APPENDIX 4.9

Adams Barranca Existing Condition Hydrology Study and Preliminary Hydrology Report for Santa Paula West Business Park

Adams Barranca

Existing Condition Hydrology Study

Santa Paula, CA

Prepared for:

McGaelic Group
&
Bender Realty Ltd

September, 2011
Revised November, 2011
Revised December, 2011

Prepared by:

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12-1-11

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CIVIL
STATE OF CALIFORNIA

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Introduction

The Santa Paula West Business Park is a planned commercial and industrial development containing a mixture of industrial, research and development, retail, office and commercial uses. The Specific Plan project site is located just outside the limits, but within the sphere of influence, of the City of Santa Paula. The land use is currently agricultural. The property is bounded by industrial development on the east, Adams Barranca on the west, Telegraph Road to the north, and Highway 126 to the south. Splitting the property east/west is the railroad operated by the Ventura County Transportation Commission Railroad (VCTC). The property ranges in elevation from approximately 250 to 222 feet above mean sea level and generally slopes from the north to the south. The Regional Location Map is shown below as Figure 1.

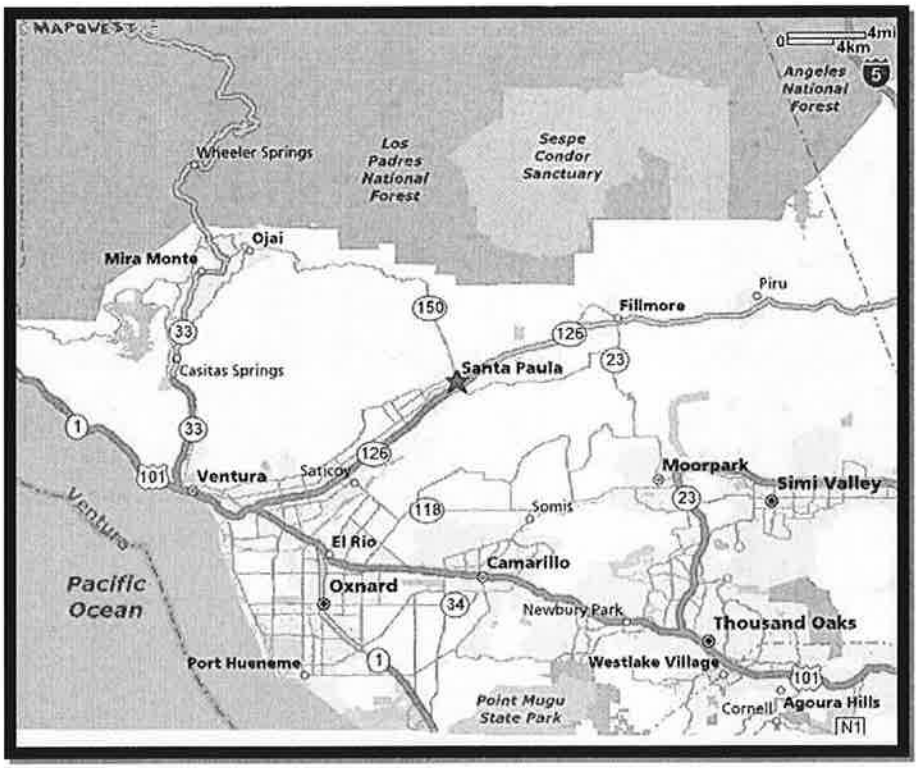


FIGURE 1 - REGIONAL LOCATION MAP

Purpose

The Santa Paula West Business Park Specific Plan encompasses approximately 58 acres of land in unincorporated Ventura County west of the City of Santa Paula. The proposed Specific Plan would permit the development of a variety of clean office, industrial and retail buildings ranging in size.

Access to the site is provided by Beckwith Road, Telegraph Road, and Faulkner Road. Secondary access is provided by Todd Lane (a private road). Figure 2 shows the project location. This study provides an evaluation of the existing drainage condition within and adjacent to Adams Barranca. Existing site conditions show that the proposed project is located within a Floodplain Zone A. A CLOMR will be filed with the development of this proposed project to redefine the flood zone limits using the flows determined by this supporting hydrology study. This primary reason for this report is to have an agreement between the affected agencies (FEMA, City of Santa Paula, and County of Ventura) on existing conditions within Adams Barranca.

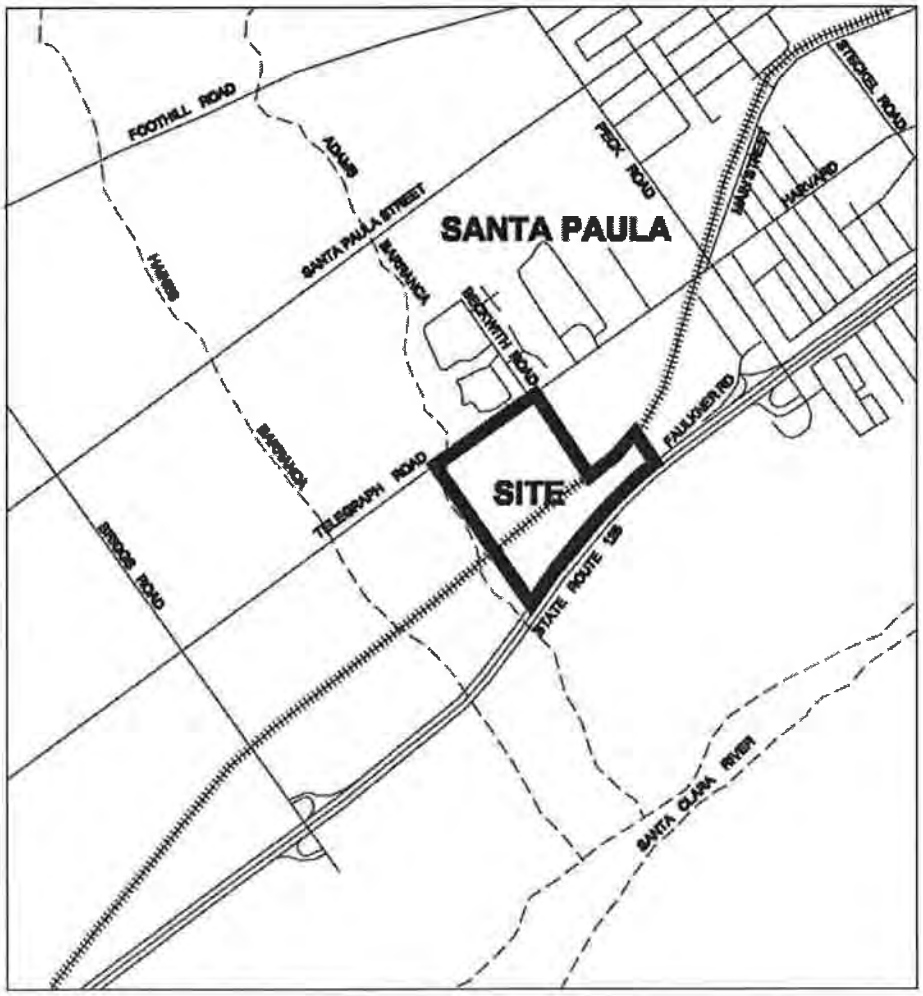


FIGURE 2 – PROJECT LOCATION MAP

Existing Drainage Area Descriptions

Adams Barranca watershed is tributary to the Santa Clara River in Ventura County and is approximately 8.8 square miles. Adams Canyon flows in a north south direction for approximately seven miles before it's confluence with the Santa Clara River. The 2005 Lidar topography provided by the County of Ventura on NAVD 1988 vertical datum shows the watershed as generally steep canyon areas, with the downstream two miles extending from Foothill Road to the Santa Clara River being flat agricultural area.

Adams Canyon is currently undeveloped. The land use in the watershed is mostly classified as herbaceous, scrub and brush rangeland, with some cropland, pasture and orchards. The watershed has high debris production potential and there is an existing debris basin just upstream of the Foothill Road Crossing. The debris basin has not been considered in this report for any storm attenuation. The soils types are mostly classified as Ventura Soil Type 1, equating to NRCS hydrologic soil group D described ad "clay loam, silty clay loam, sandy clay, silty clay or clay." (NRCS, 2007) The remaining watershed is mainly classified as Ventura Soils Types 2 and 3, equating to NRCS hydrologic soil group C: "Hydrologic group C soils are sandy clay loam" (NRCS, 2007). Refer to **Exhibit 2** for soils types.

Hydrology Methodology

The existing hydrology conditions of the Adams Canyon Watershed were determined according to the Ventura County Watershed Protection District Hydrology Manual, the County's Time of Concentration Calculator and Rational Method Design Program, VCRat 2.6 and VCRat 2.2.

The watershed was subdivided into approximately 98 subareas ranging from 5.5 to 108 acres subareas using Lidar topography. Ventura County standards prefer a range of 40-80 acre watersheds, which 84% of the subareas are, but allows for an absolute maximum subarea of 120 acres. Then each of these were broken down into an overland flowpath and a channel flowpath to calculate the Time of Concentration. A Time of Concentration was determined for 25% of the subareas (Appendix D), and the parameters are listed below:

- Rainfall Zone K
- Flood Zone 2
- 100 – year storm frequency
- Undeveloped

- 100% impervious for all subareas
- Weighted soil average calculated in GIS from Ventura County soils information.

Once the Time of Concentration was determined for 25% of the subareas, we analyzed the remaining subareas based on engineering judgment for similar traits and assigned those subareas times of concentration based on the calculated subareas. The VCRat 2.6 program was then used to calculate the 100-year peak flow rate and volume for the entire watershed area. Runoff hydrographs are computed within the model for each subarea, routed through a conveyance system and combined with other subarea hydrographs as the analysis proceeds downstream through the watershed. The additional VcRat 2.6 Parameters are listed below:

- Routing Type was mountain channel if slope is >5%. Natural Valley if slope <5%
- Routing Length used Lidar and best judgment
- Routing slope used Lidar Topography.

Once a VCRat file was complete, an aerial reduction factor was calculated for the overall watershed and each confluence point that has a contributing area greater than 640 acres. Ventura County allows for an aerial reduction, which is a factor that accounts for the varying intensities over watersheds greater than 640 acres. An aerial reduction factor is computed by taking the VCRat 2.6 output file and using VCRat 2.2 to calculate the revised flow rates, see **Appendix G** for the program output. Each confluence point has a different aerial reduction factor due to the difference in contributing drainage areas.

Table 1 – Aerial Reduction Factors

Node	Acres	Aerial Reduction Factor
14	951	0.924
48	961	0.923
60	3116	0.854
114	5580	0.794
116	5580	0.791

A fattening factor was used to adjust the volumes calculated by VCRAT to be more accurate based on the watershed location. The composite soil type for each basin was converted to the corresponding NRCS hydrologic soil group (Group C) and appropriate curve numbers were calculated on the basis of land use, vegetation type, and soil condition per Exhibit 14A in the Ventura County Hydrology Manual. Supplemental information provided in a report completed by PACE Engineering shows the composite curve numbers for each Node **(Appendix I)**, which was used for the generation of the Curve Numbers below. The weighted average 100-year 24-hour rainfall value was calculated using GIS and this was used to calculate the fattening factor used in the VcRAT 2.6 program.

Table 2 – Fattening Factors

Node	SCS CN	Rainfall Contour (in)
14	60	12.0
48	61	11.65
60	60	11.5
114	60	10.75
116	60	10.65

Table 3 – Adams Canyon 100 year Discharges and Volumes

Node	Acres	Q100 (cfs)	Volume 100-year (ac-ft)
14	951	2436	520
48	961	2412	515
60	3116	5688	1595
114	5580	5861	2561
116	5580	5690	2525

Table 4 – Adams Canyon Existing Structure Capacities

	Type of Undercrossing	Approximate Capacity (cfs)
Telegraph Road	10' H x 24' W RCB	3,200
Railroad Crossing	8' H x 28' W Crossing	2,400
Highway 126	Double 12' H x 10' W	2,200

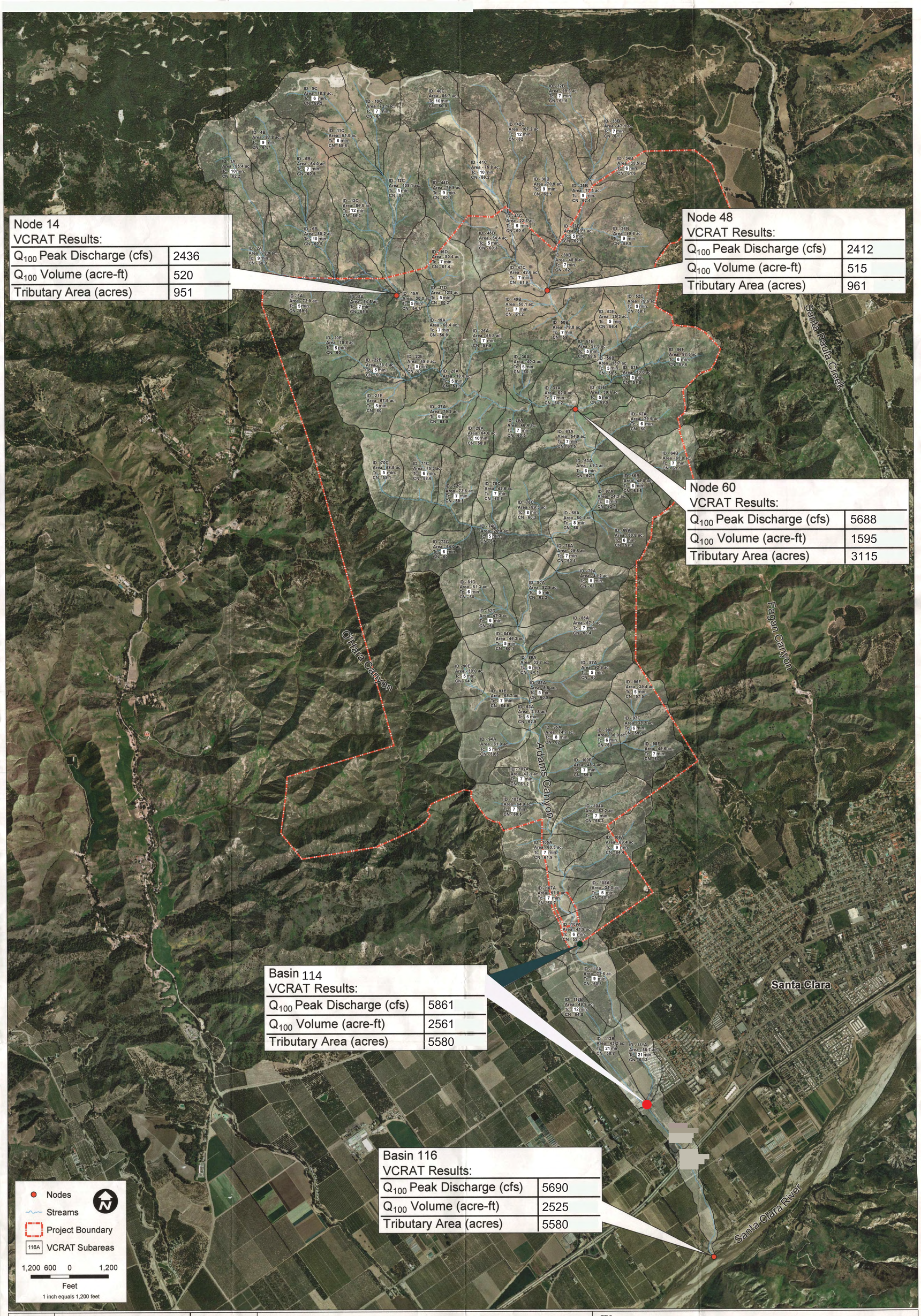
Adams Barranca Summary

Santa Paula West Business Park does not discharge water to Adams Barranca along the west boundary of the project. The amount of water that is within the creek and overtops the creek banks is due to insufficient capacity at existing crossings along the channel. Along with the proposed development, the creek is proposed to be altered to contain the existing flows and route floodwaters away from the proposed structures to remove the future development from the current Flood Zone 'A' per FIRM Panels 778 and 779 of 1275 (**Appendix E**). The primary reason for this report is to have an agreement between the affected agencies (FEMA, City of Santa Paula, and County of Ventura) on existing conditions. Once the existing flow rate conditions are agreed upon, we can move forward with a proposed design condition that will benefit the property. Santa Paula West Business Park will file a CLOMR and a LOMR to adjust the current FIRM Maps with the County using the adjusted flow rates and the proposed design along the eastern boundary of the project.

References

- Ventura County Watershed Protection District, December 2006, "Ventura County Hydrology Manual"
- National Resources Conservation Service (NRCS) 2007. Summary description of NRCS Hydrologic Soil Groups. http://soils.usda.gov/
- PACE, Inc, "Regional Hydrological Investigation, Adams Canyon", October 2007

APPENDIX A



Node 14
VCRAT Results:

Q_{100} Peak Discharge (cfs)	2436
Q_{100} Volume (acre-ft)	520
Tributary Area (acres)	951

Node 48
VCRAT Results:

Q_{100} Peak Discharge (cfs)	2412
Q_{100} Volume (acre-ft)	515
Tributary Area (acres)	961

Node 60
VCRAT Results:

Q_{100} Peak Discharge (cfs)	5688
Q_{100} Volume (acre-ft)	1595
Tributary Area (acres)	3115

Basin 114
VCRAT Results:

Q_{100} Peak Discharge (cfs)	5861
Q_{100} Volume (acre-ft)	2561
Tributary Area (acres)	5580

Basin 116
VCRAT Results:

Q_{100} Peak Discharge (cfs)	5690
Q_{100} Volume (acre-ft)	2525
Tributary Area (acres)	5580

FIGURE

JENSEN DESIGN & SURVEY, INC

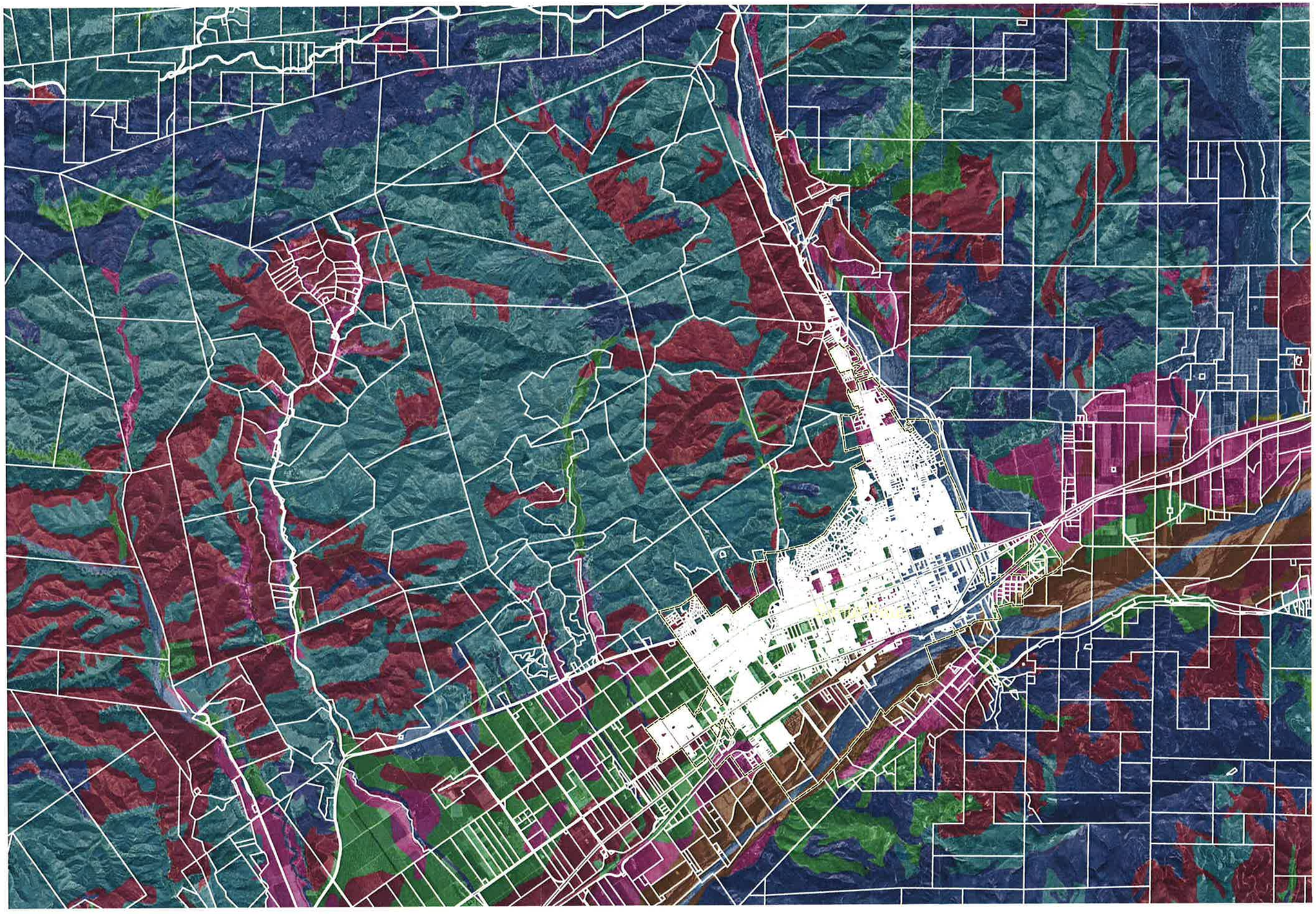
SCALE 1"= 1200'
DESIGNED
DRAWING
CHECKED
DATE
JOB NO.

JOB: ADAMS CANYON RANCH

SANTA PAULA CA

TITLE: VCRAT SUBAREA PARAMETERS

APPENDIX B



Legend

allsoil

- <all other values>

SOILNO

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 10
- 99

Prepared by: Jensen Design & Survey Inc.

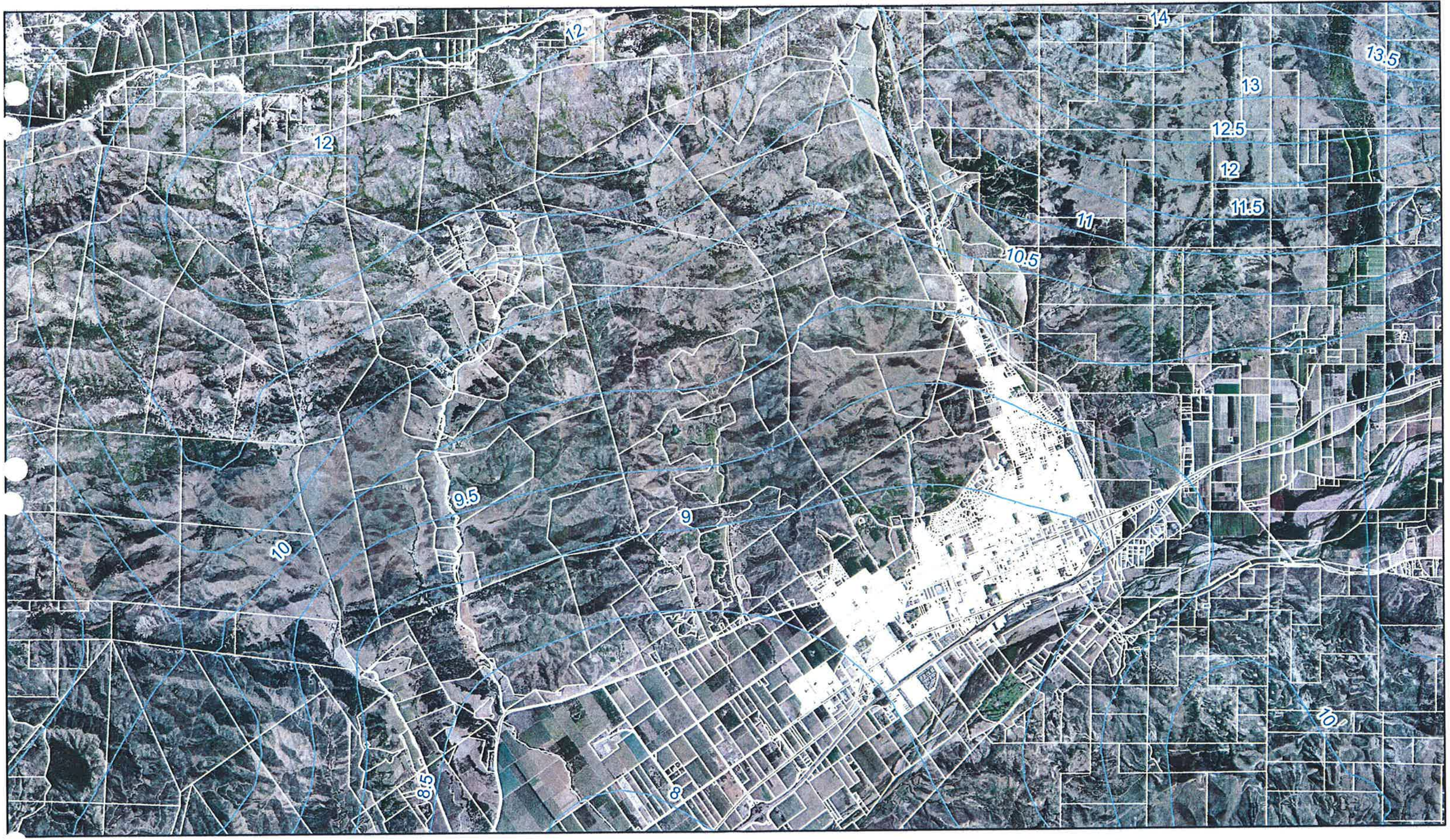
Parcel boundaries on this exhibit are a graphical representation only. They should not be used in place of record boundary information and/or field survey data and do not accurately define property boundaries.

Soils Map Adams Barranca

1 inch = 4,000 feet

File: K:\PAR\4492\Hydro\Adams Creek Ex Cond study_4492_soils map.mxd - 11/30/2011 Time: 8:13:48 AM kpasnop

APPENDIX C



Prepared by: Jensen Design & Survey Inc.

Parcel boundaries on this exhibit are a graphical representation only. They should not be used in place of record boundary information and/or field survey data and do not accurately define property boundaries.

ADAMS RAINFALL CONTOUR 100 YR

1 inch = 4,000 feet

EXHIBIT 3

APPENDIX D

APPENDIX D: EXISTING CONDITION SUBAREA SUMMARY

Adams Barranca
11/28/2011

BASIN ID	AREA (acres)	100 year Tc (mins)	Vc Soil Type	Routing Length (ft)	Min Elev (ft)	Max Elev (ft)	Routing Slope	Routing Type	Q100 (cfs) (before AR factor)	Q100 (cfs)	AR Factor	Volume (ac-ft)
1A*	85.4	10	1.3	1635	1200	1484	0.174	N.M.				
2A	78.9	9	1.6	1750	1069	1200	0.075	N.M.				
3A*	72.9	5	2	-	-	-						
4B	87.8	9	1.2	-	-	-						
5B*	54.0	7	1.1	2148	1069	1375	0.142	N.M.				
6B	80.2	10	1.6	-	-	-						
7AB	459.1			2215	948	1069	0.055	N.M.			n/a	
8A	94.5	7	2.5	-	-	-						
9C	78.8	6	1.9	2067	1461	2303	0.407	N.M.				
10C*	73.1	7	1.1	1977	1116	1461	0.175	N.M.				
11C	51.0	6	1.6	-	-	-		N.M.				
12C*	108.1	5	2.1	1913	948	1116	0.088	N.M.				
13C	86.5	12	2.4	-	-	-						
14AC	951.0			1101	904	948	0.040	N.V.	2637	**2436**	**0.924**	**520**
15A	30.0	5	2.9	-	-	-						
16D	80.4	7	2.1	830	904	952	0.058	N.M.				
17D	12.2	5	2.8	-	-	-						
18AD	1073.6			2430	817	904	0.036	N.V.	2832	**2609**	**0.921**	
19A	66.4	7	2.7	-	-	-						
20E	70.8	5	2	1615	875	974	0.061	N.M.				
21E	67.5	5	2	1242	817	875	0.047	N.V.				
22E*	38.8	5	2	-	-	-						
23E	49.6	5	2	-	-	-						
24AE	1366.7			818	796	817	0.026	N.V.	3265	**2945**	**0.902**	
25A	18.0	5	3.3	-	-	-						
26A	55.8	7	2	790	775	796	0.027	N.V.				
27A*	79.2	6	2.2	950	752	775	0.024	N.V.				
28A	64.0	10	2.4	1069	724	752	0.026	N.V.				
29A	46.4	7	2	-	-	-						
30A*	40.3	5	2.1	1537	679	724	0.029	N.V.				
31A	52.8	7	2	-	-	-						

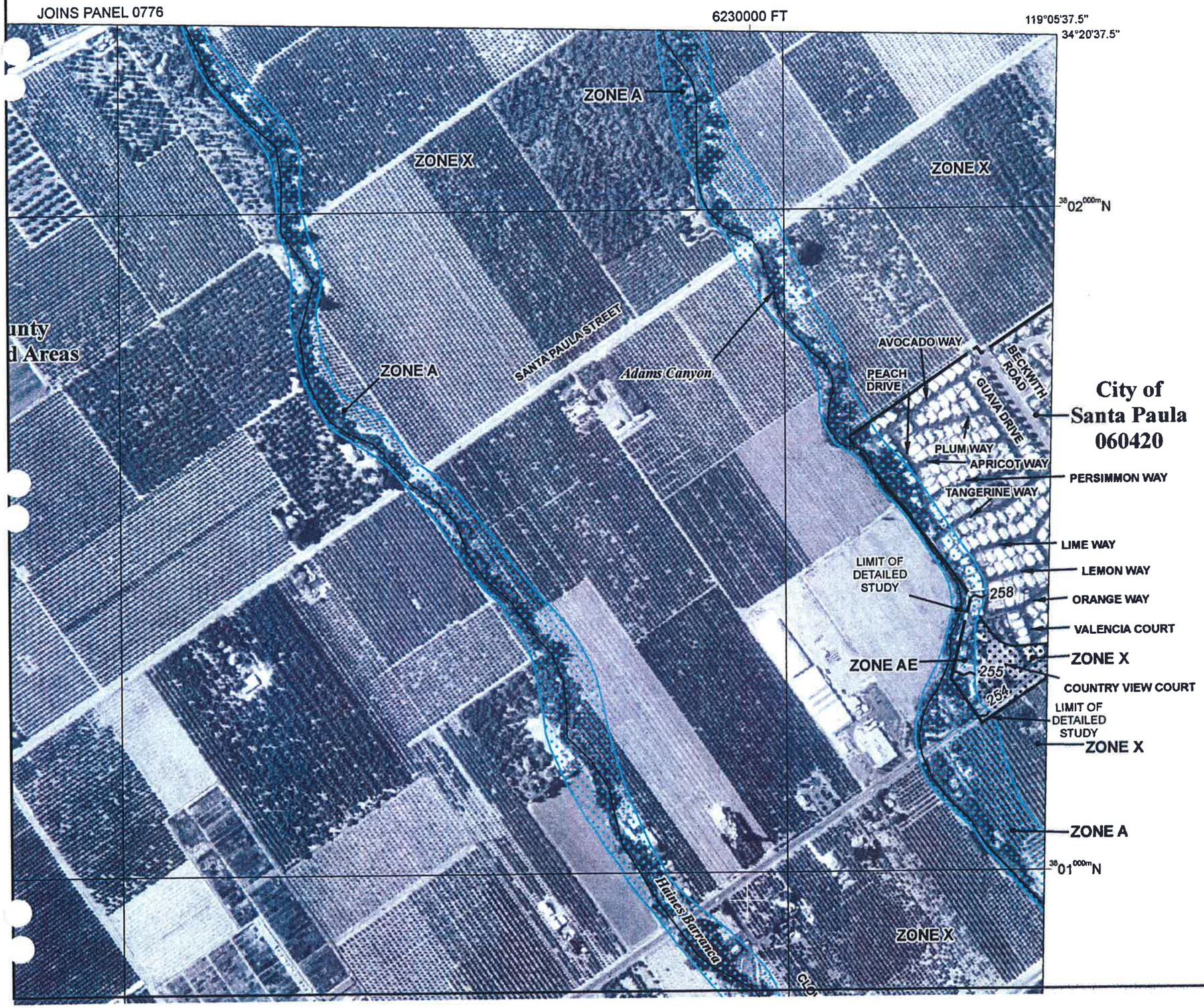
32B	99.3	7	1.5	735	1067	1149	0.112	N.M.				
33B	47.1	7	1.5	-	-	-						
34B	35.5	6	2.4	1710	969	1067	0.057	N.M.				
35B*	77.6	9	1.8	-	-	-						
36B*	99.6	9	2.1	736	931	969	0.052	N.M.				
37B	13.1	5	2.3	-	-	-						
38B	70.9	9	1.6	1438	881	931	0.035	N.V.				
39B	48.8	7	2.2	-	-	-						
40C	86.7	10	1.7	2063	1069	1405	0.163	N.M.				
41C	75.8	10	2.1	-	-	-						
42C*	107.2	12	1.4	1338	961	1069	0.081	N.M.				
43C	22.5	5	2.8	-	-	-						
44D	79.9	9	1.7	1840	960	1113	0.083	N.M.				
45D*	54.4	5	2.2	-	-	-						
46CD	426.6			1426	881	961	0.056	N.M.			**n/a**	
47C	42.6	7	2.2	-	-	-						
48BC	961.1			768	859	881	0.029	N.V.	2613	**2412**	**0.923**	**515**
49B	50.1	7	2.1	1183	818	859	0.035	N.V.				
50B*	78.8	7	2.5	1240	776	818	0.034	N.V.				
51B	27.5	5	2.4	-	-	-						
52E	78.6	9	2.3	782	776	823	0.060	N.M.				
53E	25.3	5	2.9	-	-	-						
54BE	1221.3			853	742	776	0.040	N.V.	2726	**2688**	**0.986**	
55B	13.7	5	2.4	-	-	-						
56F*	87.5	6	2	1222	742	801	0.048	N.V.				
57F	30.0	5	2.5	-	-	-						
58BF	1352.5			1584	643	742	0.063	N.M.	3116	**2823**	**0.906**	
59B*	39.7	5	2	-	-	-						
60BA	3115.4			1530	643	679	0.024	N.V.	6657	**5688**	**0.854**	**1594.6**
61A	54.9	7	1.6	-	-	-						
62A	79.9	6	2	1254	621	643	0.018	N.V.				
63A	41.3	6	1.3	-	-	-						
64B*	65.8	5	1.7	1577	616	736	0.076	N.M.				
65B	49.0	6	1.6	-	-	-						
66AB	3406.3			885	600	621	0.024	N.V.	6798	**5757**	**0.847**	
67A	24.3	5	1.5	-	-	-						
68A	56.8	6	2.7	1682	577	600	0.014	N.V.				

69A*	50.1	8	2.1	-	-	-						
70C*	58.5	5	2.2	1208	725	786	0.050	N.M.				
71C	75.3	6	2.3	1403	658	725	0.048	N.V.				
72C	73.6	7	2.1	-	-	-						
73C	54.0	6	2	814	636	658	0.027	N.V.				
74C*	20.0	5	2	-	-	-						
75C	42.6	7	1.8	1738	577	636	0.034	N.V.				
76C	89.3	8	1.9	-	-	-						
77AC	3950.8			1110	556	577	0.019	N.V.	7221	**6038**	**0.836**	
78A	29.8	7	2.7	-	-	-						
79A	41.2	5	9	2463	515	556	0.017	N.V.				
80A*	82.9	6	2.4	-								
81D	51.3	6	2	1093	515	598	0.076	N.M.				
82D	47.3	6	2	-	-	-						
83AD	4203.4			977	483	515	0.033	N.V.	7267	**6031**	**0.830**	
84A	46.3	5	2.2	-	-	-						
85A	67.3	7	2	1211	474	483	0.007	N.V.				
86A	32.7	6	2.5	-	-	-						
87A*	92.9	5	2	524	468	474	0.011	N.V.				
88A	5.5	5	3.4	-	-	-						
90E*	39.0	5	2	1621	468	564	0.059	N.M.				
91E	58.7	7	2.1	-	-	-						
92AE	4545.7			926	458	468	0.011	N.V.	7341	**6030**	**0.821**	
93A	21.8	5	2.8	-	-	-						
94A*	61.0	5	2.5	1651	431	458	0.016	N.V.				
95A	74.7	8	2.3	-	-	-						
96F	39.4	5	2.6	1064	566	622	0.053	N.M.				
97F	33.2	6	2.2	-	-	-						
98F	49.6	7	2	595	510	566	0.094	N.M.				
99F	36.0	6	2	1714	431	510	0.046	N.V.				
100F	48.3	7	2.1	-	-	-						
101AF	4909.6			1147	419	431	0.010	N.V.	7433	**6040**	**0.813**	
102A	42.1	7	2.4	1111	399	419	0.018	N.V.				
103A	64.9	7	2.4	-	-	-						
104A*	82.2	7	2	1606	370	399	0.018	N.V.				
105A	60.3	7	3	-	-	-						
106A	69.4	9	2.1	1408	340	370	0.021	N.V.				

107A	57.8	7	3.1	-	-	-						
BASIN				1467	318	340	0.015					
108A	31.0	5	2.6	1467	318	340	0.015	N.V.				
109A	41.9	6	3.1	2733	279	318	0.014					
110A	72.6	9	3.1	3056	240	279	0.013	N.V.				
111A*	55.7	21	2.9	-	-	-						
112B	49.9	12	3.3	2779	240	287	0.017	N.V.				
113B	43.2	21	3.6	-	-	-						
114AB	5580.5			1726	222	240	0.010	N.V.	7377	**5861**	**0.794**	**2561**
115A				5580			0.010	N.V.				
116A	SANTA CLARA RIVER								7193	**5690**	**0.791**	**2525**

*Subarea Time of Concentrations were caclulated using the Ventura County Tc Calculator
**N.M. = NATURAL MOUNTAIN
N.V. = NATURAL VALLEY
AR Factor is applied to any total drainage area acreage over 640 acre

APPENDIX E



d insurance is available in this community, contact your Ins
nal Flood Insurance Program at 1-800-638-6620.

METERS
150 0 150 300

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0778E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 778 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0778	E
VENTURA COUNTY	060413	0778	E

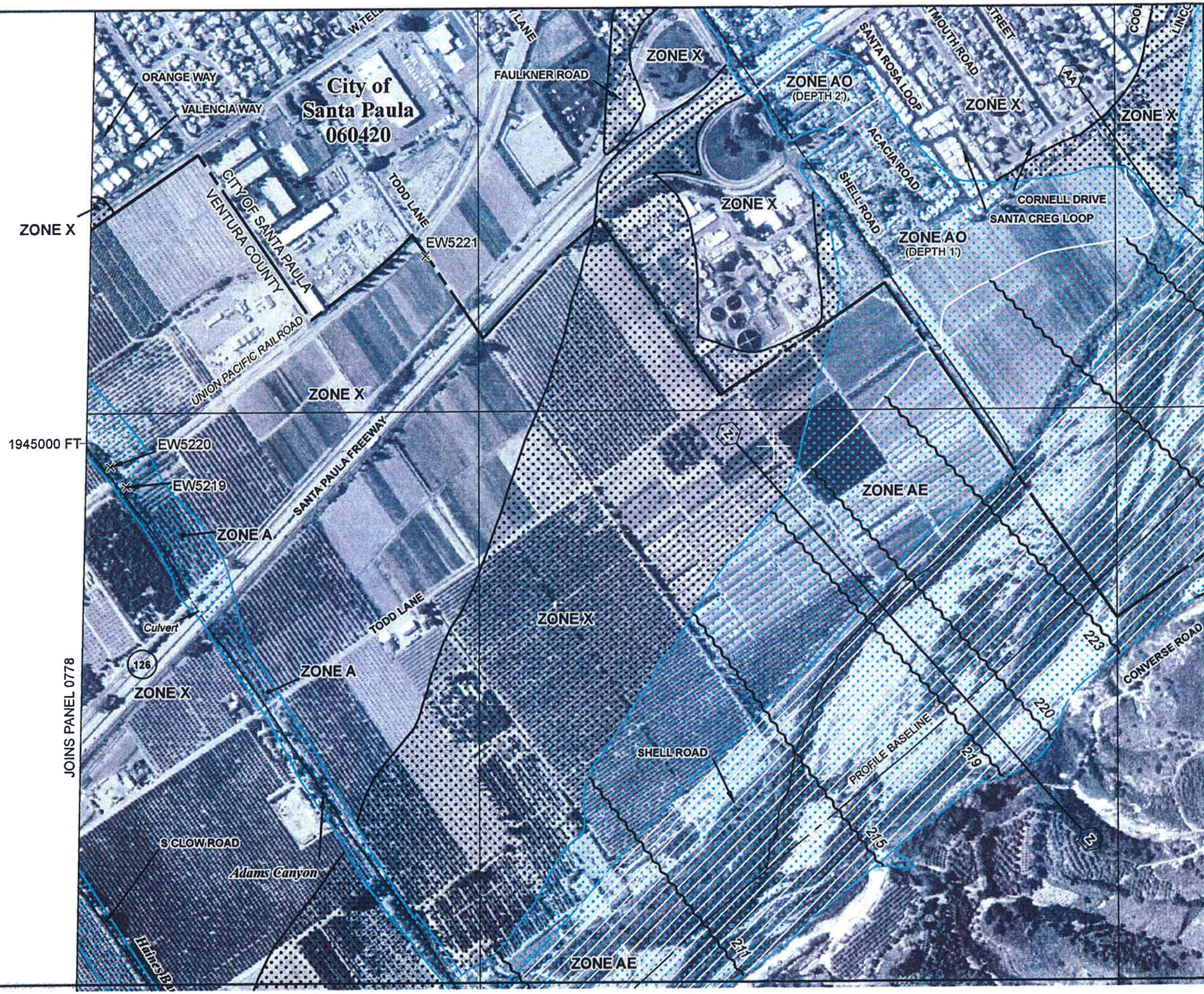
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06111C0778E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



d insurance is available in this community, contact your Ins
nal Flood Insurance Program at 1-800-638-6620.

METERS
150 0 150 300

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0779E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 779 OF 1275

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0779	E
VENTURA COUNTY	060413	0779	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
06111C0779E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

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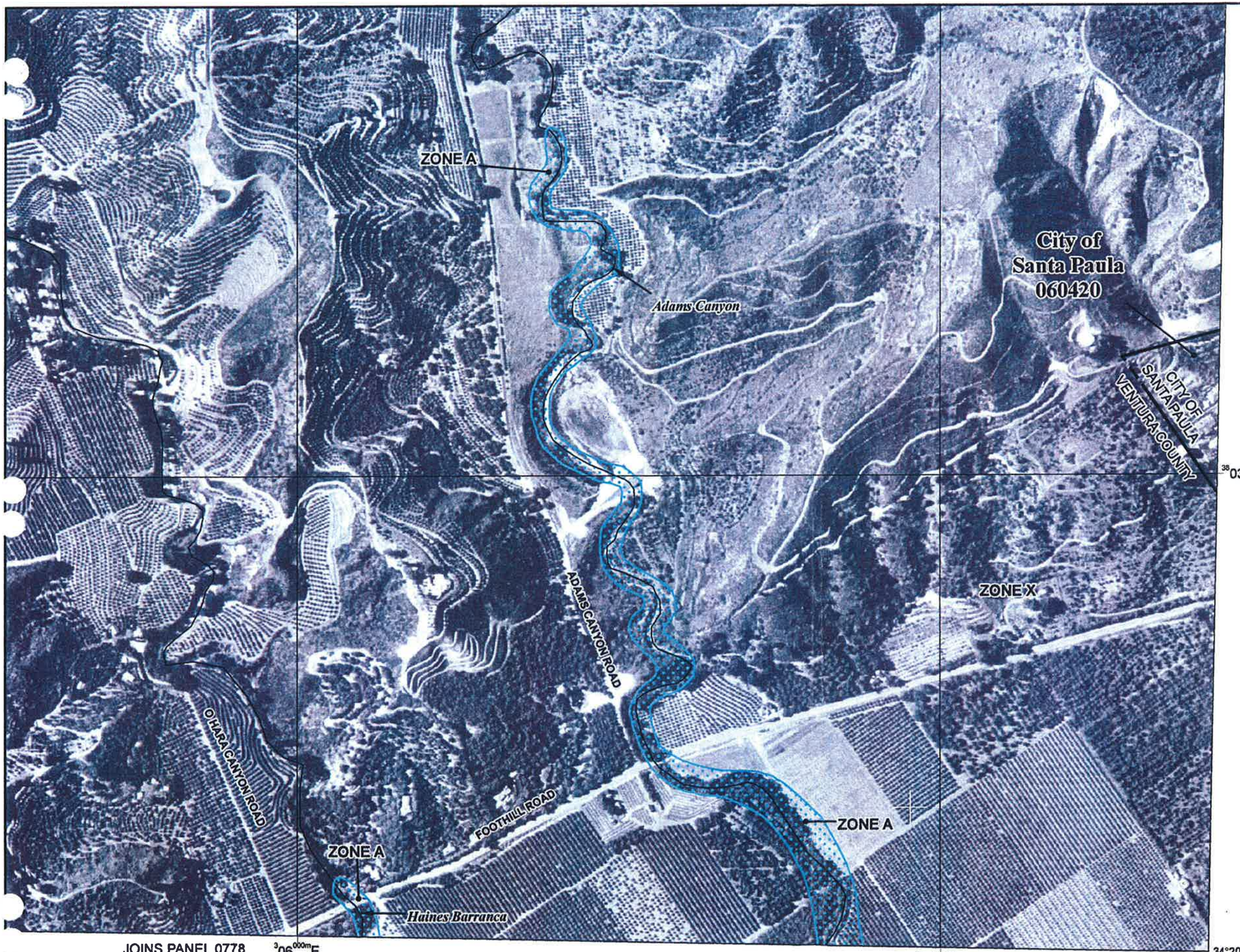

d insurance is available in this community, contact your Ins
nal Flood Insurance Program at 1-800-638-6620.

METERS
150 0 150 300

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0776E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 776 OF 1275

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0776	E
VENTURA COUNTY	060413	0776	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
06111C0776E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX F

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 4492 Project: Adams County VC Rat

Project Description

---

100 YEAR EVENT

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 2

Model Results

SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
1A : Subshed 1A																
1A	010	K100	10	0	85	278	85	278	1154	MOUNTAIN	1635	0.17400	---	----	-----	-----
2A : Subshed 2A																
2A	020	K100	9	0	79	254	164	506	1156	MOUNTAIN	1750	0.07500	---	----	-----	-----
3A : Subshed 3A																
3A	020	K100	5	0	73	332	237	633	1156	-------	----	-------	---	----	-----	-----
4B : Subshed 4B																
4B	010	K100	9	0	88	303	88	303	1153	-------	----	-------	---	----	-----	-----
5B : Subshed 5B																
5B	010	K100	7	0	54	212	142	515	1153	MOUNTAIN	2148	0.14200	---	----	-----	-----
6B : Subshed 6B																

```
      6B   020   K100   10   0    80   244    222   711  1157   -------   ----  -------   ---   ----   -----  -----
--    --
      7AB  ---   ---    --   --  222   711    459  1339  1156   MOUNTAIN  2215  0.05500   ---   ----   -----  -----
--    --
      8A :  Subshed 8A
      8A   020   K100    7   0    94   347    553  1411  1158   -------   ----  -------   ---   ----   -----  -----
--    --
      9C :  Subshed 9C
      9C   020   K100    6   0    79   320     79   320  1153   MOUNTAIN  2067  0.40700   ---   ----   -----  -----
--    --
     10C :  Subshed 11C
     10C   020   K100    7   0    51   188    130   487  1155   -------   ----  -------   ---   ----   -----  -----
--    --
     11C :  Subshed 10C
     11C   010   K100    6   0    73   313    203   771  1154   MOUNTAIN  1977  0.17500   ---   ----   -----  -----
--    --
     12C :  Subshed 12C
     12C   020   K100    5   0   108   491    311  1088  1156   MOUNTAIN  1913  0.08800   ---   ----   -----  -----
--    --
     13C :  Subshed 13C
     13C   020   K100   12   0    87   236    398  1226  1158   -------   ----  -------   ---   ----   -----  -----
--    --
     14AC  ---   ---    --   --  398  1226    951  2637  1158   -------   ----  -------   ---   ----   -----  -----
--    --
           ***************************************************************************************************
           *      INCOMING HYDROGRAPH  PEAK (cfs):   2636.54        VOLUME (acre-ft):    181.79      *
           *      HYDROGRAPH ADJUSTMENT FACTOR:         0.92400                                      *
           *      ADJUSTED HYDROGRAPH  PEAK (cfs):   2436.16        VOLUME (acre-ft):    167.97      *
           *      RUNOFF FACTOR(in):   6.56      TOTAL RAIN(in):  12.00      SCS Curve: 60           *
           *      FATTENED HYDROGRAPH  PEAK (cfs):   2436.16        VOLUME (acre-ft):    519.71      *
           ***************************************************************************************************
     14A   ---   ---    --   --  ---   ---    951  2436  ----   -------   ----  -------   ---   ----   -----  -----
--    --
     15A   ---   ---    --   --  ---   ---    951  2436  1158   VALLEY    1101  0.04000   ---   ----   -----  -----
--    --
     16A :  Subshed 15A
     16A   030   K100    5   0    30   129    981  2433  1159   -------   ----  -------   ---   ----   -----  -----
--    --
     17D :  Subshed 16D
     17D   020   K100    7   0    80   295     80   295  1153   MOUNTAIN   830  0.05800   ---   ----   -----  -----
--    --
     18D :  Subshed 17D
     18D   030   K100    5   0    12    51     92   324  1156   -------   ----  -------   ---   ----   -----  -----
--    --
     19AD  ---   ---    --   --   92   324   1073  2680  1157   VALLEY    2430  0.03600   ---   ----   -----  -----
--    --
     20A :  Subshed 19A
     20A   030   K100    7   0    66   229   1139  2777  1158   -------   ----  -------   ---   ----   -----  -----
--    --
     21E :  Subshed 20E
     21E   020   K100    5   0    71   323     71   323  1153   MOUNTAIN  1615  0.06100   ---   ----   -----  -----
--    --
     22E :  Subshed 22E
     22E   020   K100    5   0    39   177    110   376  1156   -------   ----  -------   ---   ----   -----  -----
--    --
     23E :  Subshed 21E
     23E   020   K100    5   0    68   309    178   619  1153   VALLEY    1242  0.04700   ---   ----   -----  -----
--    --
```

Model Results

SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
24E : Subshed 23E																
24E	020	K100	5	0	50	227	228	747	1155	-------	----	-------	---	----	-----	-----
25AE	---	---	--	--	228	747	1367	3340	1157	VALLEY	818	0.02600	---	----	-----	-----
26A : Subshed 25A																
26A	030	K100	5	0	18	77	1385	3355	1158	-------	----	-------	---	----	-----	-----
27A : Subshed 26A																
27A	020	K100	7	0	56	207	1441	3497	1158	VALLEY	790	0.02700	---	----	-----	-----
28A : Subshed 27A																
28A	020	K100	6	0	79	320	1520	3695	1157	VALLEY	950	0.02400	---	----	-----	-----
29A : Subshed 28A																
29A	020	K100	10	0	64	195	1584	3829	1158	VALLEY	1069	0.02600	---	----	-----	-----
30A : Subshed 29A																
30A	020	K100	7	0	46	170	1630	3890	1158	-------	----	-------	---	----	-----	-----
31A : Subshed 30A																
31A	020	K100	5	0	40	182	1670	3929	1158	VALLEY	1537	0.02900	---	----	-----	-----
32A : Subshed 31A																
32A	020	K100	7	0	53	196	1723	3959	1159	-------	----	-------	---	----	-----	-----
33B : Subshed 32B																
33B : Clearing Hydrograph Bank: B																
33B	010	K100	7	0	99	389	99	389	1153	MOUNTAIN	735	0.11200	---	----	-----	-----
34B : Subshed 33B																
34B	020	K100	7	0	47	174	146	555	1155	-------	----	-------	---	----	-----	-----
35B : Subshed 34B																
35B	020	K100	6	0	36	146	182	687	1154	MOUNTAIN	1710	0.05700	---	----	-----	-----
36B : Subshed 35B																
36B	020	K100	9	0	78	251	260	844	1157	-------	----	-------	---	----	-----	-----
37B : Subshed 36B																
37B	020	K100	9	0	100	321	360	1142	1157	MOUNTAIN	736	0.05200	---	----	-----	-----
38B : Subshed 37B																
38B	020	K100	5	0	13	59	373	1128	1158	-------	----	-------	---	----	-----	-----
39B : Subshed 38B																
39B	020	K100	9	0	71	228	444	1320	1157	VALLEY	1438	0.03500	---	----	-----	-----
40B : Subshed 39B																

```
      40B   020   K100    7    0     49    181      493    1407   1158    -------    ----  -------   ---    ----    -----  -----
--     --
      41C :  Subshed 40C
      41C :  Clearing Hydrograph Bank:  C
      41C   020   K100   10    0     87    265       87     265   1154    MOUNTAIN   2063  0.16300   ---    ----    -----  -----
--     --
      42C :  Subshed 41C
      42C   020   K100   10    0     76    231      163     460   1157    -------    ----  -------   ---    ----    -----  -----
--     --
      43C :  Subshed 42C
      43C   010   K100   12    0    107    314      270     766   1156    MOUNTAIN   1338  0.08100   ---    ----    -----  -----
--     --
      44C :  Subshed 43C
      44C   010   K100    5    0     23    110      293     780   1156    -------    ----  -------   ---    ----    -----  -----
--     --
      45D :  Subshed 44D
      45D   020   K100    9    0     80    257       80     257   1153    MOUNTAIN   1840  0.08300   ---    ----    -----  -----
--     --
      46D :  Subshed 45D
      46D   020   K100    5    0     54    246      134     384   1156    -------    ----  -------   ---    ----    -----  -----
--     --
      47CD  ---   ---    --   --    134    384      427    1165   1156    MOUNTAIN   1426  0.05600   ---    ----    -----  -----
--     --
      48C :  Subshed 47C
      48C   020   K100    7    0     43    159      470    1206   1158    -------    ----  -------   ---    ----    -----  -----
--     --
♀
```


Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
      49BC  ---   ---    --   --    470   1206      963    2613   1158    VALLEY      768  0.02900   ---    ----    -----  -----
--     --
      50B :  Subshed 49B
      50B   020   K100    7    0     50    185     1013    2655   1158    VALLEY     1183  0.03500   ---    ----    -----  -----
--     --
      51B :  Subshed 50B
      51B   020   K100    7    0     79    292     1092    2726   1159    VALLEY     1240  0.03400   ---    ----    -----  -----
--     --
      52B :  Subshed 51B
      52B   020   K100    5    0     28    127     1120    2731   1160    -------    ----  -------   ---    ----    -----  -----
--     --
      53E :  Subshed 52E
      53E :  Clearing Hydrograph Bank:  E
      53E   020   K100    9    0     79    254       79     254   1153    MOUNTAIN    782  0.06000   ---    ----    -----  -----
--     --
      54E :  Subshed 53E
      54E   030   K100    5    0     25    107      104     325   1156    -------    ----  -------   ---    ----    -----  -----
--     --
      55BE  ---   ---    --   --    104    325     1224    2947   1160    VALLEY      853  0.04000   ---    ----    -----  -----
--     --
```

```
56B :  Subshed 55B
56B   020   K100    5    0     14     64     1238    2937   1160   -------   ----  -------   ---   ----   -----  -----
--    --
57F :  Subshed 56F
57F   020   K100    6    0     87    352       87     352   1153   VALLEY    1222  0.04800   ---   ----   -----  -----
--    --
58F :  Subshed 57F
58F   030   K100    5    0     30    129      117     426   1155   -------   ----  -------   ---   ----   -----  -----
--    --
59BF  ---   ---    --   --    117    426     1355    3116   1160   MOUNTAIN  1584  0.06300   ---   ----   -----  -----
--    --
60B :  Subshed 59B
60B   020   K100    5    0     40    182     1395    3105   1161   -------   ----  -------   ---   ----   -----  -----
--    --
61AB  ---   ---    --   --   1395   3105     3118    6985   1160   VALLEY    1530  0.02400   ---   ----   -----  -----
--    --
62A :  Subshed 61A - START OF LOWER WATERSHED
62A   020   K100    7    0     55    203     3173    6989   1161   -------   ----  -------   ---   ----   -----  -----
--    --
63A :  Subshed 62A
63A   020   K100    6    0     80    324     3253    7040   1161   VALLEY    1254  0.01800   ---   ----   -----  -----
--    --
64A :  Subshed 63A
64A   010   K100    6    0     41    176     3294    7041   1162   -------   ----  -------   ---   ----   -----  -----
--    --
65B :  Subshed 64B
65B   020   K100    5    0     66    300       66     300   1153   MOUNTAIN  1577  0.07600   ---   ----   -----  -----
--    --
66B :  Subshed 65B
66B   020   K100    6    0     49    198      115     383   1155   -------   ----  -------   ---   ----   -----  -----
--    --
67AB  ---   ---    --   --    115    383     3409    7174   1162   VALLEY     885  0.02400   ---   ----   -----  -----
--    --
68A :  Subshed 67A
68A   010   K100    5    0     24    115     3433    7173   1163   -------   ----  -------   ---   ----   -----  -----
--    --
69A :  Subshed 68A
69A   030   K100    6    0     57    218     3490    7195   1163   VALLEY    1682  0.01400   ---   ----   -----  -----
--    --
70A :  Subshed 69A
70A   020   K100    8    0     50    171     3540    7193   1164   -------   ----  -------   ---   ----   -----  -----
--    --
71C :  Subshed 70C
71C :  Clearing Hydrograph Bank:  C
71C   020   K100    5    0     58    264       58     264   1153   MOUNTAIN  1208  0.05000   ---   ----   -----  -----
--    --
72C :  Subshed 71C
72C   020   K100    6    0     75    304      133     451   1154   VALLEY    1403  0.04800   ---   ----   -----  -----
--    --
73C :  Subshed 72C
73C   020   K100    7    0     74    273      207     676   1155   -------   ----  -------   ---   ----   -----  -----
--    --
74C :  Subshed 73C
74C   020   K100    6    0     54    219      261     863   1155   VALLEY     814  0.02700   ---   ----   -----  -----
--    --
```

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     75C :  Subshed 74C
     75C   020   K100    5    0     20    91     281    911   1156   -------   ----  -------   ---    ----   -----  -----
--     --
     76C :  Subshed 75C
     76C   020   K100    7    0     43   159     324   1044   1156   VALLEY    1738  0.03400   ---    ----   -----  -----
--     --
     77C :  Subshed 76C
     77C   020   K100    8    0     89   305     413   1243   1157   -------   ----  -------   ---    ----   -----  -----
--     --
     78AC  ---   ---    --   --    413  1243    3953   7770   1163   VALLEY    1110  0.01900   ---    ----   -----  -----
--     --
     79A :  Subshed 78A
     79A   030   K100    7    0     30   104    3983   7771   1164   -------   ----  -------   ---    ----   -----  -----
--     --
     80A :  Subarea 79A
     80A   020   K100    5    0     41   186    4024   7792   1164   VALLEY    2463  0.01700   ---    ----   -----  -----
--     --
     81A :  Subshed 80A
     81A   020   K100    6    0     83   336    4107   7792   1166   -------   ----  -------   ---    ----   -----  -----
--     --
     82D :  Subshed 81D
     82D :  Clearing Hydrograph Bank:  D
     82D   020   K100    6    0     51   206      51    206   1153   MOUNTAIN  1093  0.07600   ---    ----   -----  -----
--     --
     83D :  Subshed 82D
     83D   020   K100    6    0     47   190      98    337   1155   -------   ----  -------   ---    ----   -----  -----
--     --
     84AD  ---   ---    --   --     98   337    4205   7845   1166   VALLEY     977  0.03300   ---    ----   -----  -----
--     --
     85A :  Subarea 84A
     85A   020   K100    5    0     46   209    4251   7858   1166   -------   ----  -------   ---    ----   -----  -----
--     --
     86A :  Subarea 85A
     86A   020   K100    7    0     67   247    4318   7886   1166   VALLEY    1211  0.00700   ---    ----   -----  -----
--     --
     87A :  Subarea 86A
     87A   020   K100    6    0     33   134    4351   7876   1168   -------   ----  -------   ---    ----   -----  -----
--     --
     88A :  Subarea 87A
     88A   020   K100    5    0     93   423    4444   7907   1168   VALLEY     524  0.01100   ---    ----   -----  -----
--     --
     89A :  Subarea 88A
     89A   040   K100    5    0      5    20    4449   7900   1168   -------   ----  -------   ---    ----   -----  -----
--     --
     90A   ---   ---    --   --    ---   ---    4449   7900   1168   -------   ----  -------   ---    ----   -----  -----
--     --
     91E :  Subshed 90E
     91E :  Clearing Hydrograph Bank:  E
     91E   020   K100    5    0     39   177      39    177   1153   MOUNTAIN  1621  0.05900   ---    ----   -----  -----
--     --
     92E :  Subshed 91E
     92E   020   K100    7    0     59   218      98    305   1155   -------   ----  -------   ---    ----   -----  -----
```

```
--      --
     93AE  ---   ---    --   --     98    305     4547    7955   1168    VALLEY      926  0.01100    ---     ----    -----  -----
--      --
     94A :  Subshed 93A
     94A   030   K100    5    0     22     94     4569    7949   1169    -------     ----  -------    ---     ----    -----  -----
--      --
     95A :  Subshed 94A
     95A   020   K100    5    0     61    277     4630    7968   1169    -------     ----  -------    ---     ----    -----  -----
--      --
     96A :  Subshed 95A
     96A   020   K100    8    0     75    257     4705    7996   1169    VALLEY     1651  0.01600    ---     ----    -----  -----
--      --
     97F :  Subshed 96F
     97F :  Clearing Hydrograph Bank:  F
     97F   030   K100    5    0     39    167       39     167   1153    MOUNTAIN   1064  0.05300    ---     ----    -----  -----
--      --
     98F :  Subshed 97F
     98F   020   K100    6    0     33    134       72     233   1155    -------     ----  -------    ---     ----    -----  -----
--      --
     99F :  Subshed 98F
     99F   020   K100    7    0     50    185      122     414   1155    MOUNTAIN    595  0.09400    ---     ----    -----  -----
--      --
```


Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     100F :  Subshed 99F
     100F  020   K100    6    0     36    146      158     531   1155    VALLEY     1714  0.04600    ---     ----    -----  -----
--      --
     101F :  Subshed 100F
     101F  020   K100    7    0     48    177      206     633   1156    -------     ----  -------    ---     ----    -----  -----
--      --
     102AF  ---   ---    --   --    206    633     4911    8078   1170    VALLEY     1147  0.01000    ---     ----    -----  -----
--      --
     103A :  Subshed 102A
     103A  020   K100    7    0     42    155     4953    8074   1172    VALLEY     1111  0.01800    ---     ----    -----  -----
--      --
     104A :  Subshed 103A
     104A  020   K100    7    0     65    240     5018    8079   1173    -------     ----  -------    ---     ----    -----  -----
--      --
     105A :  Subshed 104A
     105A  020   K100    7    0     82    303     5100    8100   1173    VALLEY     1606  0.01800    ---     ----    -----  -----
--      --
     106A :  Subshed 105A
     106A  030   K100    7    0     60    209     5160    8100   1174    -------     ----  -------    ---     ----    -----  -----
--      --
     107A :  Subshed 106A
     107A  020   K100    9    0     69    222     5229    8119   1174    VALLEY     1408  0.02100    ---     ----    -----  -----
--      --
     108A :  Subshed 107A
```

```
     108A   030   K100    7    0     58    202     5287    8115   1175    -------    ----  -------   ---    ----   -----  -----
--     --
     109A :  Subshed 108A
     109A   030   K100    5    0     31    133     5318    8119   1175    VALLEY     1467  0.01500   ---    ----   -----  -----
--     --
     110A :  Subshed 109A
     110A   030   K100    6    0     42    160     5360    8106   1176    VALLEY     2733  0.01400   ---    ----   -----  -----
--     --
     111A :  Subshed 110A
     111A   030   K100    9    0     73    221     5433    8072   1179    VALLEY     3056  0.01300   ---    ----   -----  -----
--     --
     112A :  Subshed 111A
     112A   030   K100   21    0     56    101     5489    8026   1182    -------    ----  -------   ---    ----   -----  -----
--     --
     113B :  Subshed 112B
     113B :  Clearing Hydrograph Bank:  B
     113B   030   K100   12    0     50    127       50     127   1154    VALLEY     2779  0.01700   ---    ----   -----  -----
--     --
     114B :  Subshed 113B
     114B   040   K100   21    0     43     72       93     168   1164    -------    ----  -------   ---    ----   -----  -----
--     --
     115AB  ---   ---    --   --     93    168     5582    8056   1182    VALLEY     1726  0.01000   ---    ----   -----  -----
--     --
     116A :  routing
     116A   ---   ---    --   --    ---    ---     5582    8035   1184    VALLEY     5400  0.01000   ---    ----   -----  -----
--     --
     117A :  SC RIVER
     117A   ---   ---    --   --    ---    ---     5582    7886   1189    -------    ----  -------   ---    ----   -----  -----
--     --
     118A   ---   ---    --   --    ---    ---     5582    7886   1189    -------    ----  -------   ---    ----   -----  -----
--     --
```

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE
Caution	Err1008	SUBAREA	89A	TC and Area are set to minimum values(5). May be an attempt to run the model on a smaller area than acceptable to VCRat.

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Hydrograph Printouts

```
------------------------------------------------------------------------------------------------------------
            HYDROGRAPH PRINTOUT AT:    2A
------------------------------------------------------------------------------------------------------------
            DESCRIPTION: Subshed 2A
            TOTAL AREA TO HYDROGRAPH:      164    acres
            HYDROGRAPH PEAK:               506    cfs
            TIME OF PEAK:                 1156    minutes
            HYDROGRAPH VOLUME:              35.60 acre-ft
```

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.40	200	0.40	300	2.61	400	3.28

500	4.21	600	6.18	700	7.36	800	9.81	900	16.11
1000	27.89	1050	41.57	1100	47.99	1110	71.76	1120	71.82
1130	99.90	1131	102.34	1132	104.66	1133	108.00	1134	111.14
1135	113.66	1136	114.02	1137	118.10	1138	121.17	1139	124.18
1140	128.27	1141	134.61	1142	139.24	1143	144.13	1144	150.62
1145	163.40	1146	172.58	1147	183.42	1148	196.10	1149	234.08
1150	273.65	1151	288.68	1152	376.35	1153	432.08	1154	469.42
1155	496.67	1156	506.39	1157	503.02	1158	466.29	1159	425.71
1160	413.88	1161	322.12	1162	264.78	1163	230.89	1164	196.89
1165	156.93	1166	129.83	1167	110.97	1168	98.12	1169	89.79
1170	80.35	1171	75.74	1172	71.36	1173	63.50	1174	62.13
1175	59.20	1176	57.23	1177	53.66	1178	47.95	1179	48.73
1180	46.61	1181	44.82	1182	43.38	1183	41.39	1184	40.76
1185	40.11	1186	39.53	1187	39.52	1188	39.08	1189	38.72
1190	38.01	1191	38.01	1192	38.03	1193	37.97	1194	37.86
1195	38.22	1196	37.64	1197	37.65	1198	37.65	1199	37.66
1200	37.66	1201	37.13	1202	36.55	1203	35.47	1204	34.81
1205	34.05	1206	32.68	1207	31.71	1208	30.65	1209	29.54
1210	28.97	1211	27.84	1212	27.77	1213	27.21	1214	26.68
1215	26.35	1216	26.17	1217	26.55	1218	25.88	1219	25.83
1220	26.38	1221	26.40	1222	25.84	1223	25.81	1224	26.43
1225	26.50	1226	25.92	1227	25.86	1228	26.47	1229	26.53
1230	25.94	1231	25.88	1232	26.48	1233	26.03	1234	25.44
1235	25.88	1236	25.90	1237	25.34	1238	25.23	1239	25.15
1240	25.10	1241	25.05	1242	24.96	1243	24.82	1244	24.78
1245	24.76	1246	24.67	1247	24.68	1248	24.68	1249	24.62
1250	24.64	1251	24.65	1252	24.60	1253	24.62	1254	24.64
1255	24.59	1256	24.62	1257	24.64	1258	24.59	1259	24.61
1260	24.64	1261	24.58	1262	23.60	1263	23.12	1264	23.06
1265	22.45	1266	21.67	1267	20.82	1268	20.05	1269	19.75
1270	18.82	1271	18.42	1272	18.58	1273	18.20	1274	17.28
1275	16.94	1276	17.30	1277	17.23	1278	16.59	1279	16.44
1280	16.93	1281	16.97	1282	16.39	1283	16.30	1284	16.83
1285	16.90	1286	16.34	1287	16.26	1288	16.80	1289	16.88
1290	16.33	1291	16.25	1292	16.80	1293	16.36	1294	16.32
1295	16.25	1296	16.74	1297	16.76	1298	16.22	1299	16.17
1300	16.74	1310	10.59	1320	7.12	1330	6.46	1340	6.48
1350	5.13	1360	2.43	1370	0.80	1380	0.46	1390	0.41
1400	0.40	1420	0.40	1440	0.40	1460	0.40	1500	0.40

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Hydrograph Printouts

HYDROGRAPH FATTENED AT 14A

```
*****************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):   2636.54        VOLUME (acre-ft):    181.79      *
*      HYDROGRAPH ADJUSTMENT FACTOR:          0.92400                                     *
*      ADJUSTED HYDROGRAPH  PEAK (cfs):   2436.16        VOLUME (acre-ft):    167.97      *
*      RUNOFF FACTOR(in):   6.56      TOTAL RAIN(in):  12.00      SCS Curve: 60          *
*      FATTENED HYDROGRAPH  PEAK (cfs):   2436.16        VOLUME (acre-ft):    519.71      *
*****************************************************************************************
```

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	1.20	1.11	8.20
200	1.20	1.11	18.08	300	6.47	5.98	26.61
400	11.98	11.07	36.71	500	14.07	13.00	45.79
600	20.88	19.29	62.60	700	25.69	23.74	83.65
800	35.36	32.67	120.76	900	69.39	64.12	204.80
1000	134.98	124.72	381.73	1050	207.24	191.49	564.29
1100	254.38	235.05	830.95	1110	325.63	300.88	946.68
1120	373.22	344.85	1054.87	1130	482.49	445.82	1208.08
1131	494.85	457.24	1224.51	1132	507.39	468.83	1241.09
1133	521.97	482.30	1258.85	1134	537.74	496.87	1277.29
1135	552.76	510.75	1295.33	1136	563.49	520.67	1311.06
1137	584.53	540.11	1332.39	1138	604.17	558.25	1352.93
1139	623.17	575.81	1373.11	1140	641.77	593.00	1393.04
1141	664.28	613.79	1414.97	1142	685.98	633.85	1436.42
1143	714.70	660.38	1461.37	1144	743.43	686.93	1486.18
1145	782.31	722.85	1515.87	1146	822.40	759.90	1545.90
1147	867.18	801.27	1577.90	1148	917.59	847.85	1612.26
1149	1030.94	952.59	1675.99	1150	1156.38	1068.49	1744.17
1151	1233.62	1139.87	1788.76	1152	1510.69	1395.88	1923.52
1153	1727.76	1596.45	2028.02	1154	1958.40	1809.56	2135.89
1155	2232.84	2063.14	2260.00	1156	2408.67	2225.61	2338.21
1157	2533.38	2340.85	2392.50	1158	2636.54	2436.16	2436.16
1159	2516.07	2324.85	2385.21	1160	2378.08	2197.35	2325.21
1161	2222.51	2053.60	2255.85	1162	2052.34	1896.37	2178.15
1163	1895.38	1751.33	2104.35	1164	1681.99	1554.16	2003.14
1165	1478.18	1365.84	1903.89	1166	1310.83	1211.20	1819.34
1167	1155.33	1067.52	1738.57	1168	1025.13	947.22	1668.24
1169	921.30	851.28	1609.31	1170	820.31	757.97	1550.78
1171	735.53	679.63	1499.31	1172	667.99	617.22	1455.69
1173	607.84	561.64	1415.24	1174	558.93	516.45	1380.06
1175	515.00	475.86	1347.10	1176	469.88	434.17	1313.27
1177	439.15	405.77	1286.68	1178	408.12	377.10	1259.82
1179	384.42	355.21	1236.73	1180	362.52	334.96	1214.55
1181	339.32	313.53	1191.64	1182	323.05	298.49	1172.47
1183	305.70	282.47	1152.72	1184	292.64	270.40	1135.37
1185	281.63	260.23	1119.21	1186	269.76	249.26	1102.63
1187	260.59	240.79	1087.65	1188	252.27	233.10	1073.22
1189	245.04	226.42	1059.52	1190	237.98	219.89	1046.00
1191	231.95	214.32	1033.18	1192	226.16	208.97	1020.59

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1193	222.87	205.93	1009.59	1194	219.16	202.50	998.45
1195	216.38	199.94	987.99	1196	212.29	196.15	976.85
1197	210.48	194.49	967.20	1198	208.87	192.99	957.79
1199	206.81	191.09	948.22	1200	205.37	189.76	939.15
1201	201.90	186.56	928.94	1202	200.24	185.02	919.95
1203	197.57	182.55	910.45	1204	195.68	180.81	901.54
1205	191.99	177.40	891.59	1206	188.63	174.29	881.95
1207	185.29	171.21	872.42	1208	182.45	168.58	863.29

1209	179.29	165.66	854.06	1210	175.54	162.20	844.54
1211	171.52	158.48	834.92	1212	168.99	156.14	826.35
1213	167.20	154.49	818.37	1214	162.94	150.55	808.84
1215	159.80	147.65	800.13	1216	156.76	144.84	791.57
1217	155.18	143.39	784.06	1218	152.44	140.86	775.87
1219	148.49	137.20	766.93	1220	146.57	135.43	759.44
1221	145.42	134.37	752.55	1222	143.50	132.59	745.22
1223	140.81	130.11	737.45	1224	139.35	128.76	730.58
1225	139.06	128.49	724.60	1226	138.03	127.54	718.18
1227	136.13	125.78	711.24	1228	135.27	124.99	705.10
1229	135.55	125.25	699.82	1230	135.05	124.79	694.07
1231	133.65	123.49	687.77	1232	133.25	123.13	682.24
1233	132.71	122.62	676.67	1234	132.50	122.43	671.42
1235	132.54	122.47	666.41	1236	131.09	121.13	660.40
1237	130.47	120.55	655.06	1238	131.23	121.26	650.76
1239	129.99	120.11	645.10	1240	129.25	119.43	639.86
1241	129.64	119.78	635.49	1242	128.49	118.72	630.07
1243	128.21	118.46	625.34	1244	128.53	118.76	621.11
1245	127.30	117.63	615.81	1246	127.01	117.36	611.25
1247	127.35	117.68	607.21	1248	126.14	116.55	602.08
1249	125.86	116.30	597.70	1250	126.24	116.65	593.85
1251	125.08	115.57	588.91	1252	124.87	115.38	584.73
1253	125.32	115.80	581.10	1254	124.23	114.79	576.37
1255	124.09	114.66	572.39	1256	124.62	115.15	568.96
1257	123.59	114.20	564.42	1258	123.53	114.14	560.64
1259	124.11	114.68	557.40	1260	123.15	113.79	553.04
1261	123.13	113.77	549.44	1262	121.38	112.16	544.58
1263	119.26	110.20	539.48	1264	119.29	110.22	536.04
1265	118.73	109.71	532.19	1266	116.24	107.40	526.92
1267	114.14	105.47	521.99	1268	112.48	103.93	517.43
1269	111.92	103.41	513.73	1270	110.11	101.74	509.12
1271	106.89	98.77	503.48	1272	105.33	97.33	499.13
1273	104.75	96.79	495.56	1274	103.25	95.40	491.33
1275	100.64	92.99	486.27	1276	98.75	91.24	481.80
1277	97.87	90.43	478.14	1278	96.31	88.99	473.99
1279	93.77	86.64	469.11	1280	91.93	84.95	464.80
1281	91.16	84.23	461.35	1282	89.84	83.01	457.50
1283	87.64	80.98	453.00	1284	86.17	79.62	449.09
1285	85.77	79.25	446.05	1286	84.85	78.40	442.63
1287	83.06	76.75	438.57	1288	82.00	75.77	435.09
1289	81.98	75.75	432.47	1290	81.43	75.24	429.45

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1291	80.01	73.93	425.78	1292	79.29	73.27	422.69
1293	78.39	72.43	419.48	1294	79.33	73.30	417.74
1295	78.18	72.24	414.39	1296	77.70	71.79	411.59
1297	78.14	72.20	409.55	1298	77.85	71.94	406.96
1299	76.74	70.90	403.73	1300	77.23	71.36	401.81
1310	62.55	57.79	368.18	1320	51.00	47.12	339.05
1330	37.53	34.68	310.10	1340	29.46	27.22	287.11
1350	25.09	23.18	268.59	1360	21.91	20.25	252.33
1370	17.53	16.20	236.20	1380	12.44	11.49	220.46

1390	8.49	7.85	206.58	1400	5.80	5.36	194.57
1420	2.85	2.64	174.74	1440	1.67	1.54	158.83
1460	1.29	1.19	145.60	1500	1.20	1.11	124.37

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

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Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 117A

DESCRIPTION: SC RIVER
TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 7886 cfs
TIME OF PEAK: 1189 minutes
HYDROGRAPH VOLUME: 1204.10 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	13.40	200	13.54	300	14.98	400	21.33
500	35.34	600	52.75	700	72.13	800	103.97	900	198.06
1000	499.42	1050	806.01	1100	1267.88	1110	1375.18	1120	1504.93
1130	1677.32	1131	1697.38	1132	1717.92	1133	1738.84	1134	1760.08
1135	1781.65	1136	1804.05	1137	1827.12	1138	1850.87	1139	1875.47
1140	1901.21	1141	1928.32	1142	1956.51	1143	1985.82	1144	2016.37
1145	2048.32	1146	2081.80	1147	2116.98	1148	2154.00	1149	2192.95
1150	2233.94	1151	2277.14	1152	2322.82	1153	2371.30	1154	2423.10
1155	2479.18	1156	2540.57	1157	2608.18	1158	2683.51	1159	2768.15
1160	2862.94	1161	2969.08	1162	3088.76	1163	3225.02	1164	3381.31
1165	3560.43	1166	3763.29	1167	3988.12	1168	4230.88	1169	4486.22
1170	4749.21	1171	5015.63	1172	5280.77	1173	5538.71	1174	5782.56
1175	6005.87	1176	6205.91	1177	6384.02	1178	6542.95	1179	6689.06
1180	6831.43	1181	6976.86	1182	7127.46	1183	7280.94	1184	7431.47
1185	7571.22	1186	7692.24	1187	7787.86	1188	7853.39	1189	7885.92
1190	7884.83	1191	7851.10	1192	7786.86	1193	7695.33	1194	7579.82
1195	7444.16	1196	7292.27	1197	7127.57	1198	6953.30	1199	6772.31
1200	6586.91	1201	6399.23	1202	6211.05	1203	6023.77	1204	5838.37
1205	5655.68	1206	5476.83	1207	5302.61	1208	5132.47	1209	4968.03
1210	4808.56	1211	4654.47	1212	4506.23	1213	4363.11	1214	4226.11
1215	4094.13	1216	3968.10	1217	3846.91	1218	3731.58	1219	3620.66
1220	3515.51	1221	3414.58	1222	3318.46	1223	3226.83	1224	3139.27
1225	3055.99	1226	2976.64	1227	2900.95	1228	2828.91	1229	2760.49
1230	2695.32	1231	2633.27	1232	2574.22	1233	2518.01	1234	2464.45
1235	2413.40	1236	2364.69	1237	2318.20	1238	2273.81	1239	2231.43
1240	2190.97	1241	2152.33	1242	2115.45	1243	2080.22	1244	2046.54
1245	2014.26	1246	1983.29	1247	1953.55	1248	1924.96	1249	1897.46
1250	1871.34	1251	1846.17	1252	1821.77	1253	1798.16	1254	1775.38
1255	1753.58	1256	1732.37	1257	1711.71	1258	1691.62	1259	1672.10
1260	1653.16	1261	1634.82	1262	1617.06	1263	1599.87	1264	1583.24
1265	1567.62	1266	1552.33	1267	1537.33	1268	1522.62	1269	1508.20
1270	1494.05	1271	1480.16	1272	1466.54	1273	1453.20	1274	1440.11
1275	1427.83	1276	1415.66	1277	1403.53	1278	1391.45	1279	1379.44
1280	1367.51	1281	1355.66	1282	1343.90	1283	1332.23	1284	1321.07
1285	1310.09	1286	1299.11	1287	1288.15	1288	1277.20	1289	1266.28
1290	1255.41	1291	1244.59	1292	1233.85	1293	1223.18	1294	1212.61

1295	1202.14	1296	1191.77	1297	1181.53	1298	1171.41	1299	1161.43
1300	1151.60	1310	1065.07	1320	993.38	1330	925.12	1340	854.63
1350	787.65	1360	718.91	1370	656.81	1380	602.40	1390	553.59
1400	510.10	1420	429.28	1440	361.59	1460	311.37	1500	246.38

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 118A

TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 7886 cfs
TIME OF PEAK: 1189 minutes
HYDROGRAPH VOLUME: 1204.10 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	13.40	200	13.54	300	14.98	400	21.33
500	35.34	600	52.75	700	72.13	800	103.97	900	198.06
1000	499.42	1050	806.01	1100	1267.88	1110	1375.18	1120	1504.93
1130	1677.32	1131	1697.38	1132	1717.92	1133	1738.84	1134	1760.08
1135	1781.65	1136	1804.05	1137	1827.12	1138	1850.87	1139	1875.47
1140	1901.21	1141	1928.32	1142	1956.51	1143	1985.82	1144	2016.37
1145	2048.32	1146	2081.80	1147	2116.98	1148	2154.00	1149	2192.95
1150	2233.94	1151	2277.14	1152	2322.82	1153	2371.30	1154	2423.10
1155	2479.18	1156	2540.57	1157	2608.18	1158	2683.51	1159	2768.15
1160	2862.94	1161	2969.08	1162	3088.76	1163	3225.02	1164	3381.31
1165	3560.43	1166	3763.29	1167	3988.12	1168	4230.88	1169	4486.22
1170	4749.21	1171	5015.63	1172	5280.77	1173	5538.71	1174	5782.56
1175	6005.87	1176	6205.91	1177	6384.02	1178	6542.95	1179	6689.06
1180	6831.43	1181	6976.86	1182	7127.46	1183	7280.94	1184	7431.47
1185	7571.22	1186	7692.24	1187	7787.86	1188	7853.39	1189	7885.92
1190	7884.83	1191	7851.10	1192	7786.86	1193	7695.33	1194	7579.82
1195	7444.16	1196	7292.27	1197	7127.57	1198	6953.30	1199	6772.31
1200	6586.91	1201	6399.23	1202	6211.05	1203	6023.77	1204	5838.37
1205	5655.68	1206	5476.83	1207	5302.61	1208	5132.47	1209	4968.03
1210	4808.56	1211	4654.47	1212	4506.23	1213	4363.11	1214	4226.11
1215	4094.13	1216	3968.10	1217	3846.91	1218	3731.58	1219	3620.66
1220	3515.51	1221	3414.58	1222	3318.46	1223	3226.83	1224	3139.27
1225	3055.99	1226	2976.64	1227	2900.95	1228	2828.91	1229	2760.49
1230	2695.32	1231	2633.27	1232	2574.22	1233	2518.01	1234	2464.45
1235	2413.40	1236	2364.69	1237	2318.20	1238	2273.81	1239	2231.43
1240	2190.97	1241	2152.33	1242	2115.45	1243	2080.22	1244	2046.54
1245	2014.26	1246	1983.29	1247	1953.55	1248	1924.96	1249	1897.46
1250	1871.34	1251	1846.17	1252	1821.77	1253	1798.16	1254	1775.38
1255	1753.58	1256	1732.37	1257	1711.71	1258	1691.62	1259	1672.10
1260	1653.16	1261	1634.82	1262	1617.06	1263	1599.87	1264	1583.24
1265	1567.62	1266	1552.33	1267	1537.33	1268	1522.62	1269	1508.20
1270	1494.05	1271	1480.16	1272	1466.54	1273	1453.20	1274	1440.11
1275	1427.83	1276	1415.66	1277	1403.53	1278	1391.45	1279	1379.44
1280	1367.51	1281	1355.66	1282	1343.90	1283	1332.23	1284	1321.07
1285	1310.09	1286	1299.11	1287	1288.15	1288	1277.20	1289	1266.28
1290	1255.41	1291	1244.59	1292	1233.85	1293	1223.18	1294	1212.61
1295	1202.14	1296	1191.77	1297	1181.53	1298	1171.41	1299	1161.43

1300	1151.60	1310	1065.07	1320	993.38	1330	925.12	1340	854.63
1350	787.65	1360	718.91	1370	656.81	1380	602.40	1390	553.59
1400	510.10	1420	429.28	1440	361.59	1460	311.37	1500	246.38

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
005  4492  001A Header place holder
005  4492  002A Header place holder
005  4492  014ACHeader place holder
005  4492  117A Header place holder
005  4492  118A Header place holder
999
999
006  4492  001A 010000008510B98101635017400                    G1
006  4492  002A 020000007909B98101750007500                  1
006  4492  003A 020000007305B98
006  4492  004B 010000008809B98
006  4492  005B 010000005407B98102148014200
006  4492  006B 020000008010B98
006  4492  007AB010          A97102215005500
006  4492  008A 020000009407B98
006  4492  009C 020000007906B98102067040700
006  4492  010C 020000005107B98
006  4492  011C 010000007306B98101977017500
006  4492  012C 020000010805B98101913008800
006  4492  013C 020000008712B98
006  4492  014AC010          A97                             1
110
111            0.92400    6.56
110
006  4492  015A 010       099A97201101004000
006  4492  016A 030000003005B98
006  4492  017D 020000008007B98100830005800
006  4492  018D 030000001205B98
006  4492  019AD010          A97202430003600
006  4492  020A 030000006607B98
006  4492  021E 020000007105B98101615006100
006  4492  022E 020000003905B98
006  4492  023E 020000006805B98201242004700
006  4492  024E 020000005005B98
006  4492  025AE010          A97200818002600
006  4492  026A 030000001805B98
006  4492  027A 020000005607B98200790002700
006  4492  028A 020000007906B98200950002400
006  4492  029A 020000006410B98201069002600
006  4492  030A 020000004607B98
006  4492  031A 020000004005B98201537002900
006  4492  032A 020000005307B98
006  4492  033B 010000009907B98100735011200                    B
006  4492  034B 020000004707B98
006  4492  035B 020000003606B98101710005700
006  4492  036B 020000007809B98
006  4492  037B 020000010009B98100736005200
006  4492  038B 020000001305B98
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006  4492  039B 020000007109B98201438003500
006  4492  040B 020000004907B98
006  4492  041C 020000008710B98102063016300                    C
006  4492  042C 020000007610B98
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006  4492  043C 010000010712B98101338008100
006  4492  044C 010000002305B98
006  4492  045D 020000008009B98101840008300
006  4492  046D 020000005405B98
006  4492  047CD010          A97101426005600
006  4492  048C 020000004307B98
006  4492  049BC010          A97200768002900
006  4492  050B 020000005007B98201183003500
006  4492  051B 020000007907B98201240003400
006  4492  052B 020000002805B98
006  4492  053E 020000007909B98100782006000                    E
006  4492  054E 030000002505B98
006  4492  055BE010          A97200853004000
006  4492  056B 020000001405B98
006  4492  057F 020000008706B98201222004800
006  4492  058F 030000003005B98
006  4492  059BF010          A97101584006300
006  4492  060B 020000004005B98
006  4492  061AB010          A97201530002400
006  4492  062A 020000005507B98
006  4492  063A 020000008006B98201254001800
006  4492  064A 010000004106B98
006  4492  065B 020000006605B98101577007600
006  4492  066B 020000004906B98
006  4492  067AB010          A97200885002400
006  4492  068A 010000002405B98
006  4492  069A 030000005706B98201682001400
006  4492  070A 020000005008B98
006  4492  071C 020000005805B98101208005000                    C
006  4492  072C 020000007506B98201403004800
006  4492  073C 020000007407B98
006  4492  074C 020000005406B98200814002700
006  4492  075C 020000002005B98
006  4492  076C 020000004307B98201738003400
006  4492  077C 020000008908B98
006  4492  078AC010          A97201110001900
006  4492  079A 030000003007B98
006  4492  080A 020000004105B98202463001700
006  4492  081A 020000008306B98
006  4492  082D 020000005106B98101093007600                    D
006  4492  083D 020000004706B98
006  4492  084AD010          A97200977003300
006  4492  085A 020000004605B98
006  4492  086A 020000006707B98201211000700
006  4492  087A 020000003306B98
006  4492  088A 020000009305B98200524001100
006  4492  089A 040000000505B98
006  4492  090A 010       099A97
006  4492  091E 020000003905B98101621005900                    E
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006   4492   092E 020000005907B98
006   4492   093AE010          A97200926001100
006   4492   094A 030000002205B98
♀
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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006   4492   095A 020000006105B98
006   4492   096A 020000007508B98201651001600
006   4492   097F 030000003905B98101064005300                    F
006   4492   098F 020000003306B98
006   4492   099F 020000005007B98100595009400
006   4492   100F 020000003606B98201714004600
006   4492   101F 020000004807B98
006   4492   102AF010          A97201147001000
006   4492   103A 020000004207B98201111001800
006   4492   104A 020000006507B98
006   4492   105A 020000008207B98201606001800
006   4492   106A 030000006007B98
006   4492   107A 020000006909B98201408002100
006   4492   108A 030000005807B98
006   4492   109A 030000003105B98201467001500
006   4492   110A 030000004206B98202733001400
006   4492   111A 030000007309B98203056001300
006   4492   112A 030000005621B98
006   4492   113B 030000005012B98202779001700                    B
006   4492   114B 040000004321B98
006   4492   115AB010          A97201726001000
006   4492   116A 010       099A97205400001000
006   4492   117A 010       099A97                            1
006   4492   118A 010       099A97                            1  2
999
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VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	260.	85.	260.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	237.	164.	472.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	311.	237.	585.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	283.	88.	283.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	199.	142.	482.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	227.	222.	663.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	663.	459.	1241.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	324.	553.	1299.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	299.	79.	299.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	176.	130.	454.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	293.	203.	719.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	460.	311.	1012.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	220.	398.	1137.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1137.	951.	2436.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	120.	981.	2405.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	276.	80.	276.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	48.	92.	301.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	301.	1073.	2620.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	214.	1139.	2606.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	302.	71.	302.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	166.	110.	348.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	289.	178.	576.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	213.	228.	693.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	693.	1367.	2993.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	72.	1385.	2988.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	193.	1441.	3054.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	299.	1520.	3099.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	182.	1584.	3202.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	159.	1630.	3219.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	170.	1670.	3240.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	183.	1723.	3253.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	364.	99.	364.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	162.	146.	519.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	136.	182.	641.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00

4492	35B	78.	234.	260.	784.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	300.	360.	1061.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	55.	373.	1047.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	213.	444.	1222.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	169.	493.	1300.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	247.	87.	247.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	216.	163.	428.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	293.	270.	713.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	104.	293.	725.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	240.	80.	240.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	230.	134.	355.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	355.	427.	1078.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	148.	470.	1113.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1113.	963.	2413.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	172.	1013.	2446.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	273.	1092.	2509.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	119.	1120.	2513.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	237.	79.	237.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	100.	104.	302.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	302.	1224.	2715.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	60.	1238.	2704.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	329.	87.	329.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	120.	117.	397.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	397.	1355.	2866.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	170.	1395.	2854.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2854.	3118.	6107.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	190.	3173.	6105.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	303.	3253.	6139.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	165.	3294.	6137.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	281.	66.	281.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	185.	115.	354.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	354.	3409.	6229.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	108.	3433.	6221.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	203.	3490.	6238.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	160.	3540.	6219.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	247.	58.	247.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	284.	133.	419.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	255.	207.	627.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	204.	261.	801.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	85.	281.	846.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	148.	324.	969.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	284.	413.	1149.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1149.	3953.	6605.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	97.	3983.	6595.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	174.	4024.	6607.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	314.	4107.	6600.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	193.	51.	193.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	178.	98.	312.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	312.	4205.	6640.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	196.	4251.	6638.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	231.	4318.	6661.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	125.	4351.	6646.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	396.	4444.	6668.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	19.	4449.	6654.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6654.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

4492	90E	39.	166.	39.	166.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	204.	98.	282.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	282.	4547.	6690.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	88.	4569.	6680.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	260.	4630.	6694.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	240.	4705.	6710.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	157.	39.	157.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	125.	72.	216.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	172.	122.	385.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	136.	158.	494.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	166.	206.	584.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	584.	4911.	6769.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	145.	4953.	6762.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	224.	5018.	6761.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	283.	5100.	6774.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	195.	5160.	6762.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	207.	5229.	6776.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	188.	5287.	6767.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	124.	5318.	6768.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	150.	5360.	6760.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	206.	5433.	6720.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	93.	5489.	6674.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	118.	50.	118.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	66.	93.	155.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	155.	5582.	6694.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6674.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6515.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.

1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.941

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	1.	400	1.
500	3.	600	4.	700	5.	800	7.	900	12.
1000	23.	1050	36.	1100	42.	1110	64.	1120	64.
1130	91.	1131	93.	1132	95.	1133	98.	1134	101.
1135	104.	1136	104.	1137	108.	1138	111.	1139	113.
1140	117.	1141	123.	1142	128.	1143	132.	1144	138.
1145	150.	1146	159.	1147	169.	1148	181.	1149	217.
1150	253.	1151	267.	1152	349.	1153	401.	1154	436.
1155	462.	1156	472.	1157	469.	1158	435.	1159	397.
1160	387.	1161	301.	1162	247.	1163	215.	1164	184.
1165	146.	1166	120.	1167	102.	1168	90.	1169	82.
1170	73.	1171	69.	1172	64.	1173	57.	1174	56.
1175	53.	1176	51.	1177	48.	1178	42.	1179	43.
1180	41.	1181	39.	1182	38.	1183	36.	1184	35.
1185	35.	1186	34.	1187	34.	1188	34.	1189	33.
1190	33.	1191	33.	1192	33.	1193	32.	1194	32.
1195	33.	1196	32.	1197	32.	1198	32.	1199	32.
1200	32.	1201	32.	1202	31.	1203	30.	1204	30.
1205	29.	1206	28.	1207	27.	1208	26.	1209	25.
1210	24.	1211	23.	1212	23.	1213	22.	1214	22.
1215	22.	1216	21.	1217	22.	1218	21.	1219	21.
1220	22.	1221	22.	1222	21.	1223	21.	1224	22.
1225	22.	1226	21.	1227	21.	1228	22.	1229	22.
1230	21.	1231	21.	1232	22.	1233	21.	1234	21.
1235	21.	1236	21.	1237	21.	1238	20.	1239	20.
1240	20.	1241	20.	1242	20.	1243	20.	1244	20.
1245	20.	1246	20.	1247	20.	1248	20.	1249	20.
1250	20.	1251	20.	1252	20.	1253	20.	1254	20.
1255	20.	1256	20.	1257	20.	1258	20.	1259	20.
1260	20.	1261	20.	1262	19.	1263	18.	1264	18.
1265	18.	1266	17.	1267	16.	1268	16.	1269	15.
1270	15.	1271	14.	1272	14.	1273	14.	1274	13.
1275	13.	1276	13.	1277	13.	1278	12.	1279	12.
1280	13.	1281	13.	1282	12.	1283	12.	1284	13.
1285	13.	1286	12.	1287	12.	1288	13.	1289	13.
1290	12.	1291	12.	1292	13.	1293	12.	1294	12.
1295	12.	1296	12.	1297	12.	1298	12.	1299	12.

1300	12.	1310	9.	1320	5.	1330	5.	1340	5.
1350	4.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.941

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	7.
500	8.	600	12.	700	18.	800	29.	900	53.
1000	177.	1050	357.	1100	674.	1110	747.	1120	832.
1130	942.	1131	954.	1132	967.	1133	981.	1134	994.
1135	1008.	1136	1022.	1137	1037.	1138	1052.	1139	1068.
1140	1084.	1141	1100.	1142	1118.	1143	1136.	1144	1156.
1145	1176.	1146	1196.	1147	1218.	1148	1241.	1149	1265.
1150	1291.	1151	1318.	1152	1346.	1153	1377.	1154	1409.
1155	1443.	1156	1481.	1157	1522.	1158	1567.	1159	1618.
1160	1676.	1161	1742.	1162	1816.	1163	1899.	1164	1995.
1165	2105.	1166	2232.	1167	2378.	1168	2542.	1169	2723.
1170	2918.	1171	3121.	1172	3332.	1173	3547.	1174	3764.
1175	3975.	1176	4175.	1177	4360.	1178	4527.	1179	4675.
1180	4810.	1181	4937.	1182	5065.	1183	5198.	1184	5341.
1185	5494.	1186	5654.	1187	5817.	1188	5976.	1189	6124.
1190	6255.	1191	6363.	1192	6443.	1193	6494.	1194	6515.
1195	6505.	1196	6466.	1197	6401.	1198	6314.	1199	6206.
1200	6082.	1201	5944.	1202	5797.	1203	5642.	1204	5482.
1205	5318.	1206	5154.	1207	4990.	1208	4827.	1209	4666.
1210	4508.	1211	4353.	1212	4202.	1213	4056.	1214	3914.
1215	3777.	1216	3645.	1217	3517.	1218	3395.	1219	3277.
1220	3164.	1221	3055.	1222	2951.	1223	2851.	1224	2756.
1225	2663.	1226	2576.	1227	2492.	1228	2412.	1229	2334.
1230	2261.	1231	2190.	1232	2123.	1233	2058.	1234	1996.
1235	1937.	1236	1880.	1237	1825.	1238	1773.	1239	1724.
1240	1676.	1241	1630.	1242	1586.	1243	1544.	1244	1503.
1245	1464.	1246	1427.	1247	1391.	1248	1356.	1249	1323.
1250	1292.	1251	1261.	1252	1232.	1253	1203.	1254	1176.
1255	1150.	1256	1125.	1257	1101.	1258	1078.	1259	1056.
1260	1035.	1261	1015.	1262	995.	1263	976.	1264	958.
1265	941.	1266	923.	1267	907.	1268	891.	1269	876.
1270	861.	1271	847.	1272	833.	1273	819.	1274	806.
1275	793.	1276	781.	1277	770.	1278	758.	1279	747.
1280	735.	1281	725.	1282	715.	1283	705.	1284	695.
1285	686.	1286	677.	1287	668.	1288	659.	1289	651.
1290	643.	1291	635.	1292	627.	1293	620.	1294	613.
1295	606.	1296	599.	1297	592.	1298	585.	1299	578.
1300	572.	1310	511.	1320	458.	1330	412.	1340	376.
1350	345.	1360	316.	1370	290.	1380	265.	1390	241.
1400	218.	1420	177.	1440	140.	1460	111.	1500	75.

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 4492 Project: Adams County VC Rat

Project Description

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100 YEAR EVENT

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 2

Model Results

SUBAREA DATA AND RESULTS								ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	VEL (FT/S)	DEPTH (FT)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
1A : Subshed 1A																		
1A	010	K100	10	0	85	278	--	--	85	278	1154	MOUNTAIN	1635	0.17400	---	----	-----	-----
2A : Subshed 2A																		
2A	020	K100	9	0	79	254	--	--	164	506	1156	MOUNTAIN	1750	0.07500	---	----	-----	-----
3A : Subshed 3A																		
3A	020	K100	5	0	73	332	--	--	237	633	1156	-------	----	-------	---	----	-----	-----
4B : Subshed 4B																		
4B	010	K100	9	0	88	303	--	--	88	303	1153	-------	----	-------	---	----	-----	-----
5B : Subshed 5B																		
5B	010	K100	7	0	54	212	--	--	142	515	1153	MOUNTAIN	2148	0.14200	---	----	-----	-----
6B : Subshed 6B																		

```
      6B   020   K100   10   0    80   244    222   711  1157  -------  ----  -------  ---  ----  -----  -----
--    --
      7AB  ---   ---    --   --  222   711    459  1339  1156  MOUNTAIN 2215  0.05500  ---  ----  -----  -----
--    --
      8A : Subshed 8A
      8A   020   K100    7   0    94   347    553  1411  1158  -------  ----  -------  ---  ----  -----  -----
--    --
      9C : Subshed 9C
      9C   020   K100    6   0    79   320     79   320  1153  MOUNTAIN 2067  0.40700  ---  ----  -----  -----
--    --
     10C : Subshed 11C
     10C   020   K100    7   0    51   188    130   487  1155  -------  ----  -------  ---  ----  -----  -----
--    --
     11C : Subshed 10C
     11C   010   K100    6   0    73   313    203   771  1154  MOUNTAIN 1977  0.17500  ---  ----  -----  -----
--    --
     12C : Subshed 12C
     12C   020   K100    5   0   108   491    311  1088  1156  MOUNTAIN 1913  0.08800  ---  ----  -----  -----
--    --
     13C : Subshed 13C
     13C   020   K100   12   0    87   236    398  1226  1158  -------  ----  -------  ---  ----  -----  -----
--    --
     14AC ---   ---    --   --  398  1226    951  2637  1158  VALLEY   1101  0.04000  ---  ----  -----  -----
--    --
     15A : Subshed 15A
     15A   030   K100    5   0    30   129    981  2603  1159  -------  ----  -------  ---  ----  -----  -----
--    --
     16D : Subshed 16D
     16D   020   K100    7   0    80   295     80   295  1153  MOUNTAIN  830  0.05800  ---  ----  -----  -----
--    --
     17D : Subshed 17D
     17D   030   K100    5   0    12    51     92   324  1156  -------  ----  -------  ---  ----  -----  -----
--    --
     18AD ---   ---    --   --   92   324   1073  2832  1159  VALLEY   2430  0.03600  ---  ----  -----  -----
--    --
     19A : Subshed 19A
     19A   030   K100    7   0    66   229   1139  2833  1160  -------  ----  -------  ---  ----  -----  -----
--    --
     20E : Subshed 20E
     20E   020   K100    5   0    71   323     71   323  1153  MOUNTAIN 1615  0.06100  ---  ----  -----  -----
--    --
     21E : Subshed 22E
     21E   020   K100    5   0    39   177    110   376  1156  -------  ----  -------  ---  ----  -----  -----
--    --
     22E : Subshed 21E
     22E   020   K100    5   0    68   309    178   619  1153  VALLEY   1242  0.04700  ---  ----  -----  -----
--    --
     23E : Subshed 23E
     23E   020   K100    5   0    50   227    228   747  1155  -------  ----  -------  ---  ----  -----  -----
--    --
     24AE ---   ---    --   --  228   747   1367  3265  1158  VALLEY    818  0.02600  ---  ----  -----  -----
--    --
     25A : Subshed 25A
     25A   030   K100    5   0    18    77   1385  3252  1159  -------  ----  -------  ---  ----  -----  -----
--    --
     26A : Subshed 26A
     26A   020   K100    7   0    56   207   1441  3331  1159  VALLEY    790  0.02700  ---  ----  -----  -----
--    --
     27A : Subshed 27A
     27A   020   K100    6   0    79   320   1520  3378  1160  VALLEY    950  0.02400  ---  ----  -----  -----
--    --
```

Model Results

SUBAREA DATA AND RESULTS								ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	VEL (FT/S)	DEPTH (FT)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
28A : Subshed 28A																		
28A	020	K100	10	0	64	195	--	--	1584	3488	1160	VALLEY	1069	0.02600	---	----	-----	-----
29A : Subshed 29A																		
29A	020	K100	7	0	46	170	--	--	1630	3516	1161	-------	----	-------	---	----	-----	-----
30A : Subshed 30A																		
30A	020	K100	5	0	40	182	--	--	1670	3539	1161	VALLEY	1537	0.02900	---	----	-----	-----
31A : Subshed 31A																		
31A	020	K100	7	0	53	196	--	--	1723	3557	1162	-------	----	-------	---	----	-----	-----
32B : Subshed 32B																		
32B : Clearing Hydrograph Bank: B																		
32B	010	K100	7	0	99	389	--	--	99	389	1153	MOUNTAIN	735	0.11200	---	----	-----	-----
33B : Subshed 33B																		
33B	020	K100	7	0	47	174	--	--	146	555	1155	-------	----	-------	---	----	-----	-----
34B : Subshed 34B																		
34B	020	K100	6	0	36	146	--	--	182	687	1154	MOUNTAIN	1710	0.05700	---	----	-----	-----
35B : Subshed 35B																		
35B	020	K100	9	0	78	251	--	--	260	844	1157	-------	----	-------	---	----	-----	-----
36B : Subshed 36B																		
36B	020	K100	9	0	100	321	--	--	360	1142	1157	MOUNTAIN	736	0.05200	---	----	-----	-----
37B : Subshed 37B																		
37B	020	K100	5	0	13	59	--	--	373	1128	1158	-------	----	-------	---	----	-----	-----
38B : Subshed 38B																		
38B	020	K100	9	0	71	228	--	--	444	1320	1157	VALLEY	1438	0.03500	---	----	-----	-----
39B : Subshed 39B																		
39B	020	K100	7	0	49	181	--	--	493	1407	1158	-------	----	-------	---	----	-----	-----
40C : Subshed 40C																		
40C : Clearing Hydrograph Bank: C																		
40C	020	K100	10	0	87	265	--	--	87	265	1154	MOUNTAIN	2063	0.16300	---	----	-----	-----
41C : Subshed 41C																		
41C	020	K100	10	0	76	231	--	--	163	460	1157	-------	----	-------	---	----	-----	-----
42C : Subshed 42C																		
42C	010	K100	12	0	107	314	--	--	270	766	1156	MOUNTAIN	1338	0.08100	---	----	-----	-----

```
--      --
        43C :  Subshed 43C
        43C   010   K100    5    0     23    110      293     780   1156    -------    ----  -------    ---     ----    -----  -----
--      --
        44D :  Subshed 44D
        44D   020   K100    9    0     80    257       80     257   1153    MOUNTAIN   1840  0.08300    ---     ----    -----  -----
--      --
        45D :  Subshed 45D
        45D   020   K100    5    0     54    246      134     384   1156    -------    ----  -------    ---     ----    -----  -----
--      --
        46CD  ---   ---    --   --    134    384      427    1165   1156    MOUNTAIN   1426  0.05600    ---     ----    -----  -----
--      --
        47C :  Subshed 47C
        47C   020   K100    7    0     43    159      470    1206   1158    -------    ----  -------    ---     ----    -----  -----
--      --
        48BC  ---   ---    --   --    470   1206      963    2613   1158    -------    ----  -------    ---     ----    -----  -----
--      --
              ***********************************************************************************************
              *      INCOMING HYDROGRAPH  PEAK (cfs):   2613.09         VOLUME (acre-ft):    175.17      *
              *      HYDROGRAPH ADJUSTMENT FACTOR:          0.92300                                     *
              *      ADJUSTED HYDROGRAPH  PEAK (cfs):   2411.88         VOLUME (acre-ft):    161.68      *
              *      RUNOFF FACTOR(in):   6.42      TOTAL RAIN(in):  11.65      SCS Curve: 61           *
              *      FATTENED HYDROGRAPH  PEAK (cfs):   2411.88         VOLUME (acre-ft):    515.03      *
              ***********************************************************************************************
        48B   ---   ---    --   --    ---   ---       963    2412   ----    -------    ----  -------    ---     ----    -----  -----
--      --
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
--------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)      CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------------
-------|
        49A   ---   ---    --   --    ---   ---      1723    3557   1162    VALLEY      768  0.02900    ---     ----    -----  -----
--      --
        50B :  Subshed 49B
        50B   020   K100    7    0     50    185      1013    2538   1158    VALLEY     1183  0.03500    ---     ----    -----  -----
--      --
        51B :  Subshed 50B
        51B   020   K100    7    0     79    292      1092    2694   1158    VALLEY     1240  0.03400    ---     ----    -----  -----
--      --
        52B :  Subshed 51B
        52B   020   K100    5    0     28    127      1120    2687   1159    -------    ----  -------    ---     ----    -----  -----
--      --
        53E :  Subshed 52E
        53E :  Clearing Hydrograph Bank:  E
        53E   020   K100    9    0     79    254        79     254   1153    MOUNTAIN    782  0.06000    ---     ----    -----  -----
--      --
        54E :  Subshed 53E
        54E   030   K100    5    0     25    107       104     325   1156    -------    ----  -------    ---     ----    -----  -----
--      --
        55BE  ---   ---    --   --    104    325      1224    2967   1156    VALLEY      853  0.04000    ---     ----    -----  -----
--      --
```

