FROM:
Scott Lindebak PE	Pat Baer
COMPANY:	DATE:
City of Wichita	11/21/13
ADDRESS:	PROJECT:
8th Floor, City Hall, Eng. Dept.	West High School 2nd Addition
CITY/ STATE:	PROJECT NUMBER:
Wichita, KS 67217	12-06-P884

RE:
Final Drainage Report for West High 2nd Addition

VIA: MAIL

We are sending you ☒ ATTACHED ☐ UNDER SEPARATE COVER
☐ PLANS ☐ PRINTS ☐ SHOP DRAWINGS ☐ SAMPLES ☐ SPECS
☐ COPY OF LETTER ☐ CHANGE ORDER ☐ DISK ☒ OTHER

COPIES	DATE	DESCRIPTION
1	11/21/13	**Final Drainage Report and Plan**

☐ URGENT ☒ FOR APPROVAL ☐ FOR YOUR INFO ☐ FOR REVIEW & COMMENT
☐ APPROVED AS NOTED ☐ REVISE AS NOTED ☐ REVISE AND RETURN
☐ AS REQUESTED ☐ PLEASE REPLY ☐ FOR BIDS DUE ☐

NOTES/ COMMENTS:
Scott,

Attached is the Final Drainage Report for the above noted project. I have incorporated the comments you submitted to be in the Final Drainage Plan and completed the Drainage Report.

Thank you and please call me if you have any questions,

SIGNED: _____
Patrick S. Baer, PE

Copy:

ENGINEERING
SURVEYING
PLANNING
LANDSCAPE ARCHITECTURE

Baughman Company, P.A.
315 Ellis Street
Wichita, Kansas 67211
P 316.262.7271
F 316.262.0149

DRAINAGE PLAN

WEST HIGH 2ND ADDITION

TO

WICHITA, SEDGWICK COUNTY, KANSAS

PREPARED BY

Baughman
ENGINEERING | SURVEYING | PLANNING
LANDSCAPE ARCHITECTURE

19 November 2013

ENGINEERING | SURVEYING | PLANNING
LANDSCAPE ARCHITECTURE

DRAINAGE PLAN
NORTH HIGH 2ND ADDITON

FINAL REPORT

Prepared by Baughman Company, P.A.
November 21, 2013

By Patrick S. Baer, PE

REPORT CONTENTS

EXISTING CONDITIONS

The site is located just south of the existing West High School adjacent to the Arkansas River. The site is currently unplatted and developed as an athletic field with an infiltration basin. The area relatively flat and ultimately infiltrates into sandy soil draining into the river. There is storm water sewer in the area and drains directly into this area with a overflow drainage box allowing excess to drain into the Arkansas River.

The property lies within a FEMA SFHA Zone X-Shaded as of this report. The drainage patterns as defined above can be seen on the Drainage Plan (Exhibit 2).

PROPOSED CONDITIONS

The property is being platted as one large lot and final site plan may include a future Concession Stand and possible Clinic at the northwest corner of the plat.

The site is expected to drain, generally, as the existing site does today. There is storm water sewer located along the north and south which will continue to convey runoff directly to the river. We expect sheet flow across the sports fields and then in the generally direction of the storm water sewer. Since the site will be re-graded and the existing pavement removed, we expect more infiltration and less runoff. This would be apparent in only the curve number selection and would be represented as pervious areas.

For a half-scale copy of the Plat, see Exhibit 1.

OFFSITE CONDITIONS

The area is generally flat, draining into a infiltration Basin located in the Drainage Easement and the adjacent Railroad Right of Way. The area east of the Site is a City Facility site, west is a Residential Area and Sedgwick County Facility. North is West High School and South is a Railroad Line. The storm sewer system in Osage and Walker Drains into the Railroad Ditch, draining east to an existing Infiltration basin on site. During large rain events, an existing 2'x2' RCB located north of the Railroad, under McLean will route runoff east into the Arkansas River. Prior to the water ponding high enough to discharge to the RCB, the water will pond in the drainage easement and in Osage.

The overall site location and drainage patterns can be seen with the site location plotted as Exhibit 2.

EXISTING CONDITIONS RUNOFF CALCULATIONS

DRAINAGE METHODS & STANDARDS

The following methods and standards, although not a complete list, were used in calculating the existing conditions runoff values.

- STORM SERIES
  - 24-hour; 2-yr, 5-yr, 10-yr, 25-yr, 100-yr Storm Events Modeled
  - 2-yr Rainfall Depth = 3.5 in
  - 10-yr Rainfall Depth = 5.3 in
  - 100-yr Rainfall Depth = 7.9 in

- FLOW DATA
  - Areas per LIDAR data, USGS Quadrangle Sheet, Aerial Photos, and Site Visits
  - SCS Curve Number used for Existing Flows (composite computed using %)
  - Time of Concentration: Lag Method (minimum 15 min)

SITE CHARACTERISTICS

The site is currently unplatted and is developed for use as Athletic fields. The area is relatively flat and runoff collects in the existing infiltration area, draining into the soil which drains directly into the Little Arkansas River. The existing site characteristics can be seen from the aerial exhibit (Exhibit 2).

EXISTING CONDITIONS HYDROLOGIC ANALYSIS

The existing site was analyzed for existing runoff peak flows as well as existing impervious areas. Based on aerial images, it appears that the existing site is covered with a mixture of impervious areas, which have been approximated in the Hydrologic analysis. These impervious areas include structures, patios, driveways, and roads. Based on this impervious cover, a composite Curve Number of 87 was used, west of the site, 91 east of the site and 82 for this site. This was due to the above as well as the site lying in Type B soils. The entire site drains, ultimately, to the east (subsurface) and into the Little Arkansas River.

DOWNSTREAM DRAINAGE CAPACITY

The site drains to the Arkansas River to the west of the property. The river is controlled upstream for peak flow and is not expected to rise above its banks throughout the storm series. Since the flow is controlled upstream, and this property has been developed for many years, we expect the current FEMA study to be accurate for this reach.

The surrounding streets, which accept sheet flow and convey runoff to the storm water sewers, appears to be flat and may stand water. The storm water sewer currently serving the area consists of a 12" RCP on the west and an 33" along the south. Historic rain events show there is inadequate overflow to the river, the calculated detention during a 100 year event has been calculated and illustrated in Exhibit 2.

POST-DEVELOPMENT HYDROLOGIC ANALYSIS

DRAINAGE METHODS & STANDARDS

The following methods and standards, although not a complete list, were used in developing the drainage and grading plans.

- STORM SERIES
  - 24-hour; 2-yr, 5-yr, 10-yr, 25-yr, 50-yr, 100-yr Storm Events Modeled
  - Hydrograph Method utilized for Developed Flows
  - CN = 82 (Soil Type B – Disturbed Pervious Area)
  - Time of Concentration: Lag Method, minimum Tc = 15min

- GRADING CONSTRAINTS TO BE OBSERVED AT SITE PLAN
  - Grading will be provided at site plan
  - Match all existing perimeter grades
  - Onsite detention Volume will be maintained within the Permanent Drainage Easement.

DEVELOPED CONDITIONS HYDROLOGIC ANALYSIS

The current plan is to maintain the athletic fields, add an accessory Concession Building, and a Clinic at the Northwest corner of the site. With the completion of 0143PPD (607861), this site removed approximately 17,000 sq. feet of impervious area and increased the onsite infiltration basin volume and surface area. This improvement will provide capacity for a future Concession and Clinic site plans. These plans have not been finalized and are subject to change. A baseline for analysis for this drainage plan has been assumed.

A conservative curve number of 82 were used based on disturbed pervious areas in type B soils. Currently we have noted two areas are Temporary Detention Easements. These two Temporary Detention Easements will be terminated upon completion of a Private Project Drainage. This project will excavate an additional 230 cubic yards of soil within the existing Drainage Easement to provide the calculated detention capacity of water detention within the temporary drainage easement.

DISCHARGE POINTS SUMMARY

The site will continue to discharge to the east by the RCB, infiltration within the existing Basin; all of which eventually drains to the Arkansas River. The site will continue to utilize the storm water sewer systems along the east and south of the property.

WATER QUALITY

The site, upon development of the Concession Stand and Clinic, will provide water quality treatment due by the use of the existing Infiltration Basin. According to the City ordinance, the water quality treatment is met with the use of the Infiltration Basin.

DOWNSTREAM CHANNEL PROTECTION

No downstream channel protection will be required on this site. Downstream channel protection has been accounted for with the Improvements completed by the City of Wichita along this section of the Arkansas River.

POTENTIAL UPSTREAM/DOWNSTREAM IMPACTS

Recent improvements to the Athletic Field in 2013, with 0143PPD, has increased the detention volume and infiltration surface area for the basin located on site.

SOURCE OF FLOODPLAIN INFORMATION

The site lies within a FEMA Zone X - Shaded. The location of the property, on FEMA FIRM Panel 365 of 700 for Sedgwick County, Kansas, effective February 2, 2007, is attached as Exhibit 3.

US ARMY CORPS OF ENGINEERS
There does not appear to be any jurisdictional waters of the US on this site.

KANSAS DEPT OF AGRICULTURE – DWR PERMITTING
There does not appear to be any DWR permitting needed on the proposed site at this time.

FEMA
There is no mapped floodplain located upon the proposed site. Therefore, no FEMA permitting is expected at this time.

KANSAS DEPT OF TRANSPORTATION
No ROW permit is expected with this development.

SEDGWICK COUNTY PERMITTING
There does not appear to be any Sedgwick County permitting needed at this time.

EXHIBIT 1: Plat – Half Scale

EXHIBIT 2: Drainage Plan – Half Scale

EXHIBIT 3: Floodplain Location (FIRM)

WEST HIGH SCHOOL 2ND ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS

McCORMICK AVE.

SEE DETAIL "A"

SEE DETAIL "B"

RELOCATED FRANKLIN AVE., NOW OSAGE AVE

FRANKLIN AVE., now OSAGE AVE.

YIKE AVE., now IRVING AVE.

CAMFIELD AVE., now HANDLEY ST.

PEARL AVE., now STILLWELL AVE.

LINCOLN ST.

MIDLAND VALLEY RAILROAD COMPANY, (LESSOR PACIFIC RAILROAD COMPANY) (NOW ABANDONED)

KANSAS CITY, MEXICO, AND ORIENT RAILROAD (now ATCHISON, TOPEKA, AND SANTA FE RAILROAD

WALKER AVE. (DEED BOOK, PAGE 117)

DOOLEY AVE.

FIGG AVE.

S = SOUTH
N = NORTH
E = EAST
W = WEST
SW = SOUTHWEST
NW = NORTHWEST
SE = SOUTHEAST
NE = NORTHEAST
R/W = RIGHT-OF-WAY
℄ = CENTERLINE

NOTE:
A drainage plan has been developed for this subdivision and is on file with the City of Wichita, Kansas. Drainage Intent shall remain as depicted or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of the drainage plan shall be allowed.

DETAIL "A"
(SCALE: 1"=10')

DETAIL "B"
(NO SCALE)

PAGE 2 OF 2

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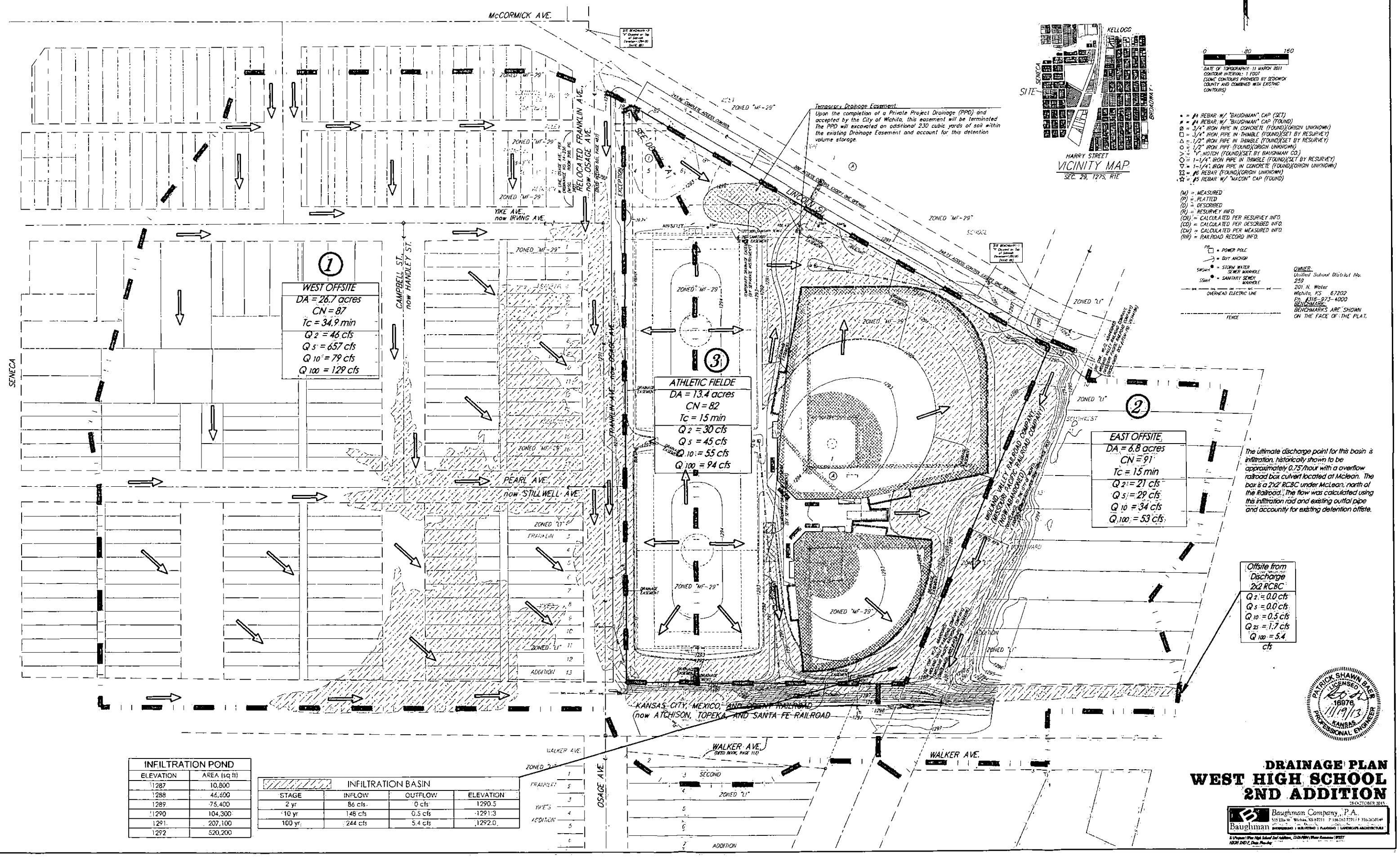
J:\PROJECTS\WEST HIGH SCHOOL 2ND ADDITION\12-05\1854\PLAT\DRAWING\WEST HIGH 2ND FINAL.DWG

DRAINAGE CONCEPT

WEST HIGH SCHOOL 2ND ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS



INFILTRATION POND	
ELEVATION	AREA (sq ft)
1287	10,800
1288	46,600
1289	75,400
1290	104,300
1291	207,100
1292	520,200

INFILTRATION BASIN

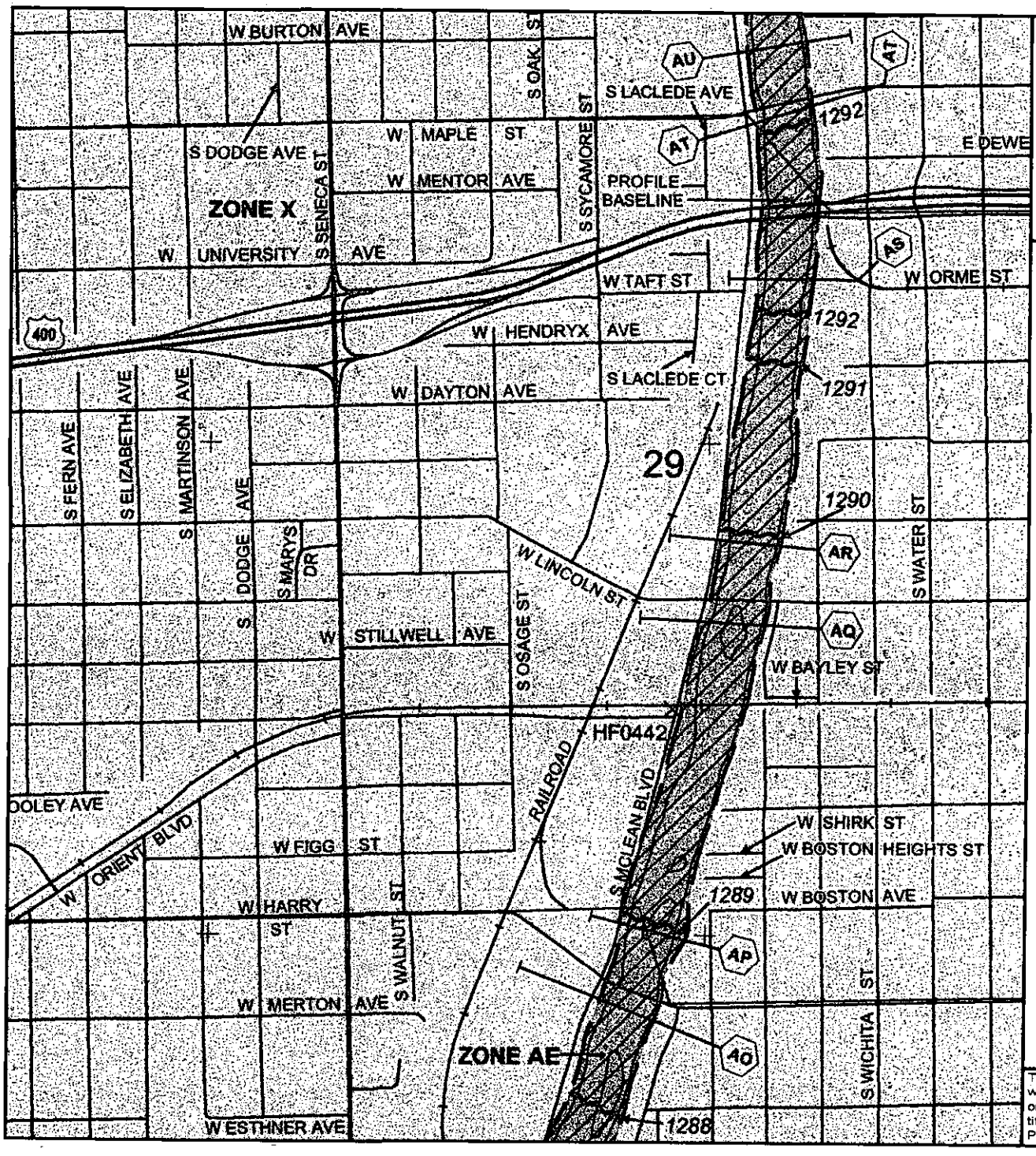
STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	86 cfs	0 cfs	1290.5
10 yr	148 cfs	0.5 cfs	1291.3
100 yr	244 cfs	5.4 cfs	1292.0

PATRICK SHAWN BAER LICENSED 16976 11/9/13 KANSAS PROFESSIONAL ENGINEER

28 OCTOBER 2013

DRAINAGE PLAN WEST HIGH SCHOOL 2ND ADDITION

Baughman Company, P.A.
535 Ellis St. Wichita, KS 67211 P 316.262.2221 F 316.262.0149
Baughman ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE



MAP SCALE 1" = 1000'

500 0 1000 2000 FE

300 0 300 60

PANEL 0365E

FIRM

FLOOD INSURANCE RATE MAP

SEDGWICK COUNTY, KANSAS
AND INCORPORATED AREAS

PANEL 365 OF 700

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SEDGWICK COUNTY	200321	0365	E
WICHITA, CITY OF	200328	0365	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
20173C0365E

EFFECTIVE DATE
FEBRUARY 2, 2007

Federal Emergency Management Agency

APPENDIX A : HydraFlow Hydrographs
Site Flow

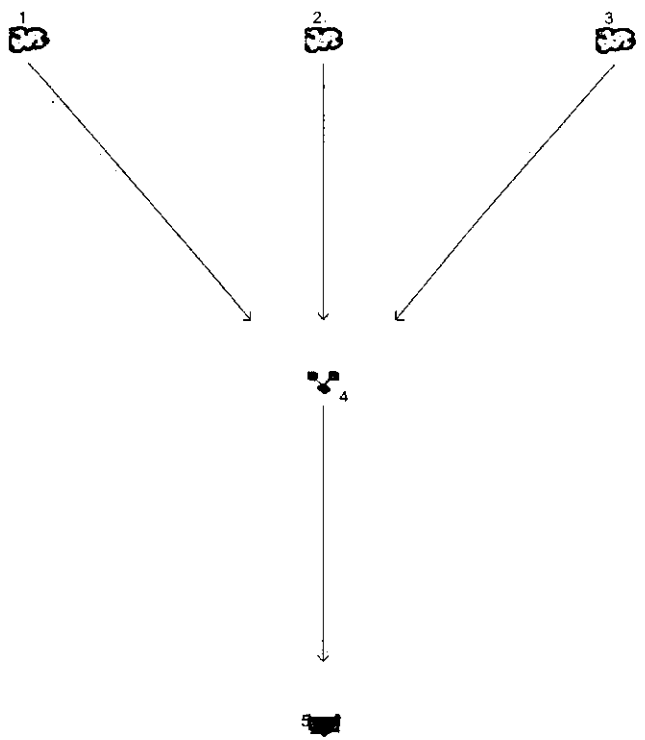
HydraFlow Hydrographs
Site Flow

Drainage Plan

1:80 Scale

Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10



Legend

Hyd.	Origin	Description
1	SCS Runoff	West offsite
2	SCS Runoff	East Offsite
3	SCS Runoff	West High Athletics
4	Combine	to Sed basin
5	Reservoir	Sediment Basin Outfall

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

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	------	33.08	46.17	6.432	65.24	78.68	95.96	111.30	128.50	West offsite
2	SCS Runoff	------	15.99	21.30	4.278	28.86	34.13	40.86	46.82	53.49	East Offsite
3	SCS Runoff	------	20.52	30.14	2.519	44.54	54.85	68.23	80.17	93.62	West High Athletics
4	Combine	1, 2, 3	60.56	85.35	11.06	121.74	147.52	180.78	210.35	243.56	to Sed basin
5	Reservoir	4	0.000	0.000	0.000	0.054	0.510	1.691	3.217	5.376	Sediment Basin Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

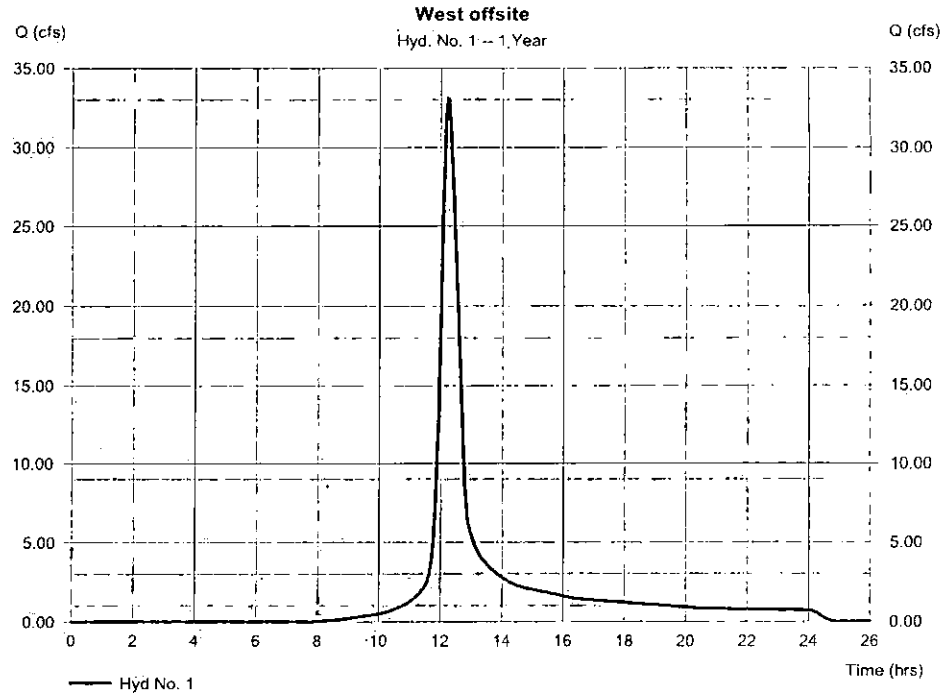
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	33.08	2	734	150,028	----	----	----	West offsite
2	SCS Runoff	15.99	2	722	45,380	----	----	----	East Offsite
3	SCS Runoff	20.52	2	722	58,024	----	----	----	West High Athletics
4	Combine	60.56	2	724	253,432	1, 2, 3	----	----	to Sed basin
5	Reservoir	0.000	2	1008	0	4	1290.03	180,447	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 33.08 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 150,028 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 2.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 1

West offsite

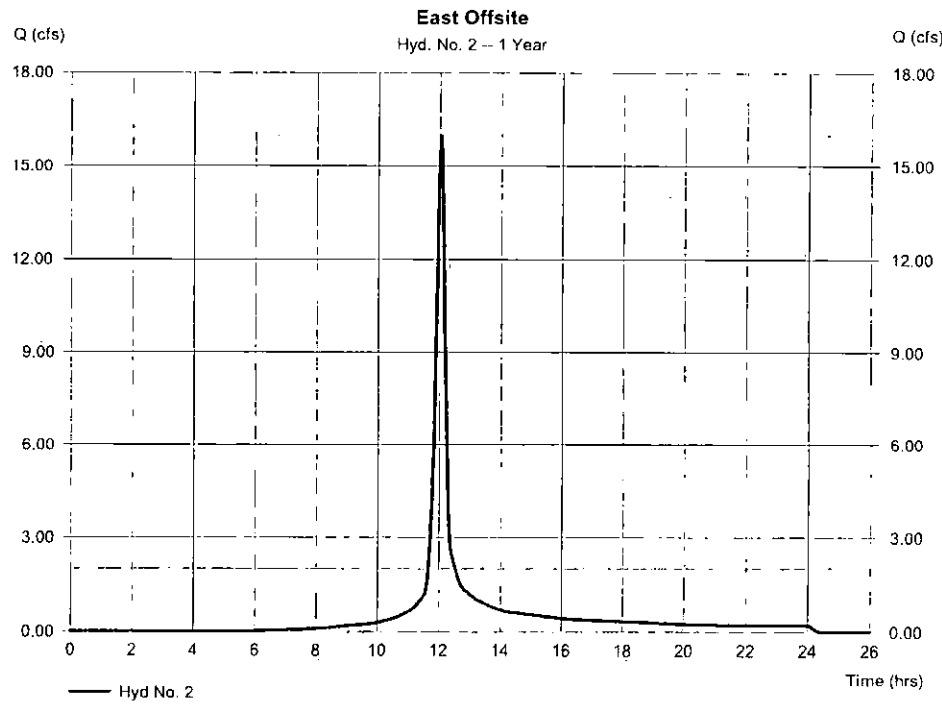
Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.050		0.011		0.011		
Flow length (ft)	= 250.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.50		0.00		0.00		
Land slope (%)	= 0.40		0.00		0.00		
Travel Time (min)	**= 15.41**	**+**	**0.00**	**+**	**0.00**	**=**	**15.41**
Shallow Concentrated Flow							
Flow length (ft)	= 1500.00		0.00		0.00		
Watercourse slope (%)	= 0.40		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=1.29		0.00		0.00		
Travel Time (min)	**= 19.45**	**+**	**0.00**	**+**	**0.00**	**=**	**19.45**
Channel Flow							
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		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Total Travel Time, Tc							**34.90 min**

Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 15.99 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 45,380 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 2.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

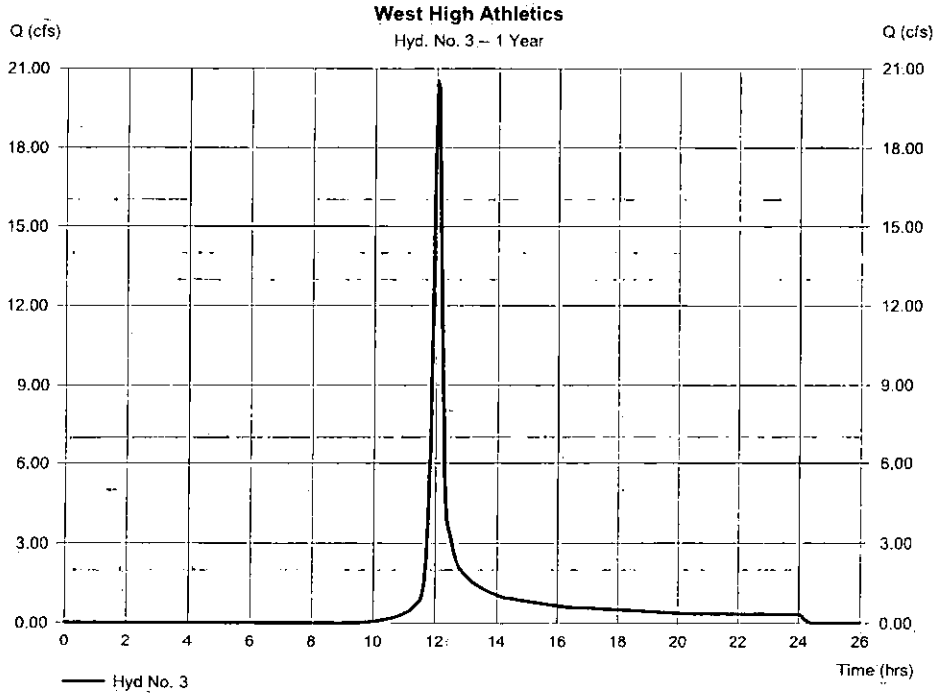


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 20.52 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 58,024 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 2.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