```
     56B :  Subshed 55B
     56B   020    K100     5    0     14     64     1238    2978   1157    -------    ----  -------   ---    ----   -----  -----
--    --
     57F :  Subshed 56F
     57F   020    K100     6    0     87    352       87     352   1153    VALLEY     1222  0.04800   ---    ----   -----  -----
--    --
     58F :  Subshed 57F
     58F   030    K100     5    0     30    129      117     426   1155    -------    ----  -------   ---    ----   -----  -----
--    --
     59BF  ---    ---     --   --    117    426     1355    3346   1156    MOUNTAIN   1584  0.06300   ---    ----   -----  -----
--    --
     60B :  Subshed 59B
     60B   020    K100     5    0     40    182     1395    3339   1158    -------    ----  -------   ---    ----   -----  -----
--    --
     61AB  ---    ---     --   --   1395   3339     3118    6655   1161    VALLEY     1530  0.02400   ---    ----   -----  -----
--    --
     62A :  Subshed 61A - START OF LOWER WATERSHED
     62A   020    K100     7    0     55    203     3173    6670   1162    -------    ----  -------   ---    ----   -----  -----
--    --
     63A :  Subshed 62A
     63A   020    K100     6    0     80    324     3253    6714   1162    VALLEY     1254  0.01800   ---    ----   -----  -----
--    --
     64A :  Subshed 63A
     64A   010    K100     6    0     41    176     3294    6722   1163    -------    ----  -------   ---    ----   -----  -----
--    --
     65B :  Subshed 64B
     65B   020    K100     5    0     66    300       66     300   1153    MOUNTAIN   1577  0.07600   ---    ----   -----  -----
--    --
     66B :  Subshed 65B
     66B   020    K100     6    0     49    198      115     383   1155    -------    ----  -------   ---    ----   -----  -----
--    --
     67AB  ---    ---     --   --    115    383     3409    6833   1163    VALLEY      885  0.02400   ---    ----   -----  -----
--    --
     68A :  Subshed 67A
     68A   010    K100     5    0     24    115     3433    6842   1163    -------    ----  -------   ---    ----   -----  -----
--    --
     69A :  Subshed 68A
     69A   030    K100     6    0     57    218     3490    6865   1163    VALLEY     1682  0.01400   ---    ----   -----  -----
--    --
     70A :  Subshed 69A
     70A   020    K100     8    0     50    171     3540    6868   1165    -------    ----  -------   ---    ----   -----  -----
--    --
     71C :  Subshed 70C
     71C :  Clearing Hydrograph Bank:  C
     71C   020    K100     5    0     58    264       58     264   1153    MOUNTAIN   1208  0.05000   ---    ----   -----  -----
--    --
     72C :  Subshed 71C
     72C   020    K100     6    0     75    304      133     451   1154    VALLEY     1403  0.04800   ---    ----   -----  -----
--    --
     73C :  Subshed 72C
     73C   020    K100     7    0     74    273      207     676   1155    -------    ----  -------   ---    ----   -----  -----
--    --
     74C :  Subshed 73C
     74C   020    K100     6    0     54    219      261     863   1155    VALLEY      814  0.02700   ---    ----   -----  -----
--    --
♀
```

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
--------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     75C :  Subshed 74C
     75C   020   K100    5    0     20    91     281    911   1156   -------   ----  -------   ---    ----    -----  -----
--     --
     76C :  Subshed 75C
     76C   020   K100    7    0     43   159     324   1044   1156   VALLEY    1738  0.03400   ---    ----    -----  -----
--     --
     77C :  Subshed 76C
     77C   020   K100    8    0     89   305     413   1243   1157   -------   ----  -------   ---    ----    -----  -----
--     --
     78AC  ---   ---    --   --    413  1243    3953   7413   1163   VALLEY    1110  0.01900   ---    ----    -----  -----
--     --
     79A :  Subshed 78A
     79A   030   K100    7    0     30   104    3983   7419   1164   -------   ----  -------   ---    ----    -----  -----
--     --
     80A :  Subarea 79A
     80A   020   K100    5    0     41   186    4024   7439   1164   VALLEY    2463  0.01700   ---    ----    -----  -----
--     --
     81A :  Subshed 80A
     81A   020   K100    6    0     83   336    4107   7447   1166   -------   ----  -------   ---    ----    -----  -----
--     --
     82D :  Subshed 81D
     82D :  Clearing Hydrograph Bank:  D
     82D   020   K100    6    0     51   206      51    206   1153   MOUNTAIN  1093  0.07600   ---    ----    -----  -----
--     --
     83D :  Subshed 82D
     83D   020   K100    6    0     47   190      98    337   1155   -------   ----  -------   ---    ----    -----  -----
--     --
     84AD  ---   ---    --   --     98   337    4205   7500   1166   VALLEY     977  0.03300   ---    ----    -----  -----
--     --
     85A :  Subarea 84A
     85A   020   K100    5    0     46   209    4251   7514   1166   -------   ----  -------   ---    ----    -----  -----
--     --
     86A :  Subarea 85A
     86A   020   K100    7    0     67   247    4318   7542   1166   VALLEY    1211  0.00700   ---    ----    -----  -----
--     --
     87A :  Subarea 86A
     87A   020   K100    6    0     33   134    4351   7538   1168   -------   ----  -------   ---    ----    -----  -----
--     --
     88A :  Subarea 87A
     88A   020   K100    5    0     93   423    4444   7569   1168   VALLEY     524  0.01100   ---    ----    -----  -----
--     --
     89A :  Subarea 88A
     89A   040   K100    5    0      5    20    4449   7563   1168   -------   ----  -------   ---    ----    -----  -----
--     --
     90A   ---   ---    --   --    ---   ---    4449   7563   1168   -------   ----  -------   ---    ----    -----  -----
--     --
     91E :  Subshed 90E
     91E :  Clearing Hydrograph Bank:  E
     91E   020   K100    5    0     39   177      39    177   1153   MOUNTAIN  1621  0.05900   ---    ----    -----  -----
--     --
     92E :  Subshed 91E
     92E   020   K100    7    0     59   218      98    305   1155   -------   ----  -------   ---    ----    -----  -----
```

```
--      --
     93AE  ---   ---    --   --     98    305     4547    7618   1168    VALLEY      926  0.01100    ---    ----   -----  -----
--      --
     94A :  Subshed 93A
     94A   030   K100    5    0     22     94     4569    7616   1169    -------     ----  -------    ---    ----   -----  -----
--      --
     95A :  Subshed 94A
     95A   020   K100    5    0     61    277     4630    7635   1169    -------     ----  -------    ---    ----   -----  -----
--      --
     96A :  Subshed 95A
     96A   020   K100    8    0     75    257     4705    7663   1169    VALLEY     1651  0.01600    ---    ----   -----  -----
--      --
     97F :  Subshed 96F
     97F :  Clearing Hydrograph Bank:  F
     97F   030   K100    5    0     39    167       39     167   1153    MOUNTAIN   1064  0.05300    ---    ----   -----  -----
--      --
     98F :  Subshed 97F
     98F   020   K100    6    0     33    134       72     233   1155    -------     ----  -------    ---    ----   -----  -----
--      --
     99F :  Subshed 98F
     99F   020   K100    7    0     50    185      122     414   1155    MOUNTAIN    595  0.09400    ---    ----   -----  -----
--      --
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
----------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     100F :  Subshed 99F
     100F  020   K100    6    0     36    146      158     531   1155    VALLEY     1714  0.04600    ---    ----   -----  -----
--      --
     101F :  Subshed 100F
     101F  020   K100    7    0     48    177      206     633   1156    -------     ----  -------    ---    ----   -----  -----
--      --
     102AF ---   ---    --   --    206    633     4911    7750   1170    VALLEY     1147  0.01000    ---    ----   -----  -----
--      --
     103A :  Subshed 102A
     103A  020   K100    7    0     42    155     4953    7750   1172    VALLEY     1111  0.01800    ---    ----   -----  -----
--      --
     104A :  Subshed 103A
     104A  020   K100    7    0     65    240     5018    7758   1173    -------     ----  -------    ---    ----   -----  -----
--      --
     105A :  Subshed 104A
     105A  020   K100    7    0     82    303     5100    7780   1173    VALLEY     1606  0.01800    ---    ----   -----  -----
--      --
     106A :  Subshed 105A
     106A  030   K100    7    0     60    209     5160    7782   1174    -------     ----  -------    ---    ----   -----  -----
--      --
     107A :  Subshed 106A
     107A  020   K100    9    0     69    222     5229    7800   1174    VALLEY     1408  0.02100    ---    ----   -----  -----
--      --
     108A :  Subshed 107A
```

```
     108A   030   K100    7    0     58    202     5287    7799   1175    -------    ----  -------   ---    ----   -----  -----
--     --
     109A :  Subshed 108A
     109A   030   K100    5    0     31    133     5318    7804   1175    VALLEY     1467  0.01500   ---    ----   -----  -----
--     --
     110A :  Subshed 109A
     110A   030   K100    6    0     42    160     5360    7794   1176    VALLEY     2733  0.01400   ---    ----   -----  -----
--     --
     111A :  Subshed 110A
     111A   030   K100    9    0     73    221     5433    7770   1179    VALLEY     3056  0.01300   ---    ----   -----  -----
--     --
     112A :  Subshed 111A
     112A   030   K100   21    0     56    101     5489    7736   1182    -------    ----  -------   ---    ----   -----  -----
--     --
     113B :  Subshed 112B
     113B :  Clearing Hydrograph Bank:  B
     113B   030   K100   12    0     50    127       50     127   1154    VALLEY     2779  0.01700   ---    ----   -----  -----
--     --
     114B :  Subshed 113B
     114B   040   K100   21    0     43     72       93     168   1164    -------    ----  -------   ---    ----   -----  -----
--     --
     115AB  ---   ---    --   --     93    168     5582    7766   1182    VALLEY     1726  0.01000   ---    ----   -----  -----
--     --
     116A :  routing
     116A   ---   ---    --   --    ---    ---     5582    7750   1184    VALLEY     5400  0.01000   ---    ----   -----  -----
--     --
     117A :  SC RIVER
     117A   ---   ---    --   --    ---    ---     5582    7632   1190    -------    ----  -------   ---    ----   -----  -----
--     --
     118A   ---   ---    --   --    ---    ---     5582    7632   1190    -------    ----  -------   ---    ----   -----  -----
--     --
```

Issue/Warning Messages

```
     TYPE       ERR NO   PROCEDURE    LOCATION   MESSAGE
-------------------------------------------------------------------------------------------------------------------------------
------
     Caution    Err1008  SUBAREA        89A   TC and Area are set to minimum values(5).  May be an attempt to run the model on a
smaller area
                                                than acceptable to VCRat.
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Hydrograph Printouts

```
-----------------------------------------------------------------------------------------------------------
            HYDROGRAPH PRINTOUT AT:    2A
-----------------------------------------------------------------------------------------------------------
            DESCRIPTION: Subshed 2A
            TOTAL AREA TO HYDROGRAPH:     164    acres
            HYDROGRAPH PEAK:              506    cfs
            TIME OF PEAK:                1156    minutes
            HYDROGRAPH VOLUME:             35.60 acre-ft

     TIME     FLOW    TIME     FLOW    TIME     FLOW    TIME     FLOW    TIME     FLOW
     (min)    (cfs)   (min)    (cfs)   (min)    (cfs)   (min)    (cfs)   (min)    (cfs)
     ---------------------------------------------------------------------------------
       0       0.00   100       0.40   200       0.40   300       2.61   400       3.28
```

500	4.21	600	6.18	700	7.36	800	9.81	900	16.11
1000	27.89	1050	41.57	1100	47.99	1110	71.76	1120	71.82
1130	99.90	1131	102.34	1132	104.66	1133	108.00	1134	111.14
1135	113.66	1136	114.02	1137	118.10	1138	121.17	1139	124.18
1140	128.27	1141	134.61	1142	139.24	1143	144.13	1144	150.62
1145	163.40	1146	172.58	1147	183.42	1148	196.10	1149	234.08
1150	273.65	1151	288.68	1152	376.35	1153	432.08	1154	469.42
1155	496.67	1156	506.39	1157	503.02	1158	466.29	1159	425.71
1160	413.88	1161	322.12	1162	264.78	1163	230.89	1164	196.89
1165	156.93	1166	129.83	1167	110.97	1168	98.12	1169	89.79
1170	80.35	1171	75.74	1172	71.36	1173	63.50	1174	62.13
1175	59.20	1176	57.23	1177	53.66	1178	47.95	1179	48.73
1180	46.61	1181	44.82	1182	43.38	1183	41.39	1184	40.76
1185	40.11	1186	39.53	1187	39.52	1188	39.08	1189	38.72
1190	38.01	1191	38.01	1192	38.03	1193	37.97	1194	37.86
1195	38.22	1196	37.64	1197	37.65	1198	37.65	1199	37.66
1200	37.66	1201	37.13	1202	36.55	1203	35.47	1204	34.81
1205	34.05	1206	32.68	1207	31.71	1208	30.65	1209	29.54
1210	28.97	1211	27.84	1212	27.77	1213	27.21	1214	26.68
1215	26.35	1216	26.17	1217	26.55	1218	25.88	1219	25.83
1220	26.38	1221	26.40	1222	25.84	1223	25.81	1224	26.43
1225	26.50	1226	25.92	1227	25.86	1228	26.47	1229	26.53
1230	25.94	1231	25.88	1232	26.48	1233	26.03	1234	25.44
1235	25.88	1236	25.90	1237	25.34	1238	25.23	1239	25.15
1240	25.10	1241	25.05	1242	24.96	1243	24.82	1244	24.78
1245	24.76	1246	24.67	1247	24.68	1248	24.68	1249	24.62
1250	24.64	1251	24.65	1252	24.60	1253	24.62	1254	24.64
1255	24.59	1256	24.62	1257	24.64	1258	24.59	1259	24.61
1260	24.64	1261	24.58	1262	23.60	1263	23.12	1264	23.06
1265	22.45	1266	21.67	1267	20.82	1268	20.05	1269	19.75
1270	18.82	1271	18.42	1272	18.58	1273	18.20	1274	17.28
1275	16.94	1276	17.30	1277	17.23	1278	16.59	1279	16.44
1280	16.93	1281	16.97	1282	16.39	1283	16.30	1284	16.83
1285	16.90	1286	16.34	1287	16.26	1288	16.80	1289	16.88
1290	16.33	1291	16.25	1292	16.80	1293	16.36	1294	16.32
1295	16.25	1296	16.74	1297	16.76	1298	16.22	1299	16.17
1300	16.74	1310	10.59	1320	7.12	1330	6.46	1340	6.48
1350	5.13	1360	2.43	1370	0.80	1380	0.46	1390	0.41
1400	0.40	1420	0.40	1440	0.40	1460	0.40	1500	0.40

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 8

Hydrograph Printouts

HYDROGRAPH FATTENED AT 48B

```
*****************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):   2613.09        VOLUME (acre-ft):    175.17      *
*      HYDROGRAPH ADJUSTMENT FACTOR:          0.92300                                     *
*      ADJUSTED HYDROGRAPH  PEAK (cfs):   2411.88        VOLUME (acre-ft):    161.68      *
*      RUNOFF FACTOR(in):   6.42      TOTAL RAIN(in):  11.65      SCS Curve: 61          *
*      FATTENED HYDROGRAPH  PEAK (cfs):   2411.88        VOLUME (acre-ft):    515.03      *
*****************************************************************************************
```

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	1.20	1.11	8.25
200	1.20	1.11	18.19	300	5.77	5.33	26.11
400	9.77	9.02	34.85	500	11.28	10.41	43.44
600	16.68	15.39	59.05	700	20.14	18.59	79.01
800	28.64	26.44	115.30	900	62.37	57.57	199.48
1000	129.16	119.21	378.17	1050	202.04	186.48	561.74
1100	250.14	230.88	829.78	1110	320.24	295.58	944.59
1120	376.07	347.11	1057.65	1130	477.04	440.31	1205.28
1131	490.49	452.73	1222.26	1132	503.48	464.71	1239.00
1133	519.42	479.43	1257.42	1134	536.46	495.15	1276.44
1135	553.34	510.73	1295.37	1136	567.67	523.96	1312.93
1137	587.63	542.38	1333.50	1138	605.99	559.33	1353.20
1139	624.35	576.27	1372.87	1140	641.56	592.16	1391.92
1141	661.07	610.17	1412.14	1142	682.67	630.11	1433.37
1143	712.07	657.24	1458.45	1144	739.66	682.71	1482.47
1145	775.00	715.32	1510.15	1146	814.13	751.44	1539.45
1147	859.31	793.14	1571.35	1148	908.55	838.59	1604.82
1149	1002.69	925.48	1658.86	1150	1118.46	1032.34	1721.92
1151	1224.65	1130.35	1779.36	1152	1454.89	1342.86	1891.38
1153	1678.83	1549.56	1997.86	1154	1938.82	1789.53	2117.35
1155	2201.15	2031.66	2234.59	1156	2373.13	2190.40	2310.18
1157	2502.05	2309.39	2365.55	1158	2613.09	2411.88	2411.88
1159	2522.16	2327.96	2373.97	1160	2423.79	2237.16	2331.76
1161	2322.36	2143.54	2287.01	1162	2180.58	2012.68	2223.45
1163	1992.74	1839.30	2137.86	1164	1790.03	1652.20	2043.39
1165	1584.21	1462.22	1945.19	1166	1398.35	1290.68	1853.85
1167	1225.24	1130.90	1766.40	1168	1073.24	990.60	1687.05
1169	945.15	872.37	1617.53	1170	827.13	763.44	1551.59
1171	728.76	672.65	1494.10	1172	653.86	603.51	1447.28
1173	590.14	544.70	1405.39	1174	539.88	498.31	1369.78
1175	495.37	457.22	1336.73	1176	452.00	417.19	1304.00
1177	422.14	389.63	1278.00	1178	393.02	362.76	1252.27
1179	368.70	340.31	1228.96	1180	347.05	320.32	1207.00
1181	327.54	302.32	1186.16	1182	310.73	286.81	1166.77
1183	294.81	272.11	1147.87	1184	282.60	260.84	1131.04
1185	271.82	250.89	1115.05	1186	260.55	240.49	1098.85
1187	251.25	231.90	1083.82	1188	242.84	224.14	1069.38
1189	235.26	217.14	1055.49	1190	228.97	211.34	1042.43
1191	223.62	206.40	1030.01	1192	218.08	201.29	1017.59

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1193	214.54	198.02	1006.44	1194	210.85	194.62	995.32
1195	207.67	191.68	984.61	1196	204.22	188.50	973.86
1197	202.88	187.26	964.47	1198	201.19	185.70	955.00
1199	199.77	184.39	945.82	1200	198.68	183.39	936.95
1201	196.21	181.10	927.35	1202	194.42	179.45	918.28
1203	192.54	177.71	909.26	1204	190.43	175.77	900.21
1205	187.11	172.70	890.51	1206	184.07	169.89	881.07
1207	180.70	166.78	871.52	1208	177.68	164.00	862.28

1209	174.46	161.02	853.01	1210	171.27	158.09	843.85
1211	167.23	154.36	834.22	1212	164.65	151.98	825.62
1213	162.00	149.52	817.06	1214	157.86	145.70	807.62
1215	154.64	142.73	798.85	1216	151.54	139.87	790.25
1217	149.21	137.72	782.23	1218	146.15	134.90	773.82
1219	142.75	131.75	765.25	1220	140.34	129.53	757.42
1221	138.60	127.93	750.12	1222	136.37	125.87	742.56
1223	133.91	123.60	734.93	1224	132.49	122.29	728.07
1225	131.87	121.72	721.84	1226	130.72	120.65	715.32
1227	129.19	119.24	708.62	1228	128.59	118.69	702.64
1229	128.70	118.79	697.21	1230	128.17	118.30	691.42
1231	127.13	117.34	685.35	1232	126.92	117.15	679.93
1233	126.58	116.83	674.49	1234	126.28	116.56	669.15
1235	126.12	116.41	663.97	1236	125.04	115.41	658.22
1237	124.56	114.97	652.95	1238	124.95	115.33	648.37
1239	123.84	114.30	642.79	1240	123.34	113.85	637.70
1241	123.68	114.16	633.27	1242	122.58	113.14	627.88
1243	122.11	112.71	622.99	1244	122.42	112.99	618.73
1245	121.31	111.97	613.50	1246	120.87	111.56	608.81
1247	121.20	111.87	604.74	1248	120.11	110.86	599.68
1249	119.67	110.46	595.16	1250	120.03	110.78	591.27
1251	118.98	109.82	586.41	1252	118.61	109.47	582.09
1253	119.04	109.87	578.41	1254	118.07	108.98	573.76
1255	117.78	108.71	569.65	1256	118.30	109.19	566.19
1257	117.41	108.37	561.74	1258	117.20	108.18	557.84
1259	117.79	108.72	554.57	1260	116.97	107.96	550.31
1261	116.82	107.82	546.59	1262	115.94	107.01	542.37
1263	114.41	105.60	537.69	1264	114.13	105.34	534.01
1265	113.44	104.71	530.05	1266	110.97	102.42	524.79
1267	108.97	100.58	519.92	1268	107.47	99.20	515.46
1269	106.54	98.34	511.48	1270	104.70	96.64	506.83
1271	102.18	94.31	501.71	1272	100.47	92.73	497.24
1273	99.33	91.68	493.23	1274	97.35	89.85	488.61
1275	94.75	87.45	483.56	1276	92.99	85.83	479.18
1277	91.90	84.82	475.34	1278	90.02	83.09	470.93
1279	87.50	80.76	466.06	1280	85.83	79.22	461.86
1281	84.88	78.35	458.27	1282	83.22	76.81	454.14
1283	80.97	74.73	449.59	1284	79.65	73.52	445.79
1285	79.13	73.04	442.64	1286	77.90	71.90	438.97
1287	76.11	70.25	434.88	1288	75.25	69.45	431.56
1289	75.19	69.40	428.88	1290	74.40	68.67	425.67

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1291	73.01	67.39	422.01	1292	72.54	66.95	419.09
1293	72.07	66.52	416.21	1294	72.36	66.79	413.95
1295	71.20	65.72	410.57	1296	70.85	65.39	407.86
1297	71.24	65.75	405.76	1298	70.91	65.45	403.12
1299	69.96	64.57	400.01	1300	70.64	65.20	398.22
1310	58.09	53.62	366.20	1320	44.04	40.65	334.96
1330	31.98	29.51	307.06	1340	24.94	23.02	284.83
1350	20.17	18.62	265.89	1360	16.05	14.81	248.76
1370	11.97	11.05	232.80	1380	8.50	7.85	218.36

1390	5.70	5.26	205.39	1400	3.87	3.57	194.05
1420	2.08	1.92	175.11	1440	1.46	1.34	159.60
1460	1.24	1.15	146.44	1500	1.20	1.11	125.14

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 117A

DESCRIPTION: SC RIVER
TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 7632 cfs
TIME OF PEAK: 1190 minutes
HYDROGRAPH VOLUME: 1207.99 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	13.45	200	13.64	300	15.37	400	22.27
500	36.33	600	53.66	700	73.72	800	106.39	900	202.02
1000	505.79	1050	814.46	1100	1281.51	1110	1390.29	1120	1521.91
1130	1696.71	1131	1717.04	1132	1737.83	1133	1759.02	1134	1780.52
1135	1802.35	1136	1825.01	1137	1848.35	1138	1872.36	1139	1897.22
1140	1923.23	1141	1950.60	1142	1979.03	1143	2008.57	1144	2039.35
1145	2071.50	1146	2105.19	1147	2140.54	1148	2177.72	1149	2216.80
1150	2257.88	1151	2301.15	1152	2346.85	1153	2395.32	1154	2447.08
1155	2503.08	1156	2564.34	1157	2631.78	1158	2706.91	1159	2791.28
1160	2885.72	1161	2991.43	1162	3110.62	1163	3246.30	1164	3401.85
1165	3580.04	1166	3781.67	1167	4004.93	1168	4245.73	1169	4498.70
1170	4758.83	1171	5021.84	1172	5282.96	1173	5536.18	1174	5774.48
1175	5991.23	1176	6183.33	1177	6351.70	1178	6498.24	1179	6628.72
1180	6751.56	1181	6873.46	1182	6997.34	1183	7122.18	1184	7244.12
1185	7357.61	1186	7456.84	1187	7536.86	1188	7594.04	1189	7626.02
1190	7631.91	1191	7611.96	1192	7567.43	1193	7499.92	1194	7411.66
1195	7304.95	1196	7182.31	1197	7046.32	1198	6899.47	1199	6744.02
1200	6581.97	1201	6415.15	1202	6245.30	1203	6073.89	1204	5902.04
1205	5731.01	1206	5562.09	1207	5395.20	1208	5231.82	1209	5072.24
1210	4916.25	1211	4765.61	1212	4618.51	1213	4477.53	1214	4340.19
1215	4209.12	1216	4081.87	1217	3960.64	1218	3843.29	1219	3731.79
1220	3624.19	1221	3521.80	1222	3423.50	1223	3329.55	1224	3239.92
1225	3154.04	1226	3072.08	1227	2993.86	1228	2919.03	1229	2847.59
1230	2779.55	1231	2714.54	1232	2652.46	1233	2593.17	1234	2536.54
1235	2482.41	1236	2430.64	1237	2381.09	1238	2333.64	1239	2288.19
1240	2244.67	1241	2202.98	1242	2163.06	1243	2124.83	1244	2088.19
1245	2053.03	1246	2019.24	1247	1986.75	1248	1955.47	1249	1925.37
1250	1896.68	1251	1869.16	1252	1842.51	1253	1816.74	1254	1791.92
1255	1768.14	1256	1745.03	1257	1722.58	1258	1700.82	1259	1679.74
1260	1659.36	1261	1639.66	1262	1620.65	1263	1602.27	1264	1585.01
1265	1568.19	1266	1551.74	1267	1535.65	1268	1519.94	1269	1504.57
1270	1489.55	1271	1474.91	1272	1460.60	1273	1447.00	1274	1433.86
1275	1420.83	1276	1407.90	1277	1395.11	1278	1382.44	1279	1369.92
1280	1357.55	1281	1345.32	1282	1333.76	1283	1322.36	1284	1311.00
1285	1299.69	1286	1288.44	1287	1277.25	1288	1266.11	1289	1255.03
1290	1244.01	1291	1233.07	1292	1222.21	1293	1211.44	1294	1200.77

1295	1190.21	1296	1179.78	1297	1169.47	1298	1159.32	1299	1149.33
1300	1139.53	1310	1053.26	1320	981.37	1330	912.90	1340	844.68
1350	778.02	1360	711.69	1370	651.81	1380	598.68	1390	550.02
1400	507.33	1420	425.34	1440	358.91	1460	309.51	1500	244.87

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 118A

TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 7632 cfs
TIME OF PEAK: 1190 minutes
HYDROGRAPH VOLUME: 1207.99 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	13.45	200	13.64	300	15.37	400	22.27
500	36.33	600	53.66	700	73.72	800	106.39	900	202.02
1000	505.79	1050	814.46	1100	1281.51	1110	1390.29	1120	1521.91
1130	1696.71	1131	1717.04	1132	1737.83	1133	1759.02	1134	1780.52
1135	1802.35	1136	1825.01	1137	1848.35	1138	1872.36	1139	1897.22
1140	1923.23	1141	1950.60	1142	1979.03	1143	2008.57	1144	2039.35
1145	2071.50	1146	2105.19	1147	2140.54	1148	2177.72	1149	2216.80
1150	2257.88	1151	2301.15	1152	2346.85	1153	2395.32	1154	2447.08
1155	2503.08	1156	2564.34	1157	2631.78	1158	2706.91	1159	2791.28
1160	2885.72	1161	2991.43	1162	3110.62	1163	3246.30	1164	3401.85
1165	3580.04	1166	3781.67	1167	4004.93	1168	4245.73	1169	4498.70
1170	4758.83	1171	5021.84	1172	5282.96	1173	5536.18	1174	5774.48
1175	5991.23	1176	6183.33	1177	6351.70	1178	6498.24	1179	6628.72
1180	6751.56	1181	6873.46	1182	6997.34	1183	7122.18	1184	7244.12
1185	7357.61	1186	7456.84	1187	7536.86	1188	7594.04	1189	7626.02
1190	7631.91	1191	7611.96	1192	7567.43	1193	7499.92	1194	7411.66
1195	7304.95	1196	7182.31	1197	7046.32	1198	6899.47	1199	6744.02
1200	6581.97	1201	6415.15	1202	6245.30	1203	6073.89	1204	5902.04
1205	5731.01	1206	5562.09	1207	5395.20	1208	5231.82	1209	5072.24
1210	4916.25	1211	4765.61	1212	4618.51	1213	4477.53	1214	4340.19
1215	4209.12	1216	4081.87	1217	3960.64	1218	3843.29	1219	3731.79
1220	3624.19	1221	3521.80	1222	3423.50	1223	3329.55	1224	3239.92
1225	3154.04	1226	3072.08	1227	2993.86	1228	2919.03	1229	2847.59
1230	2779.55	1231	2714.54	1232	2652.46	1233	2593.17	1234	2536.54
1235	2482.41	1236	2430.64	1237	2381.09	1238	2333.64	1239	2288.19
1240	2244.67	1241	2202.98	1242	2163.06	1243	2124.83	1244	2088.19
1245	2053.03	1246	2019.24	1247	1986.75	1248	1955.47	1249	1925.37
1250	1896.68	1251	1869.16	1252	1842.51	1253	1816.74	1254	1791.92
1255	1768.14	1256	1745.03	1257	1722.58	1258	1700.82	1259	1679.74
1260	1659.36	1261	1639.66	1262	1620.65	1263	1602.27	1264	1585.01
1265	1568.19	1266	1551.74	1267	1535.65	1268	1519.94	1269	1504.57
1270	1489.55	1271	1474.91	1272	1460.60	1273	1447.00	1274	1433.86
1275	1420.83	1276	1407.90	1277	1395.11	1278	1382.44	1279	1369.92
1280	1357.55	1281	1345.32	1282	1333.76	1283	1322.36	1284	1311.00
1285	1299.69	1286	1288.44	1287	1277.25	1288	1266.11	1289	1255.03
1290	1244.01	1291	1233.07	1292	1222.21	1293	1211.44	1294	1200.77
1295	1190.21	1296	1179.78	1297	1169.47	1298	1159.32	1299	1149.33

1300	1139.53	1310	1053.26	1320	981.37	1330	912.90	1340	844.68
1350	778.02	1360	711.69	1370	651.81	1380	598.68	1390	550.02
1400	507.33	1420	425.34	1440	358.91	1460	309.51	1500	244.87

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
005  4492  001A Header place holder
005  4492  002A Header place holder
005  4492  048BCHeader place holder
005  4492  117A Header place holder
005  4492  118A Header place holder
999
999
006  4492  001A 010000008510B98101635017400                    G1
006  4492  002A 020000007909B98101750007500                  1
006  4492  003A 020000007305B98
006  4492  004B 010000008809B98
006  4492  005B 010000005407B98102148014200
006  4492  006B 020000008010B98
006  4492  007AB010          A97102215005500
006  4492  008A 020000009407B98
006  4492  009C 020000007906B98102067040700
006  4492  010C 020000005107B98
006  4492  011C 010000007306B98101977017500
006  4492  012C 020000010805B98101913008800
006  4492  013C 020000008712B98
006  4492  014AC010          A97201101004000
006  4492  015A 030000003005B98
006  4492  016D 020000008007B98100830005800
006  4492  017D 030000001205B98
006  4492  018AD010          A97202430003600
006  4492  019A 030000006607B98
006  4492  020E 020000007105B98101615006100
006  4492  021E 020000003905B98
006  4492  022E 020000006805B98201242004700
006  4492  023E 020000005005B98
006  4492  024AE010          A97200818002600
006  4492  025A 030000001805B98
006  4492  026A 020000005607B98200790002700
006  4492  027A 020000007906B98200950002400
006  4492  028A 020000006410B98201069002600
006  4492  029A 020000004607B98
006  4492  030A 020000004005B98201537002900
006  4492  031A 020000005307B98
006  4492  032B 010000009907B98100735011200                    B
006  4492  033B 020000004707B98
006  4492  034B 020000003606B98101710005700
006  4492  035B 020000007809B98
006  4492  036B 020000010009B98100736005200
006  4492  037B 020000001305B98
006  4492  038B 020000007109B98201438003500
006  4492  039B 020000004907B98
006  4492  040C 020000008710B98102063016300                    C
006  4492  041C 020000007610B98
```

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006  4492  042C 010000010712B98101338008100
006  4492  043C 010000002305B98
006  4492  044D 020000008009B98101840008300
006  4492  045D 020000005405B98
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006  4492  046CD010          A97101426005600
006  4492  047C 020000004307B98
006  4492  048BC010          A97                                1
110
111            0.92300    6.42
110
006  4492  049A 010       099A97200768002900
006  4492  050B 020000005007B98201183003500
006  4492  051B 020000007907B98201240003400
006  4492  052B 020000002805B98
006  4492  053E 020000007909B98100782006000                     E
006  4492  054E 030000002505B98
006  4492  055BE010          A97200853004000
006  4492  056B 020000001405B98
006  4492  057F 020000008706B98201222004800
006  4492  058F 030000003005B98
006  4492  059BF010          A97101584006300
006  4492  060B 020000004005B98
006  4492  061AB010          A97201530002400
006  4492  062A 020000005507B98
006  4492  063A 020000008006B98201254001800
006  4492  064A 010000004106B98
006  4492  065B 020000006605B98101577007600
006  4492  066B 020000004906B98
006  4492  067AB010          A97200885002400
006  4492  068A 010000002405B98
006  4492  069A 030000005706B98201682001400
006  4492  070A 020000005008B98
006  4492  071C 020000005805B98101208005000                     C
006  4492  072C 020000007506B98201403004800
006  4492  073C 020000007407B98
006  4492  074C 020000005406B98200814002700
006  4492  075C 020000002005B98
006  4492  076C 020000004307B98201738003400
006  4492  077C 020000008908B98
006  4492  078AC010          A97201110001900
006  4492  079A 030000003007B98
006  4492  080A 020000004105B98202463001700
006  4492  081A 020000008306B98
006  4492  082D 020000005106B98101093007600                     D
006  4492  083D 020000004706B98
006  4492  084AD010          A97200977003300
006  4492  085A 020000004605B98
006  4492  086A 020000006707B98201211000700
006  4492  087A 020000003306B98
006  4492  088A 020000009305B98200524001100
006  4492  089A 040000000505B98
006  4492  090A 010       099A97
006  4492  091E 020000003905B98101621005900                     E
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006   4492   092E 020000005907B98
006   4492   093AE010          A97200926001100
006   4492   094A 030000002205B98
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006   4492   095A 020000006105B98
006   4492   096A 020000007508B98201651001600
006   4492   097F 030000003905B98101064005300                    F
006   4492   098F 020000003306B98
006   4492   099F 020000005007B98100595009400
006   4492   100F 020000003606B98201714004600
006   4492   101F 020000004807B98
006   4492   102AF010          A97201147001000
006   4492   103A 020000004207B98201111001800
006   4492   104A 020000006507B98
006   4492   105A 020000008207B98201606001800
006   4492   106A 030000006007B98
006   4492   107A 020000006909B98201408002100
006   4492   108A 030000005807B98
006   4492   109A 030000003105B98201467001500
006   4492   110A 030000004206B98202733001400
006   4492   111A 030000007309B98203056001300
006   4492   112A 030000005621B98
006   4492   113B 030000005012B98202779001700                    B
006   4492   114B 040000004321B98
006   4492   115AB010          A97201726001000
006   4492   116A 010       099A97205400001000
006   4492   117A 010       099A97                            1
006   4492   118A 010       099A97                            1  2
999
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VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

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LOCATION SUBAREA AREA SUBAREA Q TOTAL AREA TOTAL Q CONV TYPE CONV LNGTH CONV SLOPE CONV SIZE CONV Z CONTROL Q SOIL NAME TC STORM RAIN ZONE DAY 4 PCT IMPV

4492	1A	85.	260.	85.	260.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	237.	164.	472.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	310.	237.	584.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	283.	88.	283.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	199.	142.	482.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	227.	222.	663.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	663.	459.	1241.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	324.	553.	1298.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	299.	79.	299.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	176.	130.	454.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	293.	203.	719.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	459.	311.	1011.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	220.	398.	1137.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1137.	951.	2435.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	120.	981.	2404.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	276.	80.	276.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	48.	92.	301.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	301.	1073.	2619.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	214.	1139.	2605.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	302.	71.	302.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	166.	110.	348.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	289.	178.	575.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	213.	228.	693.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	693.	1367.	2992.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	72.	1385.	2987.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	193.	1441.	3053.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	299.	1520.	3097.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	182.	1584.	3201.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	159.	1630.	3218.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	170.	1670.	3239.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	183.	1723.	3251.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	364.	99.	364.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	162.	146.	519.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	136.	182.	641.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	234.	260.	784.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	299.	360.	1061.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	55.	373.	1046.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	213.	444.	1221.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	169.	493.	1300.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	247.	87.	247.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	216.	163.	428.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	293.	270.	712.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	103.	293.	724.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	240.	80.	240.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	230.	134.	355.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	355.	427.	1078.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	148.	470.	1112.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1112.	963.	2412.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	172.	1013.	2444.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	272.	1092.	2508.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	119.	1120.	2512.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	237.	79.	237.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	100.	104.	302.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	302.	1224.	2713.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	60.	1238.	2703.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00

4492	56F	87.	329.	87.	329.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	120.	117.	397.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	397.	1355.	2865.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	170.	1395.	2853.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2853.	3118.	6104.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	190.	3173.	6102.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	303.	3253.	6137.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	165.	3294.	6135.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	281.	66.	281.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	185.	115.	354.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	354.	3409.	6226.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	108.	3433.	6218.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	203.	3490.	6235.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	160.	3540.	6216.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	247.	58.	247.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	284.	133.	419.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	255.	207.	627.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	204.	261.	801.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	85.	281.	846.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	148.	324.	969.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	284.	413.	1149.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1149.	3953.	6602.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	97.	3983.	6592.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	174.	4024.	6604.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	314.	4107.	6597.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	193.	51.	193.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	178.	98.	312.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	312.	4205.	6637.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	196.	4251.	6635.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	231.	4318.	6657.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	125.	4351.	6642.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	396.	4444.	6664.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	19.	4449.	6651.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6651.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	166.	39.	166.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	203.	98.	282.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	282.	4547.	6687.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	88.	4569.	6676.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	259.	4630.	6690.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	239.	4705.	6707.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	156.	39.	156.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	125.	72.	216.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	172.	122.	385.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	136.	158.	493.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	166.	206.	584.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	101AF	206.	584.	4911.	6766.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	145.	4953.	6759.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	224.	5018.	6758.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	283.	5100.	6771.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	195.	5160.	6759.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	207.	5229.	6772.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	188.	5287.	6763.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	124.	5318.	6765.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	150.	5360.	6756.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	206.	5433.	6717.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00

4492	111A	56.	93.	5489.	6671.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	118.	50.	118.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	66.	93.	155.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	155.	5582.	6691.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6671.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6511.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.941

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	1.	400	1.
500	3.	600	4.	700	5.	800	7.	900	12.
1000	23.	1050	36.	1100	42.	1110	64.	1120	64.

1130	90.	1131	93.	1132	95.	1133	98.	1134	101.
1135	104.	1136	104.	1137	108.	1138	111.	1139	113.
1140	117.	1141	123.	1142	128.	1143	132.	1144	138.
1145	150.	1146	159.	1147	169.	1148	181.	1149	217.
1150	253.	1151	267.	1152	349.	1153	401.	1154	436.
1155	462.	1156	472.	1157	469.	1158	435.	1159	397.
1160	387.	1161	301.	1162	247.	1163	215.	1164	184.
1165	146.	1166	120.	1167	102.	1168	90.	1169	82.
1170	73.	1171	69.	1172	64.	1173	57.	1174	56.
1175	53.	1176	51.	1177	48.	1178	42.	1179	43.
1180	41.	1181	39.	1182	38.	1183	36.	1184	35.
1185	35.	1186	34.	1187	34.	1188	34.	1189	33.
1190	33.	1191	32.	1192	33.	1193	32.	1194	32.
1195	33.	1196	32.	1197	32.	1198	32.	1199	32.
1200	32.	1201	32.	1202	31.	1203	30.	1204	29.
1205	29.	1206	28.	1207	27.	1208	26.	1209	25.
1210	24.	1211	23.	1212	23.	1213	22.	1214	22.
1215	22.	1216	21.	1217	22.	1218	21.	1219	21.
1220	22.	1221	22.	1222	21.	1223	21.	1224	22.
1225	22.	1226	21.	1227	21.	1228	22.	1229	22.
1230	21.	1231	21.	1232	22.	1233	21.	1234	21.
1235	21.	1236	21.	1237	21.	1238	20.	1239	20.
1240	20.	1241	20.	1242	20.	1243	20.	1244	20.
1245	20.	1246	20.	1247	20.	1248	20.	1249	20.
1250	20.	1251	20.	1252	20.	1253	20.	1254	20.
1255	20.	1256	20.	1257	20.	1258	20.	1259	20.
1260	20.	1261	20.	1262	19.	1263	18.	1264	18.
1265	18.	1266	17.	1267	16.	1268	16.	1269	15.
1270	15.	1271	14.	1272	14.	1273	14.	1274	13.
1275	13.	1276	13.	1277	13.	1278	12.	1279	12.
1280	13.	1281	13.	1282	12.	1283	12.	1284	13.
1285	13.	1286	12.	1287	12.	1288	12.	1289	13.
1290	12.	1291	12.	1292	12.	1293	12.	1294	12.
1295	12.	1296	12.	1297	12.	1298	12.	1299	12.
1300	12.	1310	9.	1320	5.	1330	5.	1340	5.
1350	4.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.941

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	7.
500	8.	600	12.	700	18.	800	29.	900	53.
1000	176.	1050	356.	1100	673.	1110	746.	1120	831.
1130	940.	1131	953.	1132	966.	1133	980.	1134	993.
1135	1007.	1136	1021.	1137	1036.	1138	1051.	1139	1066.
1140	1082.	1141	1099.	1142	1117.	1143	1135.	1144	1154.
1145	1174.	1146	1195.	1147	1217.	1148	1240.	1149	1264.
1150	1290.	1151	1316.	1152	1345.	1153	1375.	1154	1407.
1155	1442.	1156	1479.	1157	1520.	1158	1565.	1159	1616.
1160	1674.	1161	1740.	1162	1814.	1163	1897.	1164	1993.
1165	2103.	1166	2229.	1167	2375.	1168	2539.	1169	2720.
1170	2915.	1171	3118.	1172	3329.	1173	3544.	1174	3760.
1175	3971.	1176	4171.	1177	4356.	1178	4523.	1179	4672.
1180	4806.	1181	4933.	1182	5061.	1183	5194.	1184	5337.
1185	5490.	1186	5650.	1187	5813.	1188	5972.	1189	6120.
1190	6251.	1191	6359.	1192	6439.	1193	6491.	1194	6511.
1195	6501.	1196	6463.	1197	6399.	1198	6311.	1199	6203.
1200	6080.	1201	5942.	1202	5795.	1203	5640.	1204	5480.

1205	5317.	1206	5153.	1207	4988.	1208	4825.	1209	4665.
1210	4507.	1211	4352.	1212	4201.	1213	4055.	1214	3913.
1215	3776.	1216	3644.	1217	3516.	1218	3394.	1219	3276.
1220	3163.	1221	3054.	1222	2951.	1223	2850.	1224	2755.
1225	2663.	1226	2576.	1227	2491.	1228	2411.	1229	2334.
1230	2260.	1231	2190.	1232	2122.	1233	2057.	1234	1995.
1235	1936.	1236	1879.	1237	1825.	1238	1773.	1239	1723.
1240	1675.	1241	1629.	1242	1585.	1243	1543.	1244	1503.
1245	1464.	1246	1426.	1247	1391.	1248	1356.	1249	1323.
1250	1291.	1251	1261.	1252	1231.	1253	1203.	1254	1176.
1255	1150.	1256	1124.	1257	1101.	1258	1078.	1259	1056.
1260	1035.	1261	1014.	1262	995.	1263	976.	1264	958.
1265	940.	1266	923.	1267	906.	1268	890.	1269	875.
1270	861.	1271	846.	1272	832.	1273	819.	1274	805.
1275	793.	1276	781.	1277	769.	1278	758.	1279	746.
1280	735.	1281	724.	1282	714.	1283	704.	1284	695.
1285	685.	1286	676.	1287	667.	1288	659.	1289	650.
1290	642.	1291	635.	1292	627.	1293	619.	1294	612.
1295	605.	1296	598.	1297	591.	1298	584.	1299	578.
1300	571.	1310	511.	1320	457.	1330	411.	1340	375.
1350	344.	1360	316.	1370	290.	1380	265.	1390	241.
1400	217.	1420	176.	1440	140.	1460	111.	1500	75.

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 4492 Project: Adams County VC Rat

Project Description

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100 YEAR EVENT

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 2

Model Results

SUBAREA DATA AND RESULTS								ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	VEL (FT/S)	DEPTH (FT)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
1A : Subshed 1A																		
1A	010	K100	10	0	85	278	--	--	85	278	1154	MOUNTAIN	1635	0.17400	---	----	-----	-----
2A : Subshed 2A																		
2A	020	K100	9	0	79	254	--	--	164	506	1156	MOUNTAIN	1750	0.07500	---	----	-----	-----
3A : Subshed 3A																		
3A	020	K100	5	0	73	332	--	--	237	633	1156	-------	----	-------	---	----	-----	-----
4B : Subshed 4B																		
4B	010	K100	9	0	88	303	--	--	88	303	1153	-------	----	-------	---	----	-----	-----
5B : Subshed 5B																		
5B	010	K100	7	0	54	212	--	--	142	515	1153	MOUNTAIN	2148	0.14200	---	----	-----	-----
6B : Subshed 6B																		

```
      6B   020   K100   10   0    80   244    222   711  1157  -------  ----  -------  ---  ----  -----  -----
--    --
      7AB  ---   ---    --   --  222   711    459  1339  1156  MOUNTAIN 2215  0.05500  ---  ----  -----  -----
--    --
      8A :  Subshed 8A
      8A   020   K100   7    0    94   347    553  1411  1158  -------  ----  -------  ---  ----  -----  -----
--    --
      9C :  Subshed 9C
      9C   020   K100   6    0    79   320     79   320  1153  MOUNTAIN 2067  0.40700  ---  ----  -----  -----
--    --
     10C :  Subshed 11C
     10C   020   K100   7    0    51   188    130   487  1155  -------  ----  -------  ---  ----  -----  -----
--    --
     11C :  Subshed 10C
     11C   010   K100   6    0    73   313    203   771  1154  MOUNTAIN 1977  0.17500  ---  ----  -----  -----
--    --
     12C :  Subshed 12C
     12C   020   K100   5    0   108   491    311  1088  1156  MOUNTAIN 1913  0.08800  ---  ----  -----  -----
--    --
     13C :  Subshed 13C
     13C   020   K100   12   0    87   236    398  1226  1158  -------  ----  -------  ---  ----  -----  -----
--    --
     14AC  ---   ---    --   --  398  1226    951  2637  1158  VALLEY   1101  0.04000  ---  ----  -----  -----
--    --
     15A :  Subshed 15A
     15A   030   K100   5    0    30   129    981  2603  1159  -------  ----  -------  ---  ----  -----  -----
--    --
     16D :  Subshed 16D
     16D   020   K100   7    0    80   295     80   295  1153  MOUNTAIN  830  0.05800  ---  ----  -----  -----
--    --
     17D :  Subshed 17D
     17D   030   K100   5    0    12    51     92   324  1156  -------  ----  -------  ---  ----  -----  -----
--    --
     18AD  ---   ---    --   --   92   324   1073  2832  1159  VALLEY   2430  0.03600  ---  ----  -----  -----
--    --
     19A :  Subshed 19A
     19A   030   K100   7    0    66   229   1139  2833  1160  -------  ----  -------  ---  ----  -----  -----
--    --
     20E :  Subshed 20E
     20E   020   K100   5    0    71   323     71   323  1153  MOUNTAIN 1615  0.06100  ---  ----  -----  -----
--    --
     21E :  Subshed 22E
     21E   020   K100   5    0    39   177    110   376  1156  -------  ----  -------  ---  ----  -----  -----
--    --
     22E :  Subshed 21E
     22E   020   K100   5    0    68   309    178   619  1153  VALLEY   1242  0.04700  ---  ----  -----  -----
--    --
     23E :  Subshed 23E
     23E   020   K100   5    0    50   227    228   747  1155  -------  ----  -------  ---  ----  -----  -----
--    --
     24AE  ---   ---    --   --  228   747   1367  3265  1158  VALLEY    818  0.02600  ---  ----  -----  -----
--    --
     25A :  Subshed 25A
     25A   030   K100   5    0    18    77   1385  3252  1159  -------  ----  -------  ---  ----  -----  -----
--    --
     26A :  Subshed 26A
     26A   020   K100   7    0    56   207   1441  3331  1159  VALLEY    790  0.02700  ---  ----  -----  -----
--    --
     27A :  Subshed 27A
     27A   020   K100   6    0    79   320   1520  3378  1160  VALLEY    950  0.02400  ---  ----  -----  -----
--    --
```

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
28A : Subshed 28A																		
28A	020	K100	10	0	64	195	1584	3488	1160	VALLEY	1069	0.02600	---	----	-----	-----	--	--
29A : Subshed 29A																		
29A	020	K100	7	0	46	170	1630	3516	1161	-------	----	-------	---	----	-----	-----	--	--
30A : Subshed 30A																		
30A	020	K100	5	0	40	182	1670	3539	1161	VALLEY	1537	0.02900	---	----	-----	-----	--	--
31A : Subshed 31A																		
31A	020	K100	7	0	53	196	1723	3557	1162	-------	----	-------	---	----	-----	-----	--	--
32B : Subshed 32B																		
32B : Clearing Hydrograph Bank: B																		
32B	010	K100	7	0	99	389	99	389	1153	MOUNTAIN	735	0.11200	---	----	-----	-----	--	--
33B : Subshed 33B																		
33B	020	K100	7	0	47	174	146	555	1155	-------	----	-------	---	----	-----	-----	--	--
34B : Subshed 34B																		
34B	020	K100	6	0	36	146	182	687	1154	MOUNTAIN	1710	0.05700	---	----	-----	-----	--	--
35B : Subshed 35B																		
35B	020	K100	9	0	78	251	260	844	1157	-------	----	-------	---	----	-----	-----	--	--
36B : Subshed 36B																		
36B	020	K100	9	0	100	321	360	1142	1157	MOUNTAIN	736	0.05200	---	----	-----	-----	--	--
37B : Subshed 37B																		
37B	020	K100	5	0	13	59	373	1128	1158	-------	----	-------	---	----	-----	-----	--	--
38B : Subshed 38B																		
38B	020	K100	9	0	71	228	444	1320	1157	VALLEY	1438	0.03500	---	----	-----	-----	--	--
39B : Subshed 39B																		
39B	020	K100	7	0	49	181	493	1407	1158	-------	----	-------	---	----	-----	-----	--	--
40C : Subshed 40C																		
40C : Clearing Hydrograph Bank: C																		
40C	020	K100	10	0	87	265	87	265	1154	MOUNTAIN	2063	0.16300	---	----	-----	-----	--	--
41C : Subshed 41C																		
41C	020	K100	10	0	76	231	163	460	1157	-------	----	-------	---	----	-----	-----	--	--
42C : Subshed 42C																		
42C	010	K100	12	0	107	314	270	766	1156	MOUNTAIN	1338	0.08100	---	----	-----	-----		

```
--      --
        43C :  Subshed 43C
        43C   010   K100    5    0     23    110      293     780   1156    -------    ----  -------   ---    ----   -----  -----
--      --
        44D :  Subshed 44D
        44D   020   K100    9    0     80    257       80     257   1153    MOUNTAIN   1840  0.08300   ---    ----   -----  -----
--      --
        45D :  Subshed 45D
        45D   020   K100    5    0     54    246      134     384   1156    -------    ----  -------   ---    ----   -----  -----
--      --
        46CD  ---   ---    --   --    134    384      427    1165   1156    MOUNTAIN   1426  0.05600   ---    ----   -----  -----
--      --
        47C :  Subshed 47C
        47C   020   K100    7    0     43    159      470    1206   1158    -------    ----  -------   ---    ----   -----  -----
--      --
        48BC  ---   ---    --   --    470   1206      963    2613   1158    VALLEY      768  0.02900   ---    ----   -----  -----
--      --
        49B :  Subshed 49B
        49B   020   K100    7    0     50    185     1013    2655   1158    VALLEY     1183  0.03500   ---    ----   -----  -----
--      --
        50B :  Subshed 50B
        50B   020   K100    7    0     79    292     1092    2726   1159    VALLEY     1240  0.03400   ---    ----   -----  -----
--      --
        51B :  Subshed 51B
        51B   020   K100    5    0     28    127     1120    2731   1160    -------    ----  -------   ---    ----   -----  -----
--      --
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------------
-------|
        52E :  Subshed 52E
        52E :  Clearing Hydrograph Bank:  E
        52E   020   K100    9    0     79    254       79     254   1153    MOUNTAIN    782  0.06000   ---    ----   -----  -----
--      --
        53E :  Subshed 53E
        53E   030   K100    5    0     25    107      104     325   1156    -------    ----  -------   ---    ----   -----  -----
--      --
        54BE  ---   ---    --   --    104    325     1224    2947   1160    VALLEY      853  0.04000   ---    ----   -----  -----
--      --
        55B :  Subshed 55B
        55B   020   K100    5    0     14     64     1238    2937   1160    -------    ----  -------   ---    ----   -----  -----
--      --
        56F :  Subshed 56F
        56F   020   K100    6    0     87    352       87     352   1153    VALLEY     1222  0.04800   ---    ----   -----  -----
--      --
        57F :  Subshed 57F
        57F   030   K100    5    0     30    129      117     426   1155    -------    ----  -------   ---    ----   -----  -----
--      --
        58BF  ---   ---    --   --    117    426     1355    3116   1160    MOUNTAIN   1584  0.06300   ---    ----   -----  -----
--      --
```

```
     59B :  Subshed 59B
     59B   020   K100    5    0     40    182     1395    3105   1161    -------    ----  -------    ---     ----    -----  -----
--    --
     60AB  ---   ---    --   --   1395   3105     3118    6657   1162    -------    ----  -------    ---     ----    -----  -----
--    --
           ***********************************************************************************************
           *      INCOMING HYDROGRAPH  PEAK (cfs):   6657.08        VOLUME (acre-ft):    532.19      *
           *      HYDROGRAPH ADJUSTMENT FACTOR:          0.85400                                     *
           *      ADJUSTED HYDROGRAPH  PEAK (cfs):   5685.14        VOLUME (acre-ft):    454.49      *
           *      RUNOFF FACTOR(in):   6.14      TOTAL RAIN(in):  11.50      SCS Curve: 60           *
           *      FATTENED HYDROGRAPH  PEAK (cfs):   5685.14        VOLUME (acre-ft):   1594.65      *
           ***********************************************************************************************
     60A   ---   ---    --   --    ---    ---     3118    5685   ----    -------    ----  -------    ---     ----    -----  -----
--    --
     61A   ---   ---    --   --    ---    ---     3118    5685   1162    VALLEY     1530  0.02400    ---     ----    -----  -----
--    --
     62A :  Subshed 61A - START OF LOWER WATERSHED
     62A   020   K100    7    0     55    203     3173    5707   1163    -------    ----  -------    ---     ----    -----  -----
--    --
     63A :  Subshed 62A
     63A   020   K100    6    0     80    324     3253    5746   1163    VALLEY     1254  0.01800    ---     ----    -----  -----
--    --
     64A :  Subshed 63A
     64A   010   K100    6    0     41    176     3294    5767   1164    -------    ----  -------    ---     ----    -----  -----
--    --
     65B :  Subshed 64B
     65B   020   K100    5    0     66    300       66     300   1153    MOUNTAIN   1577  0.07600    ---     ----    -----  -----
--    --
     66B :  Subshed 65B
     66B   020   K100    6    0     49    198      115     383   1155    -------    ----  -------    ---     ----    -----  -----
--    --
     67AB  ---   ---    --   --    115    383     3409    5938   1157    VALLEY      885  0.02400    ---     ----    -----  -----
--    --
     68A :  Subshed 67A
     68A   010   K100    5    0     24    115     3433    5944   1158    -------    ----  -------    ---     ----    -----  -----
--    --
     69A :  Subshed 68A
     69A   030   K100    6    0     57    218     3490    6068   1157    VALLEY     1682  0.01400    ---     ----    -----  -----
--    --
     70A :  Subshed 69A
     70A   020   K100    8    0     50    171     3540    6145   1159    -------    ----  -------    ---     ----    -----  -----
--    --
     71C :  Subshed 70C
     71C :  Clearing Hydrograph Bank:  C
     71C   020   K100    5    0     58    264       58     264   1153    MOUNTAIN   1208  0.05000    ---     ----    -----  -----
--    --
     72C :  Subshed 71C
     72C   020   K100    6    0     75    304      133     451   1154    VALLEY     1403  0.04800    ---     ----    -----  -----
--    --
     73C :  Subshed 72C
     73C   020   K100    7    0     74    273      207     676   1155    -------    ----  -------    ---     ----    -----  -----
--    --
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
-----------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
```

```
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|   TYPE     (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-------------------------------------------|---------------------|-------------------------------------------------------------
-------|
     74C :  Subshed 73C
     74C   020   K100    6    0     54    219     261     863   1155   VALLEY      814  0.02700    ---     ----    -----  -----
--     --
     75C :  Subshed 74C
     75C   020   K100    5    0     20     91     281     911   1156   -------     ----  -------    ---     ----    -----  -----
--     --
     76C :  Subshed 75C
     76C   020   K100    7    0     43    159     324    1044   1156   VALLEY     1738  0.03400    ---     ----    -----  -----
--     --
     77C :  Subshed 76C
     77C   020   K100    8    0     89    305     413    1243   1157   -------     ----  -------    ---     ----    -----  -----
--     --
     78AC  ---   ---    --   --    413   1243    3953    7327   1158   VALLEY     1110  0.01900    ---     ----    -----  -----
--     --
     79A :  Subshed 78A
     79A   030   K100    7    0     30    104    3983    7357   1159   -------     ----  -------    ---     ----    -----  -----
--     --
     80A :  Subarea 79A
     80A   020   K100    5    0     41    186    4024    7388   1159   VALLEY     2463  0.01700    ---     ----    -----  -----
--     --
     81A :  Subshed 80A
     81A   020   K100    6    0     83    336    4107    7386   1161   -------     ----  -------    ---     ----    -----  -----
--     --
     82D :  Subshed 81D
     82D :  Clearing Hydrograph Bank:  D
     82D   020   K100    6    0     51    206      51     206   1153   MOUNTAIN   1093  0.07600    ---     ----    -----  -----
--     --
     83D :  Subshed 82D
     83D   020   K100    6    0     47    190      98     337   1155   -------     ----  -------    ---     ----    -----  -----
--     --
     84AD  ---   ---    --   --     98    337    4205    7524   1160   VALLEY      977  0.03300    ---     ----    -----  -----
--     --
     85A :  Subarea 84A
     85A   020   K100    5    0     46    209    4251    7542   1161   -------     ----  -------    ---     ----    -----  -----
--     --
     86A :  Subarea 85A
     86A   020   K100    7    0     67    247    4318    7589   1161   VALLEY     1211  0.00700    ---     ----    -----  -----
--     --
     87A :  Subarea 86A
     87A   020   K100    6    0     33    134    4351    7572   1162   -------     ----  -------    ---     ----    -----  -----
--     --
     88A :  Subarea 87A
     88A   020   K100    5    0     93    423    4444    7620   1162   VALLEY      524  0.01100    ---     ----    -----  -----
--     --
     89A :  Subarea 88A
     89A   040   K100    5    0      5     20    4449    7611   1163   -------     ----  -------    ---     ----    -----  -----
--     --
     90A   ---   ---    --   --    ---    ---    4449    7611   1163   -------     ----  -------    ---     ----    -----  -----
--     --
     91E :  Subshed 90E
     91E :  Clearing Hydrograph Bank:  E
     91E   020   K100    5    0     39    177      39     177   1153   MOUNTAIN   1621  0.05900    ---     ----    -----  -----
--     --
     92E :  Subshed 91E
     92E   020   K100    7    0     59    218      98     305   1155   -------     ----  -------    ---     ----    -----  -----
```

```
--      --
      93AE  ---   ---    --   --     98    305     4547    7716   1162    VALLEY      926  0.01100    ---     ----    -----  -----
--      --
      94A :  Subshed 93A
      94A   030   K100    5    0     22     94     4569    7713   1163    -------     ----  -------    ---     ----    -----  -----
--      --
      95A :  Subshed 94A
      95A   020   K100    5    0     61    277     4630    7742   1164    -------     ----  -------    ---     ----    -----  -----
--      --
      96A :  Subshed 95A
      96A   020   K100    8    0     75    257     4705    7784   1163    VALLEY     1651  0.01600    ---     ----    -----  -----
--      --
      97F :  Subshed 96F
      97F :  Clearing Hydrograph Bank:  F
      97F   030   K100    5    0     39    167       39     167   1153    MOUNTAIN   1064  0.05300    ---     ----    -----  -----
--      --
      98F :  Subshed 97F
      98F   020   K100    6    0     33    134       72     233   1155    -------     ----  -------    ---     ----    -----  -----
--      --
♀
```



```
                                                                                  Model Results
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |
|-----------------------------------------------|---------------------|-------------------------------------------------------------------
-------|
      99F :  Subshed 98F
      99F   020   K100    7    0     50    185      122     414   1155    MOUNTAIN    595  0.09400    ---     ----    -----  -----
--      --
     100F :  Subshed 99F
     100F   020   K100    6    0     36    146      158     531   1155    VALLEY     1714  0.04600    ---     ----    -----  -----
--      --
     101F :  Subshed 100F
     101F   020   K100    7    0     48    177      206     633   1156    -------     ----  -------    ---     ----    -----  -----
--      --
     102AF  ---   ---    --   --    206    633     4911    8008   1161    VALLEY     1147  0.01000    ---     ----    -----  -----
--      --
     103A :  Subshed 102A
     103A   020   K100    7    0     42    155     4953    8029   1162    VALLEY     1111  0.01800    ---     ----    -----  -----
--      --
     104A :  Subshed 103A
     104A   020   K100    7    0     65    240     5018    8060   1163    -------     ----  -------    ---     ----    -----  -----
--      --
     105A :  Subshed 104A
     105A   020   K100    7    0     82    303     5100    8109   1162    VALLEY     1606  0.01800    ---     ----    -----  -----
--      --
     106A :  Subshed 105A
     106A   030   K100    7    0     60    209     5160    8130   1164    -------     ----  -------    ---     ----    -----  -----
--      --
     107A :  Subshed 106A
     107A   020   K100    9    0     69    222     5229    8171   1164    VALLEY     1408  0.02100    ---     ----    -----  -----
--      --
     108A :  Subshed 107A
```

```
     108A   030   K100    7    0     58    202     5287    8190   1164    -------    ----  -------   ---    ----   -----  -----
--     --
     109A :  Subshed 108A
     109A   030   K100    5    0     31    133     5318    8202   1164    VALLEY     1467  0.01500   ---    ----   -----  -----
--     --
     110A :  Subshed 109A
     110A   030   K100    6    0     42    160     5360    8208   1166    VALLEY     2733  0.01400   ---    ----   -----  -----
--     --
     111A :  Subshed 110A
     111A   030   K100    9    0     73    221     5433    8212   1169    VALLEY     3056  0.01300   ---    ----   -----  -----
--     --
     112A :  Subshed 111A
     112A   030   K100   21    0     56    101     5489    8245   1172    -------    ----  -------   ---    ----   -----  -----
--     --
     113B :  Subshed 112B
     113B :  Clearing Hydrograph Bank:  B
     113B   030   K100   12    0     50    127       50     127   1154    VALLEY     2779  0.01700   ---    ----   -----  -----
--     --
     114B :  Subshed 113B
     114B   040   K100   21    0     43     72       93     168   1164    -------    ----  -------   ---    ----   -----  -----
--     --
     115AB  ---   ---    --   --     93    168     5582    8357   1171    VALLEY     1726  0.01000   ---    ----   -----  -----
--     --
     116A :  routing
     116A   ---   ---    --   --    ---    ---     5582    8351   1173    VALLEY     5400  0.01000   ---    ----   -----  -----
--     --
     117A :  SC RIVER
     117A   ---   ---    --   --    ---    ---     5582    8218   1180    -------    ----  -------   ---    ----   -----  -----
--     --
     118A   ---   ---    --   --    ---    ---     5582    8218   1180    -------    ----  -------   ---    ----   -----  -----
--     --
     119A   ---   ---    --   --    ---    ---     5582    8218   1180    -------    ----  -------   ---    ----   -----  -----
--     --
```

Issue/Warning Messages

```
     TYPE       ERR NO   PROCEDURE    LOCATION   MESSAGE
-------------------------------------------------------------------------------------------------------------------------------------
------
     Caution    Err1008  SUBAREA        89A   TC and Area are set to minimum values(5).  May be an attempt to run the model on a
smaller area
                                                than acceptable to VCRat.
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Hydrograph Printouts

```
-----------------------------------------------------------------------------------------------------------
            HYDROGRAPH PRINTOUT AT:    2A
-----------------------------------------------------------------------------------------------------------
            DESCRIPTION: Subshed 2A
            TOTAL AREA TO HYDROGRAPH:     164    acres
            HYDROGRAPH PEAK:              506    cfs
            TIME OF PEAK:                1156    minutes
            HYDROGRAPH VOLUME:             35.60 acre-ft

     TIME     FLOW    TIME     FLOW    TIME     FLOW    TIME     FLOW    TIME     FLOW
     (min)    (cfs)   (min)    (cfs)   (min)    (cfs)   (min)    (cfs)   (min)    (cfs)
```

0	0.00	100	0.40	200	0.40	300	2.61	400	3.28
500	4.21	600	6.18	700	7.36	800	9.81	900	16.11
1000	27.89	1050	41.57	1100	47.99	1110	71.76	1120	71.82
1130	99.90	1131	102.34	1132	104.66	1133	108.00	1134	111.14
1135	113.66	1136	114.02	1137	118.10	1138	121.17	1139	124.18
1140	128.27	1141	134.61	1142	139.24	1143	144.13	1144	150.62
1145	163.40	1146	172.58	1147	183.42	1148	196.10	1149	234.08
1150	273.65	1151	288.68	1152	376.35	1153	432.08	1154	469.42
1155	496.67	1156	506.39	1157	503.02	1158	466.29	1159	425.71
1160	413.88	1161	322.12	1162	264.78	1163	230.89	1164	196.89
1165	156.93	1166	129.83	1167	110.97	1168	98.12	1169	89.79
1170	80.35	1171	75.74	1172	71.36	1173	63.50	1174	62.13
1175	59.20	1176	57.23	1177	53.66	1178	47.95	1179	48.73
1180	46.61	1181	44.82	1182	43.38	1183	41.39	1184	40.76
1185	40.11	1186	39.53	1187	39.52	1188	39.08	1189	38.72
1190	38.01	1191	38.01	1192	38.03	1193	37.97	1194	37.86
1195	38.22	1196	37.64	1197	37.65	1198	37.65	1199	37.66
1200	37.66	1201	37.13	1202	36.55	1203	35.47	1204	34.81
1205	34.05	1206	32.68	1207	31.71	1208	30.65	1209	29.54
1210	28.97	1211	27.84	1212	27.77	1213	27.21	1214	26.68
1215	26.35	1216	26.17	1217	26.55	1218	25.88	1219	25.83
1220	26.38	1221	26.40	1222	25.84	1223	25.81	1224	26.43
1225	26.50	1226	25.92	1227	25.86	1228	26.47	1229	26.53
1230	25.94	1231	25.88	1232	26.48	1233	26.03	1234	25.44
1235	25.88	1236	25.90	1237	25.34	1238	25.23	1239	25.15
1240	25.10	1241	25.05	1242	24.96	1243	24.82	1244	24.78
1245	24.76	1246	24.67	1247	24.68	1248	24.68	1249	24.62
1250	24.64	1251	24.65	1252	24.60	1253	24.62	1254	24.64
1255	24.59	1256	24.62	1257	24.64	1258	24.59	1259	24.61
1260	24.64	1261	24.58	1262	23.60	1263	23.12	1264	23.06
1265	22.45	1266	21.67	1267	20.82	1268	20.05	1269	19.75
1270	18.82	1271	18.42	1272	18.58	1273	18.20	1274	17.28
1275	16.94	1276	17.30	1277	17.23	1278	16.59	1279	16.44
1280	16.93	1281	16.97	1282	16.39	1283	16.30	1284	16.83
1285	16.90	1286	16.34	1287	16.26	1288	16.80	1289	16.88
1290	16.33	1291	16.25	1292	16.80	1293	16.36	1294	16.32
1295	16.25	1296	16.74	1297	16.76	1298	16.22	1299	16.17
1300	16.74	1310	10.59	1320	7.12	1330	6.46	1340	6.48
1350	5.13	1360	2.43	1370	0.80	1380	0.46	1390	0.41
1400	0.40	1420	0.40	1440	0.40	1460	0.40	1500	0.40

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 8

Hydrograph Printouts

HYDROGRAPH FATTENED AT 60A

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*****************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):   6657.08          VOLUME (acre-ft):    532.19      *
*      HYDROGRAPH ADJUSTMENT FACTOR:          0.85400                                      *
*      ADJUSTED HYDROGRAPH  PEAK (cfs):   5685.14          VOLUME (acre-ft):    454.49      *
*      RUNOFF FACTOR(in):   6.14      TOTAL RAIN(in):  11.50      SCS Curve: 60            *
*      FATTENED HYDROGRAPH  PEAK (cfs):   5685.14          VOLUME (acre-ft):   1594.65      *
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TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	4.00	3.42	28.45
200	4.00	3.42	63.18	300	8.56	7.31	80.01
400	19.75	16.87	107.13	500	25.79	22.02	137.17
600	34.13	29.14	181.04	700	45.65	38.99	248.32
800	63.90	54.57	360.81	900	154.95	132.33	616.10
1000	354.18	302.47	1163.49	1050	565.63	483.05	1700.91
1100	750.23	640.69	2495.98	1110	871.75	744.47	2752.24
1120	1037.03	885.62	3047.08	1130	1296.75	1107.42	3398.05
1131	1328.06	1134.17	3435.81	1132	1358.87	1160.47	3473.37
1133	1394.69	1191.07	3513.03	1134	1434.00	1224.64	3554.07
1135	1475.29	1259.90	3595.84	1136	1514.58	1293.45	3636.71
1137	1560.68	1332.82	3680.19	1138	1606.20	1371.69	3723.27
1139	1654.43	1412.88	3767.25	1140	1704.49	1455.64	3811.72
1141	1762.20	1504.92	3858.83	1142	1822.09	1556.06	3906.43
1143	1890.73	1614.68	3956.86	1144	1961.72	1675.31	4007.69
1145	2044.51	1746.02	4062.18	1146	2133.42	1821.94	4118.16
1147	2232.86	1906.86	4177.02	1148	2342.01	2000.07	4238.29
1149	2511.14	2144.51	4318.36	1150	2717.58	2320.81	4408.84
1151	2922.73	2496.02	4496.77	1152	3291.37	2810.83	4633.62
1153	3694.98	3155.51	4777.06	1154	4151.91	3545.73	4931.95
1155	4654.91	3975.29	5095.12	1156	5177.74	4421.79	5258.10
1157	5617.33	4797.20	5391.30	1158	6027.18	5147.21	5510.98
1159	6291.02	5372.53	5586.18	1160	6507.26	5557.20	5645.57
1161	6635.33	5666.57	5679.54	1162	6657.08	5685.14	5685.14
1163	6577.16	5616.90	5664.56	1164	6418.26	5481.20	5622.20
1165	6187.16	5283.84	5558.49	1166	5916.49	5052.68	5481.19
1167	5606.13	4787.64	5389.58	1168	5269.85	4500.45	5286.97
1169	4916.57	4198.75	5175.58	1170	4553.12	3888.37	5057.21
1171	4195.69	3583.12	4936.66	1172	3858.69	3295.32	4818.55
1173	3538.77	3022.11	4702.23	1174	3241.03	2767.84	4589.67
1175	2967.46	2534.21	4481.94	1176	2715.83	2319.32	4378.73
1177	2494.20	2130.05	4283.15	1178	2292.76	1958.02	4192.37
1179	2113.16	1804.64	4107.32	1180	1953.57	1668.35	4027.72
1181	1810.56	1546.21	3952.67	1182	1683.91	1438.06	3882.39
1183	1570.57	1341.26	3816.00	1184	1471.15	1256.36	3753.98
1185	1381.87	1180.12	3695.09	1186	1300.11	1110.29	3638.52
1187	1227.45	1048.25	3584.99	1188	1163.79	993.88	3534.59
1189	1106.26	944.74	3486.33	1190	1052.89	899.17	3439.53
1191	1005.20	858.44	3394.84	1192	961.33	820.98	3351.60

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1193	924.14	789.21	3311.05	1194	889.35	759.51	3271.48
1195	857.56	732.36	3233.19	1196	827.36	706.56	3195.62
1197	802.27	685.14	3160.29	1198	778.93	665.20	3125.83
1199	756.97	646.45	3092.08	1200	737.30	629.65	3059.48
1201	717.97	613.15	3027.17	1202	700.98	598.63	2996.05
1203	684.78	584.80	2965.46	1204	670.08	572.25	2935.73

1205	654.48	558.93	2905.76	1206	640.67	547.13	2876.79
1207	627.08	535.53	2848.11	1208	614.28	524.60	2819.99
1209	602.08	514.18	2792.34	1210	590.53	504.31	2765.19
1211	579.05	494.51	2738.28	1212	568.63	485.61	2712.07
1213	559.12	477.49	2686.50	1214	548.64	468.54	2660.65
1215	540.21	461.34	2636.02	1216	532.26	454.55	2611.83
1217	524.42	447.86	2587.90	1218	516.29	440.91	2564.03
1219	508.64	434.38	2540.60	1220	501.91	428.63	2517.85
1221	495.14	422.85	2495.27	1222	487.81	416.59	2472.61
1223	480.79	410.60	2450.30	1224	474.50	405.23	2428.57
1225	467.99	399.67	2406.91	1226	460.81	393.53	2385.09
1227	453.92	387.65	2363.61	1228	447.85	382.46	2342.76
1229	441.67	377.19	2322.04	1230	434.93	371.43	2301.19
1231	428.64	366.06	2280.76	1232	423.33	361.52	2261.06
1233	417.15	356.24	2241.05	1234	411.37	351.31	2221.44
1235	406.82	347.42	2202.69	1236	401.51	342.89	2183.69
1237	396.51	338.62	2165.04	1238	393.16	335.76	2147.48
1239	388.68	331.94	2129.47	1240	384.62	328.47	2111.86
1241	382.20	326.40	2095.35	1242	378.52	323.25	2078.30
1243	375.17	320.40	2061.60	1244	373.49	318.96	2046.03
1245	370.60	316.49	2029.93	1246	368.04	314.31	2014.19
1247	367.08	313.48	1999.54	1248	364.83	311.57	1984.30
1249	362.89	309.91	1969.40	1250	362.45	309.54	1955.55
1251	360.64	307.99	1941.04	1252	359.02	306.61	1926.80
1253	358.87	306.48	1913.58	1254	357.30	305.13	1899.67
1255	355.86	303.90	1885.99	1256	355.83	303.88	1873.31
1257	354.35	302.62	1859.89	1258	352.98	301.45	1846.69
1259	353.01	301.47	1834.47	1260	351.55	300.23	1821.50
1261	350.27	299.13	1808.76	1262	348.58	297.69	1795.90
1263	346.23	295.68	1782.78	1264	344.48	294.19	1770.14
1265	342.85	292.80	1757.71	1266	339.70	290.10	1744.45
1267	337.32	288.07	1731.80	1268	335.47	286.49	1719.60
1269	333.23	284.58	1707.28	1270	330.04	281.85	1694.46
1271	326.81	279.09	1681.74	1272	324.15	276.82	1669.49
1273	321.10	274.22	1657.10	1274	317.13	270.83	1644.23
1275	313.38	267.62	1631.61	1276	310.52	265.19	1619.66
1277	307.54	262.64	1607.73	1278	303.76	259.41	1595.39
1279	300.21	256.38	1583.30	1280	297.53	254.09	1571.87
1281	294.67	251.65	1560.42	1282	290.95	248.48	1548.51
1283	287.40	245.44	1536.80	1284	284.63	243.08	1525.70
1285	281.61	240.49	1514.52	1286	277.65	237.11	1502.82
1287	273.80	233.83	1491.28	1288	270.74	231.21	1480.34
1289	267.43	228.39	1469.33	1290	263.23	224.80	1457.82

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1291	259.20	221.36	1446.50	1292	256.05	218.66	1435.84
1293	251.82	215.05	1424.55	1294	248.56	212.27	1413.99
1295	244.50	208.80	1402.97	1296	241.42	206.18	1392.68
1297	238.41	203.60	1382.52	1298	235.04	200.73	1372.20
1299	231.04	197.30	1361.52	1300	229.00	195.56	1352.25
1310	193.70	165.42	1253.33	1320	163.03	139.22	1164.09
1330	137.39	117.33	1084.19	1340	112.54	96.11	1010.02

1350	89.61	76.52	941.84	1360	71.39	60.97	881.22
1370	58.75	50.17	828.43	1380	49.24	42.05	781.35
1390	41.27	35.24	738.50	1400	34.62	29.56	699.41
1420	23.43	20.01	630.12	1440	15.52	13.26	571.59
1460	10.39	8.87	522.03	1500	5.58	4.76	443.37

HYDROGRAPH PRINTOUT AT: 117A

DESCRIPTION: SC RIVER
TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 8218 cfs
TIME OF PEAK: 1180 minutes
HYDROGRAPH VOLUME: 1901.66 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	30.85	200	33.15	300	46.53	400	74.15
500	103.34	600	137.35	700	187.69	800	270.50	900	469.18
1000	974.15	1050	1454.47	1100	2203.23	1110	2384.69	1120	2606.21
1130	2894.33	1131	2927.07	1132	2960.30	1133	2993.91	1134	3027.83
1135	3062.70	1136	3098.44	1137	3135.06	1138	3172.72	1139	3212.16
1140	3252.93	1141	3294.98	1142	3338.41	1143	3383.38	1144	3430.07
1145	3478.57	1146	3529.01	1147	3581.53	1148	3636.17	1149	3693.01
1150	3752.25	1151	3814.21	1152	3879.26	1153	3947.95	1154	4021.24
1155	4100.40	1156	4186.30	1157	4280.42	1158	4384.93	1159	4501.20
1160	4630.55	1161	4775.41	1162	4938.88	1163	5124.22	1164	5333.70
1165	5566.83	1166	5820.31	1167	6088.57	1168	6364.54	1169	6641.21
1170	6912.66	1171	7172.63	1172	7413.74	1173	7628.68	1174	7811.26
1175	7957.65	1176	8068.90	1177	8147.31	1178	8195.28	1179	8217.03
1180	8218.15	1181	8201.63	1182	8168.28	1183	8118.10	1184	8051.56
1185	7969.22	1186	7873.59	1187	7766.81	1188	7652.79	1189	7533.54
1190	7412.82	1191	7291.65	1192	7172.60	1193	7055.60	1194	6941.33
1195	6829.66	1196	6719.44	1197	6611.49	1198	6504.17	1199	6396.96
1200	6291.13	1201	6184.79	1202	6078.42	1203	5973.09	1204	5867.59
1205	5763.07	1206	5659.77	1207	5557.24	1208	5457.23	1209	5358.55
1210	5262.34	1211	5168.37	1212	5077.00	1213	4988.31	1214	4902.38
1215	4819.16	1216	4738.81	1217	4661.03	1218	4586.17	1219	4513.77
1220	4444.14	1221	4376.95	1222	4312.12	1223	4249.78	1224	4189.58
1225	4131.47	1226	4075.49	1227	4021.45	1228	3969.26	1229	3918.84
1230	3870.18	1231	3823.10	1232	3777.48	1233	3733.23	1234	3690.31
1235	3648.54	1236	3607.84	1237	3568.18	1238	3529.57	1239	3491.91
1240	3455.17	1241	3419.36	1242	3384.51	1243	3350.56	1244	3317.46
1245	3285.15	1246	3253.59	1247	3222.76	1248	3192.63	1249	3163.30
1250	3134.80	1251	3106.76	1252	3079.20	1253	3052.15	1254	3025.73
1255	3000.05	1256	2974.82	1257	2950.07	1258	2925.75	1259	2901.81
1260	2878.21	1261	2854.96	1262	2832.06	1263	2809.50	1264	2787.29
1265	2765.47	1266	2744.04	1267	2723.02	1268	2702.84	1269	2683.11
1270	2663.61	1271	2644.33	1272	2625.21	1273	2606.21	1274	2587.33
1275	2568.54	1276	2549.84	1277	2531.23	1278	2512.74	1279	2494.37
1280	2476.11	1281	2458.69	1282	2441.36	1283	2423.99	1284	2406.53

1285	2388.96	1286	2371.31	1287	2353.58	1288	2335.81	1289	2318.03
1290	2300.25	1291	2282.76	1292	2265.92	1293	2249.00	1294	2232.04
1295	2215.08	1296	2198.17	1297	2181.35	1298	2164.63	1299	2148.03
1300	2131.59	1310	1977.83	1320	1842.10	1330	1719.49	1340	1603.48
1350	1491.70	1360	1387.83	1370	1289.10	1380	1203.55	1390	1129.12
1400	1062.07	1420	944.96	1440	840.88	1460	753.98	1500	625.15

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 119A

TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 8218 cfs
TIME OF PEAK: 1180 minutes
HYDROGRAPH VOLUME: 1901.66 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	30.85	200	33.15	300	46.53	400	74.15
500	103.34	600	137.35	700	187.69	800	270.50	900	469.18
1000	974.15	1050	1454.47	1100	2203.23	1110	2384.69	1120	2606.21
1130	2894.33	1131	2927.07	1132	2960.30	1133	2993.91	1134	3027.83
1135	3062.70	1136	3098.44	1137	3135.06	1138	3172.72	1139	3212.16
1140	3252.93	1141	3294.98	1142	3338.41	1143	3383.38	1144	3430.07
1145	3478.57	1146	3529.01	1147	3581.53	1148	3636.17	1149	3693.01
1150	3752.25	1151	3814.21	1152	3879.26	1153	3947.95	1154	4021.24
1155	4100.40	1156	4186.30	1157	4280.42	1158	4384.93	1159	4501.20
1160	4630.55	1161	4775.41	1162	4938.88	1163	5124.22	1164	5333.70
1165	5566.83	1166	5820.31	1167	6088.57	1168	6364.54	1169	6641.21
1170	6912.66	1171	7172.63	1172	7413.74	1173	7628.68	1174	7811.26
1175	7957.65	1176	8068.90	1177	8147.31	1178	8195.28	1179	8217.03
1180	8218.15	1181	8201.63	1182	8168.28	1183	8118.10	1184	8051.56
1185	7969.22	1186	7873.59	1187	7766.81	1188	7652.79	1189	7533.54
1190	7412.82	1191	7291.65	1192	7172.60	1193	7055.60	1194	6941.33
1195	6829.66	1196	6719.44	1197	6611.49	1198	6504.17	1199	6396.96
1200	6291.13	1201	6184.79	1202	6078.42	1203	5973.09	1204	5867.59
1205	5763.07	1206	5659.77	1207	5557.24	1208	5457.23	1209	5358.55
1210	5262.34	1211	5168.37	1212	5077.00	1213	4988.31	1214	4902.38
1215	4819.16	1216	4738.81	1217	4661.03	1218	4586.17	1219	4513.77
1220	4444.14	1221	4376.95	1222	4312.12	1223	4249.78	1224	4189.58
1225	4131.47	1226	4075.49	1227	4021.45	1228	3969.26	1229	3918.84
1230	3870.18	1231	3823.10	1232	3777.48	1233	3733.23	1234	3690.31
1235	3648.54	1236	3607.84	1237	3568.18	1238	3529.57	1239	3491.91
1240	3455.17	1241	3419.36	1242	3384.51	1243	3350.56	1244	3317.46
1245	3285.15	1246	3253.59	1247	3222.76	1248	3192.63	1249	3163.30
1250	3134.80	1251	3106.76	1252	3079.20	1253	3052.15	1254	3025.73
1255	3000.05	1256	2974.82	1257	2950.07	1258	2925.75	1259	2901.81
1260	2878.21	1261	2854.96	1262	2832.06	1263	2809.50	1264	2787.29
1265	2765.47	1266	2744.04	1267	2723.02	1268	2702.84	1269	2683.11
1270	2663.61	1271	2644.33	1272	2625.21	1273	2606.21	1274	2587.33
1275	2568.54	1276	2549.84	1277	2531.23	1278	2512.74	1279	2494.37
1280	2476.11	1281	2458.69	1282	2441.36	1283	2423.99	1284	2406.53
1285	2388.96	1286	2371.31	1287	2353.58	1288	2335.81	1289	2318.03

1290	2300.25	1291	2282.76	1292	2265.92	1293	2249.00	1294	2232.04
1295	2215.08	1296	2198.17	1297	2181.35	1298	2164.63	1299	2148.03
1300	2131.59	1310	1977.83	1320	1842.10	1330	1719.49	1340	1603.48
1350	1491.70	1360	1387.83	1370	1289.10	1380	1203.55	1390	1129.12
1400	1062.07	1420	944.96	1440	840.88	1460	753.98	1500	625.15

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

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005  4492  001A Header place holder
005  4492  002A Header place holder
005  4492  060ABHeader place holder
005  4492  117A Header place holder
005  4492  119A Header place holder
999
999
006  4492  001A 010000008510B98101635017400                    G1
006  4492  002A 020000007909B98101750007500                  1
006  4492  003A 020000007305B98
006  4492  004B 010000008809B98
006  4492  005B 010000005407B98102148014200
006  4492  006B 020000008010B98
006  4492  007AB010          A97102215005500
006  4492  008A 020000009407B98
006  4492  009C 020000007906B98102067040700
006  4492  010C 020000005107B98
006  4492  011C 010000007306B98101977017500
006  4492  012C 020000010805B98101913008800
006  4492  013C 020000008712B98
006  4492  014AC010          A97201101004000
006  4492  015A 030000003005B98
006  4492  016D 020000008007B98100830005800
006  4492  017D 030000001205B98
006  4492  018AD010          A97202430003600
006  4492  019A 030000006607B98
006  4492  020E 020000007105B98101615006100
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006  4492  022E 020000006805B98201242004700
006  4492  023E 020000005005B98
006  4492  024AE010          A97200818002600
006  4492  025A 030000001805B98
006  4492  026A 020000005607B98200790002700
006  4492  027A 020000007906B98200950002400
006  4492  028A 020000006410B98201069002600
006  4492  029A 020000004607B98
006  4492  030A 020000004005B98201537002900
006  4492  031A 020000005307B98
006  4492  032B 010000009907B98100735011200                    B
006  4492  033B 020000004707B98
006  4492  034B 020000003606B98101710005700
006  4492  035B 020000007809B98
006  4492  036B 020000010009B98100736005200
006  4492  037B 020000001305B98
006  4492  038B 020000007109B98201438003500
006  4492  039B 020000004907B98
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006  4492  040C 020000008710B98102063016300                                C
006  4492  041C 020000007610B98
006  4492  042C 010000010712B98101338008100
006  4492  043C 010000002305B98
006  4492  044D 020000008009B98101840008300
006  4492  045D 020000005405B98
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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

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006  4492  046CD010          A97101426005600
006  4492  047C 020000004307B98
006  4492  048BC010          A97200768002900
006  4492  049B 020000005007B98201183003500
006  4492  050B 020000007907B98201240003400
006  4492  051B 020000002805B98
006  4492  052E 020000007909B98100782006000                                E
006  4492  053E 030000002505B98
006  4492  054BE010          A97200853004000
006  4492  055B 020000001405B98
006  4492  056F 020000008706B98201222004800
006  4492  057F 030000003005B98
006  4492  058BF010          A97101584006300
006  4492  059B 020000004005B98
006  4492  060AB010          A97                                          1
110
111            0.85400    6.14
110
006  4492  061A 010       099A97201530002400
006  4492  062A 020000005507B98
006  4492  063A 020000008006B98201254001800
006  4492  064A 010000004106B98
006  4492  065B 020000006605B98101577007600
006  4492  066B 020000004906B98
006  4492  067AB010          A97200885002400
006  4492  068A 010000002405B98
006  4492  069A 030000005706B98201682001400
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006  4492  071C 020000005805B98101208005000                                C
006  4492  072C 020000007506B98201403004800
006  4492  073C 020000007407B98
006  4492  074C 020000005406B98200814002700
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006  4492  080A 020000004105B98202463001700
006  4492  081A 020000008306B98
006  4492  082D 020000005106B98101093007600                                D
006  4492  083D 020000004706B98
006  4492  084AD010          A97200977003300
006  4492  085A 020000004605B98
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006  4492  087A 020000003306B98
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006  4492  089A 040000000505B98
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006  4492  091E 020000003905B98101621005900                    E
006  4492  092E 020000005907B98
006  4492  093AE010          A97200926001100
006  4492  094A 030000002205B98
♀
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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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VCRat Model Input

Model Lines

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006  4492  095A 020000006105B98
006  4492  096A 020000007508B98201651001600
006  4492  097F 030000003905B98101064005300                    F
006  4492  098F 020000003306B98
006  4492  099F 020000005007B98100595009400
006  4492  100F 020000003606B98201714004600
006  4492  101F 020000004807B98
006  4492  102AF010          A97201147001000
006  4492  103A 020000004207B98201111001800
006  4492  104A 020000006507B98
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006  4492  107A 020000006909B98201408002100
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006  4492  109A 030000003105B98201467001500
006  4492  110A 030000004206B98202733001400
006  4492  111A 030000007309B98203056001300
006  4492  112A 030000005621B98
006  4492  113B 030000005012B98202779001700                    B
006  4492  114B 040000004321B98
006  4492  115AB010          A97201726001000
006  4492  116A 010       099A97205400001000
006  4492  117A 010       099A97                          1
006  4492  118A 010       099A97
006  4492  119A 010       099A97                          1  2
999
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VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	247.	85.	247.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	224.	164.	446.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	294.	237.	548.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	269.	88.	269.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	188.	142.	457.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	215.	222.	627.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	627.	459.	1167.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	307.	553.	1214.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	283.	79.	283.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	166.	130.	429.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	279.	203.	679.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	435.	311.	953.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	208.	398.	1070.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1070.	951.	2284.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	114.	981.	2254.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	261.	80.	261.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	46.	92.	284.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	284.	1073.	2458.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	202.	1139.	2442.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	286.	71.	286.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	157.	110.	327.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	274.	178.	543.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	202.	228.	652.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	652.	1367.	2788.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	68.	1385.	2789.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	183.	1441.	2844.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	283.	1520.	2886.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	172.	1584.	2985.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	150.	1630.	2994.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	161.	1670.	3013.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	173.	1723.	3023.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	345.	99.	345.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	153.	146.	492.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	129.	182.	607.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	221.	260.	738.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	283.	360.	1000.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	52.	373.	985.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	201.	444.	1148.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	160.	493.	1219.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	233.	87.	233.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	204.	163.	403.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	278.	270.	672.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	98.	293.	683.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00

4492	44D	80.	227.	80.	227.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	218.	134.	333.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	333.	427.	1012.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	140.	470.	1042.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1042.	963.	2262.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	163.	1013.	2287.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	258.	1092.	2345.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	51B	28.	113.	1120.	2347.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	224.	79.	224.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	95.	104.	285.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	285.	1224.	2538.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	56.	1238.	2530.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	312.	87.	312.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	114.	117.	375.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	375.	1355.	2676.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	161.	1395.	2667.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2667.	3118.	5688.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	179.	3173.	5681.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	287.	3253.	5713.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	156.	3294.	5708.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	266.	66.	266.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	176.	115.	333.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	333.	3409.	5794.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	103.	3433.	5794.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	192.	3490.	5808.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	151.	3540.	5791.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	234.	58.	234.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	269.	133.	395.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	241.	207.	590.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	194.	261.	754.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	81.	281.	796.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	140.	324.	913.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	269.	413.	1078.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1078.	3953.	6140.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	92.	3983.	6131.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	165.	4024.	6142.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	298.	4107.	6128.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	183.	51.	183.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	168.	98.	294.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	294.	4205.	6165.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	185.	4251.	6160.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	219.	4318.	6176.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	118.	4351.	6160.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	375.	4444.	6179.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	18.	4449.	6176.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6176.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	157.	39.	157.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	192.	98.	264.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	264.	4547.	6209.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	84.	4569.	6197.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	246.	4630.	6209.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	226.	4705.	6224.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	148.	39.	148.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	118.	72.	203.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	163.	122.	363.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00

4492	99F	36.	129.	158.	465.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	157.	206.	548.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	548.	4911.	6265.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	137.	4953.	6259.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	212.	5018.	6259.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	267.	5100.	6272.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	184.	5160.	6258.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	195.	5229.	6267.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	178.	5287.	6257.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	118.	5318.	6258.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	142.	5360.	6246.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	194.	5433.	6205.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	88.	5489.	6161.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	112.	50.	112.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	62.	93.	145.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	145.	5582.	6178.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6159.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6002.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.

1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.897

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	3.	700	4.	800	5.	900	9.
1000	19.	1050	31.	1100	37.	1110	58.	1120	58.
1130	83.	1131	85.	1132	87.	1133	91.	1134	94.
1135	96.	1136	96.	1137	100.	1138	103.	1139	105.
1140	109.	1141	115.	1142	119.	1143	123.	1144	129.
1145	140.	1146	149.	1147	158.	1148	170.	1149	204.
1150	238.	1151	251.	1152	329.	1153	378.	1154	410.
1155	436.	1156	446.	1157	444.	1158	412.	1159	376.
1160	366.	1161	286.	1162	234.	1163	203.	1164	174.
1165	138.	1166	113.	1167	96.	1168	84.	1169	76.
1170	68.	1171	63.	1172	59.	1173	52.	1174	50.
1175	48.	1176	46.	1177	43.	1178	38.	1179	38.
1180	36.	1181	35.	1182	33.	1183	32.	1184	31.
1185	30.	1186	30.	1187	30.	1188	29.	1189	29.
1190	28.	1191	28.	1192	28.	1193	28.	1194	28.
1195	29.	1196	28.	1197	28.	1198	28.	1199	28.
1200	28.	1201	28.	1202	27.	1203	26.	1204	25.
1205	25.	1206	24.	1207	23.	1208	22.	1209	21.
1210	20.	1211	19.	1212	19.	1213	19.	1214	18.
1215	18.	1216	18.	1217	18.	1218	18.	1219	17.
1220	18.	1221	18.	1222	17.	1223	17.	1224	18.
1225	18.	1226	17.	1227	17.	1228	18.	1229	18.
1230	17.	1231	17.	1232	18.	1233	18.	1234	17.
1235	17.	1236	17.	1237	17.	1238	17.	1239	17.
1240	17.	1241	17.	1242	17.	1243	17.	1244	16.
1245	16.	1246	16.	1247	16.	1248	16.	1249	16.
1250	16.	1251	16.	1252	16.	1253	16.	1254	16.
1255	16.	1256	16.	1257	16.	1258	16.	1259	16.
1260	16.	1261	16.	1262	15.	1263	15.	1264	15.
1265	14.	1266	14.	1267	13.	1268	12.	1269	12.
1270	11.	1271	11.	1272	11.	1273	11.	1274	10.
1275	10.	1276	10.	1277	10.	1278	9.	1279	9.
1280	9.	1281	9.	1282	9.	1283	9.	1284	9.
1285	9.	1286	9.	1287	9.	1288	9.	1289	9.
1290	9.	1291	9.	1292	9.	1293	9.	1294	9.
1295	9.	1296	9.	1297	9.	1298	9.	1299	9.
1300	9.	1310	7.	1320	4.	1330	3.	1340	3.
1350	3.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.897

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q

0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	9.	800	16.	900	29.
1000	95.	1050	219.	1100	500.	1110	569.	1120	650.
1130	752.	1131	764.	1132	776.	1133	788.	1134	801.
1135	814.	1136	826.	1137	840.	1138	854.	1139	868.
1140	882.	1141	898.	1142	913.	1143	930.	1144	947.
1145	965.	1146	983.	1147	1003.	1148	1023.	1149	1045.
1150	1067.	1151	1091.	1152	1117.	1153	1143.	1154	1172.
1155	1202.	1156	1234.	1157	1270.	1158	1309.	1159	1353.
1160	1403.	1161	1459.	1162	1522.	1163	1593.	1164	1674.
1165	1766.	1166	1873.	1167	1996.	1168	2136.	1169	2293.
1170	2463.	1171	2644.	1172	2833.	1173	3027.	1174	3225.
1175	3422.	1176	3614.	1177	3794.	1178	3960.	1179	4110.
1180	4243.	1181	4367.	1182	4486.	1183	4607.	1184	4735.
1185	4872.	1186	5019.	1187	5172.	1188	5327.	1189	5478.
1190	5619.	1191	5743.	1192	5847.	1193	5926.	1194	5978.
1195	6002.	1196	5998.	1197	5968.	1198	5914.	1199	5838.
1200	5743.	1201	5634.	1202	5511.	1203	5379.	1204	5240.
1205	5095.	1206	4947.	1207	4798.	1208	4648.	1209	4499.
1210	4351.	1211	4206.	1212	4064.	1213	3925.	1214	3790.
1215	3659.	1216	3533.	1217	3410.	1218	3292.	1219	3179.
1220	3069.	1221	2964.	1222	2863.	1223	2766.	1224	2673.
1225	2583.	1226	2498.	1227	2415.	1228	2337.	1229	2261.
1230	2188.	1231	2119.	1232	2052.	1233	1988.	1234	1927.
1235	1869.	1236	1813.	1237	1759.	1238	1707.	1239	1658.
1240	1610.	1241	1565.	1242	1521.	1243	1479.	1244	1439.
1245	1400.	1246	1363.	1247	1328.	1248	1293.	1249	1260.
1250	1228.	1251	1198.	1252	1169.	1253	1140.	1254	1113.
1255	1087.	1256	1062.	1257	1037.	1258	1014.	1259	992.
1260	970.	1261	949.	1262	929.	1263	909.	1264	891.
1265	873.	1266	856.	1267	840.	1268	824.	1269	808.
1270	794.	1271	779.	1272	765.	1273	751.	1274	738.
1275	725.	1276	713.	1277	701.	1278	689.	1279	678.
1280	667.	1281	656.	1282	646.	1283	635.	1284	625.
1285	616.	1286	607.	1287	598.	1288	590.	1289	581.
1290	573.	1291	564.	1292	556.	1293	549.	1294	541.
1295	534.	1296	527.	1297	520.	1298	513.	1299	507.
1300	500.	1310	441.	1320	389.	1330	344.	1340	306.
1350	274.	1360	248.	1370	227.	1380	207.	1390	189.
1400	173.	1420	142.	1440	115.	1460	94.	1500	63.

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 4492 Project: Adams County VC Rat

Project Description

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100 YEAR EVENT

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 2

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
1A : Subshed 1A																		
1A	010	K100	10	0	85	278	85	278	1154	MOUNTAIN	1635	0.17400	---	----	-----	-----	--	--
2A : Subshed 2A																		
2A	020	K100	9	0	79	254	164	506	1156	MOUNTAIN	1750	0.07500	---	----	-----	-----	--	--
3A : Subshed 3A																		
3A	020	K100	5	0	73	332	237	633	1156	-------	----	-------	---	----	-----	-----	--	--
4B : Subshed 4B																		
4B	010	K100	9	0	88	303	88	303	1153	-------	----	-------	---	----	-----	-----	--	--
5B : Subshed 5B																		
5B	010	K100	7	0	54	212	142	515	1153	MOUNTAIN	2148	0.14200	---	----	-----	-----	--	--
6B : Subshed 6B																		

```
      6B   020   K100   10   0    80   244    222   711  1157  -------  ----  -------  ---  ----  -----  -----
--    --
      7AB  ---   ---    --   --   222  711    459   1339 1156  MOUNTAIN 2215  0.05500  ---  ----  -----  -----
--    --
      8A : Subshed 8A
      8A   020   K100   7    0    94   347    553   1411 1158  -------  ----  -------  ---  ----  -----  -----
--    --
      9C : Subshed 9C
      9C   020   K100   6    0    79   320    79    320  1153  MOUNTAIN 2067  0.40700  ---  ----  -----  -----
--    --
     10C : Subshed 11C
     10C   020   K100   7    0    51   188    130   487  1155  -------  ----  -------  ---  ----  -----  -----
--    --
     11C : Subshed 10C
     11C   010   K100   6    0    73   313    203   771  1154  MOUNTAIN 1977  0.17500  ---  ----  -----  -----
--    --
     12C : Subshed 12C
     12C   020   K100   5    0    108  491    311   1088 1156  MOUNTAIN 1913  0.08800  ---  ----  -----  -----
--    --
     13C : Subshed 13C
     13C   020   K100   12   0    87   236    398   1226 1158  -------  ----  -------  ---  ----  -----  -----
--    --
     14AC ---   ---    --   --   398  1226   951   2637 1158  VALLEY   1101  0.04000  ---  ----  -----  -----
--    --
     15A : Subshed 15A
     15A   030   K100   5    0    30   129    981   2603 1159  -------  ----  -------  ---  ----  -----  -----
--    --
     16D : Subshed 16D
     16D   020   K100   7    0    80   295    80    295  1153  MOUNTAIN 830   0.05800  ---  ----  -----  -----
--    --
     17D : Subshed 17D
     17D   030   K100   5    0    12   51     92    324  1156  -------  ----  -------  ---  ----  -----  -----
--    --
     18AD ---   ---    --   --   92   324    1073  2832 1159  VALLEY   2430  0.03600  ---  ----  -----  -----
--    --
     19A : Subshed 19A
     19A   030   K100   7    0    66   229    1139  2833 1160  -------  ----  -------  ---  ----  -----  -----
--    --
     20E : Subshed 20E
     20E   020   K100   5    0    71   323    71    323  1153  MOUNTAIN 1615  0.06100  ---  ----  -----  -----
--    --
     21E : Subshed 22E
     21E   020   K100   5    0    39   177    110   376  1156  -------  ----  -------  ---  ----  -----  -----
--    --
     22E : Subshed 21E
     22E   020   K100   5    0    68   309    178   619  1153  VALLEY   1242  0.04700  ---  ----  -----  -----
--    --
     23E : Subshed 23E
     23E   020   K100   5    0    50   227    228   747  1155  -------  ----  -------  ---  ----  -----  -----
--    --
     24AE ---   ---    --   --   228  747    1367  3265 1158  VALLEY   818   0.02600  ---  ----  -----  -----
--    --
     25A : Subshed 25A
     25A   030   K100   5    0    18   77     1385  3252 1159  -------  ----  -------  ---  ----  -----  -----
--    --
     26A : Subshed 26A
     26A   020   K100   7    0    56   207    1441  3331 1159  VALLEY   790   0.02700  ---  ----  -----  -----
--    --
     27A : Subshed 27A
     27A   020   K100   6    0    79   320    1520  3378 1160  VALLEY   950   0.02400  ---  ----  -----  -----
--    --
```

Model Results

SUBAREA DATA AND RESULTS								ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	VEL (FT/S)	DEPTH (FT)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
28A : Subshed 28A																		
28A	020	K100	10	0	64	195	--	--	1584	3488	1160	VALLEY	1069	0.02600	---	----	-----	-----
29A : Subshed 29A																		
29A	020	K100	7	0	46	170	--	--	1630	3516	1161	-------	----	-------	---	----	-----	-----
30A : Subshed 30A																		
30A	020	K100	5	0	40	182	--	--	1670	3539	1161	VALLEY	1537	0.02900	---	----	-----	-----
31A : Subshed 31A																		
31A	020	K100	7	0	53	196	--	--	1723	3557	1162	-------	----	-------	---	----	-----	-----
32B : Subshed 32B																		
32B : Clearing Hydrograph Bank: B																		
32B	010	K100	7	0	99	389	--	--	99	389	1153	MOUNTAIN	735	0.11200	---	----	-----	-----
33B : Subshed 33B																		
33B	020	K100	7	0	47	174	--	--	146	555	1155	-------	----	-------	---	----	-----	-----
34B : Subshed 34B																		
34B	020	K100	6	0	36	146	--	--	182	687	1154	MOUNTAIN	1710	0.05700	---	----	-----	-----
35B : Subshed 35B																		
35B	020	K100	9	0	78	251	--	--	260	844	1157	-------	----	-------	---	----	-----	-----
36B : Subshed 36B																		
36B	020	K100	9	0	100	321	--	--	360	1142	1157	MOUNTAIN	736	0.05200	---	----	-----	-----
37B : Subshed 37B																		
37B	020	K100	5	0	13	59	--	--	373	1128	1158	-------	----	-------	---	----	-----	-----
38B : Subshed 38B																		
38B	020	K100	9	0	71	228	--	--	444	1320	1157	VALLEY	1438	0.03500	---	----	-----	-----
39B : Subshed 39B																		
39B	020	K100	7	0	49	181	--	--	493	1407	1158	-------	----	-------	---	----	-----	-----
40C : Subshed 40C																		
40C : Clearing Hydrograph Bank: C																		
40C	020	K100	10	0	87	265	--	--	87	265	1154	MOUNTAIN	2063	0.16300	---	----	-----	-----
41C : Subshed 41C																		
41C	020	K100	10	0	76	231	--	--	163	460	1157	-------	----	-------	---	----	-----	-----
42C : Subshed 42C																		
42C	010	K100	12	0	107	314	--	--	270	766	1156	MOUNTAIN	1338	0.08100	---	----	-----	-----

```
--      --
        43C :  Subshed 43C
        43C   010   K100    5    0     23    110     293     780   1156   -------   ----  -------   ---    ----   -----  -----
--      --
        44D :  Subshed 44D
        44D   020   K100    9    0     80    257      80     257   1153   MOUNTAIN  1840  0.08300   ---    ----   -----  -----
--      --
        45D :  Subshed 45D
        45D   020   K100    5    0     54    246     134     384   1156   -------   ----  -------   ---    ----   -----  -----
--      --
        46CD  ---   ---    --   --    134    384     427    1165   1156   MOUNTAIN  1426  0.05600   ---    ----   -----  -----
--      --
        47C :  Subshed 47C
        47C   020   K100    7    0     43    159     470    1206   1158   -------   ----  -------   ---    ----   -----  -----
--      --
        48BC  ---   ---    --   --    470   1206     963    2613   1158   VALLEY     768  0.02900   ---    ----   -----  -----
--      --
        49B :  Subshed 49B
        49B   020   K100    7    0     50    185    1013    2655   1158   VALLEY    1183  0.03500   ---    ----   -----  -----
--      --
        50B :  Subshed 50B
        50B   020   K100    7    0     79    292    1092    2726   1159   VALLEY    1240  0.03400   ---    ----   -----  -----
--      --
        51B :  Subshed 51B
        51B   020   K100    5    0     28    127    1120    2731   1160   -------   ----  -------   ---    ----   -----  -----
--      --
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------------
-------|
        52E :  Subshed 52E
        52E :  Clearing Hydrograph Bank:  E
        52E   020   K100    9    0     79    254      79     254   1153   MOUNTAIN   782  0.06000   ---    ----   -----  -----
--      --
        53E :  Subshed 53E
        53E   030   K100    5    0     25    107     104     325   1156   -------   ----  -------   ---    ----   -----  -----
--      --
        54BE  ---   ---    --   --    104    325    1224    2947   1160   VALLEY     853  0.04000   ---    ----   -----  -----
--      --
        55B :  Subshed 55B
        55B   020   K100    5    0     14     64    1238    2937   1160   -------   ----  -------   ---    ----   -----  -----
--      --
        56F :  Subshed 56F
        56F   020   K100    6    0     87    352      87     352   1153   VALLEY    1222  0.04800   ---    ----   -----  -----
--      --
        57F :  Subshed 57F
        57F   030   K100    5    0     30    129     117     426   1155   -------   ----  -------   ---    ----   -----  -----
--      --
        58BF  ---   ---    --   --    117    426    1355    3116   1160   MOUNTAIN  1584  0.06300   ---    ----   -----  -----
--      --
```

```
     59B :  Subshed 59B
     59B   020    K100     5    0      40     182      1395     3105    1161    -------    ----  -------    ---     ----    -----  -----
--     --
     60AB  ---    ---     --   --    1395    3105      3118     6657    1162    VALLEY     1530  0.02400    ---     ----    -----  -----
--     --
     61A :  Subshed 61A - START OF LOWER WATERSHED
     61A   020    K100     7    0      55     203      3173     6660    1163    -------    ----  -------    ---     ----    -----  -----
--     --
     62A :  Subshed 62A
     62A   020    K100     6    0      80     324      3253     6699    1163    VALLEY     1254  0.01800    ---     ----    -----  -----
--     --
     63A :  Subshed 63A
     63A   010    K100     6    0      41     176      3294     6700    1164    -------    ----  -------    ---     ----    -----  -----
--     --
     64B :  Subshed 64B
     64B   020    K100     5    0      66     300        66      300    1153    MOUNTAIN   1577  0.07600    ---     ----    -----  -----
--     --
     65B :  Subshed 65B
     65B   020    K100     6    0      49     198       115      383    1155    -------    ----  -------    ---     ----    -----  -----
--     --
     66AB  ---    ---     --   --     115     383      3409     6798    1164    VALLEY      885  0.02400    ---     ----    -----  -----
--     --
     67A :  Subshed 67A
     67A   010    K100     5    0      24     115      3433     6785    1164    -------    ----  -------    ---     ----    -----  -----
--     --
     68A :  Subshed 68A
     68A   030    K100     6    0      57     218      3490     6809    1164    VALLEY     1682  0.01400    ---     ----    -----  -----
--     --
     69A :  Subshed 69A
     69A   020    K100     8    0      50     171      3540     6802    1166    -------    ----  -------    ---     ----    -----  -----
--     --
     70C :  Subshed 70C
     70C :  Clearing Hydrograph Bank:  C
     70C   020    K100     5    0      58     264        58      264    1153    MOUNTAIN   1208  0.05000    ---     ----    -----  -----
--     --
     71C :  Subshed 71C
     71C   020    K100     6    0      75     304       133      451    1154    VALLEY     1403  0.04800    ---     ----    -----  -----
--     --
     72C :  Subshed 72C
     72C   020    K100     7    0      74     273       207      676    1155    -------    ----  -------    ---     ----    -----  -----
--     --
     73C :  Subshed 73C
     73C   020    K100     6    0      54     219       261      863    1155    VALLEY      814  0.02700    ---     ----    -----  -----
--     --
     74C :  Subshed 74C
     74C   020    K100     5    0      20      91       281      911    1156    -------    ----  -------    ---     ----    -----  -----
--     --
     75C :  Subshed 75C
     75C   020    K100     7    0      43     159       324     1044    1156    VALLEY     1738  0.03400    ---     ----    -----  -----
--     --
     76C :  Subshed 76C
     76C   020    K100     8    0      89     305       413     1243    1157    -------    ----  -------    ---     ----    -----  -----
--     --
     77AC  ---    ---     --   --     413    1243      3953     7221    1165    VALLEY     1110  0.01900    ---     ----    -----  -----
--     --
♀
```

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|   TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     78A :  Subshed 78A
     78A   030   K100    7    0     30    104     3983    7218   1166   -------    ----  -------    ---     ----    -----  -----
--     --
     79A :  Subarea 79A
     79A   020   K100    5    0     41    186     4024    7234   1166   VALLEY     2463  0.01700    ---     ----    -----  -----
--     --
     80A :  Subshed 80A
     80A   020   K100    6    0     83    336     4107    7221   1168   -------    ----  -------    ---     ----    -----  -----
--     --
     81D :  Subshed 81D
     81D :  Clearing Hydrograph Bank:  D
     81D   020   K100    6    0     51    206       51     206   1153   MOUNTAIN   1093  0.07600    ---     ----    -----  -----
--     --
     82D :  Subshed 82D
     82D   020   K100    6    0     47    190       98     337   1155   -------    ----  -------    ---     ----    -----  -----
--     --
     83AD  ---   ---    --   --     98    337     4205    7267   1168   VALLEY      977  0.03300    ---     ----    -----  -----
--     --
     84A :  Subarea 84A
     84A   020   K100    5    0     46    209     4251    7275   1169   -------    ----  -------    ---     ----    -----  -----
--     --
     85A :  Subarea 85A
     85A   020   K100    7    0     67    247     4318    7300   1169   VALLEY     1211  0.00700    ---     ----    -----  -----
--     --
     86A :  Subarea 86A
     86A   020   K100    6    0     33    134     4351    7276   1170   -------    ----  -------    ---     ----    -----  -----
--     --
     87A :  Subarea 87A
     87A   020   K100    5    0     93    423     4444    7302   1170   VALLEY      524  0.01100    ---     ----    -----  -----
--     --
     88A :  Subarea 88A
     88A   040   K100    5    0      5     20     4449    7300   1171   -------    ----  -------    ---     ----    -----  -----
--     --
     89A   ---   ---    --   --    ---    ---     4449    7300   1171   -------    ----  -------    ---     ----    -----  -----
--     --
     90E :  Subshed 90E
     90E :  Clearing Hydrograph Bank:  E
     90E   020   K100    5    0     39    177       39     177   1153   MOUNTAIN   1621  0.05900    ---     ----    -----  -----
--     --
     91E :  Subshed 91E
     91E   020   K100    7    0     59    218       98     305   1155   -------    ----  -------    ---     ----    -----  -----
--     --
     92AE  ---   ---    --   --     98    305     4547    7341   1171   VALLEY      926  0.01100    ---     ----    -----  -----
--     --
     93A :  Subshed 93A
     93A   030   K100    5    0     22     94     4569    7333   1172   -------    ----  -------    ---     ----    -----  -----
--     --
     94A :  Subshed 94A
     94A   020   K100    5    0     61    277     4630    7350   1172   -------    ----  -------    ---     ----    -----  -----
--     --
     95A :  Subshed 95A
     95A   020   K100    8    0     75    257     4705    7369   1172   VALLEY     1651  0.01600    ---     ----    -----  -----
```

```
--      --
     96F :  Subshed 96F
     96F :  Clearing Hydrograph Bank:  F
     96F   030   K100    5    0     39    167      39     167   1153    MOUNTAIN   1064  0.05300    ---     ----    -----  -----
--      --
     97F :  Subshed 97F
     97F   020   K100    6    0     33    134      72     233   1155    -------    ----  -------    ---     ----    -----  -----
--      --
     98F :  Subshed 98F
     98F   020   K100    7    0     50    185     122     414   1155    MOUNTAIN    595  0.09400    ---     ----    -----  -----
--      --
     99F :  Subshed 99F
     99F   020   K100    6    0     36    146     158     531   1155    VALLEY     1714  0.04600    ---     ----    -----  -----
--      --
    100F :  Subshed 100F
    100F   020   K100    7    0     48    177     206     633   1156    -------    ----  -------    ---     ----    -----  -----
--      --
    101AF  ---   ---    --   --    206    633    4911    7433   1173    VALLEY     1147  0.01000    ---     ----    -----  -----
--      --
    102A :  Subshed 102A
    102A   020   K100    7    0     42    155    4953    7423   1174    VALLEY     1111  0.01800    ---     ----    -----  -----
--      --
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
    103A :  Subshed 103A
    103A   020   K100    7    0     65    240    5018    7429   1175    -------    ----  -------    ---     ----    -----  -----
--      --
    104A :  Subshed 104A
    104A   020   K100    7    0     82    303    5100    7450   1175    VALLEY     1606  0.01800    ---     ----    -----  -----
--      --
    105A :  Subshed 105A
    105A   030   K100    7    0     60    209    5160    7439   1177    -------    ----  -------    ---     ----    -----  -----
--      --
    106A :  Subshed 106A
    106A   020   K100    9    0     69    222    5229    7455   1177    VALLEY     1408  0.02100    ---     ----    -----  -----
--      --
    107A :  Subshed 107A
    107A   030   K100    7    0     58    202    5287    7448   1178    -------    ----  -------    ---     ----    -----  -----
--      --
    108A :  Subshed 108A
    108A   030   K100    5    0     31    133    5318    7451   1178    VALLEY     1467  0.01500    ---     ----    -----  -----
--      --
    109A :  Subshed 109A
    109A   030   K100    6    0     42    160    5360    7441   1179    VALLEY     2733  0.01400    ---     ----    -----  -----
--      --
    110A :  Subshed 110A
    110A   030   K100    9    0     73    221    5433    7402   1182    VALLEY     3056  0.01300    ---     ----    -----  -----
--      --
```

```
     111A :  Subshed 111A
     111A   030   K100   21    0     56    101     5489    7354   1185    -------    ----  -------   ---     ----    -----  -----
--     --
     112B :  Subshed 112B
     112B :  Clearing Hydrograph Bank:  B
     112B   030   K100   12    0     50    127       50     127   1154    VALLEY     2779  0.01700   ---     ----    -----  -----
--     --
     113B :  Subshed 113B
     113B   040   K100   21    0     43     72       93     168   1164    -------    ----  -------   ---     ----    -----  -----
--     --
     114AB  ---   ---    --   --     93    168     5582    7377   1185    -------    ----  -------   ---     ----    -----  -----
--     --
            ***********************************************************************************************
            *      INCOMING HYDROGRAPH  PEAK (cfs):   7377.02         VOLUME (acre-ft):    890.60      *
            *      HYDROGRAPH ADJUSTMENT FACTOR:         0.79400                                      *
            *      ADJUSTED HYDROGRAPH  PEAK (cfs):   5857.35         VOLUME (acre-ft):    707.14      *
            *      RUNOFF FACTOR(in):   5.51      TOTAL RAIN(in):  10.75      SCS Curve: 60           *
            *      FATTENED HYDROGRAPH  PEAK (cfs):   5857.35         VOLUME (acre-ft):   2561.82      *
            ***********************************************************************************************
     114A   ---   ---    --   --    ---    ---     5582    5857   ----    -------    ----  -------   ---     ----    -----  -----
--     --
     115A   ---   ---    --   --    ---    ---     5582    5857   1185    VALLEY     1726  0.01000   ---     ----    -----  -----
--     --
     116A :  routing
     116A   ---   ---    --   --    ---    ---     5582    5856   1187    VALLEY     5400  0.01000   ---     ----    -----  -----
--     --
     117A :  SC RIVER
     117A   ---   ---    --   --    ---    ---     5582    5839   1194    -------    ----  -------   ---     ----    -----  -----
--     --
     118A   ---   ---    --   --    ---    ---     5582    5839   1194    -------    ----  -------   ---     ----    -----  -----
--     --
```

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE
Caution	Err1008	SUBAREA	88A	TC and Area are set to minimum values(5). May be an attempt to run the model on a smaller area than acceptable to VCRat.

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Hydrograph Printouts

```
------------------------------------------------------------------------------------------------
            HYDROGRAPH PRINTOUT AT:    2A
------------------------------------------------------------------------------------------------
            DESCRIPTION: Subshed 2A
            TOTAL AREA TO HYDROGRAPH:     164    acres
            HYDROGRAPH PEAK:              506    cfs
            TIME OF PEAK:                1156    minutes
            HYDROGRAPH VOLUME:             35.60 acre-ft
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TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.40	200	0.40	300	2.61	400	3.28

500	4.21	600	6.18	700	7.36	800	9.81	900	16.11
1000	27.89	1050	41.57	1100	47.99	1110	71.76	1120	71.82
1130	99.90	1131	102.34	1132	104.66	1133	108.00	1134	111.14
1135	113.66	1136	114.02	1137	118.10	1138	121.17	1139	124.18
1140	128.27	1141	134.61	1142	139.24	1143	144.13	1144	150.62
1145	163.40	1146	172.58	1147	183.42	1148	196.10	1149	234.08
1150	273.65	1151	288.68	1152	376.35	1153	432.08	1154	469.42
1155	496.67	1156	506.39	1157	503.02	1158	466.29	1159	425.71
1160	413.88	1161	322.12	1162	264.78	1163	230.89	1164	196.89
1165	156.93	1166	129.83	1167	110.97	1168	98.12	1169	89.79
1170	80.35	1171	75.74	1172	71.36	1173	63.50	1174	62.13
1175	59.20	1176	57.23	1177	53.66	1178	47.95	1179	48.73
1180	46.61	1181	44.82	1182	43.38	1183	41.39	1184	40.76
1185	40.11	1186	39.53	1187	39.52	1188	39.08	1189	38.72
1190	38.01	1191	38.01	1192	38.03	1193	37.97	1194	37.86
1195	38.22	1196	37.64	1197	37.65	1198	37.65	1199	37.66
1200	37.66	1201	37.13	1202	36.55	1203	35.47	1204	34.81
1205	34.05	1206	32.68	1207	31.71	1208	30.65	1209	29.54
1210	28.97	1211	27.84	1212	27.77	1213	27.21	1214	26.68
1215	26.35	1216	26.17	1217	26.55	1218	25.88	1219	25.83
1220	26.38	1221	26.40	1222	25.84	1223	25.81	1224	26.43
1225	26.50	1226	25.92	1227	25.86	1228	26.47	1229	26.53
1230	25.94	1231	25.88	1232	26.48	1233	26.03	1234	25.44
1235	25.88	1236	25.90	1237	25.34	1238	25.23	1239	25.15
1240	25.10	1241	25.05	1242	24.96	1243	24.82	1244	24.78
1245	24.76	1246	24.67	1247	24.68	1248	24.68	1249	24.62
1250	24.64	1251	24.65	1252	24.60	1253	24.62	1254	24.64
1255	24.59	1256	24.62	1257	24.64	1258	24.59	1259	24.61
1260	24.64	1261	24.58	1262	23.60	1263	23.12	1264	23.06
1265	22.45	1266	21.67	1267	20.82	1268	20.05	1269	19.75
1270	18.82	1271	18.42	1272	18.58	1273	18.20	1274	17.28
1275	16.94	1276	17.30	1277	17.23	1278	16.59	1279	16.44
1280	16.93	1281	16.97	1282	16.39	1283	16.30	1284	16.83
1285	16.90	1286	16.34	1287	16.26	1288	16.80	1289	16.88
1290	16.33	1291	16.25	1292	16.80	1293	16.36	1294	16.32
1295	16.25	1296	16.74	1297	16.76	1298	16.22	1299	16.17
1300	16.74	1310	10.59	1320	7.12	1330	6.46	1340	6.48
1350	5.13	1360	2.43	1370	0.80	1380	0.46	1390	0.41
1400	0.40	1420	0.40	1440	0.40	1460	0.40	1500	0.40

HYDROGRAPH FATTENED AT 114A

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*****************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):   7377.02        VOLUME (acre-ft):    890.60      *
*      HYDROGRAPH ADJUSTMENT FACTOR:          0.79400                                    *
*      ADJUSTED HYDROGRAPH  PEAK (cfs):   5857.35        VOLUME (acre-ft):    707.14      *
*      RUNOFF FACTOR(in):   5.51      TOTAL RAIN(in):  10.75      SCS Curve: 60          *
*      FATTENED HYDROGRAPH  PEAK (cfs):   5857.35        VOLUME (acre-ft):   2561.82      *
*****************************************************************************************
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TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	6.40	5.08	55.08
200	6.40	5.08	123.68	300	6.68	5.30	148.90
400	9.01	7.15	184.46	500	16.55	13.14	237.37
600	27.62	21.93	314.23	700	38.02	30.19	426.74
800	55.52	44.08	610.88	900	129.53	102.85	968.12
1000	387.14	307.39	1737.42	1050	660.99	524.83	2420.12
1100	1016.07	806.76	3378.01	1110	1113.53	884.14	3614.14
1120	1241.65	985.87	3870.69	1130	1422.03	1129.09	4149.40
1131	1443.42	1146.07	4178.31	1132	1465.31	1163.46	4207.35
1133	1488.39	1181.78	4236.68	1134	1512.39	1200.84	4266.22
1135	1536.93	1220.33	4295.85	1136	1561.27	1239.65	4325.37
1137	1589.03	1261.69	4355.70	1138	1617.71	1284.46	4386.18
1139	1647.65	1308.24	4416.86	1140	1679.53	1333.55	4447.89
1141	1714.29	1361.15	4479.48	1142	1749.30	1388.94	4510.95
1143	1786.08	1418.15	4542.66	1144	1825.07	1449.11	4574.67
1145	1868.07	1483.25	4607.35	1146	1913.04	1518.95	4640.21
1147	1961.30	1557.27	4673.49	1148	2014.01	1599.12	4707.40
1149	2084.24	1654.89	4744.62	1150	2158.15	1713.57	4782.06
1151	2222.99	1765.06	4817.11	1152	2333.55	1852.84	4860.70
1153	2435.15	1933.51	4901.65	1154	2536.80	2014.22	4941.80
1155	2658.80	2111.09	4984.86	1156	2797.13	2220.92	5029.86
1157	2953.55	2345.12	5076.89	1158	3133.21	2487.77	5126.59
1159	3338.09	2650.44	5179.01	1160	3560.05	2826.68	5232.47
1161	3788.71	3008.24	5285.10	1162	4022.98	3194.25	5336.64
1163	4248.91	3373.64	5384.91	1164	4463.77	3544.23	5429.63
1165	4678.64	3714.84	5472.50	1166	4895.26	3886.84	5513.78
1167	5103.92	4052.51	5552.13	1168	5295.15	4204.35	5586.44
1169	5462.16	4336.95	5616.07	1170	5584.90	4434.41	5638.89
1171	5684.56	4513.54	5657.94	1172	5785.34	4593.56	5676.25
1173	5845.83	4641.59	5689.28	1174	5933.68	4711.34	5704.67
1175	6055.00	4807.67	5722.72	1176	6204.77	4926.59	5742.55
1177	6378.68	5064.67	5763.44	1178	6567.41	5214.53	5784.28
1179	6758.02	5365.86	5803.82	1180	6937.46	5508.35	5820.97
1181	7094.96	5633.40	5835.04	1182	7223.79	5735.69	5845.78
1183	7315.71	5808.67	5852.94	1184	7367.77	5850.01	5856.72
1185	7377.02	5857.35	5857.35	1186	7346.17	5832.86	5855.24
1187	7275.77	5776.96	5850.10	1188	7170.06	5693.03	5841.82
1189	7033.12	5584.30	5830.37	1190	6869.65	5454.50	5815.77
1191	6687.57	5309.93	5798.41	1192	6489.18	5152.41	5778.28

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1193	6280.59	4986.79	5755.74	1194	6065.78	4816.23	5731.03
1195	5848.11	4643.40	5704.41	1196	5630.05	4470.26	5676.09
1197	5414.13	4298.82	5646.30	1198	5201.80	4130.23	5615.24
1199	4993.81	3965.08	5582.99	1200	4791.51	3804.46	5549.78
1201	4595.42	3648.76	5515.71	1202	4406.83	3499.02	5481.02
1203	4225.65	3355.16	5445.79	1204	4052.36	3217.58	5410.14
1205	3885.72	3085.26	5374.01	1206	3726.33	2958.71	5337.57
1207	3575.02	2838.56	5301.01	1208	3430.84	2724.09	5264.29

1209	3292.65	2614.37	5227.34	1210	3162.32	2510.89	5190.52
1211	3037.73	2411.96	5153.57	1212	2919.57	2318.14	5116.70
1213	2807.81	2229.40	5079.98	1214	2701.37	2144.89	5043.31
1215	2600.46	2064.77	5006.79	1216	2505.10	1989.05	4970.50
1217	2414.42	1917.05	4934.35	1218	2328.58	1848.89	4898.43
1219	2247.03	1784.15	4862.72	1220	2170.13	1723.08	4827.31
1221	2096.90	1664.94	4792.11	1222	2027.67	1609.97	4757.20
1223	1961.91	1557.76	4722.55	1224	1899.73	1508.38	4688.22
1225	1840.43	1461.30	4654.10	1226	1784.19	1416.65	4620.29
1227	1730.77	1374.23	4586.76	1228	1679.88	1333.83	4553.49
1229	1631.41	1295.34	4520.48	1230	1584.85	1258.37	4487.67
1231	1540.61	1223.25	4455.15	1232	1498.54	1189.84	4422.95
1233	1458.54	1158.08	4391.05	1234	1420.28	1127.70	4359.41
1235	1384.11	1098.98	4328.13	1236	1349.39	1071.42	4297.09
1237	1316.07	1044.96	4266.29	1238	1284.50	1019.90	4235.83
1239	1254.47	996.05	4205.70	1240	1226.59	973.92	4176.07
1241	1200.09	952.87	4146.76	1242	1174.61	932.64	4117.69
1243	1150.43	913.44	4088.95	1244	1127.46	895.21	4060.52
1245	1105.85	878.04	4032.48	1246	1085.18	861.63	4004.72
1247	1065.49	846.00	3977.25	1248	1046.17	830.66	3949.91
1249	1027.17	815.57	3922.68	1250	1009.73	801.73	3895.97
1251	992.62	788.14	3869.39	1252	975.72	774.72	3842.91
1253	959.13	761.55	3816.59	1254	942.93	748.69	3790.43
1255	927.15	736.16	3764.46	1256	911.86	724.01	3738.71
1257	897.07	712.27	3713.18	1258	882.82	700.96	3687.90
1259	869.14	690.10	3662.88	1260	856.04	679.69	3638.13
1261	843.53	669.76	3613.66	1262	831.62	660.31	3589.49
1263	820.32	651.34	3565.61	1264	809.62	642.84	3542.03
1265	799.51	634.81	3518.76	1266	789.97	627.23	3495.79
1267	780.95	620.08	3473.11	1268	772.43	613.31	3450.72
1269	764.35	606.89	3428.60	1270	756.64	600.77	3406.73
1271	749.22	594.88	3385.07	1272	741.99	589.14	3363.61
1273	734.89	583.50	3342.31	1274	727.91	577.96	3321.17
1275	721.07	572.53	3300.20	1276	714.32	567.17	3279.38
1277	707.56	561.81	3258.68	1278	700.74	556.39	3238.06
1279	693.81	550.89	3217.52	1280	686.77	545.30	3197.05
1281	679.63	539.63	3176.66	1282	672.88	534.26	3156.53
1283	666.43	529.15	3136.64	1284	659.79	523.87	3116.78
1285	653.01	518.49	3096.98	1286	646.15	513.05	3077.27
1287	639.26	507.57	3057.64	1288	632.36	502.10	3038.13
1289	625.48	496.63	3018.73	1290	618.63	491.19	2999.45

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1291	611.82	485.78	2980.31	1292	605.08	480.43	2961.29
1293	598.41	475.14	2942.42	1294	591.84	469.92	2923.69
1295	585.37	464.79	2905.12	1296	579.04	459.76	2886.72
1297	572.86	454.85	2868.49	1298	566.85	450.08	2850.43
1299	561.01	445.44	2832.57	1300	555.38	440.97	2814.89
1310	509.61	404.63	2648.87	1320	474.82	377.01	2498.46
1330	440.92	350.09	2358.30	1340	404.72	321.35	2225.92
1350	368.63	292.69	2101.69	1360	326.79	259.47	1981.65
1370	286.02	227.10	1868.74	1380	248.94	197.66	1763.92

1390	216.67	172.04	1667.42	1400	189.83	150.72	1579.24
1420	150.28	119.32	1425.35	1440	121.49	96.46	1294.46
1460	94.64	75.14	1178.65	1500	59.13	46.95	992.23

HYDROGRAPH PRINTOUT AT: 117A

DESCRIPTION: SC RIVER
TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 5839 cfs
TIME OF PEAK: 1194 minutes
HYDROGRAPH VOLUME: 2540.66 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	55.08	200	96.55	300	145.72	400	170.91
500	224.36	600	293.76	700	401.27	800	571.68	900	901.22
1000	1615.83	1050	2243.45	1100	3158.13	1110	3370.28	1120	3607.16
1130	3869.90	1131	3897.24	1132	3924.68	1133	3952.20	1134	3979.82
1135	4007.76	1136	4035.83	1137	4064.11	1138	4092.75	1139	4121.85
1140	4151.18	1141	4180.72	1142	4210.46	1143	4240.42	1144	4270.62
1145	4301.09	1146	4331.83	1147	4362.86	1148	4394.16	1149	4425.72
1150	4457.57	1151	4489.72	1152	4522.19	1153	4555.06	1154	4588.48
1155	4622.62	1156	4657.55	1157	4693.42	1158	4730.44	1159	4768.59
1160	4807.78	1161	4848.10	1162	4889.74	1163	4932.96	1164	4977.96
1165	5024.83	1166	5073.40	1167	5123.21	1168	5173.62	1169	5223.86
1170	5273.31	1171	5321.56	1172	5368.26	1173	5413.01	1174	5455.24
1175	5494.33	1176	5529.83	1177	5561.66	1178	5589.97	1179	5615.24
1180	5638.33	1181	5660.14	1182	5681.37	1183	5702.37	1184	5723.14
1185	5743.43	1186	5762.80	1187	5780.76	1188	5796.83	1189	5810.63
1190	5821.89	1191	5830.46	1192	5836.26	1193	5839.21	1194	5839.25
1195	5836.34	1196	5830.47	1197	5821.69	1198	5810.07	1199	5795.75
1200	5778.88	1201	5759.63	1202	5738.19	1203	5714.76	1204	5689.54
1205	5662.69	1206	5634.40	1207	5604.82	1208	5574.14	1209	5542.49
1210	5510.01	1211	5476.81	1212	5443.00	1213	5408.71	1214	5374.00
1215	5338.94	1216	5303.63	1217	5268.14	1218	5232.49	1219	5196.76
1220	5161.02	1221	5125.28	1222	5089.57	1223	5053.97	1224	5018.48
1225	4983.11	1226	4947.90	1227	4912.90	1228	4878.09	1229	4843.49
1230	4809.11	1231	4774.97	1232	4741.08	1233	4707.43	1234	4674.03
1235	4640.88	1236	4607.98	1237	4575.33	1238	4542.93	1239	4510.80
1240	4478.93	1241	4447.33	1242	4416.00	1243	4384.94	1244	4354.16
1245	4323.66	1246	4293.46	1247	4263.58	1248	4234.03	1249	4204.81
1250	4175.89	1251	4147.28	1252	4118.94	1253	4090.89	1254	4063.28
1255	4035.91	1256	4008.69	1257	3981.65	1258	3954.94	1259	3928.44
1260	3902.11	1261	3875.95	1262	3849.94	1263	3824.07	1264	3798.37
1265	3772.83	1266	3747.49	1267	3722.36	1268	3697.64	1269	3673.45
1270	3649.45	1271	3625.67	1272	3602.09	1273	3578.71	1274	3555.55
1275	3532.61	1276	3509.90	1277	3487.43	1278	3465.18	1279	3443.77
1280	3422.65	1281	3401.70	1282	3380.87	1283	3360.12	1284	3339.44
1285	3318.82	1286	3298.26	1287	3277.78	1288	3257.37	1289	3237.44
1290	3218.06	1291	3198.61	1292	3179.12	1293	3159.64	1294	3140.16

1295	3120.72	1296	3101.33	1297	3082.00	1298	3062.74	1299	3043.57
1300	3024.50	1310	2842.74	1320	2676.88	1330	2524.93	1340	2385.10
1350	2257.41	1360	2135.72	1370	2016.19	1380	1903.06	1390	1797.49
1400	1700.65	1420	1537.62	1440	1392.02	1460	1265.95	1500	1061.50

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 118A

TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 5839 cfs
TIME OF PEAK: 1194 minutes
HYDROGRAPH VOLUME: 2540.66 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	55.08	200	96.55	300	145.72	400	170.91
500	224.36	600	293.76	700	401.27	800	571.68	900	901.22
1000	1615.83	1050	2243.45	1100	3158.13	1110	3370.28	1120	3607.16
1130	3869.90	1131	3897.24	1132	3924.68	1133	3952.20	1134	3979.82
1135	4007.76	1136	4035.83	1137	4064.11	1138	4092.75	1139	4121.85
1140	4151.18	1141	4180.72	1142	4210.46	1143	4240.42	1144	4270.62
1145	4301.09	1146	4331.83	1147	4362.86	1148	4394.16	1149	4425.72
1150	4457.57	1151	4489.72	1152	4522.19	1153	4555.06	1154	4588.48
1155	4622.62	1156	4657.55	1157	4693.42	1158	4730.44	1159	4768.59
1160	4807.78	1161	4848.10	1162	4889.74	1163	4932.96	1164	4977.96
1165	5024.83	1166	5073.40	1167	5123.21	1168	5173.62	1169	5223.86
1170	5273.31	1171	5321.56	1172	5368.26	1173	5413.01	1174	5455.24
1175	5494.33	1176	5529.83	1177	5561.66	1178	5589.97	1179	5615.24
1180	5638.33	1181	5660.14	1182	5681.37	1183	5702.37	1184	5723.14
1185	5743.43	1186	5762.80	1187	5780.76	1188	5796.83	1189	5810.63
1190	5821.89	1191	5830.46	1192	5836.26	1193	5839.21	1194	5839.25
1195	5836.34	1196	5830.47	1197	5821.69	1198	5810.07	1199	5795.75
1200	5778.88	1201	5759.63	1202	5738.19	1203	5714.76	1204	5689.54
1205	5662.69	1206	5634.40	1207	5604.82	1208	5574.14	1209	5542.49
1210	5510.01	1211	5476.81	1212	5443.00	1213	5408.71	1214	5374.00
1215	5338.94	1216	5303.63	1217	5268.14	1218	5232.49	1219	5196.76
1220	5161.02	1221	5125.28	1222	5089.57	1223	5053.97	1224	5018.48
1225	4983.11	1226	4947.90	1227	4912.90	1228	4878.09	1229	4843.49
1230	4809.11	1231	4774.97	1232	4741.08	1233	4707.43	1234	4674.03
1235	4640.88	1236	4607.98	1237	4575.33	1238	4542.93	1239	4510.80
1240	4478.93	1241	4447.33	1242	4416.00	1243	4384.94	1244	4354.16
1245	4323.66	1246	4293.46	1247	4263.58	1248	4234.03	1249	4204.81
1250	4175.89	1251	4147.28	1252	4118.94	1253	4090.89	1254	4063.28
1255	4035.91	1256	4008.69	1257	3981.65	1258	3954.94	1259	3928.44
1260	3902.11	1261	3875.95	1262	3849.94	1263	3824.07	1264	3798.37
1265	3772.83	1266	3747.49	1267	3722.36	1268	3697.64	1269	3673.45
1270	3649.45	1271	3625.67	1272	3602.09	1273	3578.71	1274	3555.55
1275	3532.61	1276	3509.90	1277	3487.43	1278	3465.18	1279	3443.77
1280	3422.65	1281	3401.70	1282	3380.87	1283	3360.12	1284	3339.44
1285	3318.82	1286	3298.26	1287	3277.78	1288	3257.37	1289	3237.44
1290	3218.06	1291	3198.61	1292	3179.12	1293	3159.64	1294	3140.16
1295	3120.72	1296	3101.33	1297	3082.00	1298	3062.74	1299	3043.57

1300	3024.50	1310	2842.74	1320	2676.88	1330	2524.93	1340	2385.10
1350	2257.41	1360	2135.72	1370	2016.19	1380	1903.06	1390	1797.49
1400	1700.65	1420	1537.62	1440	1392.02	1460	1265.95	1500	1061.50

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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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VCRat Model Input

Model Lines

```
005  4492  001A Header place holder
005  4492  002A Header place holder
005  4492  114ABHeader place holder
005  4492  117A Header place holder
005  4492  118A Header place holder
999
999
006  4492  001A 010000008510B98101635017400                    G1
006  4492  002A 020000007909B98101750007500                  1
006  4492  003A 020000007305B98
006  4492  004B 010000008809B98
006  4492  005B 010000005407B98102148014200
006  4492  006B 020000008010B98
006  4492  007AB010          A97102215005500
006  4492  008A 020000009407B98
006  4492  009C 020000007906B98102067040700
006  4492  010C 020000005107B98
006  4492  011C 010000007306B98101977017500
006  4492  012C 020000010805B98101913008800
006  4492  013C 020000008712B98
006  4492  014AC010          A97201101004000
006  4492  015A 030000003005B98
006  4492  016D 020000008007B98100830005800
006  4492  017D 030000001205B98
006  4492  018AD010          A97202430003600
006  4492  019A 030000006607B98
006  4492  020E 020000007105B98101615006100
006  4492  021E 020000003905B98
006  4492  022E 020000006805B98201242004700
006  4492  023E 020000005005B98
006  4492  024AE010          A97200818002600
006  4492  025A 030000001805B98
006  4492  026A 020000005607B98200790002700
006  4492  027A 020000007906B98200950002400
006  4492  028A 020000006410B98201069002600
006  4492  029A 020000004607B98
006  4492  030A 020000004005B98201537002900
006  4492  031A 020000005307B98
006  4492  032B 010000009907B98100735011200                    B
006  4492  033B 020000004707B98
006  4492  034B 020000003606B98101710005700
006  4492  035B 020000007809B98
006  4492  036B 020000010009B98100736005200
006  4492  037B 020000001305B98
006  4492  038B 020000007109B98201438003500
006  4492  039B 020000004907B98
006  4492  040C 020000008710B98102063016300                    C
006  4492  041C 020000007610B98
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006  4492  042C 010000010712B98101338008100
006  4492  043C 010000002305B98
006  4492  044D 020000008009B98101840008300
006  4492  045D 020000005405B98
♀
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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006  4492  046CD010          A97101426005600
006  4492  047C 020000004307B98
006  4492  048BC010          A97200768002900
006  4492  049B 020000005007B98201183003500
006  4492  050B 020000007907B98201240003400
006  4492  051B 020000002805B98
006  4492  052E 020000007909B98100782006000                    E
006  4492  053E 030000002505B98
006  4492  054BE010          A97200853004000
006  4492  055B 020000001405B98
006  4492  056F 020000008706B98201222004800
006  4492  057F 030000003005B98
006  4492  058BF010          A97101584006300
006  4492  059B 020000004005B98
006  4492  060AB010          A97201530002400
006  4492  061A 020000005507B98
006  4492  062A 020000008006B98201254001800
006  4492  063A 010000004106B98
006  4492  064B 020000006605B98101577007600
006  4492  065B 020000004906B98
006  4492  066AB010          A97200885002400
006  4492  067A 010000002405B98
006  4492  068A 030000005706B98201682001400
006  4492  069A 020000005008B98
006  4492  070C 020000005805B98101208005000                    C
006  4492  071C 020000007506B98201403004800
006  4492  072C 020000007407B98
006  4492  073C 020000005406B98200814002700
006  4492  074C 020000002005B98
006  4492  075C 020000004307B98201738003400
006  4492  076C 020000008908B98
006  4492  077AC010          A97201110001900
006  4492  078A 030000003007B98
006  4492  079A 020000004105B98202463001700
006  4492  080A 020000008306B98
006  4492  081D 020000005106B98101093007600                    D
006  4492  082D 020000004706B98
006  4492  083AD010          A97200977003300
006  4492  084A 020000004605B98
006  4492  085A 020000006707B98201211000700
006  4492  086A 020000003306B98
006  4492  087A 020000009305B98200524001100
006  4492  088A 040000000505B98
006  4492  089A 010       099A97
006  4492  090E 020000003905B98101621005900                    E
006  4492  091E 020000005907B98
006  4492  092AE010          A97200926001100
006  4492  093A 030000002205B98
006  4492  094A 020000006105B98
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006  4492  095A 020000007508B98201651001600
006  4492  096F 030000003905B98101064005300                    F
006  4492  097F 020000003306B98
♀
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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006  4492  098F 020000005007B98100595009400
006  4492  099F 020000003606B98201714004600
006  4492  100F 020000004807B98
006  4492  101AF010          A97201147001000
006  4492  102A 020000004207B98201111001800
006  4492  103A 020000006507B98
006  4492  104A 020000008207B98201606001800
006  4492  105A 030000006007B98
006  4492  106A 020000006909B98201408002100
006  4492  107A 030000005807B98
006  4492  108A 030000003105B98201467001500
006  4492  109A 030000004206B98202733001400
006  4492  110A 030000007309B98203056001300
006  4492  111A 030000005621B98
006  4492  112B 030000005012B98202779001700                    B
006  4492  113B 040000004321B98
006  4492  114AB010          A97                              1
110
111            0.79400    5.51
110
006  4492  115A 010       099A97201726001000
006  4492  116A 010       099A97205400001000
006  4492  117A 010       099A97                              1
006  4492  118A 010       099A97                              1  2
999
```

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	115.	3433.	6785.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	218.	3490.	6809.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	171.	3540.	6802.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	264.	58.	264.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	304.	133.	451.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	273.	207.	676.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	219.	261.	863.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	91.	281.	911.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	159.	324.	1044.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	305.	413.	1243.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1243.	3953.	7221.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	104.	3983.	7218.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	186.	4024.	7234.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	336.	4107.	7221.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	206.	51.	206.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	190.	98.	337.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	337.	4205.	7267.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	209.	4251.	7275.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	247.	4318.	7300.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	134.	4351.	7276.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	423.	4444.	7302.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	20.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	177.	39.	177.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	218.	98.	305.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	305.	4547.	7341.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	94.	4569.	7333.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	277.	4630.	7350.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	257.	4705.	7369.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	167.	39.	167.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	134.	72.	233.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	185.	122.	414.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	146.	158.	531.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	177.	206.	633.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

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Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	633.	4911.	7433.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	155.	4953.	7423.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	240.	5018.	7429.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00

4492	104A	82.	303.	5100.	7450.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	209.	5160.	7439.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	222.	5229.	7455.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	202.	5287.	7448.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	133.	5318.	7451.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	160.	5360.	7441.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	221.	5433.	7402.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	101.	5489.	7354.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	127.	50.	127.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	72.	93.	168.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	168.	5582.	7377.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	7357.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	7193.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	238.	85.	238.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	216.	164.	430.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	284.	237.	525.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	260.	88.	260.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	182.	142.	442.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	207.	222.	605.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	605.	459.	1122.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	296.	553.	1162.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	273.	79.	273.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	160.	130.	413.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	269.	203.	654.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	421.	311.	917.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	200.	398.	1028.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1028.	951.	2190.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	110.	981.	2162.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	252.	80.	252.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	44.	92.	274.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	274.	1073.	2358.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	195.	1139.	2341.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	276.	71.	276.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	152.	110.	314.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	265.	178.	522.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	195.	228.	627.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	627.	1367.	2661.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	66.	1385.	2666.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	176.	1441.	2715.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	273.	1520.	2758.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	166.	1584.	2851.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	145.	1630.	2855.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	156.	1670.	2873.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	167.	1723.	2885.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	334.	99.	334.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	148.	146.	475.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	125.	182.	585.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	213.	260.	710.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	273.	360.	962.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	51.	373.	947.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	194.	444.	1102.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	154.	493.	1170.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	225.	87.	225.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	197.	163.	388.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	268.	270.	648.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00

4492	43C	23.	95.	293.	657.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	218.	80.	218.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	210.	134.	319.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	319.	427.	972.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	135.	470.	999.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	999.	963.	2169.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	157.	1013.	2191.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	249.	1092.	2245.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	109.	1120.	2246.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	216.	79.	216.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	92.	104.	274.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	274.	1224.	2430.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	55.	1238.	2424.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	301.	87.	301.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	110.	117.	361.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	361.	1355.	2560.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	156.	1395.	2551.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2551.	3118.	5431.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	173.	3173.	5421.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	277.	3253.	5452.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	151.	3294.	5453.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	257.	66.	257.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	170.	115.	320.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	320.	3409.	5525.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	99.	3433.	5528.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	185.	3490.	5542.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	146.	3540.	5527.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	226.	58.	226.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	260.	133.	380.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	233.	207.	566.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	187.	261.	725.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	78.	281.	765.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	135.	324.	878.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	259.	413.	1033.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1033.	3953.	5852.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	89.	3983.	5842.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	160.	4024.	5852.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	287.	4107.	5834.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	176.	51.	176.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	163.	98.	282.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	282.	4205.	5869.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	179.	4251.	5866.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	211.	4318.	5881.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	114.	4351.	5866.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	362.	4444.	5884.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	17.	4449.	5876.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	5876.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	152.	39.	152.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	186.	98.	254.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	254.	4547.	5907.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	81.	4569.	5895.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	238.	4630.	5905.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	218.	4705.	5919.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	143.	39.	143.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	114.	72.	195.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00

4492	98F	50.	157.	122.	349.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	125.	158.	447.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	151.	206.	526.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

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Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	526.	4911.	5960.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	132.	4953.	5951.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	204.	5018.	5950.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	258.	5100.	5962.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	178.	5160.	5946.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	188.	5229.	5955.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	172.	5287.	5946.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	114.	5318.	5946.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	137.	5360.	5932.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	187.	5433.	5894.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	84.	5489.	5844.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	108.	50.	108.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	60.	93.	138.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	138.	5582.	5861.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	5841.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5690.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.

1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	8.
500	12.	600	22.	700	33.	800	48.	900	101.
1000	315.	1050	550.	1100	894.	1110	971.	1120	1062.
1130	1184.	1131	1198.	1132	1213.	1133	1228.	1134	1243.
1135	1258.	1136	1274.	1137	1291.	1138	1308.	1139	1325.
1140	1344.	1141	1363.	1142	1383.	1143	1404.	1144	1426.
1145	1448.	1146	1472.	1147	1497.	1148	1524.	1149	1552.
1150	1581.	1151	1612.	1152	1645.	1153	1680.	1154	1718.
1155	1758.	1156	1802.	1157	1851.	1158	1905.	1159	1966.
1160	2036.	1161	2115.	1162	2204.	1163	2305.	1164	2421.
1165	2555.	1166	2710.	1167	2887.	1168	3083.	1169	3297.
1170	3523.	1171	3757.	1172	3996.	1173	4237.	1174	4473.
1175	4698.	1176	4906.	1177	5094.	1178	5261.	1179	5410.
1180	5549.	1181	5687.	1182	5830.	1183	5983.	1184	6148.
1185	6320.	1186	6494.	1187	6663.	1188	6819.	1189	6954.
1190	7062.	1191	7140.	1192	7183.	1193	7193.	1194	7169.
1195	7113.	1196	7029.	1197	6921.	1198	6791.	1199	6644.
1200	6484.	1201	6314.	1202	6137.	1203	5955.	1204	5771.
1205	5587.	1206	5404.	1207	5222.	1208	5044.	1209	4869.
1210	4699.	1211	4534.	1212	4374.	1213	4219.	1214	4070.
1215	3925.	1216	3787.	1217	3654.	1218	3527.	1219	3404.
1220	3287.	1221	3174.	1222	3067.	1223	2964.	1224	2866.
1225	2771.	1226	2681.	1227	2595.	1228	2513.	1229	2435.
1230	2359.	1231	2287.	1232	2219.	1233	2153.	1234	2091.
1235	2031.	1236	1973.	1237	1918.	1238	1866.	1239	1815.
1240	1767.	1241	1721.	1242	1677.	1243	1634.	1244	1594.
1245	1555.	1246	1517.	1247	1481.	1248	1447.	1249	1413.
1250	1382.	1251	1352.	1252	1323.	1253	1295.	1254	1269.
1255	1243.	1256	1219.	1257	1195.	1258	1173.	1259	1151.
1260	1130.	1261	1110.	1262	1091.	1263	1072.	1264	1054.
1265	1036.	1266	1019.	1267	1004.	1268	988.	1269	973.
1270	958.	1271	943.	1272	930.	1273	917.	1274	904.
1275	891.	1276	879.	1277	867.	1278	856.	1279	845.
1280	834.	1281	824.	1282	814.	1283	805.	1284	796.
1285	787.	1286	778.	1287	770.	1288	762.	1289	754.
1290	746.	1291	739.	1292	731.	1293	724.	1294	717.
1295	709.	1296	702.	1297	695.	1298	689.	1299	682.
1300	675.	1310	611.	1320	559.	1330	516.	1340	478.
1350	444.	1360	409.	1370	374.	1380	338.	1390	305.
1400	271.	1420	212.	1440	168.	1460	135.	1500	92.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.869

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	2.	700	3.	800	4.	900	7.
1000	17.	1050	29.	1100	34.	1110	54.	1120	55.
1130	79.	1131	81.	1132	83.	1133	86.	1134	89.
1135	91.	1136	91.	1137	95.	1138	98.	1139	100.
1140	104.	1141	109.	1142	113.	1143	117.	1144	123.
1145	134.	1146	142.	1147	152.	1148	163.	1149	195.
1150	229.	1151	241.	1152	316.	1153	364.	1154	395.
1155	420.	1156	430.	1157	428.	1158	397.	1159	363.
1160	353.	1161	276.	1162	225.	1163	196.	1164	167.
1165	133.	1166	108.	1167	92.	1168	80.	1169	72.
1170	64.	1171	60.	1172	56.	1173	49.	1174	47.
1175	45.	1176	43.	1177	40.	1178	35.	1179	36.
1180	34.	1181	32.	1182	31.	1183	29.	1184	28.
1185	28.	1186	27.	1187	27.	1188	27.	1189	27.
1190	26.	1191	26.	1192	26.	1193	26.	1194	26.
1195	26.	1196	25.	1197	25.	1198	25.	1199	25.
1200	25.	1201	25.	1202	24.	1203	24.	1204	23.
1205	22.	1206	21.	1207	20.	1208	20.	1209	19.
1210	18.	1211	17.	1212	17.	1213	17.	1214	16.
1215	16.	1216	16.	1217	16.	1218	15.	1219	15.
1220	16.	1221	16.	1222	15.	1223	15.	1224	16.
1225	16.	1226	15.	1227	15.	1228	16.	1229	16.
1230	15.	1231	15.	1232	16.	1233	15.	1234	15.
1235	15.	1236	15.	1237	15.	1238	15.	1239	15.
1240	15.	1241	14.	1242	14.	1243	14.	1244	14.
1245	14.	1246	14.	1247	14.	1248	14.	1249	14.
1250	14.	1251	14.	1252	14.	1253	14.	1254	14.
1255	14.	1256	14.	1257	14.	1258	14.	1259	14.
1260	14.	1261	14.	1262	13.	1263	13.	1264	13.
1265	12.	1266	12.	1267	11.	1268	11.	1269	10.
1270	10.	1271	10.	1272	10.	1273	9.	1274	9.
1275	9.	1276	8.	1277	8.	1278	8.	1279	8.
1280	8.	1281	8.	1282	8.	1283	8.	1284	8.
1285	8.	1286	8.	1287	8.	1288	8.	1289	8.
1290	8.	1291	8.	1292	8.	1293	8.	1294	8.
1295	8.	1296	8.	1297	8.	1298	8.	1299	8.
1300	8.	1310	6.	1320	3.	1330	2.	1340	2.
1350	2.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.869

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	8.	800	11.	900	20.
1000	68.	1050	161.	1100	401.	1110	464.	1120	537.
1130	634.	1131	645.	1132	656.	1133	667.	1134	679.
1135	691.	1136	703.	1137	716.	1138	729.	1139	742.
1140	756.	1141	770.	1142	785.	1143	800.	1144	816.
1145	833.	1146	850.	1147	868.	1148	887.	1149	907.
1150	928.	1151	950.	1152	973.	1153	998.	1154	1024.
1155	1052.	1156	1082.	1157	1114.	1158	1150.	1159	1189.
1160	1234.	1161	1285.	1162	1342.	1163	1405.	1164	1478.
1165	1560.	1166	1655.	1167	1765.	1168	1890.	1169	2032.
1170	2187.	1171	2353.	1172	2528.	1173	2709.	1174	2895.
1175	3082.	1176	3266.	1177	3443.	1178	3607.	1179	3757.
1180	3891.	1181	4014.	1182	4130.	1183	4245.	1184	4364.

1185	4492.	1186	4628.	1187	4773.	1188	4923.	1189	5073.
1190	5217.	1191	5349.	1192	5464.	1193	5558.	1194	5628.
1195	5672.	1196	5690.	1197	5681.	1198	5648.	1199	5593.
1200	5518.	1201	5427.	1202	5321.	1203	5205.	1204	5079.
1205	4947.	1206	4810.	1207	4671.	1208	4530.	1209	4389.
1210	4249.	1211	4110.	1212	3974.	1213	3841.	1214	3711.
1215	3584.	1216	3462.	1217	3343.	1218	3228.	1219	3117.
1220	3011.	1221	2908.	1222	2809.	1223	2713.	1224	2622.
1225	2534.	1226	2450.	1227	2368.	1228	2291.	1229	2216.
1230	2144.	1231	2076.	1232	2009.	1233	1947.	1234	1886.
1235	1828.	1236	1772.	1237	1719.	1238	1667.	1239	1618.
1240	1571.	1241	1526.	1242	1483.	1243	1441.	1244	1401.
1245	1362.	1246	1325.	1247	1290.	1248	1256.	1249	1223.
1250	1191.	1251	1161.	1252	1132.	1253	1103.	1254	1076.
1255	1050.	1256	1025.	1257	1001.	1258	977.	1259	955.
1260	933.	1261	912.	1262	892.	1263	872.	1264	853.
1265	835.	1266	817.	1267	800.	1268	784.	1269	769.
1270	754.	1271	739.	1272	725.	1273	711.	1274	698.
1275	686.	1276	673.	1277	661.	1278	650.	1279	638.
1280	627.	1281	616.	1282	606.	1283	596.	1284	586.
1285	576.	1286	567.	1287	558.	1288	549.	1289	540.
1290	531.	1291	523.	1292	515.	1293	508.	1294	500.
1295	493.	1296	486.	1297	479.	1298	471.	1299	465.
1300	458.	1310	400.	1320	351.	1330	309.	1340	272.
1350	241.	1360	216.	1370	193.	1380	178.	1390	163.
1400	149.	1420	125.	1440	104.	1460	85.	1500	60.

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 4492 Project: Adams County VC Rat

Project Description

---

100 YEAR EVENT

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

♀

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Page: 2

Model Results

SUBAREA DATA AND RESULTS								ACCUMULATED DATA			ROUTING AFTER ACCUMULATION						
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	VEL (FT/S)	DEPTH (FT)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES
1A : Subshed 1A																		
1A	010	K100	10	0	85	278	--	--	85	278	1154	MOUNTAIN	1635	0.17400	---	----	-----	-----
2A : Subshed 2A																		
2A	020	K100	9	0	79	254	--	--	164	506	1156	MOUNTAIN	1750	0.07500	---	----	-----	-----
3A : Subshed 3A																		
3A	020	K100	5	0	73	332	--	--	237	633	1156	-------	----	-------	---	----	-----	-----
4B : Subshed 4B																		
4B	010	K100	9	0	88	303	--	--	88	303	1153	-------	----	-------	---	----	-----	-----
5B : Subshed 5B																		
5B	010	K100	7	0	54	212	--	--	142	515	1153	MOUNTAIN	2148	0.14200	---	----	-----	-----
6B : Subshed 6B																		

```
      6B   020   K100   10   0    80   244    222   711   1157   -------   ----   -------   ---   ----   -----   -----
--    --
      7AB  ---   ---    --   --   222  711    459   1339  1156   MOUNTAIN  2215   0.05500   ---   ----   -----   -----
--    --
      8A :  Subshed 8A
      8A   020   K100   7    0    94   347    553   1411  1158   -------   ----   -------   ---   ----   -----   -----
--    --
      9C :  Subshed 9C
      9C   020   K100   6    0    79   320    79    320   1153   MOUNTAIN  2067   0.40700   ---   ----   -----   -----
--    --
     10C :  Subshed 11C
     10C   020   K100   7    0    51   188    130   487   1155   -------   ----   -------   ---   ----   -----   -----
--    --
     11C :  Subshed 10C
     11C   010   K100   6    0    73   313    203   771   1154   MOUNTAIN  1977   0.17500   ---   ----   -----   -----
--    --
     12C :  Subshed 12C
     12C   020   K100   5    0    108  491    311   1088  1156   MOUNTAIN  1913   0.08800   ---   ----   -----   -----
--    --
     13C :  Subshed 13C
     13C   020   K100   12   0    87   236    398   1226  1158   -------   ----   -------   ---   ----   -----   -----
--    --
     14AC ---   ---    --   --   398  1226   951   2637  1158   VALLEY    1101   0.04000   ---   ----   -----   -----
--    --
     15A :  Subshed 15A
     15A   030   K100   5    0    30   129    981   2603  1159   -------   ----   -------   ---   ----   -----   -----
--    --
     16D :  Subshed 16D
     16D   020   K100   7    0    80   295    80    295   1153   MOUNTAIN  830    0.05800   ---   ----   -----   -----
--    --
     17D :  Subshed 17D
     17D   030   K100   5    0    12   51     92    324   1156   -------   ----   -------   ---   ----   -----   -----
--    --
     18AD ---   ---    --   --   92   324    1073  2832  1159   VALLEY    2430   0.03600   ---   ----   -----   -----
--    --
     19A :  Subshed 19A
     19A   030   K100   7    0    66   229    1139  2833  1160   -------   ----   -------   ---   ----   -----   -----
--    --
     20E :  Subshed 20E
     20E   020   K100   5    0    71   323    71    323   1153   MOUNTAIN  1615   0.06100   ---   ----   -----   -----
--    --
     21E :  Subshed 22E
     21E   020   K100   5    0    39   177    110   376   1156   -------   ----   -------   ---   ----   -----   -----
--    --
     22E :  Subshed 21E
     22E   020   K100   5    0    68   309    178   619   1153   VALLEY    1242   0.04700   ---   ----   -----   -----
--    --
     23E :  Subshed 23E
     23E   020   K100   5    0    50   227    228   747   1155   -------   ----   -------   ---   ----   -----   -----
--    --
     24AE ---   ---    --   --   228  747    1367  3265  1158   VALLEY    818    0.02600   ---   ----   -----   -----
--    --
     25A :  Subshed 25A
     25A   030   K100   5    0    18   77     1385  3252  1159   -------   ----   -------   ---   ----   -----   -----
--    --
     26A :  Subshed 26A
     26A   020   K100   7    0    56   207    1441  3331  1159   VALLEY    790    0.02700   ---   ----   -----   -----
--    --
     27A :  Subshed 27A
     27A   020   K100   6    0    79   320    1520  3378  1160   VALLEY    950    0.02400   ---   ----   -----   -----
--    --
```

Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|   TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     28A :  Subshed 28A
     28A   020   K100   10    0     64    195     1584    3488   1160   VALLEY     1069  0.02600    ---     ----    -----  -----
--     --
     29A :  Subshed 29A
     29A   020   K100    7    0     46    170     1630    3516   1161   -------    ----  -------    ---     ----    -----  -----
--     --
     30A :  Subshed 30A
     30A   020   K100    5    0     40    182     1670    3539   1161   VALLEY     1537  0.02900    ---     ----    -----  -----
--     --
     31A :  Subshed 31A
     31A   020   K100    7    0     53    196     1723    3557   1162   -------    ----  -------    ---     ----    -----  -----
--     --
     32B :  Subshed 32B
     32B :  Clearing Hydrograph Bank:  B
     32B   010   K100    7    0     99    389       99     389   1153   MOUNTAIN    735  0.11200    ---     ----    -----  -----
--     --
     33B :  Subshed 33B
     33B   020   K100    7    0     47    174      146     555   1155   -------    ----  -------    ---     ----    -----  -----
--     --
     34B :  Subshed 34B
     34B   020   K100    6    0     36    146      182     687   1154   MOUNTAIN   1710  0.05700    ---     ----    -----  -----
--     --
     35B :  Subshed 35B
     35B   020   K100    9    0     78    251      260     844   1157   -------    ----  -------    ---     ----    -----  -----
--     --
     36B :  Subshed 36B
     36B   020   K100    9    0    100    321      360    1142   1157   MOUNTAIN    736  0.05200    ---     ----    -----  -----
--     --
     37B :  Subshed 37B
     37B   020   K100    5    0     13     59      373    1128   1158   -------    ----  -------    ---     ----    -----  -----
--     --
     38B :  Subshed 38B
     38B   020   K100    9    0     71    228      444    1320   1157   VALLEY     1438  0.03500    ---     ----    -----  -----
--     --
     39B :  Subshed 39B
     39B   020   K100    7    0     49    181      493    1407   1158   -------    ----  -------    ---     ----    -----  -----
--     --
     40C :  Subshed 40C
     40C :  Clearing Hydrograph Bank:  C
     40C   020   K100   10    0     87    265       87     265   1154   MOUNTAIN   2063  0.16300    ---     ----    -----  -----
--     --
     41C :  Subshed 41C
     41C   020   K100   10    0     76    231      163     460   1157   -------    ----  -------    ---     ----    -----  -----
--     --
     42C :  Subshed 42C
     42C   010   K100   12    0    107    314      270     766   1156   MOUNTAIN   1338  0.08100    ---     ----    -----  -----
```

```
--      --
        43C :  Subshed 43C
        43C   010   K100    5    0     23    110     293     780   1156   -------   ----  -------   ---    ----   -----  -----
--      --
        44D :  Subshed 44D
        44D   020   K100    9    0     80    257      80     257   1153   MOUNTAIN  1840  0.08300   ---    ----   -----  -----
--      --
        45D :  Subshed 45D
        45D   020   K100    5    0     54    246     134     384   1156   -------   ----  -------   ---    ----   -----  -----
--      --
        46CD  ---   ---    --   --    134    384     427    1165   1156   MOUNTAIN  1426  0.05600   ---    ----   -----  -----
--      --
        47C :  Subshed 47C
        47C   020   K100    7    0     43    159     470    1206   1158   -------   ----  -------   ---    ----   -----  -----
--      --
        48BC  ---   ---    --   --    470   1206     963    2613   1158   VALLEY     768  0.02900   ---    ----   -----  -----
--      --
        49B :  Subshed 49B
        49B   020   K100    7    0     50    185    1013    2655   1158   VALLEY    1183  0.03500   ---    ----   -----  -----
--      --
        50B :  Subshed 50B
        50B   020   K100    7    0     79    292    1092    2726   1159   VALLEY    1240  0.03400   ---    ----   -----  -----
--      --
        51B :  Subshed 51B
        51B   020   K100    5    0     28    127    1120    2731   1160   -------   ----  -------   ---    ----   -----  -----
--      --
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-------------------------------------------|---------------------|-------------------------------------------------------------
-------|
        52E :  Subshed 52E
        52E :  Clearing Hydrograph Bank:  E
        52E   020   K100    9    0     79    254      79     254   1153   MOUNTAIN   782  0.06000   ---    ----   -----  -----
--      --
        53E :  Subshed 53E
        53E   030   K100    5    0     25    107     104     325   1156   -------   ----  -------   ---    ----   -----  -----
--      --
        54BE  ---   ---    --   --    104    325    1224    2947   1160   VALLEY     853  0.04000   ---    ----   -----  -----
--      --
        55B :  Subshed 55B
        55B   020   K100    5    0     14     64    1238    2937   1160   -------   ----  -------   ---    ----   -----  -----
--      --
        56F :  Subshed 56F
        56F   020   K100    6    0     87    352      87     352   1153   VALLEY    1222  0.04800   ---    ----   -----  -----
--      --
        57F :  Subshed 57F
        57F   030   K100    5    0     30    129     117     426   1155   -------   ----  -------   ---    ----   -----  -----
--      --
        58BF  ---   ---    --   --    117    426    1355    3116   1160   MOUNTAIN  1584  0.06300   ---    ----   -----  -----
--      --
```

```
      59B :  Subshed 59B
      59B   020    K100    5    0     40    182     1395    3105    1161    -------    ----  -------    ---     ----    -----  -----
--     --
      60AB  ---    ---    --   --   1395   3105     3118    6657    1162    VALLEY     1530  0.02400    ---     ----    -----  -----
--     --
      61A :  Subshed 61A - START OF LOWER WATERSHED
      61A   020    K100    7    0     55    203     3173    6660    1163    -------    ----  -------    ---     ----    -----  -----
--     --
      62A :  Subshed 62A
      62A   020    K100    6    0     80    324     3253    6699    1163    VALLEY     1254  0.01800    ---     ----    -----  -----
--     --
      63A :  Subshed 63A
      63A   010    K100    6    0     41    176     3294    6700    1164    -------    ----  -------    ---     ----    -----  -----
--     --
      64B :  Subshed 64B
      64B   020    K100    5    0     66    300       66     300    1153    MOUNTAIN   1577  0.07600    ---     ----    -----  -----
--     --
      65B :  Subshed 65B
      65B   020    K100    6    0     49    198      115     383    1155    -------    ----  -------    ---     ----    -----  -----
--     --
      66AB  ---    ---    --   --    115   383     3409    6798    1164    VALLEY      885  0.02400    ---     ----    -----  -----
--     --
      67A :  Subshed 67A
      67A   010    K100    5    0     24    115     3433    6785    1164    -------    ----  -------    ---     ----    -----  -----
--     --
      68A :  Subshed 68A
      68A   030    K100    6    0     57    218     3490    6809    1164    VALLEY     1682  0.01400    ---     ----    -----  -----
--     --
      69A :  Subshed 69A
      69A   020    K100    8    0     50    171     3540    6802    1166    -------    ----  -------    ---     ----    -----  -----
--     --
      70C :  Subshed 70C
      70C :  Clearing Hydrograph Bank:  C
      70C   020    K100    5    0     58    264       58     264    1153    MOUNTAIN   1208  0.05000    ---     ----    -----  -----
--     --
      71C :  Subshed 71C
      71C   020    K100    6    0     75    304      133     451    1154    VALLEY     1403  0.04800    ---     ----    -----  -----
--     --
      72C :  Subshed 72C
      72C   020    K100    7    0     74    273      207     676    1155    -------    ----  -------    ---     ----    -----  -----
--     --
      73C :  Subshed 73C
      73C   020    K100    6    0     54    219      261     863    1155    VALLEY      814  0.02700    ---     ----    -----  -----
--     --
      74C :  Subshed 74C
      74C   020    K100    5    0     20     91      281     911    1156    -------    ----  -------    ---     ----    -----  -----
--     --
      75C :  Subshed 75C
      75C   020    K100    7    0     43    159      324    1044    1156    VALLEY     1738  0.03400    ---     ----    -----  -----
--     --
      76C :  Subshed 76C
      76C   020    K100    8    0     89    305      413    1243    1157    -------    ----  -------    ---     ----    -----  -----
--     --
      77AC  ---    ---    --   --    413   1243     3953    7221    1165    VALLEY     1110  0.01900    ---     ----    -----  -----
--     --
```

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
---------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|   TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     78A :  Subshed 78A
     78A   030   K100    7    0     30    104    3983    7218   1166   -------    ----  -------    ---     ----    -----  -----
--     --
     79A :  Subarea 79A
     79A   020   K100    5    0     41    186    4024    7234   1166   VALLEY     2463  0.01700    ---     ----    -----  -----
--     --
     80A :  Subshed 80A
     80A   020   K100    6    0     83    336    4107    7221   1168   -------    ----  -------    ---     ----    -----  -----
--     --
     81D :  Subshed 81D
     81D :  Clearing Hydrograph Bank:  D
     81D   020   K100    6    0     51    206      51     206   1153   MOUNTAIN   1093  0.07600    ---     ----    -----  -----
--     --
     82D :  Subshed 82D
     82D   020   K100    6    0     47    190      98     337   1155   -------    ----  -------    ---     ----    -----  -----
--     --
     83AD  ---   ---    --   --     98    337    4205    7267   1168   VALLEY      977  0.03300    ---     ----    -----  -----
--     --
     84A :  Subarea 84A
     84A   020   K100    5    0     46    209    4251    7275   1169   -------    ----  -------    ---     ----    -----  -----
--     --
     85A :  Subarea 85A
     85A   020   K100    7    0     67    247    4318    7300   1169   VALLEY     1211  0.00700    ---     ----    -----  -----
--     --
     86A :  Subarea 86A
     86A   020   K100    6    0     33    134    4351    7276   1170   -------    ----  -------    ---     ----    -----  -----
--     --
     87A :  Subarea 87A
     87A   020   K100    5    0     93    423    4444    7302   1170   VALLEY      524  0.01100    ---     ----    -----  -----
--     --
     88A :  Subarea 88A
     88A   040   K100    5    0      5     20    4449    7300   1171   -------    ----  -------    ---     ----    -----  -----
--     --
     89A   ---   ---    --   --    ---    ---    4449    7300   1171   -------    ----  -------    ---     ----    -----  -----
--     --
     90E :  Subshed 90E
     90E :  Clearing Hydrograph Bank:  E
     90E   020   K100    5    0     39    177      39     177   1153   MOUNTAIN   1621  0.05900    ---     ----    -----  -----
--     --
     91E :  Subshed 91E
     91E   020   K100    7    0     59    218      98     305   1155   -------    ----  -------    ---     ----    -----  -----
--     --
     92AE  ---   ---    --   --     98    305    4547    7341   1171   VALLEY      926  0.01100    ---     ----    -----  -----
--     --
     93A :  Subshed 93A
     93A   030   K100    5    0     22     94    4569    7333   1172   -------    ----  -------    ---     ----    -----  -----
--     --
     94A :  Subshed 94A
     94A   020   K100    5    0     61    277    4630    7350   1172   -------    ----  -------    ---     ----    -----  -----
--     --
     95A :  Subshed 95A
     95A   020   K100    8    0     75    257    4705    7369   1172   VALLEY     1651  0.01600    ---     ----    -----  -----
```

```
--      --
     96F :  Subshed 96F
     96F :  Clearing Hydrograph Bank:  F
     96F   030   K100    5    0     39    167      39     167   1153    MOUNTAIN   1064  0.05300    ---    ----   -----  -----
--      --
     97F :  Subshed 97F
     97F   020   K100    6    0     33    134      72     233   1155    -------    ----  -------    ---    ----   -----  -----
--      --
     98F :  Subshed 98F
     98F   020   K100    7    0     50    185     122     414   1155    MOUNTAIN    595  0.09400    ---    ----   -----  -----
--      --
     99F :  Subshed 99F
     99F   020   K100    6    0     36    146     158     531   1155    VALLEY     1714  0.04600    ---    ----   -----  -----
--      --
    100F :  Subshed 100F
    100F   020   K100    7    0     48    177     206     633   1156    -------    ----  -------    ---    ----   -----  -----
--      --
    101AF  ---   ---    --   --    206    633    4911    7433   1173    VALLEY     1147  0.01000    ---    ----   -----  -----
--      --
    102A :  Subshed 102A
    102A   020   K100    7    0     42    155    4953    7423   1174    VALLEY     1111  0.01800    ---    ----   -----  -----
--      --
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

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Model Results

```
   |---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION
--------------------------------|
   | NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V      N VALUES
VEL  DEPTH |
   |  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES
(FT/S)  (FT) |

|-----------------------------------------|---------------------|-------------------------------------------------------------
-------|
     103A :  Subshed 103A
     103A   020   K100    7    0     65    240    5018    7429   1175    -------    ----  -------    ---    ----   -----  -----
--      --
     104A :  Subshed 104A
     104A   020   K100    7    0     82    303    5100    7450   1175    VALLEY     1606  0.01800    ---    ----   -----  -----
--      --
     105A :  Subshed 105A
     105A   030   K100    7    0     60    209    5160    7439   1177    -------    ----  -------    ---    ----   -----  -----
--      --
     106A :  Subshed 106A
     106A   020   K100    9    0     69    222    5229    7455   1177    VALLEY     1408  0.02100    ---    ----   -----  -----
--      --
     107A :  Subshed 107A
     107A   030   K100    7    0     58    202    5287    7448   1178    -------    ----  -------    ---    ----   -----  -----
--      --
     108A :  Subshed 108A
     108A   030   K100    5    0     31    133    5318    7451   1178    VALLEY     1467  0.01500    ---    ----   -----  -----
--      --
     109A :  Subshed 109A
     109A   030   K100    6    0     42    160    5360    7441   1179    VALLEY     2733  0.01400    ---    ----   -----  -----
--      --
     110A :  Subshed 110A
     110A   030   K100    9    0     73    221    5433    7402   1182    VALLEY     3056  0.01300    ---    ----   -----  -----
--      --
```

```
     111A :  Subshed 111A
     111A   030   K100   21    0     56    101     5489    7354   1185    -------    ----  -------   ---     ----    -----  -----
--     --
     112B :  Subshed 112B
     112B :  Clearing Hydrograph Bank:  B
     112B   030   K100   12    0     50    127       50     127   1154    VALLEY     2779  0.01700   ---     ----    -----  -----
--     --
     113B :  Subshed 113B
     113B   040   K100   21    0     43     72       93     168   1164    -------    ----  -------   ---     ----    -----  -----
--     --
     114AB  ---   ---    --   --     93    168     5582    7377   1185    VALLEY     1726  0.01000   ---     ----    -----  -----
--     --
     115A :  routing
     115A   ---   ---    --   --    ---    ---     5582    7357   1187    VALLEY     5400  0.01000   ---     ----    -----  -----
--     --
     116A :  SC RIVER
     116A   ---   ---    --   --    ---    ---     5582    7193   1193    -------    ----  -------   ---     ----    -----  -----
--     --
            ***********************************************************************************************
            *      INCOMING HYDROGRAPH  PEAK (cfs):   7192.92        VOLUME (acre-ft):    890.57      *
            *      HYDROGRAPH ADJUSTMENT FACTOR:         0.79100                                      *
            *      ADJUSTED HYDROGRAPH  PEAK (cfs):   5689.60        VOLUME (acre-ft):    704.44      *
            *      RUNOFF FACTOR(in):   5.43      TOTAL RAIN(in):  10.65      SCS Curve: 60           *
            *      FATTENED HYDROGRAPH  PEAK (cfs):   5689.60        VOLUME (acre-ft):   2524.65      *
            ***********************************************************************************************
     116A   ---   ---    --   --    ---    ---     5582    5690   ----    -------    ----  -------   ---     ----    -----  -----
--     --
     117A   ---   ---    --   --    ---    ---     5582    5690   1193    -------    ----  -------   ---     ----    -----  -----
--     --
```

Issue/Warning Messages

```
      TYPE       ERR NO   PROCEDURE    LOCATION   MESSAGE
-------------------------------------------------------------------------------------------------------------------------------------
------
     Caution     Err1008  SUBAREA        88A   TC and Area are set to minimum values(5).  May be an attempt to run the model on a
smaller area

♀                                                  than acceptable to VCRat.
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

Hydrograph Printouts

```
-----------------------------------------------------------------------------------------------------------
            HYDROGRAPH PRINTOUT AT:    2A
-----------------------------------------------------------------------------------------------------------
            DESCRIPTION: Subshed 2A
            TOTAL AREA TO HYDROGRAPH:      164    acres
            HYDROGRAPH PEAK:               506    cfs
            TIME OF PEAK:                 1156    minutes
            HYDROGRAPH VOLUME:              35.60 acre-ft
```

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.40	200	0.40	300	2.61	400	3.28
500	4.21	600	6.18	700	7.36	800	9.81	900	16.11
1000	27.89	1050	41.57	1100	47.99	1110	71.76	1120	71.82

1130	99.90	1131	102.34	1132	104.66	1133	108.00	1134	111.14
1135	113.66	1136	114.02	1137	118.10	1138	121.17	1139	124.18
1140	128.27	1141	134.61	1142	139.24	1143	144.13	1144	150.62
1145	163.40	1146	172.58	1147	183.42	1148	196.10	1149	234.08
1150	273.65	1151	288.68	1152	376.35	1153	432.08	1154	469.42
1155	496.67	1156	506.39	1157	503.02	1158	466.29	1159	425.71
1160	413.88	1161	322.12	1162	264.78	1163	230.89	1164	196.89
1165	156.93	1166	129.83	1167	110.97	1168	98.12	1169	89.79
1170	80.35	1171	75.74	1172	71.36	1173	63.50	1174	62.13
1175	59.20	1176	57.23	1177	53.66	1178	47.95	1179	48.73
1180	46.61	1181	44.82	1182	43.38	1183	41.39	1184	40.76
1185	40.11	1186	39.53	1187	39.52	1188	39.08	1189	38.72
1190	38.01	1191	38.01	1192	38.03	1193	37.97	1194	37.86
1195	38.22	1196	37.64	1197	37.65	1198	37.65	1199	37.66
1200	37.66	1201	37.13	1202	36.55	1203	35.47	1204	34.81
1205	34.05	1206	32.68	1207	31.71	1208	30.65	1209	29.54
1210	28.97	1211	27.84	1212	27.77	1213	27.21	1214	26.68
1215	26.35	1216	26.17	1217	26.55	1218	25.88	1219	25.83
1220	26.38	1221	26.40	1222	25.84	1223	25.81	1224	26.43
1225	26.50	1226	25.92	1227	25.86	1228	26.47	1229	26.53
1230	25.94	1231	25.88	1232	26.48	1233	26.03	1234	25.44
1235	25.88	1236	25.90	1237	25.34	1238	25.23	1239	25.15
1240	25.10	1241	25.05	1242	24.96	1243	24.82	1244	24.78
1245	24.76	1246	24.67	1247	24.68	1248	24.68	1249	24.62
1250	24.64	1251	24.65	1252	24.60	1253	24.62	1254	24.64
1255	24.59	1256	24.62	1257	24.64	1258	24.59	1259	24.61
1260	24.64	1261	24.58	1262	23.60	1263	23.12	1264	23.06
1265	22.45	1266	21.67	1267	20.82	1268	20.05	1269	19.75
1270	18.82	1271	18.42	1272	18.58	1273	18.20	1274	17.28
1275	16.94	1276	17.30	1277	17.23	1278	16.59	1279	16.44
1280	16.93	1281	16.97	1282	16.39	1283	16.30	1284	16.83
1285	16.90	1286	16.34	1287	16.26	1288	16.80	1289	16.88
1290	16.33	1291	16.25	1292	16.80	1293	16.36	1294	16.32
1295	16.25	1296	16.74	1297	16.76	1298	16.22	1299	16.17
1300	16.74	1310	10.59	1320	7.12	1330	6.46	1340	6.48
1350	5.13	1360	2.43	1370	0.80	1380	0.46	1390	0.41
1400	0.40	1420	0.40	1440	0.40	1460	0.40	1500	0.40

HYDROGRAPH FATTENED AT 116A

```
*****************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):   7192.92        VOLUME (acre-ft):    890.57      *
*      HYDROGRAPH ADJUSTMENT FACTOR:         0.79100                                      *
*      ADJUSTED HYDROGRAPH  PEAK (cfs):   5689.60        VOLUME (acre-ft):    704.44      *
*      RUNOFF FACTOR(in):   5.43      TOTAL RAIN(in):  10.65      SCS Curve: 60          *
*      FATTENED HYDROGRAPH  PEAK (cfs):   5689.60        VOLUME (acre-ft):   2524.65      *
*****************************************************************************************
```

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)

0	0.00	0.00	0.00	100	6.40	5.06	54.47
200	6.40	5.06	122.10	300	6.50	5.14	146.63
400	7.50	5.94	180.36	500	11.95	9.45	229.62
600	21.54	17.04	303.25	700	33.03	26.12	412.84
800	47.75	37.77	587.74	900	101.40	80.21	915.52
1000	315.43	249.51	1621.55	1050	549.70	434.81	2248.52
1100	893.82	707.01	3149.08	1110	970.58	767.73	3364.78
1120	1062.33	840.30	3596.89	1130	1183.97	936.52	3847.98
1131	1198.21	947.79	3874.09	1132	1212.84	959.36	3900.37
1133	1227.80	971.19	3926.79	1134	1243.03	983.24	3953.32
1135	1258.49	995.47	3979.95	1136	1274.43	1008.08	4006.73
1137	1290.92	1021.12	4033.70	1138	1307.90	1034.55	4060.81
1139	1325.42	1048.41	4088.08	1140	1343.59	1062.78	4115.51
1141	1362.67	1077.87	4143.18	1142	1382.77	1093.77	4171.09
1143	1403.76	1110.37	4199.20	1144	1425.61	1127.66	4227.47
1145	1448.44	1145.72	4255.94	1146	1472.36	1164.63	4284.60
1147	1497.47	1184.50	4313.48	1148	1523.93	1205.43	4342.56
1149	1551.85	1227.52	4371.88	1150	1581.33	1250.83	4401.43
1151	1612.45	1275.45	4431.19	1152	1645.40	1301.51	4461.19
1153	1680.41	1329.20	4491.44	1154	1717.76	1358.75	4521.99
1155	1757.96	1390.55	4552.88	1156	1801.93	1425.33	4584.27
1157	1850.60	1463.83	4616.31	1158	1904.89	1506.77	4649.09
1159	1966.24	1555.29	4682.82	1160	2035.92	1610.41	4717.64
1161	2114.67	1672.70	4753.59	1162	2203.65	1743.09	4790.74
1163	2304.85	1823.13	4829.31	1164	2420.99	1915.00	4869.61
1165	2555.20	2021.16	4911.97	1166	2710.07	2143.66	4956.57
1167	2886.60	2283.30	5003.33	1168	3083.50	2439.05	5051.75
1169	3297.07	2607.98	5101.02	1170	3522.81	2786.54	5150.29
1171	3756.97	2971.76	5198.85	1172	3996.23	3161.02	5246.14
1173	4236.63	3351.17	5291.58	1174	4472.71	3537.91	5334.44
1175	4697.60	3715.80	5373.91	1176	4905.57	3880.31	5409.44
1177	5093.69	4029.11	5440.88	1178	5260.96	4161.42	5468.38
1179	5410.35	4279.59	5492.52	1180	5549.31	4389.51	5514.32
1181	5686.70	4498.18	5534.82	1182	5829.95	4611.49	5554.78
1183	5983.48	4732.93	5574.56	1184	6147.83	4862.94	5594.12
1185	6320.08	4999.19	5613.10	1186	6494.44	5137.10	5630.95
1187	6663.45	5270.79	5647.05	1188	6819.19	5393.98	5660.90
1189	6954.23	5500.80	5672.11	1190	7062.47	5586.42	5680.49
1191	7139.85	5647.62	5686.07	1192	7183.50	5682.14	5689.00

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1193	7192.92	5689.60	5689.60	1194	7168.84	5670.55	5688.08
1195	7113.31	5626.63	5684.33	1196	7029.33	5560.20	5678.24
1197	6920.65	5474.23	5669.81	1198	6791.13	5371.78	5659.05
1199	6644.42	5255.74	5646.04	1200	6484.26	5129.05	5630.89
1201	6314.11	4994.46	5613.75	1202	6137.01	4854.38	5594.75
1203	5955.44	4710.75	5574.03	1204	5771.50	4565.25	5551.75
1205	5587.11	4419.40	5528.04	1206	5403.68	4274.31	5503.04
1207	5222.30	4130.84	5476.86	1208	5043.97	3989.78	5449.62
1209	4869.33	3851.64	5421.42	1210	4699.05	3716.95	5392.38
1211	4534.09	3586.47	5362.66	1212	4373.81	3459.68	5332.22

1213	4218.67	3336.97	5301.19	1214	4069.66	3219.10	5269.75
1215	3925.23	3104.86	5237.76	1216	3787.29	2995.74	5205.54
1217	3653.89	2890.22	5172.88	1218	3526.66	2789.59	5140.10
1219	3403.87	2692.46	5106.98	1220	3287.05	2600.05	5073.84
1221	3174.33	2510.90	5040.44	1222	3067.21	2426.16	5007.08
1223	2963.92	2344.46	4973.54	1224	2865.74	2266.80	4940.08
1225	2771.40	2192.18	4906.56	1226	2681.45	2121.03	4873.11
1227	2595.42	2052.98	4839.71	1228	2512.93	1987.72	4806.34
1229	2434.54	1925.72	4773.16	1230	2359.38	1866.27	4740.04
1231	2287.45	1809.38	4707.04	1232	2218.98	1755.21	4674.25
1233	2153.35	1703.30	4641.58	1234	2090.58	1653.65	4609.07
1235	2030.58	1606.19	4576.75	1236	1973.25	1560.84	4544.63
1237	1918.38	1517.44	4512.70	1238	1865.82	1475.86	4480.97
1239	1815.49	1436.06	4449.44	1240	1767.27	1397.91	4418.11
1241	1721.04	1361.34	4387.00	1242	1676.71	1326.28	4356.09
1243	1634.21	1292.66	4325.41	1244	1593.53	1260.48	4294.98
1245	1554.51	1229.62	4264.78	1246	1517.07	1200.00	4234.81
1247	1481.12	1171.57	4205.07	1248	1446.60	1144.26	4175.56
1249	1413.49	1118.07	4146.31	1250	1381.75	1092.96	4117.31
1251	1351.51	1069.05	4088.63	1252	1322.86	1046.38	4060.30
1253	1295.22	1024.52	4032.18	1254	1268.53	1003.41	4004.27
1255	1243.20	983.37	3976.70	1256	1218.83	964.09	3949.37
1257	1195.32	945.50	3922.28	1258	1172.64	927.56	3895.40
1259	1150.74	910.24	3868.74	1260	1129.59	893.50	3842.31
1261	1109.68	877.76	3816.26	1262	1090.59	862.66	3790.48
1263	1072.06	848.00	3764.89	1264	1054.02	833.73	3739.48
1265	1036.43	819.82	3714.25	1266	1019.46	806.39	3689.25
1267	1003.67	793.90	3664.67	1268	988.14	781.62	3640.23
1269	972.91	769.57	3615.93	1270	958.00	757.78	3591.79
1271	943.44	746.26	3567.84	1272	929.96	735.60	3544.31
1273	916.76	725.16	3520.94	1274	903.87	714.96	3497.75
1275	891.33	705.04	3474.75	1276	879.14	695.40	3451.95
1277	867.35	686.07	3429.36	1278	855.94	677.05	3407.00
1279	844.94	668.35	3384.86	1280	834.34	659.97	3362.96
1281	824.14	651.89	3341.28	1282	814.31	644.12	3319.83
1283	804.83	636.62	3298.61	1284	795.69	629.39	3277.60
1285	786.85	622.40	3256.81	1286	778.30	615.64	3236.22
1287	770.00	609.07	3215.82	1288	761.92	602.68	3195.60
1289	754.03	596.44	3175.57	1290	746.30	590.32	3155.69

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1291	738.70	584.31	3135.96	1292	731.22	578.40	3116.39
1293	723.87	572.58	3096.96	1294	716.63	566.85	3077.68
1295	709.48	561.20	3058.55	1296	702.42	555.61	3039.54
1297	695.42	550.08	3020.67	1298	688.53	544.63	3001.94
1299	681.77	539.28	2983.36	1300	675.08	533.99	2964.92
1310	611.23	483.49	2787.27	1320	559.29	442.40	2624.70
1330	515.84	408.03	2475.58	1340	478.43	378.44	2338.40
1350	443.62	350.90	2210.92	1360	408.92	323.45	2091.18
1370	373.74	295.63	1978.20	1380	338.46	267.73	1871.53
1390	305.08	241.32	1771.73	1400	270.54	214.00	1676.56
1420	211.51	167.31	1506.26	1440	167.78	132.71	1361.75

1460	135.28	107.00	1238.45	1500	91.81	72.62	1040.42

HYDROGRAPH PRINTOUT AT: 117A

TOTAL AREA TO HYDROGRAPH: 5582 acres
HYDROGRAPH PEAK: 5690 cfs
TIME OF PEAK: 1193 minutes
HYDROGRAPH VOLUME: 2524.65 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	54.47	200	122.10	300	146.63	400	180.36
500	229.62	600	303.25	700	412.84	800	587.74	900	915.52
1000	1621.55	1050	2248.52	1100	3149.08	1110	3364.78	1120	3596.89
1130	3847.98	1131	3874.09	1132	3900.37	1133	3926.79	1134	3953.32
1135	3979.95	1136	4006.73	1137	4033.70	1138	4060.81	1139	4088.08
1140	4115.51	1141	4143.18	1142	4171.09	1143	4199.20	1144	4227.47
1145	4255.94	1146	4284.60	1147	4313.48	1148	4342.56	1149	4371.88
1150	4401.43	1151	4431.19	1152	4461.19	1153	4491.44	1154	4521.99
1155	4552.88	1156	4584.27	1157	4616.31	1158	4649.09	1159	4682.82
1160	4717.64	1161	4753.59	1162	4790.74	1163	4829.31	1164	4869.61
1165	4911.97	1166	4956.57	1167	5003.33	1168	5051.75	1169	5101.02
1170	5150.29	1171	5198.85	1172	5246.14	1173	5291.58	1174	5334.44
1175	5373.91	1176	5409.44	1177	5440.88	1178	5468.38	1179	5492.52
1180	5514.32	1181	5534.82	1182	5554.78	1183	5574.56	1184	5594.12
1185	5613.10	1186	5630.95	1187	5647.05	1188	5660.90	1189	5672.11
1190	5680.49	1191	5686.07	1192	5689.00	1193	5689.60	1194	5688.08
1195	5684.33	1196	5678.24	1197	5669.81	1198	5659.05	1199	5646.04
1200	5630.89	1201	5613.75	1202	5594.75	1203	5574.03	1204	5551.75
1205	5528.04	1206	5503.04	1207	5476.86	1208	5449.62	1209	5421.42
1210	5392.38	1211	5362.66	1212	5332.22	1213	5301.19	1214	5269.75
1215	5237.76	1216	5205.54	1217	5172.88	1218	5140.10	1219	5106.98
1220	5073.84	1221	5040.44	1222	5007.08	1223	4973.54	1224	4940.08
1225	4906.56	1226	4873.11	1227	4839.71	1228	4806.34	1229	4773.16
1230	4740.04	1231	4707.04	1232	4674.25	1233	4641.58	1234	4609.07
1235	4576.75	1236	4544.63	1237	4512.70	1238	4480.97	1239	4449.44
1240	4418.11	1241	4387.00	1242	4356.09	1243	4325.41	1244	4294.98
1245	4264.78	1246	4234.81	1247	4205.07	1248	4175.56	1249	4146.31
1250	4117.31	1251	4088.63	1252	4060.30	1253	4032.18	1254	4004.27
1255	3976.70	1256	3949.37	1257	3922.28	1258	3895.40	1259	3868.74
1260	3842.31	1261	3816.26	1262	3790.48	1263	3764.89	1264	3739.48
1265	3714.25	1266	3689.25	1267	3664.67	1268	3640.23	1269	3615.93
1270	3591.79	1271	3567.84	1272	3544.31	1273	3520.94	1274	3497.75
1275	3474.75	1276	3451.95	1277	3429.36	1278	3407.00	1279	3384.86
1280	3362.96	1281	3341.28	1282	3319.83	1283	3298.61	1284	3277.60
1285	3256.81	1286	3236.22	1287	3215.82	1288	3195.60	1289	3175.57
1290	3155.69	1291	3135.96	1292	3116.39	1293	3096.96	1294	3077.68
1295	3058.55	1296	3039.54	1297	3020.67	1298	3001.94	1299	2983.36
1300	2964.92	1310	2787.27	1320	2624.70	1330	2475.58	1340	2338.40
1350	2210.92	1360	2091.18	1370	1978.20	1380	1871.53	1390	1771.73

1400 1676.56 1420 1506.26 1440 1361.75 1460 1238.45 1500 1040.42

♀

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
005  4492  001A Header place holder
005  4492  002A Header place holder
005  4492  116A Header place holder
005  4492  117A Header place holder
999
999
006  4492  001A 010000008510B98101635017400                    G1
006  4492  002A 020000007909B98101750007500                  1
006  4492  003A 020000007305B98
006  4492  004B 010000008809B98
006  4492  005B 010000005407B98102148014200
006  4492  006B 020000008010B98
006  4492  007AB010          A97102215005500
006  4492  008A 020000009407B98
006  4492  009C 020000007906B98102067040700
006  4492  010C 020000005107B98
006  4492  011C 010000007306B98101977017500
006  4492  012C 020000010805B98101913008800
006  4492  013C 020000008712B98
006  4492  014AC010          A97201101004000
006  4492  015A 030000003005B98
006  4492  016D 020000008007B98100830005800
006  4492  017D 030000001205B98
006  4492  018AD010          A97202430003600
006  4492  019A 030000006607B98
006  4492  020E 020000007105B98101615006100
006  4492  021E 020000003905B98
006  4492  022E 020000006805B98201242004700
006  4492  023E 020000005005B98
006  4492  024AE010          A97200818002600
006  4492  025A 030000001805B98
006  4492  026A 020000005607B98200790002700
006  4492  027A 020000007906B98200950002400
006  4492  028A 020000006410B98201069002600
006  4492  029A 020000004607B98
006  4492  030A 020000004005B98201537002900
006  4492  031A 020000005307B98
006  4492  032B 010000009907B98100735011200                    B
006  4492  033B 020000004707B98
006  4492  034B 020000003606B98101710005700
006  4492  035B 020000007809B98
006  4492  036B 020000010009B98100736005200
006  4492  037B 020000001305B98
006  4492  038B 020000007109B98201438003500
006  4492  039B 020000004907B98
006  4492  040C 020000008710B98102063016300                    C
006  4492  041C 020000007610B98
006  4492  042C 010000010712B98101338008100
006  4492  043C 010000002305B98
006  4492  044D 020000008009B98101840008300
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006  4492  045D 020000005405B98
006  4492  046CD010          A97101426005600
♀
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006  4492  047C 020000004307B98
006  4492  048BC010          A97200768002900
006  4492  049B 020000005007B98201183003500
006  4492  050B 020000007907B98201240003400
006  4492  051B 020000002805B98
006  4492  052E 020000007909B98100782006000                    E
006  4492  053E 030000002505B98
006  4492  054BE010          A97200853004000
006  4492  055B 020000001405B98
006  4492  056F 020000008706B98201222004800
006  4492  057F 030000003005B98
006  4492  058BF010          A97101584006300
006  4492  059B 020000004005B98
006  4492  060AB010          A97201530002400
006  4492  061A 020000005507B98
006  4492  062A 020000008006B98201254001800
006  4492  063A 010000004106B98
006  4492  064B 020000006605B98101577007600
006  4492  065B 020000004906B98
006  4492  066AB010          A97200885002400
006  4492  067A 010000002405B98
006  4492  068A 030000005706B98201682001400
006  4492  069A 020000005008B98
006  4492  070C 020000005805B98101208005000                    C
006  4492  071C 020000007506B98201403004800
006  4492  072C 020000007407B98
006  4492  073C 020000005406B98200814002700
006  4492  074C 020000002005B98
006  4492  075C 020000004307B98201738003400
006  4492  076C 020000008908B98
006  4492  077AC010          A97201110001900
006  4492  078A 030000003007B98
006  4492  079A 020000004105B98202463001700
006  4492  080A 020000008306B98
006  4492  081D 020000005106B98101093007600                    D
006  4492  082D 020000004706B98
006  4492  083AD010          A97200977003300
006  4492  084A 020000004605B98
006  4492  085A 020000006707B98201211000700
006  4492  086A 020000003306B98
006  4492  087A 020000009305B98200524001100
006  4492  088A 040000000505B98
006  4492  089A 010       099A97
006  4492  090E 020000003905B98101621005900                    E
006  4492  091E 020000005907B98
006  4492  092AE010          A97200926001100
006  4492  093A 030000002205B98
006  4492  094A 020000006105B98
006  4492  095A 020000007508B98201651001600
006  4492  096F 030000003905B98101064005300                    F
006  4492  097F 020000003306B98
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006  4492  098F 020000005007B98100595009400
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Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 4492 Project: Adams County VC Rat

VCRat Model Input

Model Lines