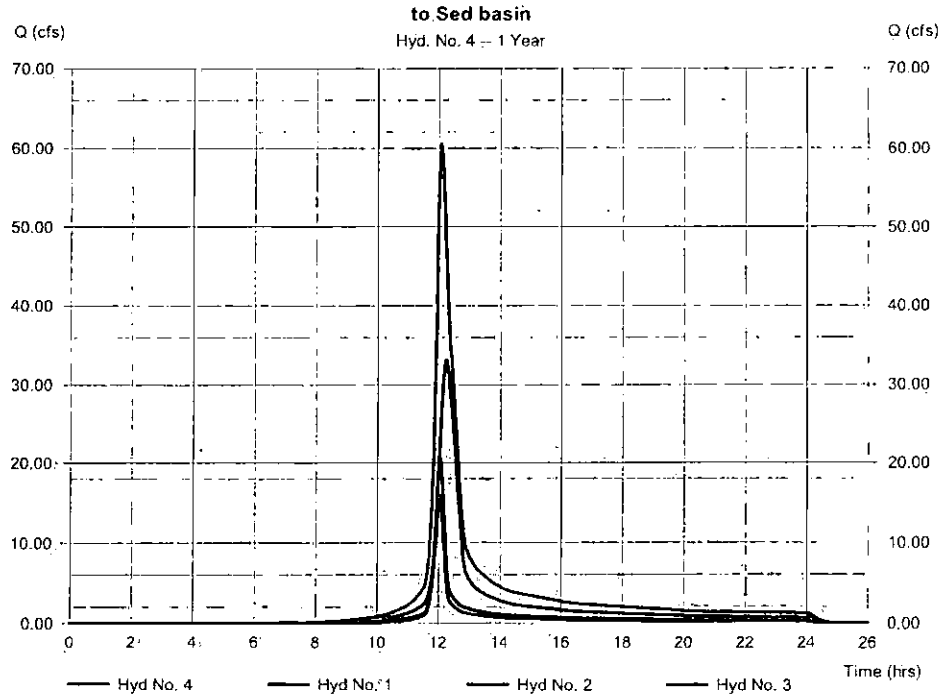


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 60.56 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 253,432 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



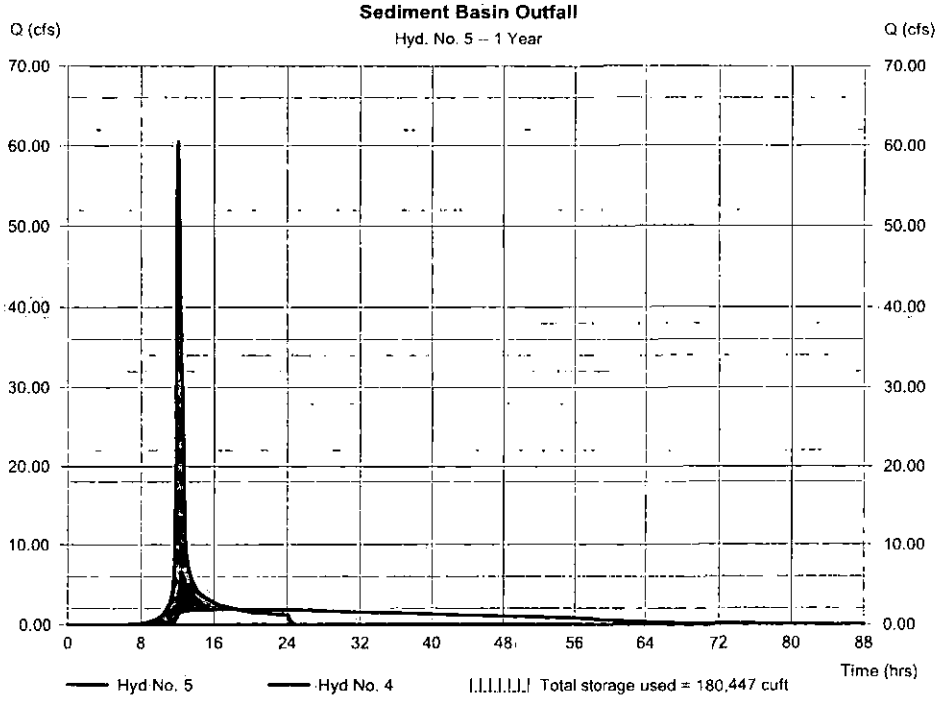
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= 16.80 hrs
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1290.03 ft
Reservoir name	= Sediment Basin	Max. Storage	= 180,447 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 1 - Sediment Basin

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1287.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1287.00	10,800	0	0
1.00	1288.00	46,630	26,621	26,621
2.00	1289.00	75,350	60,412	87,033
3.00	1290.00	104,300	89,425	176,458
4.00	1291.00	207,060	152,757	329,215
5.00	1292.00	520,160	351,766	680,981
6.00	1293.00	900,000	701,387	1,382,368

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1291.00	0.00	0.00	0.00
Length (ft)	= 110.00	0.00	0.00	0.00
Slope (%)	= 0.90	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)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 1289.25	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.750 (by Contour)			
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 cuft	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	1287.00	0.00	---	---	---	0.00	---	---	---	0.000	---	0.000
1.00	26,621	1288.00	0.00	---	---	---	0.00	---	---	---	0.810	---	0.810
2.00	87,033	1289.00	0.00	---	---	---	0.00	---	---	---	1.308	---	1.308
3.00	176,458	1290.00	0.00	---	---	---	0.00	---	---	---	1.811	---	1.811
4.00	329,215	1291.00	0.00	---	---	---	0.00	---	---	---	3.595	---	3.595
5.00	680,981	1292.00	5.36 ic	---	---	---	0.00	---	---	---	9.030	---	14.39
6.00	1,382,368	1293.00	14.84 oc	---	---	---	0.00	---	---	---	15.625	---	30.47

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

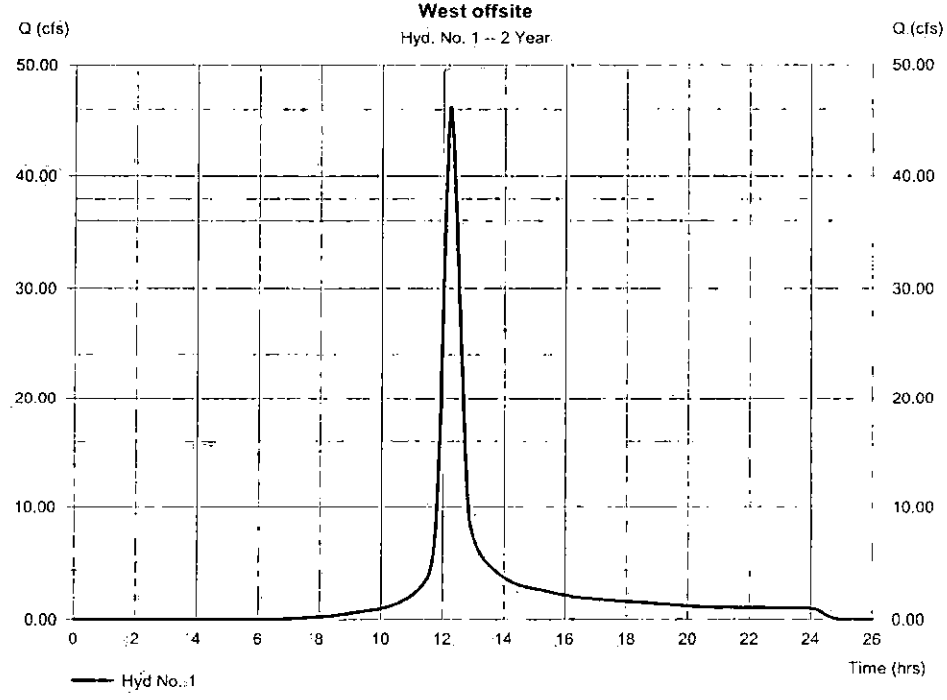
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	46.17	2	734	209,119	-----	-----	-----	West offsite
2	SCS Runoff	21.30	2	722	61,157	-----	-----	-----	East Offsite
3	SCS Runoff	30.14	2	722	84,542	-----	-----	-----	West High Athletics
4	Combine	85.35	2	724	354,818	1, 2, 3	-----	-----	to Sed basin
5	Reservoir	0.000	2	762	0	4	1290.50	252,997	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 46.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 209,119 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 3.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

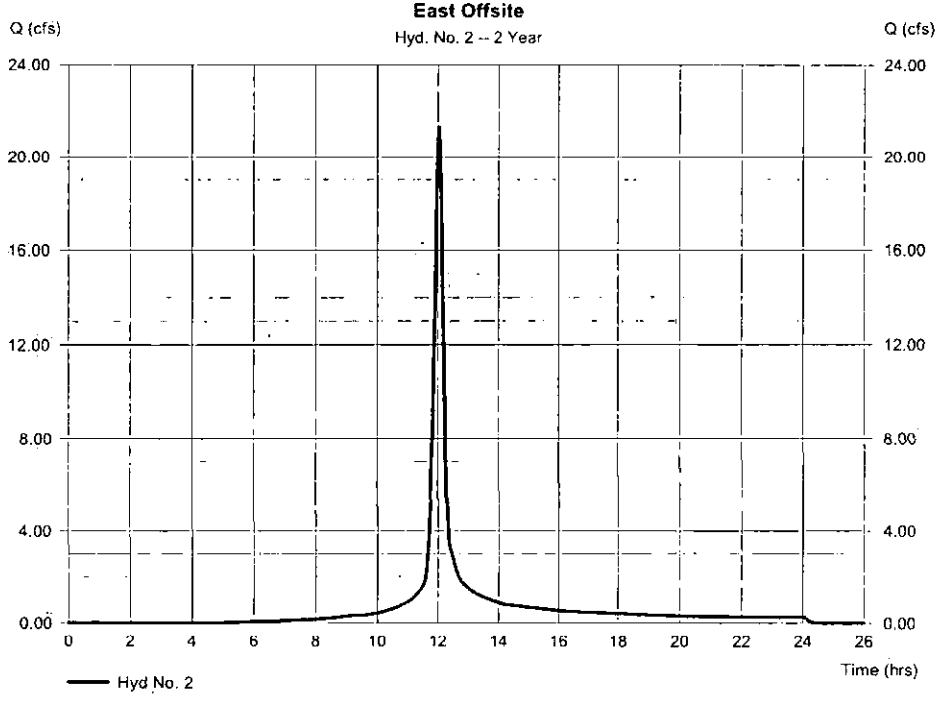


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 21.30 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 61,157 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

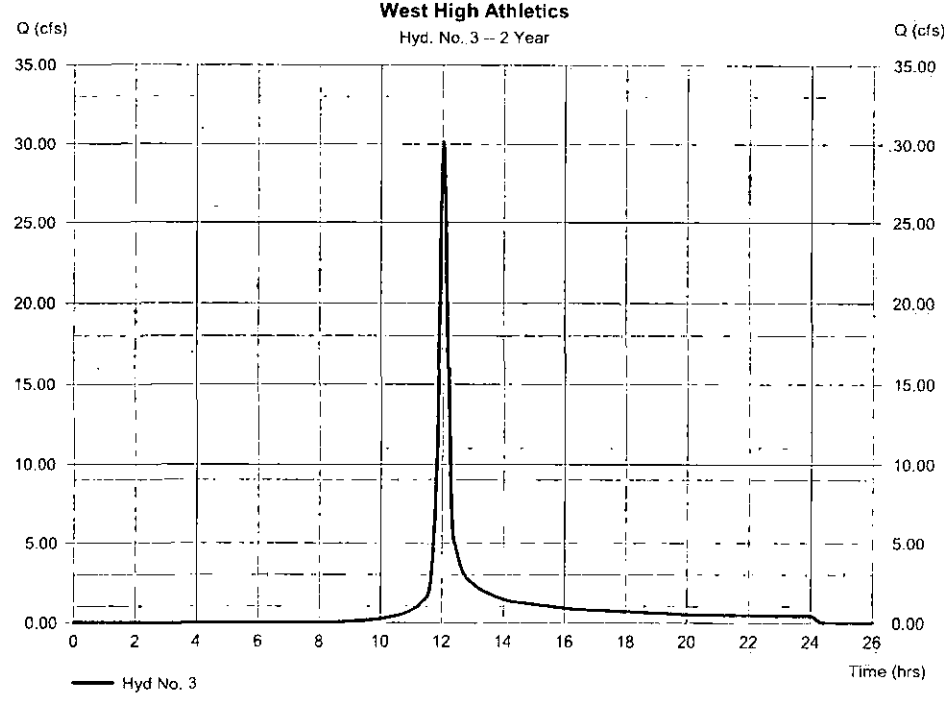


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 30.14 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 84,542 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

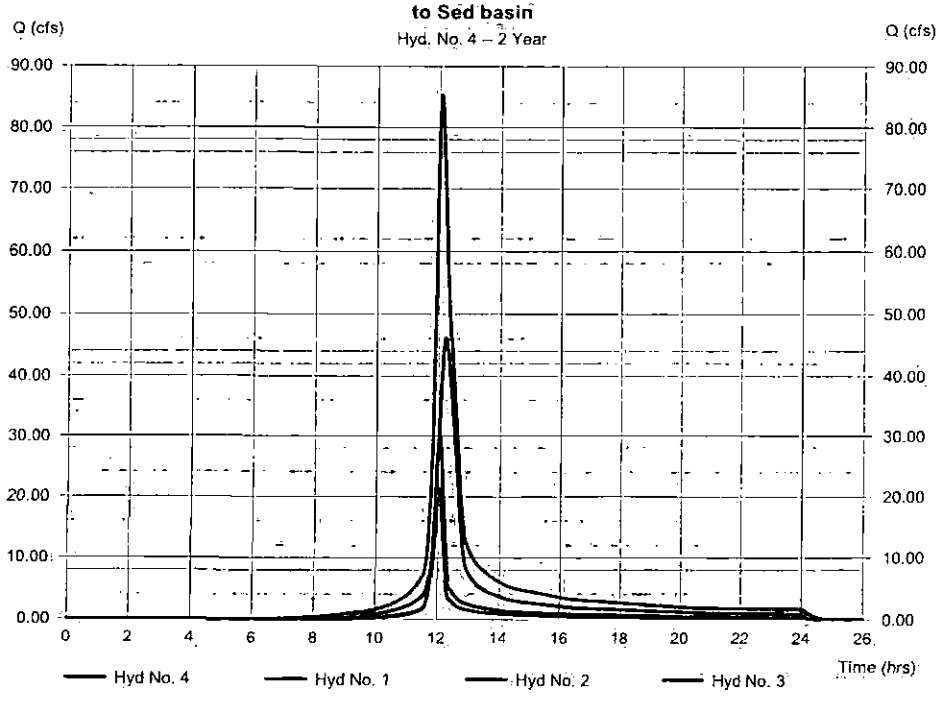


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 85.35 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 354,818 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