```
006  4492  099F 020000003606B98201714004600
006  4492  100F 020000004807B98
006  4492  101AF010          A97201147001000
006  4492  102A 020000004207B98201111001800
006  4492  103A 020000006507B98
006  4492  104A 020000008207B98201606001800
006  4492  105A 030000006007B98
006  4492  106A 020000006909B98201408002100
006  4492  107A 030000005807B98
006  4492  108A 030000003105B98201467001500
006  4492  109A 030000004206B98202733001400
006  4492  110A 030000007309B98203056001300
006  4492  111A 030000005621B98
006  4492  112B 030000005012B98202779001700                    B
006  4492  113B 040000004321B98
006  4492  114AB010          A97201726001000
006  4492  115A 010       099A97205400001000
006  4492  116A 010       099A97                          1
110
111            0.79100    5.43
110
006  4492  117A 010       099A97                          1  2
999
```

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	115.	3433.	6785.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	218.	3490.	6809.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	171.	3540.	6802.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	264.	58.	264.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	304.	133.	451.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	273.	207.	676.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	219.	261.	863.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	91.	281.	911.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	159.	324.	1044.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	305.	413.	1243.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1243.	3953.	7221.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	104.	3983.	7218.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	186.	4024.	7234.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	336.	4107.	7221.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	206.	51.	206.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	190.	98.	337.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	337.	4205.	7267.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	209.	4251.	7275.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	247.	4318.	7300.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	134.	4351.	7276.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	423.	4444.	7302.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	20.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	177.	39.	177.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	218.	98.	305.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	305.	4547.	7341.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	94.	4569.	7333.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	277.	4630.	7350.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	257.	4705.	7369.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	167.	39.	167.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	134.	72.	233.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	185.	122.	414.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	146.	158.	531.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	177.	206.	633.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	633.	4911.	7433.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	155.	4953.	7423.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	240.	5018.	7429.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00

4492	104A	82.	303.	5100.	7450.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	209.	5160.	7439.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	222.	5229.	7455.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	202.	5287.	7448.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	133.	5318.	7451.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	160.	5360.	7441.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	221.	5433.	7402.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	101.	5489.	7354.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	127.	50.	127.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	72.	93.	168.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	168.	5582.	7377.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	238.	85.	238.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	216.	164.	430.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	284.	237.	525.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	260.	88.	260.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	182.	142.	442.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	207.	222.	605.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	605.	459.	1122.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	296.	553.	1162.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	273.	79.	273.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	160.	130.	413.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	269.	203.	654.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	421.	311.	917.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	200.	398.	1028.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1028.	951.	2190.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	110.	981.	2162.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	252.	80.	252.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	44.	92.	274.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	274.	1073.	2358.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	195.	1139.	2341.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	276.	71.	276.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	152.	110.	314.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	265.	178.	522.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	195.	228.	627.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	627.	1367.	2661.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	66.	1385.	2666.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	176.	1441.	2715.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	273.	1520.	2758.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	166.	1584.	2851.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	145.	1630.	2855.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	156.	1670.	2873.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	167.	1723.	2885.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	334.	99.	334.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	148.	146.	475.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	125.	182.	585.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	213.	260.	710.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	273.	360.	962.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	51.	373.	947.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	194.	444.	1102.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	154.	493.	1170.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	225.	87.	225.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	197.	163.	388.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	268.	270.	648.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	95.	293.	657.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	218.	80.	218.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00

4492	45D	54.	210.	134.	319.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	319.	427.	972.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	135.	470.	999.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	999.	963.	2169.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	157.	1013.	2191.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	249.	1092.	2245.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	109.	1120.	2246.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	216.	79.	216.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	92.	104.	274.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	274.	1224.	2430.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	55.	1238.	2424.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	301.	87.	301.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	110.	117.	361.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	361.	1355.	2560.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	156.	1395.	2551.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2551.	3118.	5431.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	173.	3173.	5421.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	277.	3253.	5452.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	151.	3294.	5453.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	257.	66.	257.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	170.	115.	320.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	320.	3409.	5525.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	99.	3433.	5528.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	185.	3490.	5542.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	146.	3540.	5527.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	226.	58.	226.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	260.	133.	380.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	233.	207.	566.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	187.	261.	725.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	78.	281.	765.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	135.	324.	878.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	259.	413.	1033.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1033.	3953.	5852.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	89.	3983.	5842.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	160.	4024.	5852.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	287.	4107.	5834.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	176.	51.	176.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	163.	98.	282.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	282.	4205.	5869.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	179.	4251.	5866.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	211.	4318.	5881.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	114.	4351.	5866.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	362.	4444.	5884.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	17.	4449.	5876.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	5876.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	152.	39.	152.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	186.	98.	254.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	254.	4547.	5907.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	81.	4569.	5895.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	238.	4630.	5905.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	218.	4705.	5919.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	143.	39.	143.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	114.	72.	195.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	157.	122.	349.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	125.	158.	447.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00

4492	100F	48.	151.	206.	526.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	526.	4911.	5960.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	132.	4953.	5951.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	204.	5018.	5950.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	258.	5100.	5962.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	178.	5160.	5946.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	188.	5229.	5955.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	172.	5287.	5946.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	114.	5318.	5946.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	137.	5360.	5932.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	187.	5433.	5894.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	84.	5489.	5844.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	108.	50.	108.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	60.	93.	138.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	138.	5582.	5861.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	5841.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5690.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.

1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.869

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	2.	700	3.	800	4.	900	7.
1000	17.	1050	29.	1100	34.	1110	54.	1120	55.
1130	79.	1131	81.	1132	83.	1133	86.	1134	89.
1135	91.	1136	91.	1137	95.	1138	98.	1139	100.
1140	104.	1141	109.	1142	113.	1143	117.	1144	123.
1145	134.	1146	142.	1147	152.	1148	163.	1149	195.
1150	229.	1151	241.	1152	316.	1153	364.	1154	395.
1155	420.	1156	430.	1157	428.	1158	397.	1159	363.
1160	353.	1161	276.	1162	225.	1163	196.	1164	167.
1165	133.	1166	108.	1167	92.	1168	80.	1169	72.
1170	64.	1171	60.	1172	56.	1173	49.	1174	47.
1175	45.	1176	43.	1177	40.	1178	35.	1179	36.
1180	34.	1181	32.	1182	31.	1183	29.	1184	28.
1185	28.	1186	27.	1187	27.	1188	27.	1189	27.
1190	26.	1191	26.	1192	26.	1193	26.	1194	26.
1195	26.	1196	25.	1197	25.	1198	25.	1199	25.
1200	25.	1201	25.	1202	24.	1203	24.	1204	23.
1205	22.	1206	21.	1207	20.	1208	20.	1209	19.
1210	18.	1211	17.	1212	17.	1213	17.	1214	16.
1215	16.	1216	16.	1217	16.	1218	15.	1219	15.
1220	16.	1221	16.	1222	15.	1223	15.	1224	16.
1225	16.	1226	15.	1227	15.	1228	16.	1229	16.
1230	15.	1231	15.	1232	16.	1233	15.	1234	15.
1235	15.	1236	15.	1237	15.	1238	15.	1239	15.
1240	15.	1241	14.	1242	14.	1243	14.	1244	14.
1245	14.	1246	14.	1247	14.	1248	14.	1249	14.
1250	14.	1251	14.	1252	14.	1253	14.	1254	14.
1255	14.	1256	14.	1257	14.	1258	14.	1259	14.
1260	14.	1261	14.	1262	13.	1263	13.	1264	13.
1265	12.	1266	12.	1267	11.	1268	11.	1269	10.
1270	10.	1271	10.	1272	10.	1273	9.	1274	9.
1275	9.	1276	8.	1277	8.	1278	8.	1279	8.
1280	8.	1281	8.	1282	8.	1283	8.	1284	8.
1285	8.	1286	8.	1287	8.	1288	8.	1289	8.
1290	8.	1291	8.	1292	8.	1293	8.	1294	8.
1295	8.	1296	8.	1297	8.	1298	8.	1299	8.
1300	8.	1310	6.	1320	3.	1330	2.	1340	2.
1350	2.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder
HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.869

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.

500	6.	600	7.	700	8.	800	11.	900	20.
1000	68.	1050	161.	1100	401.	1110	464.	1120	537.
1130	634.	1131	645.	1132	656.	1133	667.	1134	679.
1135	691.	1136	703.	1137	716.	1138	729.	1139	742.
1140	756.	1141	770.	1142	785.	1143	800.	1144	816.
1145	833.	1146	850.	1147	868.	1148	887.	1149	907.
1150	928.	1151	950.	1152	973.	1153	998.	1154	1024.
1155	1052.	1156	1082.	1157	1114.	1158	1150.	1159	1189.
1160	1234.	1161	1285.	1162	1342.	1163	1405.	1164	1478.
1165	1560.	1166	1655.	1167	1765.	1168	1890.	1169	2032.
1170	2187.	1171	2353.	1172	2528.	1173	2709.	1174	2895.
1175	3082.	1176	3266.	1177	3443.	1178	3607.	1179	3757.
1180	3891.	1181	4014.	1182	4130.	1183	4245.	1184	4364.
1185	4492.	1186	4628.	1187	4773.	1188	4923.	1189	5073.
1190	5217.	1191	5349.	1192	5464.	1193	5558.	1194	5628.
1195	5672.	1196	5690.	1197	5681.	1198	5648.	1199	5593.
1200	5518.	1201	5427.	1202	5321.	1203	5205.	1204	5079.
1205	4947.	1206	4810.	1207	4671.	1208	4530.	1209	4389.
1210	4249.	1211	4110.	1212	3974.	1213	3841.	1214	3711.
1215	3584.	1216	3462.	1217	3343.	1218	3228.	1219	3117.
1220	3011.	1221	2908.	1222	2809.	1223	2713.	1224	2622.
1225	2534.	1226	2450.	1227	2368.	1228	2291.	1229	2216.
1230	2144.	1231	2076.	1232	2009.	1233	1947.	1234	1886.
1235	1828.	1236	1772.	1237	1719.	1238	1667.	1239	1618.
1240	1571.	1241	1526.	1242	1483.	1243	1441.	1244	1401.
1245	1362.	1246	1325.	1247	1290.	1248	1256.	1249	1223.
1250	1191.	1251	1161.	1252	1132.	1253	1103.	1254	1076.
1255	1050.	1256	1025.	1257	1001.	1258	977.	1259	955.
1260	933.	1261	912.	1262	892.	1263	872.	1264	853.
1265	835.	1266	817.	1267	800.	1268	784.	1269	769.
1270	754.	1271	739.	1272	725.	1273	711.	1274	698.
1275	686.	1276	673.	1277	661.	1278	650.	1279	638.
1280	627.	1281	616.	1282	606.	1283	596.	1284	586.
1285	576.	1286	567.	1287	558.	1288	549.	1289	540.
1290	531.	1291	523.	1292	515.	1293	508.	1294	500.
1295	493.	1296	486.	1297	479.	1298	471.	1299	465.
1300	458.	1310	400.	1320	351.	1330	309.	1340	272.
1350	241.	1360	216.	1370	193.	1380	178.	1390	163.
1400	149.	1420	125.	1440	104.	1460	85.	1500	60.

APPENDIX G

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	259.	85.	259.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	236.	164.	470.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	309.	237.	582.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	282.	88.	282.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	198.	142.	480.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	226.	222.	661.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	661.	459.	1236.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	323.	553.	1293.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	298.	79.	298.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	175.	130.	452.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	292.	203.	716.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	458.	311.	1008.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	219.	398.	1133.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1133.	951.	2426.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	120.	981.	2395.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	275.	80.	275.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	48.	92.	300.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	300.	1073.	2609.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	213.	1139.	2595.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	301.	71.	301.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	165.	110.	347.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	288.	178.	573.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	212.	228.	690.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	690.	1367.	2979.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	72.	1385.	2975.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	192.	1441.	3040.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	298.	1520.	3084.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	181.	1584.	3187.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	158.	1630.	3204.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	170.	1670.	3225.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00

4492	31A	53.	182.	1723.	3237.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	363.	99.	363.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	162.	146.	517.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	136.	182.	639.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	233.	260.	781.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	298.	360.	1057.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	55.	373.	1042.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	212.	444.	1217.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	168.	493.	1295.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	246.	87.	246.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	215.	163.	426.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	292.	270.	710.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	103.	293.	722.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	239.	80.	239.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	229.	134.	354.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	354.	427.	1073.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	148.	470.	1108.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1108.	963.	2403.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	172.	1013.	2435.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	271.	1092.	2498.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	119.	1120.	2501.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	236.	79.	236.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	100.	104.	301.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	301.	1224.	2703.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	59.	1238.	2692.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	328.	87.	328.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	120.	117.	395.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	395.	1355.	2853.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	170.	1395.	2841.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2841.	3118.	6078.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	189.	3173.	6076.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	302.	3253.	6110.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	164.	3294.	6108.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	280.	66.	280.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	185.	115.	353.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	353.	3409.	6199.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	108.	3433.	6191.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	202.	3490.	6208.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	159.	3540.	6188.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	246.	58.	246.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	283.	133.	418.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	254.	207.	625.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	204.	261.	798.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	85.	281.	842.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	148.	324.	966.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	283.	413.	1144.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1144.	3953.	6573.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	97.	3983.	6563.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	174.	4024.	6575.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	313.	4107.	6568.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	192.	51.	192.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	177.	98.	311.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	311.	4205.	6608.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	195.	4251.	6605.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	230.	4318.	6627.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00

4492	86A	33.	124.	4351.	6613.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	394.	4444.	6634.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	19.	4449.	6621.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6621.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	165.	39.	165.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	203.	98.	281.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	281.	4547.	6657.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	88.	4569.	6647.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	259.	4630.	6660.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	239.	4705.	6677.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	156.	39.	156.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	124.	72.	215.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	172.	122.	384.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	136.	158.	492.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	165.	206.	582.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	582.	4911.	6735.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	144.	4953.	6727.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	223.	5018.	6726.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	282.	5100.	6739.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	194.	5160.	6727.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	206.	5229.	6740.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	187.	5287.	6732.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	124.	5318.	6734.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	149.	5360.	6724.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	205.	5433.	6685.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	93.	5489.	6639.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	118.	50.	118.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	66.	93.	154.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	154.	5582.	6659.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6639.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6479.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.

1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

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Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.938

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	1.	400	1.
500	2.	600	4.	700	5.	800	7.	900	12.
1000	23.	1050	36.	1100	42.	1110	63.	1120	64.
1130	90.	1131	92.	1132	94.	1133	98.	1134	101.
1135	103.	1136	103.	1137	107.	1138	110.	1139	113.
1140	117.	1141	123.	1142	127.	1143	132.	1144	138.
1145	150.	1146	158.	1147	169.	1148	180.	1149	216.
1150	252.	1151	266.	1152	348.	1153	400.	1154	434.
1155	460.	1156	470.	1157	468.	1158	434.	1159	396.
1160	385.	1161	300.	1162	246.	1163	215.	1164	183.
1165	145.	1166	120.	1167	102.	1168	89.	1169	82.
1170	73.	1171	68.	1172	64.	1173	57.	1174	55.
1175	52.	1176	51.	1177	47.	1178	42.	1179	43.
1180	40.	1181	39.	1182	37.	1183	36.	1184	35.
1185	34.	1186	34.	1187	34.	1188	33.	1189	33.
1190	32.	1191	32.	1192	32.	1193	32.	1194	32.
1195	32.	1196	32.	1197	32.	1198	32.	1199	32.
1200	32.	1201	31.	1202	31.	1203	30.	1204	29.
1205	29.	1206	27.	1207	26.	1208	25.	1209	24.
1210	24.	1211	23.	1212	23.	1213	22.	1214	22.
1215	21.	1216	21.	1217	22.	1218	21.	1219	21.
1220	21.	1221	21.	1222	21.	1223	21.	1224	21.
1225	21.	1226	21.	1227	21.	1228	21.	1229	21.
1230	21.	1231	21.	1232	21.	1233	21.	1234	20.
1235	21.	1236	21.	1237	20.	1238	20.	1239	20.
1240	20.	1241	20.	1242	20.	1243	20.	1244	20.
1245	20.	1246	20.	1247	20.	1248	20.	1249	20.
1250	20.	1251	20.	1252	20.	1253	20.	1254	20.
1255	20.	1256	20.	1257	20.	1258	20.	1259	20.
1260	20.	1261	20.	1262	19.	1263	18.	1264	18.
1265	18.	1266	17.	1267	16.	1268	15.	1269	15.
1270	14.	1271	14.	1272	14.	1273	14.	1274	13.
1275	13.	1276	13.	1277	13.	1278	12.	1279	12.

1280	12.	1281	12.	1282	12.	1283	12.	1284	12.
1285	12.	1286	12.	1287	12.	1288	12.	1289	12.
1290	12.	1291	12.	1292	12.	1293	12.	1294	12.
1295	12.	1296	12.	1297	12.	1298	12.	1299	12.
1300	12.	1310	9.	1320	5.	1330	4.	1340	5.
1350	4.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

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HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.938

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	7.
500	8.	600	11.	700	18.	800	28.	900	51.
1000	171.	1050	347.	1100	662.	1110	735.	1120	820.
1130	929.	1131	942.	1132	955.	1133	968.	1134	981.
1135	995.	1136	1009.	1137	1024.	1138	1039.	1139	1054.
1140	1070.	1141	1087.	1142	1104.	1143	1122.	1144	1141.
1145	1161.	1146	1182.	1147	1204.	1148	1227.	1149	1251.
1150	1276.	1151	1303.	1152	1331.	1153	1361.	1154	1393.
1155	1427.	1156	1464.	1157	1504.	1158	1550.	1159	1600.
1160	1657.	1161	1722.	1162	1795.	1163	1878.	1164	1973.
1165	2082.	1166	2207.	1167	2351.	1168	2514.	1169	2694.
1170	2886.	1171	3089.	1172	3298.	1173	3512.	1174	3727.
1175	3937.	1176	4137.	1177	4322.	1178	4488.	1179	4637.
1180	4771.	1181	4898.	1182	5025.	1183	5157.	1184	5299.
1185	5451.	1186	5611.	1187	5773.	1188	5932.	1189	6081.
1190	6212.	1191	6321.	1192	6404.	1193	6456.	1194	6479.
1195	6471.	1196	6435.	1197	6373.	1198	6287.	1199	6182.
1200	6060.	1201	5924.	1202	5778.	1203	5624.	1204	5466.
1205	5304.	1206	5140.	1207	4977.	1208	4815.	1209	4655.
1210	4497.	1211	4343.	1212	4193.	1213	4047.	1214	3906.
1215	3769.	1216	3637.	1217	3510.	1218	3388.	1219	3270.
1220	3158.	1221	3049.	1222	2945.	1223	2845.	1224	2750.
1225	2658.	1226	2571.	1227	2487.	1228	2406.	1229	2329.
1230	2256.	1231	2185.	1232	2118.	1233	2053.	1234	1991.
1235	1932.	1236	1875.	1237	1821.	1238	1769.	1239	1719.
1240	1671.	1241	1625.	1242	1581.	1243	1539.	1244	1499.
1245	1460.	1246	1422.	1247	1387.	1248	1352.	1249	1319.
1250	1287.	1251	1257.	1252	1227.	1253	1199.	1254	1172.
1255	1146.	1256	1120.	1257	1096.	1258	1074.	1259	1052.
1260	1031.	1261	1010.	1262	991.	1263	972.	1264	954.
1265	936.	1266	919.	1267	902.	1268	886.	1269	871.
1270	856.	1271	842.	1272	828.	1273	815.	1274	801.
1275	788.	1276	776.	1277	765.	1278	753.	1279	742.
1280	731.	1281	720.	1282	710.	1283	700.	1284	690.
1285	681.	1286	672.	1287	663.	1288	654.	1289	646.
1290	638.	1291	630.	1292	622.	1293	615.	1294	608.
1295	600.	1296	593.	1297	587.	1298	580.	1299	573.
1300	567.	1310	506.	1320	453.	1330	407.	1340	371.
1350	340.	1360	312.	1370	286.	1380	261.	1390	237.
1400	215.	1420	174.	1440	139.	1460	110.	1500	74.

VENTURA COUNTY FLOOD CONTROL DISTRICT
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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	257.	85.	257.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	234.	164.	466.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	307.	237.	576.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	280.	88.	280.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	196.	142.	476.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	224.	222.	655.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	655.	459.	1224.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	320.	553.	1279.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	295.	79.	295.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	174.	130.	448.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	290.	203.	710.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	454.	311.	998.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	217.	398.	1122.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1122.	951.	2401.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	119.	981.	2370.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	272.	80.	272.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	48.	92.	297.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	297.	1073.	2582.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	211.	1139.	2568.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	298.	71.	298.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	164.	110.	343.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	286.	178.	568.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	210.	228.	683.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	683.	1367.	2945.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00

4492	25A	18.	71.	1385.	2942.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	191.	1441.	3005.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	295.	1520.	3049.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	179.	1584.	3151.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	157.	1630.	3166.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	168.	1670.	3187.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	181.	1723.	3199.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	360.	99.	360.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	160.	146.	513.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	135.	182.	633.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	231.	260.	773.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	296.	360.	1047.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	55.	373.	1032.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	210.	444.	1205.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	167.	493.	1281.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	244.	87.	244.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	213.	163.	422.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	290.	270.	703.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	102.	293.	715.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	237.	80.	237.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	227.	134.	350.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	350.	427.	1063.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	146.	470.	1096.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1096.	963.	2378.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	170.	1013.	2409.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	269.	1092.	2471.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	118.	1120.	2474.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	234.	79.	234.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	99.	104.	298.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	298.	1224.	2673.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	59.	1238.	2663.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	325.	87.	325.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	119.	117.	392.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	392.	1355.	2822.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	168.	1395.	2811.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2811.	3118.	6009.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	187.	3173.	6006.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	299.	3253.	6040.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	163.	3294.	6037.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	277.	66.	277.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	183.	115.	349.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	349.	3409.	6127.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	107.	3433.	6119.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	201.	3490.	6136.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	158.	3540.	6116.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	244.	58.	244.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	280.	133.	414.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	252.	207.	618.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	202.	261.	791.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	84.	281.	834.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	146.	324.	956.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	281.	413.	1133.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1133.	3953.	6496.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	96.	3983.	6486.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	172.	4024.	6498.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00

4492	80A	83.	310.	4107.	6490.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	191.	51.	191.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	176.	98.	308.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	308.	4205.	6529.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	193.	4251.	6524.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	228.	4318.	6546.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	123.	4351.	6533.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	391.	4444.	6554.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	19.	4449.	6543.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6543.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	164.	39.	164.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	201.	98.	278.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	278.	4547.	6578.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	87.	4569.	6568.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	256.	4630.	6581.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	236.	4705.	6597.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	155.	39.	155.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	123.	72.	213.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	170.	122.	380.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	135.	158.	487.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	163.	206.	576.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	101AF	206.	576.	4911.	6652.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	143.	4953.	6643.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	221.	5018.	6642.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	279.	5100.	6655.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	192.	5160.	6645.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	204.	5229.	6654.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	186.	5287.	6649.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	123.	5318.	6650.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	148.	5360.	6639.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	203.	5433.	6601.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	92.	5489.	6554.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	117.	50.	117.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	65.	93.	152.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	152.	5582.	6574.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6554.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6393.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.

1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.931

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	1.	400	1.
500	2.	600	4.	700	5.	800	7.	900	11.
1000	22.	1050	35.	1100	41.	1110	63.	1120	63.
1130	89.	1131	91.	1132	93.	1133	96.	1134	99.
1135	102.	1136	102.	1137	106.	1138	109.	1139	112.
1140	115.	1141	121.	1142	126.	1143	130.	1144	136.
1145	148.	1146	157.	1147	167.	1148	179.	1149	214.
1150	250.	1151	263.	1152	345.	1153	396.	1154	430.
1155	456.	1156	466.	1157	464.	1158	430.	1159	392.
1160	382.	1161	298.	1162	244.	1163	213.	1164	181.
1165	144.	1166	118.	1167	101.	1168	88.	1169	81.
1170	72.	1171	67.	1172	63.	1173	56.	1174	54.
1175	52.	1176	50.	1177	46.	1178	41.	1179	42.
1180	40.	1181	38.	1182	37.	1183	35.	1184	34.
1185	34.	1186	33.	1187	33.	1188	33.	1189	32.
1190	32.	1191	32.	1192	32.	1193	32.	1194	31.
1195	32.	1196	31.	1197	31.	1198	31.	1199	31.
1200	31.	1201	31.	1202	30.	1203	29.	1204	29.
1205	28.	1206	27.	1207	26.	1208	25.	1209	24.
1210	23.	1211	22.	1212	22.	1213	22.	1214	21.
1215	21.	1216	21.	1217	21.	1218	20.	1219	20.
1220	21.	1221	21.	1222	20.	1223	20.	1224	21.
1225	21.	1226	20.	1227	20.	1228	21.	1229	21.
1230	20.	1231	20.	1232	21.	1233	20.	1234	20.
1235	20.	1236	20.	1237	20.	1238	20.	1239	20.
1240	20.	1241	19.	1242	19.	1243	19.	1244	19.
1245	19.	1246	19.	1247	19.	1248	19.	1249	19.

1250	19.	1251	19.	1252	19.	1253	19.	1254	19.
1255	19.	1256	19.	1257	19.	1258	19.	1259	19.
1260	19.	1261	19.	1262	18.	1263	18.	1264	18.
1265	17.	1266	16.	1267	16.	1268	15.	1269	15.
1270	14.	1271	13.	1272	14.	1273	13.	1274	12.
1275	12.	1276	12.	1277	12.	1278	12.	1279	11.
1280	12.	1281	12.	1282	11.	1283	11.	1284	12.
1285	12.	1286	11.	1287	11.	1288	12.	1289	12.
1290	11.	1291	11.	1292	12.	1293	11.	1294	11.
1295	11.	1296	12.	1297	12.	1298	11.	1299	11.
1300	12.	1310	8.	1320	5.	1330	4.	1340	4.
1350	3.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.931

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	7.
500	8.	600	10.	700	16.	800	26.	900	47.
1000	157.	1050	324.	1100	634.	1110	707.	1120	790.
1130	898.	1131	911.	1132	924.	1133	937.	1134	950.
1135	964.	1136	977.	1137	992.	1138	1007.	1139	1022.
1140	1037.	1141	1054.	1142	1071.	1143	1089.	1144	1107.
1145	1127.	1146	1147.	1147	1169.	1148	1191.	1149	1214.
1150	1239.	1151	1266.	1152	1293.	1153	1323.	1154	1354.
1155	1387.	1156	1423.	1157	1463.	1158	1507.	1159	1557.
1160	1612.	1161	1676.	1162	1747.	1163	1828.	1164	1920.
1165	2026.	1166	2148.	1167	2288.	1168	2447.	1169	2623.
1170	2811.	1171	3010.	1172	3216.	1173	3426.	1174	3638.
1175	3846.	1176	4045.	1177	4229.	1178	4396.	1179	4544.
1180	4679.	1181	4805.	1182	4930.	1183	5060.	1184	5199.
1185	5349.	1186	5506.	1187	5667.	1188	5826.	1189	5975.
1190	6108.	1191	6220.	1192	6307.	1193	6365.	1194	6393.
1195	6391.	1196	6360.	1197	6304.	1198	6223.	1199	6123.
1200	6006.	1201	5874.	1202	5732.	1203	5583.	1204	5427.
1205	5268.	1206	5107.	1207	4946.	1208	4786.	1209	4628.
1210	4472.	1211	4320.	1212	4171.	1213	4026.	1214	3886.
1215	3750.	1216	3619.	1217	3493.	1218	3371.	1219	3254.
1220	3142.	1221	3034.	1222	2930.	1223	2831.	1224	2736.
1225	2645.	1226	2557.	1227	2474.	1228	2394.	1229	2317.
1230	2244.	1231	2174.	1232	2106.	1233	2042.	1234	1980.
1235	1921.	1236	1864.	1237	1810.	1238	1758.	1239	1708.
1240	1660.	1241	1615.	1242	1571.	1243	1528.	1244	1488.
1245	1449.	1246	1412.	1247	1376.	1248	1341.	1249	1308.
1250	1277.	1251	1246.	1252	1217.	1253	1188.	1254	1161.
1255	1135.	1256	1110.	1257	1086.	1258	1062.	1259	1041.
1260	1019.	1261	999.	1262	979.	1263	960.	1264	942.
1265	925.	1266	908.	1267	891.	1268	875.	1269	859.
1270	845.	1271	831.	1272	817.	1273	803.	1274	790.
1275	777.	1276	764.	1277	753.	1278	742.	1279	730.
1280	719.	1281	709.	1282	698.	1283	688.	1284	678.
1285	669.	1286	660.	1287	651.	1288	643.	1289	634.
1290	626.	1291	618.	1292	610.	1293	603.	1294	595.
1295	588.	1296	581.	1297	574.	1298	568.	1299	561.
1300	555.	1310	494.	1320	441.	1330	395.	1340	358.
1350	328.	1360	300.	1370	275.	1380	251.	1390	229.
1400	208.	1420	168.	1440	136.	1460	107.	1500	72.

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VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
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Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	258.	85.	258.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	235.	164.	468.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	308.	237.	579.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	281.	88.	281.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	197.	142.	478.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	225.	222.	658.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	658.	459.	1230.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	322.	553.	1286.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	297.	79.	297.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	174.	130.	450.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	291.	203.	713.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	456.	311.	1003.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	218.	398.	1127.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1127.	951.	2413.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	119.	981.	2382.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	274.	80.	274.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	48.	92.	299.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	299.	1073.	2595.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	212.	1139.	2581.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	300.	71.	300.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	165.	110.	345.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	287.	178.	571.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	211.	228.	687.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	687.	1367.	2962.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	72.	1385.	2958.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	192.	1441.	3022.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	297.	1520.	3066.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	180.	1584.	3169.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	157.	1630.	3185.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	169.	1670.	3205.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	181.	1723.	3217.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	361.	99.	361.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	161.	146.	515.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	135.	182.	636.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	232.	260.	777.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	297.	360.	1052.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	55.	373.	1037.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	211.	444.	1211.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	168.	493.	1288.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	245.	87.	245.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	214.	163.	424.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	291.	270.	706.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	103.	293.	718.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	238.	80.	238.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	228.	134.	352.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	352.	427.	1068.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	147.	470.	1102.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1102.	963.	2390.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	171.	1013.	2421.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00

4492	50B	79.	270.	1092.	2484.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	118.	1120.	2487.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	235.	79.	235.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	100.	104.	299.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	299.	1224.	2688.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	59.	1238.	2677.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	327.	87.	327.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	119.	117.	394.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	394.	1355.	2837.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	169.	1395.	2826.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2826.	3118.	6043.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	188.	3173.	6040.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	300.	3253.	6074.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	164.	3294.	6072.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	279.	66.	279.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	184.	115.	351.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	351.	3409.	6162.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	107.	3433.	6154.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	201.	3490.	6171.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	158.	3540.	6150.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	245.	58.	245.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	282.	133.	416.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	253.	207.	621.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	203.	261.	794.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	84.	281.	838.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	147.	324.	961.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	282.	413.	1138.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1138.	3953.	6534.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	96.	3983.	6523.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	173.	4024.	6536.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	312.	4107.	6528.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	191.	51.	191.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	176.	98.	309.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	309.	4205.	6568.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	194.	4251.	6564.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	229.	4318.	6585.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	124.	4351.	6572.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	393.	4444.	6593.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	19.	4449.	6581.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6581.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	165.	39.	165.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	202.	98.	279.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	279.	4547.	6617.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	88.	4569.	6606.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	257.	4630.	6620.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	238.	4705.	6636.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	155.	39.	155.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	124.	72.	214.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	171.	122.	382.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	135.	158.	489.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	164.	206.	579.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	579.	4911.	6693.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	144.	4953.	6684.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	222.	5018.	6683.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	281.	5100.	6696.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	193.	5160.	6685.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	205.	5229.	6695.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	187.	5287.	6690.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	123.	5318.	6691.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	148.	5360.	6681.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	204.	5433.	6642.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	92.	5489.	6596.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	117.	50.	117.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	66.	93.	153.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	153.	5582.	6615.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6595.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6435.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.

1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.934

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	1.	400	1.
500	2.	600	4.	700	5.	800	7.	900	11.
1000	22.	1050	35.	1100	41.	1110	63.	1120	63.
1130	89.	1131	92.	1132	94.	1133	97.	1134	100.
1135	102.	1136	103.	1137	107.	1138	109.	1139	112.
1140	116.	1141	122.	1142	126.	1143	131.	1144	137.
1145	149.	1146	158.	1147	168.	1148	179.	1149	215.
1150	251.	1151	265.	1152	346.	1153	398.	1154	432.
1155	458.	1156	468.	1157	466.	1158	432.	1159	394.
1160	384.	1161	299.	1162	245.	1163	214.	1164	182.
1165	145.	1166	119.	1167	101.	1168	89.	1169	81.
1170	72.	1171	68.	1172	64.	1173	56.	1174	55.
1175	52.	1176	50.	1177	47.	1178	41.	1179	42.
1180	40.	1181	38.	1182	37.	1183	35.	1184	35.
1185	34.	1186	33.	1187	33.	1188	33.	1189	33.
1190	32.	1191	32.	1192	32.	1193	32.	1194	32.
1195	32.	1196	32.	1197	32.	1198	32.	1199	32.
1200	32.	1201	31.	1202	30.	1203	29.	1204	29.
1205	28.	1206	27.	1207	26.	1208	25.	1209	24.
1210	24.	1211	23.	1212	22.	1213	22.	1214	21.
1215	21.	1216	21.	1217	21.	1218	21.	1219	21.
1220	21.	1221	21.	1222	21.	1223	20.	1224	21.
1225	21.	1226	21.	1227	21.	1228	21.	1229	21.
1230	21.	1231	21.	1232	21.	1233	21.	1234	20.
1235	21.	1236	21.	1237	20.	1238	20.	1239	20.
1240	20.	1241	20.	1242	20.	1243	20.	1244	20.
1245	19.	1246	19.	1247	19.	1248	19.	1249	19.
1250	19.	1251	19.	1252	19.	1253	19.	1254	19.
1255	19.	1256	19.	1257	19.	1258	19.	1259	19.
1260	19.	1261	19.	1262	18.	1263	18.	1264	18.
1265	17.	1266	17.	1267	16.	1268	15.	1269	15.
1270	14.	1271	14.	1272	14.	1273	13.	1274	13.
1275	12.	1276	13.	1277	12.	1278	12.	1279	12.
1280	12.	1281	12.	1282	12.	1283	12.	1284	12.
1285	12.	1286	12.	1287	12.	1288	12.	1289	12.
1290	12.	1291	12.	1292	12.	1293	12.	1294	12.
1295	12.	1296	12.	1297	12.	1298	12.	1299	11.
1300	12.	1310	8.	1320	5.	1330	4.	1340	4.
1350	4.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.934

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	7.
500	8.	600	11.	700	17.	800	27.	900	49.
1000	163.	1050	336.	1100	648.	1110	720.	1120	805.
1130	913.	1131	926.	1132	939.	1133	952.	1134	965.
1135	979.	1136	993.	1137	1007.	1138	1022.	1139	1038.
1140	1053.	1141	1070.	1142	1087.	1143	1105.	1144	1124.

1145	1144.	1146	1164.	1147	1186.	1148	1208.	1149	1232.
1150	1257.	1151	1284.	1152	1312.	1153	1341.	1154	1373.
1155	1407.	1156	1443.	1157	1483.	1158	1528.	1159	1578.
1160	1634.	1161	1698.	1162	1771.	1163	1852.	1164	1946.
1165	2053.	1166	2177.	1167	2319.	1168	2480.	1169	2657.
1170	2848.	1171	3048.	1172	3256.	1173	3468.	1174	3681.
1175	3890.	1176	4090.	1177	4274.	1178	4441.	1179	4589.
1180	4724.	1181	4850.	1182	4976.	1183	5107.	1184	5248.
1185	5399.	1186	5557.	1187	5719.	1188	5877.	1189	6026.
1190	6159.	1191	6269.	1192	6354.	1193	6409.	1194	6435.
1195	6430.	1196	6397.	1197	6337.	1198	6254.	1199	6152.
1200	6032.	1201	5899.	1202	5755.	1203	5603.	1204	5446.
1205	5285.	1206	5123.	1207	4961.	1208	4800.	1209	4641.
1210	4484.	1211	4331.	1212	4182.	1213	4037.	1214	3895.
1215	3759.	1216	3628.	1217	3501.	1218	3379.	1219	3262.
1220	3150.	1221	3041.	1222	2938.	1223	2838.	1224	2743.
1225	2651.	1226	2564.	1227	2480.	1228	2400.	1229	2323.
1230	2250.	1231	2179.	1232	2112.	1233	2047.	1234	1985.
1235	1926.	1236	1869.	1237	1815.	1238	1763.	1239	1713.
1240	1666.	1241	1620.	1242	1576.	1243	1534.	1244	1493.
1245	1454.	1246	1417.	1247	1381.	1248	1347.	1249	1313.
1250	1282.	1251	1251.	1252	1222.	1253	1193.	1254	1166.
1255	1140.	1256	1115.	1257	1091.	1258	1068.	1259	1046.
1260	1025.	1261	1004.	1262	985.	1263	966.	1264	948.
1265	930.	1266	913.	1267	896.	1268	880.	1269	865.
1270	850.	1271	836.	1272	822.	1273	809.	1274	796.
1275	783.	1276	770.	1277	759.	1278	747.	1279	736.
1280	725.	1281	714.	1282	704.	1283	694.	1284	684.
1285	675.	1286	666.	1287	657.	1288	648.	1289	640.
1290	632.	1291	624.	1292	616.	1293	609.	1294	601.
1295	594.	1296	587.	1297	580.	1298	574.	1299	567.
1300	560.	1310	500.	1320	447.	1330	401.	1340	364.
1350	334.	1360	306.	1370	280.	1380	256.	1390	233.
1400	211.	1420	171.	1440	137.	1460	109.	1500	73.

VENTURA COUNTY FLOOD CONTROL DISTRICT
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Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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Header place holder STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00♀

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Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	1A	85.	257.	85.	257.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	234.	164.	466.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	307.	237.	576.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	280.	88.	280.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	196.	142.	476.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	224.	222.	655.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	655.	459.	1224.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	320.	553.	1280.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	295.	79.	295.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	174.	130.	448.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	290.	203.	710.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	454.	311.	999.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	217.	398.	1122.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1122.	951.	2402.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	119.	981.	2371.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	273.	80.	273.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	48.	92.	298.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	298.	1073.	2583.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	211.	1139.	2569.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	299.	71.	299.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	164.	110.	344.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	286.	178.	568.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	210.	228.	684.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	684.	1367.	2947.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	71.	1385.	2943.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	191.	1441.	3007.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	295.	1520.	3050.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	179.	1584.	3153.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	157.	1630.	3168.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	168.	1670.	3189.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	181.	1723.	3200.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	360.	99.	360.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	160.	146.	513.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	135.	182.	633.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	231.	260.	773.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	296.	360.	1047.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	55.	373.	1033.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	210.	444.	1205.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	167.	493.	1282.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	244.	87.	244.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	213.	163.	422.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	290.	270.	703.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	102.	293.	715.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	237.	80.	237.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	227.	134.	350.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00

4492	46CD	134.	350.	427.	1063.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	147.	470.	1097.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1097.	963.	2379.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	170.	1013.	2410.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	269.	1092.	2472.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	118.	1120.	2475.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	234.	79.	234.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	99.	104.	298.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	298.	1224.	2675.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	59.	1238.	2665.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	325.	87.	325.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	119.	117.	392.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	392.	1355.	2823.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	168.	1395.	2812.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2812.	3118.	6012.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	187.	3173.	6009.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	299.	3253.	6043.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	163.	3294.	6040.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	277.	66.	277.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	183.	115.	350.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	350.	3409.	6130.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	107.	3433.	6122.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	201.	3490.	6138.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	158.	3540.	6119.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	244.	58.	244.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	280.	133.	414.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	252.	207.	619.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	202.	261.	791.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	84.	281.	835.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	147.	324.	957.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	281.	413.	1133.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1133.	3953.	6499.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	96.	3983.	6489.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	172.	4024.	6501.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	310.	4107.	6494.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	191.	51.	191.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	176.	98.	308.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	308.	4205.	6533.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	193.	4251.	6528.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	228.	4318.	6549.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	123.	4351.	6536.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	391.	4444.	6557.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	19.	4449.	6546.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6546.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	164.	39.	164.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	201.	98.	278.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	278.	4547.	6581.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	87.	4569.	6571.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	256.	4630.	6584.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	237.	4705.	6601.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	155.	39.	155.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	123.	72.	213.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	170.	122.	380.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	135.	158.	487.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	164.	206.	576.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	576.	4911.	6656.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	143.	4953.	6646.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	221.	5018.	6645.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	279.	5100.	6658.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	192.	5160.	6648.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	204.	5229.	6658.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	186.	5287.	6653.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	123.	5318.	6654.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	148.	5360.	6643.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	203.	5433.	6605.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	92.	5489.	6558.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	117.	50.	117.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	65.	93.	153.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	153.	5582.	6577.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6557.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	6396.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.

1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.931

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	1.	400	1.
500	2.	600	4.	700	5.	800	7.	900	11.
1000	22.	1050	35.	1100	41.	1110	63.	1120	63.
1130	89.	1131	91.	1132	93.	1133	96.	1134	100.
1135	102.	1136	102.	1137	106.	1138	109.	1139	112.
1140	115.	1141	121.	1142	126.	1143	130.	1144	136.
1145	148.	1146	157.	1147	167.	1148	179.	1149	214.
1150	250.	1151	263.	1152	345.	1153	396.	1154	430.
1155	456.	1156	466.	1157	464.	1158	430.	1159	393.
1160	382.	1161	298.	1162	244.	1163	213.	1164	181.
1165	144.	1166	118.	1167	101.	1168	89.	1169	81.
1170	72.	1171	67.	1172	63.	1173	56.	1174	54.
1175	52.	1176	50.	1177	46.	1178	41.	1179	42.
1180	40.	1181	38.	1182	37.	1183	35.	1184	34.
1185	34.	1186	33.	1187	33.	1188	33.	1189	32.
1190	32.	1191	32.	1192	32.	1193	32.	1194	31.
1195	32.	1196	31.	1197	31.	1198	31.	1199	31.
1200	31.	1201	31.	1202	30.	1203	29.	1204	29.
1205	28.	1206	27.	1207	26.	1208	25.	1209	24.
1210	23.	1211	22.	1212	22.	1213	22.	1214	21.
1215	21.	1216	21.	1217	21.	1218	20.	1219	20.
1220	21.	1221	21.	1222	20.	1223	20.	1224	21.
1225	21.	1226	20.	1227	20.	1228	21.	1229	21.
1230	20.	1231	20.	1232	21.	1233	20.	1234	20.
1235	20.	1236	20.	1237	20.	1238	20.	1239	20.
1240	20.	1241	19.	1242	19.	1243	19.	1244	19.
1245	19.	1246	19.	1247	19.	1248	19.	1249	19.
1250	19.	1251	19.	1252	19.	1253	19.	1254	19.
1255	19.	1256	19.	1257	19.	1258	19.	1259	19.
1260	19.	1261	19.	1262	18.	1263	18.	1264	18.
1265	17.	1266	16.	1267	16.	1268	15.	1269	15.
1270	14.	1271	13.	1272	14.	1273	13.	1274	12.
1275	12.	1276	12.	1277	12.	1278	12.	1279	12.
1280	12.	1281	12.	1282	11.	1283	11.	1284	12.
1285	12.	1286	11.	1287	11.	1288	12.	1289	12.
1290	11.	1291	11.	1292	12.	1293	11.	1294	11.
1295	11.	1296	12.	1297	12.	1298	11.	1299	11.
1300	12.	1310	8.	1320	5.	1330	4.	1340	4.
1350	3.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

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HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.931

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	7.
500	8.	600	10.	700	16.	800	26.	900	47.

1000	157.	1050	325.	1100	635.	1110	708.	1120	791.
1130	900.	1131	912.	1132	925.	1133	938.	1134	951.
1135	965.	1136	979.	1137	993.	1138	1008.	1139	1023.
1140	1039.	1141	1055.	1142	1072.	1143	1090.	1144	1109.
1145	1128.	1146	1149.	1147	1170.	1148	1192.	1149	1216.
1150	1241.	1151	1267.	1152	1295.	1153	1324.	1154	1355.
1155	1389.	1156	1425.	1157	1465.	1158	1509.	1159	1558.
1160	1614.	1161	1678.	1162	1749.	1163	1830.	1164	1922.
1165	2028.	1166	2150.	1167	2291.	1168	2450.	1169	2626.
1170	2814.	1171	3013.	1172	3219.	1173	3430.	1174	3642.
1175	3850.	1176	4049.	1177	4233.	1178	4400.	1179	4548.
1180	4682.	1181	4809.	1182	4934.	1183	5064.	1184	5204.
1185	5353.	1186	5510.	1187	5671.	1188	5830.	1189	5979.
1190	6113.	1191	6225.	1192	6311.	1193	6368.	1194	6396.
1195	6394.	1196	6363.	1197	6306.	1198	6226.	1199	6125.
1200	6008.	1201	5876.	1202	5734.	1203	5584.	1204	5429.
1205	5269.	1206	5109.	1207	4947.	1208	4787.	1209	4629.
1210	4473.	1211	4321.	1212	4172.	1213	4027.	1214	3886.
1215	3751.	1216	3620.	1217	3493.	1218	3372.	1219	3255.
1220	3143.	1221	3035.	1222	2931.	1223	2832.	1224	2737.
1225	2646.	1226	2558.	1227	2475.	1228	2394.	1229	2318.
1230	2244.	1231	2174.	1232	2107.	1233	2042.	1234	1980.
1235	1921.	1236	1865.	1237	1810.	1238	1758.	1239	1709.
1240	1661.	1241	1615.	1242	1571.	1243	1529.	1244	1488.
1245	1450.	1246	1412.	1247	1376.	1248	1342.	1249	1309.
1250	1277.	1251	1246.	1252	1217.	1253	1189.	1254	1162.
1255	1135.	1256	1110.	1257	1086.	1258	1063.	1259	1041.
1260	1020.	1261	999.	1262	980.	1263	961.	1264	943.
1265	925.	1266	908.	1267	892.	1268	876.	1269	860.
1270	845.	1271	831.	1272	817.	1273	804.	1274	791.
1275	778.	1276	765.	1277	753.	1278	742.	1279	731.
1280	720.	1281	709.	1282	699.	1283	688.	1284	679.
1285	670.	1286	661.	1287	652.	1288	643.	1289	635.
1290	627.	1291	619.	1292	611.	1293	603.	1294	596.
1295	589.	1296	582.	1297	575.	1298	568.	1299	562.
1300	555.	1310	494.	1320	441.	1330	396.	1340	358.
1350	328.	1360	301.	1370	275.	1380	252.	1390	229.
1400	208.	1420	169.	1440	136.	1460	107.	1500	72.

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	245.	85.	245.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	223.	164.	444.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	293.	237.	545.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	267.	88.	267.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	188.	142.	455.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	214.	222.	624.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	624.	459.	1161.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	305.	553.	1207.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	282.	79.	282.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	166.	130.	426.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	277.	203.	676.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	433.	311.	948.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	206.	398.	1064.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1064.	951.	2271.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	113.	981.	2242.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	260.	80.	260.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	45.	92.	283.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	283.	1073.	2444.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	201.	1139.	2429.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	285.	71.	285.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	156.	110.	325.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	273.	178.	540.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	201.	228.	649.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	649.	1367.	2770.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	68.	1385.	2772.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	182.	1441.	2826.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	282.	1520.	2869.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	171.	1584.	2966.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	149.	1630.	2975.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	161.	1670.	2994.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	172.	1723.	3004.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	344.	99.	344.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	153.	146.	489.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	128.	182.	604.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	220.	260.	734.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	282.	360.	995.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	52.	373.	980.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00

4492	38B	71.	200.	444.	1141.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	159.	493.	1212.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	232.	87.	232.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	203.	163.	401.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	276.	270.	669.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	98.	293.	679.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	225.	80.	225.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	217.	134.	331.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	331.	427.	1007.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	140.	470.	1036.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1036.	963.	2249.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	162.	1013.	2274.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	256.	1092.	2331.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	112.	1120.	2333.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	223.	79.	223.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	95.	104.	284.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	284.	1224.	2523.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	56.	1238.	2515.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	310.	87.	310.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	113.	117.	373.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	373.	1355.	2660.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	161.	1395.	2651.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2651.	3118.	5653.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	179.	3173.	5645.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	285.	3253.	5677.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	156.	3294.	5671.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	265.	66.	265.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	175.	115.	331.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	331.	3409.	5757.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	102.	3433.	5757.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	191.	3490.	5772.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	150.	3540.	5754.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	233.	58.	233.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	268.	133.	393.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	240.	207.	586.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	193.	261.	750.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	80.	281.	792.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	140.	324.	908.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	267.	413.	1072.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1072.	3953.	6100.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	92.	3983.	6091.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	165.	4024.	6102.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	296.	4107.	6088.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	182.	51.	182.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	168.	98.	292.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	292.	4205.	6124.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	185.	4251.	6119.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	217.	4318.	6136.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	118.	4351.	6118.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	373.	4444.	6137.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	18.	4449.	6134.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6134.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	156.	39.	156.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	191.	98.	263.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	263.	4547.	6167.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00

4492	93A	22.	83.	4569.	6156.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	245.	4630.	6168.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	225.	4705.	6182.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	147.	39.	147.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	118.	72.	202.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	162.	122.	361.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	128.	158.	463.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	156.	206.	544.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	544.	4911.	6221.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	136.	4953.	6216.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	211.	5018.	6217.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	266.	5100.	6229.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	183.	5160.	6215.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	194.	5229.	6223.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	177.	5287.	6213.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	117.	5318.	6213.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	141.	5360.	6203.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	193.	5433.	6163.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	87.	5489.	6118.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	111.	50.	111.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	62.	93.	144.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	144.	5582.	6135.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6116.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5957.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.

1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.893

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	3.	700	4.	800	5.	900	8.
1000	19.	1050	31.	1100	37.	1110	57.	1120	58.
1130	83.	1131	85.	1132	87.	1133	90.	1134	93.
1135	95.	1136	95.	1137	99.	1138	102.	1139	105.
1140	108.	1141	114.	1142	118.	1143	122.	1144	128.
1145	140.	1146	148.	1147	158.	1148	169.	1149	202.
1150	237.	1151	249.	1152	327.	1153	376.	1154	408.
1155	433.	1156	444.	1157	442.	1158	410.	1159	374.
1160	364.	1161	284.	1162	232.	1163	202.	1164	173.
1165	137.	1166	112.	1167	95.	1168	83.	1169	76.
1170	67.	1171	63.	1172	59.	1173	52.	1174	50.
1175	47.	1176	46.	1177	43.	1178	37.	1179	38.
1180	36.	1181	34.	1182	33.	1183	31.	1184	31.
1185	30.	1186	30.	1187	29.	1188	29.	1189	29.
1190	28.	1191	28.	1192	28.	1193	28.	1194	28.
1195	28.	1196	28.	1197	28.	1198	28.	1199	28.
1200	28.	1201	27.	1202	27.	1203	26.	1204	25.
1205	24.	1206	23.	1207	22.	1208	22.	1209	21.
1210	20.	1211	19.	1212	19.	1213	19.	1214	18.
1215	18.	1216	18.	1217	18.	1218	17.	1219	17.
1220	18.	1221	18.	1222	17.	1223	17.	1224	18.
1225	18.	1226	17.	1227	17.	1228	18.	1229	18.
1230	17.	1231	17.	1232	18.	1233	17.	1234	17.
1235	17.	1236	17.	1237	17.	1238	17.	1239	16.
1240	16.	1241	16.	1242	16.	1243	16.	1244	16.
1245	16.	1246	16.	1247	16.	1248	16.	1249	16.
1250	16.	1251	16.	1252	16.	1253	16.	1254	16.
1255	16.	1256	16.	1257	16.	1258	16.	1259	16.
1260	16.	1261	16.	1262	15.	1263	15.	1264	15.
1265	14.	1266	13.	1267	13.	1268	12.	1269	12.
1270	11.	1271	11.	1272	11.	1273	10.	1274	10.
1275	9.	1276	10.	1277	9.	1278	9.	1279	9.
1280	9.	1281	9.	1282	9.	1283	9.	1284	9.
1285	9.	1286	9.	1287	9.	1288	9.	1289	9.
1290	9.	1291	9.	1292	9.	1293	9.	1294	9.
1295	9.	1296	9.	1297	9.	1298	9.	1299	9.
1300	9.	1310	7.	1320	4.	1330	3.	1340	3.
1350	3.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
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HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.893

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	9.	800	15.	900	28.
1000	89.	1050	208.	1100	485.	1110	554.	1120	634.
1130	736.	1131	747.	1132	759.	1133	771.	1134	784.
1135	797.	1136	809.	1137	823.	1138	837.	1139	851.
1140	865.	1141	880.	1142	895.	1143	912.	1144	929.
1145	946.	1146	965.	1147	984.	1148	1005.	1149	1026.
1150	1048.	1151	1072.	1152	1097.	1153	1123.	1154	1151.
1155	1181.	1156	1213.	1157	1248.	1158	1287.	1159	1330.
1160	1379.	1161	1434.	1162	1497.	1163	1567.	1164	1646.
1165	1737.	1166	1842.	1167	1964.	1168	2102.	1169	2256.
1170	2425.	1171	2603.	1172	2790.	1173	2983.	1174	3179.
1175	3375.	1176	3565.	1177	3746.	1178	3912.	1179	4061.
1180	4195.	1181	4318.	1182	4437.	1183	4557.	1184	4684.
1185	4819.	1186	4964.	1187	5116.	1188	5271.	1189	5422.
1190	5563.	1191	5689.	1192	5795.	1193	5876.	1194	5930.
1195	5957.	1196	5956.	1197	5929.	1198	5878.	1199	5805.
1200	5713.	1201	5606.	1202	5486.	1203	5356.	1204	5218.
1205	5075.	1206	4929.	1207	4780.	1208	4632.	1209	4484.
1210	4337.	1211	4193.	1212	4052.	1213	3914.	1214	3779.
1215	3649.	1216	3523.	1217	3401.	1218	3284.	1219	3170.
1220	3061.	1221	2956.	1222	2856.	1223	2759.	1224	2666.
1225	2576.	1226	2491.	1227	2408.	1228	2330.	1229	2254.
1230	2182.	1231	2113.	1232	2046.	1233	1983.	1234	1922.
1235	1863.	1236	1807.	1237	1753.	1238	1702.	1239	1652.
1240	1605.	1241	1559.	1242	1516.	1243	1474.	1244	1434.
1245	1395.	1246	1358.	1247	1322.	1248	1288.	1249	1255.
1250	1223.	1251	1193.	1252	1163.	1253	1135.	1254	1108.
1255	1082.	1256	1057.	1257	1032.	1258	1009.	1259	986.
1260	965.	1261	944.	1262	923.	1263	904.	1264	886.
1265	868.	1266	851.	1267	834.	1268	818.	1269	803.
1270	788.	1271	773.	1272	759.	1273	746.	1274	733.
1275	720.	1276	707.	1277	695.	1278	684.	1279	672.
1280	662.	1281	651.	1282	640.	1283	630.	1284	620.
1285	610.	1286	601.	1287	593.	1288	584.	1289	575.
1290	567.	1291	559.	1292	551.	1293	543.	1294	535.
1295	528.	1296	521.	1297	514.	1298	508.	1299	501.
1300	494.	1310	435.	1320	384.	1330	339.	1340	301.
1350	269.	1360	242.	1370	222.	1380	203.	1390	185.
1400	169.	1420	139.	1440	113.	1460	93.	1500	62.

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	115.	3433.	6785.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	218.	3490.	6809.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	171.	3540.	6802.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	264.	58.	264.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	304.	133.	451.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	273.	207.	676.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	219.	261.	863.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	91.	281.	911.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	159.	324.	1044.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	305.	413.	1243.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1243.	3953.	7221.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00♀

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	244.	85.	244.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	221.	164.	440.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	291.	237.	540.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	265.	88.	265.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	186.	142.	452.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	212.	222.	619.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	619.	459.	1151.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	303.	553.	1196.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	280.	79.	280.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	164.	130.	423.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	275.	203.	670.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	430.	311.	941.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	205.	398.	1055.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1055.	951.	2251.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	113.	981.	2222.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	258.	80.	258.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	45.	92.	281.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	281.	1073.	2423.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	200.	1139.	2407.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	283.	71.	283.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	155.	110.	323.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	271.	178.	535.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	199.	228.	643.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	643.	1367.	2743.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	68.	1385.	2746.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	180.	1441.	2799.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00

4492	27A	79.	280.	1520.	2841.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	170.	1584.	2938.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	148.	1630.	2945.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	159.	1670.	2964.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	171.	1723.	2974.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	341.	99.	341.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	151.	146.	486.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	127.	182.	599.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	218.	260.	728.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	280.	360.	987.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	52.	373.	971.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	199.	444.	1132.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	158.	493.	1202.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	230.	87.	230.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	201.	163.	398.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	274.	270.	664.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	97.	293.	674.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	224.	80.	224.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	215.	134.	328.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	328.	427.	998.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	138.	470.	1027.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1027.	963.	2229.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	161.	1013.	2253.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	254.	1092.	2310.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	112.	1120.	2311.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	221.	79.	221.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	94.	104.	281.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	281.	1224.	2500.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	56.	1238.	2492.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	308.	87.	308.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	113.	117.	370.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	370.	1355.	2635.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	159.	1395.	2626.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2626.	3118.	5597.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	177.	3173.	5589.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	283.	3253.	5620.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	155.	3294.	5617.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	263.	66.	263.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	173.	115.	328.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	328.	3409.	5699.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	101.	3433.	5700.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	190.	3490.	5714.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	149.	3540.	5698.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	231.	58.	231.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	266.	133.	390.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	238.	207.	581.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	191.	261.	744.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	80.	281.	785.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	138.	324.	900.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	265.	413.	1062.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1062.	3953.	6038.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	91.	3983.	6029.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	163.	4024.	6039.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	294.	4107.	6025.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	181.	51.	181.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00

4492	82D	47.	166.	98.	290.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	290.	4205.	6060.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	183.	4251.	6056.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	216.	4318.	6072.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	117.	4351.	6053.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	370.	4444.	6072.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	18.	4449.	6070.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6070.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	155.	39.	155.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	190.	98.	260.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	260.	4547.	6102.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	83.	4569.	6091.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	243.	4630.	6102.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	223.	4705.	6116.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	146.	39.	146.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	117.	72.	200.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	161.	122.	358.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	127.	158.	459.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	155.	206.	540.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	540.	4911.	6155.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	135.	4953.	6150.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	209.	5018.	6150.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	264.	5100.	6162.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	182.	5160.	6146.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	193.	5229.	6154.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	176.	5287.	6143.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	116.	5318.	6144.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	140.	5360.	6136.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	192.	5433.	6096.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	87.	5489.	6050.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	110.	50.	110.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	61.	93.	143.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	143.	5582.	6067.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6047.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5891.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.

1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.887

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	2.	700	4.	800	5.	900	8.
1000	18.	1050	31.	1100	36.	1110	57.	1120	57.
1130	82.	1131	84.	1132	86.	1133	89.	1134	92.
1135	94.	1136	94.	1137	98.	1138	101.	1139	104.
1140	107.	1141	113.	1142	117.	1143	121.	1144	127.
1145	138.	1146	146.	1147	156.	1148	167.	1149	201.
1150	235.	1151	247.	1152	324.	1153	373.	1154	405.
1155	430.	1156	440.	1157	438.	1158	407.	1159	371.
1160	362.	1161	282.	1162	231.	1163	201.	1164	171.
1165	136.	1166	111.	1167	94.	1168	82.	1169	75.
1170	66.	1171	62.	1172	58.	1173	51.	1174	49.
1175	47.	1176	45.	1177	42.	1178	37.	1179	37.
1180	35.	1181	34.	1182	33.	1183	31.	1184	30.
1185	30.	1186	29.	1187	29.	1188	29.	1189	28.
1190	27.	1191	27.	1192	27.	1193	27.	1194	27.
1195	28.	1196	27.	1197	27.	1198	27.	1199	27.
1200	27.	1201	27.	1202	26.	1203	25.	1204	25.
1205	24.	1206	23.	1207	22.	1208	21.	1209	20.
1210	20.	1211	19.	1212	19.	1213	18.	1214	18.
1215	17.	1216	17.	1217	17.	1218	17.	1219	17.
1220	17.	1221	17.	1222	17.	1223	17.	1224	17.
1225	17.	1226	17.	1227	17.	1228	17.	1229	17.
1230	17.	1231	17.	1232	17.	1233	17.	1234	16.
1235	17.	1236	17.	1237	16.	1238	16.	1239	16.
1240	16.	1241	16.	1242	16.	1243	16.	1244	16.
1245	16.	1246	16.	1247	16.	1248	16.	1249	16.
1250	16.	1251	16.	1252	16.	1253	15.	1254	16.
1255	15.	1256	15.	1257	16.	1258	15.	1259	15.

1260	16.	1261	15.	1262	15.	1263	14.	1264	14.
1265	14.	1266	13.	1267	12.	1268	12.	1269	11.
1270	11.	1271	11.	1272	10.	1273	10.	1274	10.
1275	9.	1276	9.	1277	9.	1278	9.	1279	9.
1280	9.	1281	9.	1282	9.	1283	8.	1284	9.
1285	9.	1286	8.	1287	8.	1288	9.	1289	9.
1290	8.	1291	8.	1292	9.	1293	8.	1294	8.
1295	8.	1296	9.	1297	9.	1298	8.	1299	8.
1300	8.	1310	7.	1320	4.	1330	3.	1340	3.
1350	2.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

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HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.887

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	8.	800	14.	900	25.
1000	82.	1050	194.	1100	462.	1110	531.	1120	609.
1130	710.	1131	722.	1132	733.	1133	745.	1134	758.
1135	770.	1136	783.	1137	796.	1138	810.	1139	824.
1140	838.	1141	853.	1142	868.	1143	884.	1144	901.
1145	918.	1146	936.	1147	955.	1148	975.	1149	996.
1150	1018.	1151	1041.	1152	1066.	1153	1092.	1154	1119.
1155	1149.	1156	1180.	1157	1215.	1158	1253.	1159	1295.
1160	1343.	1161	1397.	1162	1458.	1163	1526.	1164	1604.
1165	1693.	1166	1795.	1167	1914.	1168	2049.	1169	2200.
1170	2365.	1171	2541.	1172	2724.	1173	2914.	1174	3108.
1175	3302.	1176	3491.	1177	3670.	1178	3836.	1179	3985.
1180	4119.	1181	4242.	1182	4360.	1183	4479.	1184	4603.
1185	4737.	1186	4880.	1187	5030.	1188	5184.	1189	5335.
1190	5477.	1191	5605.	1192	5713.	1193	5797.	1194	5856.
1195	5887.	1196	5891.	1197	5868.	1198	5821.	1199	5753.
1200	5665.	1201	5562.	1202	5445.	1203	5319.	1204	5184.
1205	5044.	1206	4900.	1207	4754.	1208	4607.	1209	4460.
1210	4316.	1211	4173.	1212	4033.	1213	3896.	1214	3762.
1215	3633.	1216	3508.	1217	3387.	1218	3270.	1219	3157.
1220	3049.	1221	2944.	1222	2844.	1223	2747.	1224	2655.
1225	2566.	1226	2481.	1227	2399.	1228	2320.	1229	2245.
1230	2172.	1231	2104.	1232	2037.	1233	1974.	1234	1912.
1235	1854.	1236	1798.	1237	1745.	1238	1693.	1239	1644.
1240	1596.	1241	1551.	1242	1507.	1243	1465.	1244	1425.
1245	1387.	1246	1350.	1247	1314.	1248	1280.	1249	1247.
1250	1215.	1251	1185.	1252	1155.	1253	1127.	1254	1100.
1255	1074.	1256	1048.	1257	1024.	1258	1001.	1259	978.
1260	956.	1261	935.	1262	915.	1263	896.	1264	877.
1265	859.	1266	842.	1267	826.	1268	809.	1269	794.
1270	779.	1271	765.	1272	751.	1273	737.	1274	724.
1275	711.	1276	699.	1277	687.	1278	675.	1279	664.
1280	653.	1281	642.	1282	632.	1283	621.	1284	611.
1285	602.	1286	592.	1287	583.	1288	575.	1289	566.
1290	558.	1291	550.	1292	542.	1293	534.	1294	526.
1295	519.	1296	512.	1297	505.	1298	498.	1299	492.
1300	485.	1310	426.	1320	376.	1330	331.	1340	294.
1350	262.	1360	235.	1370	215.	1380	196.	1390	179.
1400	164.	1420	136.	1440	111.	1460	90.	1500	62.

VENTURA COUNTY FLOOD CONTROL DISTRICT
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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	115.	3433.	6785.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	218.	3490.	6809.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	171.	3540.	6802.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	264.	58.	264.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	304.	133.	451.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	273.	207.	676.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	219.	261.	863.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	91.	281.	911.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	159.	324.	1044.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	305.	413.	1243.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1243.	3953.	7221.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	104.	3983.	7218.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	186.	4024.	7234.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	336.	4107.	7221.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	206.	51.	206.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	190.	98.	337.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	337.	4205.	7267.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	243.	85.	243.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	220.	164.	438.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	290.	237.	538.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	265.	88.	265.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	186.	142.	450.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	211.	222.	617.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	617.	459.	1147.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	302.	553.	1191.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	279.	79.	279.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	164.	130.	422.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	274.	203.	668.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	429.	311.	937.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	204.	398.	1051.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1051.	951.	2242.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	112.	981.	2212.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	257.	80.	257.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	45.	92.	279.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	279.	1073.	2413.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	199.	1139.	2397.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	282.	71.	282.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00

4492	21E	39.	155.	110.	321.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	270.	178.	533.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	198.	228.	641.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	641.	1367.	2730.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	67.	1385.	2734.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	180.	1441.	2786.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	279.	1520.	2828.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	169.	1584.	2924.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	148.	1630.	2931.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	159.	1670.	2950.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	170.	1723.	2960.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	340.	99.	340.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	151.	146.	484.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	127.	182.	597.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	217.	260.	725.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	279.	360.	983.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	52.	373.	968.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	198.	444.	1127.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	157.	493.	1197.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	230.	87.	230.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	201.	163.	396.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	273.	270.	661.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	97.	293.	671.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	223.	80.	223.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	214.	134.	327.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	327.	427.	994.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	138.	470.	1023.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1023.	963.	2219.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	160.	1013.	2243.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	254.	1092.	2300.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	111.	1120.	2301.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	220.	79.	220.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	93.	104.	280.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	280.	1224.	2489.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	56.	1238.	2482.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	307.	87.	307.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	112.	117.	369.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	369.	1355.	2624.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	159.	1395.	2614.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2614.	3118.	5571.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	177.	3173.	5563.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	282.	3253.	5594.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	154.	3294.	5592.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	262.	66.	262.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	173.	115.	327.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	327.	3409.	5672.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	101.	3433.	5673.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	189.	3490.	5687.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	148.	3540.	5671.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	230.	58.	230.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	265.	133.	388.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	237.	207.	579.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	191.	261.	741.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	79.	281.	782.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	138.	324.	897.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00

4492	76C	89.	264.	413.	1058.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1058.	3953.	6009.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	91.	3983.	6000.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	163.	4024.	6010.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	293.	4107.	5995.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	180.	51.	180.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	166.	98.	289.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	289.	4205.	6031.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	183.	4251.	6026.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	215.	4318.	6042.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	116.	4351.	6024.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	369.	4444.	6043.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	18.	4449.	6040.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	6040.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	155.	39.	155.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	189.	98.	259.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	259.	4547.	6072.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	82.	4569.	6060.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	242.	4630.	6072.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	223.	4705.	6086.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	146.	39.	146.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	116.	72.	200.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	160.	122.	357.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	127.	158.	457.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	154.	206.	537.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	537.	4911.	6125.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	135.	4953.	6119.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	209.	5018.	6119.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	263.	5100.	6131.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	181.	5160.	6115.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	192.	5229.	6122.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	175.	5287.	6113.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	116.	5318.	6113.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	139.	5360.	6104.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	191.	5433.	6065.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	86.	5489.	6019.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	110.	50.	110.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	61.	93.	142.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	142.	5582.	6035.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	6015.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5860.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950
Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.

1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.884

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	2.	700	4.	800	5.	900	8.
1000	18.	1050	30.	1100	36.	1110	56.	1120	57.
1130	81.	1131	83.	1132	85.	1133	88.	1134	91.
1135	94.	1136	94.	1137	98.	1138	101.	1139	103.
1140	107.	1141	112.	1142	116.	1143	120.	1144	126.
1145	138.	1146	146.	1147	155.	1148	167.	1149	200.
1150	234.	1151	246.	1152	323.	1153	372.	1154	403.
1155	428.	1156	438.	1157	437.	1158	405.	1159	370.
1160	360.	1161	281.	1162	230.	1163	200.	1164	171.
1165	135.	1166	111.	1167	94.	1168	82.	1169	74.
1170	66.	1171	62.	1172	58.	1173	51.	1174	49.
1175	47.	1176	45.	1177	42.	1178	36.	1179	37.
1180	35.	1181	34.	1182	32.	1183	30.	1184	30.
1185	29.	1186	29.	1187	29.	1188	28.	1189	28.
1190	27.	1191	27.	1192	27.	1193	27.	1194	27.
1195	27.	1196	27.	1197	27.	1198	27.	1199	27.
1200	27.	1201	26.	1202	26.	1203	25.	1204	24.
1205	24.	1206	23.	1207	22.	1208	21.	1209	20.
1210	19.	1211	18.	1212	18.	1213	18.	1214	17.
1215	17.	1216	17.	1217	17.	1218	17.	1219	16.
1220	17.	1221	17.	1222	16.	1223	16.	1224	17.
1225	17.	1226	16.	1227	16.	1228	17.	1229	17.

1230	16.	1231	16.	1232	17.	1233	17.	1234	16.
1235	16.	1236	16.	1237	16.	1238	16.	1239	16.
1240	16.	1241	16.	1242	16.	1243	16.	1244	15.
1245	15.	1246	15.	1247	15.	1248	15.	1249	15.
1250	15.	1251	15.	1252	15.	1253	15.	1254	15.
1255	15.	1256	15.	1257	15.	1258	15.	1259	15.
1260	15.	1261	15.	1262	14.	1263	14.	1264	14.
1265	13.	1266	13.	1267	12.	1268	11.	1269	11.
1270	11.	1271	10.	1272	10.	1273	10.	1274	9.
1275	9.	1276	9.	1277	9.	1278	9.	1279	9.
1280	9.	1281	9.	1282	8.	1283	8.	1284	8.
1285	8.	1286	8.	1287	8.	1288	8.	1289	8.
1290	8.	1291	8.	1292	8.	1293	8.	1294	8.
1295	8.	1296	8.	1297	8.	1298	8.	1299	8.
1300	8.	1310	7.	1320	4.	1330	3.	1340	3.
1350	2.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.884

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	8.	800	14.	900	25.
1000	80.	1050	189.	1100	453.	1110	520.	1120	598.
1130	698.	1131	710.	1132	721.	1133	733.	1134	746.
1135	758.	1136	771.	1137	784.	1138	797.	1139	811.
1140	825.	1141	840.	1142	855.	1143	871.	1144	888.
1145	905.	1146	923.	1147	942.	1148	962.	1149	982.
1150	1004.	1151	1027.	1152	1052.	1153	1077.	1154	1105.
1155	1134.	1156	1165.	1157	1199.	1158	1237.	1159	1279.
1160	1326.	1161	1380.	1162	1440.	1163	1507.	1164	1584.
1165	1672.	1166	1774.	1167	1891.	1168	2024.	1169	2174.
1170	2337.	1171	2512.	1172	2694.	1173	2883.	1174	3075.
1175	3268.	1176	3456.	1177	3635.	1178	3800.	1179	3950.
1180	4084.	1181	4207.	1182	4325.	1183	4443.	1184	4566.
1185	4699.	1186	4841.	1187	4991.	1188	5143.	1189	5294.
1190	5437.	1191	5565.	1192	5674.	1193	5761.	1194	5821.
1195	5854.	1196	5860.	1197	5840.	1198	5795.	1199	5728.
1200	5643.	1201	5541.	1202	5427.	1203	5301.	1204	5168.
1205	5029.	1206	4886.	1207	4741.	1208	4595.	1209	4450.
1210	4305.	1211	4163.	1212	4024.	1213	3887.	1214	3754.
1215	3626.	1216	3500.	1217	3380.	1218	3263.	1219	3151.
1220	3043.	1221	2938.	1222	2839.	1223	2742.	1224	2650.
1225	2561.	1226	2476.	1227	2394.	1228	2315.	1229	2241.
1230	2168.	1231	2099.	1232	2033.	1233	1969.	1234	1908.
1235	1850.	1236	1794.	1237	1741.	1238	1689.	1239	1640.
1240	1592.	1241	1547.	1242	1503.	1243	1462.	1244	1422.
1245	1383.	1246	1346.	1247	1310.	1248	1276.	1249	1243.
1250	1211.	1251	1181.	1252	1152.	1253	1123.	1254	1096.
1255	1070.	1256	1045.	1257	1020.	1258	997.	1259	975.
1260	953.	1261	932.	1262	911.	1263	892.	1264	873.
1265	855.	1266	838.	1267	822.	1268	806.	1269	790.
1270	775.	1271	761.	1272	747.	1273	733.	1274	720.
1275	707.	1276	695.	1277	683.	1278	671.	1279	659.
1280	649.	1281	638.	1282	628.	1283	617.	1284	608.
1285	598.	1286	588.	1287	579.	1288	570.	1289	562.
1290	554.	1291	546.	1292	538.	1293	530.	1294	522.
1295	515.	1296	508.	1297	501.	1298	494.	1299	487.
1300	481.	1310	422.	1320	372.	1330	328.	1340	290.

1350	258.	1360	231.	1370	211.	1380	193.	1390	177.
1400	161.	1420	134.	1440	109.	1460	89.	1500	61.

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	115.	3433.	6785.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	218.	3490.	6809.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	171.	3540.	6802.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	264.	58.	264.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	304.	133.	451.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	273.	207.	676.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	219.	261.	863.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	91.	281.	911.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	159.	324.	1044.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	305.	413.	1243.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1243.	3953.	7221.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	104.	3983.	7218.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	186.	4024.	7234.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	336.	4107.	7221.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	206.	51.	206.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	190.	98.	337.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	337.	4205.	7267.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	209.	4251.	7275.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	247.	4318.	7300.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	134.	4351.	7276.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	423.	4444.	7302.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	20.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	177.	39.	177.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	218.	98.	305.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	305.	4547.	7341.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00

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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	242.	85.	242.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	219.	164.	436.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	288.	237.	535.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	263.	88.	263.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	185.	142.	448.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	210.	222.	614.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	614.	459.	1141.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	300.	553.	1184.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	277.	79.	277.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	163.	130.	419.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	273.	203.	664.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00

4492	12C	108.	427.	311.	932.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	203.	398.	1045.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1045.	951.	2229.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	112.	981.	2200.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	255.	80.	255.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	45.	92.	278.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	278.	1073.	2399.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	198.	1139.	2383.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	280.	71.	280.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	154.	110.	320.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	269.	178.	531.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	198.	228.	637.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	637.	1367.	2713.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	67.	1385.	2717.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	179.	1441.	2768.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	277.	1520.	2811.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	168.	1584.	2906.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	147.	1630.	2912.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	158.	1670.	2931.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	169.	1723.	2941.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	339.	99.	339.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	150.	146.	482.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	126.	182.	594.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	216.	260.	721.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	277.	360.	978.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	51.	373.	963.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	197.	444.	1121.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	156.	493.	1190.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	228.	87.	228.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	200.	163.	394.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	272.	270.	658.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	96.	293.	667.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	222.	80.	222.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	213.	134.	325.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	325.	427.	988.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	137.	470.	1017.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1017.	963.	2207.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	160.	1013.	2230.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	252.	1092.	2286.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	111.	1120.	2287.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	219.	79.	219.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	93.	104.	279.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	279.	1224.	2474.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	55.	1238.	2467.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	306.	87.	306.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	112.	117.	367.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	367.	1355.	2608.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	158.	1395.	2599.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2599.	3118.	5536.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	176.	3173.	5528.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	281.	3253.	5558.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	153.	3294.	5557.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	261.	66.	261.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	172.	115.	325.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	325.	3409.	5636.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00

4492	67A	24.	101.	3433.	5637.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	188.	3490.	5651.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	148.	3540.	5635.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	229.	58.	229.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	263.	133.	386.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	236.	207.	576.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	190.	261.	737.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	79.	281.	778.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	137.	324.	892.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	263.	413.	1052.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1052.	3953.	5970.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	90.	3983.	5961.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	162.	4024.	5971.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	291.	4107.	5955.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	179.	51.	179.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	165.	98.	287.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	287.	4205.	5991.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	182.	4251.	5985.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	214.	4318.	6001.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	116.	4351.	5984.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	367.	4444.	6003.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	18.	4449.	5999.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	5999.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	154.	39.	154.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	188.	98.	258.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	258.	4547.	6030.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	82.	4569.	6019.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	241.	4630.	6030.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	222.	4705.	6044.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	145.	39.	145.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	116.	72.	198.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	160.	122.	355.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	126.	158.	455.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	153.	206.	534.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

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LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	534.	4911.	6084.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	134.	4953.	6077.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	208.	5018.	6077.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	262.	5100.	6089.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	180.	5160.	6071.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	191.	5229.	6079.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00
4492	107A	58.	174.	5287.	6071.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	115.	5318.	6072.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	139.	5360.	6062.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	190.	5433.	6023.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	86.	5489.	5976.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	109.	50.	109.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	61.	93.	141.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	141.	5582.	5992.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	5972.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5818.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.880

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	2.	700	4.	800	5.	900	8.
1000	18.	1050	30.	1100	35.	1110	56.	1120	56.
1130	81.	1131	83.	1132	85.	1133	88.	1134	91.
1135	93.	1136	93.	1137	97.	1138	100.	1139	102.
1140	106.	1141	111.	1142	115.	1143	120.	1144	125.
1145	137.	1146	145.	1147	155.	1148	166.	1149	199.
1150	233.	1151	245.	1152	321.	1153	370.	1154	401.
1155	426.	1156	436.	1157	435.	1158	403.	1159	368.
1160	359.	1161	280.	1162	229.	1163	199.	1164	170.
1165	135.	1166	110.	1167	93.	1168	82.	1169	74.
1170	66.	1171	61.	1172	57.	1173	50.	1174	49.
1175	46.	1176	44.	1177	41.	1178	36.	1179	37.
1180	35.	1181	33.	1182	32.	1183	30.	1184	29.

1185	29.	1186	28.	1187	28.	1188	28.	1189	28.
1190	27.	1191	27.	1192	27.	1193	27.	1194	27.
1195	27.	1196	26.	1197	26.	1198	26.	1199	26.
1200	26.	1201	26.	1202	25.	1203	25.	1204	24.
1205	23.	1206	22.	1207	21.	1208	21.	1209	20.
1210	19.	1211	18.	1212	18.	1213	18.	1214	17.
1215	17.	1216	17.	1217	17.	1218	16.	1219	16.
1220	17.	1221	17.	1222	16.	1223	16.	1224	17.
1225	17.	1226	16.	1227	16.	1228	17.	1229	17.
1230	16.	1231	16.	1232	17.	1233	16.	1234	16.
1235	16.	1236	16.	1237	16.	1238	16.	1239	15.
1240	15.	1241	15.	1242	15.	1243	15.	1244	15.
1245	15.	1246	15.	1247	15.	1248	15.	1249	15.
1250	15.	1251	15.	1252	15.	1253	15.	1254	15.
1255	15.	1256	15.	1257	15.	1258	15.	1259	15.
1260	15.	1261	15.	1262	14.	1263	14.	1264	14.
1265	13.	1266	13.	1267	12.	1268	11.	1269	11.
1270	11.	1271	10.	1272	10.	1273	10.	1274	9.
1275	9.	1276	9.	1277	9.	1278	9.	1279	8.
1280	8.	1281	8.	1282	8.	1283	8.	1284	8.
1285	8.	1286	8.	1287	8.	1288	8.	1289	8.
1290	8.	1291	8.	1292	8.	1293	8.	1294	8.
1295	8.	1296	8.	1297	8.	1298	8.	1299	8.
1300	8.	1310	7.	1320	4.	1330	3.	1340	3.
1350	2.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.880

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	8.	800	13.	900	24.
1000	77.	1050	182.	1100	440.	1110	506.	1120	583.
1130	682.	1131	694.	1132	705.	1133	717.	1134	729.
1135	742.	1136	754.	1137	767.	1138	780.	1139	794.
1140	808.	1141	823.	1142	838.	1143	853.	1144	870.
1145	887.	1146	905.	1147	924.	1148	943.	1149	964.
1150	985.	1151	1008.	1152	1032.	1153	1058.	1154	1085.
1155	1113.	1156	1144.	1157	1178.	1158	1215.	1159	1257.
1160	1303.	1161	1356.	1162	1415.	1163	1482.	1164	1558.
1165	1645.	1166	1744.	1167	1859.	1168	1991.	1169	2139.
1170	2300.	1171	2472.	1172	2653.	1173	2840.	1174	3030.
1175	3222.	1176	3409.	1177	3587.	1178	3753.	1179	3902.
1180	4036.	1181	4159.	1182	4276.	1183	4394.	1184	4516.
1185	4648.	1186	4788.	1187	4937.	1188	5089.	1189	5239.
1190	5382.	1191	5512.	1192	5622.	1193	5711.	1194	5773.
1195	5809.	1196	5818.	1197	5801.	1198	5759.	1199	5695.
1200	5612.	1201	5513.	1202	5401.	1203	5278.	1204	5146.
1205	5009.	1206	4867.	1207	4724.	1208	4579.	1209	4435.
1210	4291.	1211	4150.	1212	4011.	1213	3876.	1214	3744.
1215	3615.	1216	3491.	1217	3371.	1218	3254.	1219	3143.
1220	3035.	1221	2931.	1222	2831.	1223	2735.	1224	2643.
1225	2554.	1226	2469.	1227	2388.	1228	2309.	1229	2234.
1230	2162.	1231	2093.	1232	2027.	1233	1964.	1234	1903.
1235	1844.	1236	1789.	1237	1735.	1238	1684.	1239	1634.
1240	1587.	1241	1542.	1242	1498.	1243	1456.	1244	1416.
1245	1378.	1246	1341.	1247	1305.	1248	1271.	1249	1238.
1250	1206.	1251	1176.	1252	1147.	1253	1118.	1254	1091.
1255	1065.	1256	1040.	1257	1015.	1258	992.	1259	970.

1260	948.	1261	927.	1262	906.	1263	887.	1264	868.
1265	850.	1266	833.	1267	816.	1268	800.	1269	785.
1270	770.	1271	755.	1272	741.	1273	728.	1274	715.
1275	702.	1276	689.	1277	677.	1278	666.	1279	654.
1280	643.	1281	632.	1282	622.	1283	612.	1284	602.
1285	592.	1286	583.	1287	574.	1288	564.	1289	556.
1290	548.	1291	540.	1292	532.	1293	525.	1294	517.
1295	509.	1296	502.	1297	495.	1298	488.	1299	482.
1300	475.	1310	416.	1320	366.	1330	323.	1340	285.
1350	254.	1360	227.	1370	206.	1380	189.	1390	173.
1400	158.	1420	131.	1440	108.	1460	88.	1500	61.

VENTURA COUNTY FLOOD CONTROL DISTRICT
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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	1A	85.	278.	85.	278.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	254.	164.	506.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	332.	237.	633.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	303.	88.	303.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	212.	142.	515.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	244.	222.	711.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	711.	459.	1339.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	347.	553.	1411.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	320.	79.	320.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	188.	130.	487.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	313.	203.	771.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	491.	311.	1088.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	236.	398.	1226.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1226.	951.	2637.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	129.	981.	2603.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	295.	80.	295.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	51.	92.	324.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	324.	1073.	2832.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	229.	1139.	2833.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	323.	71.	323.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	177.	110.	376.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	309.	178.	619.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	227.	228.	747.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	747.	1367.	3265.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	77.	1385.	3252.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	207.	1441.	3331.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	320.	1520.	3378.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	195.	1584.	3488.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	170.	1630.	3516.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	182.	1670.	3539.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	196.	1723.	3557.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	389.	99.	389.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	174.	146.	555.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	146.	182.	687.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	251.	260.	844.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	321.	360.	1142.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	59.	373.	1128.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	228.	444.	1320.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	181.	493.	1407.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	265.	87.	265.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	231.	163.	460.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	314.	270.	766.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	110.	293.	780.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	257.	80.	257.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	246.	134.	384.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	384.	427.	1165.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	159.	470.	1206.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1206.	963.	2613.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	185.	1013.	2655.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	292.	1092.	2726.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00

VENTURA COUNTY FLOOD CONTROL DISTRICT
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STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	51B	28.	127.	1120.	2731.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	52E	79.	254.	79.	254.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	107.	104.	325.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	325.	1224.	2947.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	64.	1238.	2937.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	352.	87.	352.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	129.	117.	426.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	426.	1355.	3116.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	182.	1395.	3105.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	3105.	3118.	6657.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	203.	3173.	6660.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	324.	3253.	6699.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	176.	3294.	6700.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	300.	66.	300.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	198.	115.	383.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	383.	3409.	6798.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	115.	3433.	6785.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	218.	3490.	6809.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	171.	3540.	6802.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	264.	58.	264.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	304.	133.	451.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	273.	207.	676.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	219.	261.	863.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	91.	281.	911.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	159.	324.	1044.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	305.	413.	1243.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1243.	3953.	7221.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	104.	3983.	7218.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	186.	4024.	7234.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	336.	4107.	7221.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	206.	51.	206.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	190.	98.	337.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	337.	4205.	7267.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	209.	4251.	7275.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	247.	4318.	7300.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	134.	4351.	7276.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	423.	4444.	7302.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	20.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	7300.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	177.	39.	177.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	218.	98.	305.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	305.	4547.	7341.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	94.	4569.	7333.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	277.	4630.	7350.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	257.	4705.	7369.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	167.	39.	167.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	134.	72.	233.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	185.	122.	414.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	146.	158.	531.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	177.	206.	633.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
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Header place holder

STORM DAY 4

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
4492	101AF	206.	633.	4911.	7433.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00♀

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	1A	85.	240.	85.	240.	1	1635.	0.17400	0.00	0.00	0.	10	10	B98	0.00
4492	2A	79.	218.	164.	434.	1	1750.	0.07500	0.00	0.00	0.	20	9	B98	0.00
4492	3A	73.	287.	237.	531.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	4B	88.	262.	88.	262.	0	0.	0.00000	0.00	0.00	0.	10	9	B98	0.00
4492	5B	54.	184.	142.	446.	1	2148.	0.14200	0.00	0.00	0.	10	7	B98	0.00
4492	6B	80.	209.	222.	611.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	7AB	222.	611.	459.	1134.	1	2215.	0.05500	0.00	0.00	0.	10	0	A97	0.00
4492	8A	94.	299.	553.	1176.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	9C	79.	276.	79.	276.	1	2067.	0.40700	0.00	0.00	0.	20	6	B98	0.00
4492	10C	51.	162.	130.	417.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	11C	73.	272.	203.	661.	1	1977.	0.17500	0.00	0.00	0.	10	6	B98	0.00
4492	12C	108.	425.	311.	927.	1	1913.	0.08800	0.00	0.00	0.	20	5	B98	0.00
4492	13C	87.	202.	398.	1039.	0	0.	0.00000	0.00	0.00	0.	20	12	B98	0.00
4492	14AC	398.	1039.	951.	2215.	2	1101.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	15A	30.	111.	981.	2186.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	16D	80.	254.	80.	254.	1	830.	0.05800	0.00	0.00	0.	20	7	B98	0.00
4492	17D	12.	44.	92.	277.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	18AD	92.	277.	1073.	2385.	2	2430.	0.03600	0.00	0.00	0.	10	0	A97	0.00
4492	19A	66.	197.	1139.	2368.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	20E	71.	279.	71.	279.	1	1615.	0.06100	0.00	0.00	0.	20	5	B98	0.00
4492	21E	39.	153.	110.	318.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	22E	68.	267.	178.	528.	2	1242.	0.04700	0.00	0.00	0.	20	5	B98	0.00
4492	23E	50.	197.	228.	634.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	24AE	228.	634.	1367.	2695.	2	818.	0.02600	0.00	0.00	0.	10	0	A97	0.00
4492	25A	18.	67.	1385.	2699.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	26A	56.	178.	1441.	2749.	2	790.	0.02700	0.00	0.00	0.	20	7	B98	0.00
4492	27A	79.	276.	1520.	2792.	2	950.	0.02400	0.00	0.00	0.	20	6	B98	0.00
4492	28A	64.	167.	1584.	2887.	2	1069.	0.02600	0.00	0.00	0.	20	10	B98	0.00
4492	29A	46.	146.	1630.	2892.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	30A	40.	157.	1670.	2911.	2	1537.	0.02900	0.00	0.00	0.	20	5	B98	0.00
4492	31A	53.	168.	1723.	2922.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	32B	99.	337.	99.	337.	1	735.	0.11200	0.00	0.00	0.	10	7	B98	0.00
4492	33B	47.	149.	146.	479.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	34B	36.	126.	182.	591.	1	1710.	0.05700	0.00	0.00	0.	20	6	B98	0.00
4492	35B	78.	215.	260.	717.	0	0.	0.00000	0.00	0.00	0.	20	9	B98	0.00
4492	36B	100.	276.	360.	972.	1	736.	0.05200	0.00	0.00	0.	20	9	B98	0.00
4492	37B	13.	51.	373.	957.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	38B	71.	196.	444.	1114.	2	1438.	0.03500	0.00	0.00	0.	20	9	B98	0.00
4492	39B	49.	156.	493.	1183.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	40C	87.	227.	87.	227.	1	2063.	0.16300	0.00	0.00	0.	20	10	B98	0.00
4492	41C	76.	199.	163.	392.	0	0.	0.00000	0.00	0.00	0.	20	10	B98	0.00
4492	42C	107.	271.	270.	654.	1	1338.	0.08100	0.00	0.00	0.	10	12	B98	0.00
4492	43C	23.	96.	293.	664.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	44D	80.	221.	80.	221.	1	1840.	0.08300	0.00	0.00	0.	20	9	B98	0.00
4492	45D	54.	212.	134.	323.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	46CD	134.	323.	427.	983.	1	1426.	0.05600	0.00	0.00	0.	10	0	A97	0.00
4492	47C	43.	137.	470.	1010.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	48BC	470.	1010.	963.	2193.	2	768.	0.02900	0.00	0.00	0.	10	0	A97	0.00
4492	49B	50.	159.	1013.	2216.	2	1183.	0.03500	0.00	0.00	0.	20	7	B98	0.00
4492	50B	79.	251.	1092.	2272.	2	1240.	0.03400	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
4492	51B	28.	110.	1120.	2273.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00

4492	52E	79.	218.	79.	218.	1	782.	0.06000	0.00	0.00	0.	20	9	B98	0.00
4492	53E	25.	93.	104.	277.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	54BE	104.	277.	1224.	2459.	2	853.	0.04000	0.00	0.00	0.	10	0	A97	0.00
4492	55B	14.	55.	1238.	2452.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	56F	87.	304.	87.	304.	2	1222.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	57F	30.	111.	117.	365.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	58BF	117.	365.	1355.	2591.	1	1584.	0.06300	0.00	0.00	0.	10	0	A97	0.00
4492	59B	40.	157.	1395.	2582.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	60AB	1395.	2582.	3118.	5499.	2	1530.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	61A	55.	175.	3173.	5490.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	62A	80.	279.	3253.	5520.	2	1254.	0.01800	0.00	0.00	0.	20	6	B98	0.00
4492	63A	41.	153.	3294.	5521.	0	0.	0.00000	0.00	0.00	0.	10	6	B98	0.00
4492	64B	66.	259.	66.	259.	1	1577.	0.07600	0.00	0.00	0.	20	5	B98	0.00
4492	65B	49.	171.	115.	323.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	66AB	115.	323.	3409.	5597.	2	885.	0.02400	0.00	0.00	0.	10	0	A97	0.00
4492	67A	24.	100.	3433.	5599.	0	0.	0.00000	0.00	0.00	0.	10	5	B98	0.00
4492	68A	57.	187.	3490.	5613.	2	1682.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	69A	50.	147.	3540.	5597.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	70C	58.	228.	58.	228.	1	1208.	0.05000	0.00	0.00	0.	20	5	B98	0.00
4492	71C	75.	262.	133.	384.	2	1403.	0.04800	0.00	0.00	0.	20	6	B98	0.00
4492	72C	74.	235.	207.	573.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	73C	54.	189.	261.	733.	2	814.	0.02700	0.00	0.00	0.	20	6	B98	0.00
4492	74C	20.	79.	281.	773.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	75C	43.	137.	324.	887.	2	1738.	0.03400	0.00	0.00	0.	20	7	B98	0.00
4492	76C	89.	262.	413.	1045.	0	0.	0.00000	0.00	0.00	0.	20	8	B98	0.00
4492	77AC	413.	1045.	3953.	5929.	2	1110.	0.01900	0.00	0.00	0.	10	0	A97	0.00
4492	78A	30.	90.	3983.	5919.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	79A	41.	161.	4024.	5929.	2	2463.	0.01700	0.00	0.00	0.	20	5	B98	0.00
4492	80A	83.	290.	4107.	5913.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	81D	51.	178.	51.	178.	1	1093.	0.07600	0.00	0.00	0.	20	6	B98	0.00
4492	82D	47.	164.	98.	285.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	83AD	98.	285.	4205.	5948.	2	977.	0.03300	0.00	0.00	0.	10	0	A97	0.00
4492	84A	46.	181.	4251.	5943.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	85A	67.	213.	4318.	5958.	2	1211.	0.00700	0.00	0.00	0.	20	7	B98	0.00
4492	86A	33.	115.	4351.	5943.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	87A	93.	366.	4444.	5961.	2	524.	0.01100	0.00	0.00	0.	20	5	B98	0.00
4492	88A	5.	18.	4449.	5955.	0	0.	0.00000	0.00	0.00	0.	40	5	B98	0.00
4492	89A	0.	0.	4449.	5955.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00
4492	90E	39.	153.	39.	153.	1	1621.	0.05900	0.00	0.00	0.	20	5	B98	0.00
4492	91E	59.	187.	98.	256.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	92AE	98.	256.	4547.	5987.	2	926.	0.01100	0.00	0.00	0.	10	0	A97	0.00
4492	93A	22.	81.	4569.	5975.	0	0.	0.00000	0.00	0.00	0.	30	5	B98	0.00
4492	94A	61.	240.	4630.	5986.	0	0.	0.00000	0.00	0.00	0.	20	5	B98	0.00
4492	95A	75.	220.	4705.	6000.	2	1651.	0.01600	0.00	0.00	0.	20	8	B98	0.00
4492	96F	39.	144.	39.	144.	1	1064.	0.05300	0.00	0.00	0.	30	5	B98	0.00
4492	97F	33.	115.	72.	197.	0	0.	0.00000	0.00	0.00	0.	20	6	B98	0.00
4492	98F	50.	159.	122.	353.	1	595.	0.09400	0.00	0.00	0.	20	7	B98	0.00
4492	99F	36.	126.	158.	452.	2	1714.	0.04600	0.00	0.00	0.	20	6	B98	0.00
4492	100F	48.	152.	206.	531.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00♀

VENTURA COUNTY FLOOD CONTROL DISTRICT
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Header place holder

LOCATION		SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
4492	101AF	206.	531.	4911.	6040.	2	1147.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	102A	42.	133.	4953.	6033.	2	1111.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	103A	65.	206.	5018.	6033.	0	0.	0.00000	0.00	0.00	0.	20	7	B98	0.00
4492	104A	82.	260.	5100.	6044.	2	1606.	0.01800	0.00	0.00	0.	20	7	B98	0.00
4492	105A	60.	179.	5160.	6026.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	106A	69.	190.	5229.	6035.	2	1408.	0.02100	0.00	0.00	0.	20	9	B98	0.00

4492	107A	58.	173.	5287.	6027.	0	0.	0.00000	0.00	0.00	0.	30	7	B98	0.00
4492	108A	31.	115.	5318.	6027.	2	1467.	0.01500	0.00	0.00	0.	30	5	B98	0.00
4492	109A	42.	138.	5360.	6016.	2	2733.	0.01400	0.00	0.00	0.	30	6	B98	0.00
4492	110A	73.	189.	5433.	5978.	2	3056.	0.01300	0.00	0.00	0.	30	9	B98	0.00
4492	111A	56.	85.	5489.	5930.	0	0.	0.00000	0.00	0.00	0.	30	21	B98	0.00
4492	112B	50.	109.	50.	109.	2	2779.	0.01700	0.00	0.00	0.	30	12	B98	0.00
4492	113B	43.	60.	93.	140.	0	0.	0.00000	0.00	0.00	0.	40	21	B98	0.00
4492	114AB	93.	140.	5582.	5946.	2	1726.	0.01000	0.00	0.00	0.	10	0	A97	0.00
4492	115A	0.	0.	5582.	5925.	2	5400.	0.01000	0.00	0.00	0.	10	99	A97	0.00
4492	116A	0.	0.	5582.	5773.	0	0.	0.00000	0.00	0.00	0.	10	99	A97	0.00

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HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	3.	400	3.
500	4.	600	6.	700	7.	800	10.	900	16.
1000	28.	1050	42.	1100	48.	1110	72.	1120	72.
1130	100.	1131	102.	1132	105.	1133	108.	1134	111.
1135	114.	1136	114.	1137	118.	1138	121.	1139	124.
1140	128.	1141	135.	1142	139.	1143	144.	1144	151.
1145	163.	1146	173.	1147	183.	1148	196.	1149	234.
1150	274.	1151	289.	1152	376.	1153	432.	1154	469.
1155	497.	1156	506.	1157	503.	1158	466.	1159	426.
1160	414.	1161	322.	1162	265.	1163	231.	1164	197.
1165	157.	1166	130.	1167	111.	1168	98.	1169	90.
1170	80.	1171	76.	1172	71.	1173	64.	1174	62.
1175	59.	1176	57.	1177	54.	1178	48.	1179	49.
1180	47.	1181	45.	1182	43.	1183	41.	1184	41.
1185	40.	1186	40.	1187	40.	1188	39.	1189	39.
1190	38.	1191	38.	1192	38.	1193	38.	1194	38.
1195	38.	1196	38.	1197	38.	1198	38.	1199	38.
1200	38.	1201	37.	1202	37.	1203	35.	1204	35.
1205	34.	1206	33.	1207	32.	1208	31.	1209	30.
1210	29.	1211	28.	1212	28.	1213	27.	1214	27.
1215	26.	1216	26.	1217	27.	1218	26.	1219	26.
1220	26.	1221	26.	1222	26.	1223	26.	1224	26.
1225	27.	1226	26.	1227	26.	1228	26.	1229	27.
1230	26.	1231	26.	1232	26.	1233	26.	1234	25.
1235	26.	1236	26.	1237	25.	1238	25.	1239	25.
1240	25.	1241	25.	1242	25.	1243	25.	1244	25.
1245	25.	1246	25.	1247	25.	1248	25.	1249	25.
1250	25.	1251	25.	1252	25.	1253	25.	1254	25.
1255	25.	1256	25.	1257	25.	1258	25.	1259	25.
1260	25.	1261	25.	1262	24.	1263	23.	1264	23.
1265	22.	1266	22.	1267	21.	1268	20.	1269	20.
1270	19.	1271	18.	1272	19.	1273	18.	1274	17.
1275	17.	1276	17.	1277	17.	1278	17.	1279	16.
1280	17.	1281	17.	1282	16.	1283	16.	1284	17.
1285	17.	1286	16.	1287	16.	1288	17.	1289	17.
1290	16.	1291	16.	1292	17.	1293	16.	1294	16.
1295	16.	1296	17.	1297	17.	1298	16.	1299	16.
1300	17.	1310	11.	1320	7.	1330	6.	1340	6.
1350	5.	1360	2.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 2A STORM DAY 4 REDUCTION FACTOR = 0.876

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	0.	200	0.	300	0.	400	0.
500	1.	600	2.	700	3.	800	5.	900	8.
1000	17.	1050	30.	1100	35.	1110	55.	1120	56.
1130	80.	1131	82.	1132	84.	1133	87.	1134	90.
1135	92.	1136	93.	1137	96.	1138	99.	1139	102.
1140	105.	1141	111.	1142	115.	1143	119.	1144	125.
1145	136.	1146	144.	1147	154.	1148	165.	1149	198.
1150	231.	1151	243.	1152	320.	1153	368.	1154	399.
1155	424.	1156	434.	1157	432.	1158	401.	1159	366.
1160	357.	1161	278.	1162	228.	1163	198.	1164	169.
1165	134.	1166	109.	1167	93.	1168	81.	1169	73.
1170	65.	1171	61.	1172	57.	1173	50.	1174	48.
1175	46.	1176	44.	1177	41.	1178	36.	1179	36.
1180	34.	1181	33.	1182	32.	1183	30.	1184	29.
1185	29.	1186	28.	1187	28.	1188	28.	1189	27.
1190	27.	1191	26.	1192	26.	1193	26.	1194	26.
1195	27.	1196	26.	1197	26.	1198	26.	1199	26.
1200	26.	1201	26.	1202	25.	1203	24.	1204	24.
1205	23.	1206	22.	1207	21.	1208	20.	1209	19.
1210	19.	1211	18.	1212	18.	1213	17.	1214	17.
1215	16.	1216	16.	1217	16.	1218	16.	1219	16.
1220	16.	1221	16.	1222	16.	1223	16.	1224	16.
1225	16.	1226	16.	1227	16.	1228	16.	1229	16.
1230	16.	1231	16.	1232	16.	1233	16.	1234	15.
1235	16.	1236	16.	1237	15.	1238	15.	1239	15.
1240	15.	1241	15.	1242	15.	1243	15.	1244	15.
1245	15.	1246	15.	1247	15.	1248	15.	1249	15.
1250	15.	1251	15.	1252	15.	1253	15.	1254	15.
1255	15.	1256	15.	1257	15.	1258	15.	1259	15.
1260	15.	1261	15.	1262	14.	1263	13.	1264	13.
1265	13.	1266	12.	1267	12.	1268	11.	1269	11.
1270	10.	1271	10.	1272	10.	1273	10.	1274	9.
1275	9.	1276	9.	1277	9.	1278	8.	1279	8.
1280	8.	1281	8.	1282	8.	1283	8.	1284	8.
1285	8.	1286	8.	1287	8.	1288	8.	1289	8.
1290	8.	1291	8.	1292	8.	1293	8.	1294	8.
1295	8.	1296	8.	1297	8.	1298	8.	1299	8.
1300	8.	1310	6.	1320	4.	1330	3.	1340	3.
1350	2.	1360	1.	1370	1.	1380	0.	1390	0.
1400	0.	1420	0.	1440	0.	1460	0.	1500	0.

MODIFIED RATIONAL METHOD HYDROLOGY / PC 2.21-950

Header place holder

HYDROGRAPH AT 4492 116A STORM DAY 4 REDUCTION FACTOR = 0.876

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	0.	100	6.	200	6.	300	6.	400	6.
500	6.	600	7.	700	8.	800	12.	900	22.
1000	74.	1050	174.	1100	426.	1110	491.	1120	567.
1130	665.	1131	676.	1132	688.	1133	700.	1134	712.
1135	724.	1136	736.	1137	749.	1138	762.	1139	776.
1140	790.	1141	804.	1142	819.	1143	835.	1144	851.
1145	868.	1146	886.	1147	904.	1148	924.	1149	944.
1150	965.	1151	988.	1152	1012.	1153	1037.	1154	1063.
1155	1092.	1156	1122.	1157	1156.	1158	1192.	1159	1233.
1160	1279.	1161	1331.	1162	1390.	1163	1455.	1164	1530.
1165	1615.	1166	1713.	1167	1826.	1168	1956.	1169	2101.
1170	2260.	1171	2430.	1172	2609.	1173	2794.	1174	2983.
1175	3173.	1176	3359.	1177	3537.	1178	3702.	1179	3851.
1180	3985.	1181	4108.	1182	4225.	1183	4341.	1184	4463.

1185	4593.	1186	4732.	1187	4879.	1188	5031.	1189	5181.
1190	5324.	1191	5455.	1192	5567.	1193	5657.	1194	5723.
1195	5761.	1196	5773.	1197	5759.	1198	5720.	1199	5659.
1200	5579.	1201	5483.	1202	5373.	1203	5252.	1204	5123.
1205	4987.	1206	4848.	1207	4705.	1208	4562.	1209	4419.
1210	4277.	1211	4136.	1212	3998.	1213	3864.	1214	3732.
1215	3604.	1216	3481.	1217	3361.	1218	3245.	1219	3134.
1220	3026.	1221	2923.	1222	2823.	1223	2728.	1224	2635.
1225	2547.	1226	2462.	1227	2381.	1228	2303.	1229	2228.
1230	2156.	1231	2087.	1232	2021.	1233	1957.	1234	1897.
1235	1839.	1236	1783.	1237	1729.	1238	1678.	1239	1629.
1240	1582.	1241	1536.	1242	1493.	1243	1451.	1244	1411.
1245	1372.	1246	1335.	1247	1300.	1248	1266.	1249	1233.
1250	1201.	1251	1171.	1252	1141.	1253	1113.	1254	1086.
1255	1060.	1256	1034.	1257	1010.	1258	987.	1259	964.
1260	943.	1261	921.	1262	901.	1263	882.	1264	863.
1265	845.	1266	827.	1267	811.	1268	795.	1269	779.
1270	764.	1271	749.	1272	735.	1273	722.	1274	709.
1275	696.	1276	684.	1277	672.	1278	660.	1279	648.
1280	637.	1281	626.	1282	616.	1283	606.	1284	596.
1285	587.	1286	577.	1287	568.	1288	559.	1289	550.
1290	542.	1291	534.	1292	526.	1293	519.	1294	511.
1295	504.	1296	496.	1297	489.	1298	482.	1299	475.
1300	469.	1310	411.	1320	361.	1330	318.	1340	280.
1350	249.	1360	223.	1370	202.	1380	185.	1390	169.
1400	155.	1420	129.	1440	106.	1460	87.	1500	61.

APPENDIX H

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Adams

Name	Zone	Storm	Soil	Area (acres)	TC (min)
1a	K	100	1.30	85.0 / 85	9.892 / 10
3a	K	100	2.00	72.0 / 72	5.199 / 5
5B	K	100	1.10	54.1 / 54	6.543 / 7
10c	K	100	1.10	73.6 / 74	6.821 / 7
12c	K	100	2.10	109.0 / 109	6.990 / 7
22E	K	100	2.00	38.8 / 39	5.058 / 5
27A	K	100	2.20	79.0 / 79	5.742 / 6
30a	K	100	2.10	40.0 / 40	5.066 / 5
35B	K	100	2.40	35.5 / 36	8.761 / 9
36B	K	100	2.10	78.0 / 78	5.531 / 6
42C	K	100	1.40	107.0 / 107	11.717 / 12
45D	K	100	2.20	54.4 / 54	5.146 / 5
50B	K	100	2.50	78.7 / 79	6.560 / 7
56f	K	100	2.00	86.0 / 86	5.836 / 6
59B	K	100	2.00	39.6 / 40	5.149 / 5
64B	K	100	1.70	65.7 / 66	5.095 / 5
69A	K	100	2.10	50.1 / 50	7.759 / 8
70C	K	100	2.20	58.5 / 59	10.045 / 10
74c	K	100	2.00	20.0 / 20	5.294 / 5
80A	K	100	2.40	82.9 / 83	6.361 / 6
87A	K	100	2.00	92.9 / 93	6.657 / 7
90E	K	100	2.00	39.0 / 39	5.239 / 5
94A	K	100	2.50	61.0 / 61	5.336 / 5
104A	K	100	2.10	82.2 / 82	6.910 / 7
111a	K	100	2.90	55.0 / 55	21.096 / 21

♀

Watershed Name: Adams

Sub-Area Name: 1a
Tc: 9.892 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 9.892 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: 1a
Total Area (ac): 85
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 1.30
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 3.570
C Total: 0.896
Sum Q Segments (cfs): 271.81
Q Total (cfs): 271.81
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 593.54
Time of Concentration (min): 9.892

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 6.2944
Flow Type: Overland
Length (ft): 632
Top Elevation (ft): 2600
Bottom Elevation (ft): 2480
Contributing Area (acres): 4.3

```
Percent of Sub-Area (%): 5.1
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.1899
Effective Slope: 0.1543
Q for Flow Path (cfs): 13.75
Avg Velocity (ft/s): 1.67
Passed Scour Check: YES
Scour Velocity (ft/sec): 5.16
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: Channel
FLOW PATH TRAVEL TIME (min): 3.5979
Flow Type: Natural Channel
Length (ft): 3517
Top Elevation (ft): 2480
Bottom Elevation (ft): 1480
Contributing Area (acres): 80.7
Percent of Sub-Area (%): 94.9
Overland Type: Mountain
Map Slope: 0.2843
Effective Slope: 0.1917
Q for Flow Path (cfs): 258.06
Q Top (cfs): 13.75
Q Bottom (cfs): 271.81
Velocity Top (ft/s): 5.87
Velocity Bottom (ft/s): 15.85
Avg Velocity (ft/s): 10.86
Wave Velocity (ft/s): 16.29
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 3a
Tc: 5.199 Minutes
DATA FOR SUB AREA 2
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.199 min. = 5 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 3a
Total Area (ac): 72
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.891
Sum Q Segments (cfs): 327.29
Q Total (cfs): 327.29
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 311.96
Time of Concentration (min): 5.199
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 2.2719
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 1560
Bottom Elevation (ft): 1440
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 1.7
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.4000
Effective Slope: 0.2142
Q for Flow Path (cfs): 5.45
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
```

Scour Velocity (ft/sec): 4.39

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.9275
Flow Type: Natural Channel
Length (ft): 2335
Top Elevation (ft): 1440
Bottom Elevation (ft): 1080
Contributing Area (acres): 70.8
Percent of Sub-Area (%): 98.3
Overland Type: Mountain
Map Slope: 0.1542
Effective Slope: 0.1343
Q for Flow Path (cfs): 321.83
Q Top (cfs): 5.45
Q Bottom (cfs): 327.29
Velocity Top (ft/s): 3.61
Velocity Bottom (ft/s): 14.11
Avg Velocity (ft/s): 8.86
Wave Velocity (ft/s): 13.29
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

Sub-Area Name: 5B
Tc: 6.543 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 6.543 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: 5B
Total Area (ac): 54.1
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 1.10
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 4.226
C Total: 0.923
Sum Q Segments (cfs): 210.97
Q Total (cfs): 210.97
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 392.56
Time of Concentration (min): 6.543

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2629
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 2550
Bottom Elevation (ft): 2500
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 2.2
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.1667
Effective Slope: 0.1417
Q for Flow Path (cfs): 4.68
Avg Velocity (ft/s): 1.53
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.44

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2798
Flow Type: Natural Channel
Length (ft): 2900

```
Top Elevation (ft): 2500
Bottom Elevation (ft): 1384
Contributing Area (acres): 52.9
Percent of Sub-Area (%): 97.8
Overland Type: Mountain
Map Slope: 0.3848
Effective Slope: 0.2124
Q for Flow Path (cfs): 206.29
Q Top (cfs): 4.68
Q Bottom (cfs): 210.97
Velocity Top (ft/s): 4.31
Velocity Bottom (ft/s): 15.33
Avg Velocity (ft/s): 9.82
Wave Velocity (ft/s): 14.74
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 10c
Tc: 6.821 Minutes
DATA FOR SUB AREA 4
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 6.821 min. = 7 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 10c
Total Area (ac): 73.6
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 1.10
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.226
C Total: 0.923
Sum Q Segments (cfs): 287.02
Q Total (cfs): 287.02
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 409.28
Time of Concentration (min): 6.821
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 2.8471
Flow Type: Overland
Length (ft): 376
Top Elevation (ft): 2480
Bottom Elevation (ft): 2360
Contributing Area (acres): 0.8
Percent of Sub-Area (%): 1.1
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.3191
Effective Slope: 0.2007
Q for Flow Path (cfs): 3.12
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.58
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.9743
Flow Type: Natural Channel
Length (ft): 3442
Top Elevation (ft): 2360
Bottom Elevation (ft): 1480
Contributing Area (acres): 72.8
Percent of Sub-Area (%): 98.9
Overland Type: Mountain
Map Slope: 0.2557
Effective Slope: 0.1825
Q for Flow Path (cfs): 283.90
```

```
Q Top (cfs): 3.12
Q Bottom (cfs): 287.02
Velocity Top (ft/s): 3.49
Velocity Bottom (ft/s): 15.75
Avg Velocity (ft/s): 9.62
Wave Velocity (ft/s): 14.43
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 12c
Tc: 6.990 Minutes
DATA FOR SUB AREA 5
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 6.990 min. = 7 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 12c
Total Area (ac): 109
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.10
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.226
C Total: 0.868
Sum Q Segments (cfs): 399.72
Q Total (cfs): 399.72
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 419.39
Time of Concentration (min): 6.990
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.9000
Flow Type: Overland
Length (ft): 515
Top Elevation (ft): 2440
Bottom Elevation (ft): 2160
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 1.1
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5437
Effective Slope: 0.2232
Q for Flow Path (cfs): 4.40
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.23
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: Channel
FLOW PATH TRAVEL TIME (min): 3.0898
Flow Type: Natural Channel
Length (ft): 3154
Top Elevation (ft): 2160
Bottom Elevation (ft): 1120
Contributing Area (acres): 107.8
Percent of Sub-Area (%): 98.9
Overland Type: Mountain
Map Slope: 0.3297
Effective Slope: 0.2030
Q for Flow Path (cfs): 395.32
Q Top (cfs): 4.40
Q Bottom (cfs): 399.72
Velocity Top (ft/s): 4.13
Velocity Bottom (ft/s): 18.55
Avg Velocity (ft/s): 11.34
Wave Velocity (ft/s): 17.01
♀
Project: Adams Barranca
```

Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

Sub-Area Name: 22E
Tc: 5.058 Minutes
DATA FOR SUB AREA 6

SUB AREA TIME OF CONCENTRATION: 5.058 min. = 5 min.

SUB AREA INPUT DATA

Sub Area Name: 22E
Total Area (ac): 38.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 5.100
C Total: 0.891
Sum Q Segments (cfs): 176.37
Q Total (cfs): 176.37
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 303.46
Time of Concentration (min): 5.058

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.0178
Flow Type: Overland
Length (ft): 400
Top Elevation (ft): 1365
Bottom Elevation (ft): 1230
Contributing Area (acres): 1.8
Percent of Sub-Area (%): 4.6
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.3375
Effective Slope: 0.2046
Q for Flow Path (cfs): 8.18
Avg Velocity (ft/s): 2.21
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.91

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.0399
Flow Type: Natural Channel
Length (ft): 1610
Top Elevation (ft): 1230
Bottom Elevation (ft): 873
Contributing Area (acres): 37
Percent of Sub-Area (%): 95.4
Overland Type: Mountain
Map Slope: 0.2217
Effective Slope: 0.1693
Q for Flow Path (cfs): 168.19
Q Top (cfs): 8.18
Q Bottom (cfs): 176.37
Velocity Top (ft/s): 4.64
Velocity Bottom (ft/s): 12.90
Avg Velocity (ft/s): 8.77
Wave Velocity (ft/s): 13.15
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

Sub-Area Name: 27A
Tc: 5.742 Minutes
DATA FOR SUB AREA 7

SUB AREA TIME OF CONCENTRATION: 5.742 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: 27A
Total Area (ac): 79
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.20
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 4.590
C Total: 0.871
Sum Q Segments (cfs): 315.77
Q Total (cfs): 315.77
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 344.51
Time of Concentration (min): 5.742

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.8501
Flow Type: Overland
Length (ft): 245
Top Elevation (ft): 1270
Bottom Elevation (ft): 1190
Contributing Area (acres): 1
Percent of Sub-Area (%): 1.3
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.3265
Effective Slope: 0.2024
Q for Flow Path (cfs): 4.00
Avg Velocity (ft/s): 2.21
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.88

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.8918
Flow Type: Natural Channel
Length (ft): 2915
Top Elevation (ft): 1190
Bottom Elevation (ft): 780
Contributing Area (acres): 78
Percent of Sub-Area (%): 98.7
Overland Type: Mountain
Map Slope: 0.1407
Effective Slope: 0.1257
Q for Flow Path (cfs): 311.77
Q Top (cfs): 4.00
Q Bottom (cfs): 315.77
Velocity Top (ft/s): 3.15
Velocity Bottom (ft/s): 13.50
Avg Velocity (ft/s): 8.32
Wave Velocity (ft/s): 12.48
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

Sub-Area Name: 30a
Tc: 5.066 Minutes
DATA FOR SUB AREA 8

SUB AREA TIME OF CONCENTRATION: 5.066 min. = 5 min.

SUB AREA INPUT DATA

Sub Area Name: 30a
Total Area (ac): 40
Flood Zone: 2
Rainfall Zone: K

```
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.10
Percent Impervious: 0
SUB AREA OUTPUT
--------------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.886
Sum Q Segments (cfs): 180.80
Q Total (cfs): 180.80
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 303.97
Time of Concentration (min): 5.066
--------------------------------------------------------------------------
DATA FOR FLOW PATH 1
--------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.4616
Flow Type: Overland
Length (ft): 193
Top Elevation (ft): 1140
Bottom Elevation (ft): 1040
Contributing Area (acres): 0.5
Percent of Sub-Area (%): 1.3
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5181
Effective Slope: 0.2222
Q for Flow Path (cfs): 2.26
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.33
--------------------------------------------------------------------------
DATA FOR FLOW PATH 2
--------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.6047
Flow Type: Natural Channel
Length (ft): 2170
Top Elevation (ft): 1040
Bottom Elevation (ft): 760
Contributing Area (acres): 39.5
Percent of Sub-Area (%): 98.8
Overland Type: Mountain
Map Slope: 0.1290
Effective Slope: 0.1179
Q for Flow Path (cfs): 178.54
Q Top (cfs): 2.26
Q Bottom (cfs): 180.80
Velocity Top (ft/s): 2.52
Velocity Bottom (ft/s): 10.85
Avg Velocity (ft/s): 6.69
Wave Velocity (ft/s): 10.03
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
--------------------------------------------------------------------------
Sub-Area Name: 35B
Tc: 8.761 Minutes
DATA FOR SUB AREA 9
--------------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 8.761 min. = 9 min.
--------------------------------------------------------------------------
SUB AREA INPUT DATA
--------------------------------------------------------------------------
Sub Area Name: 35B
Total Area (ac): 35.5
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.40
Percent Impervious: 0
SUB AREA OUTPUT
--------------------------------------------------------------------------
Intensity (in/hr): 3.740
C Total: 0.838
```

```
Sum Q Segments (cfs): 111.30
Q Total (cfs): 111.30
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 525.64
Time of Concentration (min): 8.761
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.0722
Flow Type: Overland
Length (ft): 485
Top Elevation (ft): 2000
Bottom Elevation (ft): 1880
Contributing Area (acres): 2
Percent of Sub-Area (%): 5.6
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.2474
Effective Slope: 0.1795
Q for Flow Path (cfs): 6.27
Avg Velocity (ft/s): 1.99
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.30
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.6885
Flow Type: Natural Channel
Length (ft): 3400
Top Elevation (ft): 1880
Bottom Elevation (ft): 960
Contributing Area (acres): 33.5
Percent of Sub-Area (%): 94.4
Overland Type: Mountain
Map Slope: 0.2706
Effective Slope: 0.1875
Q for Flow Path (cfs): 105.03
Q Top (cfs): 6.27
Q Bottom (cfs): 111.30
Velocity Top (ft/s): 4.47
Velocity Bottom (ft/s): 11.65
Avg Velocity (ft/s): 8.06
Wave Velocity (ft/s): 12.09
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 36B
Tc: 5.531 Minutes
DATA FOR SUB AREA 10
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.531 min. = 6 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 36B
Total Area (ac): 78
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.10
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.590
C Total: 0.876
Sum Q Segments (cfs): 313.59
Q Total (cfs): 313.59
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 331.88
Time of Concentration (min): 5.531
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
```

```
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.4612
Flow Type: Overland
Length (ft): 325
Top Elevation (ft): 1495
Bottom Elevation (ft): 1350
Contributing Area (acres): 1.25
Percent of Sub-Area (%): 1.6
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.4462
Effective Slope: 0.2185
Q for Flow Path (cfs): 5.03
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.35
---------------------------------------------------------------------
DATA FOR FLOW PATH 2
---------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.0701
Flow Type: Natural Channel
Length (ft): 2470
Top Elevation (ft): 1350
Bottom Elevation (ft): 940
Contributing Area (acres): 76.75
Percent of Sub-Area (%): 98.4
Overland Type: Mountain
Map Slope: 0.1660
Effective Slope: 0.1413
Q for Flow Path (cfs): 308.56
Q Top (cfs): 5.03
Q Bottom (cfs): 313.59
Velocity Top (ft/s): 3.60
Velocity Bottom (ft/s): 14.27
Avg Velocity (ft/s): 8.94
Wave Velocity (ft/s): 13.41
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
---------------------------------------------------------------------
Sub-Area Name: 42C
Tc: 11.717 Minutes
DATA FOR SUB AREA 11
---------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 11.717 min. = 12 min.
---------------------------------------------------------------------
SUB AREA INPUT DATA
---------------------------------------------------------------------
Sub Area Name: 42C
Total Area (ac): 107
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 1.40
Percent Impervious: 0
SUB AREA OUTPUT
---------------------------------------------------------------------
Intensity (in/hr): 3.230
C Total: 0.879
Sum Q Segments (cfs): 303.76
Q Total (cfs): 303.76
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 703.01
Time of Concentration (min): 11.717
---------------------------------------------------------------------
DATA FOR FLOW PATH 1
---------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.9007
Flow Type: Overland
Length (ft): 628
Top Elevation (ft): 2370
Bottom Elevation (ft): 2240
Contributing Area (acres): 1.4
Percent of Sub-Area (%): 1.3
```

```
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.2070
Effective Slope: 0.1627
Q for Flow Path (cfs): 3.97
Avg Velocity (ft/s): 1.77
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.52
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.8160
Flow Type: Natural Channel
Length (ft): 5050
Top Elevation (ft): 2240
Bottom Elevation (ft): 1080
Contributing Area (acres): 105.6
Percent of Sub-Area (%): 98.7
Overland Type: Mountain
Map Slope: 0.2297
Effective Slope: 0.1726
Q for Flow Path (cfs): 299.79
Q Top (cfs): 3.97
Q Bottom (cfs): 303.76
Velocity Top (ft/s): 3.68
Velocity Bottom (ft/s): 15.61
Avg Velocity (ft/s): 9.65
Wave Velocity (ft/s): 14.47
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 45D
Tc: 5.146 Minutes
DATA FOR SUB AREA 12
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.146 min. = 5 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 45D
Total Area (ac): 54.4
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.20
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.881
Sum Q Segments (cfs): 244.48
Q Total (cfs): 244.48
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 308.75
Time of Concentration (min): 5.146
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.0893
Flow Type: Overland
Length (ft): 540
Top Elevation (ft): 1330
Bottom Elevation (ft): 1120
Contributing Area (acres): 2.2
Percent of Sub-Area (%): 4.0
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.3889
Effective Slope: 0.2129
Q for Flow Path (cfs): 9.89
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 5.33
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0566
Flow Type: Natural Channel
Length (ft): 870
Top Elevation (ft): 1120
Bottom Elevation (ft): 959
Contributing Area (acres): 52.2
Percent of Sub-Area (%): 96.0
Overland Type: Mountain
Map Slope: 0.1851
Effective Slope: 0.1518
Q for Flow Path (cfs): 234.59
Q Top (cfs): 9.89
Q Bottom (cfs): 244.48
Velocity Top (ft/s): 4.68
Velocity Bottom (ft/s): 13.62
Avg Velocity (ft/s): 9.15
Wave Velocity (ft/s): 13.72
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

Sub-Area Name: 50B
Tc: 6.560 Minutes
DATA FOR SUB AREA 13

SUB AREA TIME OF CONCENTRATION: 6.560 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: 50B
Total Area (ac): 78.7
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.50
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 4.226
C Total: 0.847
Sum Q Segments (cfs): 281.75
Q Total (cfs): 281.75
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 393.61
Time of Concentration (min): 6.560

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3724
Flow Type: Overland
Length (ft): 440
Top Elevation (ft): 1363
Bottom Elevation (ft): 1230
Contributing Area (acres): 1.1
Percent of Sub-Area (%): 1.4
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.3023
Effective Slope: 0.1966
Q for Flow Path (cfs): 3.94
Avg Velocity (ft/s): 2.17
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.82

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.1877
Flow Type: Natural Channel
Length (ft): 2460
Top Elevation (ft): 1230

```
Bottom Elevation (ft): 818
Contributing Area (acres): 77.6
Percent of Sub-Area (%): 98.6
Overland Type: Mountain
Map Slope: 0.1675
Effective Slope: 0.1422
Q for Flow Path (cfs): 277.81
Q Top (cfs): 3.94
Q Bottom (cfs): 281.75
Velocity Top (ft/s): 3.33
Velocity Bottom (ft/s): 13.82
Avg Velocity (ft/s): 8.57
Wave Velocity (ft/s): 12.86
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 56f
Tc: 5.836 Minutes
DATA FOR SUB AREA 14
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.836 min. = 6 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 56f
Total Area (ac): 86
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.590
C Total: 0.881
Sum Q Segments (cfs): 347.76
Q Total (cfs): 347.76
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 350.15
Time of Concentration (min): 5.836
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.6732
Flow Type: Overland
Length (ft): 353
Top Elevation (ft): 1240
Bottom Elevation (ft): 1040
Contributing Area (acres): 0.6
Percent of Sub-Area (%): 0.7
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5666
Effective Slope: 0.2240
Q for Flow Path (cfs): 2.43
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.45
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.1626
Flow Type: Natural Channel
Length (ft): 2160
Top Elevation (ft): 1040
Bottom Elevation (ft): 800
Contributing Area (acres): 85.4
Percent of Sub-Area (%): 99.3
Overland Type: Mountain
Map Slope: 0.1111
Effective Slope: 0.1051
Q for Flow Path (cfs): 345.33
Q Top (cfs): 2.43
```

Q Bottom (cfs): 347.76
Velocity Top (ft/s): 2.44
Velocity Bottom (ft/s): 12.74
Avg Velocity (ft/s): 7.59
Wave Velocity (ft/s): 11.38
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen

Sub-Area Name: 59B
Tc: 5.149 Minutes
DATA FOR SUB AREA 15

SUB AREA TIME OF CONCENTRATION: 5.149 min. = 5 min.