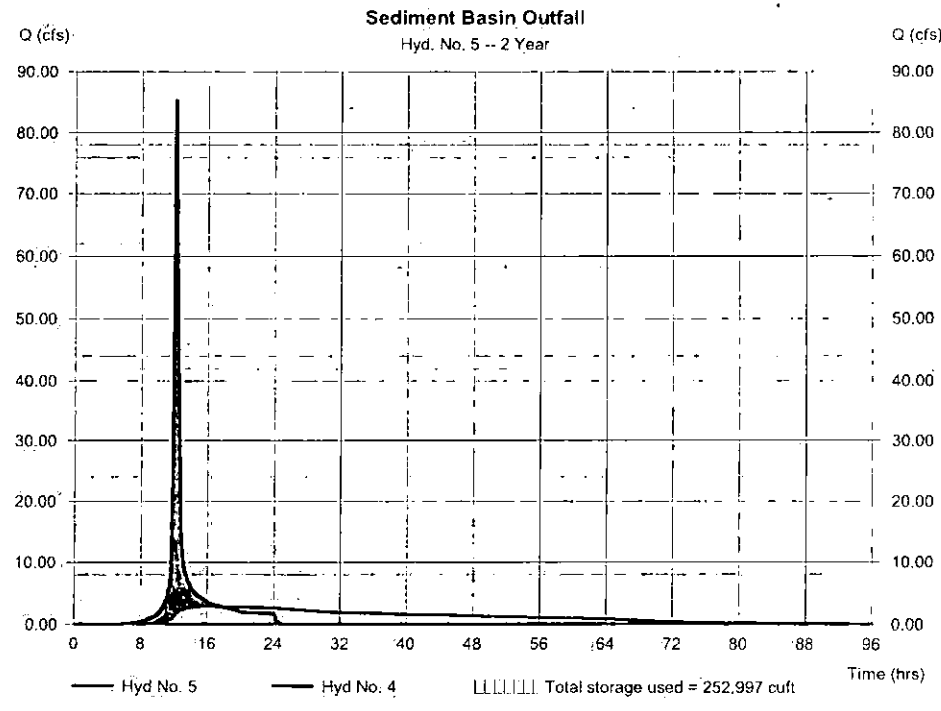
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.70 hrs
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1290.50 ft
Reservoir name	= Sediment Basin	Max. Storage	= 252,997 cuft

Storage indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	6.432	2	736	32,484	-----	-----	-----	West offsite
2	SCS Runoff	4.278	2	722	12,140	-----	-----	-----	East Offsite
3	SCS Runoff	2.519	2	724	9,288	-----	-----	-----	West High Athletics
4	Combine	11.06	2	726	53,911	1, 2, 3	-----	-----	to Sed basin
5	Reservoir	0.000	2	956	0	4	1288.04	28,739	Sediment Basin Outfall

West High Athletics Field.gpw | Return Period: 3 Year | Wednesday, 11 / 13 / 2013

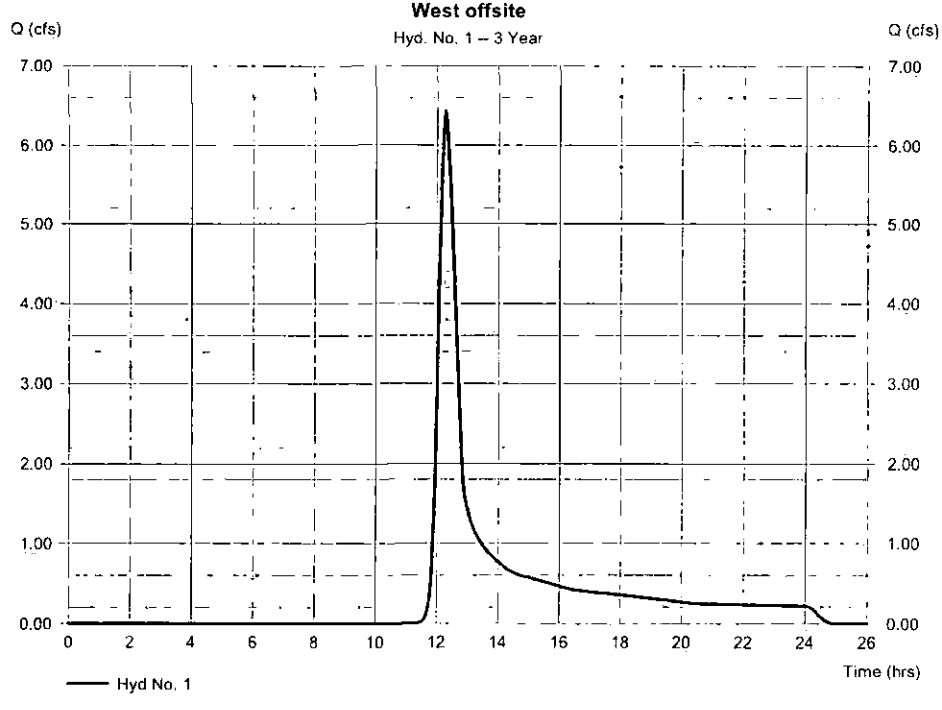
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10 — Wednesday, 11 / 13 / 2013

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 6.432 cfs
Storm frequency	= 3 yrs	Time to peak	= 12.27 hrs
Time interval	= 2 min	Hyd. volume	= 32,484 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 1.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

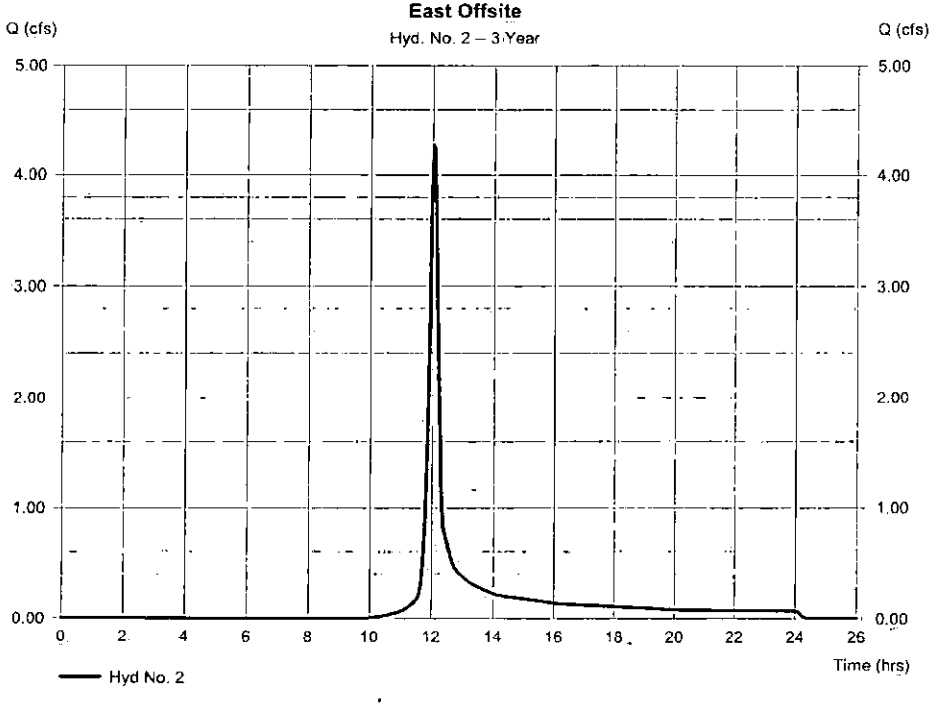


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.278 cfs
Storm frequency	= 3 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 12,140 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 1.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

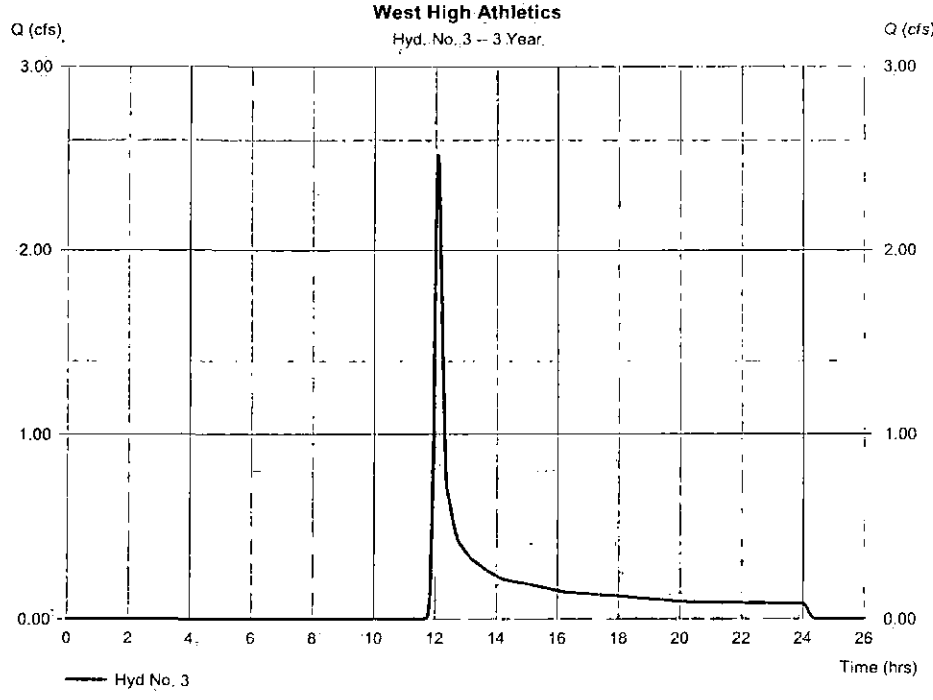


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 2.519 cfs
Storm frequency	= 3 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 9,288 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 1.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

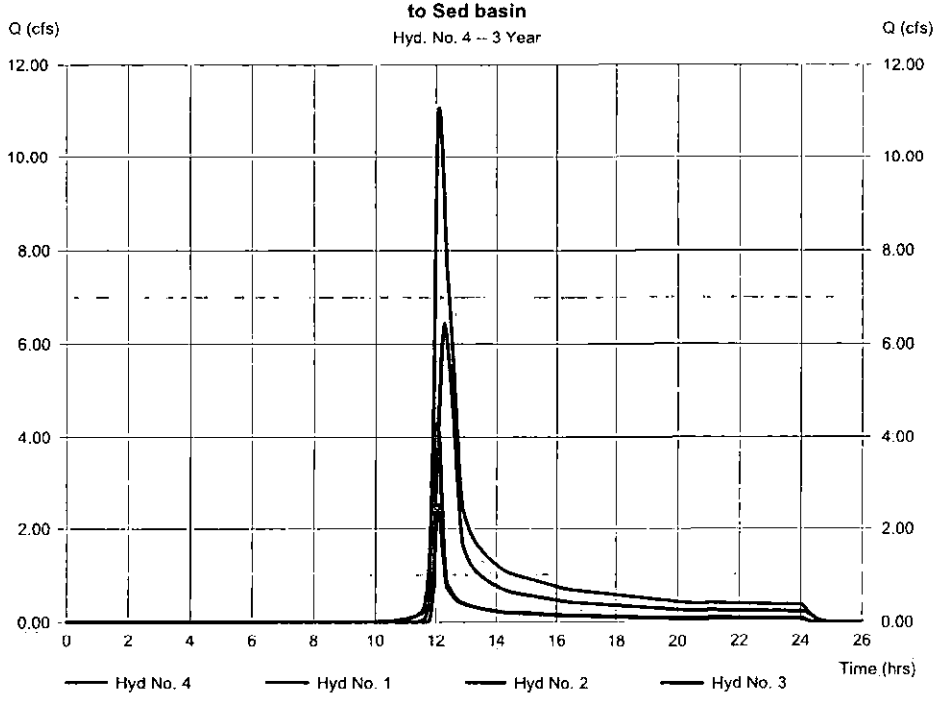


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 11.06 cfs
Storm frequency	= 3 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 53,911 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



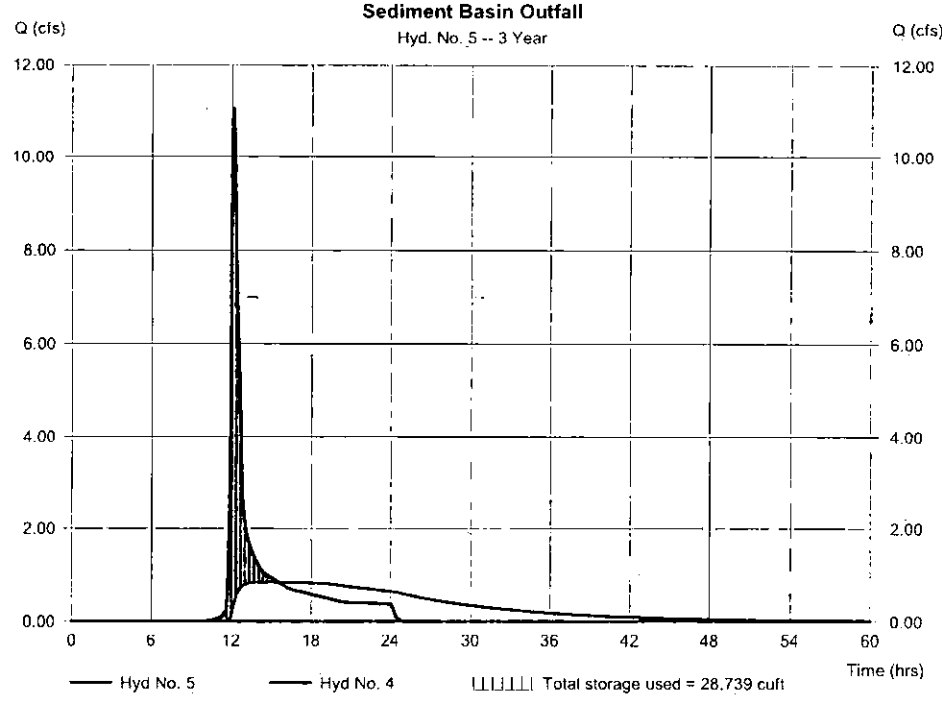
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 3 yrs	Time to peak	= 15.93 hrs
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1288.04 ft
Reservoir name	= Sediment Basin	Max. Storage	= 28,739 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

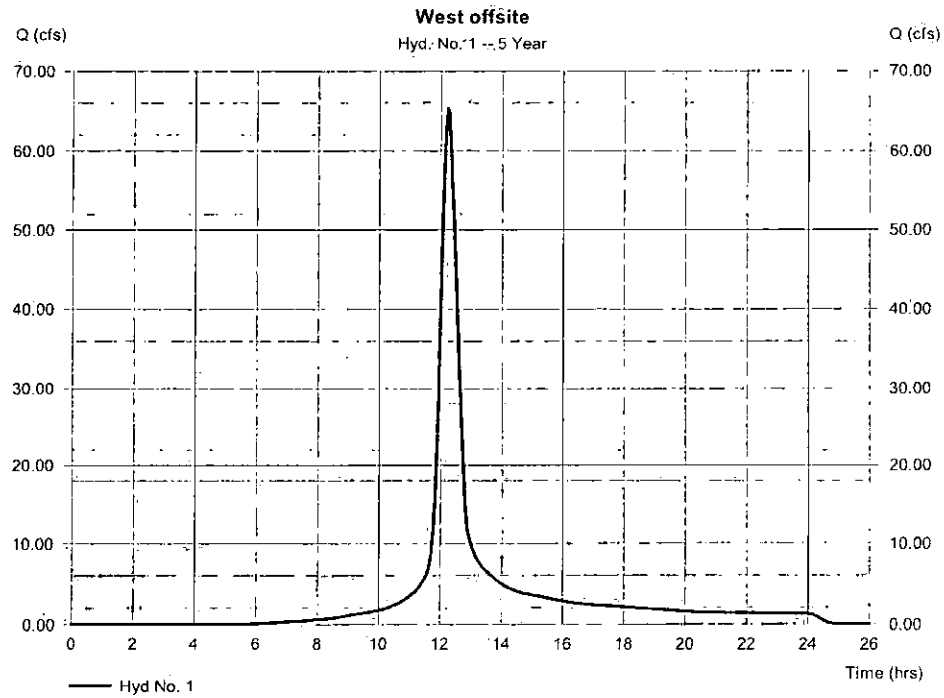
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	65.24	2	734	296,938	-----	-----	-----	West offsite
2	SCS Runoff	28.86	2	722	84,187	-----	-----	-----	East Offsite
3	SCS Runoff	44.54	2	722	125,018	-----	-----	-----	West High Athletics
4	Combine	121.74	2	724	506,144	1, 2, 3	-----	-----	to Sed basin
5	Reservoir	0.054	2	1010	1,375	4	1291.09	359,255	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 65.24 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 296,938 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 4.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

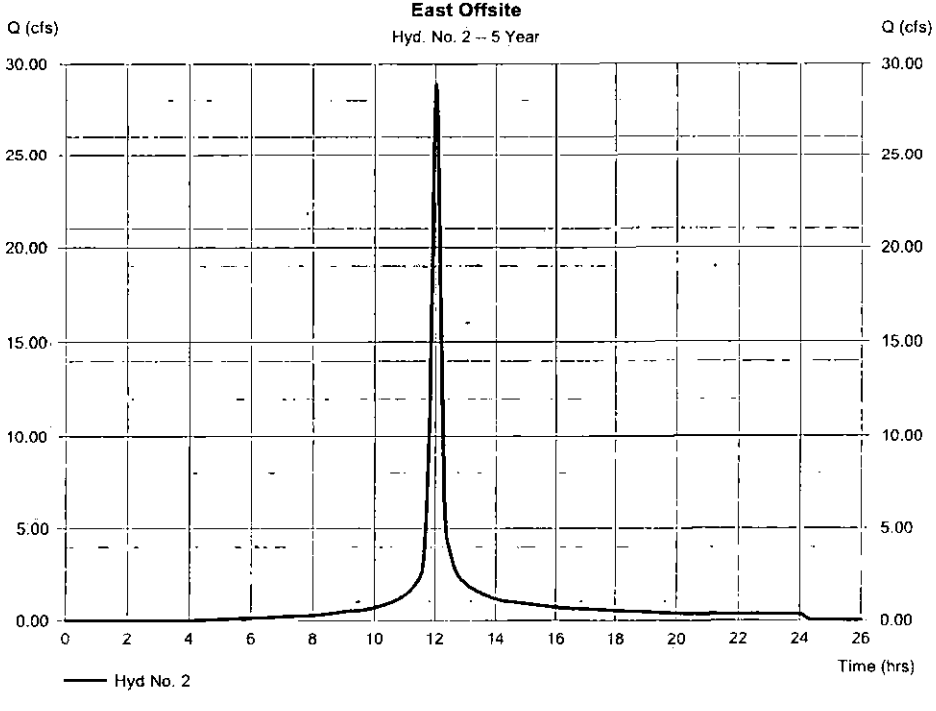


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 28.86 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 84,187 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 4.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

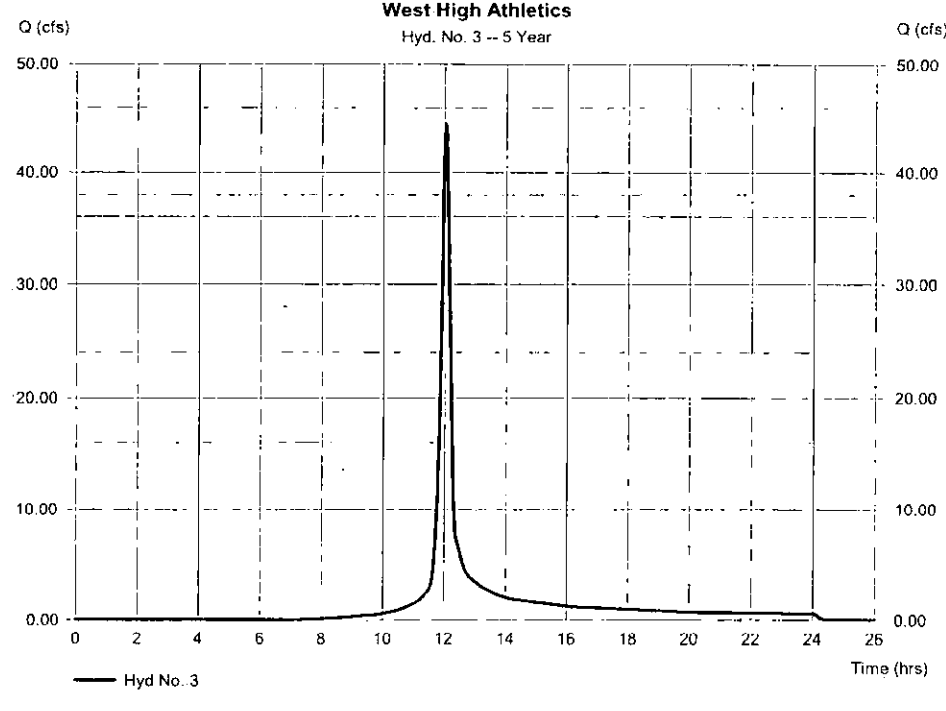


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 44.54 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 125,018 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 4.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

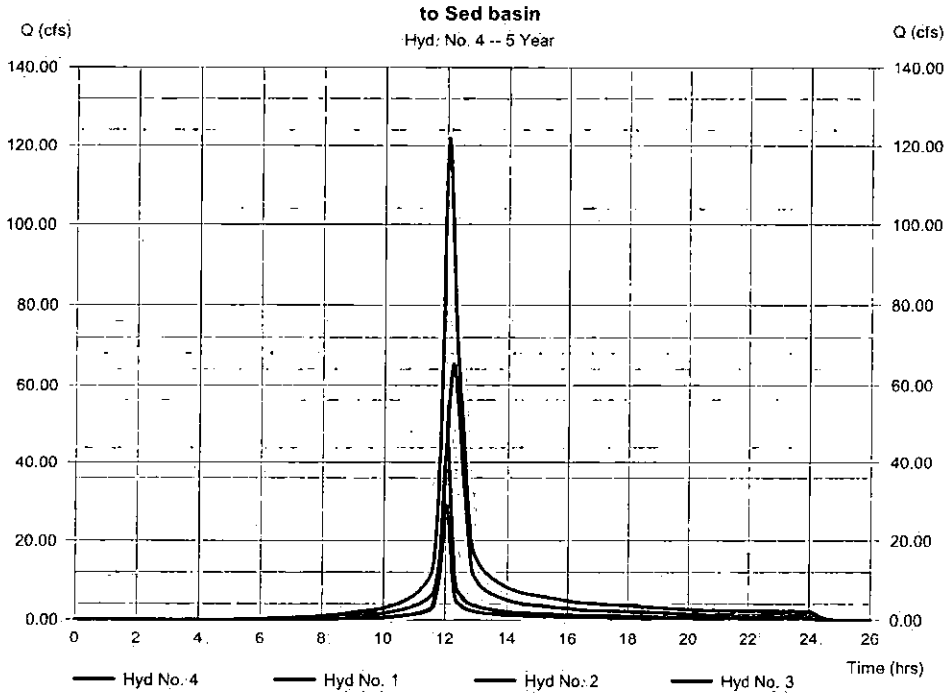


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 121.74 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 506,144 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



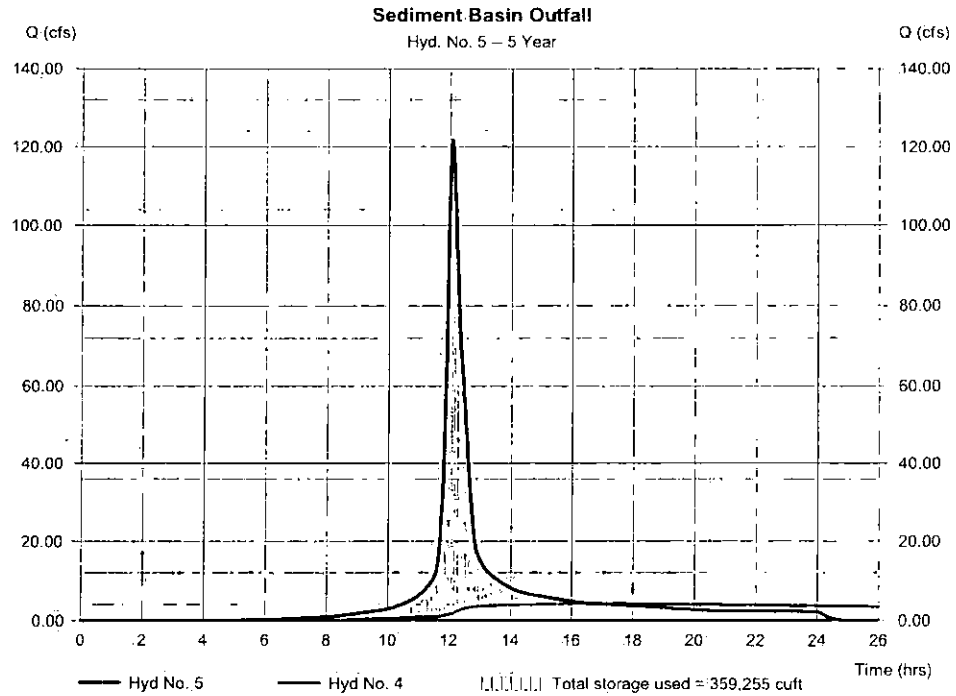
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 0.054 cfs
Storm frequency	= 5 yrs	Time to peak	= 16.83 hrs
Time interval	= 2 min	Hyd. volume	= 1,375 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1291.09 ft
Reservoir name	= Sediment Basin	Max. Storage	= 359,255 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

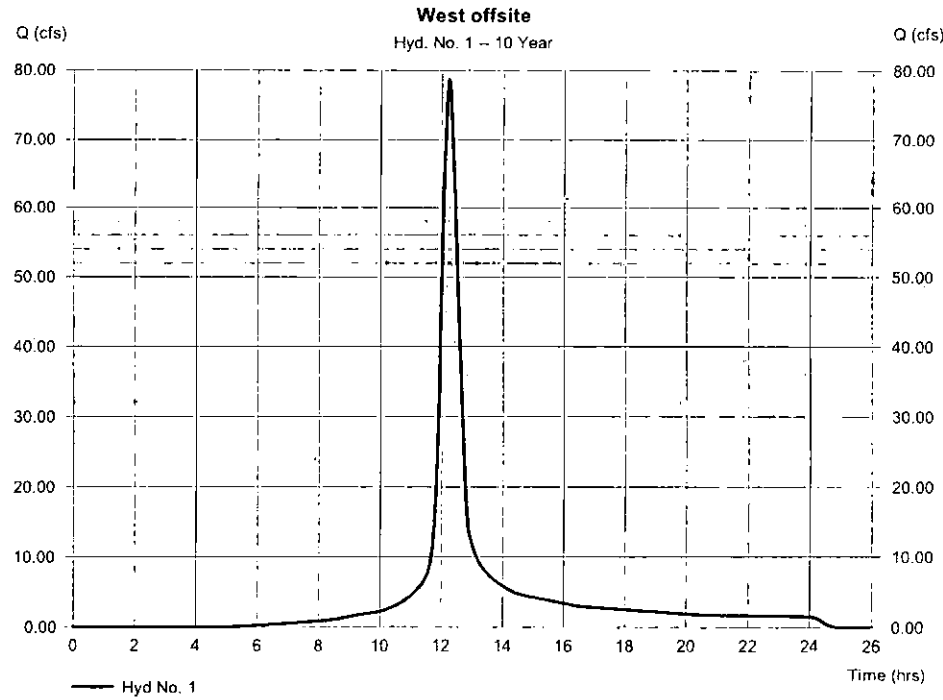
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	78.68	2	734	359,901	----	----	----	West offsite
2	SCS Runoff	34.13	2	722	100,514	----	----	----	East Offsite
3	SCS Runoff	54.85	2	722	154,540	----	----	----	West High Athletics
4	Combine	147.52	2	724	614,955	1, 2, 3	----	----	to Sed basin
5	Reservoir	0.510	2	958	15,451	4	1291.29	429,728	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 78.68 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 359,901 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 5.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