SUB AREA INPUT DATA

Sub Area Name: 59B
Total Area (ac): 39.6
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 5.100
C Total: 0.891
Sum Q Segments (cfs): 180.01
Q Total (cfs): 180.01
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 308.94
Time of Concentration (min): 5.149

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.1806
Flow Type: Overland
Length (ft): 420
Top Elevation (ft): 1090
Bottom Elevation (ft): 870
Contributing Area (acres): 2
Percent of Sub-Area (%): 5.1
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5238
Effective Slope: 0.2224
Q for Flow Path (cfs): 9.09
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 5.30

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.9684
Flow Type: Natural Channel
Length (ft): 1360
Top Elevation (ft): 870
Bottom Elevation (ft): 678
Contributing Area (acres): 37.6
Percent of Sub-Area (%): 94.9
Overland Type: Mountain
Map Slope: 0.1412
Effective Slope: 0.1261
Q for Flow Path (cfs): 170.92
Q Top (cfs): 9.09
Q Bottom (cfs): 180.01
Velocity Top (ft/s): 4.15
Velocity Bottom (ft/s): 11.21
Avg Velocity (ft/s): 7.68
Wave Velocity (ft/s): 11.52
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM

```
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 64B
Tc: 5.095 Minutes
DATA FOR SUB AREA 16
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.095 min. = 5 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 64B
Total Area (ac): 65.7
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 1.70
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.906
Sum Q Segments (cfs): 303.64
Q Total (cfs): 303.64
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 305.71
Time of Concentration (min): 5.095
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.4612
Flow Type: Overland
Length (ft): 325
Top Elevation (ft): 1171
Bottom Elevation (ft): 990
Contributing Area (acres): 1.4
Percent of Sub-Area (%): 2.1
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5569
Effective Slope: 0.2237
Q for Flow Path (cfs): 6.47
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.75
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.6339
Flow Type: Natural Channel
Length (ft): 2010
Top Elevation (ft): 990
Bottom Elevation (ft): 710
Contributing Area (acres): 64.3
Percent of Sub-Area (%): 97.9
Overland Type: Mountain
Map Slope: 0.1393
Effective Slope: 0.1248
Q for Flow Path (cfs): 297.17
Q Top (cfs): 6.47
Q Bottom (cfs): 303.64
Velocity Top (ft/s): 3.68
Velocity Bottom (ft/s): 13.27
Avg Velocity (ft/s): 8.48
Wave Velocity (ft/s): 12.72
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 69A
Tc: 7.759 Minutes
DATA FOR SUB AREA 17
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 7.759 min. = 8 min.
```

```
---------------------------------------------------------------------------
SUB AREA INPUT DATA
---------------------------------------------------------------------------
Sub Area Name: 69A
Total Area (ac): 50.05
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.10
Percent Impervious: 0
SUB AREA OUTPUT
---------------------------------------------------------------------------
Intensity (in/hr): 3.953
C Total: 0.861
Sum Q Segments (cfs): 170.35
Q Total (cfs): 170.35
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 465.54
Time of Concentration (min): 7.759
---------------------------------------------------------------------------
DATA FOR FLOW PATH 1
---------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.9421
Flow Type: Overland
Length (ft): 390
Top Elevation (ft): 1100
Bottom Elevation (ft): 970
Contributing Area (acres): 1.15
Percent of Sub-Area (%): 2.3
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.3333
Effective Slope: 0.2038
Q for Flow Path (cfs): 3.91
Avg Velocity (ft/s): 2.21
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.90
---------------------------------------------------------------------------
DATA FOR FLOW PATH 2
---------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.8169
Flow Type: Natural Channel
Length (ft): 3000
Top Elevation (ft): 970
Bottom Elevation (ft): 570
Contributing Area (acres): 48.9
Percent of Sub-Area (%): 97.7
Overland Type: Mountain
Map Slope: 0.1333
Effective Slope: 0.1209
Q for Flow Path (cfs): 166.43
Q Top (cfs): 3.91
Q Bottom (cfs): 170.35
Velocity Top (ft/s): 3.07
Velocity Bottom (ft/s): 10.77
Avg Velocity (ft/s): 6.92
Wave Velocity (ft/s): 10.38
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
---------------------------------------------------------------------------
Sub-Area Name: 70C
Tc: 10.045 Minutes
DATA FOR SUB AREA 18
---------------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 10.045 min. = 10 min.
---------------------------------------------------------------------------
SUB AREA INPUT DATA
---------------------------------------------------------------------------
Sub Area Name: 70C
Total Area (ac): 58.52
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
```

```
Development Type: Undeveloped
Soil Type: 2.20
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 3.570
C Total: 0.842
Sum Q Segments (cfs): 176.00
Q Total (cfs): 176.00
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 602.68
Time of Concentration (min): 10.045
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.2737
Flow Type: Overland
Length (ft): 620
Top Elevation (ft): 1350
Bottom Elevation (ft): 1235
Contributing Area (acres): 2.12
Percent of Sub-Area (%): 3.6
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.1855
Effective Slope: 0.1520
Q for Flow Path (cfs): 6.38
Avg Velocity (ft/s): 1.65
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.96
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.7710
Flow Type: Natural Channel
Length (ft): 2688
Top Elevation (ft): 1235
Bottom Elevation (ft): 775
Contributing Area (acres): 56.4
Percent of Sub-Area (%): 96.4
Overland Type: Mountain
Map Slope: 0.1711
Effective Slope: 0.1442
Q for Flow Path (cfs): 169.63
Q Top (cfs): 6.38
Q Bottom (cfs): 176.00
Velocity Top (ft/s): 3.94
Velocity Bottom (ft/s): 11.90
Avg Velocity (ft/s): 7.92
Wave Velocity (ft/s): 11.88
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 74c
Tc: 5.294 Minutes
DATA FOR SUB AREA 19
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.294 min. = 5 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 74c
Total Area (ac): 20
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.891
Sum Q Segments (cfs): 90.91
```

```
Q Total (cfs): 90.91
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 317.64
Time of Concentration (min): 5.294
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.5838
Flow Type: Overland
Length (ft): 261
Top Elevation (ft): 930
Bottom Elevation (ft): 880
Contributing Area (acres): 0.4
Percent of Sub-Area (%): 2.0
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.1916
Effective Slope: 0.1552
Q for Flow Path (cfs): 1.82
Avg Velocity (ft/s): 1.68
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.59
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.7102
Flow Type: Natural Channel
Length (ft): 1476
Top Elevation (ft): 880
Bottom Elevation (ft): 630
Contributing Area (acres): 19.6
Percent of Sub-Area (%): 98.0
Overland Type: Mountain
Map Slope: 0.1694
Effective Slope: 0.1433
Q for Flow Path (cfs): 89.09
Q Top (cfs): 1.82
Q Bottom (cfs): 90.91
Velocity Top (ft/s): 2.59
Velocity Bottom (ft/s): 9.52
Avg Velocity (ft/s): 6.05
Wave Velocity (ft/s): 9.08
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 80A
Tc: 6.361 Minutes
DATA FOR SUB AREA 20
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 6.361 min. = 6 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 80A
Total Area (ac): 82.85
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.40
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.590
C Total: 0.861
Sum Q Segments (cfs): 327.29
Q Total (cfs): 327.29
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 381.64
Time of Concentration (min): 6.361
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
```

```
FLOW PATH TRAVEL TIME (min): 3.0291
Flow Type: Overland
Length (ft): 400
Top Elevation (ft): 1030
Bottom Elevation (ft): 820
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 2.5
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5250
Effective Slope: 0.2225
Q for Flow Path (cfs): 8.30
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 5.18
---------------------------------------------------------------------------
DATA FOR FLOW PATH 2
---------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3316
Flow Type: Natural Channel
Length (ft): 2520
Top Elevation (ft): 820
Bottom Elevation (ft): 510
Contributing Area (acres): 80.75
Percent of Sub-Area (%): 97.5
Overland Type: Mountain
Map Slope: 0.1230
Effective Slope: 0.1137
Q for Flow Path (cfs): 318.99
Q Top (cfs): 8.30
Q Bottom (cfs): 327.29
Velocity Top (ft/s): 3.82
Velocity Bottom (ft/s): 12.99
Avg Velocity (ft/s): 8.40
Wave Velocity (ft/s): 12.61
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
---------------------------------------------------------------------------
Sub-Area Name: 87A
Tc: 6.657 Minutes
DATA FOR SUB AREA 21
---------------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 6.657 min. = 7 min.
---------------------------------------------------------------------------
SUB AREA INPUT DATA
---------------------------------------------------------------------------
Sub Area Name: 87A
Total Area (ac): 92.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT
---------------------------------------------------------------------------
Intensity (in/hr): 4.226
C Total: 0.873
Sum Q Segments (cfs): 342.70
Q Total (cfs): 342.70
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 399.42
Time of Concentration (min): 6.657
---------------------------------------------------------------------------
DATA FOR FLOW PATH 1
---------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.1204
Flow Type: Overland
Length (ft): 280
Top Elevation (ft): 1110
Bottom Elevation (ft): 950
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 1.3
Overland Type: Mountain
```

```
Development Type: Undeveloped
Map Slope: 0.5714
Effective Slope: 0.2242
Q for Flow Path (cfs): 4.43
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.25
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.5366
Flow Type: Natural Channel
Length (ft): 3434
Top Elevation (ft): 950
Bottom Elevation (ft): 490
Contributing Area (acres): 91.7
Percent of Sub-Area (%): 98.7
Overland Type: Mountain
Map Slope: 0.1340
Effective Slope: 0.1213
Q for Flow Path (cfs): 338.27
Q Top (cfs): 4.43
Q Bottom (cfs): 342.70
Velocity Top (ft/s): 3.20
Velocity Bottom (ft/s): 13.62
Avg Velocity (ft/s): 8.41
Wave Velocity (ft/s): 12.62
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 90E
Tc: 5.239 Minutes
DATA FOR SUB AREA 22
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.239 min. = 5 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 90E
Total Area (ac): 39
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.891
Sum Q Segments (cfs): 177.28
Q Total (cfs): 177.28
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 314.33
Time of Concentration (min): 5.239
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2563
Flow Type: Overland
Length (ft): 430
Top Elevation (ft): 983
Bottom Elevation (ft): 810
Contributing Area (acres): 1.7
Percent of Sub-Area (%): 4.4
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.4023
Effective Slope: 0.2145
Q for Flow Path (cfs): 7.73
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.93
-----------------------------------------------------------------------
```

```
DATA FOR FLOW PATH 2
--------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.9824
Flow Type: Natural Channel
Length (ft): 1440
Top Elevation (ft): 810
Bottom Elevation (ft): 563
Contributing Area (acres): 37.3
Percent of Sub-Area (%): 95.6
Overland Type: Mountain
Map Slope: 0.1715
Effective Slope: 0.1445
Q for Flow Path (cfs): 169.55
Q Top (cfs): 7.73
Q Bottom (cfs): 177.28
Velocity Top (ft/s): 4.21
Velocity Bottom (ft/s): 11.94
Avg Velocity (ft/s): 8.07
Wave Velocity (ft/s): 12.11
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
--------------------------------------------------------------------------
Sub-Area Name: 94A
Tc: 5.336 Minutes
DATA FOR SUB AREA 23
--------------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.336 min. = 5 min.
--------------------------------------------------------------------------
SUB AREA INPUT DATA
--------------------------------------------------------------------------
Sub Area Name: 94A
Total Area (ac): 61
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.50
Percent Impervious: 0
SUB AREA OUTPUT
--------------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.866
Sum Q Segments (cfs): 269.43
Q Total (cfs): 269.43
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 320.18
Time of Concentration (min): 5.336
--------------------------------------------------------------------------
DATA FOR FLOW PATH 1
--------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.3476
Flow Type: Overland
Length (ft): 310
Top Elevation (ft): 1010
Bottom Elevation (ft): 830
Contributing Area (acres): 0.6
Percent of Sub-Area (%): 1.0
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5806
Effective Slope: 0.2246
Q for Flow Path (cfs): 2.65
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.53
--------------------------------------------------------------------------
DATA FOR FLOW PATH 2
--------------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.9888
Flow Type: Natural Channel
Length (ft): 2220
Top Elevation (ft): 830
Bottom Elevation (ft): 460
```

```
Contributing Area (acres): 60.4
Percent of Sub-Area (%): 99.0
Overland Type: Mountain
Map Slope: 0.1667
Effective Slope: 0.1417
Q for Flow Path (cfs): 266.78
Q Top (cfs): 2.65
Q Bottom (cfs): 269.43
Velocity Top (ft/s): 2.92
Velocity Bottom (ft/s): 13.59
Avg Velocity (ft/s): 8.25
Wave Velocity (ft/s): 12.38
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 104A
Tc: 6.910 Minutes
DATA FOR SUB AREA 24
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 6.910 min. = 7 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 104A
Total Area (ac): 82.2
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.10
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.226
C Total: 0.868
Sum Q Segments (cfs): 301.44
Q Total (cfs): 301.44
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 414.59
Time of Concentration (min): 6.910
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.3854
Flow Type: Overland
Length (ft): 315
Top Elevation (ft): 980
Bottom Elevation (ft): 810
Contributing Area (acres): 1.1
Percent of Sub-Area (%): 1.3
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.5397
Effective Slope: 0.2230
Q for Flow Path (cfs): 4.03
Avg Velocity (ft/s): 2.20
Passed Scour Check: YES
Scour Velocity (ft/sec): 4.10
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.5244
Flow Type: Natural Channel
Length (ft): 3225
Top Elevation (ft): 810
Bottom Elevation (ft): 400
Contributing Area (acres): 81.1
Percent of Sub-Area (%): 98.7
Overland Type: Mountain
Map Slope: 0.1271
Effective Slope: 0.1166
Q for Flow Path (cfs): 297.40
Q Top (cfs): 4.03
Q Bottom (cfs): 301.44
```

```
Velocity Top (ft/s): 3.04
Velocity Bottom (ft/s): 12.80
Avg Velocity (ft/s): 7.92
Wave Velocity (ft/s): 11.88
♀
Project: Adams Barranca
Date: 11/14/2011 4:04:17 PM
Engineer: Kinsey Hensley
Consultant: Jensen
-----------------------------------------------------------------------
Sub-Area Name: 111a
Tc: 21.096 Minutes
DATA FOR SUB AREA 25
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 21.096 min. = 21 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: 111a
Total Area (ac): 55
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 2.90
Percent Impervious: 10
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.426
C Total: 0.766
Sum Q Segments (cfs): 102.15
Q Total (cfs): 102.15
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,265.78
Time of Concentration (min): 21.096
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 10.1584
Flow Type: Overland
Length (ft): 500
Top Elevation (ft): 290
Bottom Elevation (ft): 280
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 2.2
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0200
Effective Slope: 0.0200
Q for Flow Path (cfs): 2.23
Avg Velocity (ft/s): 0.82
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.51
-----------------------------------------------------------------------
DATA FOR FLOW PATH 2
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 10.9380
Flow Type: Natural Channel
Length (ft): 3460
Top Elevation (ft): 280
Bottom Elevation (ft): 240
Contributing Area (acres): 53.8
Percent of Sub-Area (%): 97.8
Overland Type: Valley
Map Slope: 0.0116
Effective Slope: 0.0116
Q for Flow Path (cfs): 99.93
Q Top (cfs): 2.23
Q Bottom (cfs): 102.15
Velocity Top (ft/s): 1.89
Velocity Bottom (ft/s): 5.14
Avg Velocity (ft/s): 3.51
Wave Velocity (ft/s): 5.27
```

APPENDIX I

8927EP\6-GIS\mxds\AdamsCanyonRegionalHydrologicalInvestigationReport_102507\8927E_Exh4_VCRATSubareas_VenturaSoilTypes_PC1_102507.mxd

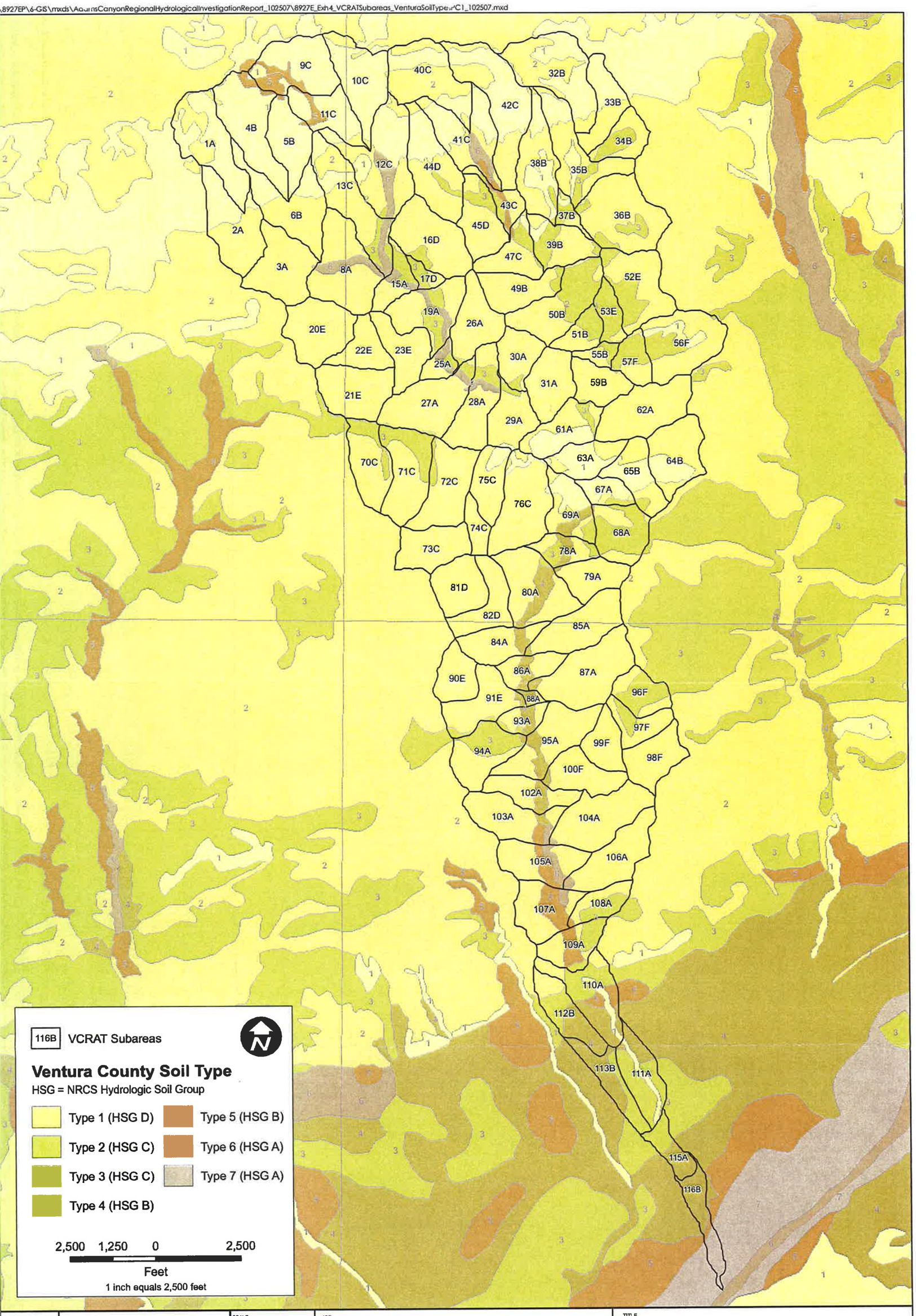

FIGURE 4

PACE
PACIFIC ADVANCED CIVIL ENGINEERING
17520 NEWHOPE STREET, SUITE 200
FOUNTAIN VALLEY, CA 92708
PH (714) 481-7300 FAX (714) 481-7399

SCALE	1"= 2500'
DESIGNED	PC
DRAWING	PC
CHECKED	AH
DATE	10/25/07
JOB NO.	8927-E

JOB
ADAMS CANYON RANCH
SANTA PAULA CA

TITLE
VENTURA COUNTY SOIL TYPES WITH VCRAT SUBAREAS

\8927EP\6-GIS\mxds\AdamsCanyonRegionalHydrologicalInvestigationReport_102507\8927E_Exh5_VCRATSubareas_LandUsePC1_102507.mxd

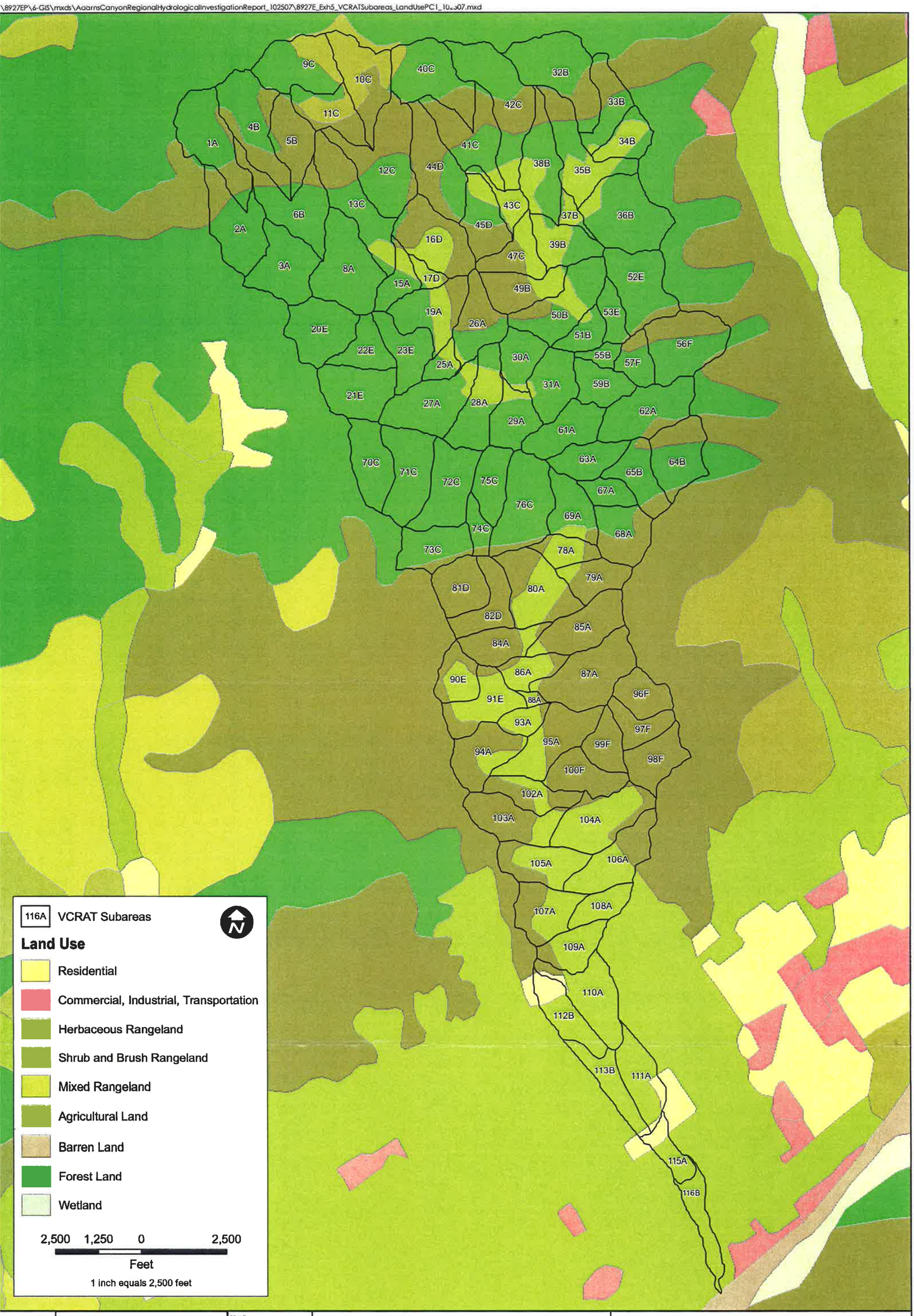

FIGURE 5

PACE
PACIFIC ADVANCED CIVIL ENGINEERING
17520 NEWHOPE STREET, SUITE 200
FOUNTAIN VALLEY, CA 92708
PH (714) 481-7300 FAX (714) 481-7299

SCALE	1"= 2500'
DESIGNED	PC
DRAWING	PC
CHECKED	AH
DATE	10/25/07
JOB NO	8927-E

JOB

ADAMS CANYON RANCH

SANTA PAULA CA

TITLE

LANDUSE WITH VCRAT SUBAREAS

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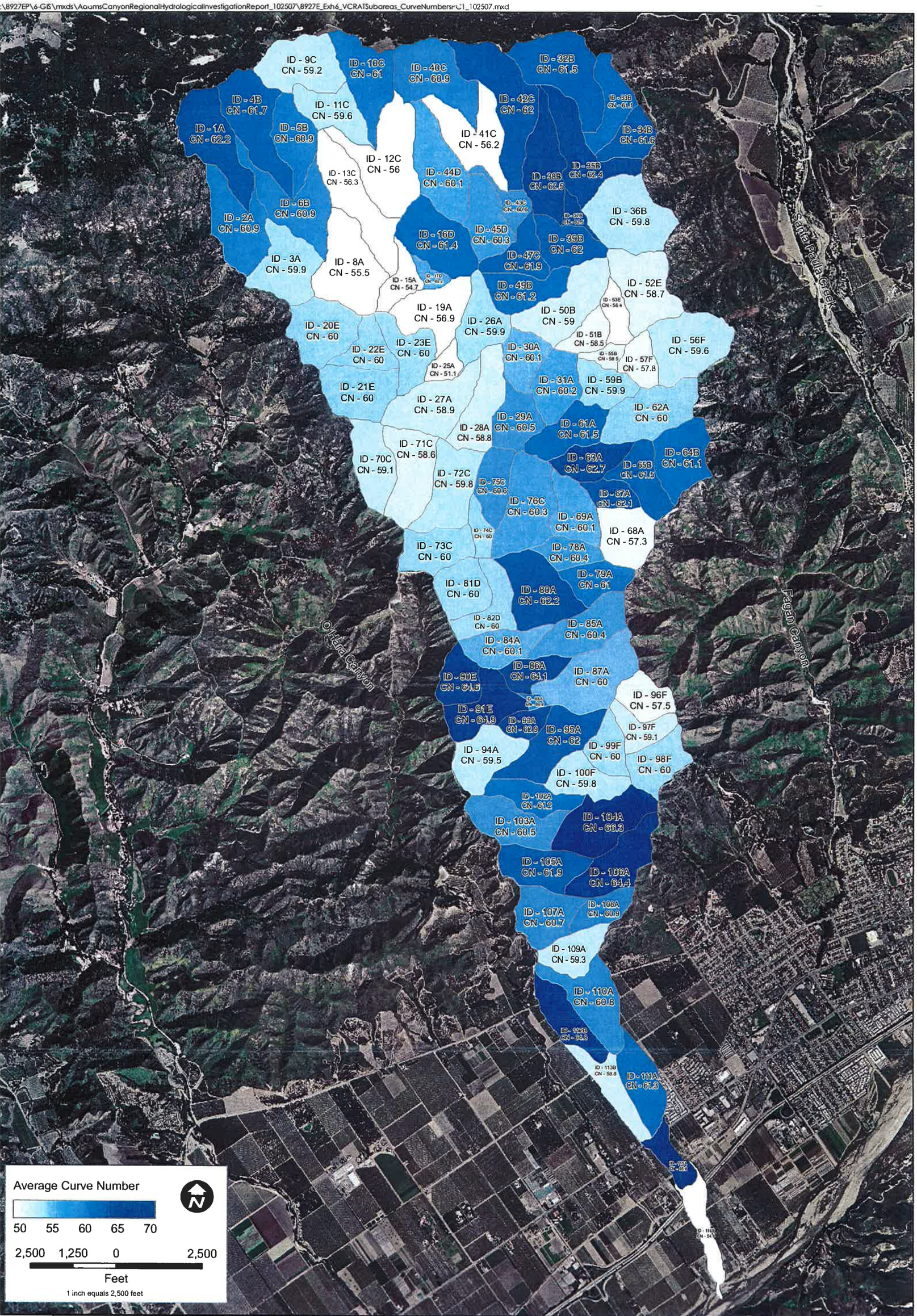

FIGURE 9

PACE
PACIFIC ADVANCED CIVIL ENGINEERING
17520 NEWHOPE STREET, SUITE 200
FOUNTAIN VALLEY, CA 92708
PH (714) 481-7300 FAX (714)481-7399

SCALE	1"= 2500'
DESIGNED	PC
DRAWING	PC
CHECKED	AH
DATE	10/25/07
JOB NO.	8927-E

JOB

ADAMS CANYON RANCH

SANTA PAULA CA

TITLE

VCRAT SUBAREAS WITH AVERAGE CURVE NUMBER

A. Node 16 Calculations

Subarea ID	Area (acres)	Curve Number	CN x A
1A	85.4	62.18	5312.7
2A	78.9	60.91	4803.9
3A	72.9	59.87	4361.8
4B	87.8	61.75	5419.1
5B	54.0	60.91	3291.4
6B	80.2	60.89	4881.1
8A	94.5	55.48	5244.8
9C	78.8	59.24	4666.2
10C	73.1	61.00	4456.6
11C	51.0	59.58	3036.3
12C	108.1	55.97	6049.2
13C	86.5	56.35	4876.1
		Composite CN =	59.3
		S =	6.9
		100-yr, 24-hr Precipitation, P(in.) =	12.07
		Fattening factor	**6.5**

B. Node 48 Calculations

Subarea ID	Area (acres)	Curve Number	CN x A
32B	99.3	61.50	6107.0
33B	47.1	61.07	2876.7
34B	35.5	61.64	2190.0
35B	77.5	62.43	4841.4
36B	99.6	59.83	5961.7
37B	13.1	62.52	818.2
38B	70.9	62.55	4435.3
39B	48.8	61.97	3026.0
40C	86.7	60.89	5280.8
41C	75.8	56.20	4258.0
42C	107.2	62.03	6652.7
43C	22.5	60.56	1364.0
44D	79.9	60.11	4801.9
45D	54.4	60.30	3280.7
47C	42.6	61.86	2632.5
		Composite CN =	60.9
		S =	6.42
		100-yr, 24-hr Precipitation, P(in.) =	11.66
		Fattening factor	**6.4**

C. Node 60 Calculations

Subarea ID	Area (acres)	Curve Number	CN x A
1A	85.4	62.18	5312.7
2A	78.9	60.91	4803.9
3A	72.9	59.87	4361.8
4B	87.8	61.75	5419.1
5B	54.0	60.91	3291.4
6B	80.2	60.89	4881.1
8A	94.5	55.48	5244.8
9C	78.8	59.24	4666.2
10C	73.1	61.00	4456.6
11C	51.0	59.58	3036.3
12C	108.1	55.97	6049.2
13C	86.5	56.35	4876.1
15A	30.0	54.69	1639.9
16D	80.4	61.37	4936.9
17D	12.2	60.19	731.8
19A	66.4	56.86	3775.0
20E	70.8	60.00	4245.4
21E	67.5	59.97	4050.5
22E	38.8	60.00	2329.1
23E	49.6	60.00	2973.4
25A	18.0	51.06	921.2
26A	55.8	59.93	3346.8
27A	79.2	58.87	4664.9
28A	64.0	58.80	3761.1
29A	46.4	60.54	2808.4
30A	40.3	60.07	2419.2
31A	52.8	60.16	3176.8
32B	99.3	61.50	6107.0
33B	47.1	61.07	2876.7
34B	35.5	61.64	2190.0
35B	77.5	62.43	4841.4
36B	99.6	59.83	5961.7
37B	13.1	62.52	818.2
38B	70.9	62.55	4435.3
39B	48.8	61.97	3026.0
40C	86.7	60.89	5280.8
41C	75.8	56.20	4258.0
42C	107.2	62.03	6652.7
43C	22.5	60.56	1364.0
44D	79.9	60.11	4801.9
45D	54.4	60.30	3280.7
47C	42.6	61.86	2632.5
49B	50.1	61.16	3062.9
50B	78.8	58.99	4645.6
51B	27.5	58.48	1606.1
52E	78.6	58.68	4612.2
53E	25.3	56.41	1424.6
55B	13.7	58.50	802.4
56F	87.5	59.59	5213.4
57F	30.0	57.80	1736.4
59B	39.7	59.93	2377.1
		Composite CN =	59.8
		S =	6.73
		100-yr, 24-hr Precipitation, P(in.) =	11.53
		Fattening factor	**6.1**

D. Basin 109 calculations

Subarea ID	Area (acres)	Curve Number	CN x A
1A	85.4	62.18	5312.7
2A	78.9	60.91	4803.9
3A	72.9	59.87	4361.8
4B	87.8	61.75	5419.1
5B	54.0	60.91	3291.4
6B	80.2	60.89	4881.1
8A	94.5	55.48	5244.8
9C	78.8	59.24	4666.2
10C	73.1	61.00	4456.6
11C	51.0	59.58	3036.3
12C	108.1	55.97	6049.2
13C	86.5	56.35	4876.1
15A	30.0	54.69	1639.9
16D	80.4	61.37	4936.9
17D	12.2	60.19	731.8
19A	66.4	56.86	3775.0
20E	70.8	60.00	4245.4
21E	67.5	59.97	4050.5
22E	38.8	60.00	2329.1
23E	49.6	60.00	2973.4
25A	18.0	51.06	921.2
26A	55.8	59.93	3346.8
27A	79.2	58.87	4664.9
28A	64.0	58.80	3761.1
29A	46.4	60.54	2808.4
30A	40.3	60.07	2419.2
31A	52.8	60.16	3176.8
32B	99.3	61.50	6107.0
33B	47.1	61.07	2876.7
34B	35.5	61.64	2190.0
35B	77.5	62.43	4841.4
36B	99.6	59.83	5961.7
37B	13.1	62.52	818.2
38B	70.9	62.55	4435.3
39B	48.8	61.97	3026.0
40C	86.7	60.89	5280.8
41C	75.8	56.20	4258.0
42C	107.2	62.03	6652.7
43C	22.5	60.56	1364.0
44D	79.9	60.11	4801.9
45D	54.4	60.30	3280.7
47C	42.6	61.86	2632.5
49B	50.1	61.16	3062.9
50B	78.8	58.99	4645.6
51B	27.5	58.48	1606.1
52E	78.6	58.68	4612.2
53E	25.3	56.41	1424.6
55B	13.7	58.50	802.4
56F	87.5	59.59	5213.4
57F	30.0	57.80	1736.4
59B	39.7	59.93	2377.1
61A	54.92	61.47	3375.9
62A	79.85	60.00	4791.0
63A	41.33	62.74	2592.9
64B	65.79	61.09	4019.0
65B	48.97	61.55	3013.7
67A	24.33	62.13	1511.4
68A	56.79	57.30	3253.6
69A	50.07	60.10	3008.8
70C	58.51	59.08	3457.0
71C	75.32	58.65	4417.5
72C	73.63	59.77	4400.3
73C	54.01	60.00	3240.6
74C	19.96	60.00	1197.9
75C	42.62	60.61	2583.4
76C	89.31	60.27	5382.6
78A	29.76	60.44	1798.8
79A	41.21	61.02	2514.8
80A	82.91	62.24	5160.2
81D	51.31	60.00	3078.3
82D	47.34	60.00	2840.6
84A	46.26	60.08	2779.1
85A	67.30	60.41	4065.4
86A	32.68	64.12	2095.3
87A	92.86	60.00	5571.9
88A	5.49	60.91	334.4
90E	39.00	64.57	2518.1
91E	58.74	64.92	3813.5
93A	21.77	62.94	1370.3
94A	61.03	59.48	3629.9
95A	74.71	62.00	4631.5
96F	39.36	57.55	2264.7
97F	33.16	59.06	1958.5
98F	49.59	60.00	2975.5
99F	35.96	60.00	2157.6
100F	48.28	59.83	2888.7
102A	42.05	61.15	2571.8
103A	64.87	60.47	3923.0
104A	82.19	66.35	5453.5
105A	60.30	61.88	3731.5
106A	69.42	64.44	4473.3
107A	57.79	60.70	3508.0
108A	31.00	60.86	1886.9
109A	41.88	59.31	2484.1
		Composite CN =	60.3
		S =	6.60
		100-yr, 24-hr Precipitation, P(in.) =	10.77
		Fattening factor	**5.6**

E. Basin 116 calculations

Subarea ID	Area (acres)	Curve Number	CN x A
1A	85.4	62.18	5312.7
2A	78.9	60.91	4803.9
3A	72.9	59.87	4361.8
4B	87.8	61.75	5419.1
5B	54.0	60.91	3291.4
6B	80.2	60.89	4881.1
8A	94.5	55.48	5244.8
9C	78.8	59.24	4666.2
10C	73.1	61.00	4456.6
11C	51.0	59.58	3036.3
12C	108.1	55.97	6049.2
13C	86.5	56.35	4876.1
15A	30.0	54.69	1639.9
16D	80.4	61.37	4936.9
17D	12.2	60.19	731.8
19A	66.4	56.86	3775.0
20E	70.8	60.00	4245.4
21E	67.5	59.97	4050.5
22E	38.8	60.00	2329.1
23E	49.6	60.00	2973.4
25A	18.0	51.06	921.2
26A	55.8	59.93	3346.8
27A	79.2	58.87	4664.9
28A	64.0	58.80	3761.1
29A	46.4	60.54	2808.4
30A	40.3	60.07	2419.2
31A	52.8	60.16	3176.8
32B	99.3	61.50	6107.0
33B	47.1	61.07	2876.7
34B	35.5	61.64	2190.0
35B	77.5	62.43	4841.4
36B	99.6	59.83	5961.7
37B	13.1	62.52	818.2
38B	70.9	62.55	4435.3
39B	48.8	61.97	3026.0
40C	86.7	60.89	5280.8
41C	75.8	56.20	4258.0
42C	107.2	62.03	6652.7
43C	22.5	60.56	1364.0
44D	79.9	60.11	4801.9
45D	54.4	60.30	3280.7
47C	42.6	61.86	2632.5
49B	50.1	61.16	3062.9
50B	78.8	58.99	4645.6
51B	27.5	58.48	1606.1
52E	78.6	58.68	4612.2
53E	25.3	56.41	1424.6
55B	13.7	58.50	802.4
56F	87.5	59.59	5213.4
57F	30.0	57.80	1736.4
59B	39.7	59.93	2377.1
61A	54.92	61.47	3375.9
62A	79.85	60.00	4791.0
63A	41.33	62.74	2592.9
64B	65.79	61.09	4019.0
65B	48.97	61.55	3013.7
67A	24.33	62.13	1511.4
68A	56.79	57.30	3253.6
69A	50.07	60.10	3008.8
70C	58.51	59.08	3457.0
71C	75.32	58.65	4417.5
72C	73.63	59.77	4400.3
73C	54.01	60.00	3240.6
74C	19.96	60.00	1197.9
75C	42.62	60.61	2583.4
76C	89.31	60.27	5382.6
78A	29.76	60.44	1798.8
79A	41.21	61.02	2514.8
80A	82.91	62.24	5160.2
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85A	67.30	60.41	4065.4
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100F	48.28	59.83	2888.7
102A	42.05	61.15	2571.8
103A	64.87	60.47	3923.0
104A	82.19	66.35	5453.5
105A	60.30	61.88	3731.5
106A	69.42	64.44	4473.3
107A	57.79	60.70	3508.0
108A	31.00	60.86	1886.9
109A	41.88	59.31	2484.1
110A	72.63	60.78	4414.2
111A	55.74	61.27	3415.3
112B	49.87	64.85	3233.8
113B	43.17	58.84	2540.4
115A	27.36	65.81	1800.4
116B	37.42	54.58	2042.3
		Composite CN =	60.3
		S =	6.59
		100-yr, 24-hr Precipitation, P(in.) =	10.65
		Fattening factor	**5.5**

Preliminary Hydrology Report

Santa Paula West Business Park
Santa Paula, CA

February 3, 2011

Prepared by:

JENSEN DESIGN & SURVEY, INC

Engineers Planners Surveyors

Santa Paula West Business Park

Preliminary Drainage Report

Santa Paula, CA

Prepared for:

McGaelic Group
&
Bender Realty Ltd

June 2009
Updated February 2011

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APPENDIX

A: Existing Hydrology Calculations

B: Existing Hydrology Exhibit A

C: Proposed Hydrology Calculations

D: Proposed Hydrology Exhibit B

E: Existing FIRM & Soils Maps

F: HEC-RAS Analysis Maps and Calculations

Introduction

The Santa Paula West project is a planned commercial and industrial development containing a mixture of industrial, research and development, retail, office and commercial uses. The Specific Plan project site is located just outside the limits, but within the sphere of influence, of the City of Santa Paula. The land use is currently agricultural. The property is bounded by industrial development on the east, Adams Barranca on the west, Telegraph Road to the north, and Highway 126 to the south. Splitting the property east/west is the railroad operated by the Ventura County Transportation Commission Railroad (VCTC). The property ranges in elevation from approximately 250 to 222 feet above mean sea level and generally slopes from the north to the south. The Regional Location Map is shown below as Figure 1.

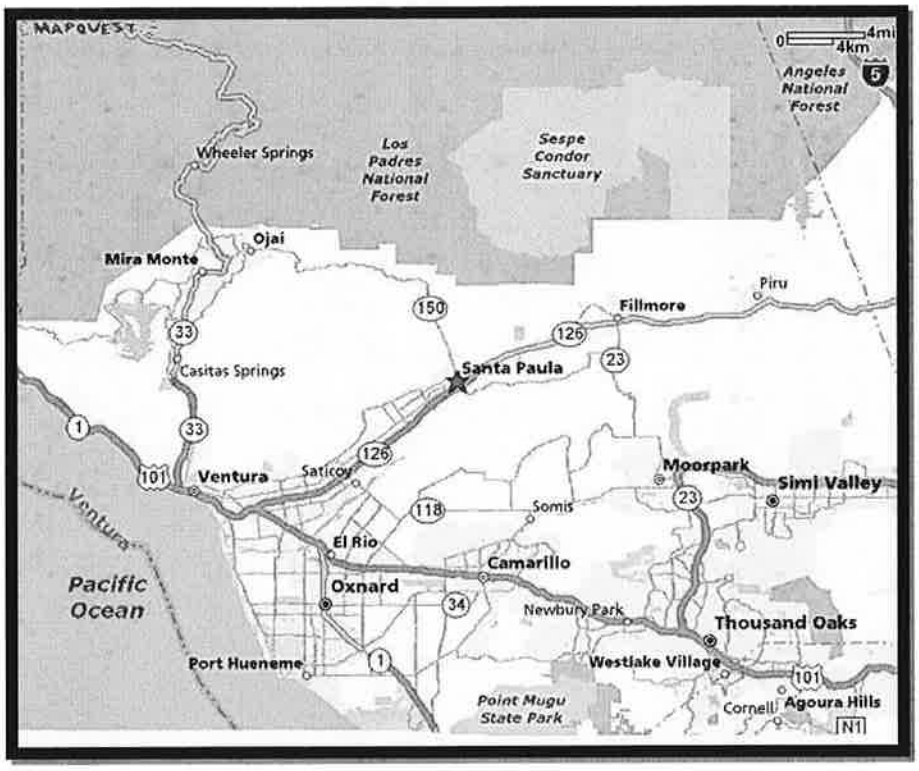


FIGURE 1 - REGIONAL LOCATION MAP

Project Description

The Santa Paula West Business Park Specific Plan encompasses approximately 58 acres of land in unincorporated Ventura County west of the City of Santa Paula. The proposed Specific Plan would permit the development of a variety of clean office, industrial and retail buildings ranging in size.

Access to the site is provided by Beckwith Road, Telegraph Road, and Faulkner Road. Secondary access is provided by Todd Lane (a private road). Figure 2 shows the project location.

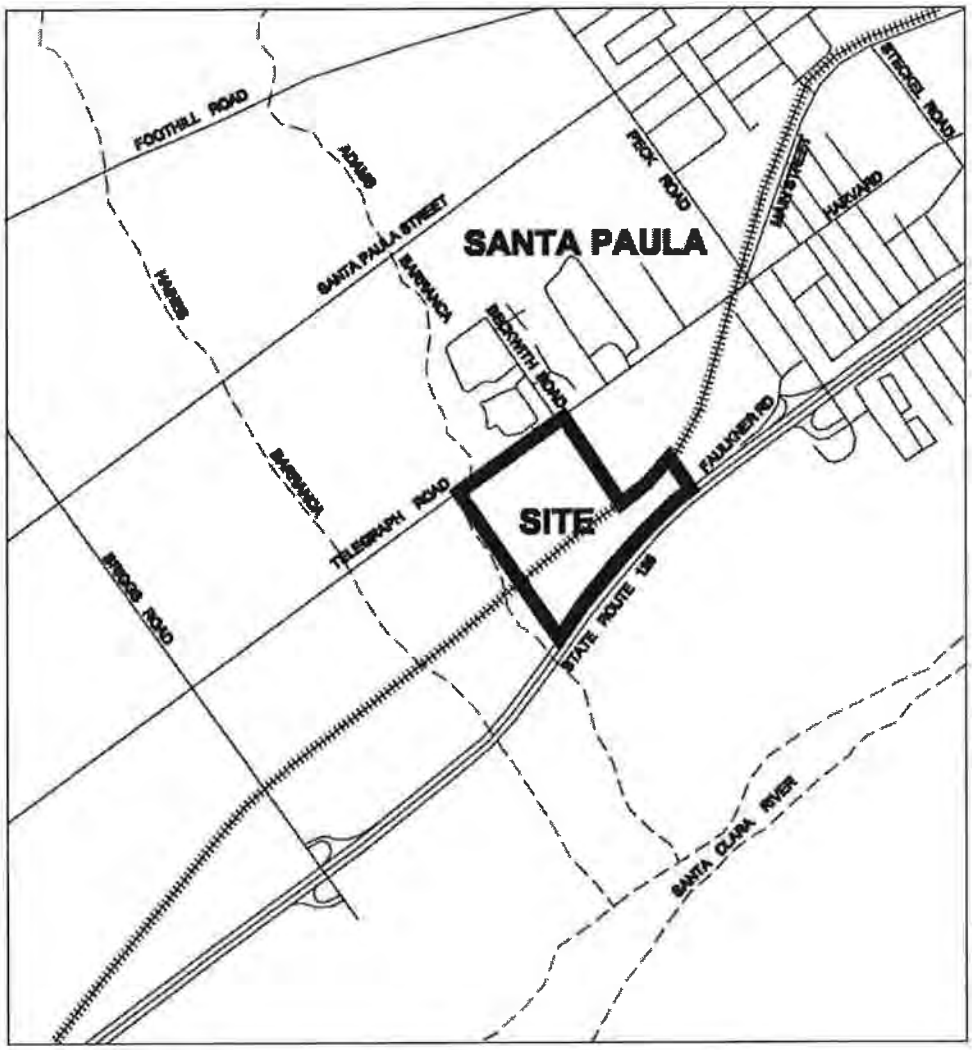


FIGURE 2 – PROJECT LOCATION MAP

Purpose

This study provides an evaluation of the existing drainage conditions and the design of a preliminary storm drain system within the Santa Paula West Business Park Specific Plan project. The general approach of the proposed condition is to maintain the existing drainage pattern without having adverse affects offsite.

Existing site conditions show that the project site is located in a floodplain, Zone A. Based on our analysis of Adams Canyon Barranca using flows generated by an Existing Condition study by Jensen Design & Survey currently being reviewed by the County of Ventura Watershed Protection District, the floodplain limits currently shown by FEMA are inaccurate. This report will summarize the flow information used in Adams Barranca for a HEC-RAS analysis and a CLOMR/LOMR will be filed at a later date to modify the current FIRM maps.

Future site runoff will be conveyed through the project via surface drainage and underground structures connecting into Adams Canyon Barranca and the existing culverts under Highway 126. This report includes hydrologic analysis and supporting calculations to demonstrate how the project's contributions to stormwater runoff resulting from development will be controlled and match existing conditions at major outlet points.

Hydrology Methodology

The existing conditions of the Santa Paula West Business Park Specific Plan were determined according to the Ventura County Watershed Protection District 2006 Hydrology Manual, the City of Santa Paula Master Plan for Drainage, the County's Time of Concentration Calculator, and Hec-Ras.

- Soil Group Types 3 & 4 are used for drainage areas in this study
- Existing condition coefficients were obtained from Appendix A, Exhibit 6A of the 'VCWPD Hydrology Manual'.
- Proposed condition coefficients were obtained from Appendix A, Exhibit 6A of the 'VCWPD Hydrology Manual'.
- Time of Concentration (Tc) values were calculated with the Tc Calculator program for each drainage area.

- Water quality treatment will either be flow based, volume based, or a combination of the two according to current SQUIMP guidelines at the time of Tentative Map submittal. Appendix D, Exhibit B shows various areas used for treatment, infiltration, and detention that will meet or exceed the County's SQUIMP requirements according to the Ventura County Technical Manual.

Existing Drainage Conditions

The Santa Paula West Business Park site is located within the greater Santa Clara River watershed. The onsite drainage is a tributary to the Santa Clara River, and has been divided into four drainage areas: Adams Canyon Barranca (Area A), Todd Lane Drain (Area D), Highway 126 West culverts (Area B), and Highway 126 east culverts (Area C). The limits of the drainage subareas were determined by a flown aerial topo (NGVD 1929 datum) and a site visit. In performing the hydrology analysis for the existing condition, all of the drainage areas within the property limits were analyzed for a ten through a hundred year storm events. The subarea properties and the calculated runoff are shown in **Table 1 and in Appendix A.**

The 58 acre project site is currently used for agriculture and varies in land gradient sloping north to south with the railroad and the Highway being higher than adjacent grade and acting as dams. The railroad has two culverts (2-12" CMP and 1-24" CMP) to transport the onsite water from the north to the south, not including the crossing for Adams Barranca. These culverts are about 50% blocked with sediment and currently do not function at capacity. There are also four existing culverts of various sizes under Highway 126 that are blocked with sediment and do not function at capacity, causing ponding north of the Highway during storm events. The outlets of the culverts are on the south side of Highway 126 and drain through historic agricultural drainage channels ending in the Santa Clara River and do not connect to Adams Barranca.

A small portion of the property drains west into Adams Barranca (**Area A on Exhibit A**). Adams Barranca is a raised channel with the top of the channel being an average 2.0' higher than the adjacent grade on the property. This property is subject to flooding during a 100 year storm event from Adams Barranca, according to the current FIRM maps (Map Numbers 06111C0778E and 06111C0779E – **Appendix E**). A HEC-RAS analysis was completed using flow information from a VcRAT analysis completed by Jensen Design & Survey to support a change in the floodplain limits. A more detailed analysis will be completed at the Tentative Map level of review and will be coordinated with the County and City. The existing condition report for the

flow rates used in the HEC-RAS analysis is currently being reviewed by the County Watershed Protection District.

The Highway 126 westerly culverts (1-24" CMP, and 1-48"x24" Arch CMP), drainage area B, handle the flows from approximately 27 acres. Overflow from pipe inlet blockage travels easterly to two other culverts under Highway 126 or farther east to the inlet at the end of Faulkner Road into a 72" RCP leading to Todd Lane Drain.

The Highway 126 easterly culverts (2–52"x30" Arch CMP), drainage areas C and D, handle the flows from approximately 31 acres. Overflow from pipe inlet blockage travels easterly to the inlet at the end of Faulkner Road into a 72" RCP leading to Todd Lane Drain.

The time of concentration for each overall drainage area within the property boundaries was calculated using VcRAT Time of Concentration calculator from Ventura County to obtain a time of concentration and a peak flow rate. That peak flow rate was used to calculate a cfs/acre which was then applied to each drainage subarea, respectively as shown in **Appendix A**.

The Santa Paula Master Storm Drain Plan shows 75% of the specific plan area to be draining to Todd Lane Drain. Todd Lane Drain has a maximum design capacity of 393 cfs in a 100 year storm. After an analysis of the onsite drainage patterns, Todd Lane Drain receives flows from the project site only in the event of blockage at the Highway 126 culverts.

The existing flow areas and peak flows for the existing condition are shown in Appendix A and Table 1.

Table 1 – Santa Paula West Business Park Specific Plan Existing Runoffs

Watershed	Subarea	Area (ac.)	10-year Q10 (cfs)	50-year Q50 (cfs)	100-year Q100 (cfs)
ADAMS BARRANCA	**A**	**2.82**	**2.8**	**4.8**	**6.5**
WEST 126 CULVERTS (2,8)	B1	16.28	11.2	21.6	28.4
	B2	10.88	7.4	14.4	18.8
	TOTAL	**27.16**	**18.6**	**35.9**	**46.9**
EAST 126 CULVERTS (5,6)	C1a	10.7	5.0	14.4	18.9
	C1b	4	1.9	5.5	7.3
	C1c	0.9	0.4	1.2	1.6
	C2	7.6	3.6	10.3	13.5
	D	7.3	7.9	14.0	19.6
	TOTAL	**30.5**	**18.8**	**45.5**	**61.0**

Proposed Drainage Conditions

The proposed grading and drainage (see **Appendix D, Exhibit B**) shows the site maintaining the north to south flow pattern. The northern part of the project has a steeper slope of 3%, while the south end of the project slopes an average of 1%. The site will be mostly fill in order to raise the buildings above any flooding potential. Various catch basin locations and a local storm drain system, designed to current City of Santa Paula Standards will convey the stormwater to five different outlet points, as shown on **Exhibit B**. The storm drain system is a network of local storm drain pipes routed within the project site and flows by gravity. A parallel channel and a debris basin are incorporated into plans to improve the Adams Barranca, and that is further explained later in this report, but no onsite stormwater will be directed to Adams Barranca.

The project will take advantage of planter areas throughout to allow for infiltration and treatment of rain water to comply with the County of Ventura MS4 permit. Before the stormwater leaves the site it will be detained in small localized landscaped basins and three larger basins onsite to allow for infiltration and peak flow control per current MS4 standards at the time of Tentative Map submittal. Storm drain sizes and slopes will be determined once site layout is finalized at the Tentative Map level.

The five outlet points for site water discharge are Todd Lane Drain (Pipe 9), three existing culvert locations under Highway 126 (pipes 2,5,8). Proposed condition stormwater discharge at each outlet point will not increase from the existing peak outflow (**Appendix C**), due to the implementation of detention basins. Preliminary calculations have been done to size the proposed detention basins, however a more detailed analysis will be required at the Tentative Map level, once the site layout is completed. There are two surface detention basins located on site and one subsurface detention basin located on the east end of the development (see **Appendix D, Exhibit B).**

Most of the existing condition drainage issues onsite are due to sediment build up in the existing storm drain pipes under Highway 126. By developing the site, undergrounding existing open inlet pipes at Highway 126, and providing a system for treatment and flow control, the site will not be exposed to sediment and the usual culvert blockage that can cause ponding north of Highway 126 will be eliminated.

The time of concentration for each overall drainage area within the property boundaries was calculated using VcRAT Time of Concentration calculator from Ventura County to obtain a time of concentration and a peak flow rate for the developed condition. The peak flow rate was used to calculate a cfs/acre, which was then applied to each drainage subarea, respectively as shown in Appendix C and Table 2.

Table 2A – Santa Paula West Business Park Specific Plan Proposed Runoffs

Watershed	Subarea	Area (ac.)	10-year Q10 (cfs)	50-year Q50 (cfs)	100-year Q100 (cfs)
ADAMS BARRANCA	**A**	**1.7**	**1.5**	**2.1**	**2.3**
WEST 126 CULVERTS (2)	B1 a	5.9	16.4	22.0	27.6
	B1b	8.2	24.8	33.6	37.8
	B1c	3.75	9.6	14.0	15.7
	B2	1.97	4.1	6.6	7.5
	TOTAL UNDETAINED	**19.82**	**54.9**	**76.2**	**88.6**
EAST 126 CULVERTS (5)	C1	15.65	32.7	52.7	59.8
	C2	9.24	19.3	31.1	35.3
	TOTAL	**24.9**	**52.0**	**84.0**	**95.0**
TODD LANE DRAIN	**D**	**5.59**	**10.6**	**16.6**	**18.7**
WEST 126 CULVERTS (8)	**E**	**8.25**	**19.4**	**33.8**	**38.0**

Table 2B – Santa Paula West Business Park Specific Plan Proposed Runoffs

(Includes Detention)

Watershed	Subarea	Area (ac.)	10-year Q10 (cfs)	50-year Q50 (cfs)	100-year Q100 (cfs)
ADAMS BARRANCA	**A**	**1.7**	**1.5**	**2.1**	**2.3**
WEST 126 CULVERTS (2)	B1	17.85	7.7	9.0	9.2
	B2	1.97	4.1	6.6	7.5
	B TOTAL	**19.82**	**11.8**	**15.6**	**16.7**
EAST 126 CULVERTS (5)	**C TOTAL**	**24.9**	**26.8**	**41.7**	**46.0**
TODD LANE DRAIN	**D**	**5.59**	**10.6**	**16.6**	**18.7**
WEST 126 CULVERTS (8)	**E**	**8.25**	**9.0**	**12.8**	**13.0**

Water Quality

Water quality measures for the Santa Paula West Business Park development will consist of Best Management Practices (BMPs) that are listed in the Ventura County Stormwater Quality Urban Impact Mitigation Plan (SQUIMP). This plan was devised to address storm water pollution for any new development and redevelopment. Stormwater treatment occurs onsite and prior to stormwater leaving the site to existing drainage facilities. Water quality treatment will either be flow based, volume based, or a combination of the two according to SQUIMP guidelines. The following are some of the BMPs that may be utilized on the project.

Bio-swales will be designed into various parking landscape areas to convey and treat paved areas and allow stormwater capture for infiltration and evapotranspiration. These swales that generally have low velocities are used to mitigate concentration of nutrients by its contact with vegetation. Bio-swales could occur within each planter area designed within the project, providing cleansing of storm runoff prior to discharge into Adams Barranca and Santa Clara River.

Bio-filter inserts will be used in curb inlets to capture oil and grease, suspended solids, metals, gasoline, pesticides and pathogens. Also, storm drain inlets and catch basins will have proper signage and stenciling to discourage illegal dumping. Filters and signage will be checked and/or replaced annually.

Two surface detention basins are located onsite north of the railroad at the center of the development and north of the highway at the center of the development in addition to one underground basin located east of Beckwith Drive just north of the highway. Localized detention basins will also be used throughout the site, such as landscape areas that are used to lag the discharge of stormwater. These areas will settle out and filter pollutants that are within the runoff on-site. The final sizing of the detention basins and landscape areas will be provided with the Tentative Map design.

The following table shows the volume required for each drainage area according to the SQUIMP guidelines and the Tentative Stormwater Permit for Ventura County as of the date of this report for water quality treatment. The Railroad Right of Way area is not included in the treatment volume requirements.

Table 3 – Santa Paula West Business Park Specific Plan Water Quality

Subarea	DrainageArea (acres)	Railroad Right of Way Area (acres)	Total Required Treatment Area (acres)	Volume Based Water Quality Required (ft^3)**
A	1.7	0.09	0.00	0.0
B1a	5.9	0.00	5.90	16062.1
B1b	8.2	0.17	8.03	21848.4
B1c	3.75	0.58	3.17	8634.2
B2	1.97	0.40	1.57	4285.9
C1	15.65	0.69	14.96	40740.3
C2	9.24	0.67	8.57	23325.0
D	5.59	0.65	4.94	13456.0
E	8.25	0.32	7.93	21594.8
			Total Volume	**149946.7**

** Calculated using a 75% impervious area average. Used method in SQUIMP manual page 5-5 for calculations
(same value as a 0.75 in storm event as stated in new permit)

Adams Canyon Barranca Floodplain Analysis

Current FIRM maps dated January 20, 2010 show the westerly portion of the property within flood Zone A (See **Appendix E**). After a review of historic flooding, existing contours, and site features, the Flood Zone limits shown on the current FIRM maps are inaccurate. Using flows generated by a VcRAT study completed by Jensen Design & Survey currently under review by the County of Ventura Watershed Protection District, a preliminary HEC-RAS River study of Adams Canyon Barranca was completed.

Adams Canyon Barranca's current banks are earthen dikes created by past farm land owners in order to prevent flooding their crops. These dikes are about 2.0 feet above adjacent grade on both the east and west sides of the channel. The Adams Barranca and the undercrossings at Highway 126, the Railroad, and Telegraph road are undersized for the 4,810 cfs flow.

Table 4 – Adams Barranca Existing Structures

	Type of Undercrossing	Approximate Capacity (cfs)
Telegraph Road	10' H x 24' W RCB	3,200
Railroad Crossing	8' H x 28' W Crossing	2,400
Highway 126	Double 12' H x 10' W	2,200

Multiple HEC-RAS analysis were completed to develop our findings. A summary of the HEC-RAS plans and geometry files are in the **Appendix F**. The existing condition where the channel geometry is overtopped was modeled using lateral structures as weirs at the top of the existing bank to analyze the flow that has left the channel. Existing condition topography reflects that if water overtops the channel, it will leave the channel forever and head either east or west to Todd Barranca or Clow Road undercrossing, respectively. The flow rates that overtopped the bank on the west side of the Adams Barranca were removed from the total design Q for the proposed condition analysis at each respective cross section. The summary of the flow rates that have overtopped the existing banks at certain locations is shown below and in **Appendix F**.

Table 5 – Adams Barranca Existing Overflow Values

Main Channel Station	Overtop Flow West (ROB) (cfs)	Overtop Flow East (LOB) (cfs)
52+53 - 46+45.2	1218	0
45+39.6 – 42+39.6	757	0
42+39.6 – 38+21.2	1552	0
38+21.2 – 36+89.1	0	88

The breakout begins upstream of Telegraph Road, due to the lack of capacity in the Telegraph Road culvert. Therefore, the flows pond and overtop Telegraph Road as a sheet flow with a depth of approximately 1.5 feet. The northwest frontage of the proposed project extending from the main project entry west to the Barranca has been designed to handle 300 cfs within the parking lot between Telegraph Road and the proposed building. This overflow will be directed into the proposed channel along the west property line, with a total of 1,218 cfs, which totals the overflow from upstream of Telegraph Road on the east side of the Barranca.

The proposed condition will only occur if the property is developed. An 800 foot long parallel channel to Adams Canyon Barranca has been designed with a bottom width of 6.0' and a varying depth with 2:1 side slopes. The west side of the proposed channel adjacent to Adams Canyon Barranca will match the existing elevations until Adams Barranca reaches the west property boundary of the Specific Plan area and the two channels merge into one. This channel is only for the purposes of flood water routing.

At the merge location, we are proposing a wider channel section for debris storage. In discussions with Fillmore & Western railroad, they believe the railroad crossing gets clogged with debris. In order to accommodate the debris and enlarge the crossing capacity, we are proposing a wider channel section and a double 12'W x 6'H culvert to the east of the existing crossing.

Downstream of the railroad crossing, we are proposing to widen the channel by removing the existing easterly bank of the Barranca, making the bottom width 60'. However, the undersized Highway 126 12'Hx10'W double box culvert is causing the water to overtop the new channel configuration banks. The new easterly channel top of bank elevation will not exceed the elevation of the westerly top of bank of the Adams Barranca. The east side of the new channel will also have a lower weir cut at elevation 125 for a length of 75 feet between stations 28+39.2 and 27+08.7, just upstream of the Highway 126 undercrossing. This will allow the water to overtop the weir and head west to the natural low point in Highway 126, maintaining the existing condition flow path during a storm event. Therefore the proposed condition will not have an adverse impact on floodwaters heading to the west because the design is not increasing the peak flows or changing the overtopping location from the existing condition. The buildings are proposed at a minimum of 1.0' above the water surface elevation determined for the new channel to protect from flooding (See Exhibit B).

Table 6 – Adams Barranca Proposed Overflow Values

Main Channel Station	Overtop Flow West (ROB) (cfs)	Overtop Flow East (LOB) (cfs)
52+53 – 46+45.2	1218	0
45+39.6 – 42+39.6	737	0
42+39 - 38+21	1290	0
28+39 – 27+55.9	0	1000
24+24 – 18+18	45	147

Conclusions

Based on the hydrology calculations done in accordance with the Ventura County Hydrology Manual and reflected in **Appendix C**, the proposed project improves existing drainage conditions and does not allow an increase in peak flow leaving the site. **Table 3** shows a comparison of the

flows at the five outlet points that does not include detention calculations. The increase in flow is anticipated due to the proposed development. To improve existing conditions dramatically, the project drainage design includes an overflow channel, smaller localized detention basins, and surface treatment swales. Existing flow patterns will generally remain the same after the proposed condition. The existing downstream storm drain facilities are currently not operating at their design capacity for a 10-year storm event. The proposed improvements will alleviate this situation.

References

- Ventura County Watershed Protection District, December 2006, "Ventura County Hydrology Manual"
- FEMA Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix H, April 2003
- FEMA National Flood Insurance Program Section 65.10, November 2008

APPENDIX A

Existing Hydrology Calculations

PAR01.4492
4/21/2010

APPENDIX A
EXISTING CONDITION CALCULATIONS

Flood Zone 2
Rainfall Zone K

Subarea	Area (acres)	Soil Type	10 yr Time of Concentration	50 yr Time of Concentration	100 yr Time of Concentration	q10 (cfs/ac)	q50 (cfs/ac)	q100 (cfs/ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Storm Drain
A Total	*2.82*	*3*	*27 min*	*19 min*	*14 min*	*0.99*	*1.72*	*2.31*	*2.8*	*4.8*	*6.5*	Adams
B1	16.4	3,4	-	-	-	-	-	-	11.2	21.6	28.4	1
B2	10.88	4	-	-	-	-	-	-	7.4	14.4	18.8	2
B Total	*27.28*	*3,4*	*30 min*	*25 min*	*20 min*	*0.68*	*1.32*	*1.73*	*18.6*	*35.9*	*46.9*	2
C1a	10.7	3	-	-	-	-	-	-	5.0	14.4	18.9	7,4
C1b	4.1	4	-	-	-	-	-	-	1.9	5.5	7.3	3
C1c	0.91	4	-	-	-	-	-	-	0.4	1.2	1.6	4
C2	7.6	4	-	-	-	-	-	-	3.6	10.3	13.5	5
C Total	*23.31*	*4*	*30 min*	*24 min*	*19 min*	*0.73*	*1.35*	*1.77*	*16.9*	*31.5*	*41.4*	*5*
D Total	*7.26*	*4*	*20 min*	*14 min*	*10 min*	*1.08*	*1.92*	*2.69*	*7.9*	*14.0*	*19.6*	*6*
					TOTAL PEAK FLOW (cfs)				**46.1**	**86.2**	**114.3**	
					AVERAGE (cfs/ac)	**0.87**	**1.58**	**2.13**				
					cfs/ac from Peck Road Drain Hydrology Report*	**1.1**	**1.7**	**2**				

*Peck Road Drain Hydrology Report (Septmeber 6, 2007). Ventura County Watershed Protection District

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed A

Name	Zone	Storm	Soil	Area (acres)	TC (min)
A	K	10	3.00	2.8 / 3	27.495 / 27
A	K	25	3.00	2.8 / 3	21.857 / 22
A	K	50	3.00	2.8 / 3	18.766 / 19
A	K	100	3.00	2.8 / 3	14.378 / 14

♀

Watershed Name: Watershed A

Sub-Area Name: A
Computing Tc for all rainfall frequencies for sub-area A...

Tc for frequency = 10.00: 27.495 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 27.495 min. = 27 min.

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.529
C Total: 0.649
Sum Q Segments (cfs): 2.79
Q Total (cfs): 2.79
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,649.69
Time of Concentration (min): 27.495

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 26.0075
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped

Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 2.51
Avg Velocity (ft/s): 0.42
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.52
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.4873
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.28
Q Top (cfs): 2.51
Q Bottom (cfs): 2.79
Velocity Top (ft/s): 1.96
Velocity Bottom (ft/s): 2.04
Avg Velocity (ft/s): 2.00
Wave Velocity (ft/s): 3.25
♀
Tc for frequency = 25.00: 21.857 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 21.857 min. = 22 min.

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.868
C Total: 0.690
Sum Q Segments (cfs): 3.62
Q Total (cfs): 3.62
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,311.40
Time of Concentration (min): 21.857

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 20.4867
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0

Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 3.26
Avg Velocity (ft/s): 0.53
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.67
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.3701
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.36
Q Top (cfs): 3.26
Q Bottom (cfs): 3.62
Velocity Top (ft/s): 2.14
Velocity Bottom (ft/s): 2.21
Avg Velocity (ft/s): 2.18
Wave Velocity (ft/s): 3.53
♀
Tc for frequency = 50.00: 18.766 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 18.766 min. = 19 min.

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.349
C Total: 0.733
Sum Q Segments (cfs): 4.84
Q Total (cfs): 4.84
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,125.94
Time of Concentration (min): 18.766

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 17.5137
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238

Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 4.36
Avg Velocity (ft/s): 0.62
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.85
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.2519
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.48
Q Top (cfs): 4.36
Q Bottom (cfs): 4.84
Velocity Top (ft/s): 2.35
Velocity Bottom (ft/s): 2.43
Avg Velocity (ft/s): 2.39
Wave Velocity (ft/s): 3.86
♀
Tc for frequency = 100.00: 14.378 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 14.378 min. = 14 min.

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.987
C Total: 0.776
Sum Q Segments (cfs): 6.52
Q Total (cfs): 6.52
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 862.65
Time of Concentration (min): 14.378

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.2318
Flow Type: Overland
Length (ft): 650

Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 5.87
Avg Velocity (ft/s): 0.82
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.01
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1457
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.65
Q Top (cfs): 5.87
Q Bottom (cfs): 6.52
Velocity Top (ft/s): 2.57
Velocity Bottom (ft/s): 2.67
Avg Velocity (ft/s): 2.62
Wave Velocity (ft/s): 4.22

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed B

Name	Zone	Storm	Soil	Area (acres)	TC (min)
B1	K	10	4.00	27.3 / 27	TC ERROR
B1	K	25	4.00	27.3 / 27	28.668 / 29
B1	K	50	4.00	27.3 / 27	25.025 / 25
B1	K	100	4.00	27.3 / 27	20.170 / 20

♀

Watershed Name: Watershed B

Sub-Area Name: B1
Computing Tc for all rainfall frequencies for sub-area B1...

Tc for frequency = 10.00: 35.081 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 35.081 min. = 35 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B1
Total Area (ac): 27.28
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 1.346
C Total: 0.505
Sum Q Segments (cfs): 18.55
Q Total (cfs): 18.55
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 2,104.88
Time of Concentration (min): 35.081

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 26.4327
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 7.7
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 1.43
Avg Velocity (ft/s): 0.42
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.46

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.9062
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 52.1
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 9.65
Q Top (cfs): 1.43
Q Bottom (cfs): 11.08
Velocity Top (ft/s): 1.13
Velocity Bottom (ft/s): 2.12
Avg Velocity (ft/s): 1.62
Wave Velocity (ft/s): 2.60

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0520
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.07
Q Top (cfs): 11.08
Q Bottom (cfs): 11.15
Avg Velocity (ft/s): 5.15
Wave Velocity (ft/s): 6.41
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.6904
Flow Type: Natural Channel
Length (ft): 640
Top Elevation (ft): 226.3
Bottom Elevation (ft): 220.4
Contributing Area (acres): 10.88
Percent of Sub-Area (%): 39.9
Overland Type: Valley
Map Slope: 0.0092
Effective Slope: 0.0092
Q for Flow Path (cfs): 7.40
Q Top (cfs): 11.15
Q Bottom (cfs): 18.55
Velocity Top (ft/s): 2.47
Velocity Bottom (ft/s): 2.82
Avg Velocity (ft/s): 2.64
Wave Velocity (ft/s): 3.96
♀
Tc for frequency = 25.00: 28.668 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 28.668 min. = 29 min.

SUB AREA INPUT DATA

Sub Area Name: B1
Total Area (ac): 27.28
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.639
C Total: 0.591
Sum Q Segments (cfs): 26.44
Q Total (cfs): 26.44
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,720.09
Time of Concentration (min): 28.668

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 20.8434
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 7.7
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 2.04
Avg Velocity (ft/s): 0.54
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.64

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.3290
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 52.1
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 13.76
Q Top (cfs): 2.04
Q Bottom (cfs): 15.80
Velocity Top (ft/s): 1.27
Velocity Bottom (ft/s): 2.34
Avg Velocity (ft/s): 1.80
Wave Velocity (ft/s): 2.88

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0481
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 27
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.10
Q Top (cfs): 15.80
Q Bottom (cfs): 15.90
Avg Velocity (ft/s): 5.62
Wave Velocity (ft/s): 6.93

DATA FOR FLOW PATH 4

Flow Path Name: FlowPath

FLOW PATH TRAVEL TIME (min): 2.4476
Flow Type: Natural Channel
Length (ft): 640
Top Elevation (ft): 226.3
Bottom Elevation (ft): 220.4
Contributing Area (acres): 10.88
Percent of Sub-Area (%): 39.9
Overland Type: Valley
Map Slope: 0.0092
Effective Slope: 0.0092
Q for Flow Path (cfs): 10.55
Q Top (cfs): 15.90
Q Bottom (cfs): 26.44
Velocity Top (ft/s): 2.71
Velocity Bottom (ft/s): 3.10
Avg Velocity (ft/s): 2.91
Wave Velocity (ft/s): 4.36
♀
Tc for frequency = 50.00: 25.025 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 25.025 min. = 25 min.

SUB AREA INPUT DATA

Sub Area Name: B1
Total Area (ac): 27.28
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.026
C Total: 0.649
Sum Q Segments (cfs): 35.88
Q Total (cfs): 35.88
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,501.49
Time of Concentration (min): 25.025

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 17.8288
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 7.7
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 2.76
Avg Velocity (ft/s): 0.63
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.82
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.8998
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 52.1
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 18.68
Q Top (cfs): 2.76
Q Bottom (cfs): 21.44
Velocity Top (ft/s): 1.39
Velocity Bottom (ft/s): 2.54
Avg Velocity (ft/s): 1.97
Wave Velocity (ft/s): 3.13
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0448
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 30
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.13
Q Top (cfs): 21.44
Q Bottom (cfs): 21.57
Avg Velocity (ft/s): 6.03
Wave Velocity (ft/s): 7.44
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.2514
Flow Type: Natural Channel
Length (ft): 640
Top Elevation (ft): 226.3
Bottom Elevation (ft): 220.4
Contributing Area (acres): 10.88
Percent of Sub-Area (%): 39.9
Overland Type: Valley
Map Slope: 0.0092
Effective Slope: 0.0092
Q for Flow Path (cfs): 14.31
Q Top (cfs): 21.57
Q Bottom (cfs): 35.88
Velocity Top (ft/s): 2.94
Velocity Bottom (ft/s): 3.38
Avg Velocity (ft/s): 3.16
Wave Velocity (ft/s): 4.74
♀
Tc for frequency = 100.00: 20.170 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 20.170 min. = 20 min.

SUB AREA INPUT DATA

Sub Area Name: B1
Total Area (ac): 27.28
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 2.490
C Total: 0.691
Sum Q Segments (cfs): 46.94
Q Total (cfs): 46.94
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,210.21
Time of Concentration (min): 20.170

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.4989
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 7.7
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 3.61
Avg Velocity (ft/s): 0.83
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.00

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.5409
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 52.1
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 24.44
Q Top (cfs): 3.61
Q Bottom (cfs): 28.05
Velocity Top (ft/s): 1.52
Velocity Bottom (ft/s): 2.74
Avg Velocity (ft/s): 2.13
Wave Velocity (ft/s): 3.38

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0421
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 33
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.17
Q Top (cfs): 28.05
Q Bottom (cfs): 28.22
Avg Velocity (ft/s): 6.47
Wave Velocity (ft/s): 7.93
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.0883
Flow Type: Natural Channel
Length (ft): 640
Top Elevation (ft): 226.3
Bottom Elevation (ft): 220.4
Contributing Area (acres): 10.88
Percent of Sub-Area (%): 39.9
Overland Type: Valley
Map Slope: 0.0092
Effective Slope: 0.0092
Q for Flow Path (cfs): 18.72
Q Top (cfs): 28.22
Q Bottom (cfs): 46.94
Velocity Top (ft/s): 3.16
Velocity Bottom (ft/s): 3.65
Avg Velocity (ft/s): 3.41
Wave Velocity (ft/s): 5.11

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed C

Name	Zone	Storm	Soil	Area (acres)	TC (min)
C	K	10	4.00	23.3 / 23	TC ERROR
C	K	25	4.00	23.3 / 23	27.150 / 27
C	K	50	4.00	23.3 / 23	23.859 / 24
C	K	100	4.00	23.3 / 23	19.399 / 19

♀

Watershed Name: Watershed C

Sub-Area Name: C

Computing Tc for all rainfall frequencies for sub-area C...

Tc for frequency = 10.00: 32.925 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 32.925 min. = 33 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 1.387
C Total: 0.523
Sum Q Segments (cfs): 16.90
Q Total (cfs): 16.90
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,975.52
Time of Concentration (min): 32.925

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 24.2017
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.33
Avg Velocity (ft/s): 0.41
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.61

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.7087
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 2.56
Q Top (cfs): 0.33
Q Bottom (cfs): 2.89
Velocity Top (ft/s): 1.67
Velocity Bottom (ft/s): 2.50

Avg Velocity (ft/s): 2.09
Wave Velocity (ft/s): 3.13
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0477
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 12
Used Pipe Diameter (in): 12
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.07
Q Top (cfs): 2.89
Q Bottom (cfs): 2.97
Avg Velocity (ft/s): 5.56
Wave Velocity (ft/s): 6.99
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.3586
Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 0.66
Q Top (cfs): 2.97
Q Bottom (cfs): 3.63
Velocity Top (ft/s): 1.12
Velocity Bottom (ft/s): 1.17
Avg Velocity (ft/s): 1.14
Wave Velocity (ft/s): 1.72
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3184
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 36
Used Pipe Diameter (in): 36
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 7.76
Q Top (cfs): 3.63
Q Bottom (cfs): 11.38
Avg Velocity (ft/s): 1.98
Wave Velocity (ft/s): 2.62
DATA FOR FLOW PATH 6

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.2903
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6
Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 5.52
Q Top (cfs): 11.38
Q Bottom (cfs): 16.90
Velocity Top (ft/s): 2.19
Velocity Bottom (ft/s): 2.42
Avg Velocity (ft/s): 2.30
Wave Velocity (ft/s): 3.46
♀
Tc for frequency = 25.00: 27.150 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 27.150 min. = 27 min.

SUB AREA INPUT DATA

Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.695
C Total: 0.600
Sum Q Segments (cfs): 23.70
Q Total (cfs): 23.70
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,628.98
Time of Concentration (min): 27.150

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 19.0565
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.47
Avg Velocity (ft/s): 0.52
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.70

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.4030
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 3.59
Q Top (cfs): 0.47
Q Bottom (cfs): 4.06
Velocity Top (ft/s): 1.76
Velocity Bottom (ft/s): 2.70
Avg Velocity (ft/s): 2.23
Wave Velocity (ft/s): 3.35

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0414
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 15
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.10
Q Top (cfs): 4.06
Q Bottom (cfs): 4.16
Avg Velocity (ft/s): 6.10
Wave Velocity (ft/s): 8.06

DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.2577
Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 0.93
Q Top (cfs): 4.16
Q Bottom (cfs): 5.08
Velocity Top (ft/s): 1.21
Velocity Bottom (ft/s): 1.27
Avg Velocity (ft/s): 1.24
Wave Velocity (ft/s): 1.86

DATA FOR FLOW PATH 5

Flow Path Name: FlowPath

FLOW PATH TRAVEL TIME (min): 0.2974
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 39
Used Pipe Diameter (in): 39
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 10.88
Q Top (cfs): 5.08
Q Bottom (cfs): 15.96
Avg Velocity (ft/s): 2.15
Wave Velocity (ft/s): 2.80
DATA FOR FLOW PATH 6

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.0937
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6
Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 7.74
Q Top (cfs): 15.96
Q Bottom (cfs): 23.70
Velocity Top (ft/s): 2.39
Velocity Bottom (ft/s): 2.65
Avg Velocity (ft/s): 2.52
Wave Velocity (ft/s): 3.78
♀
Tc for frequency = 50.00: 23.859 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 23.859 min. = 24 min.

SUB AREA INPUT DATA

Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.070
C Total: 0.653
Sum Q Segments (cfs): 31.52
Q Total (cfs): 31.52
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,431.53
Time of Concentration (min): 23.859

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 16.2876
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.62
Avg Velocity (ft/s): 0.61
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.79
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.1495
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 4.77
Q Top (cfs): 0.62
Q Bottom (cfs): 5.40
Velocity Top (ft/s): 1.85
Velocity Bottom (ft/s): 2.89
Avg Velocity (ft/s): 2.37
Wave Velocity (ft/s): 3.55
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0411
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 15
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.14
Q Top (cfs): 5.40
Q Bottom (cfs): 5.53
Avg Velocity (ft/s): 6.52
Wave Velocity (ft/s): 8.12
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1756
Flow Type: Natural Channel

Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 1.23
Q Top (cfs): 5.53
Q Bottom (cfs): 6.76
Velocity Top (ft/s): 1.29
Velocity Bottom (ft/s): 1.36
Avg Velocity (ft/s): 1.32
Wave Velocity (ft/s): 1.98
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.2679
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 48
Used Pipe Diameter (in): 48
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 14.47
Q Top (cfs): 6.76
Q Bottom (cfs): 21.23
Avg Velocity (ft/s): 2.31
Wave Velocity (ft/s): 3.11
DATA FOR FLOW PATH 6

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.9372
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6
Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 10.29
Q Top (cfs): 21.23
Q Bottom (cfs): 31.52
Velocity Top (ft/s): 2.58
Velocity Bottom (ft/s): 2.87
Avg Velocity (ft/s): 2.72
Wave Velocity (ft/s): 4.09
♀
Tc for frequency = 100.00: 19.399 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 19.399 min. = 19 min.

SUB AREA INPUT DATA

Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.552
C Total: 0.696
Sum Q Segments (cfs): 41.37
Q Total (cfs): 41.37
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,163.95
Time of Concentration (min): 19.399

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 12.2905
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.82
Avg Velocity (ft/s): 0.81
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.88
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.9126
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 6.27
Q Top (cfs): 0.82
Q Bottom (cfs): 7.08
Velocity Top (ft/s): 1.94
Velocity Bottom (ft/s): 3.08
Avg Velocity (ft/s): 2.51
Wave Velocity (ft/s): 3.77
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0411
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4

Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 15
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.18
Q Top (cfs): 7.08
Q Bottom (cfs): 7.26
Avg Velocity (ft/s): 6.75
Wave Velocity (ft/s): 8.12
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1000
Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 1.62
Q Top (cfs): 7.26
Q Bottom (cfs): 8.87
Velocity Top (ft/s): 1.38
Velocity Bottom (ft/s): 1.45
Avg Velocity (ft/s): 1.41
Wave Velocity (ft/s): 2.12
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.2590
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 48
Used Pipe Diameter (in): 48
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 18.99
Q Top (cfs): 8.87
Q Bottom (cfs): 27.87
Avg Velocity (ft/s): 2.47
Wave Velocity (ft/s): 3.22
DATA FOR FLOW PATH 6

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.7960
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6
Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6

Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 13.51
Q Top (cfs): 27.87
Q Bottom (cfs): 41.37
Velocity Top (ft/s): 2.78
Velocity Bottom (ft/s): 3.10
Avg Velocity (ft/s): 2.94
Wave Velocity (ft/s): 4.41

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed D

Name	Zone	Storm	Soil	Area (acres)	TC (min)
D	K	10	4.00	7.3 / 7	20.297 / 20
D	K	25	4.00	7.3 / 7	16.006 / 16
D	K	50	4.00	7.3 / 7	13.691 / 14
D	K	100	4.00	7.3 / 7	10.309 / 10

♀

Watershed Name: Watershed D

Sub-Area Name: D
Computing Tc for all rainfall frequencies for sub-area D...

Tc for frequency = 10.00: 20.297 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 20.297 min. = 20 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.770
C Total: 0.612
Sum Q Segments (cfs): 7.86
Q Total (cfs): 7.86
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,217.80
Time of Concentration (min): 20.297

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 20.2164
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 5.95
Avg Velocity (ft/s): 0.40
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.74
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0802
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 1.91
Q Top (cfs): 5.95
Q Bottom (cfs): 7.86
Velocity Top (ft/s): 3.96
Velocity Bottom (ft/s): 4.35
Avg Velocity (ft/s): 4.16
Wave Velocity (ft/s): 6.23
♀
Tc for frequency = 25.00: 16.006 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 16.006 min. = 16 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.183
C Total: 0.663
Sum Q Segments (cfs): 10.51
Q Total (cfs): 10.51
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 960.35
Time of Concentration (min): 16.006

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 15.9330
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 7.96
Avg Velocity (ft/s): 0.51
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.83

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0728
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 2.55
Q Top (cfs): 7.96
Q Bottom (cfs): 10.51
Velocity Top (ft/s): 4.37
Velocity Bottom (ft/s): 4.79
Avg Velocity (ft/s): 4.58
Wave Velocity (ft/s): 6.87
♀
Tc for frequency = 50.00: 13.691 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 13.691 min. = 14 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 2.717
C Total: 0.707
Sum Q Segments (cfs): 13.95
Q Total (cfs): 13.95
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 821.46
Time of Concentration (min): 13.691

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.6247
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 10.57
Avg Velocity (ft/s): 0.60
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.96

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0663
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 3.38
Q Top (cfs): 10.57
Q Bottom (cfs): 13.95
Velocity Top (ft/s): 4.80
Velocity Bottom (ft/s): 5.26
Avg Velocity (ft/s): 5.03
Wave Velocity (ft/s): 7.55
♀
Tc for frequency = 100.00: 10.309 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 10.309 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 3.570
C Total: 0.755
Sum Q Segments (cfs): 19.56
Q Total (cfs): 19.56
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 618.52

Time of Concentration (min): 10.309

DATA FOR FLOW PATH 1

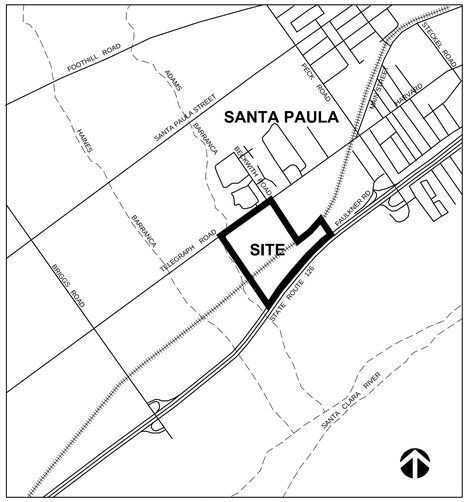
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 10.2494
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 14.82
Avg Velocity (ft/s): 0.80
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.13

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0592
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 4.74
Q Top (cfs): 14.82
Q Bottom (cfs): 19.56
Velocity Top (ft/s): 5.37
Velocity Bottom (ft/s): 5.89
Avg Velocity (ft/s): 5.63
Wave Velocity (ft/s): 8.44

APPENDIX B

Existing Hydrology Exhibit A



VICINITY MAP
NOT TO SCALE

DRAINAGE AREA CALCULATIONS

SUBAREA	ACRE	EXIST. Q_{10}	EXIST. Q_{50}	EXIST. Q_{100}	STORM DRAIN
A	2.82	2.8	4.8	6.5	ADAMS
B1	16.4	11.2	21.6	28.4	1
B2	10.88	7.4	14.4	18.8	2
C1a	10.7	5.0	14.4	18.9	7,4
C1b	4.1	1.9	5.5	7.3	3
C1c	0.91	0.4	1.2	1.6	4
C2	7.61	3.6	10.3	13.5	5
D	7.26	7.9	14.0	19.6	6

LEGEND

- DRAINAGE AREA LIMITS
- EXISTING STORM DRAIN
- (C1) DRAINAGE AREA
- [1] PIPE NUMBER
- FLOW PATH
- PROPERTY BOUNDARY
- SUBDRAINAGE AREA LIMITS

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=80'
J.N.: PAR01.4492
DATE: Jun 01, 2011
DWG. NAME: 4492_EX-01_HYDRO.dwg

EXISTING HYDROLOGY
FOR
SANTA PAULA WEST 2

City of Santa Paula
COUNTY OF VENTURA
STATE OF CALIFORNIA

EXHIBIT
A

J:\PAR01\4492\Eng\Exhibits\Hydrology Reference\4492_EX-01_HYDRO.dwg Jun 01, 2011, 9:28am kpascoe

APPENDIX C

Proposed Hydrology Calculations

PAR01.4492
4/21/2010

APPENDIX C
PROPOSED CONDITION CALCULATIONS

Flood Zone 2
Rainfall Zone K

Subarea	Area (acres)	Soil Type	10 yr Time of Concentration (min)	50 yr Time of Concentration (min)	100 yr Time of Concentration (min)	q10 (cfs/ac)	q50 (cfs/ac)	q100 (cfs/ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Storm Drain
A	1.7	3	30	30	30	0.88	1.24	1.35	1.5	2.1	2.3	Adams
B1a	5.9	3	7	6	5	2.78	3.73	4.68	16.4	22.0	27.6	Basin, 2
B1b	8.2	3	6	6	5	3.02	4.10	4.61	24.8	33.6	37.8	Basin, 2
B1c	3.75	4	8	6	6	2.56	3.73	4.19	9.6	14.0	15.7	Basin, 2
B1 Total	17.85	3,4	-	-	-	-	-	-	50.8	69.6	81.1	Basin, 2
B2	1.97	4	11	7	7	2.08	3.35	3.81	4.1	6.6	7.5	2
C1	15.65	3,4	-	-	-	-	-	-	32.7	52.7	59.8	-
C2	9.24	4	-	-	-	-	-	-	19.3	31.1	35.3	-
C Total	24.89	3,4	11	7	7	2.09	3.37	3.82	52.0	84.0	95.0	Basin, 5
D	5.59	4	13	9	9	1.90	2.96	3.34	10.6	16.6	18.7	9
E	8.25	4	7	5	5	2.74	4.66	4.61	19.4	33.8	38.0	Basin, 8
								TOTAL PEAK FLOW (cfs)**	134.3	212.7	242.6	
					AVERAGE (cfs/ac)	2.26	3.39	3.80				
					cfs/ac from City of Santa Paula Storm Drain Master Plan***	1.8	2.7	3.2				

**Does not include detention time
***City of Santa Paula Storm Draim Master Plan (July 2008). Hawks & Associates

PAR01.4492
4/21/2010

APPENDIX C
HIGHWAY 126 CULVERT CALCULATIONS

EXISTING CONDITION CULVERT DATA SUMMARY

Pipe Number	Size (span x rise)	Invert in	Invert out	Length	slope	headwater	Culvert Master (cfs)	Equivalent Pipe Dimensions for Culvert Program
2	48"x24"	220.44	220.25	140	0.001	225	33.7	43"x27"
5	52"x30"	220.64	219.69	150	0.006	225	49.5	50"x31"
6	52"x30"	220.44	220.25	172	0.001	225	43.2	50"x31"
8	24"x21"	222.25	220.79	140	0.010	225	15.2	used a 24" cmp
9	Paula master plan has the majority of the onsite water planned and sized to go to to Todd Lane Drain							

EXISTING CONDITION ROUTING TO CULVERTS

(proposed condition not to exceed peak flows)

Pipe Number	Existing Subarea	Area (ac)	Q10 (cfs)	Q100 (cfs)
2	(B1 + B2)/2	13.64	9.30	23.45
8	(B1 + B2)/2	13.64	9.30	23.45
5	C1a+C1b+C1c+C2	23.22	16.90	41.37
6	D	7.26	7.86	19.56
Adams	A	2.82	2.8	6.5

PROPOSED CONDITION ROUTING TO CULVERTS

Existing Condition Pipe Number	Proposed Condition Pipe Number	Proposed Subarea	Area (ac)	Q10 (cfs)	Q100 (cfs)
2	2	B1 + B2	19.82	15.60	16.70
8	8	E	8.25	*9.0*	*13.0*
5,6	5	C	24.9	26.80	46.00

DETENTION BASIN CALCULATIONS

Detention Basin	Contributing Subarea	Basin Volume (cf)	Outflow Pipe Location	Peak Inflow to Basin 10 year (cfs)	Peak Outflow 10 year (cfs)	Peak Inflow to Basin 50 year (cfs)	Peak Outflow 50 year (cfs)	Peak Inflow to Basin 100 year (cfs)	Peak Outflow 100 year (cfs)
1	B1 - 17.85 ac	191,000	2	50.8	7.7	69.6	9	81.1	9.2
2	E - 8.25 ac	31,450	8	19.4	9	33.8	12.8	38	13
3	C - 24.9 ac	78,200	5	52	26.8	84	41.7	95	46

PROPOSED CONDITION CALCULATIONS INCLUDING DETENTION

Subarea	Area (acres)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Final Outflow Location
A	*1.7*	*1.5*	*2.1*	*2.3*	*Adams*
B1	*17.85*	*7.7*	*9.0*	*9.2*	*2*
B2	*1.97*	*4.1*	*6.6*	*7.5*	*2*
C	*24.89*	*26.8*	*41.7*	*46.0*	*5*
D	*5.59*	*10.6*	*16.6*	*18.7*	*9*
E	*8.25*	*9.0*	*12.8*	*13.0*	*8*
	TOTAL	**59.7**	**88.8**	**96.7**	

Detention Basin 3

10 year

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.23

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
2	Manual	2.400	1	1153	18,986	----	------	------	10 unit
3	Manual	52.03	1	1153	411,604	----	------	------	10 C area INFLOW
4	Manual	0.000	1	n/a	0	----	------	------	50 unit
5	Manual	0.000	1	n/a	0	----	------	------	50 C area
6	Manual	0.000	1	n/a	0	----	------	------	100 uinit
7	Manual	0.000	1	n/a	0	----	------	------	100 C area
	Reservoir	26.84	1	1162	411,145	3	224.19	60,443	east pond 10 OUTFLOW
10	Reservoir	0.000	1	n/a	0	5	221.50	0.000	east pond 50
11	Reservoir	0.000	1	n/a	0	7	221.50	0.000	east pond 100

Basin 3
50 year 2

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.23

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
2	Manual	0.000	1	n/a	0	----	------	------	10 unit
3	Manual	0.000	1	n/a	0	----	------	------	10 C area
4	Manual	3.770	1	1152	27,827	----	------	------	50 unit
5	Manual	83.99	1	1152	619,937	----	------	------	50 C area INFLOW
6	Manual	0.000	1	n/a	0	----	------	------	100 uinit
7	Manual	0.000	1	n/a	0	----	------	------	100 C area
9	Reservoir	0.000	1	n/a	0	3	221.50	0.000	east pond 10
10	Reservoir	41.74	1	1158	619,460	5	224.77	73,444	east pond 50 OUTFLOW
11	Reservoir	0.000	1	n/a	0	7	221.50	0.000	east pond 100

BASIN 3
100 year 3

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.23

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
2	Manual	0.000	1	n/a	0	----	------	------	10 unit
3	Manual	0.000	1	n/a	0	----	------	------	10 C area
4	Manual	0.000	1	n/a	0	----	------	------	50 unit
5	Manual	0.000	1	n/a	0	----	------	------	50 C area
6	Manual	4.230	1	1152	36,154	----	------	------	100 uinit
	Manual	94.66		1152	809,028	----	------	------	100 C area INFLOW
9	Reservoir	0.000	1	n/a	0	3	221.50	0.000	east pond 10
10	Reservoir	0.000	1	n/a	0	5	221.50	0.000	east pond 50
	Reservoir	45.89		1158	808,536	7	225.02	79,072	east pond 100 OUTFLOW

Pond Report

Basin 3

Hydraflow Hydrographs by Intelisolve v9.23

Thursday, Feb 3, 2011

Pond No. 3 - underground

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 221.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	221.50	22,500	0	0
1.00	222.50	22,500	22,498	22,498
2.00	223.50	22,500	22,498	44,996
3.00	224.50	22,500	22,498	67,493
3.50	225.00	22,500	11,249	78,742
3.75	225.25	22,500	5,624	84,367

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	24.00	0.00	0.00
Span (in)	= 36.00	24.00	0.00	0.00
No. Barrels	= 1	2	0	0
Invert El. (ft)	= 221.50	221.50	0.00	0.00
Length (ft)	= 160.00	1.00	0.00	0.00
Slope (%)	= 1.00	1.00	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	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.70	0.00	0.00	0.00
Crest El. (ft)	= 224.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	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 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	221.50	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
1.00	22,498	222.50	5.51 ic	5.50 ic	---	---	0.00	---	---	---	---	---	5.504
2.00	44,996	223.50	17.66 ic	17.66 ic	---	---	0.00	---	---	---	---	---	17.66
3.00	67,493	224.50	36.17 ic	18.58 ic	---	---	17.58 s	---	---	---	---	---	36.16
3.50	78,742	225.00	45.67 ic	13.50 ic	---	---	32.17 s	---	---	---	---	---	45.66
3.75	84,367	225.25	49.29 ic	11.80 ic	---	---	37.50 s	---	---	---	---	---	49.29

Detention Basin North + South

10 year

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.23

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	Manual	2.860	1	1153	18,760	----	------	------	<no description>
2	Manual	50.79	1	1153	333,189	----	------	------	B1 10
3	Manual	0.000	1	n/a	0	----	------	------	<no description>
4	Manual	0.000	1	n/a	0	----	------	------	b1 50
5	Manual	0.000	1	n/a	0	----	------	------	<no description>
6	Manual	0.000	1	n/a	0	----	------	------	b1 100
8	Reservoir	7.669	1	1182	321,731	2	230.99	125,699	northern pond 10 year OUTFLOW 'B'
9	Reservoir	0.000	1	n/a	0	4	226.00	0.000	northern pond 50
10	Reservoir	0.000	1	n/a	0	6	226.00	0.000	northern pond 100
12	Manual	2.680	1	1154	18,769	----	------	------	<no description>
13	Manual	19.34	1	1154	135,504	----	------	------	E 10 year
14	Manual	0.000	1	n/a	0	----	------	------	<no description>
15	Manual	0.000	1	n/a	0	----	------	------	E 50 year
16	Manual	0.000	1	n/a	0	----	------	------	E 100 year
18	Reservoir	9.004	1	1161	131,547	13	226.29	14,610	southern pond 10 OUTFLOW 'G'
19	Reservoir	0.000	1	n/a	0	15	223.00	0.000	southern pond 50
20	Reservoir	0.000	1	n/a	0	16	223.00	0.000	southern pond 100

50 year 2

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.23

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	Manual	0.000	1	n/a	0	----	------	------	<no description>
2	Manual	0.000	1	n/a	0	----	------	------	B1 10
3	Manual	4.100	1	1152	27,818	----	------	------	<no description>
4	Manual	69.58	1	1152	472,086	----	------	------	b1 50
5	Manual	0.000	1	n/a	0	----	------	------	<no description>
6	Manual	0.000	1	n/a	0	----	------	------	b1 100
8	Reservoir	0.000	1	n/a	0	2	226.00	0.000	northern pond 10 year
9	Reservoir	9.019	1	1194	460,460	4	232.18	163,626	northern pond 50 OUTFLOW 'B'
10	Reservoir	0.000	1	n/a	0	6	226.00	0.000	northern pond 100
12	Manual	0.000	1	n/a	0	----	------	------	<no description>
13	Manual	0.000	1	n/a	0	----	------	------	E 10 year
14	Manual	4.550	1	1153	27,439	----	------	------	<no description>
15	Manual	33.74	1	1153	203,470	----	------	------	E 50 year
16	Manual	0.000	1	n/a	0	----	------	------	E 100 year
18	Reservoir	0.000	1	n/a	0	13	223.00	0.000	southern pond 10
19	Reservoir	12.60	1	1157	199,513	15	227.10	18,873	southern pond 50 OUTFLOW 'E'
20	Reservoir	0.000	1	n/a	0	16	223.00	0.000	southern pond 100

100 year 3

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.23

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	Manual	0.000	1	n/a	0	----	------	------	<no description>
2	Manual	0.000	1	n/a	0	----	------	------	B1 10
3	Manual	0.000	1	n/a	0	----	------	------	<no description>
4	Manual	0.000	1	n/a	0	----	------	------	b1 50
5	Manual	5.100	1	1153	36,061	----	------	------	<no description>
6	Manual	81.09	1	1153	573,432	----	------	------	b1 100
8	Reservoir	0.000	1	n/a	0	2	226.00	0.000	northern pond 10 year
9	Reservoir	0.000	1	n/a	0	4	226.00	0.000	northern pond 50
10	Reservoir	9.197	1	1200	561,712	6	232.35	169,425	northern pond 100 OUTFLOW 'B'
12	Manual	0.000	1	n/a	0	----	------	------	<no description>
13	Manual	0.000	1	n/a	0	----	------	------	E 10 year
14	Manual	0.000	1	n/a	0	----	------	------	<no description>
15	Manual	0.000	1	n/a	0	----	------	------	E 50 year
16	Manual	37.82	1	1153	267,402	----	------	------	E 100 year
18	Reservoir	0.000	1	n/a	0	13	223.00	0.000	southern pond 10
19	Reservoir	0.000	1	n/a	0	15	223.00	0.000	southern pond 50
20	Reservoir	13.17	1	1158	263,445	16	227.37	20,665	southern pond 100 OUTFLOW 'E'

Pond Report

North Pond

Hydraflow Hydrographs by Intelisolve v9.23

Thursday, Feb 3, 2011

Pond No. 1 - northern pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 226.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	226.00	835	0	0
1.00	227.00	26,104	10,535	10,535
2.00	228.00	27,396	26,745	37,280
4.00	230.00	30,055	57,425	94,704
6.00	232.00	32,815	62,843	157,548
7.00	233.00	34,232	33,518	191,066

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	8.00	6.00	0.00
Span (in)	= 36.00	8.00	6.00	0.00
No. Barrels	= 1	2	1	0
Invert El. (ft)	= 226.00	227.00	229.00	0.00
Length (ft)	= 100.00	1.00	1.00	0.00
Slope (%)	= 1.00	0.02	0.02	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	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 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	226.00	0.00	0.00	0.00	---	---	---	---	---	---	---	0.000
1.00	10,535	227.00	0.00	0.00	0.00	---	---	---	---	---	---	---	0.000
2.00	37,280	228.00	2.77 ic	2.74 ic	0.00	---	---	---	---	---	---	---	2.744
4.00	94,704	230.00	6.31 ic	5.49 ic	0.82 ic	---	---	---	---	---	---	---	6.307
6.00	157,548	232.00	9.01 ic	7.26 ic	1.57 ic	---	---	---	---	---	---	---	8.828
7.00	191,066	233.00	10.04 ic	8.00 ic	1.83 ic	---	---	---	---	---	---	---	9.832

Pond Report

South Pond

Hydraflow Hydrographs by Intelisolve v9.23 — Thursday, Feb 3, 2011

Pond No. 2 - Southern Pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 223.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	223.00	3,380	0	0
2.00	225.00	4,560	7,910	7,910
4.00	227.00	5,868	10,400	18,309
5.00	228.00	7,300	6,570	24,880
5.10	228.10	7,350	732	25,612

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	12.00	0.00	0.00
Span (in)	= 18.00	12.00	0.00	0.00
No. Barrels	= 1	2	0	0
Invert El. (ft)	= 223.00	224.00	0.00	0.00
Length (ft)	= 250.00	1.00	0.00	0.00
Slope (%)	= 1.00	0.01	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	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 6.28	0.00	0.00	0.00
Crest El. (ft)	= 226.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	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 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	223.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
2.00	7,910	225.00	5.37 ic	5.35 ic	---	---	0.00	---	---	---	---	---	5.347
4.00	18,309	227.00	12.34 oc	5.05 ic	---	---	7.29 s	---	---	---	---	---	12.34
5.00	24,880	228.00	14.10 oc	1.74 ic	---	---	12.35 s	---	---	---	---	---	14.09
5.10	25,612	228.10	14.22 oc	1.62 ic	---	---	12.59 s	---	---	---	---	---	14.21

APPENDIX D

Proposed Hydrology Exhibit B

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed A

Name	Zone	Storm	Soil	Area (acres)	TC (min)
A	K	10	4.00	1.7 / 2	TC ERROR
A	K	25	4.00	1.7 / 2	TC ERROR
A	K	50	4.00	1.7 / 2	TC ERROR
A	K	100	4.00	1.7 / 2	TC ERROR

Watershed Name: Watershed A

Sub-Area Name: A
Computing Tc for all rainfall frequencies for sub-area A...

Tc for frequency = 10.00: 54.237 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 54.237 min. = 54 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 1.7
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 1.097
C Total: 0.785
Sum Q Segments (cfs): 1.46
Q Total (cfs): 1.46
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 3,254.20
Time of Concentration (min): 54.237

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.7128
Flow Type: Overland
Length (ft): 30
Top Elevation (ft): 245
Bottom Elevation (ft): 242
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.9
Overland Type: Mountain
Development Type: Industrial

Map Slope: 0.1000
Effective Slope: 0.1000
Q for Flow Path (cfs): 0.09
Avg Velocity (ft/s): 0.70
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 38.4265
Flow Type: Channel
Length (ft): 1095
Top Elevation (ft): 242
Bottom Elevation (ft): 225
Contributing Area (acres): 1
Percent of Sub-Area (%): 58.8
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0155
Q for Flow Path (cfs): 0.86
Q Top (cfs): 0.09
Q Bottom (cfs): 0.95
Velocity Top (ft/s): 0.18
Velocity Bottom (ft/s): 0.41
Avg Velocity (ft/s): 0.29
Wave Velocity (ft/s): 0.47
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 15.0974
Flow Type: Channel
Length (ft): 580
Top Elevation (ft): 224
Bottom Elevation (ft): 217
Contributing Area (acres): 0.6
Percent of Sub-Area (%): 35.3
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0121
Q for Flow Path (cfs): 0.52
Q Top (cfs): 0.95
Q Bottom (cfs): 1.46
Velocity Top (ft/s): 0.37
Velocity Bottom (ft/s): 0.43
Avg Velocity (ft/s): 0.40
Wave Velocity (ft/s): 0.64
♀
Tc for frequency = 25.00: 51.566 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 51.566 min. = 52 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 1.7
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70

SUB AREA OUTPUT

Intensity (in/hr): 1.254
C Total: 0.805
Sum Q Segments (cfs): 1.72
Q Total (cfs): 1.72
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 3,093.94
Time of Concentration (min): 51.566

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6033
Flow Type: Overland
Length (ft): 30
Top Elevation (ft): 245
Bottom Elevation (ft): 242
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.9
Overland Type: Mountain
Development Type: Industrial
Map Slope: 0.1000
Effective Slope: 0.1000
Q for Flow Path (cfs): 0.10
Avg Velocity (ft/s): 0.83
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 36.5496
Flow Type: Channel
Length (ft): 1095
Top Elevation (ft): 242
Bottom Elevation (ft): 225
Contributing Area (acres): 1
Percent of Sub-Area (%): 58.8
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0155
Q for Flow Path (cfs): 1.01
Q Top (cfs): 0.10
Q Bottom (cfs): 1.11
Velocity Top (ft/s): 0.19
Velocity Bottom (ft/s): 0.43
Avg Velocity (ft/s): 0.31
Wave Velocity (ft/s): 0.50

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 14.4127
Flow Type: Channel
Length (ft): 580
Top Elevation (ft): 224
Bottom Elevation (ft): 217
Contributing Area (acres): 0.6
Percent of Sub-Area (%): 35.3
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0121
Q for Flow Path (cfs): 0.61

Q Top (cfs): 1.11
Q Bottom (cfs): 1.72
Velocity Top (ft/s): 0.39
Velocity Bottom (ft/s): 0.45
Avg Velocity (ft/s): 0.42
Wave Velocity (ft/s): 0.67
♀
Tc for frequency = 50.00: 48.958 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 48.958 min. = 49 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 1.7
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 1.446
C Total: 0.829
Sum Q Segments (cfs): 2.04
Q Total (cfs): 2.04
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 2,937.50
Time of Concentration (min): 48.958

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.5000
Flow Type: Overland
Length (ft): 30
Top Elevation (ft): 245
Bottom Elevation (ft): 242
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.9
Overland Type: Mountain
Development Type: Industrial
Map Slope: 0.1000
Effective Slope: 0.1000
Q for Flow Path (cfs): 0.12
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 34.7551
Flow Type: Channel
Length (ft): 1095
Top Elevation (ft): 242
Bottom Elevation (ft): 225
Contributing Area (acres): 1
Percent of Sub-Area (%): 58.8
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0155

Q for Flow Path (cfs): 1.20
Q Top (cfs): 0.12
Q Bottom (cfs): 1.32
Velocity Top (ft/s): 0.20
Velocity Bottom (ft/s): 0.45
Avg Velocity (ft/s): 0.33
Wave Velocity (ft/s): 0.53
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.7032
Flow Type: Channel
Length (ft): 580
Top Elevation (ft): 224
Bottom Elevation (ft): 217
Contributing Area (acres): 0.6
Percent of Sub-Area (%): 35.3
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0121
Q for Flow Path (cfs): 0.72
Q Top (cfs): 1.32
Q Bottom (cfs): 2.04
Velocity Top (ft/s): 0.42
Velocity Bottom (ft/s): 0.47
Avg Velocity (ft/s): 0.44
Wave Velocity (ft/s): 0.71
♀
Tc for frequency = 100.00: 46.936 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 46.936 min. = 47 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 1.7
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 1.630
C Total: 0.842
Sum Q Segments (cfs): 2.33
Q Total (cfs): 2.33
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 2,816.18
Time of Concentration (min): 46.936

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.4395
Flow Type: Overland
Length (ft): 30
Top Elevation (ft): 245
Bottom Elevation (ft): 242
Contributing Area (acres): 0.1

Percent of Sub-Area (%): 5.9
Overland Type: Mountain
Development Type: Industrial
Map Slope: 0.1000
Effective Slope: 0.1000
Q for Flow Path (cfs): 0.14
Avg Velocity (ft/s): 1.14
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 33.2898
Flow Type: Channel
Length (ft): 1095
Top Elevation (ft): 242
Bottom Elevation (ft): 225
Contributing Area (acres): 1
Percent of Sub-Area (%): 58.8
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0155
Q for Flow Path (cfs): 1.37
Q Top (cfs): 0.14
Q Bottom (cfs): 1.51
Velocity Top (ft/s): 0.21
Velocity Bottom (ft/s): 0.47
Avg Velocity (ft/s): 0.34
Wave Velocity (ft/s): 0.55
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.2071
Flow Type: Channel
Length (ft): 580
Top Elevation (ft): 224
Bottom Elevation (ft): 217
Contributing Area (acres): 0.6
Percent of Sub-Area (%): 35.3
Bottom Width (ft): 5
Side Slope (H:V): 4
Manning's N: 0.2
Map Slope: 0.0121
Q for Flow Path (cfs): 0.82
Q Top (cfs): 1.51
Q Bottom (cfs): 2.33
Velocity Top (ft/s): 0.43
Velocity Bottom (ft/s): 0.49
Avg Velocity (ft/s): 0.46
Wave Velocity (ft/s): 0.73

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed B

Name	Zone	Storm	Soil	Area (acres)	TC (min)
B1a	K	10	3.00	5.9 / 6	6.625 / 7
B1a	K	25	3.00	5.9 / 6	5.962 / 6
B1a	K	50	3.00	5.9 / 6	5.643 / 6
B1a	K	100	3.00	5.9 / 6	TC ERROR
B1b	K	10	3.00	8.2 / 8	6.138 / 6
B1b	K	25	3.00	8.2 / 8	5.660 / 6
B1b	K	50	3.00	8.2 / 8	TC ERROR
B1b	K	100	3.00	8.2 / 8	TC ERROR
B1c	K	10	4.00	3.8 / 4	7.849 / 8
B1c	K	25	4.00	3.8 / 4	7.619 / 8
B1c	K	50	4.00	3.8 / 4	5.788 / 6
B1c	K	100	4.00	3.8 / 4	5.656 / 6
B2a	K	10	4.00	2.0 / 2	11.069 / 11
B2a	K	25	4.00	2.0 / 2	8.653 / 9
B2a	K	50	4.00	2.0 / 2	6.850 / 7
B2a	K	100	4.00	2.0 / 2	6.779 / 7

♀

Watershed Name: Watershed B

Sub-Area Name: B1a
Computing Tc for all rainfall frequencies for sub-area B1a...

Tc for frequency = 10.00: 6.625 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 6.625 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 5.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.094
C Total: 0.899
Sum Q Segments (cfs): 16.42
Q Total (cfs): 16.42
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 397.50
Time of Concentration (min): 6.625

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.2608
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.8
Overland Type: Valley
Development Type: Undeveloped

Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.14
Avg Velocity (ft/s): 0.44
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.99
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.4322
Flow Type: Street
Length (ft): 677
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 7.93
Q Top (cfs): 0.14
Q Bottom (cfs): 8.07
Velocity Top (ft/s): 1.16
Velocity Bottom (ft/s): 3.22
Avg Velocity (ft/s): 2.19
Wave Velocity (ft/s): 3.29
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.9320
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 3
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 8.35
Q Top (cfs): 8.07
Q Bottom (cfs): 16.42
Avg Velocity (ft/s): 7.36
Wave Velocity (ft/s): 9.75
♀
Tc for frequency = 25.00: 5.962 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 5.962 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 5.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.800
C Total: 0.908
Sum Q Segments (cfs): 20.35
Q Total (cfs): 20.35
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 357.70
Time of Concentration (min): 5.962

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.7916
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.17
Avg Velocity (ft/s): 0.56
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.04

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2516
Flow Type: Street
Length (ft): 677
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 9.83
Q Top (cfs): 0.17
Q Bottom (cfs): 10.00
Velocity Top (ft/s): 1.23
Velocity Bottom (ft/s): 3.40
Avg Velocity (ft/s): 2.31
Wave Velocity (ft/s): 3.47

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.9184
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 3
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 10.35

Q Top (cfs): 10.00
Q Bottom (cfs): 20.35
Avg Velocity (ft/s): 7.72
Wave Velocity (ft/s): 9.89
♀
Tc for frequency = 50.00: 5.643 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 5.643 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 5.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.100
C Total: 0.911
Sum Q Segments (cfs): 22.03
Q Total (cfs): 22.03
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 338.56
Time of Concentration (min): 5.643

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.5366
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.19
Avg Velocity (ft/s): 0.65
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.06
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.1878
Flow Type: Street
Length (ft): 677
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 10.64
Q Top (cfs): 0.19

Q Bottom (cfs): 10.83
Velocity Top (ft/s): 1.25
Velocity Bottom (ft/s): 3.47
Avg Velocity (ft/s): 2.36
Wave Velocity (ft/s): 3.54
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.9184
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 3
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 11.20
Q Top (cfs): 10.83
Q Bottom (cfs): 22.03
Avg Velocity (ft/s): 7.87
Wave Velocity (ft/s): 9.89
♀
Tc for frequency = 100.00: 4.827 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 4.827 min. = 5 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 5.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 5.100
C Total: 0.917
Sum Q Segments (cfs): 27.60
Q Total (cfs): 27.60
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 289.62
Time of Concentration (min): 4.827

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1718
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.8
Overland Type: Valley
Development Type: Undeveloped

Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.23
Avg Velocity (ft/s): 0.85
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.12
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.0119
Flow Type: Street
Length (ft): 677
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 13.33
Q Top (cfs): 0.23
Q Bottom (cfs): 13.57
Velocity Top (ft/s): 1.32
Velocity Bottom (ft/s): 3.67
Avg Velocity (ft/s): 2.50
Wave Velocity (ft/s): 3.75
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6433
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 3
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 14.03
Q Top (cfs): 13.57
Q Bottom (cfs): 27.60
Avg Velocity (ft/s): 10.93
Wave Velocity (ft/s): 14.12
♀
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

Sub-Area Name: B1b
Computing Tc for all rainfall frequencies for sub-area B1b...

Tc for frequency = 10.00: 6.138 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 6.138 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1b

Total Area (ac): 8.2
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.400
C Total: 0.904
Sum Q Segments (cfs): 25.19
Q Total (cfs): 25.19
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 368.29
Time of Concentration (min): 6.138

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.0000
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.15
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.4914
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 235.5
Contributing Area (acres): 1.1
Percent of Sub-Area (%): 13.4
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0185
Q for Flow Path (cfs): 3.38
Q Top (cfs): 0.15
Q Bottom (cfs): 3.53
Velocity Top (ft/s): 1.40
Velocity Bottom (ft/s): 2.90
Avg Velocity (ft/s): 2.15
Wave Velocity (ft/s): 3.22
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6468
Flow Type: Pipe
Length (ft): 280
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 7.05

Percent of Sub-Area (%): 86.0
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0196
Q for Flow Path (cfs): 21.66
Q Top (cfs): 3.53
Q Bottom (cfs): 25.19
Avg Velocity (ft/s): 5.45
Wave Velocity (ft/s): 7.22
♀
Tc for frequency = 25.00: 5.660 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 5.660 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1b
Total Area (ac): 8.2
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.800
C Total: 0.908
Sum Q Segments (cfs): 28.29
Q Total (cfs): 28.29
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 339.63
Time of Concentration (min): 5.660

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.7916
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.17
Avg Velocity (ft/s): 0.56
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3987
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 235.5
Contributing Area (acres): 1.1

Percent of Sub-Area (%): 13.4
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0185
Q for Flow Path (cfs): 3.79
Q Top (cfs): 0.17
Q Bottom (cfs): 3.97
Velocity Top (ft/s): 1.44
Velocity Bottom (ft/s): 2.98
Avg Velocity (ft/s): 2.21
Wave Velocity (ft/s): 3.31
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.4702
Flow Type: Pipe
Length (ft): 280
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 7.05
Percent of Sub-Area (%): 86.0
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0196
Q for Flow Path (cfs): 24.32
Q Top (cfs): 3.97
Q Bottom (cfs): 28.29
Avg Velocity (ft/s): 7.33
Wave Velocity (ft/s): 9.92
♀
Tc for frequency = 50.00: 4.711 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 4.711 min. = 5 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B1b
Total Area (ac): 8.2
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.548
C Total: 0.914
Sum Q Segments (cfs): 34.08
Q Total (cfs): 34.08
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 282.68
Time of Concentration (min): 4.711

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0000
Flow Type: Overland
Length (ft): 60

Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.21
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2549
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 235.5
Contributing Area (acres): 1.1
Percent of Sub-Area (%): 13.4
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0185
Q for Flow Path (cfs): 4.57
Q Top (cfs): 0.21
Q Bottom (cfs): 4.78
Velocity Top (ft/s): 1.50
Velocity Bottom (ft/s): 3.11
Avg Velocity (ft/s): 2.30
Wave Velocity (ft/s): 3.46
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.4564
Flow Type: Pipe
Length (ft): 280
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 7.05
Percent of Sub-Area (%): 86.0
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0196
Q for Flow Path (cfs): 29.30
Q Top (cfs): 4.78
Q Bottom (cfs): 34.08
Avg Velocity (ft/s): 7.71
Wave Velocity (ft/s): 10.23
♀
Tc for frequency = 100.00: 4.510 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 4.510 min. = 5 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B1b
Total Area (ac): 8.2
Flood Zone: 2
Rainfall Zone: K

Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 5.100
C Total: 0.917
Sum Q Segments (cfs): 38.36
Q Total (cfs): 38.36
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 270.62
Time of Concentration (min): 4.510

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0000
Flow Type: Overland
Length (ft): 60
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0333
Effective Slope: 0.0333
Q for Flow Path (cfs): 0.23
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.1666
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 235.5
Contributing Area (acres): 1.1
Percent of Sub-Area (%): 13.4
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0185
Q for Flow Path (cfs): 5.15
Q Top (cfs): 0.23
Q Bottom (cfs): 5.38
Velocity Top (ft/s): 1.54
Velocity Bottom (ft/s): 3.19
Avg Velocity (ft/s): 2.37
Wave Velocity (ft/s): 3.55
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3436
Flow Type: Pipe
Length (ft): 280
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 7.05
Percent of Sub-Area (%): 86.0
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 27

Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0196
Q for Flow Path (cfs): 32.98
Q Top (cfs): 5.38
Q Bottom (cfs): 38.36
Avg Velocity (ft/s): 10.03
Wave Velocity (ft/s): 13.58
♀
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

Sub-Area Name: B1c
Computing Tc for all rainfall frequencies for sub-area B1c...

Tc for frequency = 10.00: 7.849 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 7.849 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 3.75
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.865
C Total: 0.880
Sum Q Segments (cfs): 9.46
Q Total (cfs): 9.46
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 470.94
Time of Concentration (min): 7.849

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 238
Bottom Elevation (ft): 237
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 2.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.25
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.0957

Flow Type: Street
Length (ft): 500
Top Elevation (ft): 237
Bottom Elevation (ft): 234
Contributing Area (acres): 1
Percent of Sub-Area (%): 26.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0060
Q for Flow Path (cfs): 2.52
Q Top (cfs): 0.25
Q Bottom (cfs): 2.77
Velocity Top (ft/s): 0.96
Velocity Bottom (ft/s): 1.75
Avg Velocity (ft/s): 1.36
Wave Velocity (ft/s): 2.03
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.4200
Flow Type: Pipe
Length (ft): 275
Top Elevation (ft): 234
Bottom Elevation (ft): 230
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 70.7
Initial Pipe Diameter (in): 18
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 18
Manning's N: 0.011
Map Slope: 0.0145
Q for Flow Path (cfs): 6.68
Q Top (cfs): 2.77
Q Bottom (cfs): 9.46
Avg Velocity (ft/s): 8.05
Wave Velocity (ft/s): 10.91
♀
Tc for frequency = 25.00: 7.619 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 7.619 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 3.75
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.191
C Total: 0.886
Sum Q Segments (cfs): 10.60
Q Total (cfs): 10.60
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 457.13
Time of Concentration (min): 7.619

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2287
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 238
Bottom Elevation (ft): 237
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 2.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.28
Avg Velocity (ft/s): 0.52
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.9796
Flow Type: Street
Length (ft): 500
Top Elevation (ft): 237
Bottom Elevation (ft): 234
Contributing Area (acres): 1
Percent of Sub-Area (%): 26.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0060
Q for Flow Path (cfs): 2.83
Q Top (cfs): 0.28
Q Bottom (cfs): 3.11
Velocity Top (ft/s): 0.99
Velocity Bottom (ft/s): 1.80
Avg Velocity (ft/s): 1.40
Wave Velocity (ft/s): 2.09
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.4106
Flow Type: Pipe
Length (ft): 275
Top Elevation (ft): 234
Bottom Elevation (ft): 230
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 70.7
Initial Pipe Diameter (in): 18
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 18
Manning's N: 0.011
Map Slope: 0.0145
Q for Flow Path (cfs): 7.49
Q Top (cfs): 3.11
Q Bottom (cfs): 10.60
Avg Velocity (ft/s): 8.28
Wave Velocity (ft/s): 11.16
♀
Tc for frequency = 50.00: 5.788 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 5.788 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 3.75
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.100
C Total: 0.897
Sum Q Segments (cfs): 13.79
Q Total (cfs): 13.79
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 347.28
Time of Concentration (min): 5.788

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.6667
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 238
Bottom Elevation (ft): 237
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 2.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.37
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.7250
Flow Type: Street
Length (ft): 500
Top Elevation (ft): 237
Bottom Elevation (ft): 234
Contributing Area (acres): 1
Percent of Sub-Area (%): 26.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0060
Q for Flow Path (cfs): 3.68
Q Top (cfs): 0.37
Q Bottom (cfs): 4.05
Velocity Top (ft/s): 1.05
Velocity Bottom (ft/s): 1.93
Avg Velocity (ft/s): 1.49
Wave Velocity (ft/s): 2.24
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3962
Flow Type: Pipe
Length (ft): 275
Top Elevation (ft): 234

Bottom Elevation (ft): 230
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 70.7
Initial Pipe Diameter (in): 18
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 18
Manning's N: 0.011
Map Slope: 0.0145
Q for Flow Path (cfs): 9.74
Q Top (cfs): 4.05
Q Bottom (cfs): 13.79
Avg Velocity (ft/s): 8.86
Wave Velocity (ft/s): 11.57
♀
Tc for frequency = 100.00: 5.656 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 5.656 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 3.75
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.590
C Total: 0.901
Sum Q Segments (cfs): 15.51
Q Total (cfs): 15.51
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 339.36
Time of Concentration (min): 5.656

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.6667
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 238
Bottom Elevation (ft): 237
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 2.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.41
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.6166
Flow Type: Street
Length (ft): 500
Top Elevation (ft): 237

Bottom Elevation (ft): 234
Contributing Area (acres): 1
Percent of Sub-Area (%): 26.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0060
Q for Flow Path (cfs): 4.14
Q Top (cfs): 0.41
Q Bottom (cfs): 4.55
Velocity Top (ft/s): 1.09
Velocity Bottom (ft/s): 1.99
Avg Velocity (ft/s): 1.54
Wave Velocity (ft/s): 2.30
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3728
Flow Type: Pipe
Length (ft): 275
Top Elevation (ft): 234
Bottom Elevation (ft): 230
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 70.7
Initial Pipe Diameter (in): 18
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 21
Manning's N: 0.011
Map Slope: 0.0145
Q for Flow Path (cfs): 10.96
Q Top (cfs): 4.55
Q Bottom (cfs): 15.51
Avg Velocity (ft/s): 9.10
Wave Velocity (ft/s): 12.30
♀
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

Sub-Area Name: B2a
Computing Tc for all rainfall frequencies for sub-area B2a...

Tc for frequency = 10.00: 11.069 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 11.069 min. = 11 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 1.97
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.396
C Total: 0.870
Sum Q Segments (cfs): 4.10
Q Total (cfs): 4.10

Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 664.13
Time of Concentration (min): 11.069

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 231
Bottom Elevation (ft): 230
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.10
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.7414
Flow Type: Street
Length (ft): 275
Top Elevation (ft): 230
Bottom Elevation (ft): 228.5
Contributing Area (acres): 0.75
Percent of Sub-Area (%): 38.1
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0055
Q for Flow Path (cfs): 1.56
Q Top (cfs): 0.10
Q Bottom (cfs): 1.67
Velocity Top (ft/s): 0.74
Velocity Bottom (ft/s): 1.49
Avg Velocity (ft/s): 1.11
Wave Velocity (ft/s): 1.67

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.9940
Flow Type: Pipe
Length (ft): 550
Top Elevation (ft): 229.5
Bottom Elevation (ft): 224
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 59.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 12
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0100
Q for Flow Path (cfs): 2.44
Q Top (cfs): 1.67
Q Bottom (cfs): 4.10
Avg Velocity (ft/s): 1.44
Wave Velocity (ft/s): 1.84
♀
Tc for frequency = 25.00: 8.653 Minutes

DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 8.653 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 1.97
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70

SUB AREA OUTPUT

Intensity (in/hr): 2.987
C Total: 0.883
Sum Q Segments (cfs): 5.19
Q Total (cfs): 5.19
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 519.18
Time of Concentration (min): 8.653

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2287
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 231
Bottom Elevation (ft): 230
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.13
Avg Velocity (ft/s): 0.52
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.5839
Flow Type: Street
Length (ft): 275
Top Elevation (ft): 230
Bottom Elevation (ft): 228.5
Contributing Area (acres): 0.75
Percent of Sub-Area (%): 38.1
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0055
Q for Flow Path (cfs): 1.98
Q Top (cfs): 0.13
Q Bottom (cfs): 2.11
Velocity Top (ft/s): 0.79
Velocity Bottom (ft/s): 1.58
Avg Velocity (ft/s): 1.18
Wave Velocity (ft/s): 1.77

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.8404
Flow Type: Pipe
Length (ft): 550
Top Elevation (ft): 229.5
Bottom Elevation (ft): 224
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 59.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0100
Q for Flow Path (cfs): 3.08
Q Top (cfs): 2.11
Q Bottom (cfs): 5.19
Avg Velocity (ft/s): 2.40
Wave Velocity (ft/s): 3.23
♀
Tc for frequency = 50.00: 6.850 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 6.850 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 1.97
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.771
C Total: 0.894
Sum Q Segments (cfs): 6.64
Q Total (cfs): 6.64
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 411.02
Time of Concentration (min): 6.850

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.6667
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 231
Bottom Elevation (ft): 230
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.17
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.4292
Flow Type: Street
Length (ft): 275
Top Elevation (ft): 230
Bottom Elevation (ft): 228.5
Contributing Area (acres): 0.75
Percent of Sub-Area (%): 38.1
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0055
Q for Flow Path (cfs): 2.53
Q Top (cfs): 0.17
Q Bottom (cfs): 2.70
Velocity Top (ft/s): 0.84
Velocity Bottom (ft/s): 1.68
Avg Velocity (ft/s): 1.26
Wave Velocity (ft/s): 1.89
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.7544
Flow Type: Pipe
Length (ft): 550
Top Elevation (ft): 229.5
Bottom Elevation (ft): 224
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 59.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0100
Q for Flow Path (cfs): 3.94
Q Top (cfs): 2.70
Q Bottom (cfs): 6.64
Avg Velocity (ft/s): 2.55
Wave Velocity (ft/s): 3.33
♀
Tc for frequency = 100.00: 6.779 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 6.779 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 1.97
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.226
C Total: 0.898
Sum Q Segments (cfs): 7.48
Q Total (cfs): 7.48
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 406.73
Time of Concentration (min): 6.779

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.6667
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 231
Bottom Elevation (ft): 230
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 0.19
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.3578
Flow Type: Street
Length (ft): 275
Top Elevation (ft): 230
Bottom Elevation (ft): 228.5
Contributing Area (acres): 0.75
Percent of Sub-Area (%): 38.1
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0055
Q for Flow Path (cfs): 2.85
Q Top (cfs): 0.19
Q Bottom (cfs): 3.04
Velocity Top (ft/s): 0.86
Velocity Bottom (ft/s): 1.73
Avg Velocity (ft/s): 1.30
Wave Velocity (ft/s): 1.94

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.7544
Flow Type: Pipe
Length (ft): 550
Top Elevation (ft): 229.5
Bottom Elevation (ft): 224
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 59.4
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0100
Q for Flow Path (cfs): 4.44
Q Top (cfs): 3.04
Q Bottom (cfs): 7.48
Avg Velocity (ft/s): 2.62
Wave Velocity (ft/s): 3.33

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM

Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed B

Name	Zone	Storm	Soil	Area (acres)	TC (min)
B1a	K	10	3.00	19.9 / 20	8.302 / 8
B1a	K	25	3.00	19.9 / 20	7.107 / 7
B1a	K	50	3.00	19.9 / 20	6.566 / 7
B1a	K	100	3.00	19.9 / 20	5.620 / 6

♀

Watershed Name: Watershed B

Sub-Area Name: B1a
Computing Tc for all rainfall frequencies for sub-area B1a...

Tc for frequency = 10.00: 8.302 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 8.302 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 19.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.865
C Total: 0.896
Sum Q Segments (cfs): 51.06
Q Total (cfs): 51.06
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 498.11
Time of Concentration (min): 8.302

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.9907
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.3
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0200
Effective Slope: 0.0200
Q for Flow Path (cfs): 0.13
Avg Velocity (ft/s): 0.42
Passed Scour Check: YES

Scour Velocity (ft/sec): 1.53
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.4888
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 14.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 7.31
Q Top (cfs): 0.13
Q Bottom (cfs): 7.44
Velocity Top (ft/s): 1.14
Velocity Bottom (ft/s): 3.16
Avg Velocity (ft/s): 2.15
Wave Velocity (ft/s): 3.22
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.8223
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 17
Percent of Sub-Area (%): 85.4
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 43.62
Q Top (cfs): 7.44
Q Bottom (cfs): 51.06
Avg Velocity (ft/s): 8.31
Wave Velocity (ft/s): 11.05
♀
Tc for frequency = 25.00: 7.107 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 7.107 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 19.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.454
C Total: 0.904
Sum Q Segments (cfs): 62.17
Q Total (cfs): 62.17

Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 426.40
Time of Concentration (min): 7.107

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.1441
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.3
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0200
Effective Slope: 0.0200
Q for Flow Path (cfs): 0.16
Avg Velocity (ft/s): 0.53
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.56

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3203
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 14.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 8.90
Q Top (cfs): 0.16
Q Bottom (cfs): 9.06
Velocity Top (ft/s): 1.20
Velocity Bottom (ft/s): 3.32
Avg Velocity (ft/s): 2.26
Wave Velocity (ft/s): 3.39

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6423
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 17
Percent of Sub-Area (%): 85.4
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 53.11
Q Top (cfs): 9.06
Q Bottom (cfs): 62.17
Avg Velocity (ft/s): 10.50
Wave Velocity (ft/s): 14.14
♀

Tc for frequency = 50.00: 6.566 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 6.566 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 19.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.771
C Total: 0.908
Sum Q Segments (cfs): 68.12
Q Total (cfs): 68.12
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 393.95
Time of Concentration (min): 6.566

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.6881
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.3
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0200
Effective Slope: 0.0200
Q for Flow Path (cfs): 0.17
Avg Velocity (ft/s): 0.62
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.58
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.2448
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 14.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 9.76
Q Top (cfs): 0.17
Q Bottom (cfs): 9.93
Velocity Top (ft/s): 1.22
Velocity Bottom (ft/s): 3.40
Avg Velocity (ft/s): 2.31
Wave Velocity (ft/s): 3.47

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6330
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 17
Percent of Sub-Area (%): 85.4
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 58.19
Q Top (cfs): 9.93
Q Bottom (cfs): 68.12
Avg Velocity (ft/s): 10.82
Wave Velocity (ft/s): 14.35
♀
Tc for frequency = 100.00: 5.620 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 5.620 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 19.9
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70

SUB AREA OUTPUT

Intensity (in/hr): 4.590
C Total: 0.914
Sum Q Segments (cfs): 83.49
Q Total (cfs): 83.49
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 337.19
Time of Concentration (min): 5.620

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.0317
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.3
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0200
Effective Slope: 0.0200
Q for Flow Path (cfs): 0.21
Avg Velocity (ft/s): 0.82
Passed Scour Check: YES

Scour Velocity (ft/sec): 1.62
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.0829
Flow Type: Street
Length (ft): 675
Top Elevation (ft): 248
Bottom Elevation (ft): 238
Contributing Area (acres): 2.85
Percent of Sub-Area (%): 14.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0148
Q for Flow Path (cfs): 11.96
Q Top (cfs): 0.21
Q Bottom (cfs): 12.17
Velocity Top (ft/s): 1.29
Velocity Bottom (ft/s): 3.58
Avg Velocity (ft/s): 2.43
Wave Velocity (ft/s): 3.65
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.5053
Flow Type: Pipe
Length (ft): 545
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 17
Percent of Sub-Area (%): 85.4
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 36
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0147
Q for Flow Path (cfs): 71.32
Q Top (cfs): 12.17
Q Bottom (cfs): 83.49
Avg Velocity (ft/s): 13.52
Wave Velocity (ft/s): 17.98

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed C

Name	Zone	Storm	Soil	Area (acres)	TC (min)
C1	K	10	4.00	24.9 / 25	11.376 / 11
C1	K	25	4.00	24.9 / 25	10.664 / 11
C1	K	50	4.00	24.9 / 25	7.306 / 7
C1	K	100	4.00	24.9 / 25	7.011 / 7

♀

Watershed Name: Watershed C

Sub-Area Name: C1
Computing Tc for all rainfall frequencies for sub-area C1...

Tc for frequency = 10.00: 11.376 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 11.376 min. = 11 min.

SUB AREA INPUT DATA

Sub Area Name: C1
Total Area (ac): 24.92
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.396
C Total: 0.870
Sum Q Segments (cfs): 51.93
Q Total (cfs): 51.93
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 682.53
Time of Concentration (min): 11.376

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.6667
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 250
Bottom Elevation (ft): 245
Contributing Area (acres): 0.63
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0250
Effective Slope: 0.0250
Q for Flow Path (cfs): 1.31
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.8125
Flow Type: Street
Length (ft): 450
Top Elevation (ft): 245
Bottom Elevation (ft): 236
Contributing Area (acres): 1.5
Percent of Sub-Area (%): 6.0
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0200
Q for Flow Path (cfs): 3.13
Q Top (cfs): 1.31
Q Bottom (cfs): 4.44

Velocity Top (ft/s): 2.37
Velocity Bottom (ft/s): 3.15
Avg Velocity (ft/s): 2.76
Wave Velocity (ft/s): 4.14
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0677
Flow Type: Pipe
Length (ft): 470
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 25.7
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 27
Manning's N: 0.02
Map Slope: 0.0117
Q for Flow Path (cfs): 13.34
Q Top (cfs): 4.44
Q Bottom (cfs): 17.77
Avg Velocity (ft/s): 5.53
Wave Velocity (ft/s): 7.34
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0407
Flow Type: Pipe
Length (ft): 490
Top Elevation (ft): 230
Bottom Elevation (ft): 224
Contributing Area (acres): 7.15
Percent of Sub-Area (%): 28.7
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0122
Q for Flow Path (cfs): 14.90
Q Top (cfs): 17.77
Q Bottom (cfs): 32.67
Avg Velocity (ft/s): 6.03
Wave Velocity (ft/s): 7.85
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.7879
Flow Type: Pipe
Length (ft): 508
Top Elevation (ft): 224
Bottom Elevation (ft): 220
Contributing Area (acres): 9.24
Percent of Sub-Area (%): 37.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0079
Q for Flow Path (cfs): 19.25
Q Top (cfs): 32.67
Q Bottom (cfs): 51.93
Avg Velocity (ft/s): 8.63

Wave Velocity (ft/s): 10.75
♀
Tc for frequency = 25.00: 10.664 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 10.664 min. = 11 min.

SUB AREA INPUT DATA

Sub Area Name: C1
Total Area (ac): 24.92
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.657
C Total: 0.876
Sum Q Segments (cfs): 58.01
Q Total (cfs): 58.01
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 639.84
Time of Concentration (min): 10.664

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.1799
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 250
Bottom Elevation (ft): 245
Contributing Area (acres): 0.63
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0250
Effective Slope: 0.0250
Q for Flow Path (cfs): 1.47
Avg Velocity (ft/s): 0.54
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.7665
Flow Type: Street
Length (ft): 450
Top Elevation (ft): 245
Bottom Elevation (ft): 236
Contributing Area (acres): 1.5
Percent of Sub-Area (%): 6.0
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0200
Q for Flow Path (cfs): 3.49
Q Top (cfs): 1.47
Q Bottom (cfs): 4.96
Velocity Top (ft/s): 2.43
Velocity Bottom (ft/s): 3.23
Avg Velocity (ft/s): 2.83

Wave Velocity (ft/s): 4.25
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0520
Flow Type: Pipe
Length (ft): 470
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 25.7
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 27
Manning's N: 0.02
Map Slope: 0.0117
Q for Flow Path (cfs): 14.90
Q Top (cfs): 4.96
Q Bottom (cfs): 19.86
Avg Velocity (ft/s): 5.64
Wave Velocity (ft/s): 7.45
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0407
Flow Type: Pipe
Length (ft): 490
Top Elevation (ft): 230
Bottom Elevation (ft): 224
Contributing Area (acres): 7.15
Percent of Sub-Area (%): 28.7
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0122
Q for Flow Path (cfs): 16.64
Q Top (cfs): 19.86
Q Bottom (cfs): 36.50
Avg Velocity (ft/s): 6.19
Wave Velocity (ft/s): 7.85
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6248
Flow Type: Pipe
Length (ft): 508
Top Elevation (ft): 224
Bottom Elevation (ft): 220
Contributing Area (acres): 9.24
Percent of Sub-Area (%): 37.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 36
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0079
Q for Flow Path (cfs): 21.51
Q Top (cfs): 36.50
Q Bottom (cfs): 58.01
Avg Velocity (ft/s): 10.58
Wave Velocity (ft/s): 13.55
♀
Tc for frequency = 50.00: 7.306 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 7.306 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: C1
Total Area (ac): 24.92
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70

SUB AREA OUTPUT

Intensity (in/hr): 3.771
C Total: 0.894
Sum Q Segments (cfs): 83.98
Q Total (cfs): 83.98
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 438.36
Time of Concentration (min): 7.306

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 250
Bottom Elevation (ft): 245
Contributing Area (acres): 0.63
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0250
Effective Slope: 0.0250
Q for Flow Path (cfs): 2.12
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.6211
Flow Type: Street
Length (ft): 450
Top Elevation (ft): 245
Bottom Elevation (ft): 236
Contributing Area (acres): 1.5
Percent of Sub-Area (%): 6.0
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0200
Q for Flow Path (cfs): 5.05
Q Top (cfs): 2.12
Q Bottom (cfs): 7.18
Velocity Top (ft/s): 2.65
Velocity Bottom (ft/s): 3.52
Avg Velocity (ft/s): 3.08
Wave Velocity (ft/s): 4.63

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.9735
Flow Type: Pipe
Length (ft): 470
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 25.7
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 30
Manning's N: 0.02
Map Slope: 0.0117
Q for Flow Path (cfs): 21.57
Q Top (cfs): 7.18
Q Bottom (cfs): 28.75
Avg Velocity (ft/s): 6.18
Wave Velocity (ft/s): 8.05
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.7858
Flow Type: Pipe
Length (ft): 490
Top Elevation (ft): 230
Bottom Elevation (ft): 224
Contributing Area (acres): 7.15
Percent of Sub-Area (%): 28.7
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0122
Q for Flow Path (cfs): 24.09
Q Top (cfs): 28.75
Q Bottom (cfs): 52.84
Avg Velocity (ft/s): 8.34
Wave Velocity (ft/s): 10.39
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.5923
Flow Type: Pipe
Length (ft): 508
Top Elevation (ft): 224
Bottom Elevation (ft): 220
Contributing Area (acres): 9.24
Percent of Sub-Area (%): 37.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 39
Used Pipe Diameter (in): 39
Manning's N: 0.011
Map Slope: 0.0079
Q for Flow Path (cfs): 31.14
Q Top (cfs): 52.84
Q Bottom (cfs): 83.98
Avg Velocity (ft/s): 11.58
Wave Velocity (ft/s): 14.29
♀
Tc for frequency = 100.00: 7.011 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 7.011 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: C1
Total Area (ac): 24.92
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.226
C Total: 0.898
Sum Q Segments (cfs): 94.57
Q Total (cfs): 94.57
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 420.64
Time of Concentration (min): 7.011

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 250
Bottom Elevation (ft): 245
Contributing Area (acres): 0.63
Percent of Sub-Area (%): 2.5
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0250
Effective Slope: 0.0250
Q for Flow Path (cfs): 2.39
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.5770
Flow Type: Street
Length (ft): 450
Top Elevation (ft): 245
Bottom Elevation (ft): 236
Contributing Area (acres): 1.5
Percent of Sub-Area (%): 6.0
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0200
Q for Flow Path (cfs): 5.69
Q Top (cfs): 2.39
Q Bottom (cfs): 8.08
Velocity Top (ft/s): 2.73
Velocity Bottom (ft/s): 3.62
Avg Velocity (ft/s): 3.17
Wave Velocity (ft/s): 4.76
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.9271
Flow Type: Pipe

Length (ft): 470
Top Elevation (ft): 235.5
Bottom Elevation (ft): 230
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 25.7
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 33
Manning's N: 0.02
Map Slope: 0.0117
Q for Flow Path (cfs): 24.29
Q Top (cfs): 8.08
Q Bottom (cfs): 32.37
Avg Velocity (ft/s): 6.38
Wave Velocity (ft/s): 8.45
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.6094
Flow Type: Pipe
Length (ft): 490
Top Elevation (ft): 230
Bottom Elevation (ft): 224
Contributing Area (acres): 7.15
Percent of Sub-Area (%): 28.7
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0122
Q for Flow Path (cfs): 27.13
Q Top (cfs): 32.37
Q Bottom (cfs): 59.50
Avg Velocity (ft/s): 10.47
Wave Velocity (ft/s): 13.40
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.5637
Flow Type: Pipe
Length (ft): 508
Top Elevation (ft): 224
Bottom Elevation (ft): 220
Contributing Area (acres): 9.24
Percent of Sub-Area (%): 37.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 42
Used Pipe Diameter (in): 42
Manning's N: 0.011
Map Slope: 0.0079
Q for Flow Path (cfs): 35.06
Q Top (cfs): 59.50
Q Bottom (cfs): 94.57
Avg Velocity (ft/s): 11.95
Wave Velocity (ft/s): 15.02

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed D

Name	Zone	Storm	Soil	Area (acres)	TC (min)
D	K	10	4.00	5.6 / 6	12.771 / 13
D	K	25	4.00	5.6 / 6	12.345 / 12
D	K	50	4.00	5.6 / 6	8.787 / 9
D	K	100	4.00	5.6 / 6	8.640 / 9

♀

Watershed Name: Watershed D

Sub-Area Name: D
Computing Tc for all rainfall frequencies for sub-area D...

Tc for frequency = 10.00: 12.771 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 12.771 min. = 13 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 5.59
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.199
C Total: 0.864
Sum Q Segments (cfs): 10.63
Q Total (cfs): 10.63
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 766.25
Time of Concentration (min): 12.771

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.6667
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 228
Bottom Elevation (ft): 227
Contributing Area (acres): 0.41
Percent of Sub-Area (%): 7.3
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 0.78
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.9186
Flow Type: Street
Length (ft): 645
Top Elevation (ft): 227
Bottom Elevation (ft): 225.5
Contributing Area (acres): 2.9
Percent of Sub-Area (%): 51.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0023
Q for Flow Path (cfs): 5.51
Q Top (cfs): 0.78
Q Bottom (cfs): 6.29
Velocity Top (ft/s): 0.92
Velocity Bottom (ft/s): 1.50
Avg Velocity (ft/s): 1.21
Wave Velocity (ft/s): 1.82
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.1856
Flow Type: Pipe
Length (ft): 60
Top Elevation (ft): 225.5
Bottom Elevation (ft): 220.3
Contributing Area (acres): 2.28
Percent of Sub-Area (%): 40.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0867
Q for Flow Path (cfs): 4.33
Q Top (cfs): 6.29
Q Bottom (cfs): 10.63
Avg Velocity (ft/s): 4.23
Wave Velocity (ft/s): 5.39
♀
Tc for frequency = 25.00: 12.345 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 12.345 min. = 12 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 5.59
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.534
C Total: 0.873
Sum Q Segments (cfs): 12.37
Q Total (cfs): 12.37
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 740.70
Time of Concentration (min): 12.345

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.5143
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 228
Bottom Elevation (ft): 227
Contributing Area (acres): 0.41
Percent of Sub-Area (%): 7.3
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 0.91
Avg Velocity (ft/s): 0.51
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.7132
Flow Type: Street
Length (ft): 645
Top Elevation (ft): 227
Bottom Elevation (ft): 225.5
Contributing Area (acres): 2.9
Percent of Sub-Area (%): 51.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0023
Q for Flow Path (cfs): 6.42
Q Top (cfs): 0.91
Q Bottom (cfs): 7.32
Velocity Top (ft/s): 0.96
Velocity Bottom (ft/s): 1.55
Avg Velocity (ft/s): 1.25
Wave Velocity (ft/s): 1.88
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.1176
Flow Type: Pipe
Length (ft): 60
Top Elevation (ft): 225.5
Bottom Elevation (ft): 220.3
Contributing Area (acres): 2.28
Percent of Sub-Area (%): 40.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0867
Q for Flow Path (cfs): 5.05
Q Top (cfs): 7.32
Q Bottom (cfs): 12.37
Avg Velocity (ft/s): 6.40
Wave Velocity (ft/s): 8.51
♀
Tc for frequency = 50.00: 8.787 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 8.787 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 5.59
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.333
C Total: 0.888
Sum Q Segments (cfs): 16.55
Q Total (cfs): 16.55
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 527.24
Time of Concentration (min): 8.787

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 228
Bottom Elevation (ft): 227
Contributing Area (acres): 0.41
Percent of Sub-Area (%): 7.3
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 1.21
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.3399
Flow Type: Street
Length (ft): 645
Top Elevation (ft): 227
Bottom Elevation (ft): 225.5
Contributing Area (acres): 2.9
Percent of Sub-Area (%): 51.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0023
Q for Flow Path (cfs): 8.58
Q Top (cfs): 1.21
Q Bottom (cfs): 9.80
Velocity Top (ft/s): 1.02
Velocity Bottom (ft/s): 1.66
Avg Velocity (ft/s): 1.34
Wave Velocity (ft/s): 2.01
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.1141
Flow Type: Pipe

Length (ft): 60
Top Elevation (ft): 225.5
Bottom Elevation (ft): 220.3
Contributing Area (acres): 2.28
Percent of Sub-Area (%): 40.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0867
Q for Flow Path (cfs): 6.75
Q Top (cfs): 9.80
Q Bottom (cfs): 16.55
Avg Velocity (ft/s): 6.82
Wave Velocity (ft/s): 8.76
♀
Tc for frequency = 100.00: 8.640 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 8.640 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 5.59
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.740
C Total: 0.893
Sum Q Segments (cfs): 18.67
Q Total (cfs): 18.67
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 518.38
Time of Concentration (min): 8.640

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 228
Bottom Elevation (ft): 227
Contributing Area (acres): 0.41
Percent of Sub-Area (%): 7.3
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 1.37
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.1922
Flow Type: Street

Length (ft): 645
Top Elevation (ft): 227
Bottom Elevation (ft): 225.5
Contributing Area (acres): 2.9
Percent of Sub-Area (%): 51.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0023
Q for Flow Path (cfs): 9.69
Q Top (cfs): 1.37
Q Bottom (cfs): 11.06
Velocity Top (ft/s): 1.05
Velocity Bottom (ft/s): 1.71
Avg Velocity (ft/s): 1.38
Wave Velocity (ft/s): 2.07
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.1141
Flow Type: Pipe
Length (ft): 60
Top Elevation (ft): 225.5
Bottom Elevation (ft): 220.3
Contributing Area (acres): 2.28
Percent of Sub-Area (%): 40.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0867
Q for Flow Path (cfs): 7.62
Q Top (cfs): 11.06
Q Bottom (cfs): 18.67
Avg Velocity (ft/s): 6.97
Wave Velocity (ft/s): 8.76

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed E

Name	Zone	Storm	Soil	Area (acres)	TC (min)
E	K	10	4.00	8.2 / 8	8.831 / 9
E	K	25	4.00	8.2 / 8	8.625 / 9
E	K	50	4.00	8.2 / 8	5.229 / 5
E	K	100	4.00	8.2 / 8	5.183 / 5

♀

Watershed Name: Watershed E

Sub-Area Name: E
Computing Tc for all rainfall frequencies for sub-area E...

Tc for frequency = 10.00: 8.831 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 8.831 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: E
Total Area (ac): 8.24
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70

SUB AREA OUTPUT

Intensity (in/hr): 2.680
C Total: 0.876
Sum Q Segments (cfs): 19.35
Q Total (cfs): 19.35
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 529.85
Time of Concentration (min): 8.831

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.6667
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 232
Bottom Elevation (ft): 231
Contributing Area (acres): 1
Percent of Sub-Area (%): 12.1
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 2.35
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.8006
Flow Type: Street
Length (ft): 415
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2
Percent of Sub-Area (%): 24.3
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0120
Q for Flow Path (cfs): 4.70
Q Top (cfs): 2.35
Q Bottom (cfs): 7.05
Velocity Top (ft/s): 2.24
Velocity Bottom (ft/s): 2.89
Avg Velocity (ft/s): 2.56
Wave Velocity (ft/s): 3.84

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3636
Flow Type: Pipe
Length (ft): 225
Top Elevation (ft): 226
Bottom Elevation (ft): 220
Contributing Area (acres): 5.24
Percent of Sub-Area (%): 63.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0267
Q for Flow Path (cfs): 12.31
Q Top (cfs): 7.05
Q Bottom (cfs): 19.35
Avg Velocity (ft/s): 7.79
Wave Velocity (ft/s): 10.31
♀
Tc for frequency = 25.00: 8.625 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 8.625 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: E
Total Area (ac): 8.24
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.987
C Total: 0.883
Sum Q Segments (cfs): 21.73
Q Total (cfs): 21.73
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 517.52
Time of Concentration (min): 8.625

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.5143
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 232
Bottom Elevation (ft): 231
Contributing Area (acres): 1
Percent of Sub-Area (%): 12.1
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 2.64
Avg Velocity (ft/s): 0.51
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.7529
Flow Type: Street
Length (ft): 415
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2
Percent of Sub-Area (%): 24.3
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0120
Q for Flow Path (cfs): 5.27
Q Top (cfs): 2.64
Q Bottom (cfs): 7.91
Velocity Top (ft/s): 2.30
Velocity Bottom (ft/s): 2.96
Avg Velocity (ft/s): 2.63
Wave Velocity (ft/s): 3.95
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3582
Flow Type: Pipe
Length (ft): 225
Top Elevation (ft): 226
Bottom Elevation (ft): 220
Contributing Area (acres): 5.24
Percent of Sub-Area (%): 63.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0267
Q for Flow Path (cfs): 13.82
Q Top (cfs): 7.91
Q Bottom (cfs): 21.73
Avg Velocity (ft/s): 8.02
Wave Velocity (ft/s): 10.47
♀
Tc for frequency = 50.00: 5.229 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 5.229 min. = 5 min.

SUB AREA INPUT DATA

Sub Area Name: E
Total Area (ac): 8.24
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.548
C Total: 0.901
Sum Q Segments (cfs): 33.76
Q Total (cfs): 33.76
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 313.75
Time of Concentration (min): 5.229

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 232
Bottom Elevation (ft): 231
Contributing Area (acres): 1
Percent of Sub-Area (%): 12.1
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 4.10
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.5824
Flow Type: Street
Length (ft): 415
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2
Percent of Sub-Area (%): 24.3
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0120
Q for Flow Path (cfs): 8.19
Q Top (cfs): 4.10
Q Bottom (cfs): 12.29
Velocity Top (ft/s): 2.54
Velocity Bottom (ft/s): 3.28
Avg Velocity (ft/s): 2.91
Wave Velocity (ft/s): 4.37
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3135
Flow Type: Pipe
Length (ft): 225
Top Elevation (ft): 226
Bottom Elevation (ft): 220
Contributing Area (acres): 5.24
Percent of Sub-Area (%): 63.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 30
Manning's N: 0.02
Map Slope: 0.0267
Q for Flow Path (cfs): 21.47
Q Top (cfs): 12.29
Q Bottom (cfs): 33.76
Avg Velocity (ft/s): 8.95
Wave Velocity (ft/s): 11.96
♀
Tc for frequency = 100.00: 5.183 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 5.183 min. = 5 min.

SUB AREA INPUT DATA

Sub Area Name: E
Total Area (ac): 8.24
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 5.100
C Total: 0.904
Sum Q Segments (cfs): 37.99
Q Total (cfs): 37.99
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 310.96
Time of Concentration (min): 5.183

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 232
Bottom Elevation (ft): 231
Contributing Area (acres): 1
Percent of Sub-Area (%): 12.1
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0050
Effective Slope: 0.0050
Q for Flow Path (cfs): 4.61
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.5396
Flow Type: Street
Length (ft): 415
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2
Percent of Sub-Area (%): 24.3
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0120
Q for Flow Path (cfs): 9.22
Q Top (cfs): 4.61
Q Bottom (cfs): 13.83
Velocity Top (ft/s): 2.62
Velocity Bottom (ft/s): 3.37
Avg Velocity (ft/s): 3.00
Wave Velocity (ft/s): 4.49
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3098
Flow Type: Pipe

Length (ft): 225
Top Elevation (ft): 226
Bottom Elevation (ft): 220
Contributing Area (acres): 5.24
Percent of Sub-Area (%): 63.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 30
Manning's N: 0.02
Map Slope: 0.0267
Q for Flow Path (cfs): 24.16
Q Top (cfs): 13.83
Q Bottom (cfs): 37.99
Avg Velocity (ft/s): 9.27
Wave Velocity (ft/s): 12.10

APPENDIX D

Proposed Hydrology Exhibit B

TELEGRAPH ROAD

BECKWITH ROAD

NEW PARALLEL CHANNEL

DEBRIS BASIN

ADAMS CANYON BARRANCA

DETENTION BASIN 1

RAILROAD

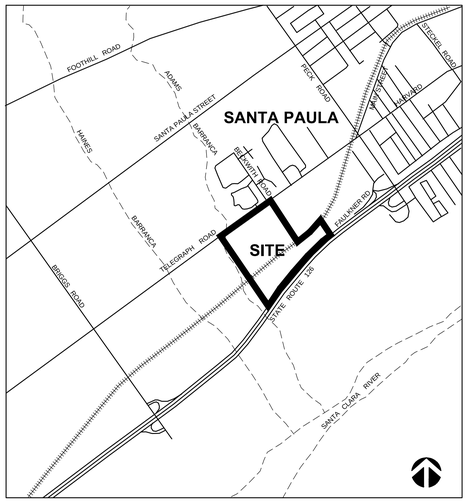
NEW WIDENED BARRANCA

DETENTION BASIN 2

UNDERGROUND DETENTION BASIN 3

HIGHWAY 126

TODD LANE DRAIN



VICINITY MAP
NOT TO SCALE

DRAINAGE AREA CALCULATIONS

SUBAREA	ACRE	PROPOSED Q_{10}	PROPOSED Q_{50}	PROPOSED Q_{100}	STORM DRAIN OUTLET
A	1.7	1.5	2.1	2.3	ADAMS
B1a	5.9	16.4	22.0	27.6	BASIN, 2
B1b	8.2	24.8	33.6	37.8	BASIN, 2
B1c	3.75	9.6	14.0	15.7	BASIN, 2
B2	1.97	4.1	6.6	7.5	2
C1	15.65	32.7	52.7	59.8	BASIN, 5
C2	9.24	19.4	27.7	32.3	BASIN, 5
D	5.59	10.6	16.6	18.7	9
E	8.25	19.4	33.8	38.0	BASIN, 8

PEAK FLOWS SHOWN ARE UNDETAINED VALUES

LEGEND

- DRAINAGE AREA LIMITS
- EXISTING STORM DRAIN
- STORM DRAIN INLET
- STORM DRAIN
- (144) PROPOSED CONTOUR
- TREATMENT/INFILTRATION/DETENTION AREA
- (D) DRAINAGE AREA
- [1] PIPE NUMBER

80' 40' 0' 80' 160'
GRAPHIC SCALE: 1"=80'

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=80'
J.N.: PAR01.4492
DATE: Jun 01, 2011
DWG. NAME: 4492_PRP-01_HYDRO.dwg

PROPOSED HYDROLOGY
FOR
SANTA PAULA WEST 2

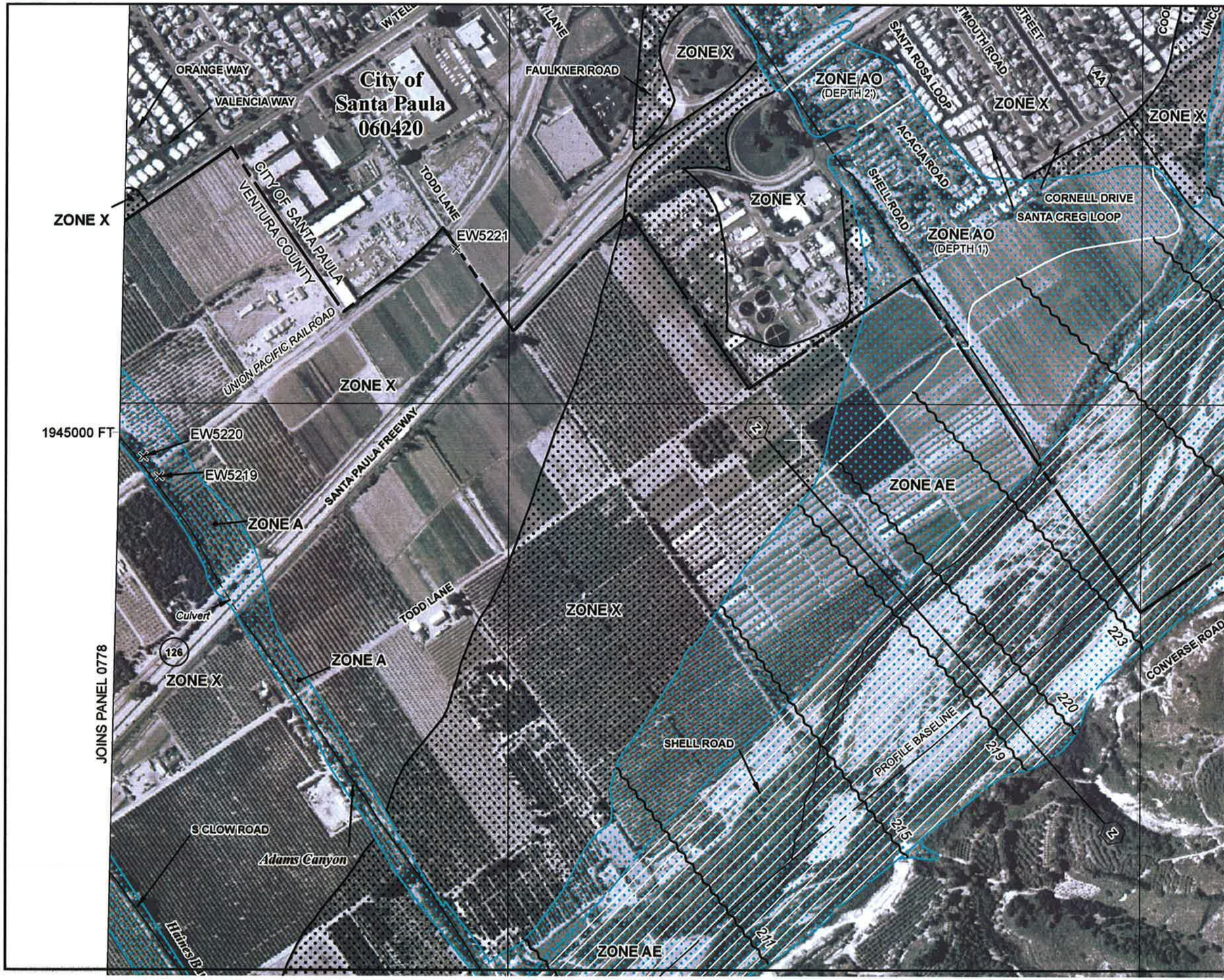
City of Santa Paula
COUNTY OF VENTURA
STATE OF CALIFORNIA

EXHIBIT
B

J:\PAR14492\Eng\Exhibits\Hydrology Reference\4492_PRP-01_HYDRO.dwg Jun 01, 2011, 9:31am kpascoe

APPENDIX E

Existing FIRM Maps & Soils Maps



d insurance is available in this community, contact your Ins
nal Flood Insurance Program at 1-800-638-6620.

FEET
METERS
150 0 150 300

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0779E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 779 OF 1275

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0779	E
VENTURA COUNTY	060413	0779	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
06111C0779E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

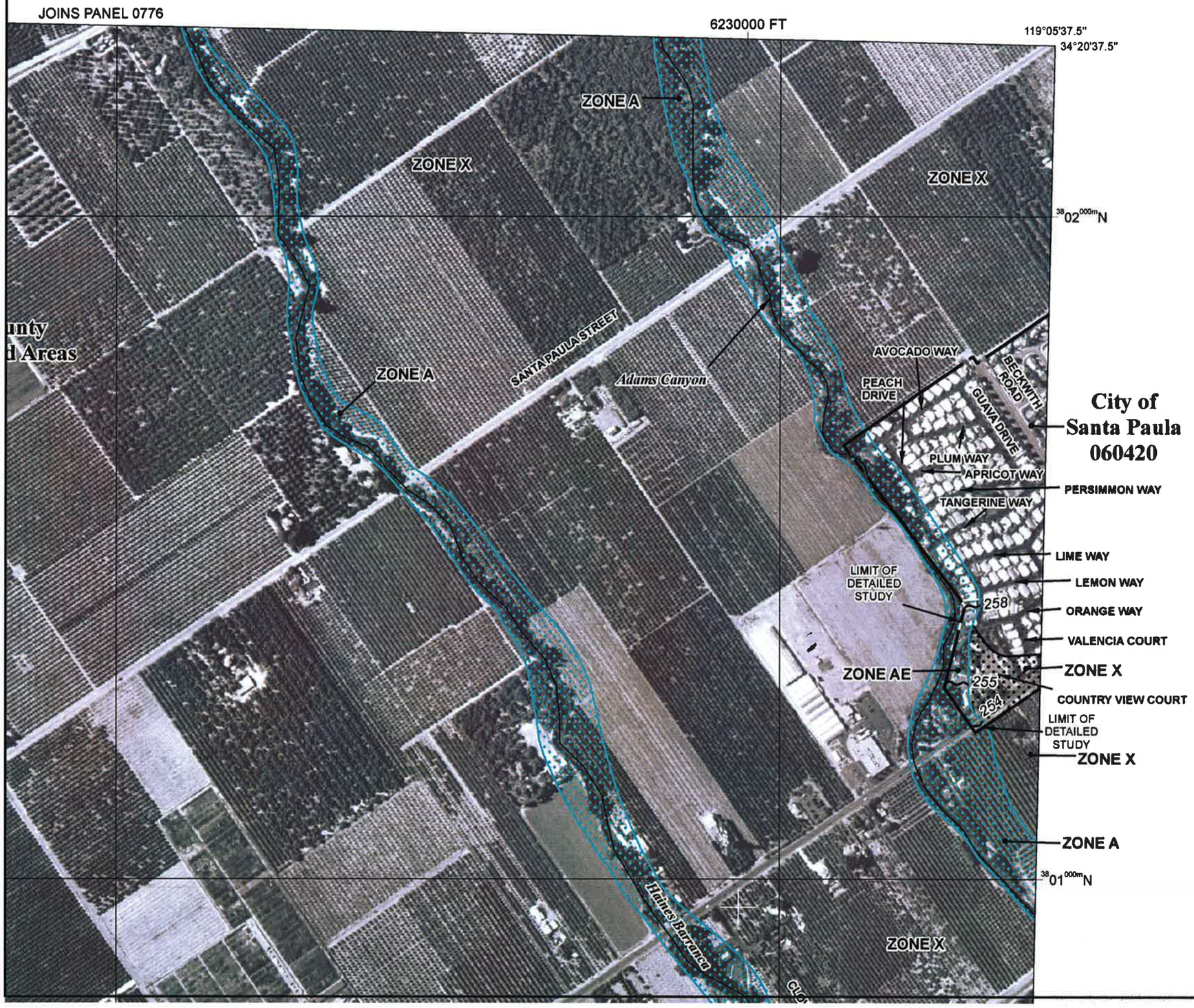
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Prepared by: Jensen Design & Survey Inc.

Parcel boundaries on this exhibit are a graphical representation only. They should not be used in place of record boundary information and/or field survey data and do not accurately define property boundaries.

SOIL TYPE MAP

1 inch equals 300 feet



d insurance is available in this community, contact your Ins
nal Flood Insurance Program at 1-800-638-6620.

METERS
150 0 150 300

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0778E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 778 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0778	E
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APPENDIX F

Adams Barranca HEC-RAS Analysis Maps and Calculations

Adams Canyon – Hydraulic Analysis Report

Introduction

Adams Canyon is located in the unincorporated areas of Ventura County, California. The study was performed for 1.05 miles of the stream. The extent of the stream is from the confluence with the Santa Clara River and continuing upstream to 800 ft north of Telegraph Road. The channel is earthen. The entire study reach area is agricultural. There are three bridges in the study extent namely East Telegraph Road, Union Pacific Railroad and Highway 126. The stream was a natural channel consisting of minor vegetation.

Structure Data

The structure information for East Telegraph Road and Union pacific Railroad is obtained from the field reconnaissance and information provided by CalTrans and record drawings from the County. The information was incorporated in this analysis.

	Model Type
Telegraph Road	Culvert
Railroad	Bridge
Highway 126	Two Culverts

Terrain Data

LIDAR data was provided by Ventura County. The data was in the form of mass points (each point was attributed with latitude, longitude and elevation), with a horizontal datum of NAD 1983 with projection of "*State Plane California V FIPS 0405 Feet*" and the vertical datum is "*NAVD 88*". These points were used to generate a surface with 1' and 5' contour interavels in Sufer 8. The surface was then converted to a CAD drawing lowered by 2.5 feet to match the NGVD 29 datum that a flown aerial topo was generated by Central Coast Mapping in March 2007.

Streamline and Flow Paths

- Streamline was generated using the flowline of the Adams Barranca.
- Overland Flowpaths were generated following the west and east side of the bank contours and path of travel for the overflow water.
- Lateral structure elevations were determined by topograhy

Cross Section Generation

Cross-sections geometry was extracted from the terrain. Each cross-section was oriented such that it is normal to the floodplain.

Manning's Roughness Coefficient (n) Calculations

Manning's coefficient values were determined for each cross section using the Cowan (1956) procedure outlined in "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Floodplains" "(Authors: G.J. Arcement and V.R. Schneider, USGS Water supply Paper 2339). Photographs taken during field reconnaissance were used in conjunction with the aerial images to estimate Manning's coefficients for the channel

portion of the cross section. For overbank areas, land-use classification data was developed from the aerial imagery. Polygons were digitized for different landuses, which were attributed with the corresponding Manning's n values. Manning's n value of 0.045 was used for the main channel and between 0.03 and 0.035 for the overbanks. See attached computation table (Attachment 1).

Boundary Conditions
For a downstream WS Elevation in SC River from FIRM 06111C0779E, we used 208.25 on the 88 datum, and lowered it 2.5' to be on the '29 datum = 205.75

Discharge Point Locations
Discharges for the Adams Barranca vary depending on the source. Ventura County Watershed Protection District current adopted flow rate is from the HSPF Model of 6,880 cfs. A revised discharges was provided by VCWPD in Appendix L Ventura Design Storm by Mark Banduraga of 5,150 cfs. A separate VcRAT analysis was completed by Jensen Design & Survey using aerial reduction totalying 4,810 cfs. The varying discharges are shown in the table below:

	100-Year
HSPF Model VCWPD	6,880
HMS Model VCWPD	5,150
JDS Model	4,810

HEC-RAS Project – Existing

- PLANS: The name of the project is 4492_Adams Barranca.prj
  - Adams Canyon - Plan With Embankment (p05, g05, f02)
  - **Adams Canyon – Plan With Embankment with lateral structures at top of bank (p12, g09, f02) – used for Specific Plan Report**
  - **Right Overbank**
    - **Adams Canyon Right Overbank Profile (p18, g13, f08)**
  - **Left Overbank**
    - **Adams Canyon Left Overbank Profile (p17, g14, f07)**

Discharges in the main stream were reduced using lateral structures for the without embankment scenario and balanced appropriately with the right and left overbank as shown in the table below for the **EXISTING** condition:

LOB_RS	100-YR
5096.3	1218
4223.5	1306

ROB_RS	100-YR
4966.8	1
4634	757
4222.5	2308

Methodology Existing Condition

Plan 5: With Embankment Plan and levees

- The channel embankments had higher elevations than the overbank areas. The embankments in this case act as levees, but do not satisfy levee requirements as per 65.10 and hence need to be failed as directed by FEMA Regional Engineer during field reconnaissance.
- Levees option was used on the crest of the levee, and their elevations were arbitrarily raised above the 0.2-percent annual chance water surface elevation as mentioned in Appendix H: Guidance for Mapping of Areas Protected by Levee Systems of the FEMA Guidelines and Specifications for Flood Hazard Mapping Partners.
- In this analysis only the channel portion was analyzed through out the length of the stream and the cross sections were cut off using levee option to consider only the areas within the embankments.

Plan 12: With Embankment Plan with lateral structures

- Lateral structures were placed on top of the embankments on *both* sides and were optimized
- The use of lateral structures reduced the flow in the channel. Some amount of water overtopped the channel embankments as they exist in the field and the rest of the water flowed through the channel.

Plan 17: Right overbank

- An overbank flowline was delineated using 1 foot contours on the right (west) overbank
- The cross-sections were taken parallel to the contours in the overflow area
- The flow rates were determined using the overflow from the lateral structures on the right side of Plan 12.

Plan 18: Left overbank

- An overbank flowline was delineated using 1 foot contours on the left (east) overbank
- The cross-sections were taken parallel to the contours in the overflow area
- The flow rates were determined using the overflow from the lateral structures on the left side of Plan 12.

HEC-RAS Project – Proposed

- PLANS: The name of the project is 4492_Adams Barranca.prj
  - Adams Canyon – Proposed Geometry – larger channel section between 126 and RR and Lateral structures, no parallel channel at the north end (p7, g10, f03)
  - **Adams Canyon – Proposed Geometry – larger channel section and parallel channel on north end of project (p19, g11, f05)**
  - **Right Overbank**
    - **Adams Canyon Right Overbank Profile (p22, g13, f06) (used same alignment and sections as existing condition)**
  - **Left Overbank**
    - **Adams Canyon Left Overbank Profile (p21, g12, f09)**

Discharges in the main stream were reduced using lateral structures for the without embankment scenario and balanced appropriately with the right and left overbank as shown in the table below for the **PROPOSED** condition:

LOB_RS	100-YR
3711.2	1000
1067.7	1147

ROB_RS	100-YR
4966.8	1
4634	738
4222.5	2028
284.2	2073

Methodology Proposed Condition

Plan 19: Proposed Geometry

- It was observed on the Existing condition (Plan 12) that a break out of 1,215 cfs occurred upstream of Telegraph Road and Traveled over telegraph Road to the frontage of the project site. We have designed this overflow condition to be captured in the parking lot and diverted to the west and then to the south in a parallel channel. The proposed buildings are protected from the 100 year water surface elevation.
- A flow file was created based on the assumption that at the beginning of the new channel (easterly end) the flow rate would start at 300 cfs. Then it would increase to the full 1,215 cfs at the northwesterly property corner before heading south. 8.
- The proposed channel is joined with the existing channel upstream of station 3525.2. The channel is then widened to accommodate the additional 1,215 cfs added to the system.

- It was noticed that the water was overtopping the existing top of bank on the west side of the channel downstream of the railroad. This was not occurring in the existing condition and therefore the proposed widened channel is proposed to have a notch cut in the top between stations 2839.2 and 2708.7 to allow the water to overflow to the east through the frontage road and over the highway, as it did in the existing condition. Therefore no impacts will occur on the west side of the barranca.

Plan 22: Right overbank

- An overbank flowline was delineated using 1 foot contours on the right (west) overbank
- The cross-sections were taken parallel to the contours in the overflow area
- The flow rates were determined using the overflow from the lateral structures on the right side of Plan 19.

Plan 21: Left overbank

- An overbank flowline was delineated using 1 foot contours on the left (east) overbank
- The cross-sections were taken parallel to the contours in the overflow area, which is a lower portion of the east side of the channel between stations 2839.2 and 2708.7.
- The flow rates were determined using the overflow from the lateral structures on the left side of Plan 19.

Mapping

BFEs for the main channel are obtained from Plan # 12 and Plan #19.
BFEs for the left overbank are obtained from Plan # 18 & #21.
BFEs for the right overbank are obtained from Plan # 17 & #22

EXISTING CONDITION OVERLFOW VALUES FROM MAIN CHANNEL

Flow data with both levees in place EXISTING

LOB **EAST**

LATERAL STATION FROM MAIN CHANNEL	CROSS SECTION	FLOW IN FROM MAIN CHANNEL	TOTAL FLOW INPUT INTO HEC RAS
5253.1-4539	5096.3	1218	**1218**
4239	4809	-	
3821.1	4223.5	88	**1306**
	3757	-	
	3400.4	-	
	3030.5	-	
	2936.1	-	
	2728.9	-	
2501	2302.1	-	
2424-1818	1067.8	-	
X	365.2	-	

ROB **WEST**

LATERAL STATION FROM MAIN CHANNEL	CROSS SECTION	FLOW IN FROM MAIN CHANNEL	TOTAL FLOW INPUT INTO HEC RAS
X	4966.8	1	**1**
4539	4634	756	**757**
4239	4222.5	1551	**2308**
3689	3948.3	-	
3525	3739	-	
X	3517.9	-	
3379+3128	3253	-	
2839	2612.2	-	
2501-2424	2471.6	-	
2096-1818	284.2	-	

PROPOSED CONDITION OVERLFOW VALUES FROM MAIN CHANNEL

Flow data with both levees in place

LOB **EAST**

LATERAL STATION FROM MAIN CHANNEL	CROSS SECTION	FLOW IN FROM MAIN CHANNEL	TOTAL FLOW INPUT INTO HEC RAS
2839.2, 2755.9	3711.2	1000	**1000**
X	3508.3	-	
X	3115.4	-	
X	2935	-	
X	2726.6	-	
2501	2302	-	
2424-1818	1067.7	147	**1147**
X	365.2	-	

ROB **WEST**

LATERAL STATION FROM MAIN CHANNEL	CROSS SECTION	FLOW IN FROM MAIN CHANNEL	TOTAL FLOW INPUT INTO HEC RAS
X	4966.8	1	**1**
4539	4634	737	**738**
4239	4222.5	1290	**2028**
3689	3948.3	-	
3525	3739	-	
X	3517.9	-	
3379+3128	3253	-	
2839	2612.2	-	
2501-2424	2471.6		
2096-1818	284.2	45	**2073**

Table 3-1 Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
A. *Natural Streams*			
1. Main Channels			
a. Clean, straight, full, no rifts or deep pools	0.025	0.030	0.033
b. Same as above, but more stones and weeds	0.030	0.035	0.040
c. Clean, winding, some pools and shoals	0.033	0.040	0.045
d. Same as above, but some weeds and stones	0.035	0.045	0.050
e. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
f. Same as "d" but more stones	0.045	0.050	0.060
g. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
h. Very weedy reaches, deep pools, or floodways with heavy stands of timber and brush	0.070	0.100	0.150
2. Flood Plains			
a. Pasture no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
2. Same as above, but heavy sprouts	0.050	0.060	0.080
3. Heavy stand of timber, few down trees, little undergrowth, flow below branches	0.080	0.100	0.120
4. Same as above, but with flow into branches	0.100	0.120	0.160
5. Dense willows, summer, straight	0.110	0.150	0.200
3. Mountain Streams, no vegetation in channel, banks usually steep, with trees and brush on banks submerged			
a. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
b. Bottom: cobbles with large boulders	0.040	0.050	0.070

Table 3-1 (Continued) Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
C. *Excavated or Dredged Channels*			
1. Earth, straight and uniform			
a. Clean, recently completed	0.016	0.018	0.020
b. Clean, after weathering	0.018	0.022	0.025
c. Gravel, uniform section, clean	0.022	0.025	0.030
d. With short grass, few weeds	0.022	0.027	0.033
2. Earth, winding and sluggish			
a. No vegetation	0.023	0.025	0.030
b. Grass, some weeds	0.025	0.030	0.033
c. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
d. Earth bottom and rubble side	0.028	0.030	0.035
e. Stony bottom and weedy banks	0.025	0.035	0.040
f. Cobble bottom and clean sides	0.030	0.040	0.050
3. Dragline-excavated or dredged			
a. No vegetation	0.025	0.028	0.033
b. Light brush on banks	0.035	0.050	0.060
4. Rock cuts			
a. Smooth and uniform	0.025	0.035	0.040
b. Jagged and irregular	0.035	0.040	0.050
5. Channels not maintained, weeds and brush			
a. Clean bottom, brush on sides	0.040	0.050	0.080
b. Same as above, highest stage of flow	0.045	0.070	0.110
c. Dense weeds, high as flow depth	0.050	0.080	0.120
d. Dense brush, high stage	0.080	0.100	0.140

Other sources that include pictures of selected streams as a guide to n value determination are available (Fasken, 1963; Barnes, 1967; and Hicks and Mason, 1991). In general, these references provide color photos with tables of calibrated n values for a range of flows.

Although there are many factors that affect the selection of the n value for the channel, some of the most important factors are the type and size of materials that compose the bed and banks of a channel, and the shape of the channel. Cowan (1956) developed a procedure for estimating the effects of these factors to determine the value of Manning's n of a channel. In Cowan's procedure, the value of n is computed by the following equation:

Table 3-1 (Continued) Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
B. *Lined or Built-Up Channels*			
1. **Concrete**			
a. Trowel finish	0.011	0.013	0.015
b. Float Finish	0.013	0.015	0.016
c. Finished, with gravel bottom	0.015	0.017	0.020
d. Unfinished	0.014	0.017	0.020
e. Gunite, good section	0.016	0.019	0.023
f. Gunite, wavy section	0.018	0.022	0.025
g. On good excavated rock	0.017	0.020	
h. On irregular excavated rock	0.022	0.027	
2. **Concrete bottom float finished with sides of:**			
a. Dressed stone in mortar	0.015	0.017	0.020
b. Random stone in mortar	0.017	0.020	0.024
c. Cement rubble masonry, plastered	0.016	0.020	0.024
d. Cement rubble masonry	0.020	0.025	0.030
e. Dry rubble on riprap	0.020	0.030	0.035
3. **Gravel bottom with sides of:**			
a. Formed concrete	0.017	0.020	0.025
b. Random stone in mortar	0.020	0.023	0.026
c. Dry rubble or riprap	0.023	0.033	0.036
4. **Brick**			
a. Glazed	0.011	0.013	0.015
b. In cement mortar	0.012	0.015	0.018
5. **Metal**			
a. Smooth steel surfaces	0.011	0.012	0.014
b. Corrugated metal	0.021	0.025	0.030
6. **Asphalt**			
a. Smooth	0.013	0.013	
b. Rough	0.016	0.016	
7. **Vegetal lining**	0.030		0.500

EXISTING CONDITION

HEC-RAS Plan: plan 12 River: ADAMS_BARRANCA Reach: 1 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	5253.2	PF 1	4810.00	243.87	254.29	253.05	256.03	0.009797	10.58	454.60	74.39	0.75
1	5253.1		Lat Struct									
1	5253		Lat Struct									
1	5063.9	PF 1	4810.00	240.99	250.35	250.35	253.42	0.018061	14.06	342.04	55.81	1.00
1	4738.5	PF 1	4092.45	237.94	251.00	246.17	251.19	0.000997	3.59	1255.40	836.86	0.25
1	4645.2	PF 1	3592.26	237.62	250.98	246.84	251.08	0.000710	2.77	1441.87	1619.65	0.21
1	4585		Culvert									
1	4539.6	PF 1	3592.26	234.97	244.37	242.79	245.98	0.009800	10.16	353.57	59.96	0.74
1	4539.5		Lat Struct									
1	4539		Lat Struct									
1	4239.6	PF 1	2835.84	231.97	240.66	240.51	242.25	0.017405	10.12	281.76	409.66	0.93
1	4239.5		Lat Struct									
1	4239		Lat Struct									
1	3821.2	PF 1	1285.26	228.71	235.15	233.67	235.83	0.010969	6.62	199.09	2236.88	0.71
1	3821.1		Lat Struct									
1	3821		Lat Struct									
1	3689.1	PF 1	1197.39	226.71	234.16	232.14	234.71	0.006221	5.95	201.17	2610.27	0.55
1	3689		Lat Struct									
1	3688.9		Lat Struct									
1	3525.2	PF 1	1197.37	225.00	232.40	231.05	233.43	0.009066	8.13	147.21	2282.76	0.66
1	3525.1		Lat Struct									
1	3525		Lat Struct									
1	3404.4	PF 1	1197.37	224.98	231.64	229.49	232.42	0.006649	7.06	169.69	2399.74	0.55
1	3393		Bridge									
1	3379.6	PF 1	1197.37	224.00	231.34	229.31	232.23	0.006835	7.58	157.95	2274.41	0.56
1	3379.5		Lat Struct									
1	3379		Lat Struct									
1	3128.6	PF 1	1197.37	220.85	228.49	227.34	229.90	0.012650	9.52	125.80	2672.85	0.74
1	3128.5		Lat Struct									
1	3128		Lat Struct									
1	2839.3	PF 1	1197.37	217.21	225.50	223.85	226.63	0.009703	8.53	140.33	1489.29	0.66
1	2839.2		Lat Struct									
1	2839		Lat Struct									
1	2708.7	PF 1	1197.37	217.90	224.82	222.33	225.48	0.006333	6.49	184.36	1119.05	0.54
1	2585		Culvert									
1	2501.9	PF 1	1197.37	215.50	223.55	221.48	224.44	0.006943	7.54	158.76	2820.96	0.57
1	2501.5		Lat Struct									
1	2501		Lat Struct									
1	2488.0	PF 1	1197.37	217.00	223.38	222.01	224.30	0.008501	7.70	155.40	2982.54	0.64

EXISTING CONDITION.

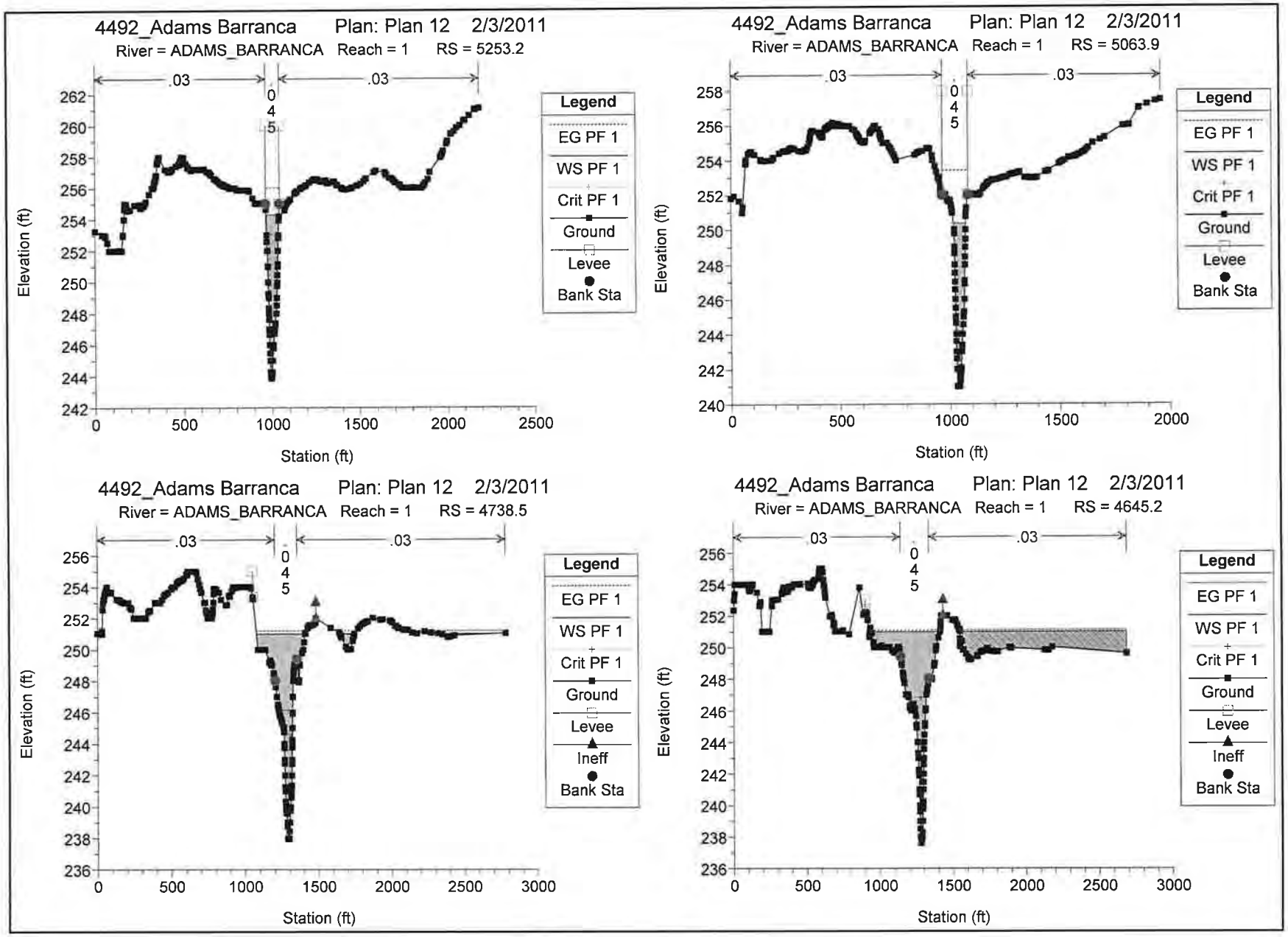
HEC-RAS Plan: plan 12 River: ADAMS_BARRANCA Reach: 1 Profile: PF 1 (Continued)

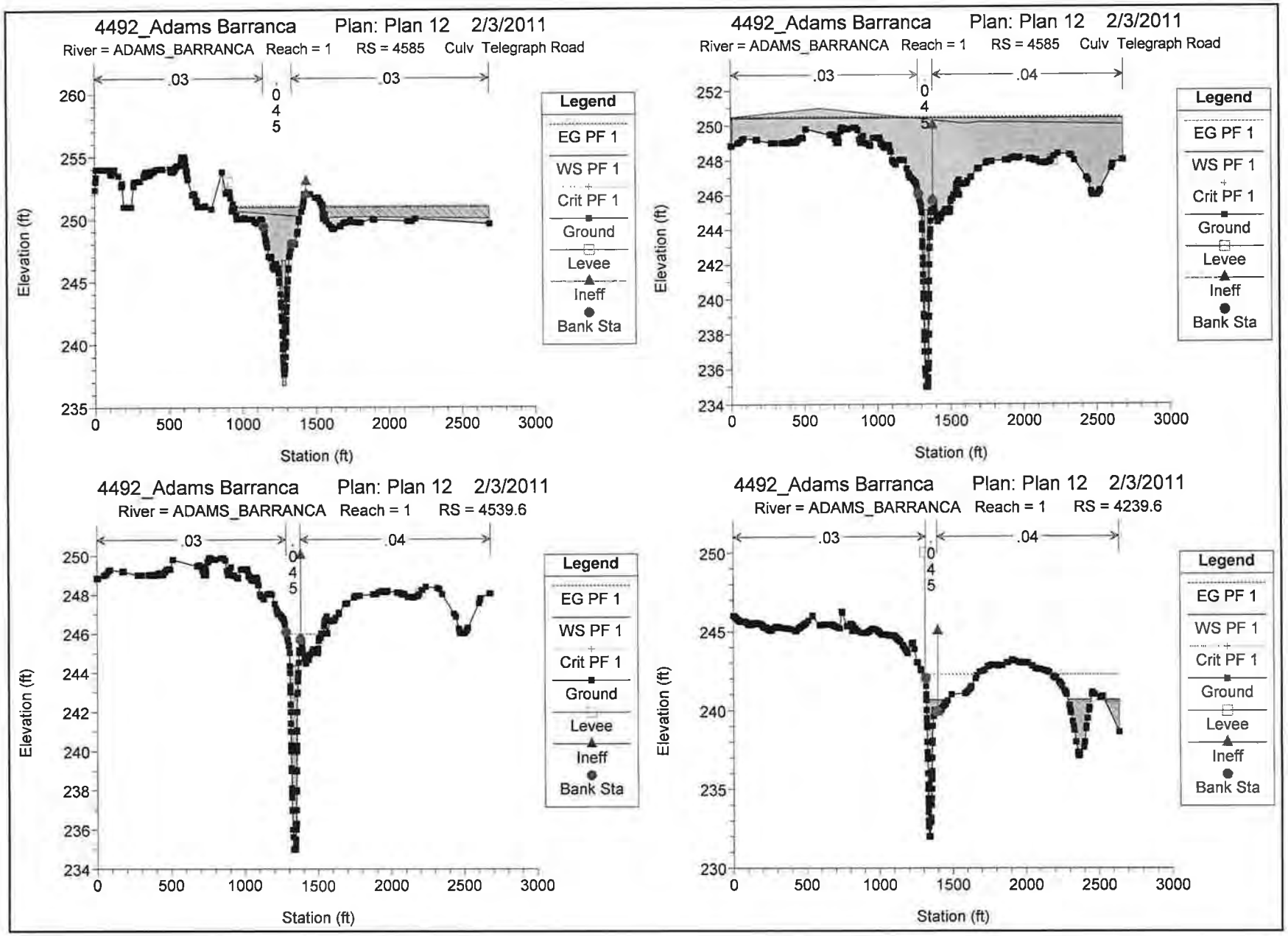
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	2487.9		Lat Struct									
1	2487		Lat Struct									
1	2424.2	PF 1	1197.37	215.08	222.91	221.07	223.77	0.007048	7.47	160.22	2653.10	0.58
1	2424.1		Lat Struct									
1	2424		Lat Struct									
1	2096.2	PF 1	1197.37	212.00	219.49	218.29	220.79	0.011599	9.14	130.96	2643.93	0.72
1	2096.1		Lat Struct									
1	2096		Lat Struct									
1	1972.4	PF 1	1195.29	210.93	217.98	216.62	219.21	0.013690	8.91	134.30	2697.33	0.75
1	1972.3		Lat Struct									
1	1972		Lat Struct									
1	1818.2	PF 1	1195.29	208.00	214.25	214.25	216.27	0.026364	11.42	104.70	2214.83	1.00
1	1818.1		Lat Struct									
1	1818		Lat Struct									
1	204.7	PF 1	1195.29	199.82	205.75	203.08	205.83	0.001480	2.36	547.64	297.71	0.26

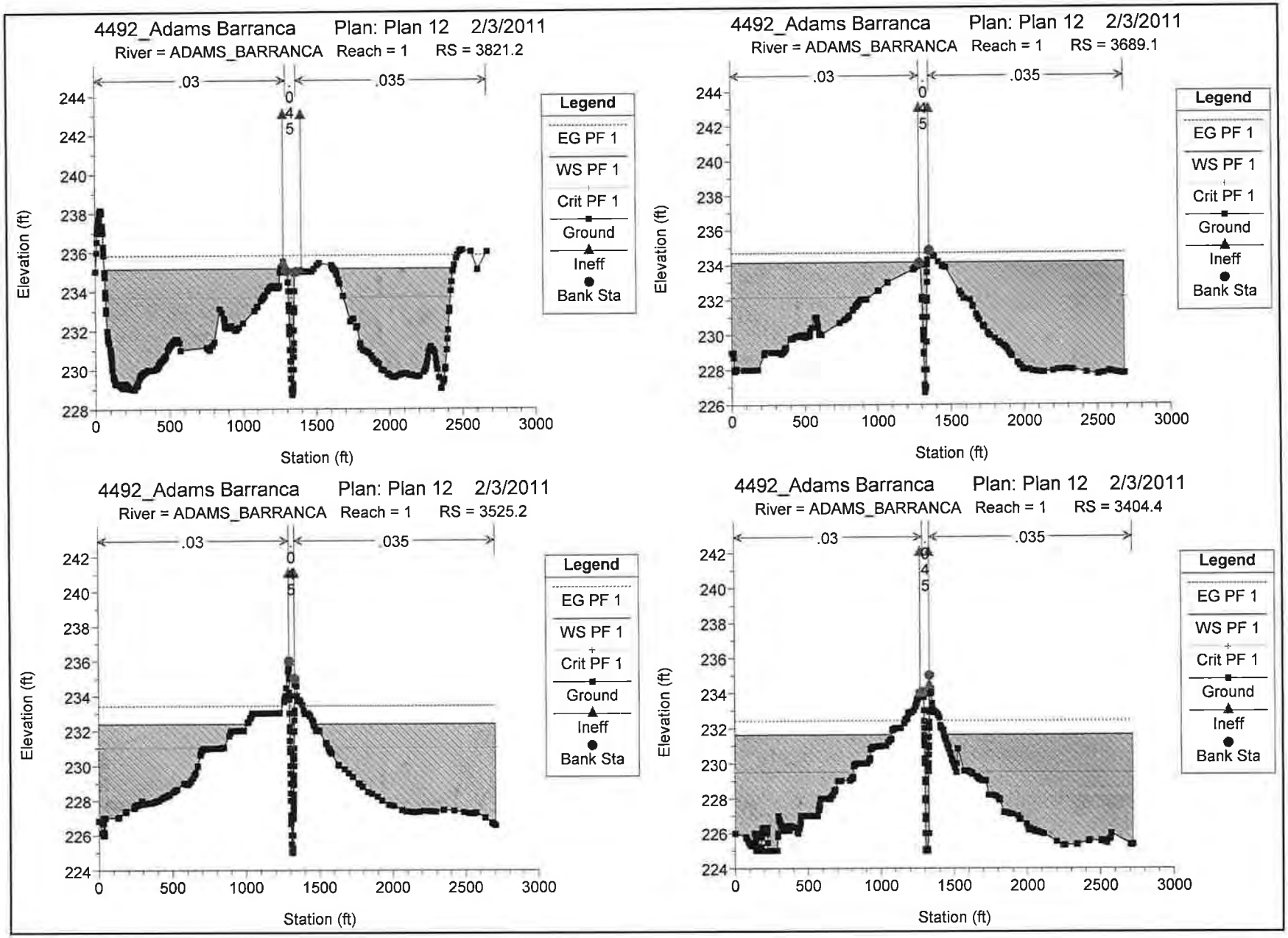
EXISTING CONDITION LAT STRUCTURE

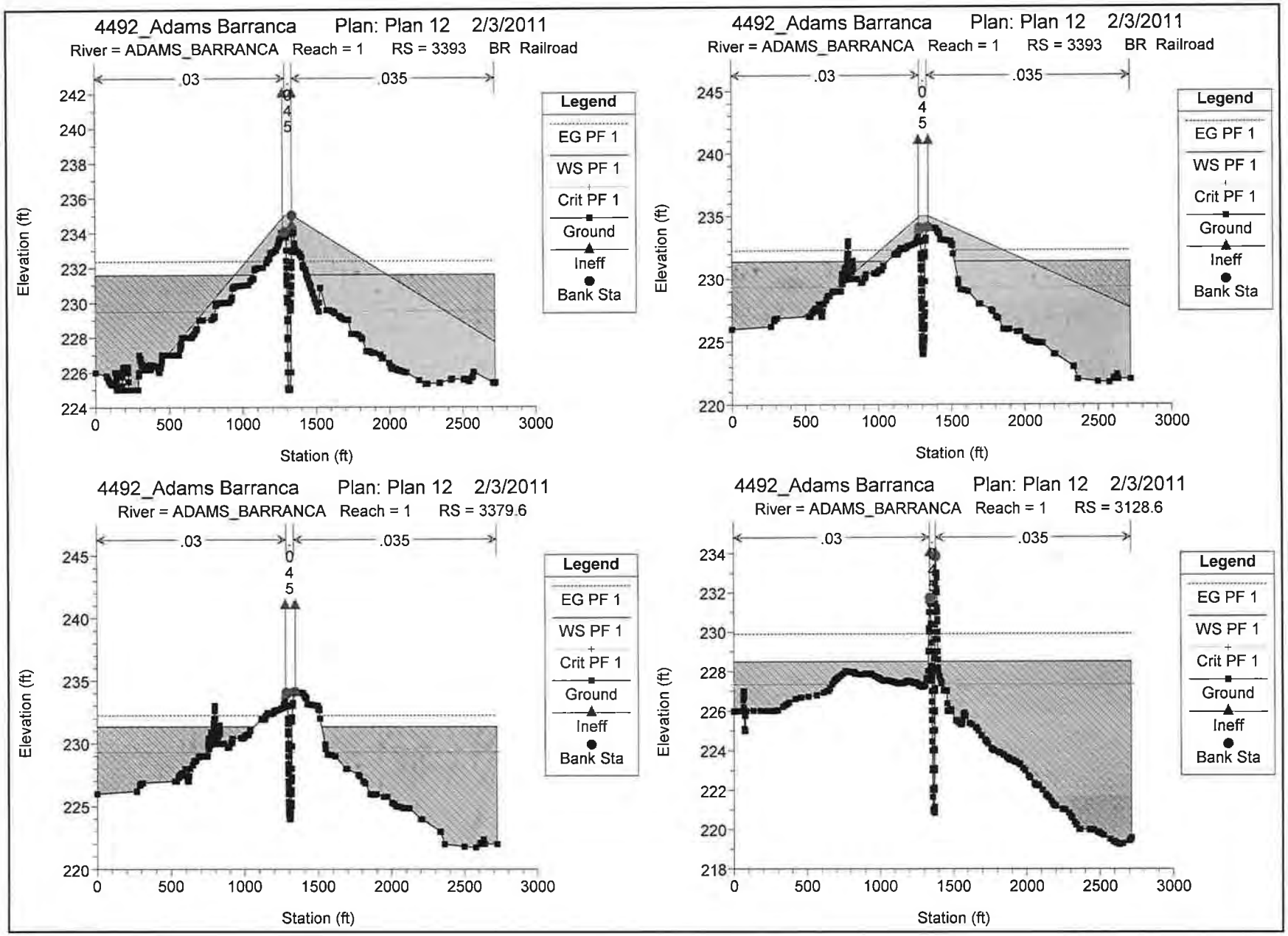
HEC-RAS Plan: plan 12 River: ADAMS_BARRANCA Reach: 1 Profile: PF 1

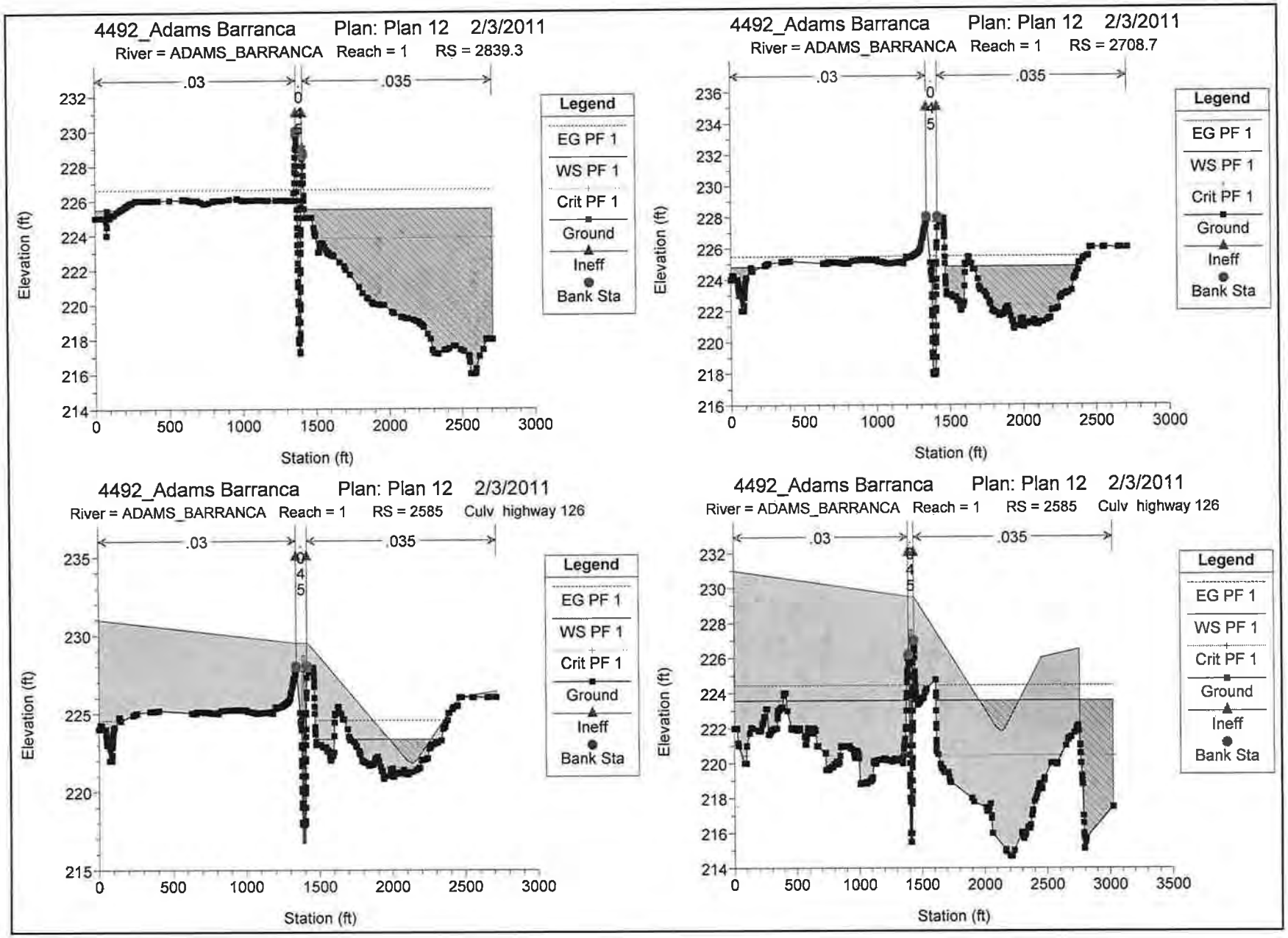
Reach	River Sta	Profile	Q US	Q Leaving Total	Q DS	Q Weir	Q Gates	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	E.G. US.	W.S. US.	E.G. DS	W.S. DS
			(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1	5253.1	PF 1	4810.00	1217.74	3592.26	1217.74		278.91	2.84	1.58	248.16	256.03	254.29	251.08	250.98
1	5253	PF 1	4810.00	0.00	3592.26	0.00					252.00	256.03	254.29	251.08	250.98
1	4539.5	PF 1	3592.26	0.00	2835.84	0.00					242.00	245.97	244.37	242.25	240.66
1	4539	PF 1	3592.26	756.65	2835.84	756.65		257.43	1.92	1.26	240.00	245.97	244.37	242.25	240.66
1	4239.5	PF 1	2835.84	0.00	1285.26	0.00					235.51	242.25	240.66	235.83	235.15
1	4239	PF 1	2835.84	1551.22	1285.26	1551.22		401.03	2.85	1.46	235.10	242.24	240.66	235.83	235.15
1	3821.1	PF 1	1285.26	87.85	1197.39	87.85		122.46	0.90	0.47	234.00	235.83	235.15	234.71	234.16
1	3821	PF 1	1285.26	0.00	1197.39	0.00					234.84	235.83	235.15	234.71	234.16
1	3689	PF 1	1197.39	0.00	1197.37	0.00					234.84	234.70	234.15	233.43	232.40
1	3688.9	PF 1	1197.39	0.02	1197.37	0.02		0.73	0.10	0.05	234.00	234.70	234.15	233.43	232.40
1	3525.1	PF 1	1197.37	0.00	1197.37	0.00					234.00	233.43	232.40	232.42	231.64
1	3525	PF 1	1197.37	0.00	1197.37	0.00					234.00	233.43	232.40	232.42	231.64
1	3379.5	PF 1	1197.37	0.00	1197.37	0.00					231.80	232.23	231.34	229.90	228.49
1	3379	PF 1	1197.37	0.00	1197.37	0.00					233.20	232.23	231.34	229.90	228.49
1	3128.5	PF 1	1197.37	0.00	1197.37	0.00					227.00	229.90	228.49	226.63	225.50
1	3128	PF 1	1197.37	0.00	1197.37	0.00					228.00	229.89	228.49	226.63	225.50
1	2839.2	PF 1	1197.37	0.00	1197.37	0.00					228.00	226.63	225.50	225.48	224.82
1	2839	PF 1	1197.37	0.00	1197.37	0.00					227.50	226.63	225.50	225.48	224.82
1	2501.5	PF 1	1197.37	0.00	1197.37	0.00					225.93	224.43	223.55	224.30	223.38
1	2501	PF 1	1197.37	0.00	1197.37	0.00					226.17	224.43	223.54	224.30	223.38
1	2487.9	PF 1	1197.37	0.00	1197.37	0.00					225.93	224.30	223.37	223.77	222.91
1	2487	PF 1	1197.37	0.00	1197.37	0.00					226.17	224.29	223.37	223.77	222.91
1	2424.1	PF 1	1197.37	0.00	1197.37	0.00					223.04	223.77	222.91	220.79	219.49
1	2424	PF 1	1197.37	0.00	1197.37	0.00					223.04	223.77	222.90	220.79	219.49
1	2096.1	PF 1	1197.37	2.05	1195.29	2.05		11.56	0.37	0.18	217.61	220.79	219.49	219.21	217.98
1	2096	PF 1	1197.37	0.01	1195.29	0.01		1.59	0.05	0.02	217.93	220.78	219.49	219.21	217.98
1	1972.3	PF 1	1195.29	4.44	1195.29	4.44		25.31	0.36	0.18	216.10	219.21	217.97	216.27	214.25
1	1972	PF 1	1195.29	0.01	1195.29	0.01		1.48	0.04	0.02	217.93	219.20	217.97	216.27	214.25
1	1818.1	PF 1	1195.29	0.00	1195.29	0.00					210.96	216.27	214.25	205.83	205.75
1	1818	PF 1	1195.29	0.00	1195.29	0.00					209.42	216.27	214.25	205.83	205.75

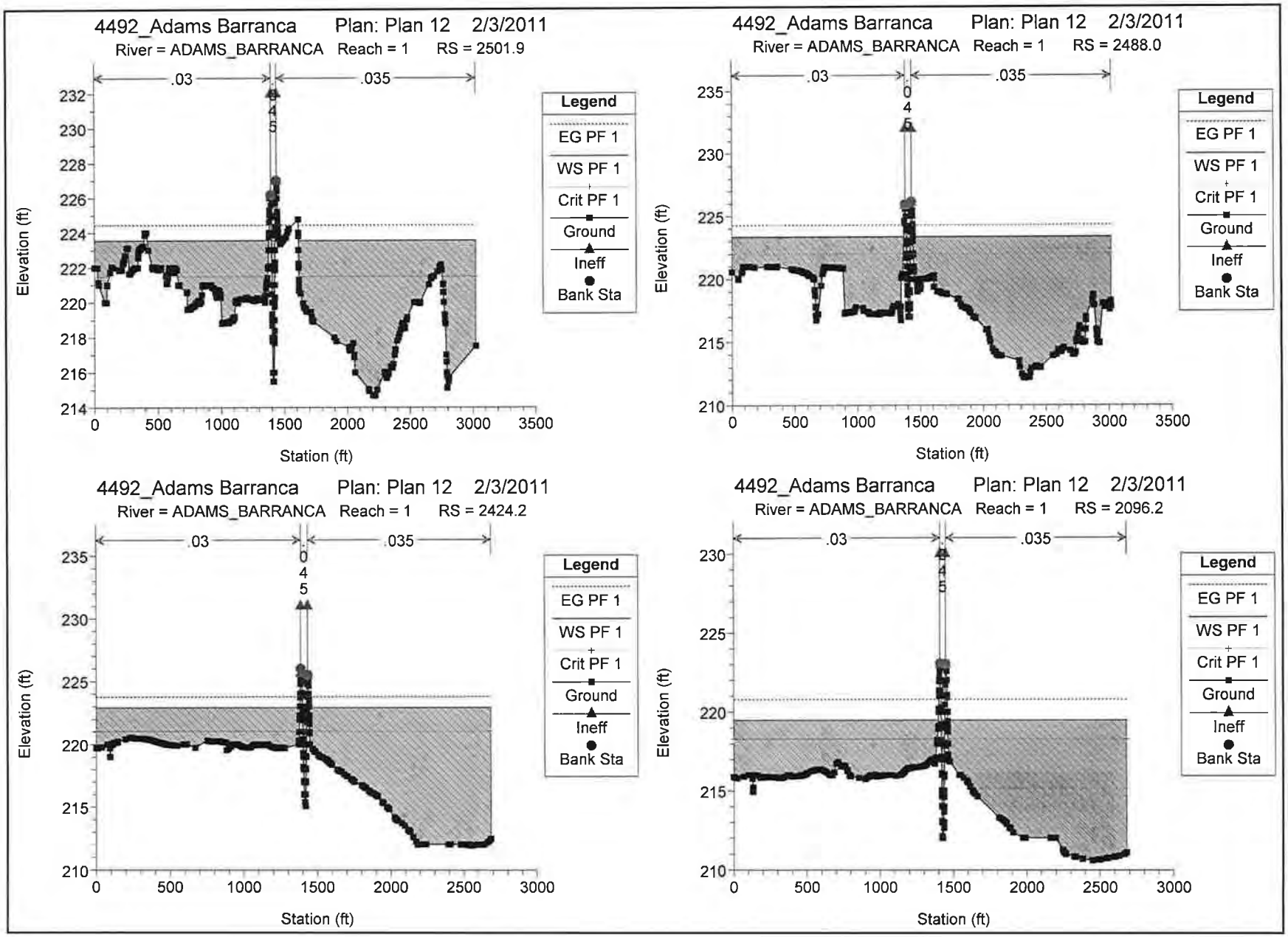

4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 5253.2
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 5063.9
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4738.5
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4645.2
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta

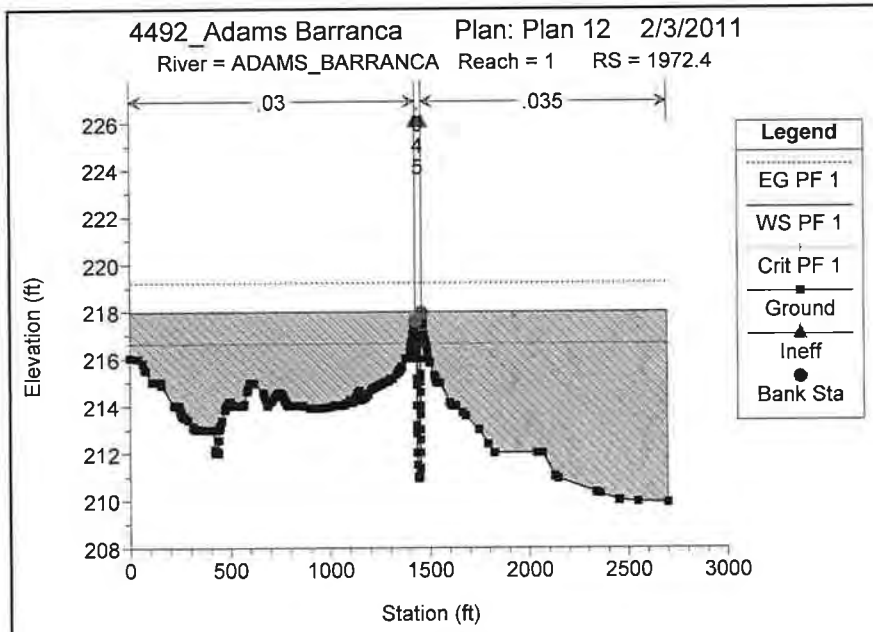

4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4585 Culv Telegraph Road
.03
.045
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4585 Culv Telegraph Road
.03
.045
.04
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4539.6
.03
.045
.04
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4239.6
.03
.045
.04
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

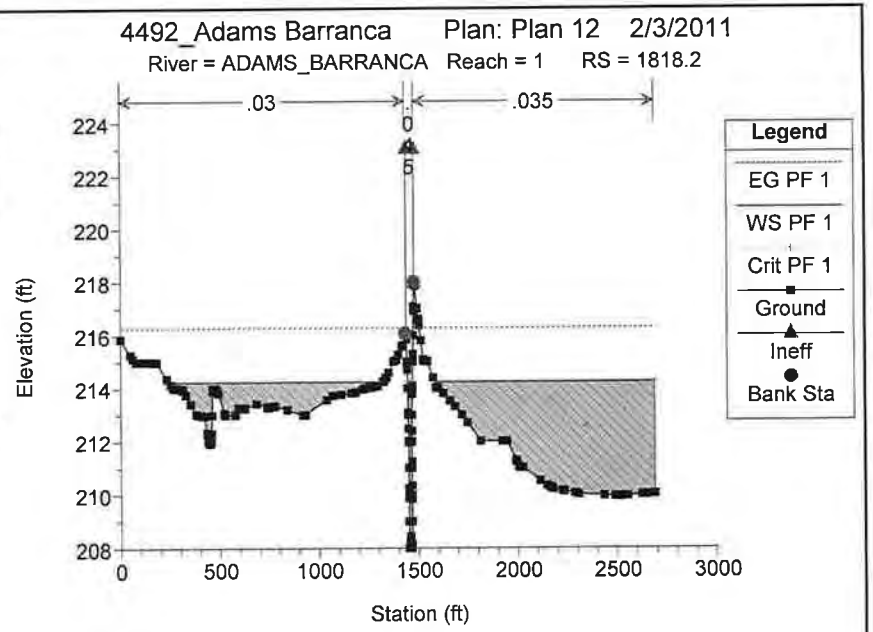

4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3821.2
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3689.1
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3525.2
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3404.4
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

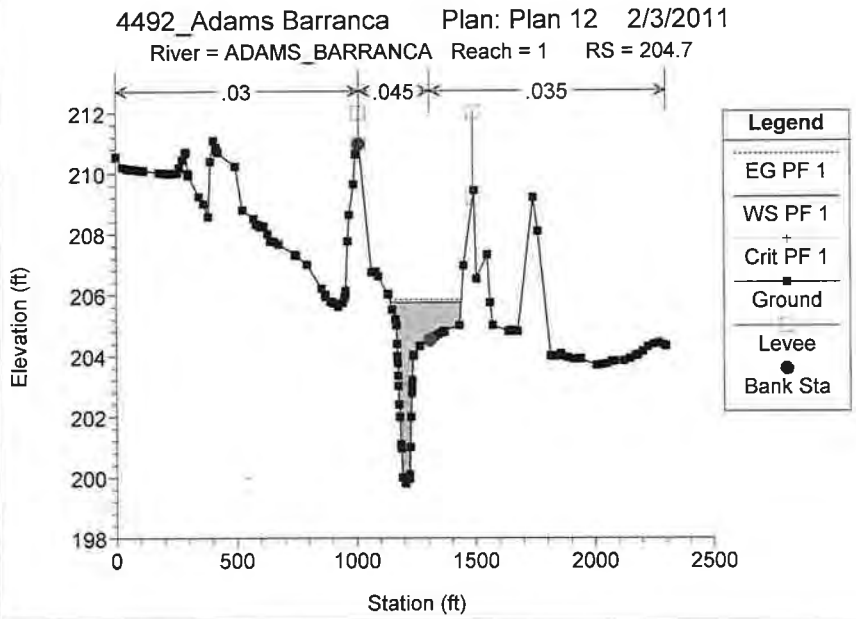

4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3393 BR Railroad
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3393 BR Railroad
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3379.6
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3128.6
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2839.3
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2708.7
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2585 Culv highway 126
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2585 Culv highway 126
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta


4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2501.9
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2488.0
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2424.2
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 2096.2
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta


4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 1972.4
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta

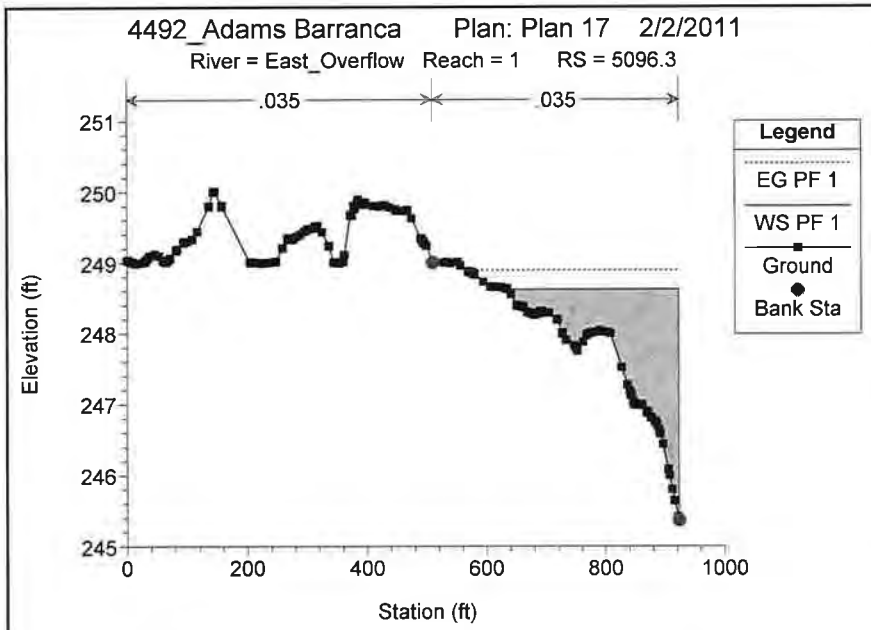

4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 1818.2
.03
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta

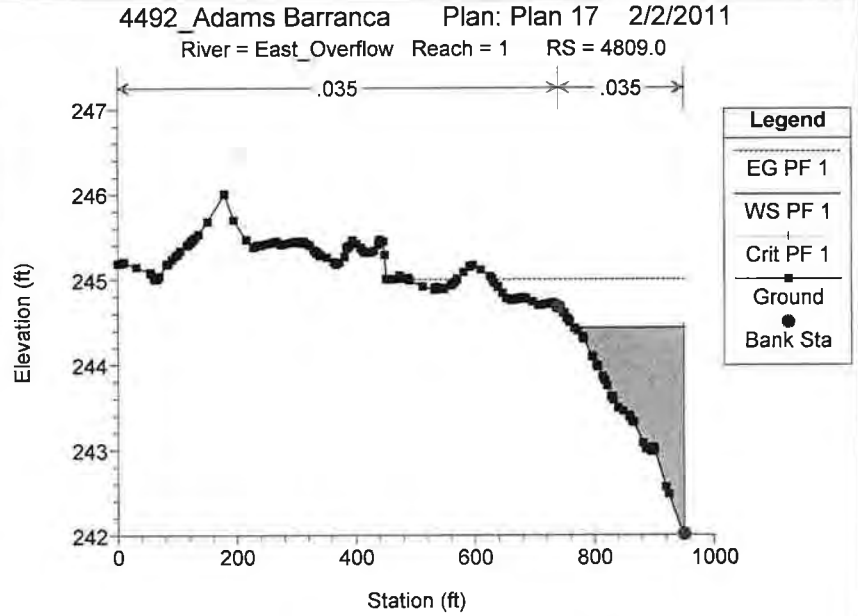

4492_Adams Barranca Plan: Plan 12 2/3/2011
River = ADAMS_BARRANCA Reach = 1 RS = 204.7
.03
.045
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta

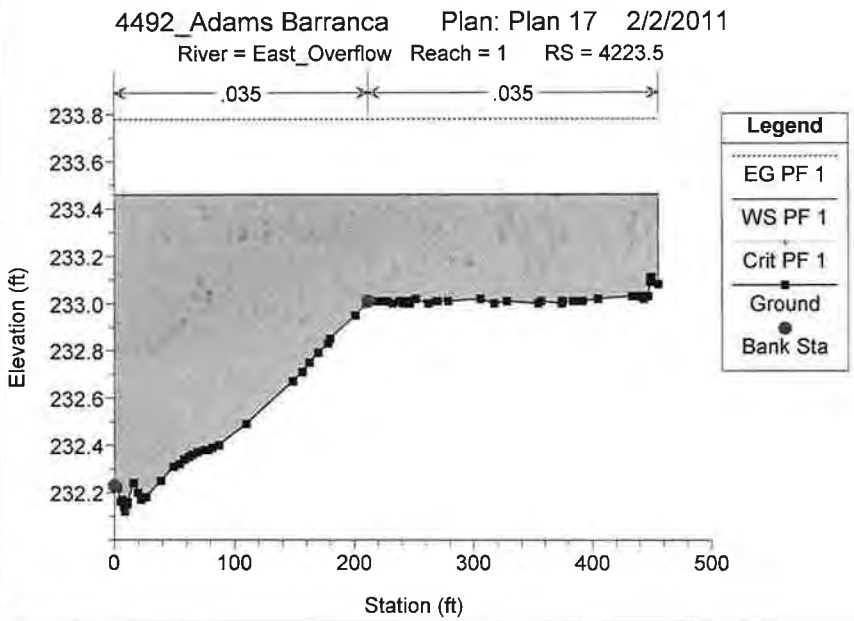
EXISTING RIGHT OVERBANK

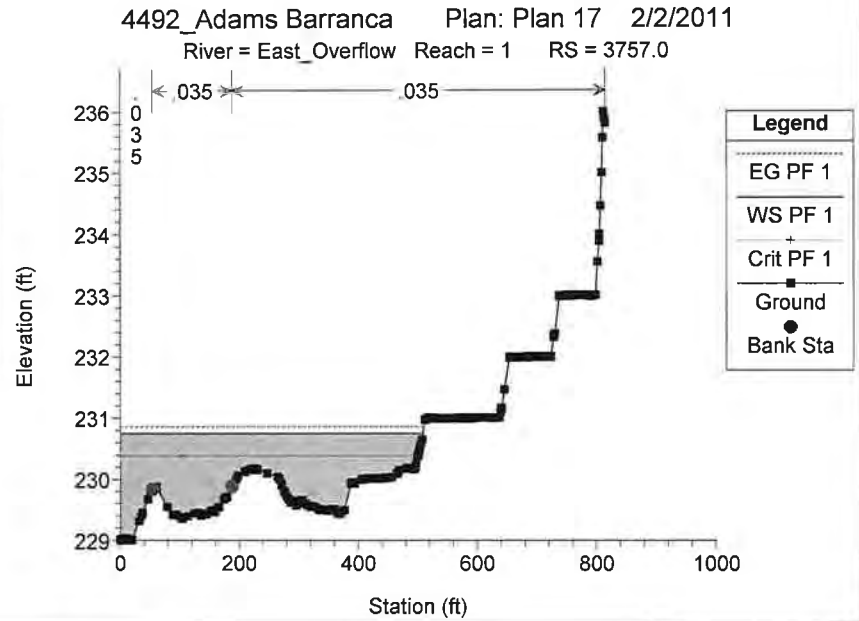
HEC-RAS Plan: plan 17 River: East_Overflow Reach: 1 Profile: PF 1

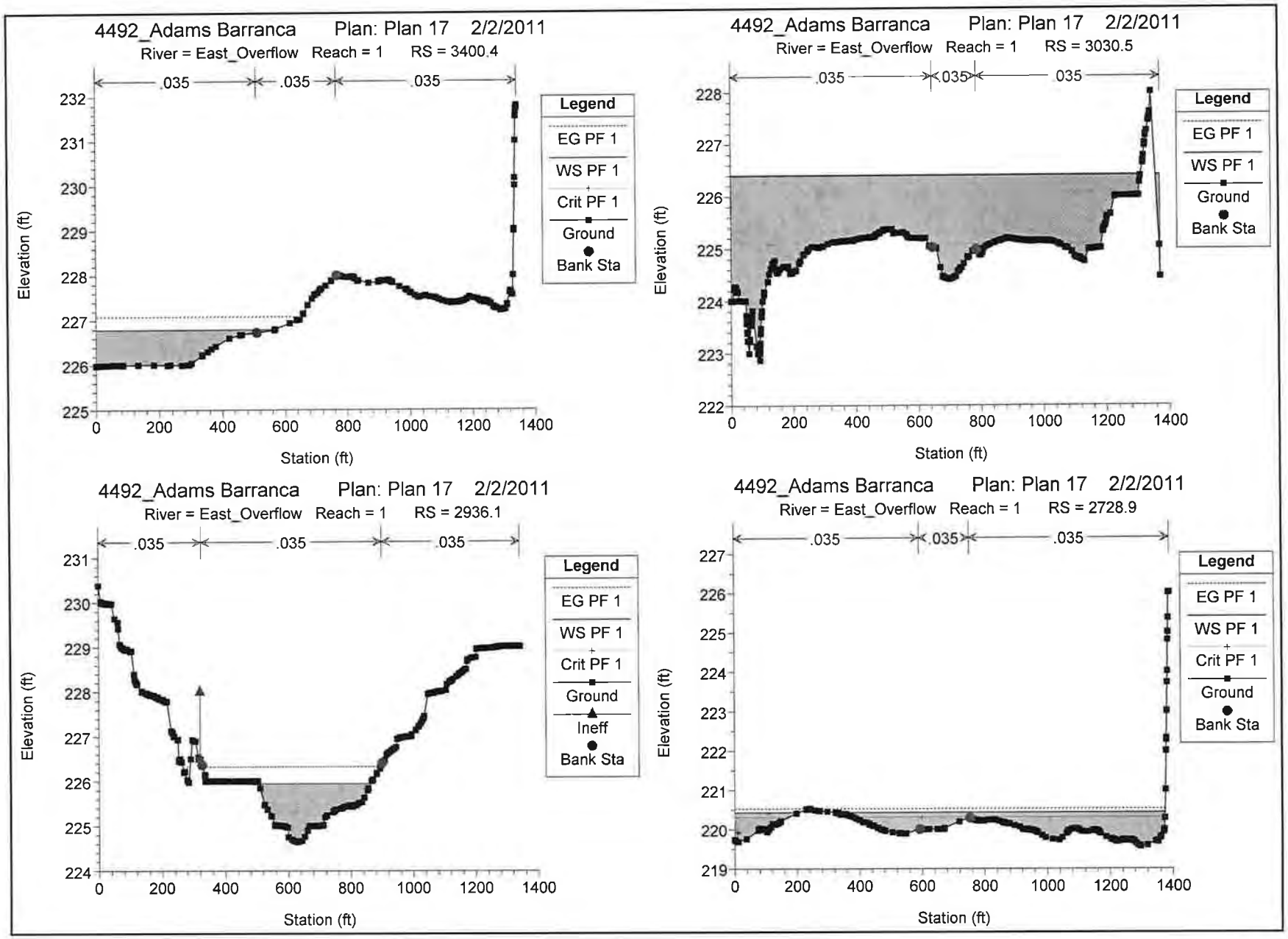
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	5096.3	PF 1	1218.00	245.36	248.62		248.90	0.010011	4.23	288.14	286.96	0.74
1	4809.0	PF 1	1218.00	242.01	244.44	244.44	245.00	0.018036	6.02	202.20	183.75	1.01
1	4223.5	PF 1	1306.00	232.12	233.46	233.46	233.78	0.014706	4.92	307.66	455.33	0.89
1	3757.0	PF 1	1306.00	229.35	230.75	230.38	230.86	0.003380	2.81	514.02	509.05	0.45
1	3400.4	PF 1	1306.00	226.72	226.79	226.79	227.08	0.020711	0.72	304.91	567.31	0.63
1	3030.5	PF 1	1306.00	224.41	226.40		226.41	0.000164	0.78	1876.29	1323.20	0.10
1	2936.1	PF 1	1306.00	224.64	225.95	225.95	226.32	0.019511	4.89	266.95	356.20	1.00
1	2728.9	PF 1	1306.00	220.00	220.44	220.31	220.53	0.009215	2.01	547.14	1257.03	0.60
1	2302.1	PF 1	1306.00	215.99	216.46		216.56	0.009713	1.97	524.24	1147.68	0.61
1	1067.8	PF 1	1306.00	210.41	211.50	211.09	211.54	0.002092	1.92	827.03	1155.05	0.34
1	365.2	PF 1	1306.00	206.98	207.98	207.98	208.31	0.021093	4.64	281.42	430.67	1.01

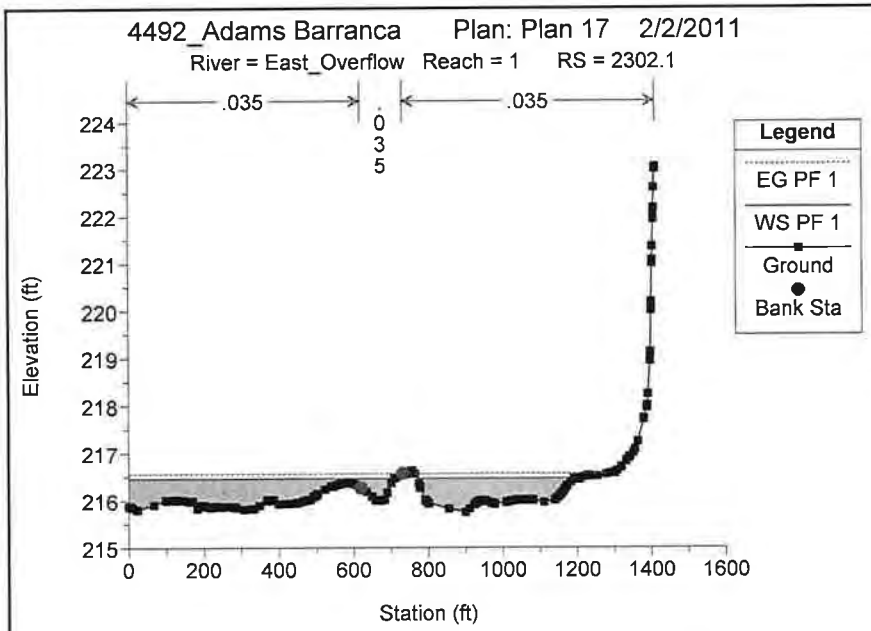

4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 5096.3
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

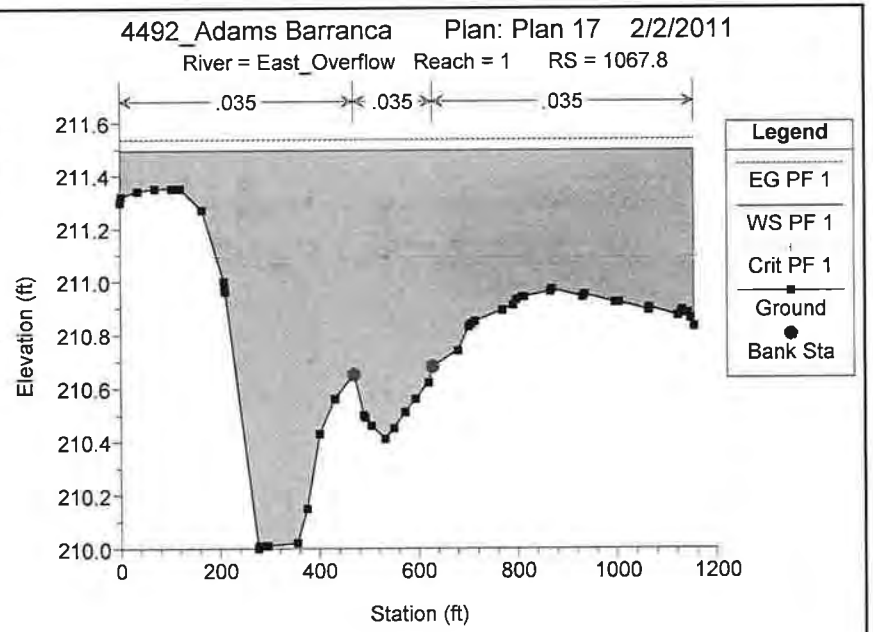

4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 4809.0
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