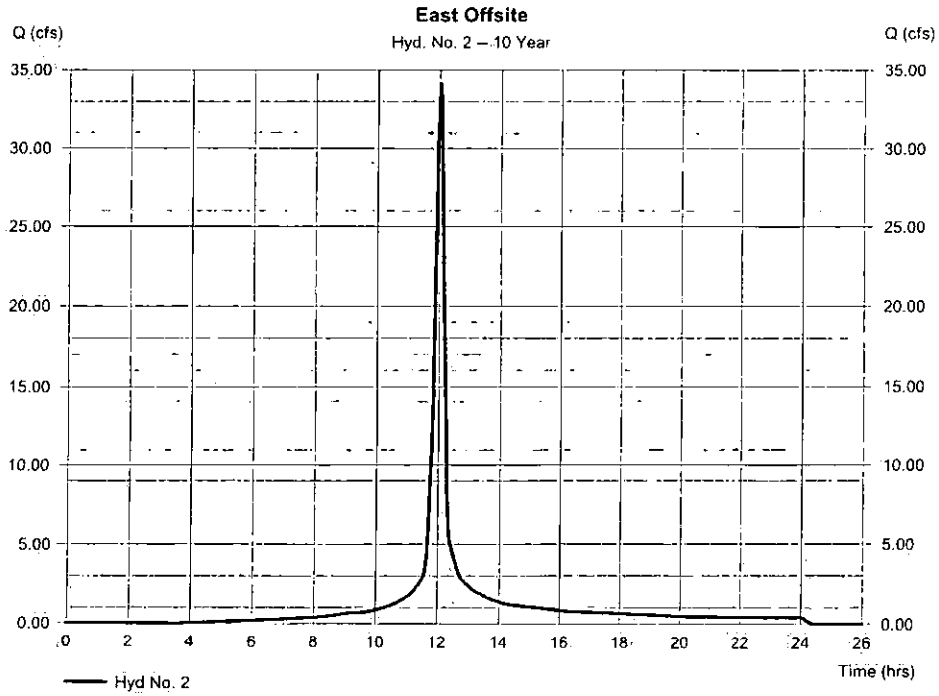


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 34.13 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 100,514 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 5.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

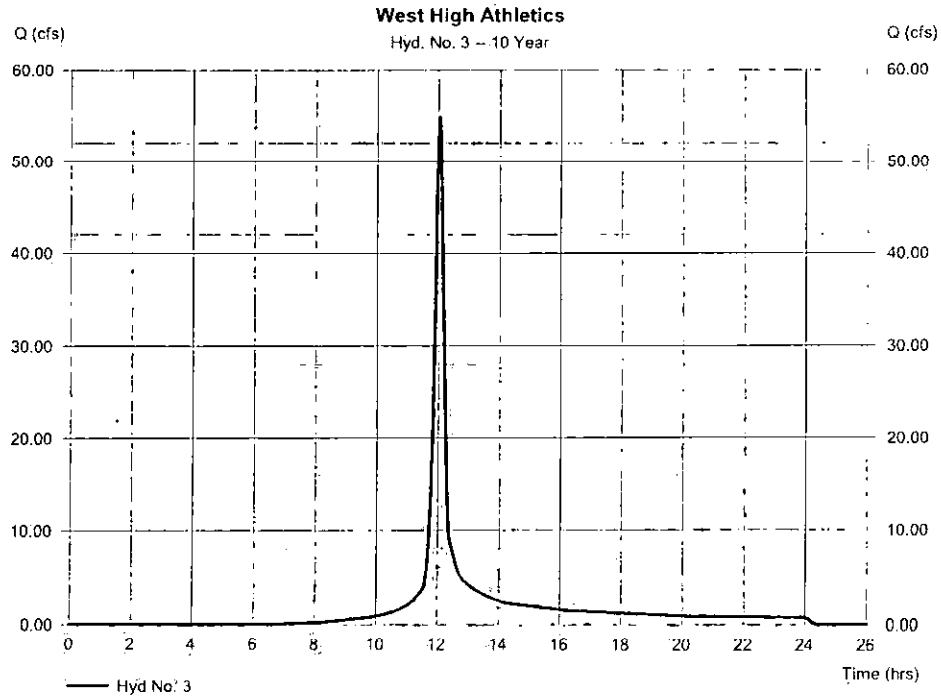


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 54.85 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 154,540 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 5.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

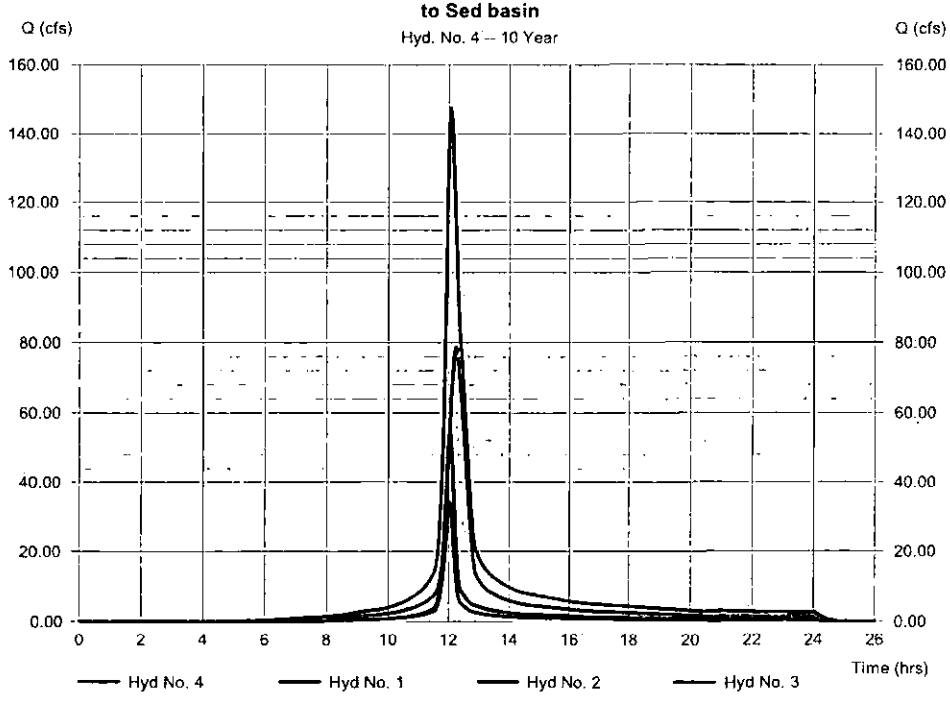


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 147.52 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 614,955 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



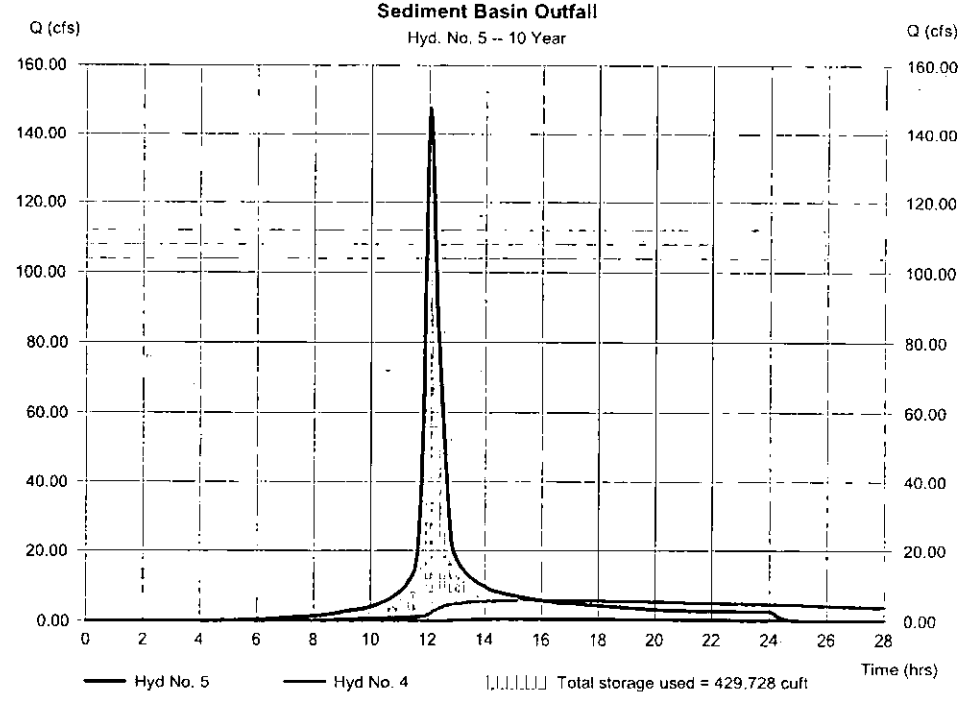
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 0.510 cfs
Storm frequency	= 10 yrs	Time to peak	= 15.97 hrs
Time interval	= 2 min	Hyd. volume	= 15,451 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1291.29 ft
Reservoir name	= Sediment Basin	Max. Storage	= 429,728 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

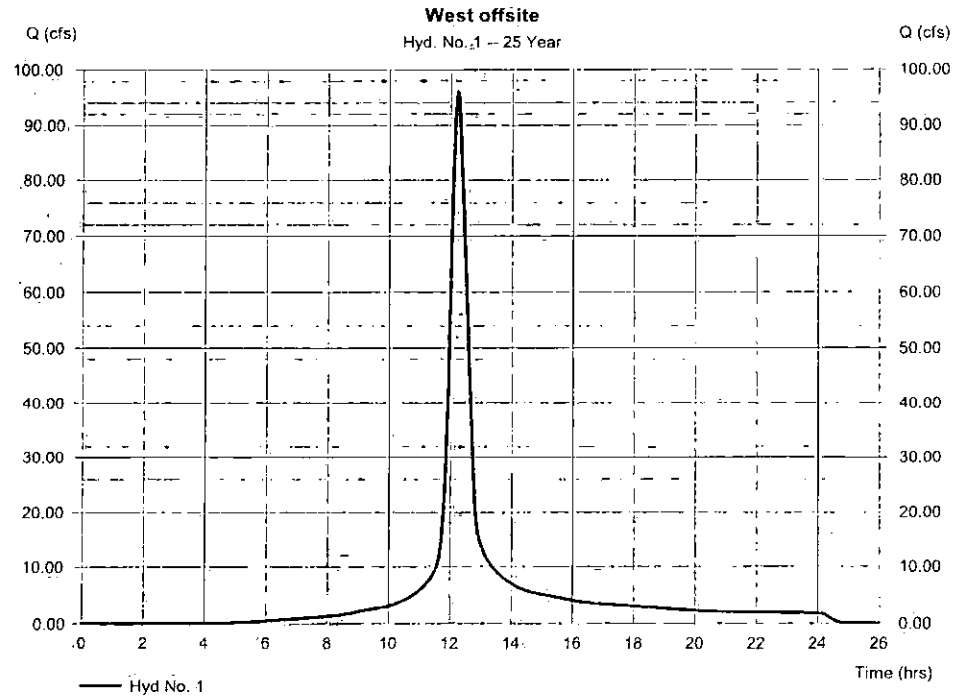
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	95.96	2	734	442,011	----	----	----	West offsite
2	SCS Runoff	40.86	2	722	121,661	----	----	----	East Offsite
3	SCS Runoff	68.23	2	722	193,460	----	----	----	West High Athletics
4	Combine	180.78	2	724	757,133	1, 2, 3	----	----	to Sed basin
5	Reservoir	1.691	2	912	54,750	4	1291.53	517,260	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 95.96 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 442,011 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 6.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

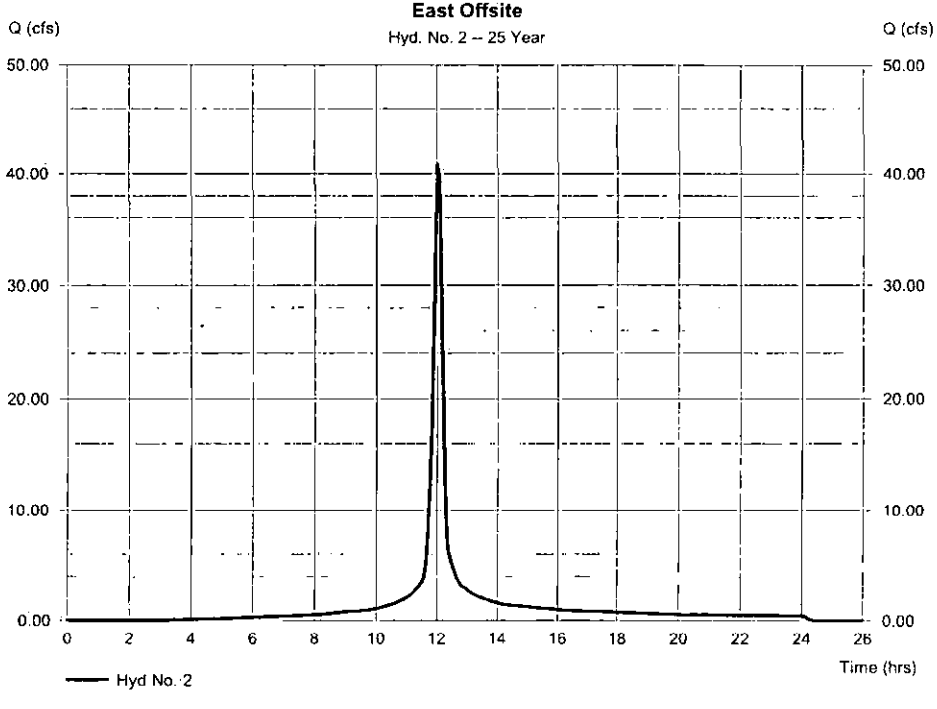


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 40.86 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 121,661 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 6.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

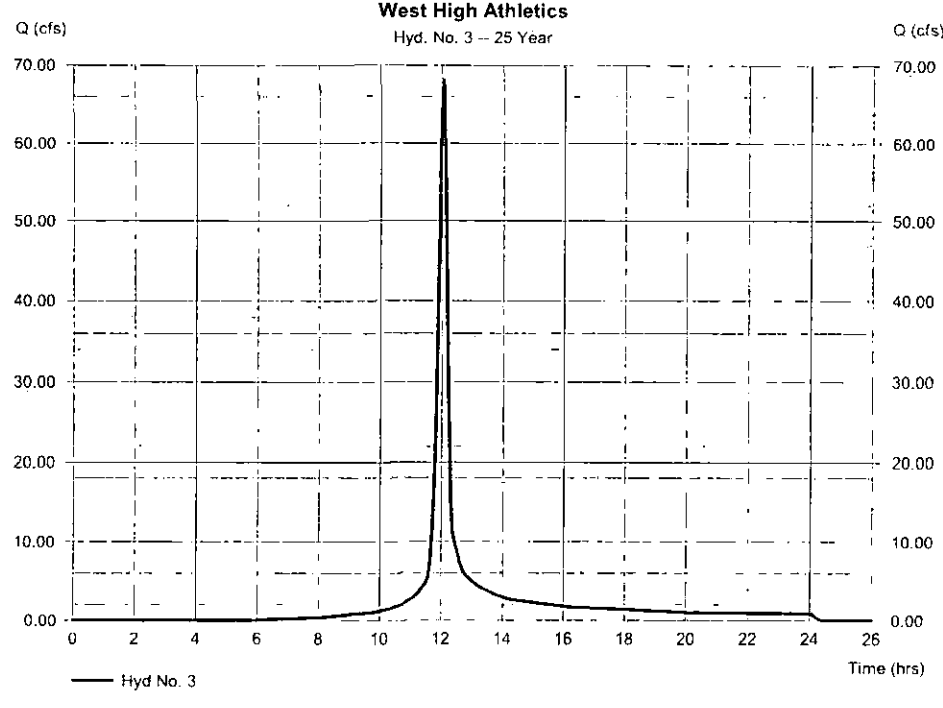


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 68.23 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 193,460 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 6.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

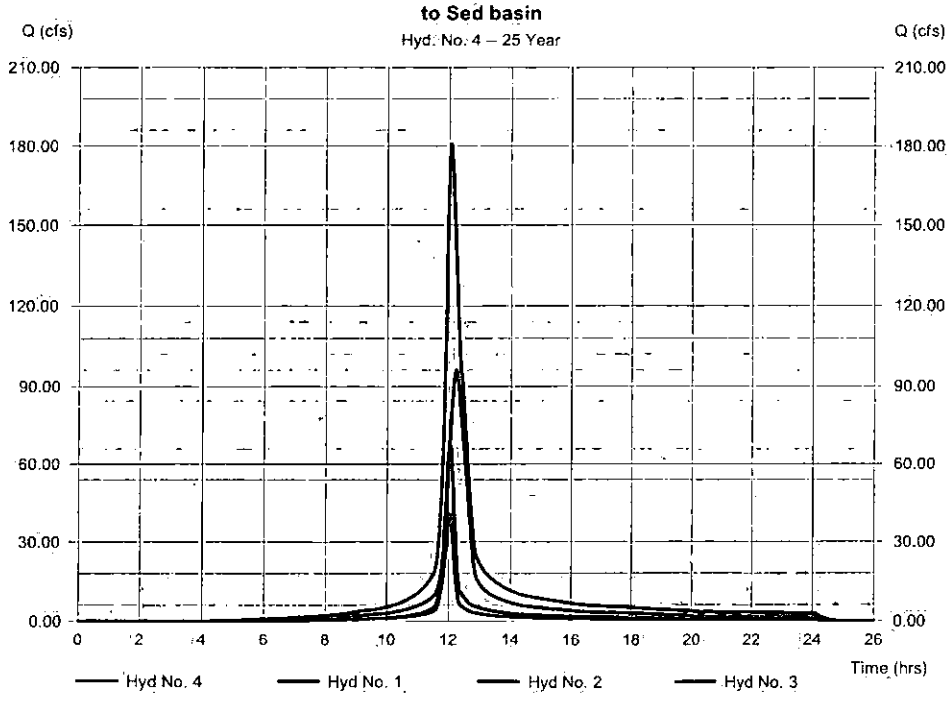


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 180.78 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 757,133 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



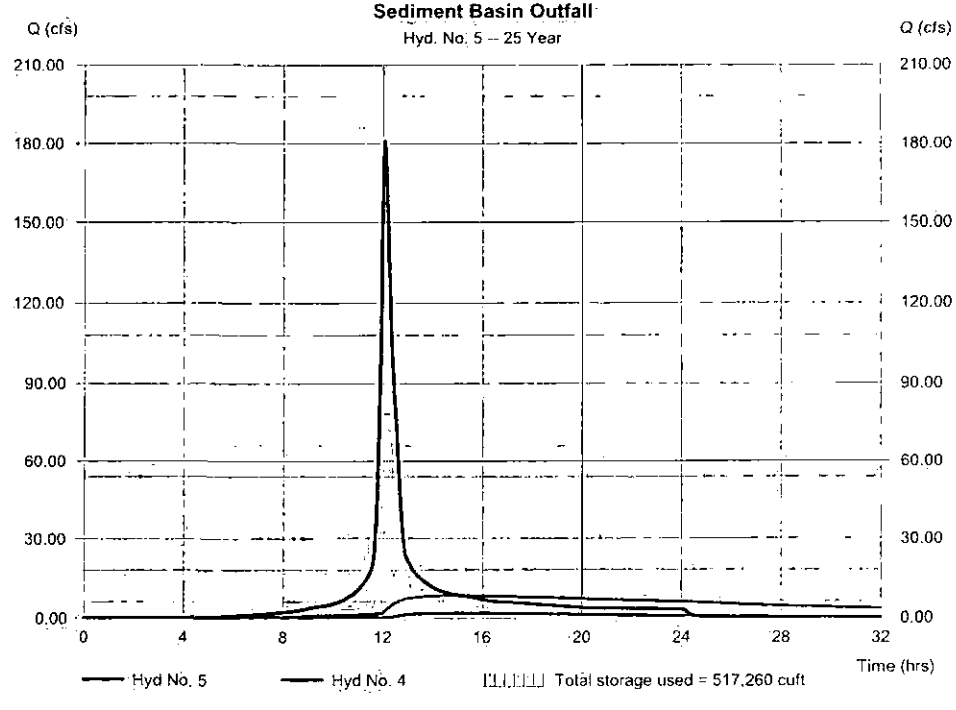
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 1.691 cfs
Storm frequency	= 25 yrs	Time to peak	= 15.20 hrs
Time interval	= 2 min	Hyd. volume	= 54,750 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1291.53 ft
Reservoir name	= Sediment Basin	Max. Storage	= 517,260 cuft

Storage indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

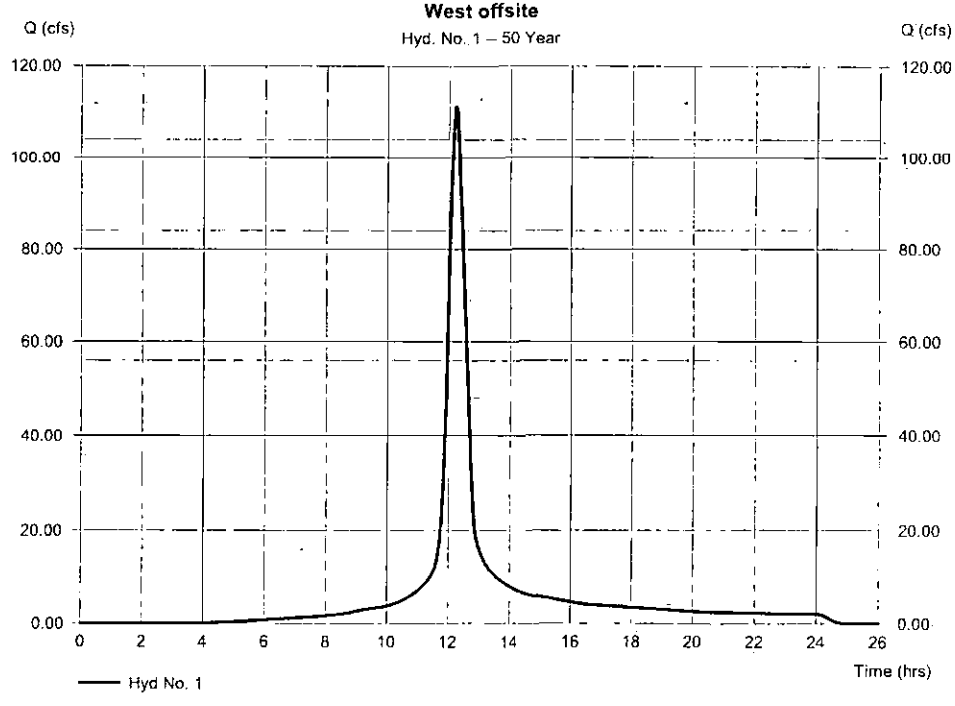
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	111.30	2	734	515,769	----	----	----	West offsite
2	SCS Runoff	46.82	2	722	140,560	----	----	----	East Offsite
3	SCS Runoff	80.17	2	722	228,713	----	----	----	West High Athletics
4	Combine	210.35	2	724	885,041	1, 2, 3	----	----	to Sed basin
5	Reservoir	3.217	2	872	104,026	4	1291.75	594,580	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 111.30 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 515,769 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 6.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

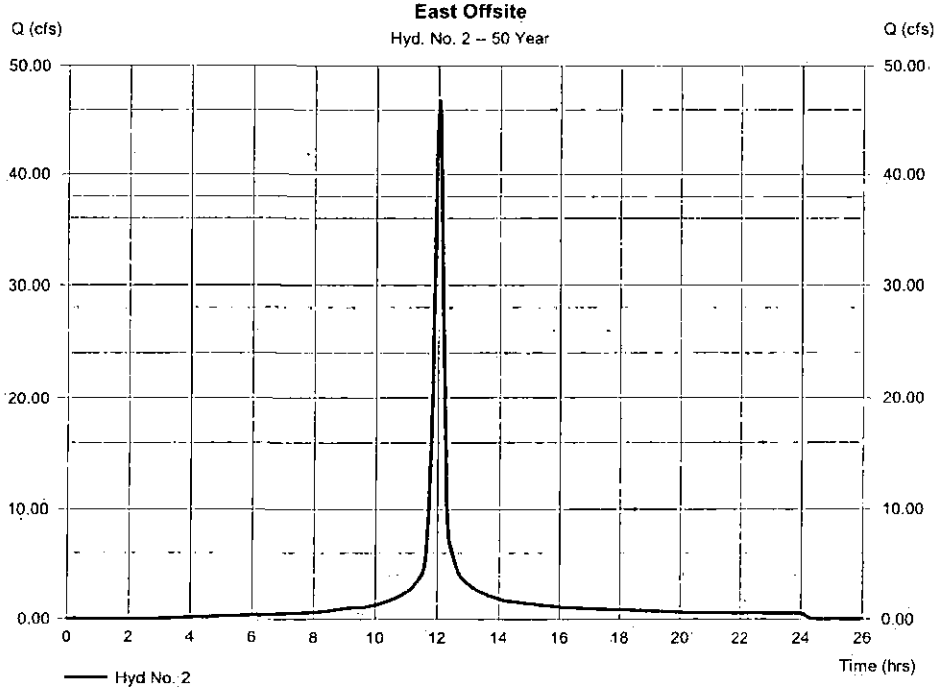


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 46.82 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 140,560 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 6.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

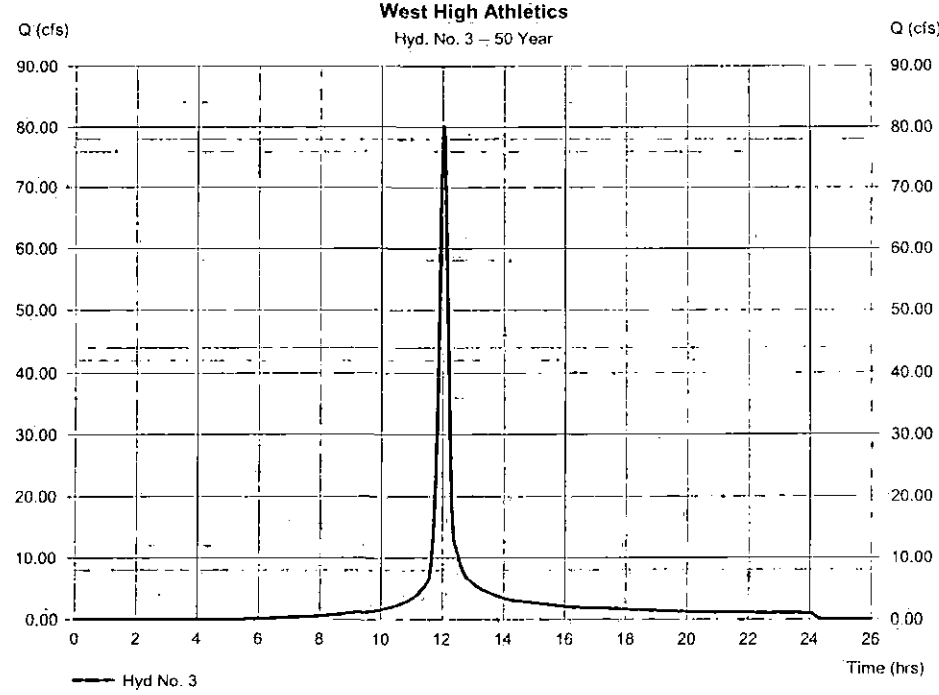


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 80.17 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 228,713 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 6.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

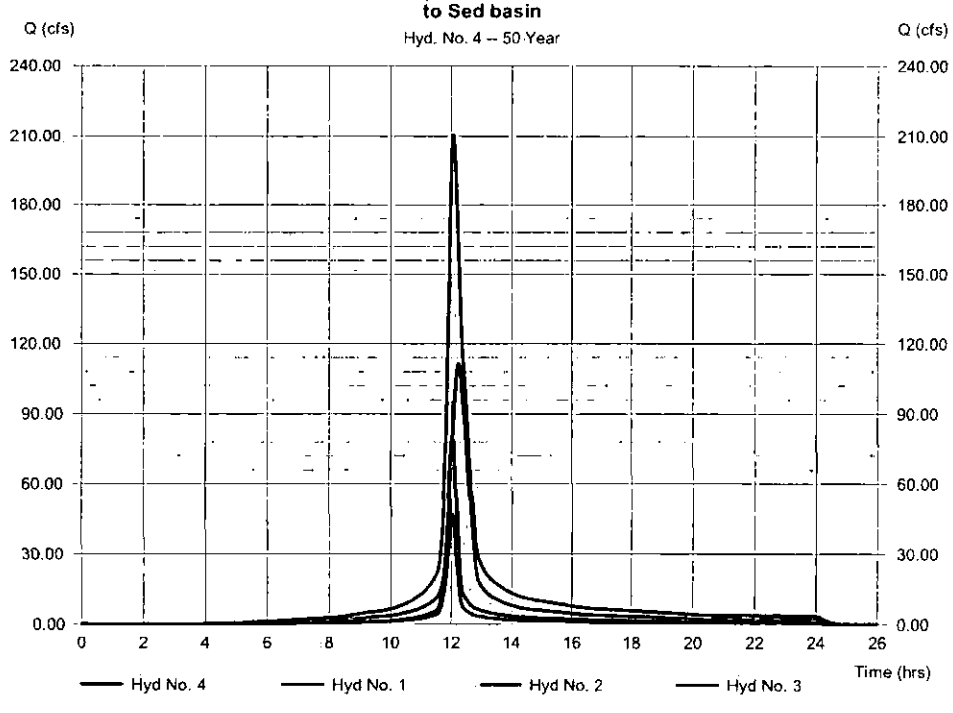


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 210.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 885,041 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