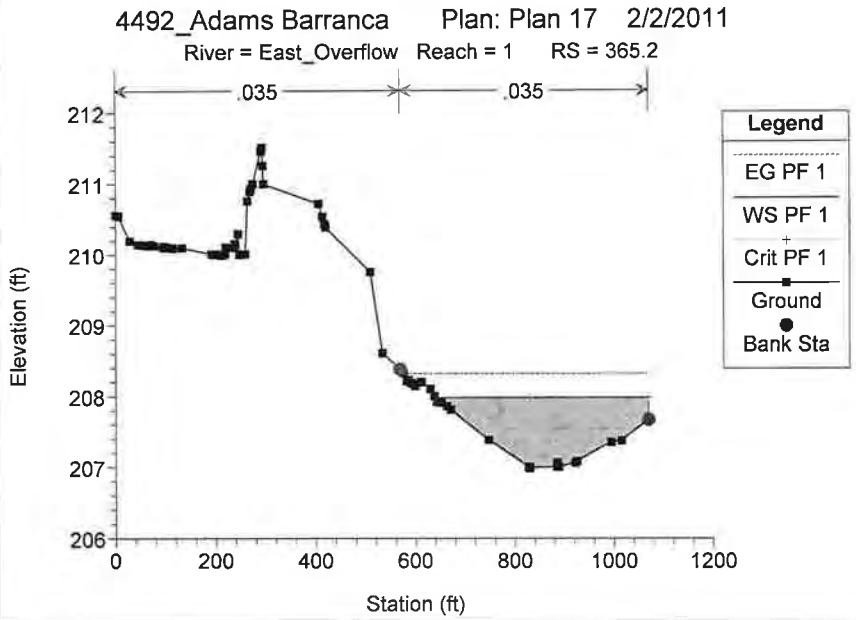

4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 4223.5
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 3757.0
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 3400.4
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 3030.5
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 2936.1
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 2728.9
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 2302.1
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

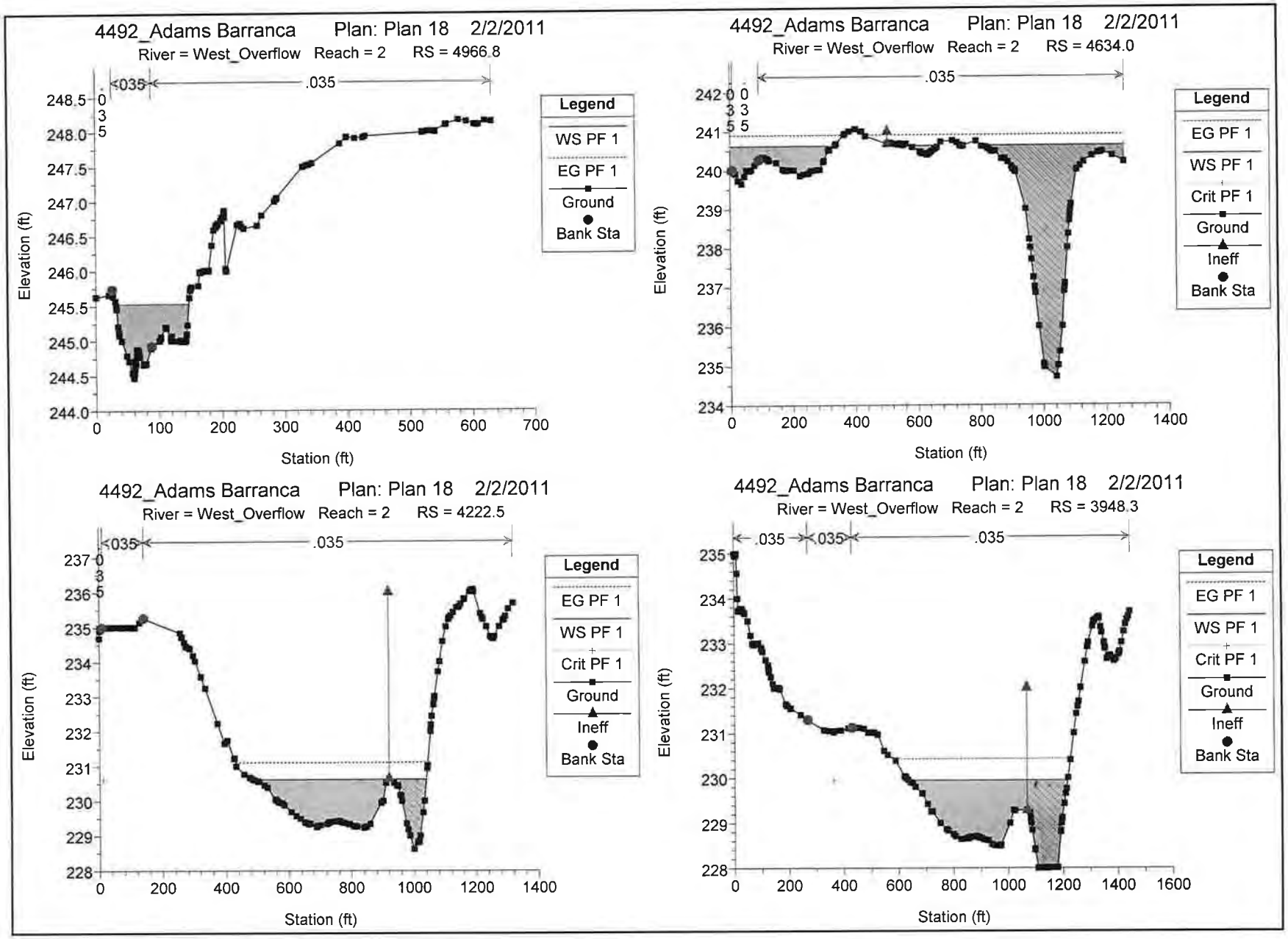

4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 1067.8
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

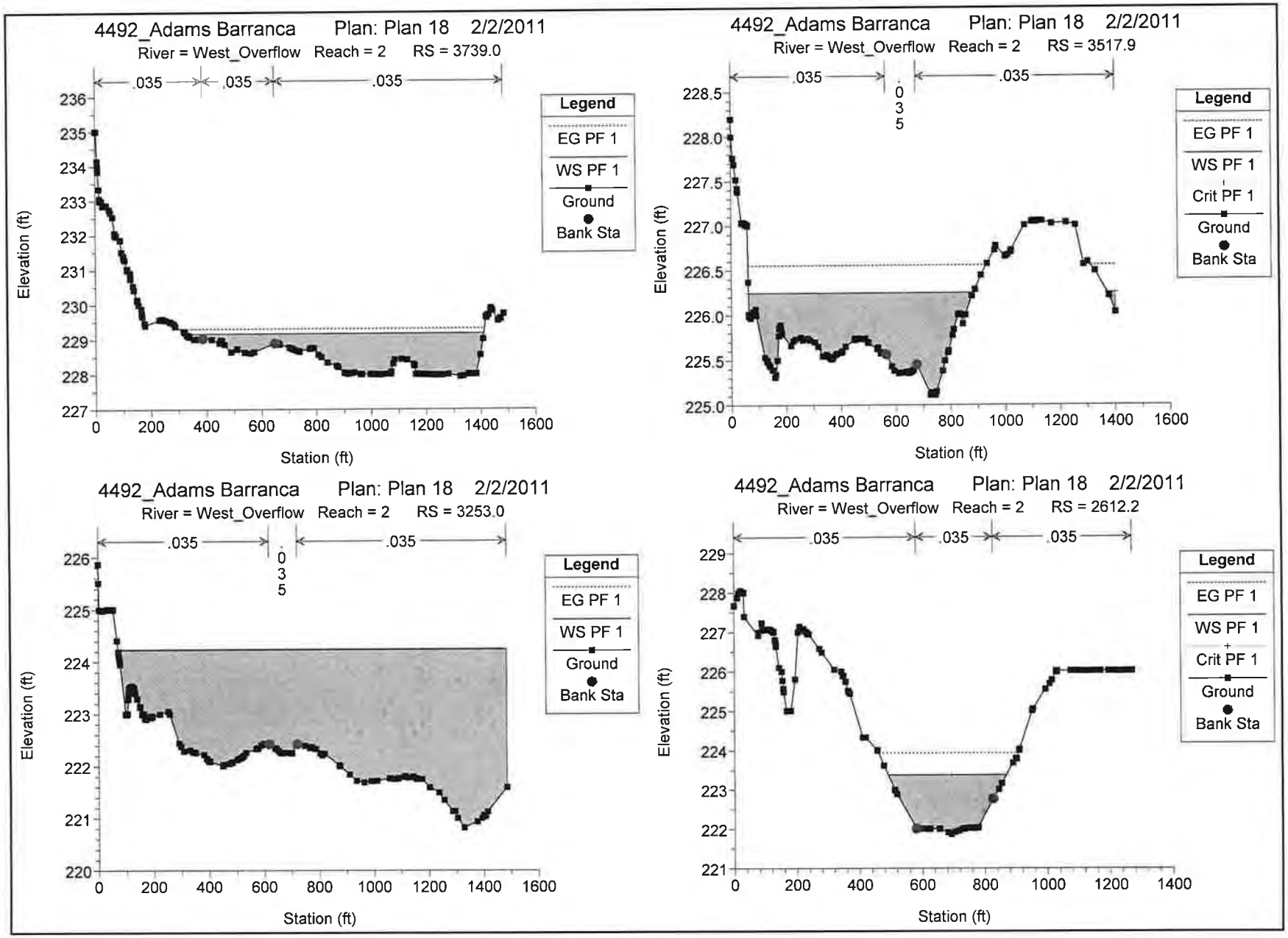

4492_Adams Barranca Plan: Plan 17 2/2/2011
River = East_Overflow Reach = 1 RS = 365.2
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

EXISTING LEFT OVERBANK

HEC-RAS Plan: Plan 18 River: West_Overflow Reach: 2 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
2	4966.8	PF 1	1.00	244.47	245.53		245.53	0.000000	0.02	68.71	115.64	0.00
2	4634.0	PF 1	757.00	239.66	240.63	240.63	240.90	0.021030	4.75	182.48	897.83	1.02
2	4222.5	PF 1	2308.00	234.99	230.63	230.63	231.11	0.018254		414.59	551.36	0.00
2	3948.3	PF 1	2308.00	231.02	229.95	229.95	230.43	0.018292		414.46	581.86	0.00
2	3739.0	PF 1	2308.00	228.61	229.17		229.31	0.005764	1.69	807.60	1086.56	0.48
2	3517.9	PF 1	2308.00	225.35	226.25	226.25	226.56	0.019426	5.31	524.39	850.91	1.01
2	3253.0	PF 1	2308.00	222.25	224.23		224.24	0.000105	0.67	3082.71	1414.32	0.09
2	2612.2	PF 1	2308.00	221.87	223.38	223.38	223.94	0.014818	6.20	402.03	378.91	0.95
2	2471.6	PF 1	2308.00	212.36	213.28	213.28	213.69	0.019266	4.67	448.58	551.97	0.98
2	284.2	PF 1	2308.00	203.69	205.75	204.76	205.78	0.000687	1.75	1613.43	1146.47	0.22


4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 4966.8
.035
Legend
WS PF 1
EG PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 4634.0
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 4222.5
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 3948.3
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 3739.0
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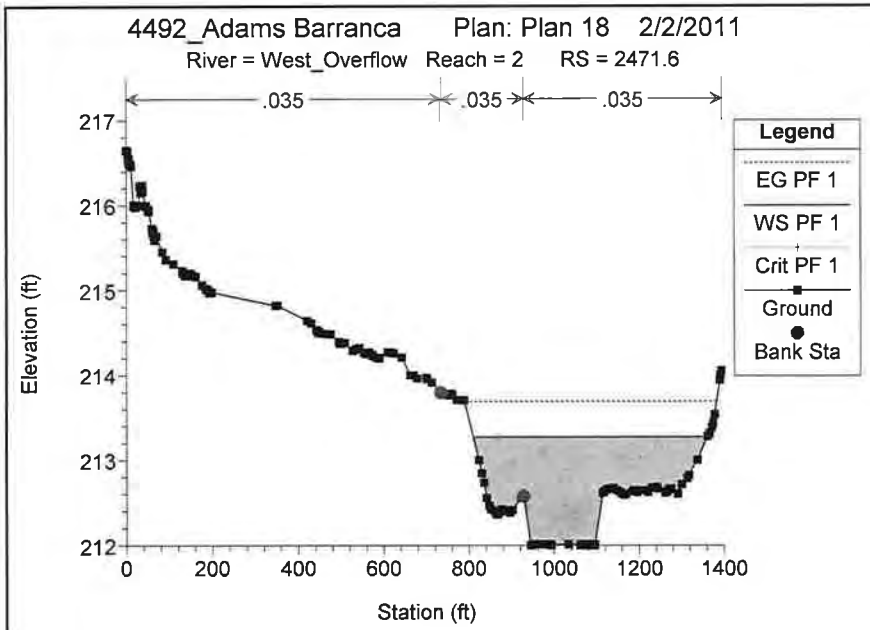
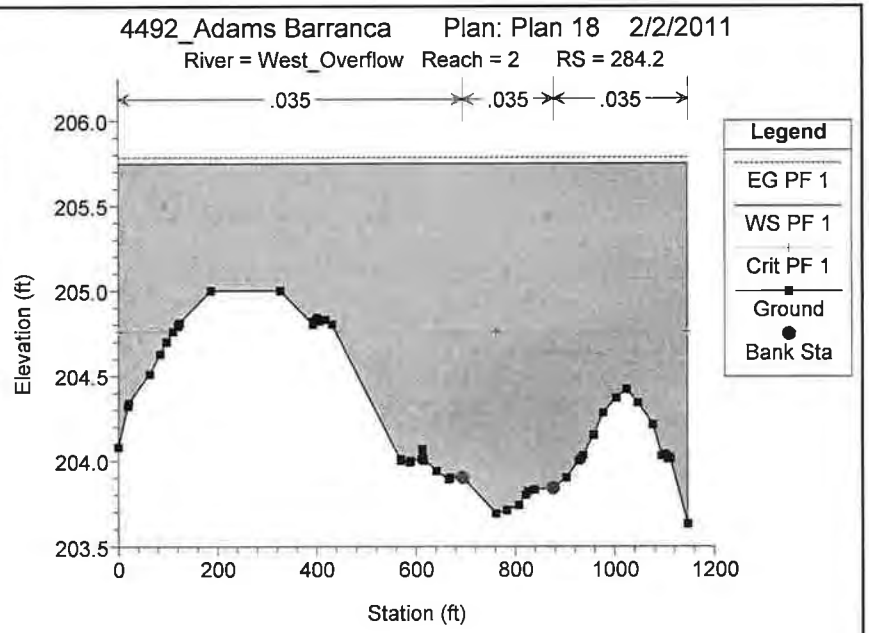
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 3517.9
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 3253.0
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 2612.2
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 2471.6
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
217
216
215
214
213
212
0
200
400
600
800
1000
1200
1400
Station (ft)


4492_Adams Barranca Plan: Plan 18 2/2/2011
River = West_Overflow Reach = 2 RS = 284.2
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
206.0
205.5
205.0
204.5
204.0
203.5
0
200
400
600
800
1000
1200
Station (ft)

PROPOSED GEOMETRY

HEC-RAS Plan: plan 19 Profile: PF 1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
PROPOSED_CHANNEL	2	1250.1	PF 1	300.00	245.75	250.07		250.10	0.000036	1.41	226.96	100.00	0.14
PROPOSED_CHANNEL	2	1050.1	PF 1	300.00	242.19	250.08	244.75	250.09	0.000005	0.77	411.33	100.00	0.06
PROPOSED_CHANNEL	2	927.7	PF 1	1218.00	240.38	247.64	247.64	249.86	0.005503	11.95	102.42	66.80	0.98
PROPOSED_CHANNEL	2	727.6	PF 1	1218.00	237.38	243.91	243.91	245.03	0.006259	8.51	143.15	65.26	1.01
PROPOSED_CHANNEL	2	527.6	PF 1	1218.00	234.38	240.71	240.71	242.08	0.003737	9.45	137.12	77.06	0.84
PROPOSED_CHANNEL	2	327.6	PF 1	1218.00	231.38	236.20	236.20	237.34	0.004058	9.25	152.04	61.57	0.89
PROPOSED_CHANNEL	2	166.5	PF 1	1218.00	226.75	233.44		233.55	0.000225	2.63	463.59	108.05	0.22
ADAMS_BARRANCA	1	5253.2	PF 1	4810.00	243.87	256.33	253.05	257.28	0.004054	7.85	612.82	78.40	0.49
ADAMS_BARRANCA	1	5063.9	PF 1	4810.00	240.99	250.82	250.36	253.46	0.015501	13.04	369.00	60.37	0.93
ADAMS_BARRANCA	1	4738.5	PF 1	4810.00	237.94	251.61	246.73	251.79	0.001154	3.49	1471.11	398.93	0.26
ADAMS_BARRANCA	1	4645.2	PF 1	4810.00	237.62	251.55	247.68	251.68	0.000897	3.01	1725.09	497.33	0.23
ADAMS_BARRANCA	1	4585		Culvert									
ADAMS_BARRANCA	1	4539.6	PF 1	3592.00	234.97	243.91	242.79	245.79	0.011623	10.99	326.85	55.85	0.80
ADAMS_BARRANCA	1	4539		Lat Struct									
ADAMS_BARRANCA	1	4239.6	PF 1	2854.98	231.97	240.94	240.94	242.12	0.011422	9.01	357.67	169.37	0.76
ADAMS_BARRANCA	1	4239		Lat Struct									
ADAMS_BARRANCA	1	3821.2	PF 1	1567.97	228.71	234.25	234.25	236.00	0.020630	10.61	147.73	811.17	1.00
ADAMS_BARRANCA	1	3821		Lat Struct									
ADAMS_BARRANCA	1	3689.1	PF 1	1567.97	226.73	233.25	230.83	233.45	0.000644	3.53	443.62	1319.53	0.31
ADAMS_BARRANCA	1	3689		Lat Struct									
ADAMS_BARRANCA	1	3525.2	PF 1	1567.97	225.02	233.28	229.01	233.36	0.000179	2.28	688.86	2160.37	0.17
ADAMS_BARRANCA	2	3689.1	PF 1	2785.97	226.73	232.08	231.79	233.25	0.005652	8.70	320.12	1184.63	0.87
ADAMS_BARRANCA	2	3689		Lat Struct									
ADAMS_BARRANCA	2	3688.9		Lat Struct									
ADAMS_BARRANCA	2	3525.2	PF 1	2785.97	225.02	232.32	229.90	232.69	0.001001	4.86	573.34	1999.40	0.39
ADAMS_BARRANCA	2	3525		Lat Struct									
ADAMS_BARRANCA	2	3404.4	PF 1	2785.97	224.78	231.88	229.13	232.52	0.001323	6.41	434.89	69.10	0.45
ADAMS_BARRANCA	2	3393		Mult Open									
ADAMS_BARRANCA	2	3379.6	PF 1	2785.97	224.55	228.54	228.54	230.37	0.007397	10.87	256.19	1768.66	1.00
ADAMS_BARRANCA	2	3379.5		Lat Struct									
ADAMS_BARRANCA	2	3379		Lat Struct									
ADAMS_BARRANCA	2	3128.6	PF 1	2785.97	221.40	228.20	225.85	228.88	0.001572	6.62	420.69	1527.16	0.49
ADAMS_BARRANCA	2	3128		Lat Struct									
ADAMS_BARRANCA	2	2839.3	PF 1	2782.37	218.20	228.35	222.62	228.57	0.000314	3.79	756.99	2103.82	0.23
ADAMS_BARRANCA	2	2839.2		Lat Struct									
ADAMS_BARRANCA	2	2839		Lat Struct									
ADAMS_BARRANCA	2	2756	PF 1	2047.13	216.68	228.50		228.50	0.000001	0.26	9525.21	1747.71	0.02
ADAMS_BARRANCA	2	2755.9		Lat Struct									
ADAMS_BARRANCA	2	2755		Lat Struct									
ADAMS_BARRANCA	2	2708.7	PF 1	1819.44	216.58	227.42	224.61	228.41	0.002328	7.96	228.53	2612.15	0.56
ADAMS_BARRANCA	2	2585		Culvert									
ADAMS_BARRANCA	2	2501.9	PF 1	1819.44	215.50	225.23	223.00	226.39	0.007486	8.64	210.61	33.08	0.60
ADAMS_BARRANCA	2	2501.5		Lat Struct									
ADAMS_BARRANCA	2	2501		Lat Struct									
ADAMS_BARRANCA	2	2488.0	PF 1	1819.44	217.00	225.23	223.29	226.24	0.007236	8.08	225.19	41.20	0.61

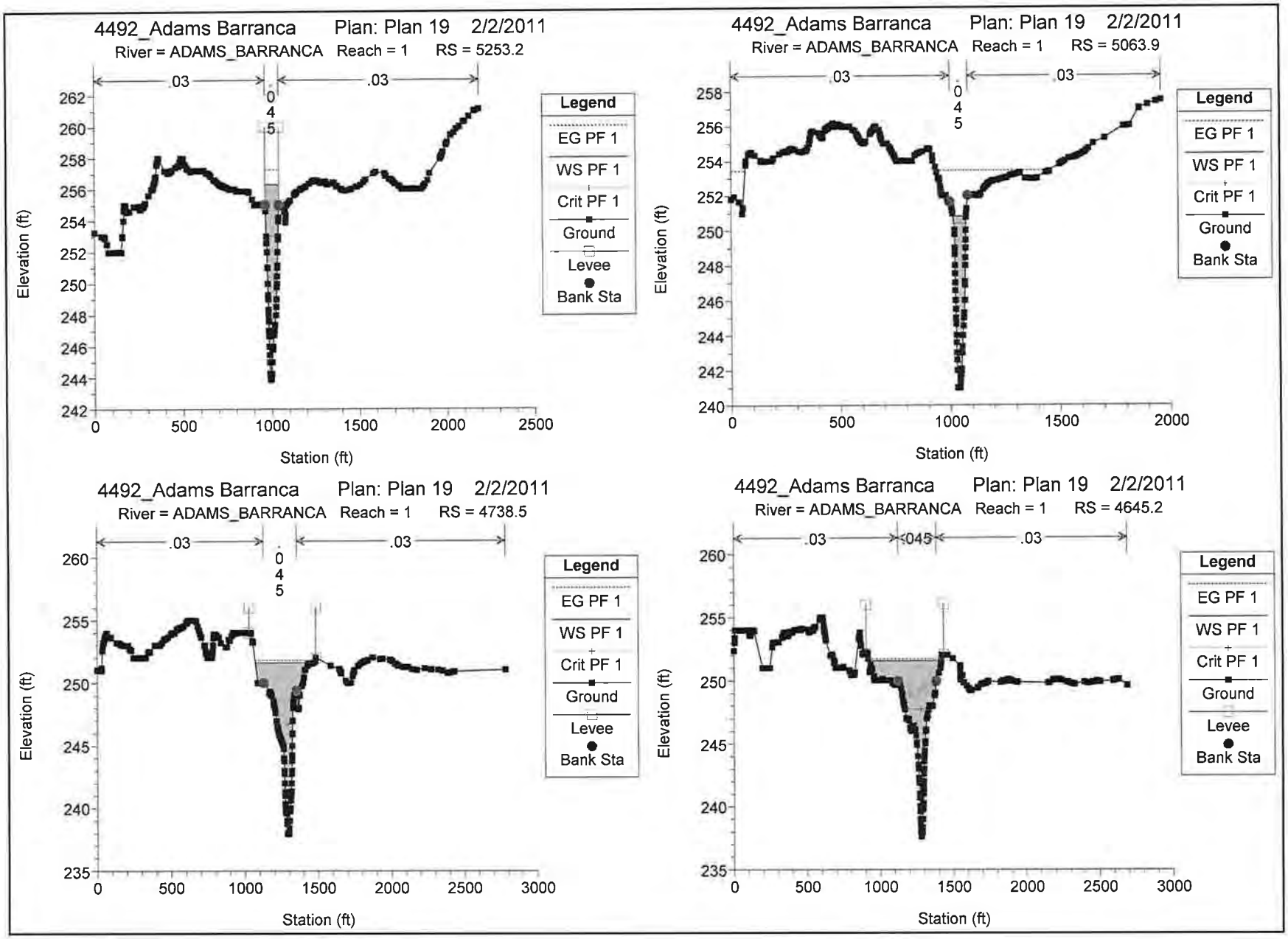
HEC-RAS Plan: plan 19 Profile: PF 1 (Continued)

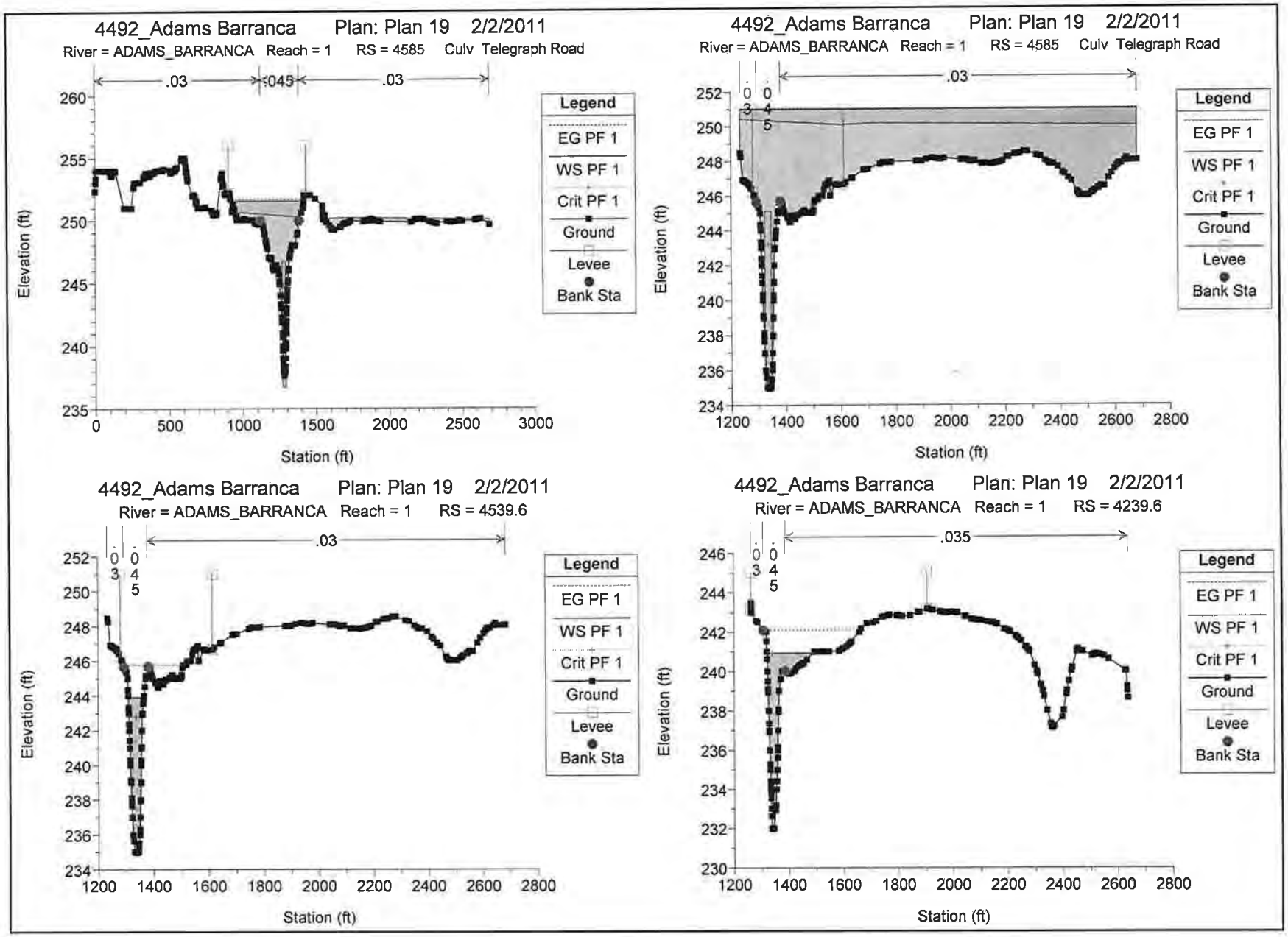
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
ADAMS_BARRANCA	2	2487.1		Lat Struct									
ADAMS_BARRANCA	2	2487		Lat Struct									
ADAMS_BARRANCA	2	2424.2	PF 1	1819.44	215.08	224.74	222.45	225.80	0.006661	8.24	220.89	34.84	0.58
ADAMS_BARRANCA	2	2424.1		Lat Struct									
ADAMS_BARRANCA	2	2424		Lat Struct									
ADAMS_BARRANCA	2	2096.2	PF 1	1819.44	212.00	220.71	219.85	222.61	0.014476	11.06	164.55	28.83	0.82
ADAMS_BARRANCA	2	2096.1		Lat Struct									
ADAMS_BARRANCA	2	2096		Lat Struct									
ADAMS_BARRANCA	2	1972.4	PF 1	1755.82	210.93	218.78	218.28	220.68	0.016914	11.07	159.15	31.00	0.85
ADAMS_BARRANCA	2	1972.3		Lat Struct									
ADAMS_BARRANCA	2	1972		Lat Struct									
ADAMS_BARRANCA	2	1818.2	PF 1	1629.09	208.00	215.40	215.40	217.55	0.024728	11.77	138.40	32.24	1.00
ADAMS_BARRANCA	2	1818.1		Lat Struct									
ADAMS_BARRANCA	2	1818		Lat Struct									
ADAMS_BARRANCA	2	204.7	PF 1	1629.09	199.82	205.75	203.70	205.89	0.002611	3.14	547.64	297.71	0.35

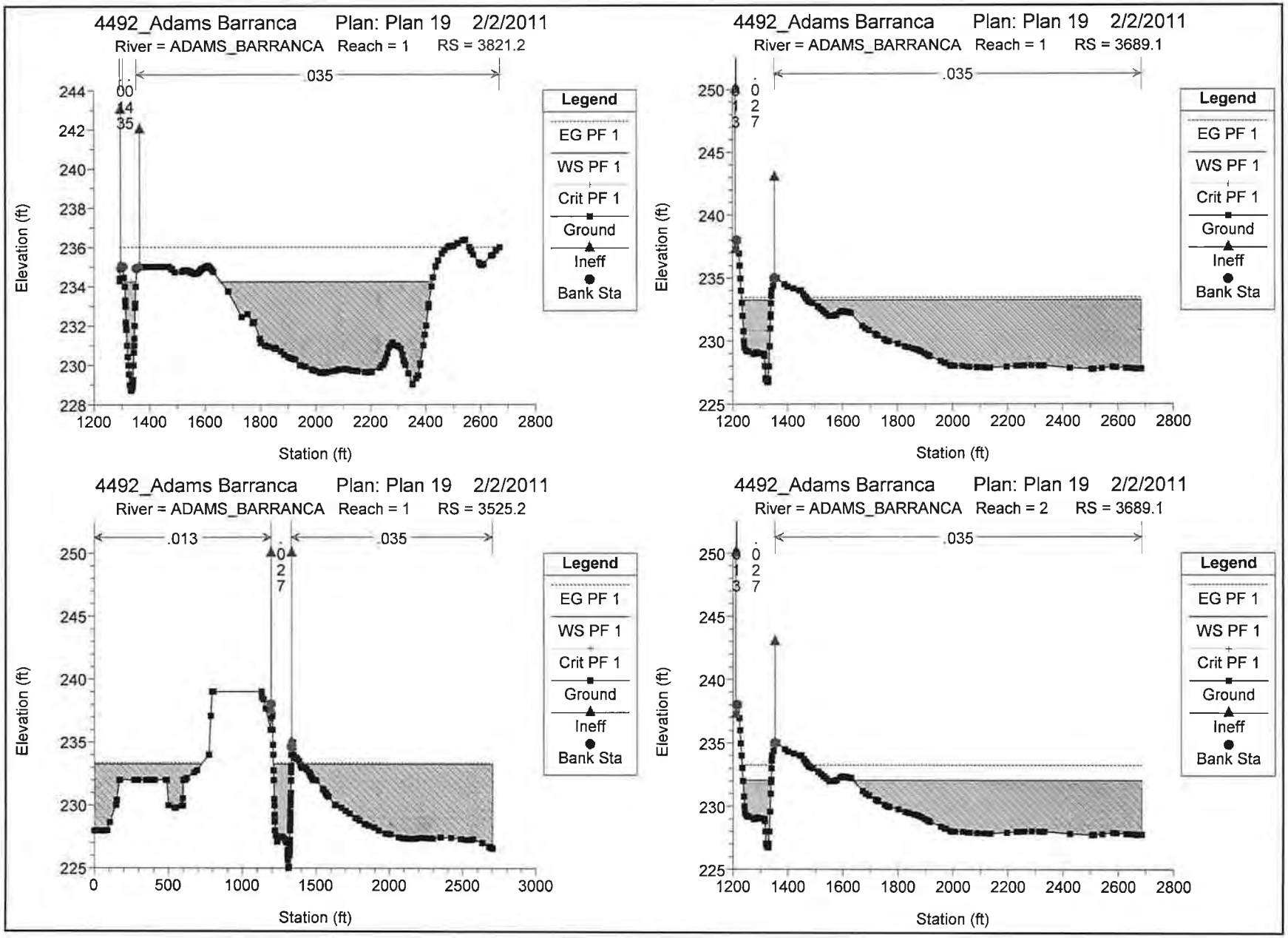
PROPOSED LATERAL STRUCTURES

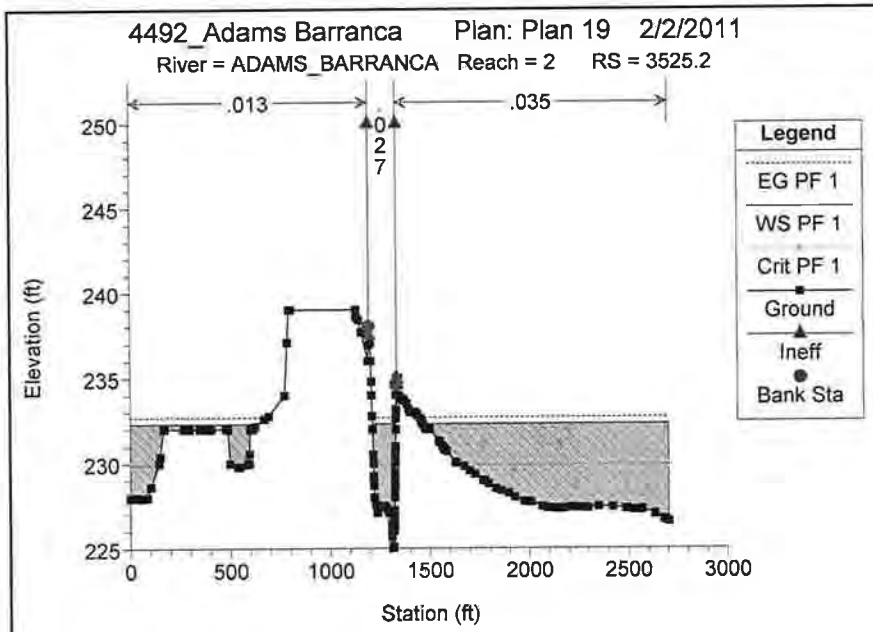
HEC-RAS Plan: plan 19 Profile: PF 1

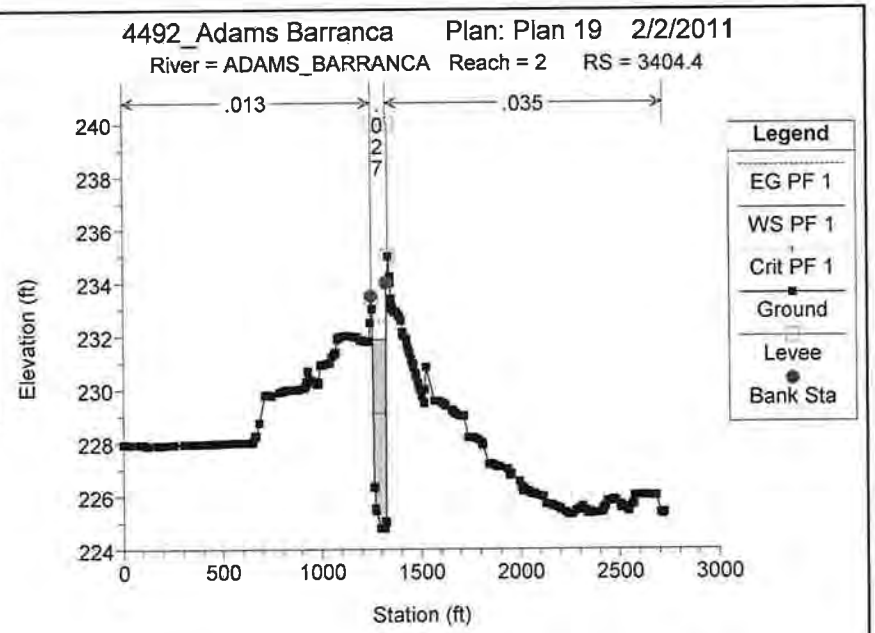
River	Reach	River Sta	Profile	Q US	Q Leaving Total	Q DS	Q Weir	Q Gates	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	E.G. US.	W.S. US.	E.G. DS	W.S. DS
				(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
ADAMS_BARRANCA	1	4539	PF 1	3592.00	737.02	2854.98	737.02		247.26	1.74	1.28	240.00	245.78	243.91	242.12	240.94
ADAMS_BARRANCA	1	4239	PF 1	2854.98	1288.47	1567.97	1288.47		357.01	2.81	1.37	235.10	242.11	240.93	236.00	234.25
ADAMS_BARRANCA	1	3821	PF 1	1567.97	0.00	1567.97	0.00					234.84	236.00	234.25	233.45	233.25
ADAMS_BARRANCA	1	3689	PF 1	1567.97	0.00	1567.97	0.00					234.84	233.45	233.25	233.36	233.28
ADAMS_BARRANCA	2	3689	PF 1	2785.97	0.00	2785.97	0.00					234.84	233.25	232.08	232.69	232.32
ADAMS_BARRANCA	2	3688.9	PF 1	2785.97	0.00	2785.97	0.00					233.48	233.25	232.08	232.52	231.88
ADAMS_BARRANCA	2	3525	PF 1	2785.97	0.00	2785.97	0.00					234.00	232.69	232.32	232.52	231.88
ADAMS_BARRANCA	2	3379.5	PF 1	2785.97	0.00	1819.44	0.00					228.00	230.37	228.54	228.41	227.42
ADAMS_BARRANCA	2	3379	PF 1	2785.97	0.00	2785.97	0.00					233.20	230.37	228.54	228.88	228.20
ADAMS_BARRANCA	2	3128	PF 1	2785.97	3.57	2782.37	3.57		26.49	0.35	0.15	228.00	228.88	228.20	228.57	228.35
ADAMS_BARRANCA	2	2839.2	PF 1	2782.37	735.29	2047.13	735.29		70.74	3.50	2.89	225.00	228.57	228.35	228.50	228.50
ADAMS_BARRANCA	2	2839	PF 1	2782.37	0.00	2047.13	0.00					228.60	228.57	228.35	228.50	228.50
ADAMS_BARRANCA	2	2755.9	PF 1	2047.13	227.44	1819.44	227.44		39.02	3.50	1.82	225.00	228.50	228.50	228.41	227.42
ADAMS_BARRANCA	2	2755	PF 1	2047.13	0.00	1819.44	0.00					228.00	228.50	228.48	228.41	227.42
ADAMS_BARRANCA	2	2501.5	PF 1	1819.44	0.00	1819.44	0.00					225.93	226.38	225.23	226.24	225.23
ADAMS_BARRANCA	2	2501	PF 1	1819.44	0.00	1819.44	0.00					226.17	226.38	225.23	226.24	225.23
ADAMS_BARRANCA	2	2487.1	PF 1	1819.44	0.00	1819.44	0.00					225.93	226.24	225.23	225.80	224.74
ADAMS_BARRANCA	2	2487	PF 1	1819.44	0.00	1819.44	0.00					225.51	226.24	225.22	225.80	224.74
ADAMS_BARRANCA	2	2424.1	PF 1	1819.44	0.00	1819.44	0.00					223.00	225.80	224.74	222.61	220.71
ADAMS_BARRANCA	2	2424	PF 1	1819.44	0.00	1819.44	0.00					223.00	225.79	224.74	222.61	220.71
ADAMS_BARRANCA	2	2096.1	PF 1	1819.44	42.95	1755.82	42.95		42.00	1.18	0.59	217.60	222.61	220.71	220.68	218.78
ADAMS_BARRANCA	2	2096	PF 1	1819.44	20.84	1755.82	20.84		33.37	0.85	0.42	217.93	222.61	220.71	220.68	218.78
ADAMS_BARRANCA	2	1972.3	PF 1	1755.82	104.01	1629.09	104.01		102.00	1.18	0.59	216.00	220.68	218.78	217.55	215.40
ADAMS_BARRANCA	2	1972	PF 1	1755.82	23.06	1629.09	23.06		37.51	0.84	0.42	217.93	220.67	218.77	217.55	215.40
ADAMS_BARRANCA	2	1818.1	PF 1	1629.09	0.00	1629.09	0.00					211.00	217.55	215.40	205.89	205.75
ADAMS_BARRANCA	2	1818	PF 1	1629.09	0.00	1629.09	0.00					209.42	217.55	215.40	205.89	205.75

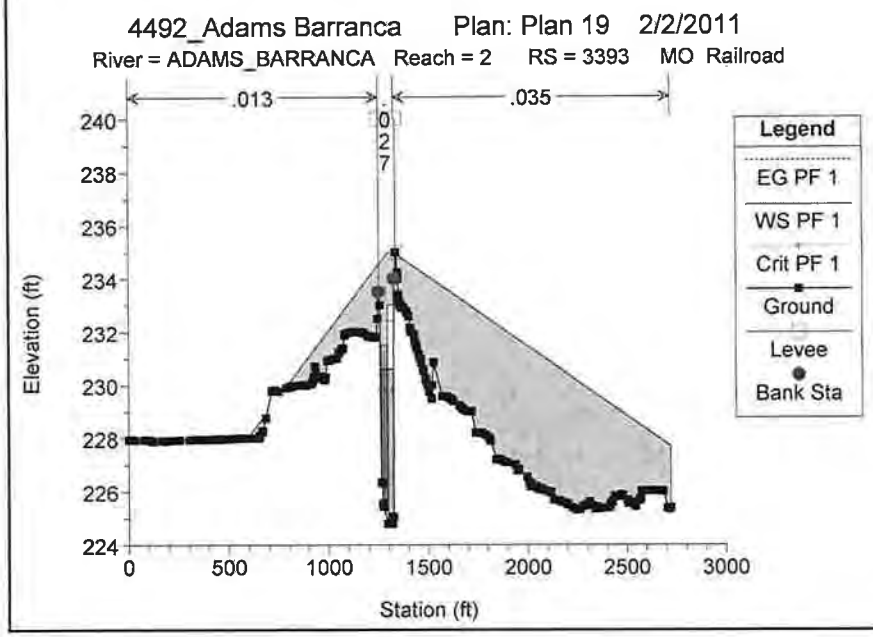

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 5253.2
.03
.045
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 5063.9
.03
.045
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4738.5
.03
.045
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4645.2
.03
.045
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

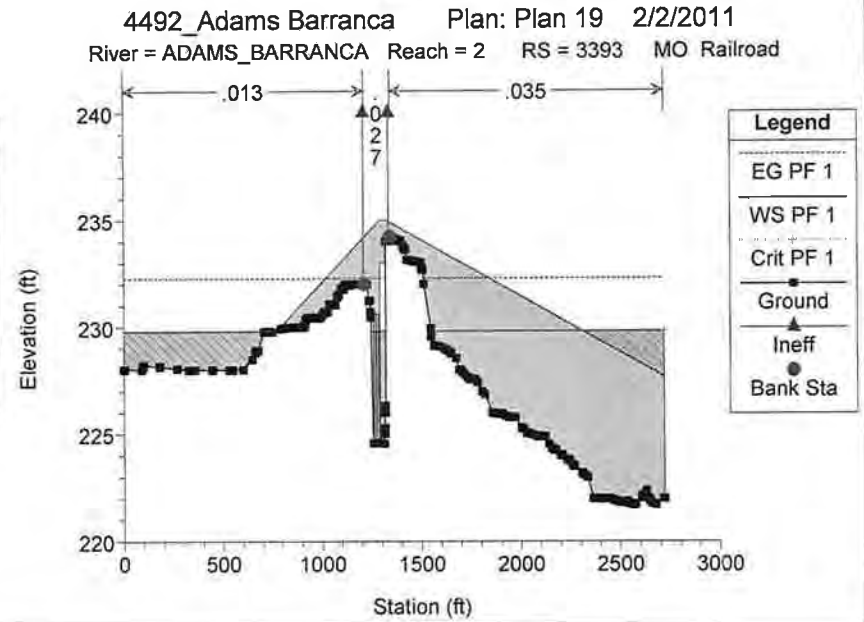

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4585 Culv Telegraph Road
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4585 Culv Telegraph Road
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4539.6
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 4239.6
.035
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta

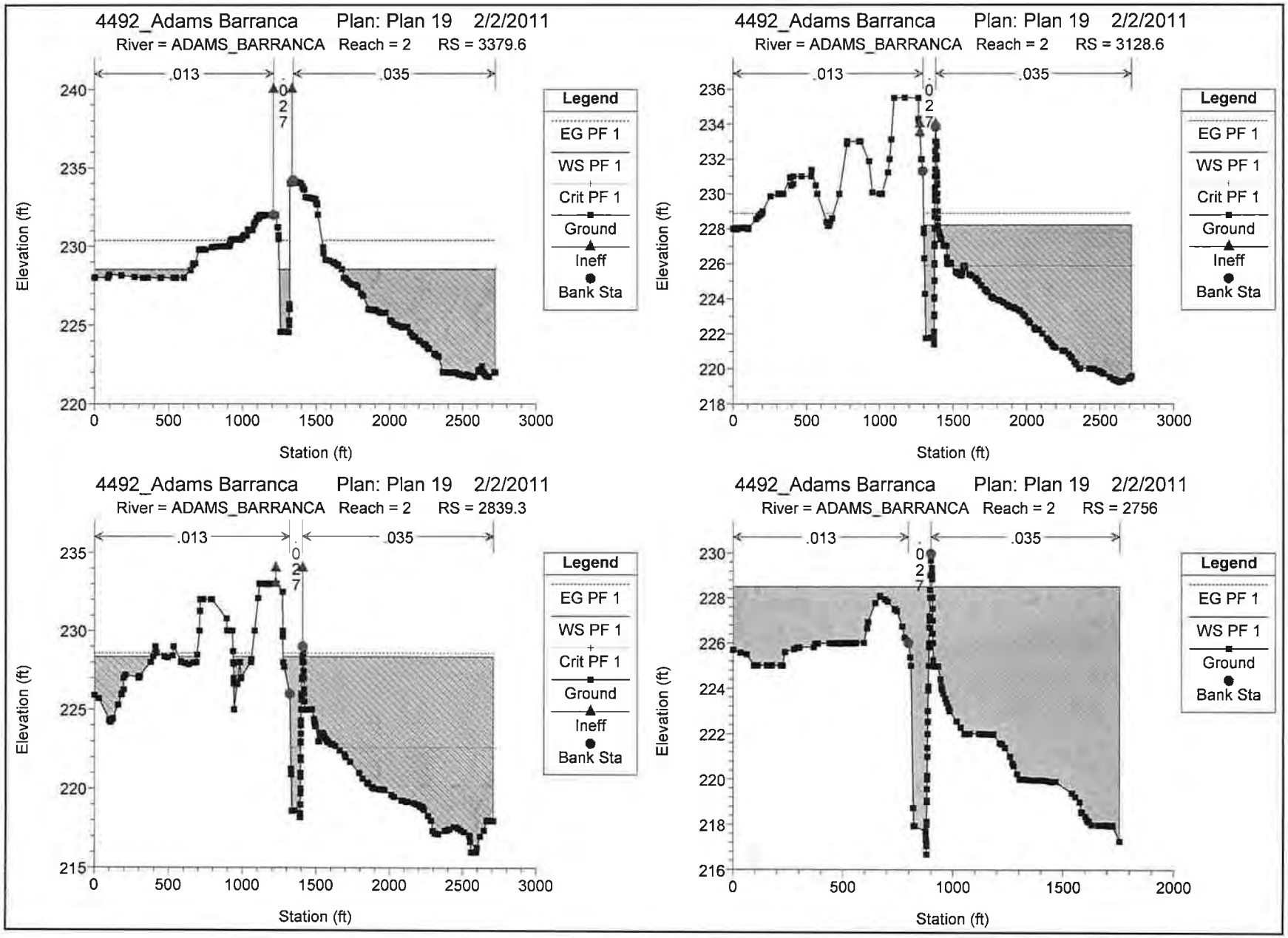

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3821.2
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3689.1
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 1 RS = 3525.2
.013
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3689.1
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta

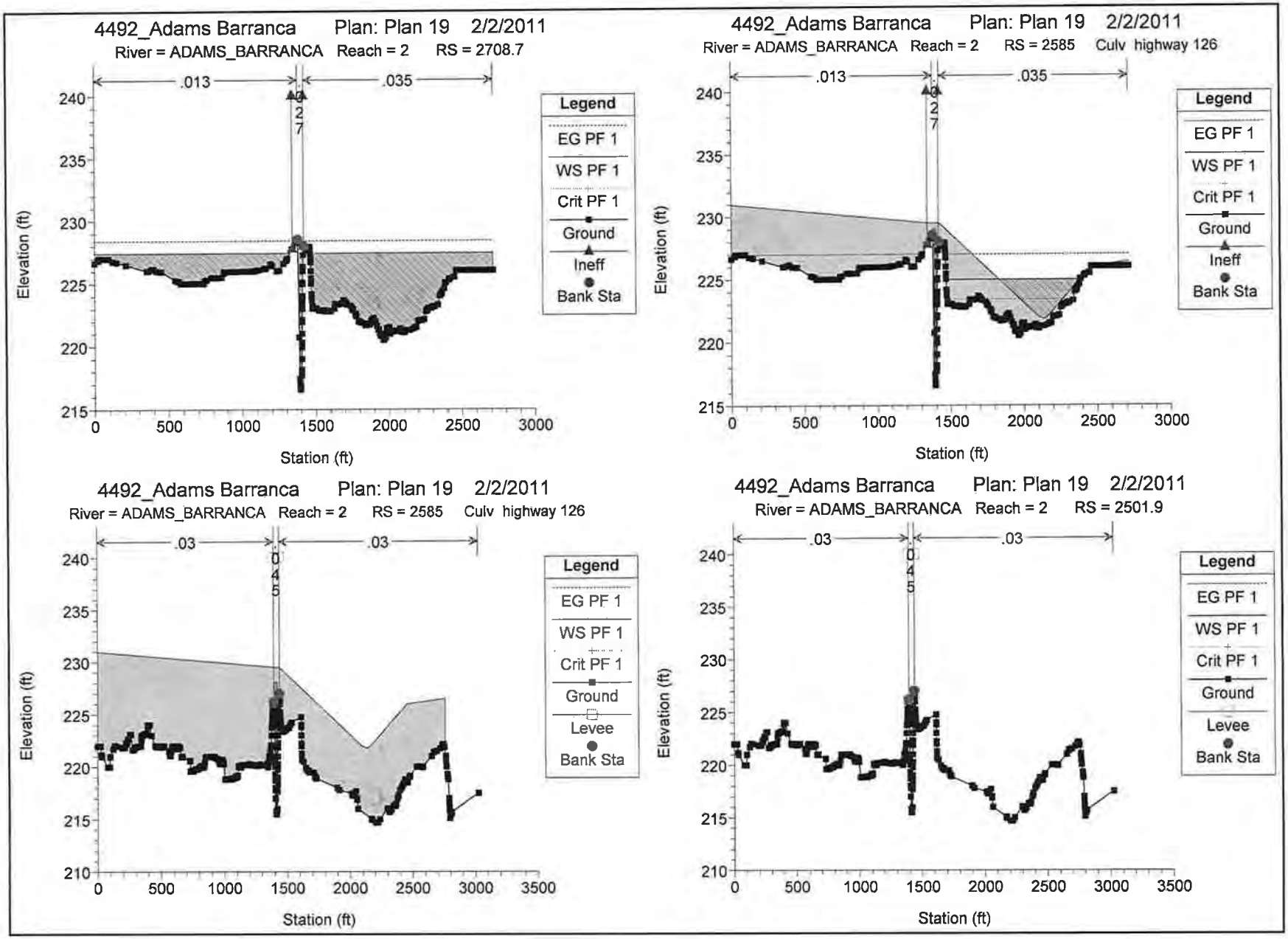

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3525.2
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

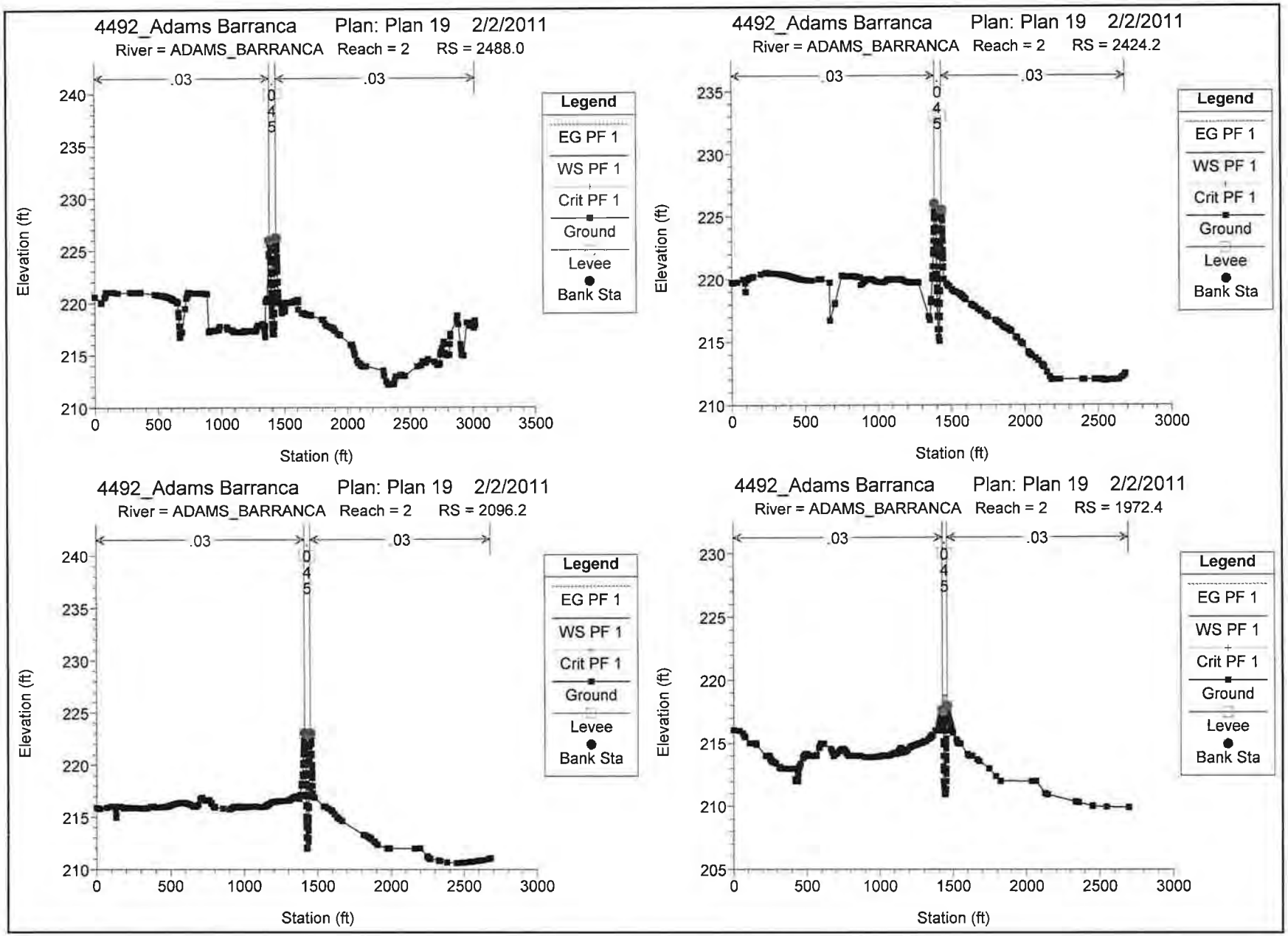

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3404.4
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

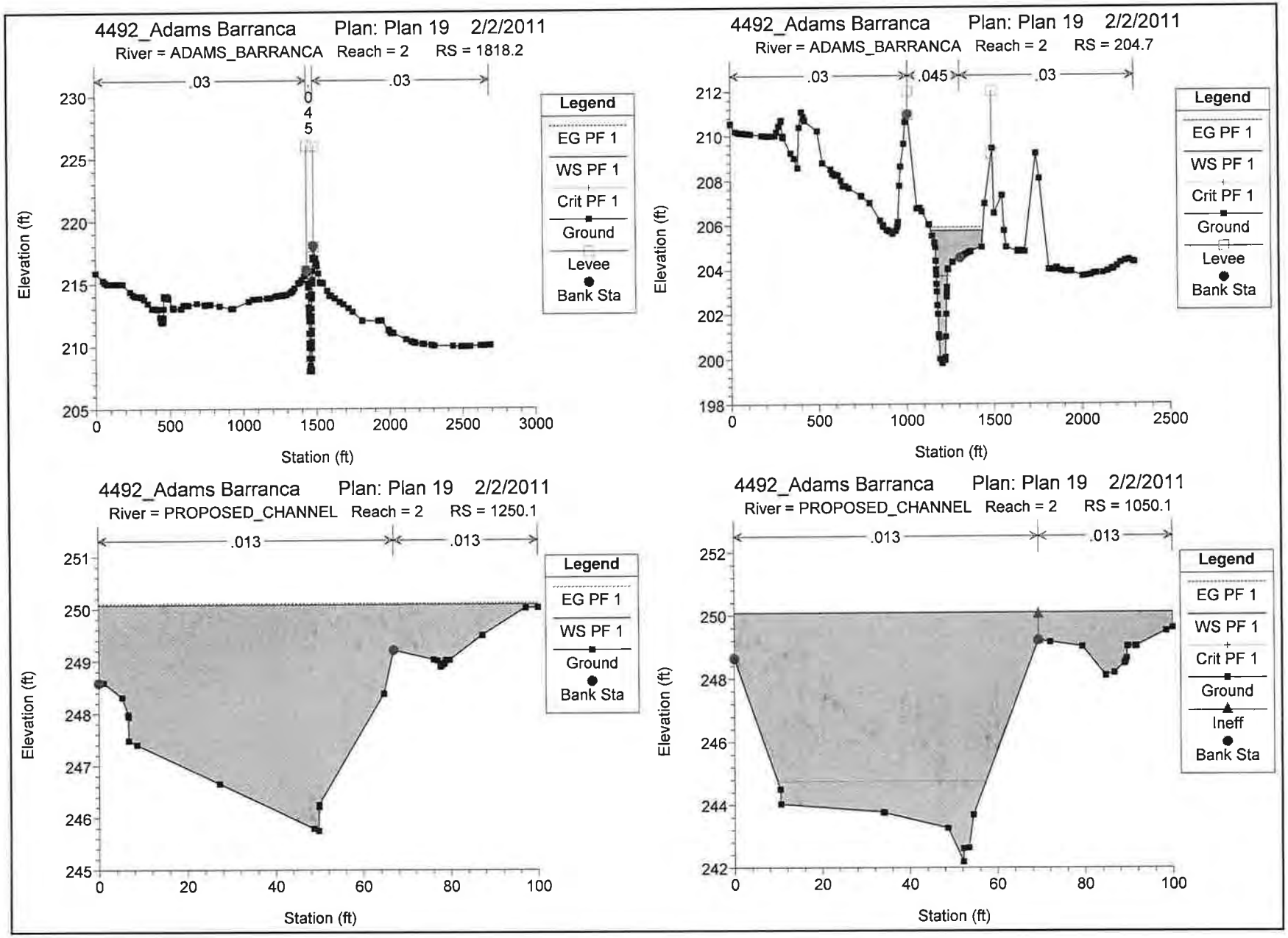

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3393 MO Railroad
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

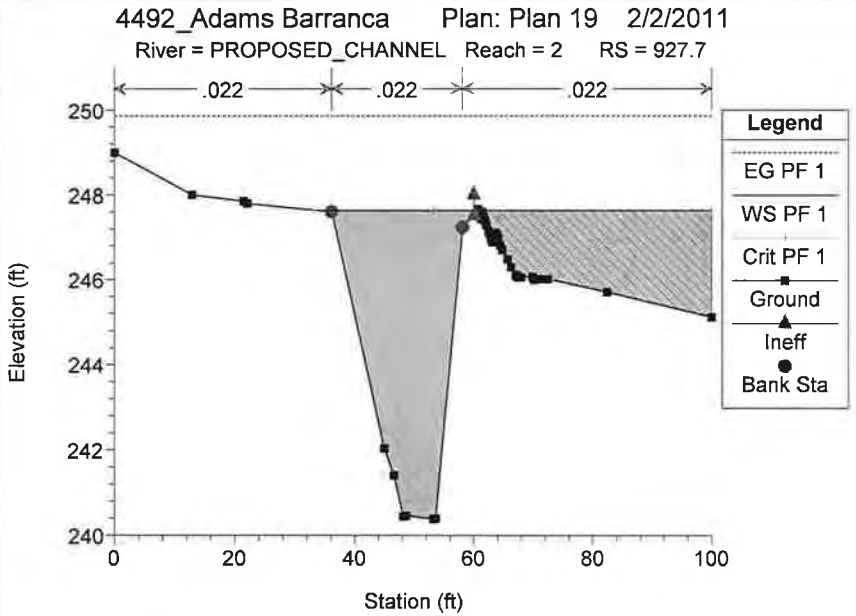

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3393 MO Railroad
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

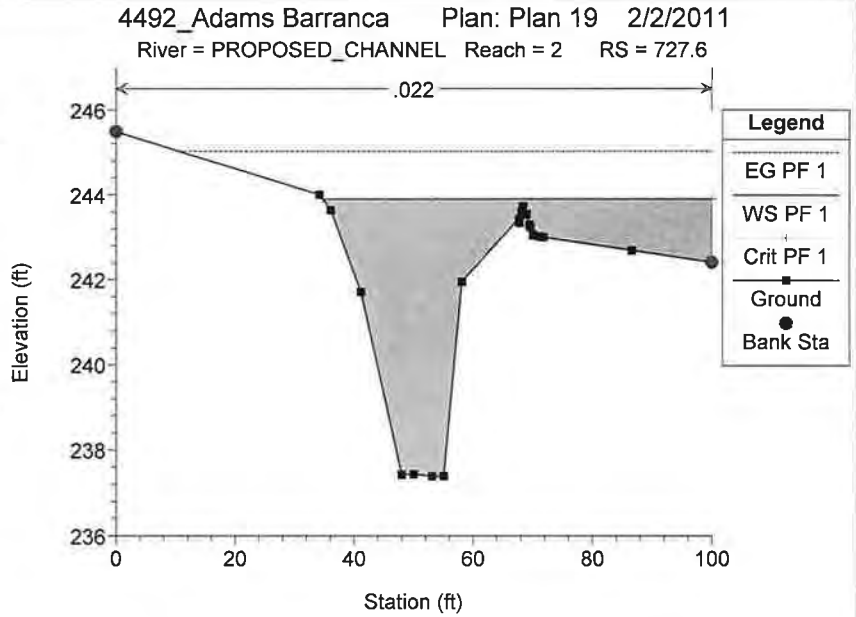

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3379.6
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 3128.6
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2839.3
.013
.027
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2756
.013
.027
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

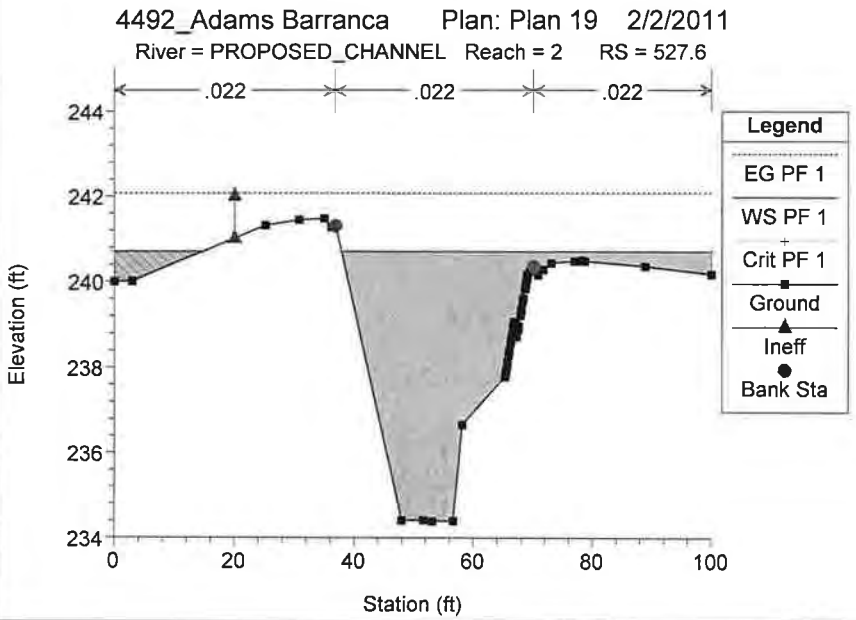

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2708.7
.013
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2585 Culv highway 126
.013
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2585 Culv highway 126
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2501.9
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

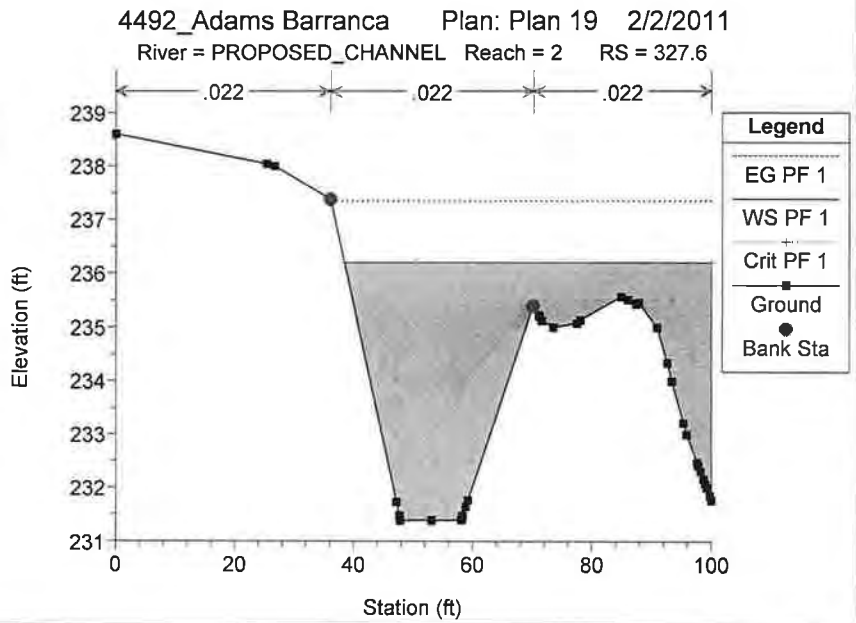

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2488.0
.03
.03
0
4
5
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2424.2
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 2096.2
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 1972.4


4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 1818.2
.03
.03
0
4
5
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = ADAMS_BARRANCA Reach = 2 RS = 204.7
.03
.045
.03
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = PROPOSED_CHANNEL Reach = 2 RS = 1250.1
.013
.013
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
4492_Adams Barranca Plan: Plan 19 2/2/2011
River = PROPOSED_CHANNEL Reach = 2 RS = 1050.1
.013
.013
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta


4492_Adams Barranca Plan: Plan 19 2/2/2011
River = PROPOSED_CHANNEL Reach = 2 RS = 927.7
.022
.022
.022
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

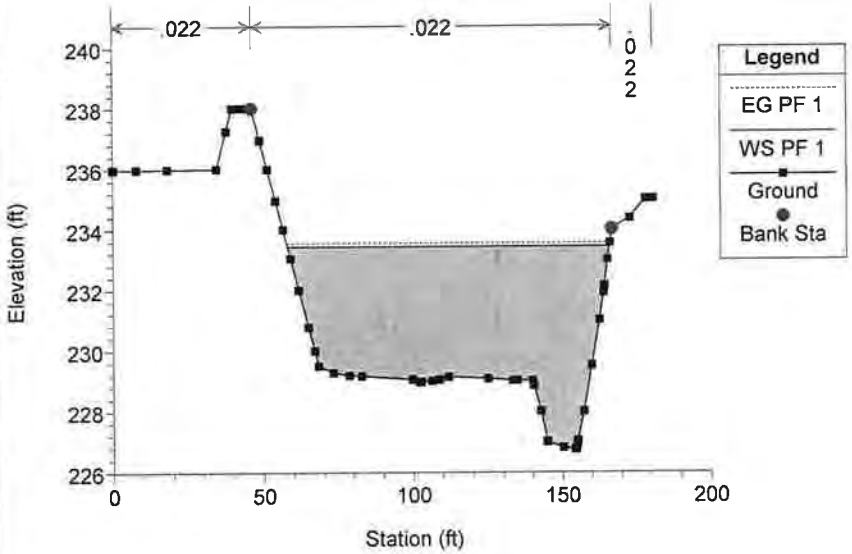

4492_Adams Barranca Plan: Plan 19 2/2/2011
River = PROPOSED_CHANNEL Reach = 2 RS = 727.6
.022
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 19 2/2/2011
River = PROPOSED_CHANNEL Reach = 2 RS = 527.6
.022
.022
.022
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 19 2/2/2011
River = PROPOSED_CHANNEL Reach = 2 RS = 327.6
.022
.022
.022
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

4492_Adams Barranca Plan: Plan 19 2/2/2011

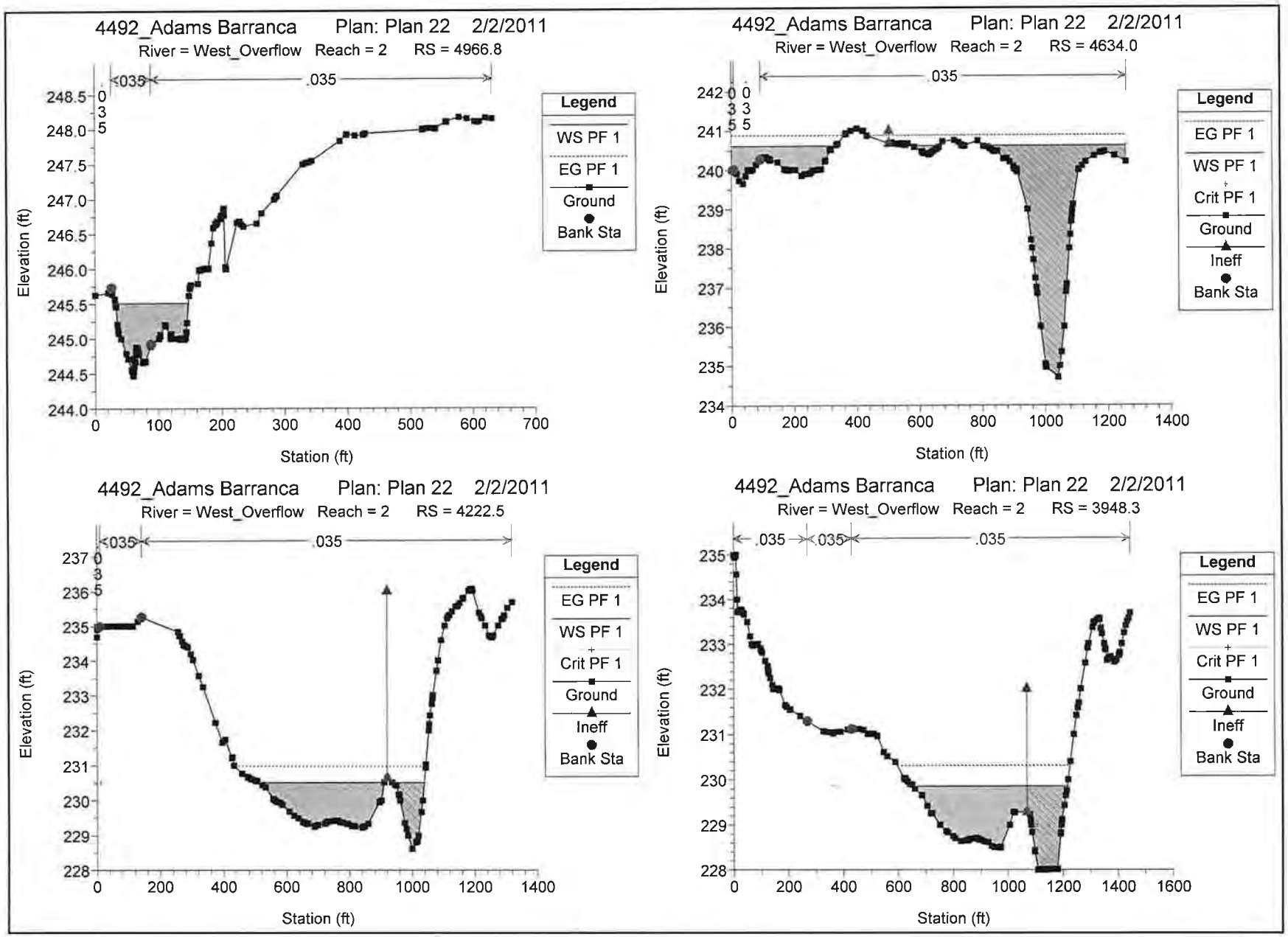
River = PROPOSED_CHANNEL Reach = 2 RS = 166.5

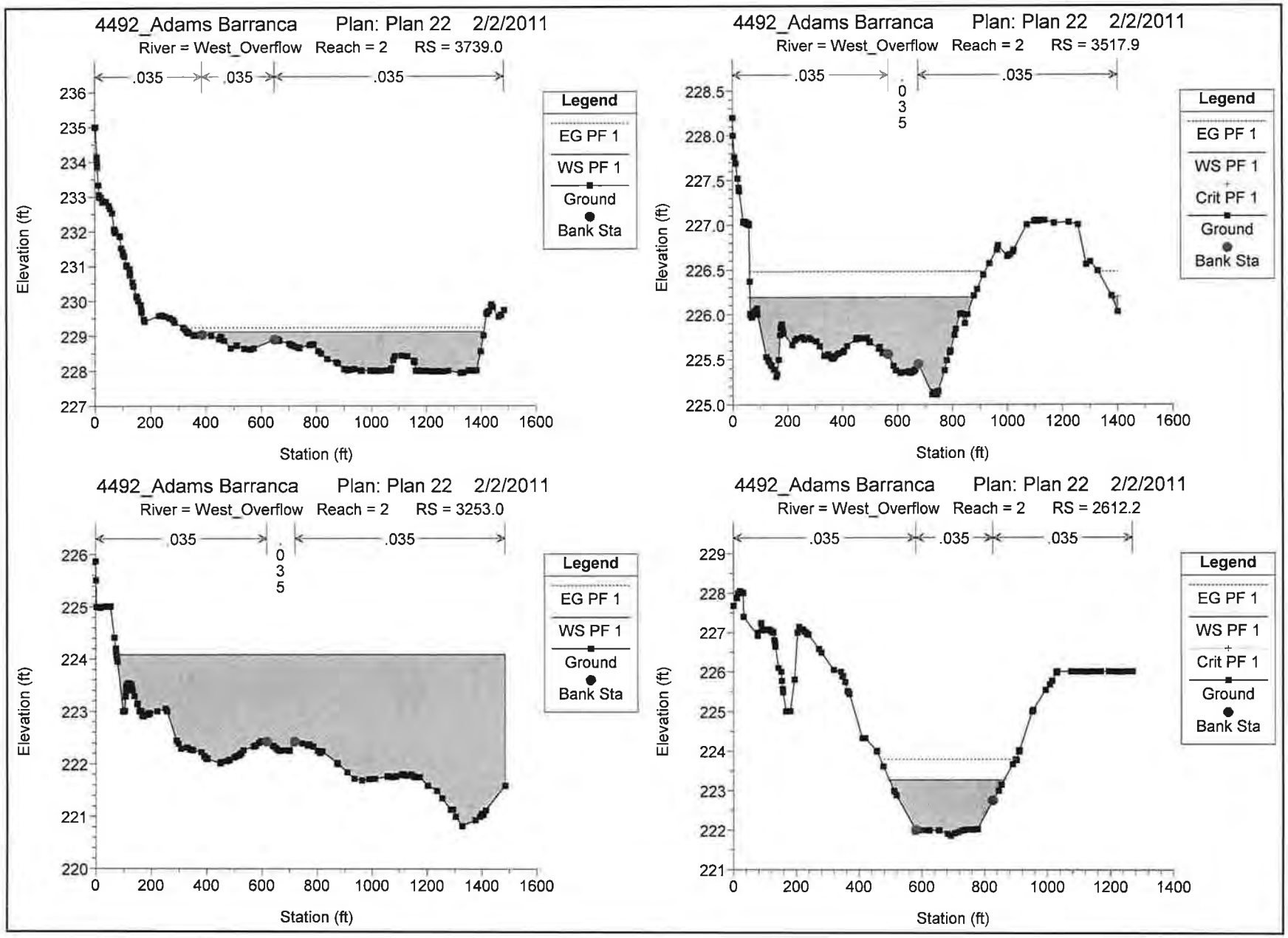


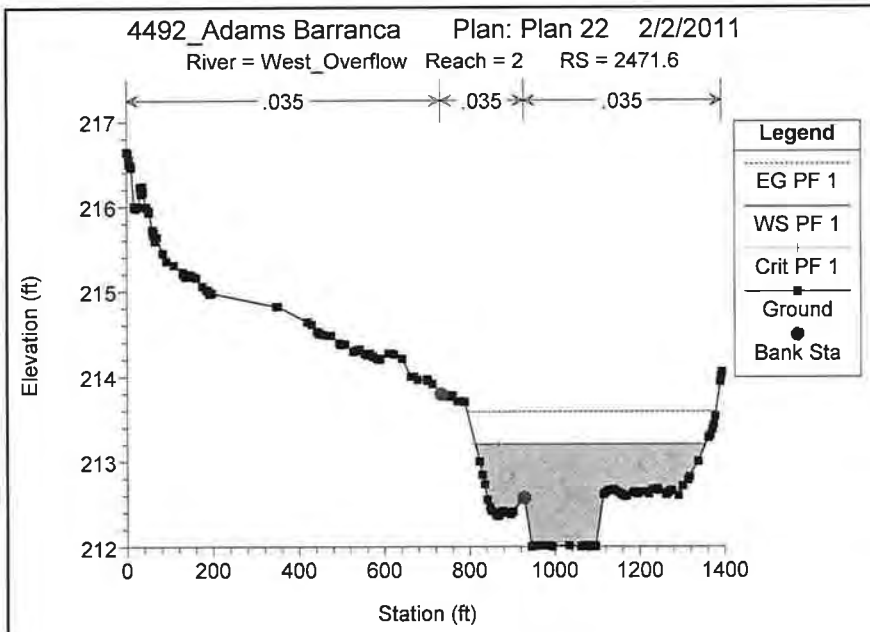
PROPOSED RIGHT OVERBANK

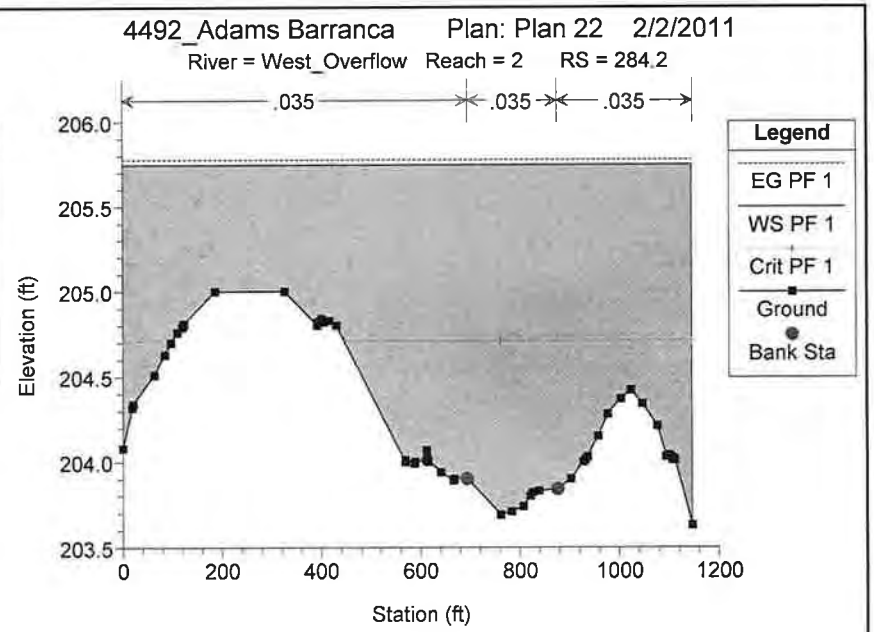
HEC-RAS Plan: Plan 22 River: West_Overflow Reach: 2 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
2	4966.8	PF 1	1.00	244.47	245.51		245.51	0.000000	0.02	66.82	115.22	0.00
2	4634.0	PF 1	729.00	239.66	240.62	240.62	240.88	0.020771	4.67	178.71	885.97	1.01
2	4222.5	PF 1	2032.00	234.99	230.52	230.52	230.99	0.018769		368.24	500.99	0.00
2	3948.3	PF 1	2032.00	231.02	229.86	229.86	230.31	0.018320		377.07	561.17	0.00
2	3739.0	PF 1	2032.00	228.61	229.11		229.24	0.005737	1.51	742.58	1078.83	0.47
2	3517.9	PF 1	2032.00	225.35	226.19	226.19	226.48	0.019644	5.12	480.61	834.15	1.01
2	3253.0	PF 1	2032.00	222.25	224.08		224.08	0.000104	0.63	2858.15	1410.49	0.08
2	2612.2	PF 1	2032.00	221.87	223.28	223.28	223.80	0.015524	6.01	363.01	366.12	0.96
2	2471.6	PF 1	2032.00	212.36	213.20	213.20	213.59	0.019917	4.51	408.49	542.12	0.98
2	284.2	PF 1	2084.00	203.69	205.75	204.71	205.78	0.000560	1.58	1613.43	1146.47	0.20


4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 4966.8
.035
.035
Legend
WS PF 1
EG PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 4634.0
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 4222.5
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 3948.3
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 3739.0
.035 .035 .035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 3517.9
.035 .035 .035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 3253.0
.035 .035 .035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 2612.2
.035 .035 .035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

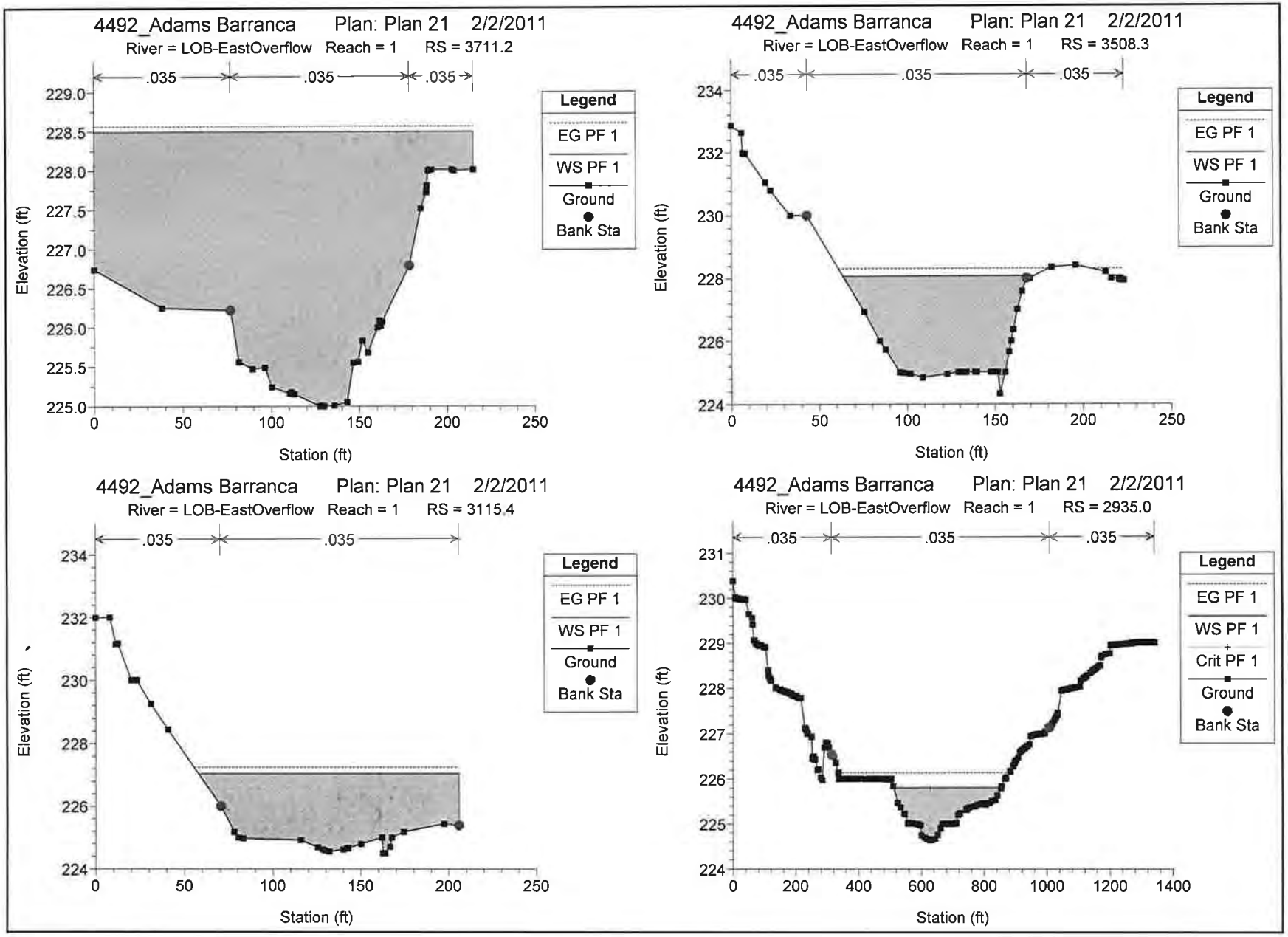

4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 2471.6
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
217
216
215
214
213
212
0
200
400
600
800
1000
1200
1400
Station (ft)

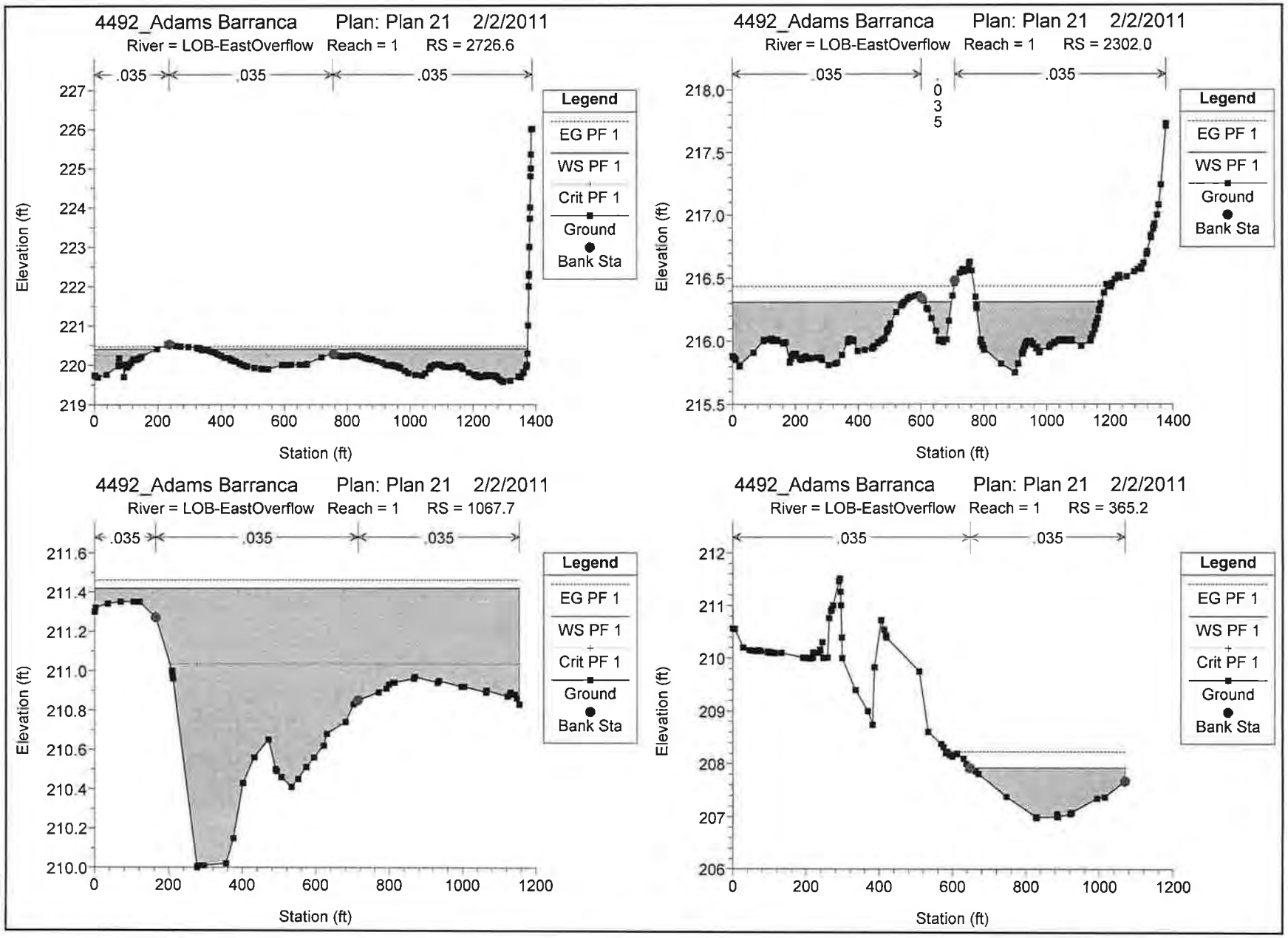

4492_Adams Barranca Plan: Plan 22 2/2/2011
River = West_Overflow Reach = 2 RS = 284.2
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
206.0
205.5
205.0
204.5
204.0
203.5
0
200
400
600
800
1000
1200
Station (ft)

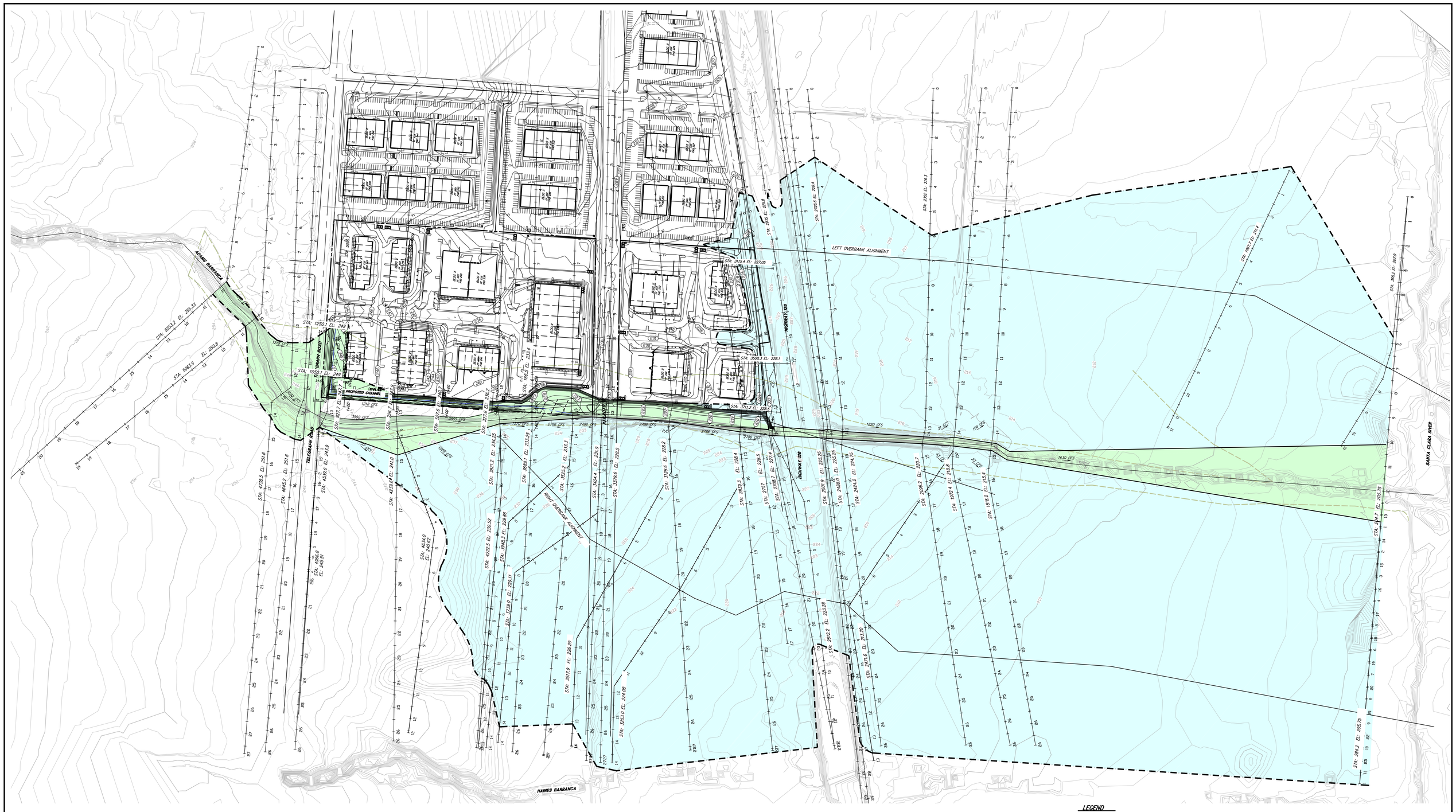
PROPOSED LEFT OVERBANK

HEC-RAS Plan: Plan 21 River: LOB-EastOverflow Reach: 1 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	3711.2	PF 1	1000.00	225.00	228.50		228.57	0.000667	2.27	491.28	214.93	0.23
1	3508.3	PF 1	1000.00	224.33	228.07		228.31	0.002602	3.91	256.74	117.11	0.44
1	3115.4	PF 1	1000.00	224.50	227.05		227.24	0.002775	3.57	283.90	148.13	0.44
1	2935.0	PF 1	1000.00	224.64	225.81	225.81	226.14	0.021320	4.59	218.08	342.74	1.01
1	2726.6	PF 1	1000.00	219.89	220.41	220.26	220.47	0.006373	1.59	517.48	1237.99	0.49
1	2302.0	PF 1	1000.00	215.99	216.31		216.43	0.017320	1.83	358.44	1032.89	0.74
1	1067.7	PF 1	1147.00	210.00	211.42	211.03	211.46	0.001918	1.75	739.10	1155.05	0.32
1	365.2	PF 1	1147.00	206.98	207.92	207.92	208.23	0.021610	4.47	256.42	423.53	1.01


4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 3711.2
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 3508.3
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 3115.4
.035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 2935.0
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 2726.6
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 2302.0
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 1067.7
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4492_Adams Barranca Plan: Plan 21 2/2/2011
River = LOB-EastOverflow Reach = 1 RS = 365.2
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)



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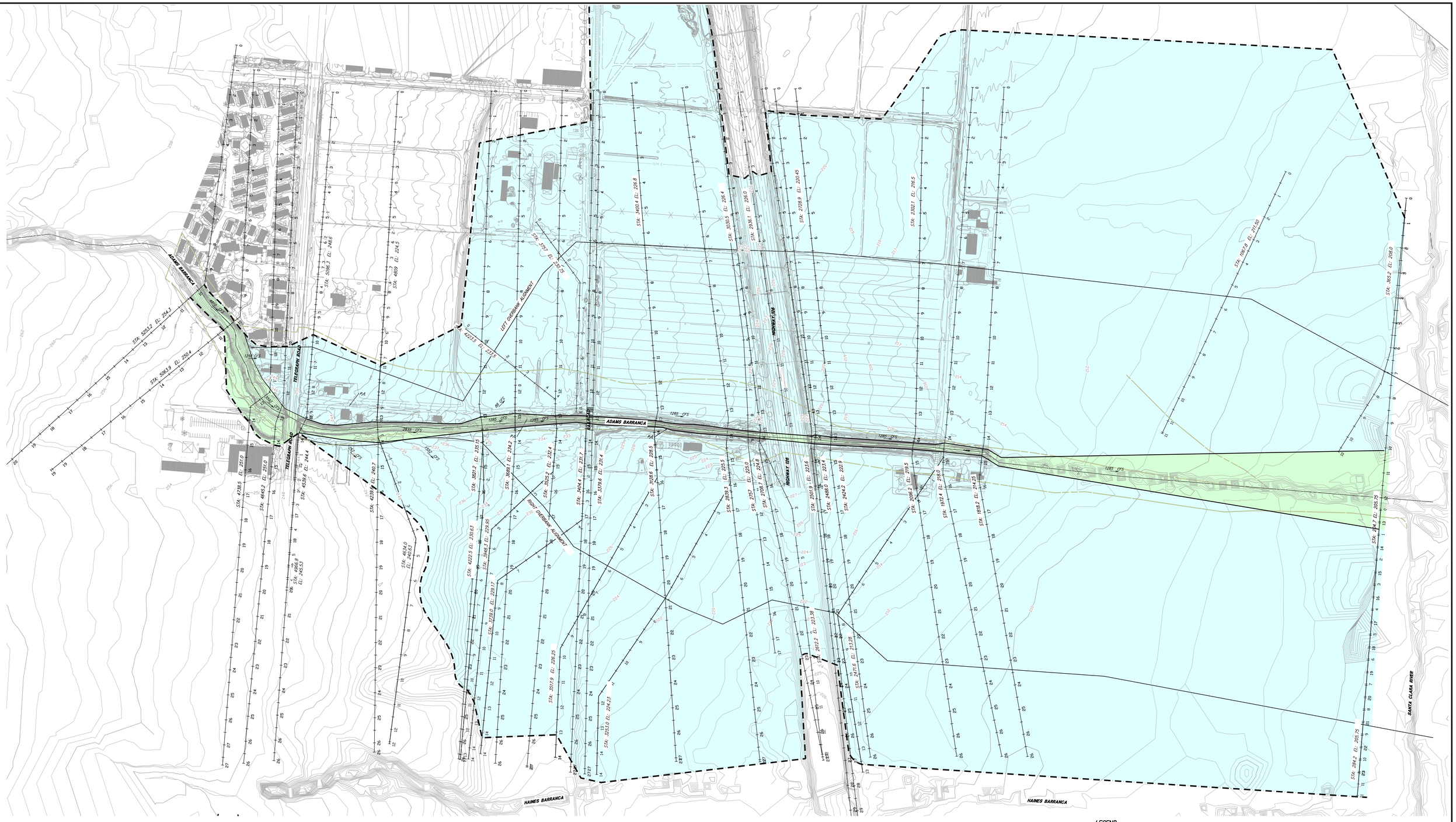
www.jensenlandsurvey.com

J:\PAR1442\Eng\Cmbds\Levee Conditions\1492 EX-FLOOD PLAIN_Workdgs-Overflow Proposed.dwg Feb 03, 2011, 2:36pm kpoosse

EXHIBIT B
PROPOSED FLOODPLAIN
FOR
ADAMS BARRANCA



LEGEND

- 100 YEAR FLOODPLAIN ZONE AO LIMITS (Q=4810 CFS)
- 100 YEAR FLOODPLAIN ZONE AO
- 100 YEAR CHANNEL FLOODZONE LIMITS
- FEMA 100 YEAR FLOODPLAIN PER FIRM PANEL No. 06041C0755C
- EL 100 YEAR WATER SURFACE ELEVATION
- CHANNEL WATER SURFACE LIMITS

100' 50' 0' 100' 200'
GRAPHIC SCALE: 1"=100'

EXHIBIT A
EXISTING FLOODPLAIN
FOR
ADAMS BARRANCA
(LATERAL STRUCTURES AT TOP BANK)

JENSEN DESIGN & SURVEY, INC
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VENTURA, CALIF 93003
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J:\P4914482\Eng\Exhibits\Levee Conditions\4482 EX-FLOOD PLAN_WorkMap-Overflow.dwg Feb 03, 2011, 2:32pm kpascoe

Preliminary Hydrology Report

Santa Paula West Business Park
Santa Paula, CA

November 19, 2015

Prepared by:

JENSEN DESIGN & SURVEY, INC

Engineers Planners Surveyors

Santa Paula West Business Park

Preliminary Drainage Report

Santa Paula, CA

Prepared for:

McGaelic Group
&
Bender Realty Ltd

November 2015

Prepared by:

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Ventura, CA 93003

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APPENDIX

A: Existing Hydrology Calculations

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Introduction

The Santa Paula West project is a planned commercial and industrial development containing a mixture of industrial, research and development, retail, office and commercial uses. The Specific Plan project site is located just outside the limits, but within the sphere of influence, of the City of Santa Paula. The land use is currently agricultural. The property is bounded by industrial development on the east, Adams Barranca on the west, Telegraph Road to the north, and Highway 126 to the south. Splitting the northerly section of the specific plan area east/west is the railroad operated by the Ventura County Transportation Commission Railroad (VCTC). The property ranges in elevation from approximately 250 to 222 feet above mean sea level and generally slopes from the north to the south. The Regional Location Map is shown below as Figure 1.

FIGURE 1 - REGIONAL LOCATION MAP

Project Description

The Santa Paula West Business Park Specific Plan encompasses approximately 58 acres of land in unincorporated Ventura County west of the City of Santa Paula. The proposed Specific Plan would permit the development of a variety of clean office, industrial and retail buildings ranging in size.

Access to the site is provided by Beckwith Road, Telegraph Road, and Faulkner Road. Figure 2 shows the project location.

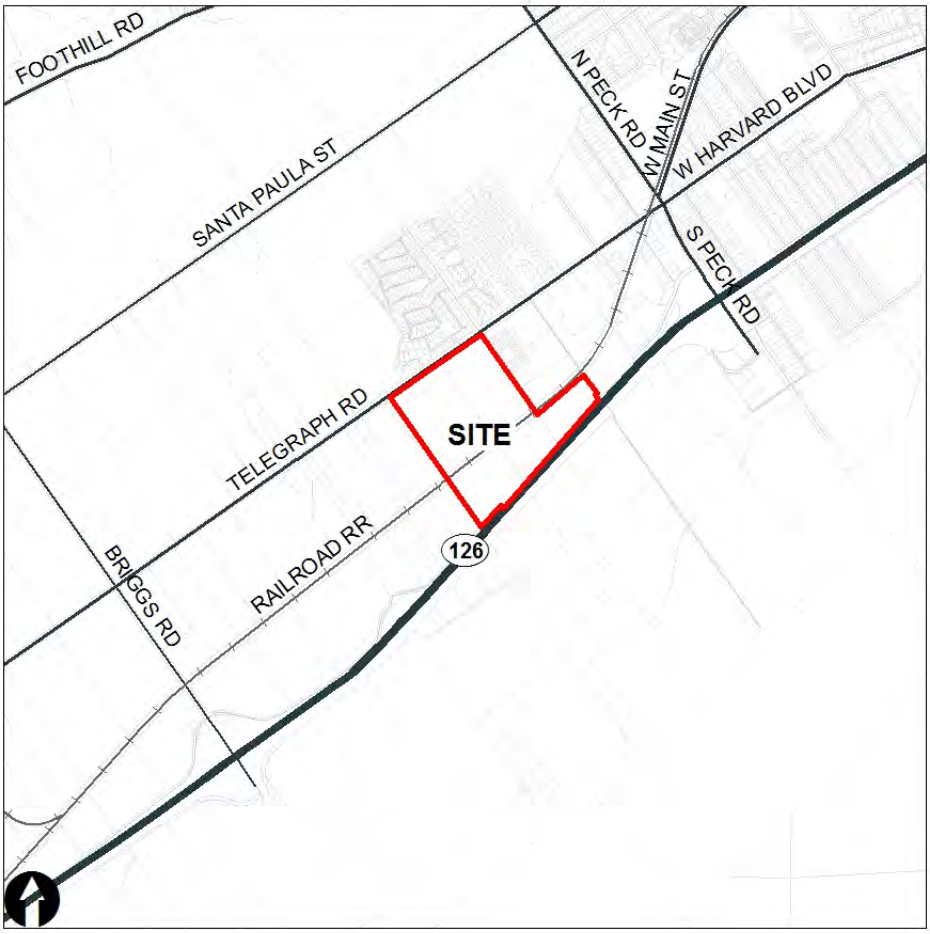


FIGURE 2 – PROJECT LOCATION MAP

Purpose

This study provides an evaluation of the existing drainage conditions and the design of a preliminary storm drain system within the Santa Paula West Business Park Specific Plan project.

The general approach of the proposed condition is to maintain the existing drainage pattern without having adverse affects offsite.

Existing site conditions show that the project site is located in a floodplain, Zone A. Based on our analysis of Adams Canyon Barranca using flows generated by an Existing Condition study by Jensen Design & Survey reviewed and approved by the County of Ventura Watershed Protection District in December 2011 (see **Appendix A**), the floodplain limits currently shown by FEMA are inaccurate. This report also summarizes the flow information that will be used in Adams Barranca for a HEC-RAS analysis for a CLOMR/LOMR to be filed at a later date to modify the current FIRM maps.

Future site runoff will be conveyed through the project via surface drainage and underground structures connecting into the existing culverts under Highway 126. This report includes hydrologic analysis and supporting calculations to demonstrate how the project's contributions to stormwater runoff resulting from development will be controlled and match existing conditions at major outlet points.

Hydrology Methodology

The existing conditions of the Santa Paula West Business Park Specific Plan were determined according to the Ventura County Watershed Protection District 2010 Hydrology Manual, the City of Santa Paula Master Plan for Drainage, the County's Time of Concentration Calculator, and Hec-Ras.

- Soil Group Types 3 & 4 are used for drainage areas in this study
- Existing condition coefficients were obtained from Appendix A, Exhibit 6A of the 'VCWPD Hydrology Manual'.
- Proposed condition coefficients were obtained from Appendix A, Exhibit 6A of the 'VCWPD Hydrology Manual'.
- Time of Concentration (Tc) values were calculated with the Tc Calculator program for each drainage area.
- Water quality treatment will be flow based and volume based, according to current SQUIMP guidelines at the time of Tentative Map submittal. Various areas can be used

for treatment, infiltration, and detention that will meet or exceed the County's SQUIMP requirements according to the Ventura County Technical Manual.

Existing Drainage Conditions

The Santa Paula West Business Park site is located within the greater Santa Clara River watershed. The onsite drainage is a tributary to the Santa Clara River, and has been divided into four drainage areas: Adams Canyon Barranca (Area A), Todd Lane Drain (Area D), Highway 126 West culverts (Area B), and Highway 126 east culverts (Area C). The limits of the drainage subareas were determined by a flown aerial topo (NGVD 1929 datum) and a site visit. In performing the hydrology analysis for the existing condition, all of the drainage areas within the property limits were analyzed for a ten through a hundred year storm events. The subarea properties and the calculated runoff are shown in **Table 1 and in Appendix A.**

The 58 acre project site is currently used for agriculture and varies in land gradient sloping north to south with the railroad and the Highway being higher than adjacent grade and acting as dams. The railroad has two culverts (2-12" CMP and 1-24" CMP) to transport the onsite water from the north to the south, not including the crossing for Adams Barranca. These culverts are about 50% blocked with sediment and currently do not function at capacity. There are also four existing culverts of various sizes under Highway 126 that are blocked with sediment and do not function at capacity, causing ponding north of the Highway during storm events. The outlets of the culverts are on the south side of Highway 126 and drain through historic agricultural drainage channels ending in the Santa Clara River and do not connect to Adams Barranca.

A small portion of the property drains west into Adams Barranca (**Area A on Exhibit A**). Adams Barranca is a raised channel with the top of the channel being an average 2.0' higher than the adjacent grade on the property for approximately 480' extending north from HWY 126. This property is subject to flooding during a 100 year storm event from Adams Barranca, according to the current FIRM maps (Map Numbers 06111C0778E and 06111C0779E – **Appendix E**). A HEC-RAS analysis was completed using flow information from a VcRAT analysis completed by Jensen Design & Survey to support a change in the floodplain limits. A more detailed analysis will be completed at the Tentative Map level of review and will be coordinated with the County and City. The existing condition report for the flow rates used in the HEC-RAS analysis has been reviewed and approved by the County Watershed Protection District on December 6, 2011.

The Highway 126 westerly culverts (1-24" CMP, and 1-48"x24" Arch CMP), drainage area B, handle the flows from approximately 27.3 acres. Overflow from pipe inlet blockage travels

easterly to two other culverts under Highway 126 or farther east to the inlet at the end of Faulkner Road into a 72” RCP leading to Todd Lane Drain.

The Highway 126 easterly culverts (2–52”x30” Arch CMP), drainage areas C and D, handle the flows from approximately 31 acres. Overflow from pipe inlet blockage travels easterly to the inlet at the end of Faulkner Road into a 72” RCP leading to Todd Lane Drain.

The time of concentration for each overall drainage area within the property boundaries was calculated using VcRAT Time of Concentration calculator from Ventura County to obtain a time of concentration and a peak flow rate. That peak flow rate was used to calculate a cfs/acre which was then applied to each drainage subarea, respectively as shown in **Appendix A**.

The Santa Paula Master Storm Drain Plan shows 75% of the specific plan area to be draining to Todd Lane Drain. Todd Lane Drain has a maximum design capacity of 393 cfs in a 100 year storm. After an analysis of the onsite drainage patterns, Todd Lane Drain receives flows from the project site only in the event of blockage at the Highway 126 culverts.

Highway 126 westbound lane drains northerly through an asphalt down drain into Culvert 2. With the proposed improvements for the project, an inlet will need to be added to capture this flow and route it under the freeway per existing conditions.

The existing flow areas and peak flows for the existing condition are shown in Appendix A and Table 1.

Table 1A – Santa Paula West Business Park Specific Plan Existing Runoffs

Watershed	Subarea	Area (ac.)	10-year	50-year	100-year
			Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
ADAMS BARRANCA	**A**	**2.82**	**2.8**	**4.8**	**6.5**
WEST 126 CULVERTS (2,8)	B1	16.4	14.0	23.5	30.4
	B2	10.88	9.3	15.6	20.2
	TOTAL	**27.28**	**23.3**	**39.0**	**50.6**
EAST 126 CULVERTS (5,6)	C1a	10.7	7.8	14.5	19.0
	C1b	4.1	3.0	5.5	7.3
	C1c	0.91	0.7	1.2	1.6
	C2	7.6	5.6	10.3	13.5
	D	7.26	7.9	14.0	19.6
	TOTAL	**30.6**	**24.9**	**45.5**	**60.9**

Proposed Drainage Conditions

The proposed grading and drainage (see **Appendix D, Exhibit B**) shows the site maintaining the flow pattern. The project has a slope of 3%. The site will be mostly fill in order to raise the buildings away from any flooding potential. Various catch basin locations and a local storm drain system, designed to current City of Santa Paula Standards will convey the stormwater to five different outlet points, as shown on **Exhibit B**. The storm drain system is a network of PVC pipe routed within the project site and flows by gravity. A parallel channel has been incorporated into plans to improve the Adams Barranca flooding condition, and will be furthered explained later in this report.No onsite stormwater will be directed to the Barranca.