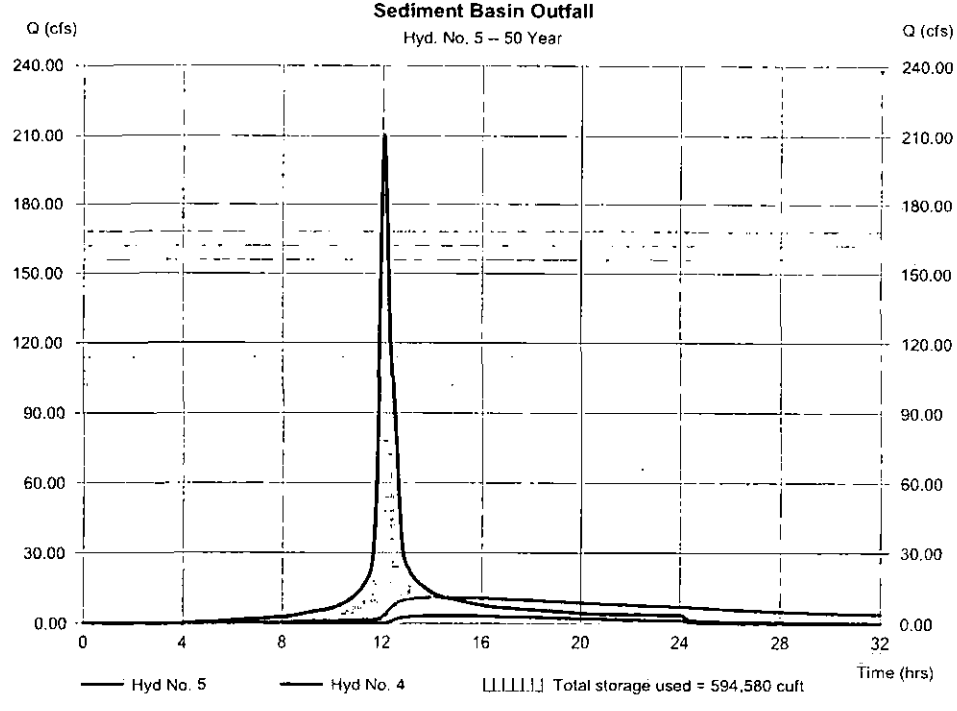
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 3.217 cfs
Storm frequency	= 50 yrs	Time to peak	= 14.53 hrs
Time interval	= 2 min	Hyd. volume	= 104,026 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1291.75 ft
Reservoir name	= Sediment Basin	Max. Storage	= 594,580 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

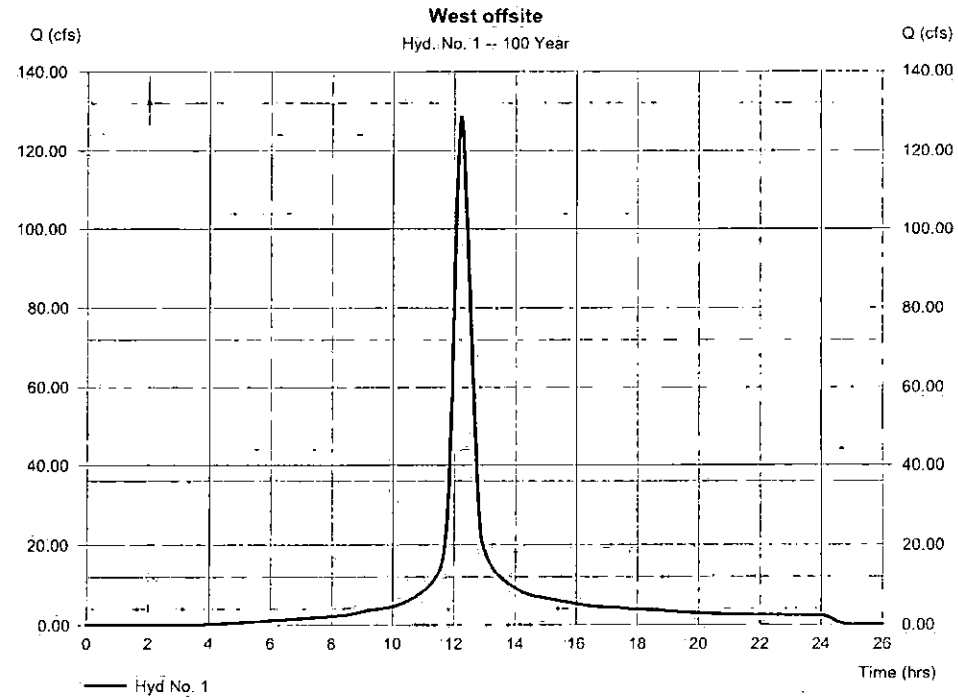
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	128.50	2	734	599,362	-----	-----	-----	West offsite
2	SCS Runoff	53.49	2	722	161,899	-----	-----	-----	East Offsite
3	SCS Runoff	93.62	2	722	268,910	-----	-----	-----	West High Athletics
4	Combine	243.56	2	724	1,030,170	1, 2, 3	-----	-----	to Sed basin
5	Reservoir	5.376	2	846	170,539	4	1292.00	682,241	Sediment Basin Outfall

Hydrograph Report

Hyd. No. 1

West offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 128.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 599,362 cuft
Drainage area	= 26.700 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.90 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

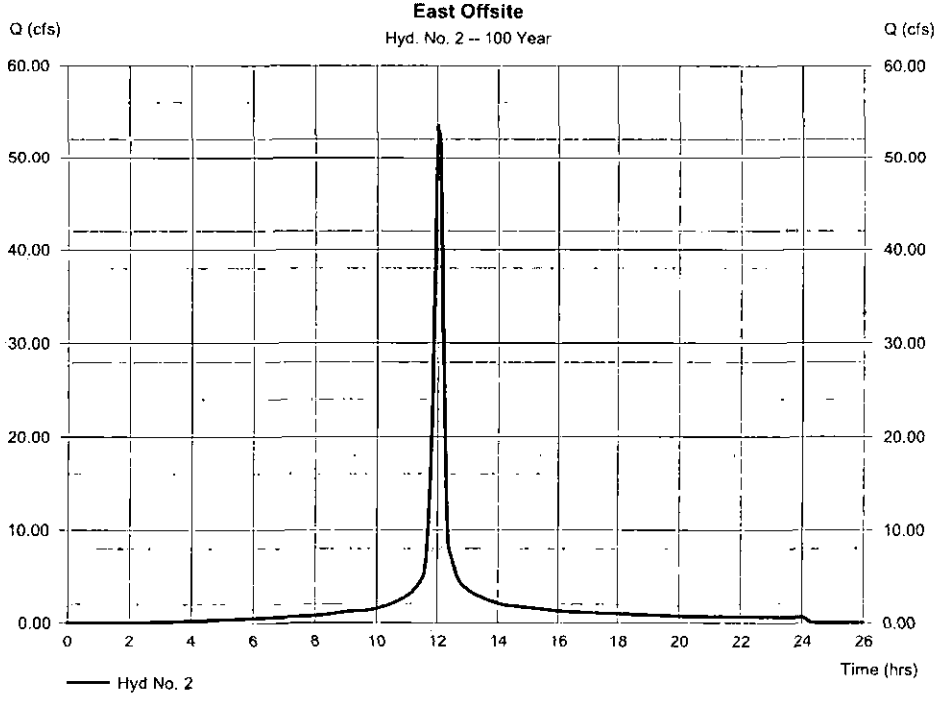


Hydrograph Report

Hyd. No. 2

East Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 53.49 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 161,899 cuft
Drainage area	= 6.800 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

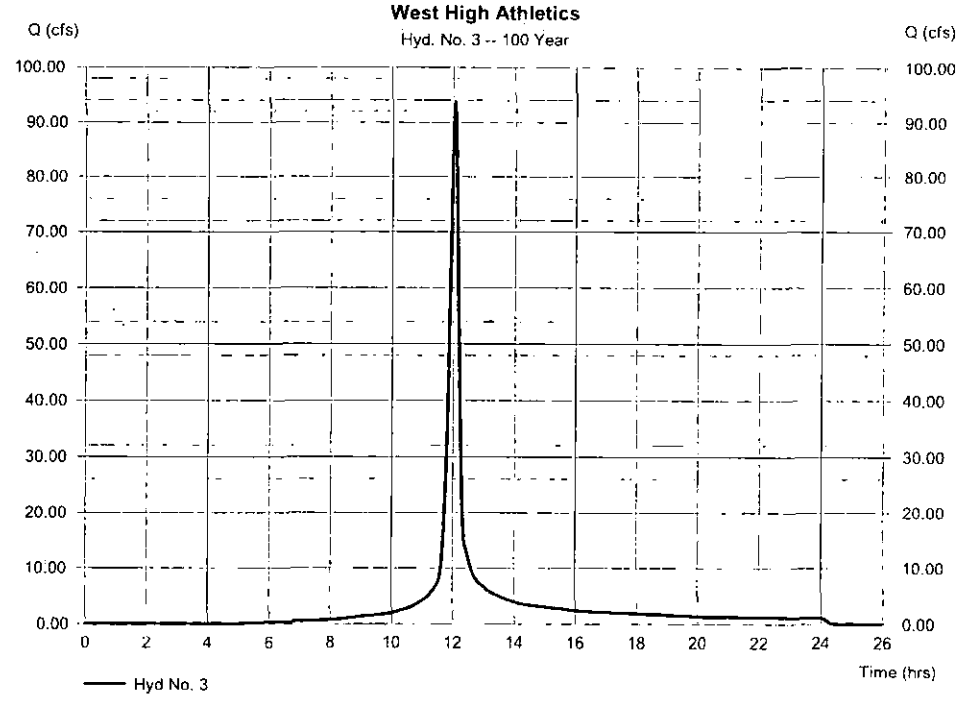


Hydrograph Report

Hyd. No. 3

West High Athletics

Hydrograph type	= SCS Runoff	Peak discharge	= 93.62 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 268,910 cuft
Drainage area	= 13.400 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

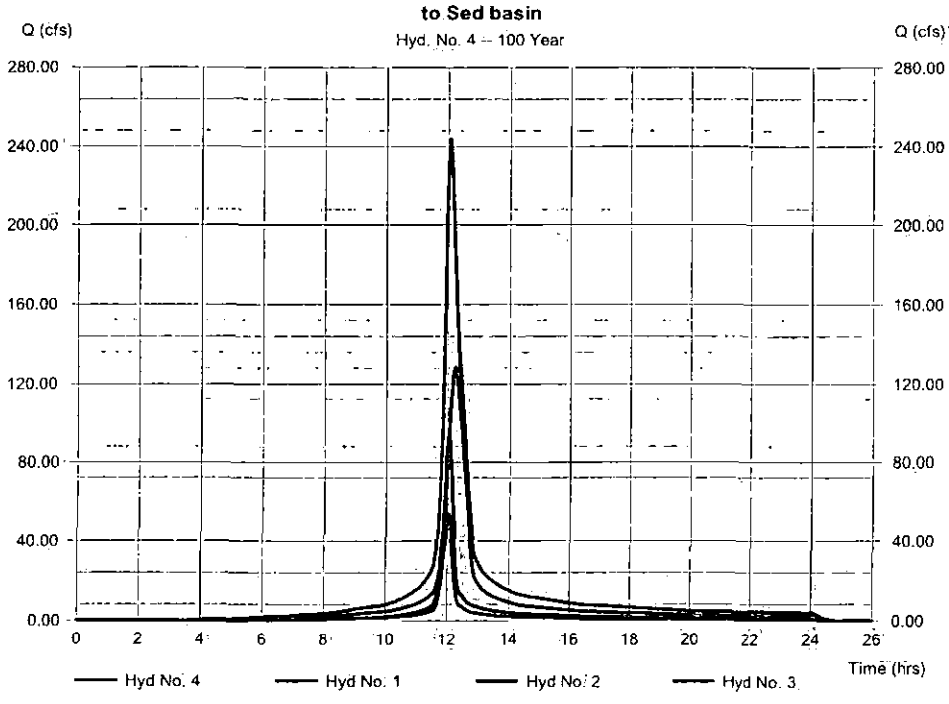


Hydrograph Report

Hyd. No. 4

to Sed basin

Hydrograph type	= Combine	Peak discharge	= 243.56 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,030,170 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 46.900 ac



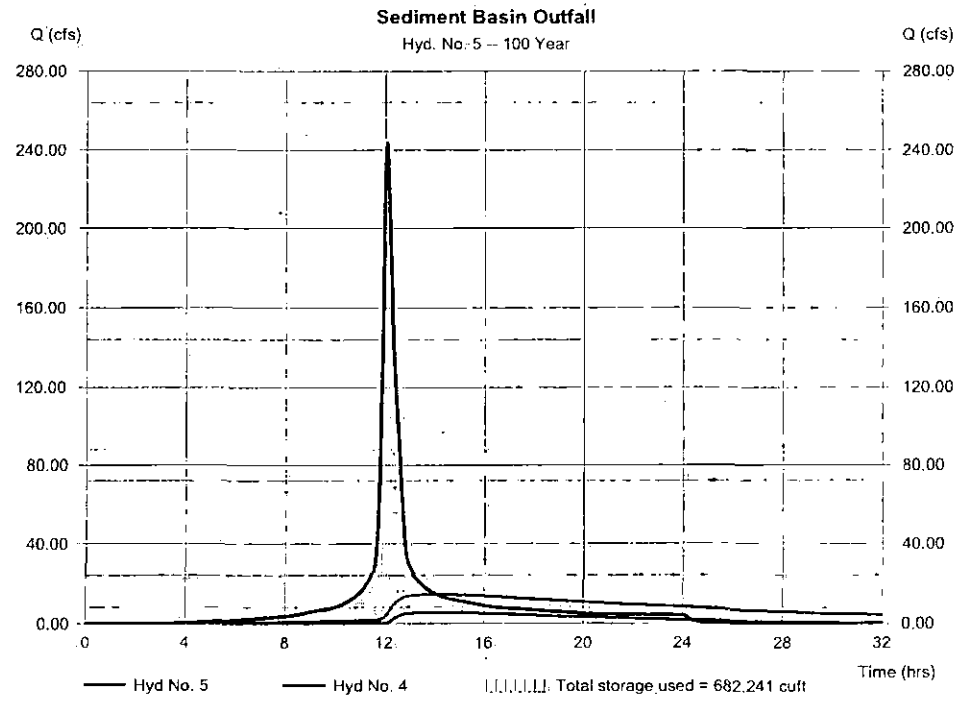
Hydrograph Report

Hyd. No. 5

Sediment Basin Outfall

Hydrograph type	= Reservoir	Peak discharge	= 5.376 cfs
Storm frequency	= 100 yrs	Time to peak	= 14.10 hrs
Time interval	= 2 min	Hyd. volume	= 170,539 cuft
Inflow hyd. No.	= 4 - to Sed basin	Max. Elevation	= 1292.00 ft
Reservoir name	= Sediment Basin	Max. Storage	= 682,241 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



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US ARMY CORPS OF ENGINEERS
There does not appear to be any jurisdictional waters of the US on this site.

KANSAS DEPT OF AGRICULTURE – DWR PERMITTING
There does not appear to be any DWR permitting needed on the proposed site at this time.

FEMA
There is no mapped floodplain located upon the proposed site. Therefore, no FEMA permitting is expected at this time.

KANSAS DEPT OF TRANSPORTATION
No ROW permit is expected with this development.

SEDGWICK COUNTY PERMITTING
There does not appear to be any Sedgwick County permitting needed at this time.