The project will take advantage of planter areas throughout to allow for infiltration and treatment of rain water to comply with the County of Ventura MS4 permit. Before the stormwater leaves the site, it will be detained in small localized landscaped basins and three larger basins onsite to allow for infiltration and peak flow control per current MS4 standards at the time of Tentative Map submittal. Storm drain sizes and slopes will be determined once site layout is finalized at the Tentative Map level.

The five outlet points for onsite water discharge are Todd Lane Drain (Pipe 9), three existing culvert locations under Highway 126 (pipes 2,5,&8). Proposed condition stormwater discharge at each outlet point will not increase from the existing peak outflow (**Appendix C**), due to the implementation of detention basins. Preliminary calculations have been done to size the proposed detention basins, however a more detailed analysis will be required at the Tentative Map level, once the site layout is completed. There are two surface detention basins located on site and one subsurface detention basin located on the east end of the development (see **Appendix D, Exhibit B).**

Most of the existing condition drainage issues onsite are due to sediment build up in the existing storm drain pipes under Highway 126. By developing the site, undergrounding existing open inlet pipes at Highway 126, and providing a system for treatment and flow control, the site will not be exposed to sediment and the usual culvert blockage that can cause ponding north of Highway 126 will be eliminated.

The time of concentration for drainage areas C and D within the property boundaries was calculated using VcRAT Time of Concentration calculator from Ventura County to obtain a time of concentration and a peak flow rate for developed condition. The peak flow rate for these two areas was used to calculate a cfs/acre, which was then applied to each drainage subarea, respectively as shown in **Appendix C** and Table 2A. For area B the time of concentration was also calculated using VcRAT Time of Concentration calculator from Ventura County. Are B was subdivided into B1 and B2 to obtain a time of concentration for each subarea. This time was used to calculate a peak flow rate for the developed condition

Table 2A – Santa Paula West Business Park Specific Plan Proposed Runoffs

Watershed	Subarea	Area (ac.)	10-year	50-year	100-year
			Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
ADAMS BARRANCA	**A**	**2.5**	**2.7**	**3.4**	**3.8**
WEST 126 CULVERTS (2)	**B1a**	8.5	**19.0**	**28.9**	**35.5**
	B1b	1.9	**8.2**	**11.7**	**14.1**
	B1c	7.6	**17.7**	**27.8**	**34.6**
	B1 Total	17.9	**33.0**	**68.3**	**84.1**
WEST 126 CULVERTS (8)	**B2a**	5.5	**12.1**	**17.2**	**19.4**
	B2b	4.0	**13.4**	**16.4**	**18.4**
	B2 Total	9.5	**25.5**	**33.7**	**37.8**
	TOTAL UNDETAINED	27.4	58.5	102.0	122.0
EAST 126 CULVERTS (5)	C1	15.7	32.7	52.7	59.8
	C2	9.2	19.3	31.1	35.3
	TOTAL	**24.9**	**52.0**	**84.0**	**95.0**
TODD LANE DRAIN	**D**	**5.6**	**10.6**	**16.6**	**18.7**

Table 2B – Santa Paula West Business Park Specific Plan Proposed Runoffs

(Includes Detention)

Watershed	Subarea	Area (ac.)	10-year	50-year	100-year
			Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
ADAMS BARRANCA	**A**	**2.5**	**--**	**--**	**--**
WEST 126 CULVERTS (2,8)	**B1 Total**	17.9	11.8	21.2	20.5
	B2 Total	9.5	8.6	17.6	16.2
	B TOTAL	**27.4**	**20.4**	**38.8**	**36.7**
EAST 126 CULVERTS (5)	**C TOTAL**	**24.9**	**26.8**	**41.7**	**46.0**
TODD LANE DRAIN	**D**	**5.6**	**10.6**	**16.6**	**18.7**

Water Quality

Water quality measures for the Santa Paula West Business Park development will consist of Best Management Practices (BMPs) that are listed in the Ventura County Stormwater Quality Urban Impact Mitigation Plan (SQUIMP). This plan was devised to address storm water pollution for any new development and redevelopment. Stormwater treatment occurs onsite prior to stormwater leaving the site to existing drainage facilities. Water quality treatment will either be flow based, volume based, or a combination of the two according to SQUIMP guidelines. The following are some of the BMPs that may be utilized on our project.

Vegetated-swales will be designed into various parking landscape areas to convey and treat paved areas and allow stormwater capture for infiltration and evapotranspiration. These swales that generally have low velocities are used to mitigate concentration of nutrients by its contact with vegetation. Vegetated-swales could occur within each planter area designed within the project, providing cleansing of storm runoff prior to discharge into Adams Barranca and Santa Clara River.

Bio-filter inserts will be used in curb inlets to capture oil and grease, suspended solids, metals, gasoline, pesticides and pathogens. Also, storm drain inlets and catch basins will have proper signage and stenciling to discourage illegal dumping. Filters and signage will be checked and/or replaced annually.

For proposed development, two surface detention basins are located onsite north of the railroad at the center of the development and north of the highway at the center of the development in addition to one underground basin located east of Beckwith Drive just north of the highway. Localized detention basins will also be used throughout the site, such as landscape areas that are used to lag the discharge of stormwater. These areas will settle out and filter pollutants that are within the runoff on-site. The final sizing of the detention basins and landscape areas will be provided with the Tentative Map design.

The following table shows the volume required for each drainage area according to the SQUIMP guidelines and the Tentative Stormwater Permit for Ventura County as of the date of this report for water quality treatment. The Railroad Right of Way area is not included in the treatment volume requirements.

Table 3 – Santa Paula West Business Park Specific Plan Water Quality

Subarea	Drainage Area (acres)	Railroad Right of Way Area (acres)	Total Required Treatment Area (acres)	Volume Based Water Quality Required (ft^3)**
A	2.5	0.1	0.0	0.0
B1a	8.5	0.4	8.1	16563.4
B1b	1.9	0.0	1.9	3793.2
B1c	7.6	0.4	7.2	14634.7
B2a	5.5	0.4	5.1	10395.0
B2b	4.0	0.7	3.3	6807.0
C1	15.7	0.7	15.0	30556.5
C2	9.2	0.7	8.6	17501.6
D	5.6	0.6	4.9	10096.9
			Total Volume	**110348.3**

** Caluclated using a 75% impervious area average
Used method in SQUIMP manual page 5-5 for calculations
(same value as a 0.75 in storm event as stated in new permit)

Adams Canyon Barranca Floodplain Analysis

Current FIRM maps dated January 20, 2010 show the westerly portion of the property within flood Zone A (See **Appendix E**). After a review of historic flooding, existing contours, and site features, the Flood Zone limits shown on the current FIRM maps are inaccurate. Using flows generated by a VcRAT study completed by Jensen Design & Survey adopted in December 2011 by the County of Ventura Watershed Protection District, a preliminary HEC-RAS River study of Adams Canyon Barranca was completed.

Adams Canyon Barranca's current banks are earthen dikes created by past farm land owners in order to prevent flooding their crops. These dikes are about 2.0 feet above adjacent grade on both the east and west sides of the channel. The Barranca and the undercrossings at Highway 126, the Railroad, and Telegraph road are undersized for the 5,861 cfs flow.

Table 4 – Adams Barranca Existing Structures

	Type of Undercrossing	Approximate Capacity (cfs)
Telegraph Road	10' H x 24' W RCB	3,200
Railroad Crossing	8' H x 28' W Crossing	2,400
Highway 126	Double 12' H x 10' W	2,200

Multiple HEC-RAS analysis were completed to support our findings. A summary of the HEC-RAS plans and geometry files are in the **Appendix F**. The existing condition where the channel geometry is overtopped was modeled using lateral structures as weirs at the top of the existing bank to analyze the flow that has left the channel. Existing condition topography reflects that if water overtops the channel, it will leave the channel forever and head either east or west to Todd Barranca or Clow Road undercrossing, respectively. The flow rates that overtopped the bank on the west side of the Barranca were removed from the total design Q for the proposed condition analysis at each respective cross section. The summary of the flow rates that have overtopped the existing banks at certain locations is shown below and in **Appendix F**.

The breakout begins upstream of Telegraph Road, due to the lack of capacity in the Telegraph Road culvert. Therefore, the flows pond and overtop Telegraph Road as a sheet flow with a depth of approximately 1.5 feet. The northwest frontage of the proposed project extending from the main project entry west to the Barranca has been designed to handle 300 cfs within the parking lot between Telegraph Road and the proposed building. This overflow will be directed

into the proposed channel along the west property line, with a total of 2,637cfs, which totals the overflow from upstream of Telegraph Road on the east side of the Barranca.

The proposed condition will only occur if the property is developed. An 1,700 foot long parallel channel to Adams Canyon Barranca has been designed with a bottom width of 20' and a varying depth with 2:1 side slopes. The west side of the proposed channel adjacent to Adams Canyon Barranca will match the existing elevations until Adams Barranca reaches Hwy 1226. At this point a notch cut at the easterly channel banks is proposed to act as a weir. Flood flows will initially flow to the east into a widen channel through the frontage road and over the highway, as it did in the existing condition. Some flow will go back into Adams Barranca Creek at Hwy 126 however this will be controlled via a weir to prevent overtopping of the west bank therefore no impacts will occur on the west side of the Barranca.

The buildings are proposed at a minimum of 1.0' above the water surface elevation determined for the new channel to protect from flooding (See Exhibit B).

Conclusions

Based on the hydrology calculations done in accordance with the Ventura County Hydrology Manual and reflected in **Appendix C**, the proposed project improves existing drainage conditions and does not allow an increase in peak flow leaving the site. To improve existing conditions, the project drainage design includes an overflow channel, smaller localized detention basins, and surface treatment swales. Existing flow patterns will generally remain the same after the proposed condition. The existing downstream storm drain facilities are currently not operating at their design capacity for a 10-year storm event. The proposed improvements will alleviate this situation.

References

- Ventura County Watershed Protection District, December 2010, "Ventura County Hydrology Manual"
- Jensen Design & Survey, Inc. December 2011, "Adams Barranca Existing Condition Hydrology Study"

- FEMA Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix H, April 2003
- FEMA National Flood Insurance Program Section 65.10, November 2008

APPENDIX A

Existing Hydrology Calculations

PAR01.4492
11/11/2015

APPENDIX A
EXISTING CONDITION CALCULATIONS

Flood Zone 2
Rainfall Zone K

Subarea	Area (acres)	Soil Type	10 yr Time of Concentration	50 yr Time of Concentration	100 yr Time of Concentration	q10 (cfs/ac)	q50 (cfs/ac)	q100 (cfs/ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Storm Drain
A Total	*2.82*	*3*	*27 min*	*19 min*	*14 min*	*0.99*	*1.72*	*2.31*	*2.8*	*4.8*	*6.5*	Adams
B1	16.4	3,4	-	-	-	-	-	-	13.9	23.5	30.3	1
B2	10.88	4	-	-	-	-	-	-	9.2	15.6	20.1	2
B Total	*27.28*	*3,4*	*30 min*	*23 min*	*18 min*	*0.85*	*1.43*	*1.85*	*23.3*	*39.0*	*50.6*	2
C1a	10.7	3	-	-	-	-	-	-	7.8	14.5	19.0	7,4
C1b	4.1	4	-	-	-	-	-	-	3.0	5.5	7.3	3
C1c	0.91	4	-	-	-	-	-	-	0.7	1.2	1.6	4
C2	7.6	4	-	-	-	-	-	-	5.6	10.3	13.5	5
C Total	*23.31*	*4*	*30 min*	*24 min*	*19 min*	*0.73*	*1.35*	*1.77*	*17.1*	*31.5*	*41.4*	*5*
D Total	*7.26*	*4*	*20 min*	*14 min*	*10 min*	*1.08*	*1.92*	*2.69*	*7.9*	*14.0*	*19.6*	*6*
								TOTAL PEAK FLOW (cfs)	**51.1**	**89.3**	**118.1**	
					AVERAGE (cfs/ac)	**0.91**	**1.61**	**2.16**				
					cfs/ac from Peck Road Drain Hydrology Report*	**1.1**	**1.7**	**2**				

*Peck Road Drain Hydrology Report (Septmeber 6, 2007). Ventura County Watershed Protection District

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed A

Name	Zone	Storm	Soil	Area (acres)	TC (min)
A	K	10	3.00	2.8 / 3	27.495 / 27
A	K	25	3.00	2.8 / 3	21.857 / 22
A	K	50	3.00	2.8 / 3	18.766 / 19
A	K	100	3.00	2.8 / 3	14.378 / 14

```
----------------------------------------------------------------------
Watershed Name: Watershed A
----------------------------------------------------------------------
Sub-Area Name: A
Computing Tc for all rainfall frequencies for sub-area A...
----------------------------------------------------------------------
Tc for frequency = 10.00: 27.495 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 27.495 min. = 27 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 1.529
C Total: 0.649
Sum Q Segments (cfs): 2.79
Q Total (cfs): 2.79
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,649.69
Time of Concentration (min): 27.495
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 26.0075
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped
```

Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 2.51
Avg Velocity (ft/s): 0.42
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.52
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.4873
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.28
Q Top (cfs): 2.51
Q Bottom (cfs): 2.79
Velocity Top (ft/s): 1.96
Velocity Bottom (ft/s): 2.04
Avg Velocity (ft/s): 2.00
Wave Velocity (ft/s): 3.25

```
Tc for frequency = 25.00: 21.857 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 21.857 min. = 22 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 1.868
C Total: 0.690
Sum Q Segments (cfs): 3.62
Q Total (cfs): 3.62
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,311.40
Time of Concentration (min): 21.857
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 20.4867
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 3.26
Avg Velocity (ft/s): 0.53
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.67
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.3701
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.36
Q Top (cfs): 3.26
Q Bottom (cfs): 3.62
Velocity Top (ft/s): 2.14
Velocity Bottom (ft/s): 2.21
Avg Velocity (ft/s): 2.18
Wave Velocity (ft/s): 3.53

```
Tc for frequency = 50.00: 18.766 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 18.766 min. = 19 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.349
C Total: 0.733
Sum Q Segments (cfs): 4.84
Q Total (cfs): 4.84
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,125.94
Time of Concentration (min): 18.766
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 17.5137
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 4.36
Avg Velocity (ft/s): 0.62
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.85
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.2519
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.48
Q Top (cfs): 4.36
Q Bottom (cfs): 4.84
Velocity Top (ft/s): 2.35
Velocity Bottom (ft/s): 2.43
Avg Velocity (ft/s): 2.39
Wave Velocity (ft/s): 3.86

```
Tc for frequency = 100.00: 14.378 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 14.378 min. = 14 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 2.81
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.987
C Total: 0.776
Sum Q Segments (cfs): 6.52
Q Total (cfs): 6.52
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 862.65
Time of Concentration (min): 14.378
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.2318
Flow Type: Overland
Length (ft): 650
Top Elevation (ft): 250.5
Bottom Elevation (ft): 238
Contributing Area (acres): 2.53
Percent of Sub-Area (%): 90.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0192
Effective Slope: 0.0192
Q for Flow Path (cfs): 5.87
Avg Velocity (ft/s): 0.82
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.01
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1457
Flow Type: Channel
Length (ft): 290
Top Elevation (ft): 238
Bottom Elevation (ft): 230
Contributing Area (acres): 0.28
Percent of Sub-Area (%): 10.0
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0276
Q for Flow Path (cfs): 0.65
Q Top (cfs): 5.87
Q Bottom (cfs): 6.52
Velocity Top (ft/s): 2.57
Velocity Bottom (ft/s): 2.67
Avg Velocity (ft/s): 2.62
Wave Velocity (ft/s): 4.22

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed B

Name	Zone	Storm	Soil	Area (acres)	TC (min)
B1	K	10	3.00	16.4 / 16	TC ERROR
B1	K	25	3.00	16.4 / 16	25.959 / 26
B1	K	50	3.00	16.4 / 16	22.588 / 23
B1	K	100	3.00	16.4 / 16	17.913 / 18

```
----------------------------------------------------------------------
Watershed Name: Watershed B
----------------------------------------------------------------------
Sub-Area Name: B1
Computing Tc for all rainfall frequencies for sub-area B1...
----------------------------------------------------------------------
Tc for frequency = 10.00: 31.961 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 31.961 min. = 32 min. ** TC ERROR **
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: B1
Total Area (ac): 16.4
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 1.410
C Total: 0.625
Sum Q Segments (cfs): 14.46
Q Total (cfs): 14.46
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,917.68
Time of Concentration (min): 31.961
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 26.4327
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 12.8
Overland Type: Valley
Development Type: Undeveloped
```

Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 1.85
Avg Velocity (ft/s): 0.42
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.59
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.4766
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 86.6
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 12.52
Q Top (cfs): 1.85
Q Bottom (cfs): 14.37
Velocity Top (ft/s): 1.23
Velocity Bottom (ft/s): 2.28
Avg Velocity (ft/s): 1.75
Wave Velocity (ft/s): 2.80
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0520
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 24
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.09
Q Top (cfs): 14.37

Q Bottom (cfs): 14.46
Avg Velocity (ft/s): 5.33
Wave Velocity (ft/s): 6.41

Tc for frequency = 25.00: 25.959 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 25.959 min. = 26 min.

SUB AREA INPUT DATA

Sub Area Name: B1
Total Area (ac): 16.4
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.726
C Total: 0.674
Sum Q Segments (cfs): 19.07
Q Total (cfs): 19.07
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,557.52
Time of Concentration (min): 25.959

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 20.8434
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 12.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 2.44
Avg Velocity (ft/s): 0.54
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.75

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 5.0672
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 86.6
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 16.51
Q Top (cfs): 2.44
Q Bottom (cfs): 18.96
Velocity Top (ft/s): 1.35
Velocity Bottom (ft/s): 2.46
Avg Velocity (ft/s): 1.90
Wave Velocity (ft/s): 3.03
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0481
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 27
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.12
Q Top (cfs): 18.96
Q Bottom (cfs): 19.07
Avg Velocity (ft/s): 5.77
Wave Velocity (ft/s): 6.93

```
Tc for frequency = 50.00: 22.588 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 22.588 min. = 23 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: B1
Total Area (ac): 16.4
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.118
C Total: 0.714
Sum Q Segments (cfs): 24.80
Q Total (cfs): 24.80
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,355.27
Time of Concentration (min): 22.588
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 17.8288
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 12.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 3.18
Avg Velocity (ft/s): 0.63
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.91
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.7143
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 86.6
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 21.47
Q Top (cfs): 3.18
Q Bottom (cfs): 24.65
Velocity Top (ft/s): 1.46
Velocity Bottom (ft/s): 2.64
Avg Velocity (ft/s): 2.05
Wave Velocity (ft/s): 3.25
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0448
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 30
Used Pipe Diameter (in): 30
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.15
Q Top (cfs): 24.65
Q Bottom (cfs): 24.80
Avg Velocity (ft/s): 6.14
Wave Velocity (ft/s): 7.44

```
Tc for frequency = 100.00: 17.913 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 17.913 min. = 18 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: B1
Total Area (ac): 16.4
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.623
C Total: 0.754
Sum Q Segments (cfs): 32.42
Q Total (cfs): 32.42
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,074.79
Time of Concentration (min): 17.913
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.4989
Flow Type: Overland
Length (ft): 670
Top Elevation (ft): 250.5
Bottom Elevation (ft): 235
Contributing Area (acres): 2.1
Percent of Sub-Area (%): 12.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0231
Effective Slope: 0.0231
Q for Flow Path (cfs): 4.15
Avg Velocity (ft/s): 0.83
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.10
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.3722
Flow Type: Channel
Length (ft): 920
Top Elevation (ft): 235
Bottom Elevation (ft): 226.5
Contributing Area (acres): 14.2
Percent of Sub-Area (%): 86.6
Bottom Width (ft): 5
Side Slope (H:V): 5
Manning's N: 0.04
Map Slope: 0.0092
Q for Flow Path (cfs): 28.07
Q Top (cfs): 4.15
Q Bottom (cfs): 32.23
Velocity Top (ft/s): 1.59
Velocity Bottom (ft/s): 2.84
Avg Velocity (ft/s): 2.22
Wave Velocity (ft/s): 3.51
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0421
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 226.5
Bottom Elevation (ft): 226.3
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.6
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 33
Used Pipe Diameter (in): 33
Manning's N: 0.02
Map Slope: 0.0100
Q for Flow Path (cfs): 0.20
Q Top (cfs): 32.23
Q Bottom (cfs): 32.42
Avg Velocity (ft/s): 6.60
Wave Velocity (ft/s): 7.93

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed C

Name	Zone	Storm	Soil	Area (acres)	TC (min)
C	K	10	4.00	23.3 / 23	TC ERROR
C	K	25	4.00	23.3 / 23	27.150 / 27
C	K	50	4.00	23.3 / 23	23.859 / 24
C	K	100	4.00	23.3 / 23	19.399 / 19

```
----------------------------------------------------------------------
Watershed Name: Watershed C
----------------------------------------------------------------------
Sub-Area Name: C
Computing Tc for all rainfall frequencies for sub-area C...
----------------------------------------------------------------------
Tc for frequency = 10.00: 32.925 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 32.925 min. = 33 min. ** TC ERROR **
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 1.387
C Total: 0.523
Sum Q Segments (cfs): 16.90
Q Total (cfs): 16.90
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,975.52
Time of Concentration (min): 32.925
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 24.2017
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
```

Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.33
Avg Velocity (ft/s): 0.41
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.61
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.7087
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 2.56
Q Top (cfs): 0.33
Q Bottom (cfs): 2.89
Velocity Top (ft/s): 1.67
Velocity Bottom (ft/s): 2.50
Avg Velocity (ft/s): 2.09
Wave Velocity (ft/s): 3.13
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0477
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 12
Used Pipe Diameter (in): 12
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.07
Q Top (cfs): 2.89
Q Bottom (cfs): 2.97

```
Avg Velocity (ft/s): 5.56
Wave Velocity (ft/s): 6.99
DATA FOR FLOW PATH 4
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.3586
Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 0.66
Q Top (cfs): 2.97
Q Bottom (cfs): 3.63
Velocity Top (ft/s): 1.12
Velocity Bottom (ft/s): 1.17
Avg Velocity (ft/s): 1.14
Wave Velocity (ft/s): 1.72
DATA FOR FLOW PATH 5
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.3184
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 36
Used Pipe Diameter (in): 36
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 7.76
Q Top (cfs): 3.63
Q Bottom (cfs): 11.38
Avg Velocity (ft/s): 1.98
Wave Velocity (ft/s): 2.62
DATA FOR FLOW PATH 6
----------------------------------------------------------------------
```

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.2903
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6
Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 5.52
Q Top (cfs): 11.38
Q Bottom (cfs): 16.90
Velocity Top (ft/s): 2.19
Velocity Bottom (ft/s): 2.42
Avg Velocity (ft/s): 2.30
Wave Velocity (ft/s): 3.46

```
Tc for frequency = 25.00: 27.150 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 27.150 min. = 27 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 1.695
C Total: 0.600
Sum Q Segments (cfs): 23.70
Q Total (cfs): 23.70
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,628.98
Time of Concentration (min): 27.150
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 19.0565
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.47
Avg Velocity (ft/s): 0.52
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.70
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.4030
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 3.59
Q Top (cfs): 0.47
Q Bottom (cfs): 4.06
Velocity Top (ft/s): 1.76
Velocity Bottom (ft/s): 2.70
Avg Velocity (ft/s): 2.23
Wave Velocity (ft/s): 3.35
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0414
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 15
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.10
Q Top (cfs): 4.06
Q Bottom (cfs): 4.16
Avg Velocity (ft/s): 6.10
Wave Velocity (ft/s): 8.06
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.2577

Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 0.93
Q Top (cfs): 4.16
Q Bottom (cfs): 5.08
Velocity Top (ft/s): 1.21
Velocity Bottom (ft/s): 1.27
Avg Velocity (ft/s): 1.24
Wave Velocity (ft/s): 1.86
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.2974
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 39
Used Pipe Diameter (in): 39
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 10.88
Q Top (cfs): 5.08
Q Bottom (cfs): 15.96
Avg Velocity (ft/s): 2.15
Wave Velocity (ft/s): 2.80
DATA FOR FLOW PATH 6

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.0937
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6

Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 7.74
Q Top (cfs): 15.96
Q Bottom (cfs): 23.70
Velocity Top (ft/s): 2.39
Velocity Bottom (ft/s): 2.65
Avg Velocity (ft/s): 2.52
Wave Velocity (ft/s): 3.78

```
Tc for frequency = 50.00: 23.859 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 23.859 min. = 24 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 2.070
C Total: 0.653
Sum Q Segments (cfs): 31.52
Q Total (cfs): 31.52
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,431.53
Time of Concentration (min): 23.859
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 16.2876
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.62
Avg Velocity (ft/s): 0.61
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.79
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 4.1495
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 4.77
Q Top (cfs): 0.62
Q Bottom (cfs): 5.40
Velocity Top (ft/s): 1.85
Velocity Bottom (ft/s): 2.89
Avg Velocity (ft/s): 2.37
Wave Velocity (ft/s): 3.55
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0411
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 15
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.14
Q Top (cfs): 5.40
Q Bottom (cfs): 5.53
Avg Velocity (ft/s): 6.52
Wave Velocity (ft/s): 8.12
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1756

Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 1.23
Q Top (cfs): 5.53
Q Bottom (cfs): 6.76
Velocity Top (ft/s): 1.29
Velocity Bottom (ft/s): 1.36
Avg Velocity (ft/s): 1.32
Wave Velocity (ft/s): 1.98
DATA FOR FLOW PATH 5

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.2679
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 48
Used Pipe Diameter (in): 48
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 14.47
Q Top (cfs): 6.76
Q Bottom (cfs): 21.23
Avg Velocity (ft/s): 2.31
Wave Velocity (ft/s): 3.11
DATA FOR FLOW PATH 6

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.9372
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6

Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 10.29
Q Top (cfs): 21.23
Q Bottom (cfs): 31.52
Velocity Top (ft/s): 2.58
Velocity Bottom (ft/s): 2.87
Avg Velocity (ft/s): 2.72
Wave Velocity (ft/s): 4.09

```
Tc for frequency = 100.00: 19.399 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 19.399 min. = 19 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: C
Total Area (ac): 23.31
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.552
C Total: 0.696
Sum Q Segments (cfs): 41.37
Q Total (cfs): 41.37
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,163.95
Time of Concentration (min): 19.399
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 12.2905
Flow Type: Overland
Length (ft): 600
Top Elevation (ft): 251
Bottom Elevation (ft): 241
Contributing Area (acres): 0.46
Percent of Sub-Area (%): 2.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0167
Effective Slope: 0.0167
Q for Flow Path (cfs): 0.82
Avg Velocity (ft/s): 0.81
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.88
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.9126
Flow Type: Natural Channel
Length (ft): 885
Top Elevation (ft): 241
Bottom Elevation (ft): 225
Contributing Area (acres): 3.53
Percent of Sub-Area (%): 15.1
Overland Type: Valley
Map Slope: 0.0181
Effective Slope: 0.0181
Q for Flow Path (cfs): 6.27
Q Top (cfs): 0.82
Q Bottom (cfs): 7.08
Velocity Top (ft/s): 1.94
Velocity Bottom (ft/s): 3.08
Avg Velocity (ft/s): 2.51
Wave Velocity (ft/s): 3.77
DATA FOR FLOW PATH 3

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0411
Flow Type: Pipe
Length (ft): 20
Top Elevation (ft): 225.4
Bottom Elevation (ft): 224.8
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 0.4
Initial Pipe Diameter (in): 12
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 15
Manning's N: 0.02
Map Slope: 0.0300
Q for Flow Path (cfs): 0.18
Q Top (cfs): 7.08
Q Bottom (cfs): 7.26
Avg Velocity (ft/s): 6.75
Wave Velocity (ft/s): 8.12
DATA FOR FLOW PATH 4

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.1000

```
Flow Type: Natural Channel
Length (ft): 140
Top Elevation (ft): 224.8
Bottom Elevation (ft): 224.3
Contributing Area (acres): 0.91
Percent of Sub-Area (%): 3.9
Overland Type: Valley
Map Slope: 0.0036
Effective Slope: 0.0036
Q for Flow Path (cfs): 1.62
Q Top (cfs): 7.26
Q Bottom (cfs): 8.87
Velocity Top (ft/s): 1.38
Velocity Bottom (ft/s): 1.45
Avg Velocity (ft/s): 1.41
Wave Velocity (ft/s): 2.12
DATA FOR FLOW PATH 5
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.2590
Flow Type: Pipe
Length (ft): 50
Top Elevation (ft): 224.2
Bottom Elevation (ft): 224
Contributing Area (acres): 10.7
Percent of Sub-Area (%): 45.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 48
Used Pipe Diameter (in): 48
Manning's N: 0.04
Map Slope: 0.0040
Q for Flow Path (cfs): 18.99
Q Top (cfs): 8.87
Q Bottom (cfs): 27.87
Avg Velocity (ft/s): 2.47
Wave Velocity (ft/s): 3.22
DATA FOR FLOW PATH 6
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.7960
Flow Type: Natural Channel
Length (ft): 475
Top Elevation (ft): 224
Bottom Elevation (ft): 220.6
```

Contributing Area (acres): 7.61
Percent of Sub-Area (%): 32.6
Overland Type: Valley
Map Slope: 0.0072
Effective Slope: 0.0072
Q for Flow Path (cfs): 13.51
Q Top (cfs): 27.87
Q Bottom (cfs): 41.37
Velocity Top (ft/s): 2.78
Velocity Bottom (ft/s): 3.10
Avg Velocity (ft/s): 2.94
Wave Velocity (ft/s): 4.41

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project: Santa Paula West 2
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed D

Name	Zone	Storm	Soil	Area (acres)	TC (min)
D	K	10	4.00	7.3 / 7	20.297 / 20
D	K	25	4.00	7.3 / 7	16.006 / 16
D	K	50	4.00	7.3 / 7	13.691 / 14
D	K	100	4.00	7.3 / 7	10.309 / 10

Watershed Name: Watershed D

Sub-Area Name: D
Computing Tc for all rainfall frequencies for sub-area D...

Tc for frequency = 10.00: 20.297 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 20.297 min. = 20 min.

SUB AREA INPUT DATA

Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.770
C Total: 0.612
Sum Q Segments (cfs): 7.86
Q Total (cfs): 7.86
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,217.80
Time of Concentration (min): 20.297

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 20.2164
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped

Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 5.95
Avg Velocity (ft/s): 0.40
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.74
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0802
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 1.91
Q Top (cfs): 5.95
Q Bottom (cfs): 7.86
Velocity Top (ft/s): 3.96
Velocity Bottom (ft/s): 4.35
Avg Velocity (ft/s): 4.16
Wave Velocity (ft/s): 6.23

```
Tc for frequency = 25.00: 16.006 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 16.006 min. = 16 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.183
C Total: 0.663
Sum Q Segments (cfs): 10.51
Q Total (cfs): 10.51
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 960.35
Time of Concentration (min): 16.006
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 15.9330
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 7.96
Avg Velocity (ft/s): 0.51
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.83
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0728
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 2.55
Q Top (cfs): 7.96
Q Bottom (cfs): 10.51
Velocity Top (ft/s): 4.37
Velocity Bottom (ft/s): 4.79
Avg Velocity (ft/s): 4.58
Wave Velocity (ft/s): 6.87

```
Tc for frequency = 50.00: 13.691 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 13.691 min. = 14 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 2.717
C Total: 0.707
Sum Q Segments (cfs): 13.95
Q Total (cfs): 13.95
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 821.46
Time of Concentration (min): 13.691
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 13.6247
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 10.57
Avg Velocity (ft/s): 0.60
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.96
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0663
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 3.38
Q Top (cfs): 10.57
Q Bottom (cfs): 13.95
Velocity Top (ft/s): 4.80
Velocity Bottom (ft/s): 5.26
Avg Velocity (ft/s): 5.03
Wave Velocity (ft/s): 7.55

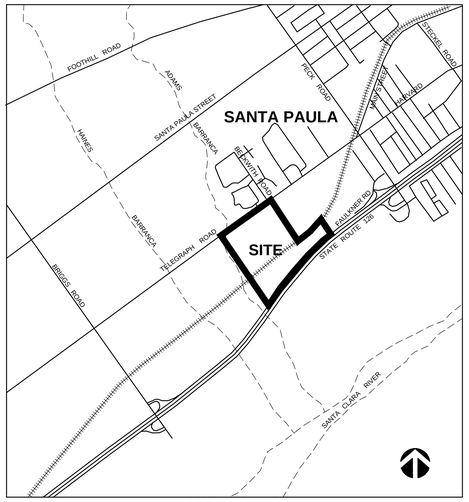
```
Tc for frequency = 100.00: 10.309 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 10.309 min. = 10 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: D
Total Area (ac): 7.26
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 3.570
C Total: 0.755
Sum Q Segments (cfs): 19.56
Q Total (cfs): 19.56
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 618.52
Time of Concentration (min): 10.309
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 10.2494
Flow Type: Overland
Length (ft): 490
Top Elevation (ft): 226
Bottom Elevation (ft): 223
Contributing Area (acres): 5.5
Percent of Sub-Area (%): 75.8
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0061
Effective Slope: 0.0061
Q for Flow Path (cfs): 14.82
Avg Velocity (ft/s): 0.80
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.13
```

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.0592
Flow Type: Natural Channel
Length (ft): 30
Top Elevation (ft): 226
Bottom Elevation (ft): 220.4
Contributing Area (acres): 1.76
Percent of Sub-Area (%): 24.2
Overland Type: Mountain
Map Slope: 0.1867
Effective Slope: 0.1527
Q for Flow Path (cfs): 4.74
Q Top (cfs): 14.82
Q Bottom (cfs): 19.56
Velocity Top (ft/s): 5.37
Velocity Bottom (ft/s): 5.89
Avg Velocity (ft/s): 5.63
Wave Velocity (ft/s): 8.44

APPENDIX B

Existing Hydrology Exhibit A



VICINITY MAP
NOT TO SCALE

DRAINAGE AREA CALCULATIONS

Watershed	Subarea	Area (ac.)	10-year Q10 (cfs)	50-year Q50 (cfs)	100-year Q100 (cfs)
ADAMS BARRANCA	A	2.82	2.8	4.8	6.5
WEST 126 CULVERTS (2,8)	B1	16.4	14.0	23.5	30.4
	B2	10.88	9.3	15.6	20.2
	TOTAL	27.28	23.3	39.0	50.6
EAST 126 CULVERTS (5,6)	C1a	10.7	7.8	14.5	19.0
	C1b	4.1	3.0	5.5	7.3
	C1c	0.91	0.7	1.2	1.6
	C2	7.6	5.6	10.3	13.5
	D	7.26	7.9	14.0	19.6
	TOTAL	30.6	24.9	45.5	60.9

LEGEND

- DRAINAGE AREA LIMITS
- EXISTING STORM DRAIN
- (C1) DRAINAGE AREA
- 1 PIPE NUMBER
- FLOW PATH
- PROPERTY BOUNDARY
- SUBDRAINAGE AREA LIMITS

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=__'
J.N.: ____
DATE: Nov 19, 2015
DWG. NAME: 4492_EX-01_HYDRO.dwg

EXISTING HYDROLOGY
FOR
SANTA PAULA WEST (North of 126)

North of Highway 126
City of Santa Paula
COUNTY OF VENTURA STATE OF CALIFORNIA

EXHIBIT
A

J:\PAR14492\Eng\Exhibits\Hydrology Reference\4492_EX-01_HYDRO.dwg Nov 19, 2015, 9:07am kpascoe

APPENDIX C

Proposed Hydrology Calculations

PAR01.4492
11/17/2015

APPENDIX C
PROPOSED CONDITION CALCULATIONS

Flood Zone 2
Rainfall Zone K

Subarea	Area (acres)	Soil Type	10 yr Time of Concentration (min)	50 yr Time of Concentration (min)	100 yr Time of Concentration (min)	q10 (cfs/ac)	q50 (cfs/ac)	q100 (cfs/ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)	Storm Drain
A	*2.49*	*3*	*30*	*30*	*30*	*1.08*	*1.37*	*1.51*	*2.7*	*3.4*	*3.8*	*Adams*
B1a	*8.47*	*3*	10	7	6	*2.24*	*3.41*	*4.19*	*19.0*	*28.9*	*35.5*	-
B1b	*1.86*	*3*	10	8	7	*4.41*	*6.27*	*7.57*	*8.2*	*11.7*	*14.1*	-
B1c	*7.55*	*4*	9	6	5	*2.35*	*3.67*	*4.58*	*17.7*	*27.8*	*34.6*	-
B1 Total	*17.88*	*3,4*	-	-	-	-	-	-	*33*	*68.3*	*84.1*	*Basin, 2*
B2a	*5.49*	*4*	10	8	8	*2.21*	*3.14*	*3.54*	*12.1*	*17.2*	*19.4*	-
B2b	*4.04*	*4*	5	5	5	*3.32*	*4.06*	*4.55*	*13.4*	*16.4*	*18.4*	-
B2 Total	*9.53*	*4*	-	-	-	-	-	-	*25.5*	*33.7*	*37.8*	*Basin, 8*
C1	*15.65*	3,4	-	-	-	-	-	-	*32.7*	*52.7*	*59.8*	-
C2	*9.24*	4	-	-	-	-	-	-	*19.3*	*31.2*	*35.3*	-
C Total	*24.89*	*3,4*	*11*	*7*	*7*	*2.09*	*3.37*	*3.82*	*52*	*84*	*95*	*Basin, 5*
D	*5.59*	*4*	*13*	*9*	*9*	*1.90*	*2.96*	*3.34*	*10.6*	*16.6*	*18.7*	*9*
E(take out	-	-	-	-	-	-	-	-	-	-	-	-
								TOTAL PEAK FLOW (cfs)**	**135.7**	**205.9**	**239.5**	
					AVERAGE (cfs/ac)	**2.45**	**3.53**	**4.14**				
					cfs/ac from City of Santa Paula Storm Drain Master Plan***	**1.8**	**2.7**	**3.2**				

PAR01.4492
11/11/2015

APPENDIX C
HIGHWAY 126 CULVERT CALCULATIONS

EXISTING CONDITION CULVERT DATA SUMMARY

Pipe Number	Size (span x rise)	Invert in	Invert out	Length	slope	headwater	Culvert Master (cfs)	Equivalent Pipe Dimensions for Culvert Program
2	48"x24"	220.44	220.25	140	0.001	225	33.7	43"x27"
5	52"x30"	220.64	219.69	150	0.006	225	49.5	50"x31"
6	52"x30"	220.44	220.25	172	0.001	225	43.2	50"x31"
8	24"x21"	222.25	220.79	140	0.010	225	15.2	used a 24" cmp
9	Currently no water is directed there in the existing condtion, but the City of Santa Paula master plan has the majority of the onsite water planned and sized to go to to Todd Lane Drain							

EXISTING CONDITION ROUTING TO CULVERTS

(proposed condition not to exceed peak flows)

Pipe Number	Existing Subarea	Area (ac)	Q10 (cfs)	Q100 (cfs)
2	(B1 + B2)/2	13.64	11.65	25.30
8	(B1 + B2)/2	13.64	11.65	25.30
5	C1a+C1b+C1c+C2	23.22	17.07	41.37
6	D	7.26	7.86	19.56
Adams	A	2.82	2.8	6.5

PROPOSED CONDITION ROUTING TO CULVERTS

Existing Condition Pipe Number	Proposed Condition Pipe Number	Proposed Subarea	Area (ac)	Q10 (cfs)	Q100 (cfs)
2	2	B1	17.88	11.80	20.10
8	8	B2	9.53	*8.6*	*16.2*
5,6	5	C	24.89354	26.80	46.00

APPENDIX C:
DETENTION BASIN CALCULATIONS

Detention Basin	Contributing Subarea	Basin Volume (cf)	Outflow Pipe Location	Peak Inflow to Basin 10 year (cfs)	Peak Outflow 10 year (cfs)	Peak Inflow to Basin 50 year (cfs)	Peak Outflow 50 year (cfs)	Peak Inflow to Basin 100 year (cfs)	Peak Outflow 100 year (cfs)
1	B1 - 17.88 ac	163,525	2	43.9	11.8	66.8	21.1	82.5	20.1
2	B2 - 9.53 ac	104,136	8	25.4	8.6	33.7	17.6	37.91	16.2
3	C - 24.89 ac	78,200	5	52	26.8	84	41.7	95	46

PROPOSED CONDITION WATER QUALITY REQUIREMENTS

Subarea	Drainage Area (acres)	Railroad Right of Way Area (acres)	Total Required Treatment Area (acres)	Volume Based Water Quality Required (ft^3)**
A	2.5	0.1	0.0	0.0
B1a	8.5	0.4	8.1	16563.4
B1b	1.9	0.0	1.9	3793.2
B1c	7.6	0.4	7.2	14634.7
B2a	5.5	0.4	5.1	10395.0
B2b	4.0	0.7	3.3	6807.0
C1	15.7	0.7	15.0	30556.5
C2	9.2	0.7	8.6	17501.6
D	5.6	0.6	4.9	10096.9
			Total Volume	**110348.3**

** Caluclated using a 75% impervious area average
Used method in SQUIMP manual page 5-5 for calculations
(same value as a 0.75 in storm event as stated in new permit)

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed A

Name	Zone	Storm	Soil	Area (acres)	TC (min)
A	K	10	4.00	1.8 / 2	TC ERROR
A	K	25	4.00	1.8 / 2	TC ERROR
A	K	50	4.00	1.8 / 2	TC ERROR
A	K	100	4.00	1.8 / 2	TC ERROR

```
----------------------------------------------------------------------
Watershed Name: Watershed A
----------------------------------------------------------------------
Sub-Area Name: A
Computing Tc for all rainfall frequencies for sub-area A...
----------------------------------------------------------------------
Tc for frequency = 10.00: 68.003 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 68.003 min. = 68 min. ** TC ERROR **
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 1.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 0.991
C Total: 0.771
Sum Q Segments (cfs): 1.37
Q Total (cfs): 1.37
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 4,080.19
Time of Concentration (min): 68.003
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 1.0498
Flow Type: Overland
Length (ft): 33
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.6
Overland Type: Mountain
Development Type: Industrial
```

Map Slope: 0.0606
Effective Slope: 0.0606
Q for Flow Path (cfs): 0.08
Avg Velocity (ft/s): 0.52
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 66.9535
Flow Type: Channel
Length (ft): 1799
Top Elevation (ft): 248
Bottom Elevation (ft): 220
Contributing Area (acres): 1.7
Percent of Sub-Area (%): 94.4
Bottom Width (ft): 10
Side Slope (H:V): 2
Manning's N: 0.2
Map Slope: 0.0156
Q for Flow Path (cfs): 1.30
Q Top (cfs): 0.08
Q Bottom (cfs): 1.37
Velocity Top (ft/s): 0.14
Velocity Bottom (ft/s): 0.41
Avg Velocity (ft/s): 0.27
Wave Velocity (ft/s): 0.45

Tc for frequency = 25.00: 63.764 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 63.764 min. = 64 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: A
Total Area (ac): 1.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 1.145
C Total: 0.791
Sum Q Segments (cfs): 1.63
Q Total (cfs): 1.63
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 3,825.82
Time of Concentration (min): 63.764

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.8519
Flow Type: Overland
Length (ft): 33
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.6
Overland Type: Mountain
Development Type: Industrial
Map Slope: 0.0606
Effective Slope: 0.0606
Q for Flow Path (cfs): 0.09
Avg Velocity (ft/s): 0.65
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 62.9118
Flow Type: Channel
Length (ft): 1799
Top Elevation (ft): 248
Bottom Elevation (ft): 220
Contributing Area (acres): 1.7
Percent of Sub-Area (%): 94.4
Bottom Width (ft): 10
Side Slope (H:V): 2
Manning's N: 0.2
Map Slope: 0.0156
Q for Flow Path (cfs): 1.54
Q Top (cfs): 0.09
Q Bottom (cfs): 1.63
Velocity Top (ft/s): 0.15
Velocity Bottom (ft/s): 0.44
Avg Velocity (ft/s): 0.29
Wave Velocity (ft/s): 0.48

```
Tc for frequency = 50.00: 60.187 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 60.187 min. = 60 min. ** TC ERROR **
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 1.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 1.309
C Total: 0.812
Sum Q Segments (cfs): 1.91
Q Total (cfs): 1.91
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 3,611.22
Time of Concentration (min): 60.187
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.5500
Flow Type: Overland
Length (ft): 33
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.6
Overland Type: Mountain
Development Type: Industrial
Map Slope: 0.0606
Effective Slope: 0.0606
Q for Flow Path (cfs): 0.11
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2
```

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 59.6370
Flow Type: Channel
Length (ft): 1799
Top Elevation (ft): 248
Bottom Elevation (ft): 220
Contributing Area (acres): 1.7
Percent of Sub-Area (%): 94.4
Bottom Width (ft): 10
Side Slope (H:V): 2
Manning's N: 0.2
Map Slope: 0.0156
Q for Flow Path (cfs): 1.81
Q Top (cfs): 0.11
Q Bottom (cfs): 1.91
Velocity Top (ft/s): 0.15
Velocity Bottom (ft/s): 0.46
Avg Velocity (ft/s): 0.31
Wave Velocity (ft/s): 0.50

```
Tc for frequency = 100.00: 56.998 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 56.998 min. = 57 min. ** TC ERROR **
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: A
Total Area (ac): 1.8
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 1.483
C Total: 0.834
Sum Q Segments (cfs): 2.23
Q Total (cfs): 2.23
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 3,419.86
Time of Concentration (min): 56.998
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 0.5500
Flow Type: Overland
Length (ft): 33
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.1
Percent of Sub-Area (%): 5.6
Overland Type: Mountain
Development Type: Industrial
Map Slope: 0.0606
Effective Slope: 0.0606
Q for Flow Path (cfs): 0.12
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2
```

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 56.4477
Flow Type: Channel
Length (ft): 1799
Top Elevation (ft): 248
Bottom Elevation (ft): 220
Contributing Area (acres): 1.7
Percent of Sub-Area (%): 94.4
Bottom Width (ft): 10
Side Slope (H:V): 2
Manning's N: 0.2
Map Slope: 0.0156
Q for Flow Path (cfs): 2.10
Q Top (cfs): 0.12
Q Bottom (cfs): 2.23
Velocity Top (ft/s): 0.16
Velocity Bottom (ft/s): 0.49
Avg Velocity (ft/s): 0.33
Wave Velocity (ft/s): 0.53

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2008.11
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Watershed B

Name	Zone	Storm	Soil	Area (acres)	TC (min)
B1a	K	10	3.00	8.5 / 8	9.681 / 10
B1a	K	25	3.00	8.5 / 8	8.250 / 8
B1a	K	50	3.00	8.5 / 8	6.980 / 7
B1a	K	100	3.00	8.5 / 8	5.893 / 6
B1b	K	10	3.00	3.7 / 4	10.032 / 10
B1b	K	25	3.00	3.7 / 4	9.768 / 10
B1b	K	50	3.00	3.7 / 4	7.961 / 8
B1b	K	100	3.00	3.7 / 4	7.130 / 7
B1c	K	10	4.00	7.6 / 8	8.505 / 9
B1c	K	25	4.00	7.6 / 8	7.256 / 7
B1c	K	50	4.00	7.6 / 8	5.583 / 6
B1c	K	100	4.00	7.6 / 8	TC ERROR
B2a	K	10	4.00	5.5 / 5	10.228 / 10
B2a	K	25	4.00	5.5 / 5	9.985 / 10
B2a	K	50	4.00	5.5 / 5	7.749 / 8
B2a	K	100	4.00	5.5 / 5	7.580 / 8
B2b	K	10	4.00	4.0 / 4	5.231 / 5
B2b	K	25	4.00	4.0 / 4	TC ERROR
B2b	K	50	4.00	4.0 / 4	TC ERROR
B2b	K	100	4.00	4.0 / 4	TC ERROR

Watershed Name: Watershed B

Sub-Area Name: B1a
Computing Tc for all rainfall frequencies for sub-area B1a...

Tc for frequency = 10.00: 9.681 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 9.681 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: B1a
Total Area (ac): 8.45
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.524
C Total: 0.889
Sum Q Segments (cfs): 18.96
Q Total (cfs): 18.96
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 580.87
Time of Concentration (min): 9.681

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 5.8531
Flow Type: Overland
Length (ft): 144
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Undeveloped

Map Slope: 0.0139
Effective Slope: 0.0139
Q for Flow Path (cfs): 0.11
Avg Velocity (ft/s): 0.41
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.25
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.9057
Flow Type: Street
Length (ft): 315.5
Top Elevation (ft): 248
Bottom Elevation (ft): 244
Contributing Area (acres): 2
Percent of Sub-Area (%): 23.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0127
Q for Flow Path (cfs): 4.49
Q Top (cfs): 0.11
Q Bottom (cfs): 4.60
Velocity Top (ft/s): 1.04
Velocity Bottom (ft/s): 2.64
Avg Velocity (ft/s): 1.84
Wave Velocity (ft/s): 2.76
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.9224
Flow Type: Pipe
Length (ft): 809.9
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 75.7
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0198
Q for Flow Path (cfs): 14.36
Q Top (cfs): 4.60
Q Bottom (cfs): 18.96

Avg Velocity (ft/s): 5.20
Wave Velocity (ft/s): 7.02

```
Tc for frequency = 25.00: 8.250 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 8.250 min. = 8 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: B1a
Total Area (ac): 8.45
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 3.191
C Total: 0.901
Sum Q Segments (cfs): 24.29
Q Total (cfs): 24.29
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 495.02
Time of Concentration (min): 8.250
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 4.6079
Flow Type: Overland
Length (ft): 144
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0139
Effective Slope: 0.0139
Q for Flow Path (cfs): 0.14
Avg Velocity (ft/s): 0.52
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.29
```

DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.7907
Flow Type: Street
Length (ft): 315.5
Top Elevation (ft): 248
Bottom Elevation (ft): 244
Contributing Area (acres): 2
Percent of Sub-Area (%): 23.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0127
Q for Flow Path (cfs): 5.75
Q Top (cfs): 0.14
Q Bottom (cfs): 5.89
Velocity Top (ft/s): 1.10
Velocity Bottom (ft/s): 2.81
Avg Velocity (ft/s): 1.96
Wave Velocity (ft/s): 2.94
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.8517
Flow Type: Pipe
Length (ft): 809.9
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 75.7
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0198
Q for Flow Path (cfs): 18.40
Q Top (cfs): 5.89
Q Bottom (cfs): 24.29
Avg Velocity (ft/s): 5.54
Wave Velocity (ft/s): 7.29

```
Tc for frequency = 50.00: 6.980 Minutes
DATA FOR SUB AREA 1
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 6.980 min. = 7 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: B1a
Total Area (ac): 8.45
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 3.771
C Total: 0.908
Sum Q Segments (cfs): 28.92
Q Total (cfs): 28.92
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 418.78
Time of Concentration (min): 6.980
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.9380
Flow Type: Overland
Length (ft): 144
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0139
Effective Slope: 0.0139
Q for Flow Path (cfs): 0.17
Avg Velocity (ft/s): 0.61
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.32
```

DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.7137
Flow Type: Street
Length (ft): 315.5
Top Elevation (ft): 248
Bottom Elevation (ft): 244
Contributing Area (acres): 2
Percent of Sub-Area (%): 23.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0127
Q for Flow Path (cfs): 6.85
Q Top (cfs): 0.17
Q Bottom (cfs): 7.02
Velocity Top (ft/s): 1.15
Velocity Bottom (ft/s): 2.94
Avg Velocity (ft/s): 2.05
Wave Velocity (ft/s): 3.07
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.3278
Flow Type: Pipe
Length (ft): 809.9
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 75.7
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0198
Q for Flow Path (cfs): 21.91
Q Top (cfs): 7.02
Q Bottom (cfs): 28.92
Avg Velocity (ft/s): 7.56
Wave Velocity (ft/s): 10.17

```
Tc for frequency = 100.00: 5.893 Minutes
DATA FOR SUB AREA 1
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.893 min. = 6 min.
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: B1a
Total Area (ac): 8.45
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 4.590
C Total: 0.914
Sum Q Segments (cfs): 35.45
Q Total (cfs): 35.45
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 353.61
Time of Concentration (min): 5.893
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 2.9683
Flow Type: Overland
Length (ft): 144
Top Elevation (ft): 250
Bottom Elevation (ft): 248
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.6
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0139
Effective Slope: 0.0139
Q for Flow Path (cfs): 0.21
Avg Velocity (ft/s): 0.81
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.35
```

DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.6282
Flow Type: Street
Length (ft): 315.5
Top Elevation (ft): 248
Bottom Elevation (ft): 244
Contributing Area (acres): 2
Percent of Sub-Area (%): 23.7
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0127
Q for Flow Path (cfs): 8.39
Q Top (cfs): 0.21
Q Bottom (cfs): 8.60
Velocity Top (ft/s): 1.21
Velocity Bottom (ft/s): 3.09
Avg Velocity (ft/s): 2.15
Wave Velocity (ft/s): 3.23
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.2970
Flow Type: Pipe
Length (ft): 809.9
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.4
Percent of Sub-Area (%): 75.7
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0198
Q for Flow Path (cfs): 26.85
Q Top (cfs): 8.60
Q Bottom (cfs): 35.45
Avg Velocity (ft/s): 7.96
Wave Velocity (ft/s): 10.41

```
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:
------------------------------------------------------------------------
Sub-Area Name: B1b
Computing Tc for all rainfall frequencies for sub-area B1b...
------------------------------------------------------------------------
Tc for frequency = 10.00: 10.032 Minutes
DATA FOR SUB AREA 2
------------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 10.032 min. = 10 min.
------------------------------------------------------------------------
SUB AREA INPUT DATA
------------------------------------------------------------------------
Sub Area Name: B1b
Total Area (ac): 3.65
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT
------------------------------------------------------------------------
Intensity (in/hr): 2.524
C Total: 0.889
Sum Q Segments (cfs): 8.19
Q Total (cfs): 8.19
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 601.92
Time of Concentration (min): 10.032
------------------------------------------------------------------------
DATA FOR FLOW PATH 1
------------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.2000
Flow Type: Overland
Length (ft): 96
Top Elevation (ft): 251
Bottom Elevation (ft): 250
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.4
```

Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0104
Effective Slope: 0.0104
Q for Flow Path (cfs): 0.11
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 5.0210
Flow Type: Street
Length (ft): 849.9
Top Elevation (ft): 250
Bottom Elevation (ft): 237
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 32.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0153
Q for Flow Path (cfs): 2.69
Q Top (cfs): 0.11
Q Bottom (cfs): 2.81
Velocity Top (ft/s): 1.21
Velocity Bottom (ft/s): 2.55
Avg Velocity (ft/s): 1.88
Wave Velocity (ft/s): 2.82
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.8109
Flow Type: Pipe
Length (ft): 353.5
Top Elevation (ft): 237
Bottom Elevation (ft): 228
Contributing Area (acres): 2.4
Percent of Sub-Area (%): 65.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0255
Q for Flow Path (cfs): 5.39
Q Top (cfs): 2.81

Q Bottom (cfs): 8.19
Avg Velocity (ft/s): 2.41
Wave Velocity (ft/s): 3.25

Tc for frequency = 25.00: 9.768 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 9.768 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: B1b
Total Area (ac): 3.65
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.806
C Total: 0.894
Sum Q Segments (cfs): 9.16
Q Total (cfs): 9.16
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 586.10
Time of Concentration (min): 9.768

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.0969
Flow Type: Overland
Length (ft): 96
Top Elevation (ft): 251
Bottom Elevation (ft): 250
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.4
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0104
Effective Slope: 0.0104
Q for Flow Path (cfs): 0.13
Avg Velocity (ft/s): 0.52
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 4.8924
Flow Type: Street
Length (ft): 849.9
Top Elevation (ft): 250
Bottom Elevation (ft): 237
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 32.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0153
Q for Flow Path (cfs): 3.01
Q Top (cfs): 0.13
Q Bottom (cfs): 3.14
Velocity Top (ft/s): 1.24
Velocity Bottom (ft/s): 2.62
Avg Velocity (ft/s): 1.93
Wave Velocity (ft/s): 2.90
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.7791
Flow Type: Pipe
Length (ft): 353.5
Top Elevation (ft): 237
Bottom Elevation (ft): 228
Contributing Area (acres): 2.4
Percent of Sub-Area (%): 65.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0255
Q for Flow Path (cfs): 6.02
Q Top (cfs): 3.14
Q Bottom (cfs): 9.16
Avg Velocity (ft/s): 2.49
Wave Velocity (ft/s): 3.31

Tc for frequency = 50.00: 7.961 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 7.961 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: B1b
Total Area (ac): 3.65
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.525
C Total: 0.905
Sum Q Segments (cfs): 11.65
Q Total (cfs): 11.65
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 477.63
Time of Concentration (min): 7.961

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 1.6000
Flow Type: Overland
Length (ft): 96
Top Elevation (ft): 251
Bottom Elevation (ft): 250
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.4
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0104
Effective Slope: 0.0104
Q for Flow Path (cfs): 0.16
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 4.6269
Flow Type: Street
Length (ft): 849.9
Top Elevation (ft): 250
Bottom Elevation (ft): 237
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 32.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0153
Q for Flow Path (cfs): 3.83
Q Top (cfs): 0.16
Q Bottom (cfs): 3.99
Velocity Top (ft/s): 1.31
Velocity Bottom (ft/s): 2.77
Avg Velocity (ft/s): 2.04
Wave Velocity (ft/s): 3.06
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.7336
Flow Type: Pipe
Length (ft): 353.5
Top Elevation (ft): 237
Bottom Elevation (ft): 228
Contributing Area (acres): 2.4
Percent of Sub-Area (%): 65.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0255
Q for Flow Path (cfs): 7.66
Q Top (cfs): 3.99
Q Bottom (cfs): 11.65
Avg Velocity (ft/s): 2.63
Wave Velocity (ft/s): 3.40

Tc for frequency = 100.00: 7.130 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 7.130 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: B1b
Total Area (ac): 3.65
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 3.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.226
C Total: 0.911
Sum Q Segments (cfs): 14.06
Q Total (cfs): 14.06
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 427.81
Time of Concentration (min): 7.130

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 1.6000
Flow Type: Overland
Length (ft): 96
Top Elevation (ft): 251
Bottom Elevation (ft): 250
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.4
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0104
Effective Slope: 0.0104
Q for Flow Path (cfs): 0.19
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 4.4291
Flow Type: Street
Length (ft): 849.9
Top Elevation (ft): 250
Bottom Elevation (ft): 237
Contributing Area (acres): 1.2
Percent of Sub-Area (%): 32.9
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0153
Q for Flow Path (cfs): 4.62
Q Top (cfs): 0.19
Q Bottom (cfs): 4.81
Velocity Top (ft/s): 1.37
Velocity Bottom (ft/s): 2.89
Avg Velocity (ft/s): 2.13
Wave Velocity (ft/s): 3.20
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.1010
Flow Type: Pipe
Length (ft): 353.5
Top Elevation (ft): 237
Bottom Elevation (ft): 228
Contributing Area (acres): 2.4
Percent of Sub-Area (%): 65.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0255
Q for Flow Path (cfs): 9.24
Q Top (cfs): 4.81
Q Bottom (cfs): 14.06
Avg Velocity (ft/s): 3.98
Wave Velocity (ft/s): 5.35

Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:

Sub-Area Name: B1c
Computing Tc for all rainfall frequencies for sub-area B1c...

Tc for frequency = 10.00: 8.505 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 8.505 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 7.55
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.680
C Total: 0.876
Sum Q Segments (cfs): 17.73
Q Total (cfs): 17.73
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 510.28
Time of Concentration (min): 8.505

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.2067
Flow Type: Overland
Length (ft): 96.2
Top Elevation (ft): 248
Bottom Elevation (ft): 247.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.7

Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0052
Effective Slope: 0.0052
Q for Flow Path (cfs): 0.12
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.5930
Flow Type: Street
Length (ft): 251.9
Top Elevation (ft): 247.5
Bottom Elevation (ft): 244
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 15.5
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0139
Q for Flow Path (cfs): 2.75
Q Top (cfs): 0.12
Q Bottom (cfs): 2.87
Velocity Top (ft/s): 1.09
Velocity Bottom (ft/s): 2.43
Avg Velocity (ft/s): 1.76
Wave Velocity (ft/s): 2.64
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 3.7049
Flow Type: Pipe
Length (ft): 1267
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.33
Percent of Sub-Area (%): 83.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0126
Q for Flow Path (cfs): 14.87
Q Top (cfs): 2.87

Q Bottom (cfs): 17.73
Avg Velocity (ft/s): 4.28
Wave Velocity (ft/s): 5.70

```
Tc for frequency = 25.00: 7.256 Minutes
DATA FOR SUB AREA 3
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 7.256 min. = 7 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: B1c
Total Area (ac): 7.55
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 3.454
C Total: 0.890
Sum Q Segments (cfs): 23.21
Q Total (cfs): 23.21
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 435.35
Time of Concentration (min): 7.256
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.1325
Flow Type: Overland
Length (ft): 96.2
Top Elevation (ft): 248
Bottom Elevation (ft): 247.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0052
Effective Slope: 0.0052
Q for Flow Path (cfs): 0.15
Avg Velocity (ft/s): 0.51
Passed Scour Check: N/A
DATA FOR FLOW PATH 2
```

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.4888
Flow Type: Street
Length (ft): 251.9
Top Elevation (ft): 247.5
Bottom Elevation (ft): 244
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 15.5
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0139
Q for Flow Path (cfs): 3.60
Q Top (cfs): 0.15
Q Bottom (cfs): 3.75
Velocity Top (ft/s): 1.16
Velocity Bottom (ft/s): 2.60
Avg Velocity (ft/s): 1.88
Wave Velocity (ft/s): 2.82
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 2.6346
Flow Type: Pipe
Length (ft): 1267
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.33
Percent of Sub-Area (%): 83.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0126
Q for Flow Path (cfs): 19.46
Q Top (cfs): 3.75
Q Bottom (cfs): 23.21
Avg Velocity (ft/s): 5.93
Wave Velocity (ft/s): 8.02

Tc for frequency = 50.00: 5.583 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 5.583 min. = 6 min.

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 7.55
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.100
C Total: 0.897
Sum Q Segments (cfs): 27.76
Q Total (cfs): 27.76
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 334.98
Time of Concentration (min): 5.583

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 1.6033
Flow Type: Overland
Length (ft): 96.2
Top Elevation (ft): 248
Bottom Elevation (ft): 247.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0052
Effective Slope: 0.0052
Q for Flow Path (cfs): 0.18
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.4232
Flow Type: Street
Length (ft): 251.9
Top Elevation (ft): 247.5
Bottom Elevation (ft): 244
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 15.5
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0139
Q for Flow Path (cfs): 4.30
Q Top (cfs): 0.18
Q Bottom (cfs): 4.49
Velocity Top (ft/s): 1.22
Velocity Bottom (ft/s): 2.72
Avg Velocity (ft/s): 1.97
Wave Velocity (ft/s): 2.95
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 2.5566
Flow Type: Pipe
Length (ft): 1267
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.33
Percent of Sub-Area (%): 83.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 24
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0126
Q for Flow Path (cfs): 23.28
Q Top (cfs): 4.49
Q Bottom (cfs): 27.76
Avg Velocity (ft/s): 6.22
Wave Velocity (ft/s): 8.26

Tc for frequency = 100.00: 4.843 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 4.843 min. = 5 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B1c
Total Area (ac): 7.55
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 5.100
C Total: 0.904
Sum Q Segments (cfs): 34.81
Q Total (cfs): 34.81
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 290.60
Time of Concentration (min): 4.843

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 1.6033
Flow Type: Overland
Length (ft): 96.2
Top Elevation (ft): 248
Bottom Elevation (ft): 247.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.7
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0052
Effective Slope: 0.0052
Q for Flow Path (cfs): 0.23
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

```
----------------------------------------------------------------------
Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.3445
Flow Type: Street
Length (ft): 251.9
Top Elevation (ft): 247.5
Bottom Elevation (ft): 244
Contributing Area (acres): 1.17
Percent of Sub-Area (%): 15.5
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0139
Q for Flow Path (cfs): 5.39
Q Top (cfs): 0.23
Q Bottom (cfs): 5.62
Velocity Top (ft/s): 1.29
Velocity Bottom (ft/s): 2.88
Avg Velocity (ft/s): 2.08
Wave Velocity (ft/s): 3.12
DATA FOR FLOW PATH 3
----------------------------------------------------------------------
Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.8955
Flow Type: Pipe
Length (ft): 1267
Top Elevation (ft): 244
Bottom Elevation (ft): 228
Contributing Area (acres): 6.33
Percent of Sub-Area (%): 83.8
Initial Pipe Diameter (in): 30
Calculated Pipe Diameter (in): 27
Used Pipe Diameter (in): 30
Manning's N: 0.011
Map Slope: 0.0126
Q for Flow Path (cfs): 29.18
Q Top (cfs): 5.62
Q Bottom (cfs): 34.81
Avg Velocity (ft/s): 8.38
Wave Velocity (ft/s): 11.14
```

```
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:
------------------------------------------------------------------------
Sub-Area Name: B2a
Computing Tc for all rainfall frequencies for sub-area B2a...
------------------------------------------------------------------------
Tc for frequency = 10.00: 10.228 Minutes
DATA FOR SUB AREA 4
------------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 10.228 min. = 10 min.
------------------------------------------------------------------------
SUB AREA INPUT DATA
------------------------------------------------------------------------
Sub Area Name: B2a
Total Area (ac): 5.49
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
------------------------------------------------------------------------
Intensity (in/hr): 2.524
C Total: 0.873
Sum Q Segments (cfs): 12.10
Q Total (cfs): 12.10
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 613.69
Time of Concentration (min): 10.228
------------------------------------------------------------------------
DATA FOR FLOW PATH 1
------------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.1633
Flow Type: Overland
Length (ft): 94.9
Top Elevation (ft): 233
Bottom Elevation (ft): 232.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.9
```

Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0053
Effective Slope: 0.0053
Q for Flow Path (cfs): 0.11
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 6.0670
Flow Type: Street
Length (ft): 427.6
Top Elevation (ft): 232.5
Bottom Elevation (ft): 232
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0012
Q for Flow Path (cfs): 5.84
Q Top (cfs): 0.11
Q Bottom (cfs): 5.95
Velocity Top (ft/s): 0.42
Velocity Bottom (ft/s): 1.15
Avg Velocity (ft/s): 0.78
Wave Velocity (ft/s): 1.17
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 0.9978
Flow Type: Pipe
Length (ft): 357.4
Top Elevation (ft): 232
Bottom Elevation (ft): 220.5
Contributing Area (acres): 2.79
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0322
Q for Flow Path (cfs): 6.15
Q Top (cfs): 5.95

Q Bottom (cfs): 12.10
Avg Velocity (ft/s): 4.66
Wave Velocity (ft/s): 5.97

Tc for frequency = 25.00: 9.985 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 9.985 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 5.49
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.806
C Total: 0.879
Sum Q Segments (cfs): 13.54
Q Total (cfs): 13.54
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 599.10
Time of Concentration (min): 9.985

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.0898
Flow Type: Overland
Length (ft): 94.9
Top Elevation (ft): 233
Bottom Elevation (ft): 232.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0053
Effective Slope: 0.0053
Q for Flow Path (cfs): 0.12
Avg Velocity (ft/s): 0.51
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

```
----------------------------------------------------------------------
Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 5.8974
Flow Type: Street
Length (ft): 427.6
Top Elevation (ft): 232.5
Bottom Elevation (ft): 232
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0012
Q for Flow Path (cfs): 6.54
Q Top (cfs): 0.12
Q Bottom (cfs): 6.66
Velocity Top (ft/s): 0.43
Velocity Bottom (ft/s): 1.18
Avg Velocity (ft/s): 0.81
Wave Velocity (ft/s): 1.21
DATA FOR FLOW PATH 3
----------------------------------------------------------------------
Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 0.9978
Flow Type: Pipe
Length (ft): 357.4
Top Elevation (ft): 232
Bottom Elevation (ft): 220.5
Contributing Area (acres): 2.79
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 15
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0322
Q for Flow Path (cfs): 6.88
Q Top (cfs): 6.66
Q Bottom (cfs): 13.54
Avg Velocity (ft/s): 4.75
Wave Velocity (ft/s): 5.97
```

Tc for frequency = 50.00: 7.749 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 7.749 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 5.49
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.525
C Total: 0.891
Sum Q Segments (cfs): 17.24
Q Total (cfs): 17.24
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 464.97
Time of Concentration (min): 7.749

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 1.5817
Flow Type: Overland
Length (ft): 94.9
Top Elevation (ft): 233
Bottom Elevation (ft): 232.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0053
Effective Slope: 0.0053
Q for Flow Path (cfs): 0.16
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

```
----------------------------------------------------------------------
Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 5.5497
Flow Type: Street
Length (ft): 427.6
Top Elevation (ft): 232.5
Bottom Elevation (ft): 232
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0012
Q for Flow Path (cfs): 8.32
Q Top (cfs): 0.16
Q Bottom (cfs): 8.48
Velocity Top (ft/s): 0.46
Velocity Bottom (ft/s): 1.25
Avg Velocity (ft/s): 0.86
Wave Velocity (ft/s): 1.28
DATA FOR FLOW PATH 3
----------------------------------------------------------------------
Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 0.6181
Flow Type: Pipe
Length (ft): 357.4
Top Elevation (ft): 232
Bottom Elevation (ft): 220.5
Contributing Area (acres): 2.79
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0322
Q for Flow Path (cfs): 8.76
Q Top (cfs): 8.48
Q Bottom (cfs): 17.24
Avg Velocity (ft/s): 7.35
Wave Velocity (ft/s): 9.64
```

Tc for frequency = 100.00: 7.580 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 7.580 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: B2a
Total Area (ac): 5.49
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.953
C Total: 0.895
Sum Q Segments (cfs): 19.43
Q Total (cfs): 19.43
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 454.83
Time of Concentration (min): 7.580

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 1.5817
Flow Type: Overland
Length (ft): 94.9
Top Elevation (ft): 233
Bottom Elevation (ft): 232.5
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 0.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0053
Effective Slope: 0.0053
Q for Flow Path (cfs): 0.18
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

```
----------------------------------------------------------------------
Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 5.3852
Flow Type: Street
Length (ft): 427.6
Top Elevation (ft): 232.5
Bottom Elevation (ft): 232
Contributing Area (acres): 2.65
Percent of Sub-Area (%): 48.3
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0012
Q for Flow Path (cfs): 9.38
Q Top (cfs): 0.18
Q Bottom (cfs): 9.56
Velocity Top (ft/s): 0.47
Velocity Bottom (ft/s): 1.29
Avg Velocity (ft/s): 0.88
Wave Velocity (ft/s): 1.32
DATA FOR FLOW PATH 3
----------------------------------------------------------------------
Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 0.6136
Flow Type: Pipe
Length (ft): 357.4
Top Elevation (ft): 232
Bottom Elevation (ft): 220.5
Contributing Area (acres): 2.79
Percent of Sub-Area (%): 50.8
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 24
Manning's N: 0.011
Map Slope: 0.0322
Q for Flow Path (cfs): 9.87
Q Top (cfs): 9.56
Q Bottom (cfs): 19.43
Avg Velocity (ft/s): 7.52
Wave Velocity (ft/s): 9.71
```

```
Project:
Date: 12:00:00 AM
Engineer: Kinsey Hensley
Consultant:
----------------------------------------------------------------------
Sub-Area Name: B2b
Computing Tc for all rainfall frequencies for sub-area B2b...
----------------------------------------------------------------------
Tc for frequency = 10.00: 5.231 Minutes
DATA FOR SUB AREA 5
----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 5.231 min. = 5 min.
----------------------------------------------------------------------
SUB AREA INPUT DATA
----------------------------------------------------------------------
Sub Area Name: B2b
Total Area (ac): 4.04
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
----------------------------------------------------------------------
Intensity (in/hr): 3.720
C Total: 0.893
Sum Q Segments (cfs): 13.42
Q Total (cfs): 13.42
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 313.86
Time of Concentration (min): 5.231
----------------------------------------------------------------------
DATA FOR FLOW PATH 1
----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 0.9767
Flow Type: Overland
Length (ft): 29.3
Top Elevation (ft): 231.5
Bottom Elevation (ft): 231.25
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.2
```

Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0085
Effective Slope: 0.0085
Q for Flow Path (cfs): 0.17
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.8694
Flow Type: Street
Length (ft): 149.1
Top Elevation (ft): 231.25
Bottom Elevation (ft): 231
Contributing Area (acres): 1.37
Percent of Sub-Area (%): 33.9
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0017
Q for Flow Path (cfs): 4.55
Q Top (cfs): 0.17
Q Bottom (cfs): 4.72
Velocity Top (ft/s): 0.53
Velocity Bottom (ft/s): 1.24
Avg Velocity (ft/s): 0.89
Wave Velocity (ft/s): 1.33
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 2.3849
Flow Type: Pipe
Length (ft): 389.8
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2.62
Percent of Sub-Area (%): 64.9
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0128
Q for Flow Path (cfs): 8.70
Q Top (cfs): 4.72

Q Bottom (cfs): 13.42
Avg Velocity (ft/s): 2.11
Wave Velocity (ft/s): 2.72

Tc for frequency = 25.00: 4.380 Minutes
DATA FOR SUB AREA 5

SUB AREA TIME OF CONCENTRATION: 4.380 min. = 4 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B2b
Total Area (ac): 4.04
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 4.275
C Total: 0.898
Sum Q Segments (cfs): 15.52
Q Total (cfs): 15.52
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 262.79
Time of Concentration (min): 4.380

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 0.9488
Flow Type: Overland
Length (ft): 29.3
Top Elevation (ft): 231.5
Bottom Elevation (ft): 231.25
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.2
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0085
Effective Slope: 0.0085
Q for Flow Path (cfs): 0.19
Avg Velocity (ft/s): 0.51
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.8024
Flow Type: Street
Length (ft): 149.1
Top Elevation (ft): 231.25
Bottom Elevation (ft): 231
Contributing Area (acres): 1.37
Percent of Sub-Area (%): 33.9
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0017
Q for Flow Path (cfs): 5.26
Q Top (cfs): 0.19
Q Bottom (cfs): 5.45
Velocity Top (ft/s): 0.55
Velocity Bottom (ft/s): 1.28
Avg Velocity (ft/s): 0.92
Wave Velocity (ft/s): 1.38
DATA FOR FLOW PATH 3

Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.6286
Flow Type: Pipe
Length (ft): 389.8
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2.62
Percent of Sub-Area (%): 64.9
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0128
Q for Flow Path (cfs): 10.06
Q Top (cfs): 5.45
Q Bottom (cfs): 15.52
Avg Velocity (ft/s): 3.00
Wave Velocity (ft/s): 3.99

Tc for frequency = 50.00: 3.786 Minutes
DATA FOR SUB AREA 5

SUB AREA TIME OF CONCENTRATION: 3.786 min. = 4 min. ** TC ERROR **

SUB AREA INPUT DATA

Sub Area Name: B2b
Total Area (ac): 4.04
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 5.160
C Total: 0.904
Sum Q Segments (cfs): 18.85
Q Total (cfs): 18.85
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 227.14
Time of Concentration (min): 3.786

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 0.4883
Flow Type: Overland
Length (ft): 29.3
Top Elevation (ft): 231.5
Bottom Elevation (ft): 231.25
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.2
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0085
Effective Slope: 0.0085
Q for Flow Path (cfs): 0.23
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

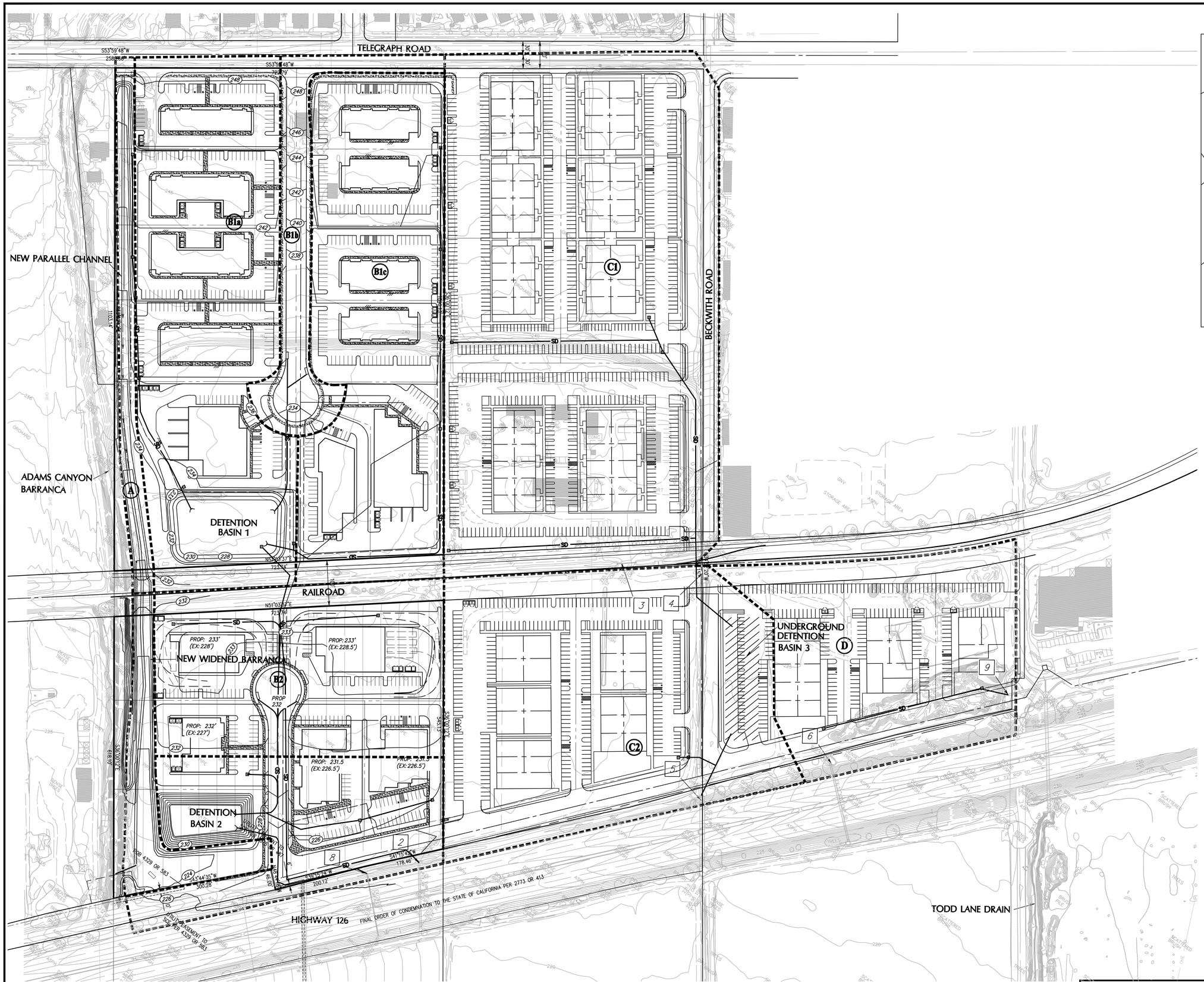
```
----------------------------------------------------------------------
Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.7164
Flow Type: Street
Length (ft): 149.1
Top Elevation (ft): 231.25
Bottom Elevation (ft): 231
Contributing Area (acres): 1.37
Percent of Sub-Area (%): 33.9
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0017
Q for Flow Path (cfs): 6.39
Q Top (cfs): 0.23
Q Bottom (cfs): 6.63
Velocity Top (ft/s): 0.58
Velocity Bottom (ft/s): 1.35
Avg Velocity (ft/s): 0.97
Wave Velocity (ft/s): 1.45
DATA FOR FLOW PATH 3
----------------------------------------------------------------------
Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.5811
Flow Type: Pipe
Length (ft): 389.8
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2.62
Percent of Sub-Area (%): 64.9
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0128
Q for Flow Path (cfs): 12.22
Q Top (cfs): 6.63
Q Bottom (cfs): 18.85
Avg Velocity (ft/s): 3.15
Wave Velocity (ft/s): 4.11
```

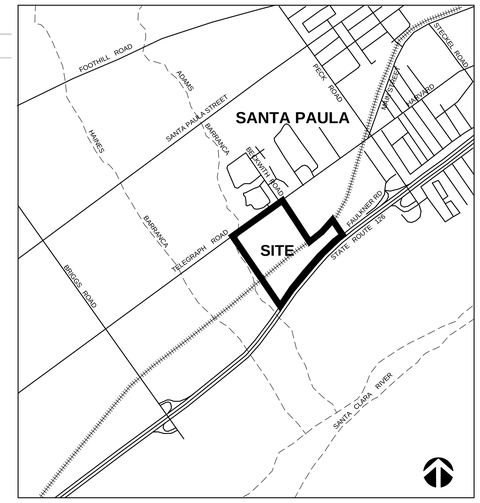
```
Tc for frequency = 100.00: 3.798 Minutes
DATA FOR SUB AREA 5
-----------------------------------------------------------------------
SUB AREA TIME OF CONCENTRATION: 3.798 min. = 4 min. ** TC ERROR **
-----------------------------------------------------------------------
SUB AREA INPUT DATA
-----------------------------------------------------------------------
Sub Area Name: B2b
Total Area (ac): 4.04
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT
-----------------------------------------------------------------------
Intensity (in/hr): 5.100
C Total: 0.904
Sum Q Segments (cfs): 18.62
Q Total (cfs): 18.62
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 227.90
Time of Concentration (min): 3.798
-----------------------------------------------------------------------
DATA FOR FLOW PATH 1
-----------------------------------------------------------------------
Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 0.4883
Flow Type: Overland
Length (ft): 29.3
Top Elevation (ft): 231.5
Bottom Elevation (ft): 231.25
Contributing Area (acres): 0.05
Percent of Sub-Area (%): 1.2
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0085
Effective Slope: 0.0085
Q for Flow Path (cfs): 0.23
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2
```

```
----------------------------------------------------------------------
Flow Path Name: Street
FLOW PATH TRAVEL TIME (min): 1.7215
Flow Type: Street
Length (ft): 149.1
Top Elevation (ft): 231.25
Bottom Elevation (ft): 231
Contributing Area (acres): 1.37
Percent of Sub-Area (%): 33.9
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0017
Q for Flow Path (cfs): 6.32
Q Top (cfs): 0.23
Q Bottom (cfs): 6.55
Velocity Top (ft/s): 0.58
Velocity Bottom (ft/s): 1.34
Avg Velocity (ft/s): 0.96
Wave Velocity (ft/s): 1.44
DATA FOR FLOW PATH 3
----------------------------------------------------------------------
Flow Path Name: Pipe
FLOW PATH TRAVEL TIME (min): 1.5885
Flow Type: Pipe
Length (ft): 389.8
Top Elevation (ft): 231
Bottom Elevation (ft): 226
Contributing Area (acres): 2.62
Percent of Sub-Area (%): 64.9
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 36
Manning's N: 0.011
Map Slope: 0.0128
Q for Flow Path (cfs): 12.08
Q Top (cfs): 6.55
Q Bottom (cfs): 18.62
Avg Velocity (ft/s): 3.13
Wave Velocity (ft/s): 4.09
```

APPENDIX D

Proposed Hydrology Exhibit B





VICINITY MAP
NOT TO SCALE

DRAINAGE AREA CALCULATIONS (non-detained)

Watershed	Subarea	Area (ac.)	10-year Q10 (cfs)	50-year Q50 (cfs)	100-year Q100 (cfs)
ADAMS BARRANCA	A	2.5	2.7	3.4	3.8
WEST 126 CULVERTS (2)	B1a	8.5	19.0	28.9	35.5
	B1b	1.9	8.2	11.7	14.1
	B1c	7.6	17.7	27.8	34.6
	B1 Total	17.9	33.0	68.3	84.1
WEST 126 CULVERTS (8)	B2a	5.5	12.1	17.2	19.4
	B2b	4.0	13.4	16.4	18.4
	B2 Total	9.5	25.5	33.7	37.8
	TOTAL UNDETAINED	27.4	58.5	102.0	122.0
EAST 126 CULVERTS (5)	C1	15.7	32.7	52.7	59.8
	C2	9.2	19.3	31.1	35.3
	TOTAL	24.9	52.0	84.0	95.0
TODD LANE DRAIN	D	5.6	10.6	16.6	18.7

DRAINAGE AREA CALCULATIONS (detained)

Watershed	Subarea	Area (ac.)	10-year Q10 (cfs)	50-year Q50 (cfs)	100-year Q100 (cfs)
ADAMS BARRANCA	A	2.5	--	--	--
WEST 126 CULVERTS (2,8)	B1 Total	17.9	11.8	21.2	20.5
	B2 Total	9.5	8.6	17.6	16.2
	B TOTAL	27.4	20.4	38.8	36.7
EAST 126 CULVERTS (5)	C TOTAL	24.9	26.8	41.7	46.0
TODD LANE DRAIN	D	5.6	10.6	16.6	18.7

LEGEND

- DRAINAGE AREA LIMITS
- EXISTING STORM DRAIN
- STORM DRAIN INLET
- STORM DRAIN
- (144) PROPOSED CONTOUR
- TREATMENT/INFILTRATION/DETENTION AREA
- (D) DRAINAGE AREA
- [1] PIPE NUMBER

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1"=__'
J.N.: ____
DATE: Nov 19, 2015
DWG. NAME: 4492_PRP-01_HYDRO.dwg

PROPOSED HYDROLOGY
FOR
SANTA PAULA WEST (NORTH OF 126)

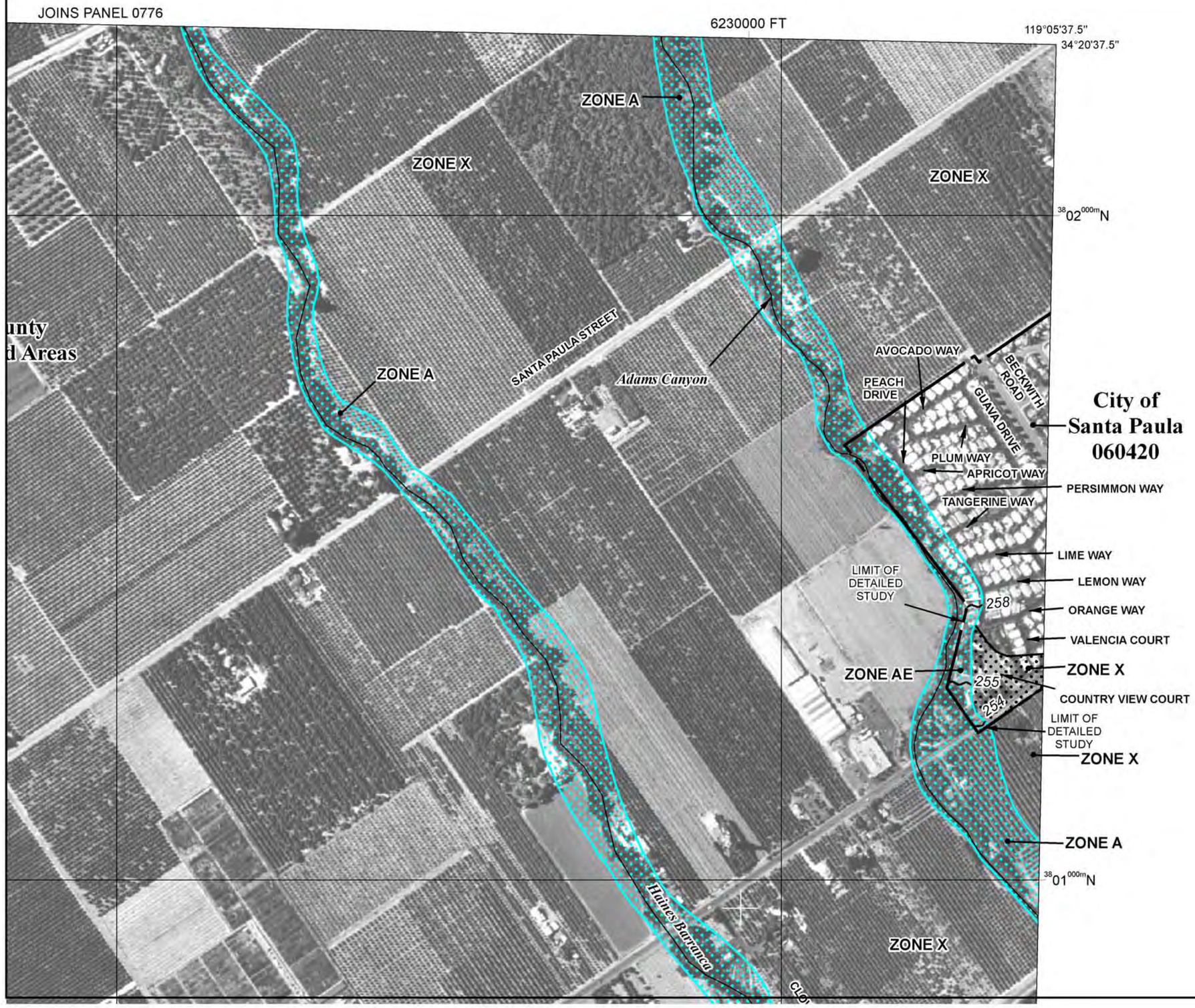
City of Santa Paula
COUNTY OF VENTURA
STATE OF CALIFORNIA

EXHIBIT
B

J:\PAR14492\Eng\Exhibits\Hydrology Reference\4492_PRP-01_HYDRO.dwg Nov 19, 2015, 11:48am kpascoe

APPENDIX E

Existing FIRM Maps & Soils Maps



...ted in the Flood Insurance Study report for this jurisdiction.

...d insurance is available in this community, contact your Ins...
...nal Flood Insurance Program at 1-800-638-6620.

FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0778E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 778 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0778	E
VENTURA COUNTY	060413	0778	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
06111C0778E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

d insurance is available in this community, contact your Ins
nal Flood Insurance Program at 1-800-638-6620.

METERS
150 0 150 300

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0779E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 779 OF 1275

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTA PAULA, CITY OF	060420	0779	E
VENTURA COUNTY	060413	0779	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
06111C0779E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Prepared by: Jensen Design & Survey Inc.

Parcel boundaries on this exhibit are a graphical representation only. They should not be used in place of record boundary information and/or field survey data and do not accurately define property boundaries.

SOIL TYPE MAP

1 inch equals 300 feet

APPENDIX F

Adams Barranca HEC-RAS Analysis Maps and Calculations

Adams Canyon – Hydraulic Analysis Report

Introduction

Adams Canyon is located in the unincorporated areas of Ventura County, California. The study was performed for 1.2 miles of the stream. The extent of the stream is from the confluence with the Santa Clara River and continuing upstream to 1,600 ft north of Telegraph Road. The channel is earthen. The entire study reach area is agricultural. There are three bridges in the study extent namely East Telegraph Road, Union Pacific Railroad and Highway 126. The stream was a natural channel consisting of minor vegetation.

Structure Data

The structure information for East Telegraph Road and Union pacific Railroad is obtained from the field reconnaissance and information provided by CalTrans and record drawings from the County. The information was incorporated in this analysis.

	Model Type
Telegraph Road	Culvert
Railroad	Bridge
Highway 126	Two Culverts

Terrain Data

A flown aerial topo was generated by Central Coast Mapping in March 2007 with an assumed horizontal datum and a vertical datum of NGVD 29. The data from the flown aerial was re-projected to "*State Plane California V FIPS 0405 Feet*" and raised 2.39' to convert the data to NAD 1983 horizontal datum and "*NAVD 88*" vertical datum.

LIDAR data was provided by Ventura County. The data was in the form of mass points (each point was attributed with latitude, longitude and elevation), with a horizontal datum of NAD 1983 with projection of "*State Plane California V FIPS 0405 Feet*" and the vertical datum is "*NAVD 88*".

These two data sources were used to generate a surface with 1' and 5' contour intervals in Civil3D.

Streamline and Flow Paths

- Streamline was generated using the flowline of the Adams Barranca.
- Overland Flowpaths were generated following the west and east side of the bank contours and path of travel for the overflow water.
- Lateral structure elevations were determined by topography

Cross Section Generation

Cross-sections geometry was extracted from the terrain. Each cross-section was oriented such that it is normal to the floodplain.

Manning's Roughness Coefficient (n) Calculations
Manning's coefficient values were determined for each cross section using the Cowan (1956) procedure outlined in "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Floodplains" "(Authors: G.J. Arcement and V.R. Schneider, USGS Water supply Paper 2339). Photographs taken during field reconnaissance were used in conjunction with the aerial images to estimate Manning's coefficients for the channel portion of the cross section. For overbank areas, land-use classification data was developed from the aerial imagery. Polygons were digitized for different landuses, which were attributed with the corresponding Manning's n values. Manning's n value of 0.045 was used for the main channel and between 0.03 and 0.035 for the overbanks. See attached computation table (Attachment 1).

Boundary Conditions
For a downstream WS Elevation in SC River from FIRM 06111C0779E, we used 208.25 on the 88 datum.

Discharge Point Locations
Discharges for the Adams Barranca vary depending on the source. Ventura County Watershed Protection District current adopted flow rate is from the HSPF Model of 6,880 cfs. A revised discharges was provided by VCWPD in Appendix L Ventura Design Storm by Mark Banduraga of 5,150 cfs. A separate VcRAT analysis was completed by Jensen Design & Survey using aerial reduction totaling 5,861cfs. The varying discharges are shown in the table below:

	100-Year
HSPF Model VCWPD	6,880
HMS Model VCWPD	5,150
JDS Model	5,861

For this analysis we used a peak flow of 5,861.
HEC-RAS Project – Existing

- PLANS: The name of the project is 4492_Adams Barranca.prj
  - **Adams Canyon**
    - **Plan With Embankment (p01, g01, f01)**
  - **Right Overbank**
    - **Adams Canyon Right Overbank Profile (p04, g02, f03)**
  - **Left Overbank**
    - **Adams Canyon Left Overbank Profile (p03, g04, f02)**

Discharges in the main stream were reduced using lateral structures for the with Embankment Plan with lateral structures(Plan 1) and balanced appropriately with the right and left overbank as shown in the table below for the **EXISTING** condition:

LOB_RS	100-YR
5246	2191
3370	101

ROB_RS	100-YR
5221.1	1359
3525.7	1297

Methodology Existing Condition

Plan 1: With Embankment Plan with lateral structures

- Levees were modeled using lateral structures in accordance with the Levee Analysis and Mapping Procedures released by FEMA in 2013 which outlines different modeling approaches for non-accredited levees.
    - Lateral structures were used to establish breaches in areas where the levees had a steep slope towards the landward side of the floodplain.
    - In areas where the levees were gradually slopping and potential for failures is lower the mapping was done by assuming the levees were topographic feature that did not impede flow.
- Flow in the main channel was reduced by optimizing the lateral structures.

Plan 2: Right overbank

- An overbank flowline was delineated using 1 foot contours on the right (west) overbank
- The cross-sections were taken parallel to the contours in the overflow area
- The flow rates were determined using the overflow from the lateral structures on the right side of Plan 1.

Plan 3: Left overbank

- An overbank flowline was delineated using 1 foot contours on the left (east) overbank
- The cross-sections were taken parallel to the contours in the overflow area
- The flow rates were determined using the overflow from the lateral structures on the left side of Plan 1.

HEC-RAS Project – Proposed

- PLANS: The name of the project is 4492_Adams Barranca.prj
    - **Proposed Adams Canyon - Plan With Embankment Main channel Overbank**
        - **A flood control condition to capture overflow of the east banks and diverted to a parallel channel. Weir cut into Adams Barranca at the southerly end between section 2929.25 and 3159.25. (p06, g03, f05)**

- **<u>Right Overbank</u>**
  - **Adams Canyon Right Overbank Profile (p07, g05, f06) (used same alignment and sections as existing condition)**
- **<u>Left Overbank</u>**
  - **Adams Canyon Left Overbank Profile (p03, g04, f02)**
  - **Flow line taken along proposed parallel channel**

Discharges in the main stream were reduced using lateral structures balanced appropriately with the right and left overbank as shown in the table below for the **PROPOSED** condition:

LOB_RS	100-YR
5246	2177
3370	460

ROB_RS	100-YR
5221.1	1348
3525.7	855

Methodology Proposed Condition

Plan 4: Proposed Geometry

- It was observed on the Existing condition (Plan 1) that a break out of 2,178cfs occurred upstream of Telegraph Road and Traveled over telegraph Road to the frontage of the project site. We have designed this overflow condition to be captured in the parking lot and diverted to the west and then to the south in a parallel channel. The proposed buildings are protected from the 100 year water surface elevation.
- Additional break out of 187.3cfs occurs just North of Hwy 126.
- A flow file was created based on the assumption that at the beginning of the new channel (easterly end) the flow rate would start at 300 cfs. Then it would increase to the full 2178 cfs at the northwesterly property corner before heading south.
- The proposed channel that will handle overflows from the main channel in the 100yr event. It runs parallel to the property between Telegraph road and Hwy 126. At the Hwy the proposed overflow channel wraps to the east along Faulkner Road. Overflow will pond in Faulkner Rd and up to the Culdesac.
- A notch cut at the easterly channel banks between stations 2929.25 and 3159.25; This cut will act as a weir, flood flows will initially flow to the east into a widen channel through the frontage road and over the highway, as it did in the existing condition. Some flow will go back into Adams Barranca Creek at Hwy 126 however this will be controlled via a weir to prevent overtopping of the west bank therefore no impacts will occur on the west side of the Barranca .

Plan 5: Right overbank

- An overbank flowline was delineated using 1 foot contours on the right (west) overbank
- The cross-sections were taken parallel to the contours in the overflow area
- The flow rates were determined using the overflow from the lateral structures on the right side of Plan 4.

Plan 6: Left overbank

- An overbank flowline was delineated using 1 foot contours on the left (east) overbank following the flowline of the proposed flood control channel.
- The cross-sections were taken parallel to the contours in the overflow area
- A lower portion as observed along Hwy 126 on the east side of the channel between stations 2895.24 and 2684.37.
- The flow rates were determined using the overflow from the lateral structures on the left side of Plan 4.

Mapping

BFEs for the right overbank are obtained from Plan # 2 & #5
BFEs for the left overbank are obtained from Plan # 3 & #6

Table 3-1 Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
A. *Natural Streams*			
1. Main Channels			
a. Clean, straight, full, no rifts or deep pools	0.025	0.030	0.033
b. Same as above, but more stones and weeds	0.030	0.035	0.040
c. Clean, winding, some pools and shoals	0.033	0.040	0.045
d. Same as above, but some weeds and stones	0.035	0.045	0.050
e. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
f. Same as "d" but more stones	0.045	0.050	0.060
g. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
h. Very weedy reaches, deep pools, or floodways with heavy stands of timber and brush	0.070	0.100	0.150
2. Flood Plains			
a. Pasture no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
2. Same as above, but heavy sprouts	0.050	0.060	0.080
3. Heavy stand of timber, few down trees, little undergrowth, flow below branches	0.080	0.100	0.120
4. Same as above, but with flow into branches	0.100	0.120	0.160
5. Dense willows, summer, straight	0.110	0.150	0.200
3. Mountain Streams, no vegetation in channel, banks usually steep, with trees and brush on banks submerged			
a. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
b. Bottom: cobbles with large boulders	0.040	0.050	0.070

Table 3-1 (Continued) Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
C. *Excavated or Dredged Channels*			
1. Earth, straight and uniform			
a. Clean, recently completed	0.016	0.018	0.020
b. Clean, after weathering	0.018	0.022	0.025
c. Gravel, uniform section, clean	0.022	0.025	0.030
d. With short grass, few weeds	0.022	0.027	0.033
2. Earth, winding and sluggish			
a. No vegetation	0.023	0.025	0.030
b. Grass, some weeds	0.025	0.030	0.033
c. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
d. Earth bottom and rubble side	0.028	0.030	0.035
e. Stony bottom and weedy banks	0.025	0.035	0.040
f. Cobble bottom and clean sides	0.030	0.040	0.050
3. Dragline-excavated or dredged			
a. No vegetation	0.025	0.028	0.033
b. Light brush on banks	0.035	0.050	0.060
4. Rock cuts			
a. Smooth and uniform	0.025	0.035	0.040
b. Jagged and irregular	0.035	0.040	0.050
5. Channels not maintained, weeds and brush			
a. Clean bottom, brush on sides	0.040	0.050	0.080
b. Same as above, highest stage of flow	0.045	0.070	0.110
c. Dense weeds, high as flow depth	0.050	0.080	0.120
d. Dense brush, high stage	0.080	0.100	0.140

Other sources that include pictures of selected streams as a guide to n value determination are available (Fasken, 1963; Barnes, 1967; and Hicks and Mason, 1991). In general, these references provide color photos with tables of calibrated n values for a range of flows.

Although there are many factors that affect the selection of the n value for the channel, some of the most important factors are the type and size of materials that compose the bed and banks of a channel, and the shape of the channel. Cowan (1956) developed a procedure for estimating the effects of these factors to determine the value of Manning's n of a channel. In Cowan's procedure, the value of n is computed by the following equation:

Table 3-1 (Continued) Manning's 'n' Values

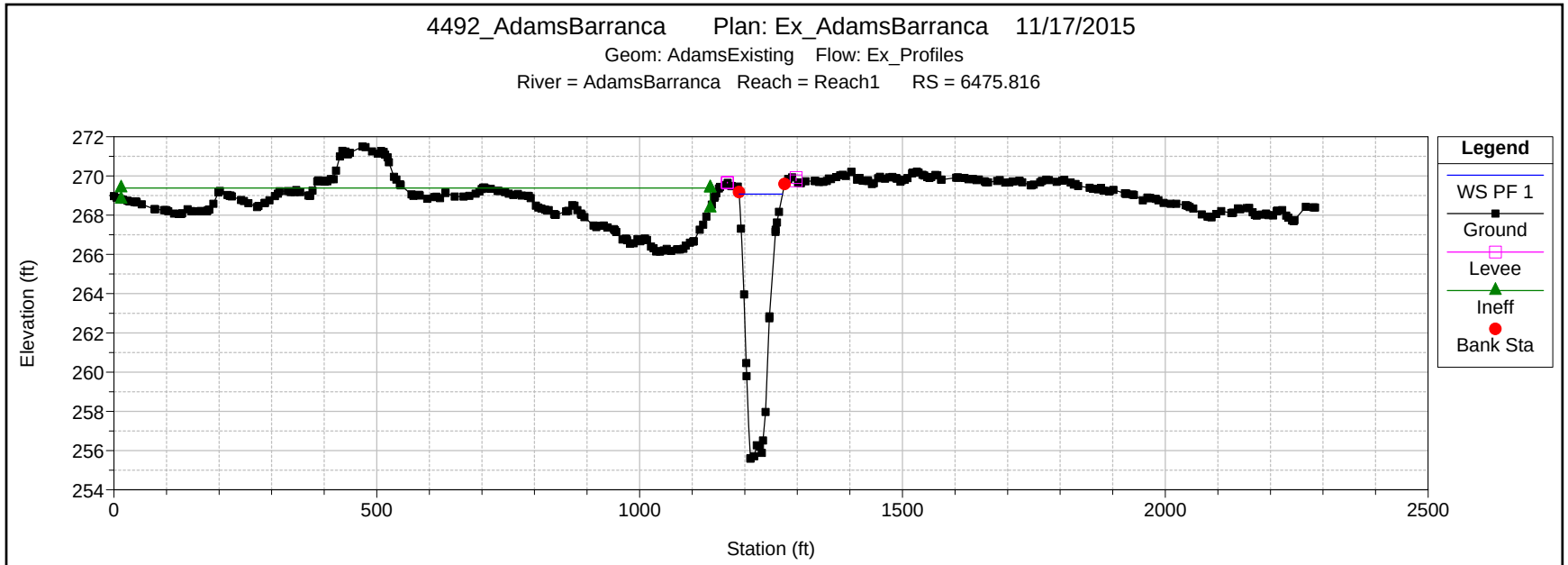
Type of Channel and Description	Minimum	Normal	Maximum
B. *Lined or Built-Up Channels*			
1. **Concrete**			
a. Trowel finish	0.011	0.013	0.015
b. Float Finish	0.013	0.015	0.016
c. Finished, with gravel bottom	0.015	0.017	0.020
d. Unfinished	0.014	0.017	0.020
e. Gunite, good section	0.016	0.019	0.023
f. Gunite, wavy section	0.018	0.022	0.025
g. On good excavated rock	0.017	0.020	
h. On irregular excavated rock	0.022	0.027	
2. **Concrete bottom float finished with sides of:**			
a. Dressed stone in mortar	0.015	0.017	0.020
b. Random stone in mortar	0.017	0.020	0.024
c. Cement rubble masonry, plastered	0.016	0.020	0.024
d. Cement rubble masonry	0.020	0.025	0.030
e. Dry rubble on riprap	0.020	0.030	0.035
3. **Gravel bottom with sides of:**			
a. Formed concrete	0.017	0.020	0.025
b. Random stone in mortar	0.020	0.023	0.026
c. Dry rubble or riprap	0.023	0.033	0.036
4. **Brick**			
a. Glazed	0.011	0.013	0.015
b. In cement mortar	0.012	0.015	0.018
5. **Metal**			
a. Smooth steel surfaces	0.011	0.012	0.014
b. Corrugated metal	0.021	0.025	0.030
6. **Asphalt**			
a. Smooth	0.013	0.013	
b. Rough	0.016	0.016	
7. **Vegetal lining**	0.030		0.500

HEC-RAS Plan: Ex River: AdamsBarranca Reach: Reach1 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach1	6475.816	PF 1	5861.00	255.59	269.07	265.60	270.40	0.005718	9.24	634.64	82.48	0.59
Reach1	6235.479	PF 1	5861.00	252.92	264.88	264.48	268.10	0.015115	14.39	407.16	54.89	0.93
Reach1	5984.647	PF 1	5861.00	250.34	263.62	263.40	264.92	0.007116	10.60	1203.58	409.16	0.64
Reach1	5737.684	PF 1	5861.00	248.36	261.73	261.73	263.08	0.008277	10.12	1057.11	774.57	0.73
Reach1	5491.663	PF 1	5861.00	246.27	259.26	257.43	260.62	0.011788	9.82	915.48	570.72	0.61
Reach1	5246.089	PF 1	5861.00	244.00	256.85	255.82	257.55	0.011981	6.91	1041.28	926.22	0.59
Reach1	5246 Tel_East		Lat Struct									
Reach1	5221.13 Tele_West		Lat Struct									
Reach1	5201.42	PF 1	5620.44	243.34	256.22		256.82	0.021821	6.23	910.19	258.94	0.57
Reach1	5156.75	PF 1	5426.83	242.68	255.28		255.86	0.020709	6.16	906.50	265.07	0.55
Reach1	5112.09	PF 1	5208.80	242.02	254.28		254.92	0.021019	6.46	818.18	219.68	0.57
Reach1	5022.76	PF 1	4659.60	240.69	252.46		253.04	0.020352	6.01	774.98	196.87	0.51
Reach1	4978.1	PF 1	4193.18	240.03	251.79		252.26	0.013677	5.48	777.79	180.61	0.46
Reach1	4933.43	PF 1	3463.33	239.37	251.43		251.79	0.006938	4.73	735.11	137.60	0.35
Reach1	4888.77	PF 1	2731.26	238.71	251.21		251.45	0.006514	3.93	699.91	121.48	0.28
Reach1	4826.612	PF 1	2336.91	238.31	251.19		251.42	0.000116	3.89	609.42	115.72	0.28
Reach1	4808.237	PF 1	2327.94	238.64	251.23	245.03	251.39	0.197676	3.18	731.81	242.56	0.31
Reach1	4775.879 Teleraph		Culvert									
Reach1	4739.053	PF 1	2327.94	237.53	243.80	243.80	246.69	0.001960	13.65	170.54	29.94	1.01
Reach1	4673.858	PF 1	2327.94	235.63	244.58		245.70	0.007092	8.52	273.11	46.56	0.62
Reach1	4495.546	PF 1	2327.94	234.23	242.88	241.46	244.23	0.009456	9.32	249.79	46.26	0.71
Reach1	4247.987	PF 1	2327.94	232.68	241.31	239.80	241.89	0.007697	6.12	382.53	237.19	0.79
Reach1	3997.28	PF 1	2327.94	230.86	238.31	237.43	239.49	0.011533	8.78	272.86	83.79	0.77
Reach1	3823.969	PF 1	2327.94	228.87	236.71	236.71	238.15	0.019287	9.64	241.38	83.23	1.00
Reach1	3656.055	PF 1	2327.94	227.64	235.73	235.71	235.73	0.000004	0.12	8573.16	1633.56	0.01
Reach1	3574.137 RRxing		Bridge									
Reach1	3547.872	PF 1	2327.94	226.87	234.77	234.77	234.77	0.000014	0.33	7197.04	1655.55	0.03
Reach1	3525.703 Hwy_West		Lat Struct									
Reach1	3372.434	PF 1	2100.00	225.62	232.19	232.19	234.00	0.008824	11.10	210.99	68.45	0.87
Reach1	3370 Hwy_East		Lat Struct									
Reach1	3020.276	PF 1	988.87	221.79	228.69	228.61	230.10	0.010997	9.82	109.83	40.23	0.88
Reach1	2929.252	PF 1	976.92	220.63	227.20	227.20	228.92	0.014586	10.52	93.09	28.65	0.99
Reach1	2895.24	PF 1	976.92	219.12	227.20	222.51	227.24	0.000340	1.79	688.19	1805.68	0.12
Reach1	2773.995 HWy126		Culvert									
Reach1	2684.378	PF 1	976.92	218.04	226.01	221.91	226.38	0.000217	4.88	200.22	30.14	0.33
Reach1	2485.067	PF 1	976.92	216.26	225.57	223.28	226.23	0.005841	6.51	152.82	35.01	0.52
Reach1	2247.204	PF 1	976.92	215.34	221.77	221.77	223.64	0.023137	11.00	88.83	23.67	1.00
Reach1	1997.363	PF 1	976.92	210.82	217.84	216.97	218.94	0.013457	8.42	116.06	32.31	0.78
Reach1	1747.714	PF 1	976.92	208.97	215.13	214.07	216.04	0.009789	7.68	127.27	32.53	0.68
Reach1	1498.684	PF 1	976.92	207.32	213.27	212.00	213.92	0.006950	6.63	158.27	1103.70	0.58
Reach1	1250.347	PF 1	976.92	204.47	211.35	209.75	212.13	0.007288	7.10	137.62	30.45	0.59
Reach1	1001.841	PF 1	976.92	202.27	209.75	208.09	210.39	0.006427	6.43	152.44	47.06	0.56
Reach1	748.9206	PF 1	976.92	200.99	208.76		209.08	0.003720	4.59	212.89	64.81	0.43

HEC-RAS Plan: Ex River: AdamsBarranca Reach: Reach1 Profile: PF 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach1	502.0116	PF 1	976.92	199.59	208.05	204.71	208.36	0.002317	4.46	219.13	42.83	0.35
Reach1	249.222	PF 1	976.92	199.26	208.25	201.77	208.25	0.000022	0.54	2221.21	514.17	0.04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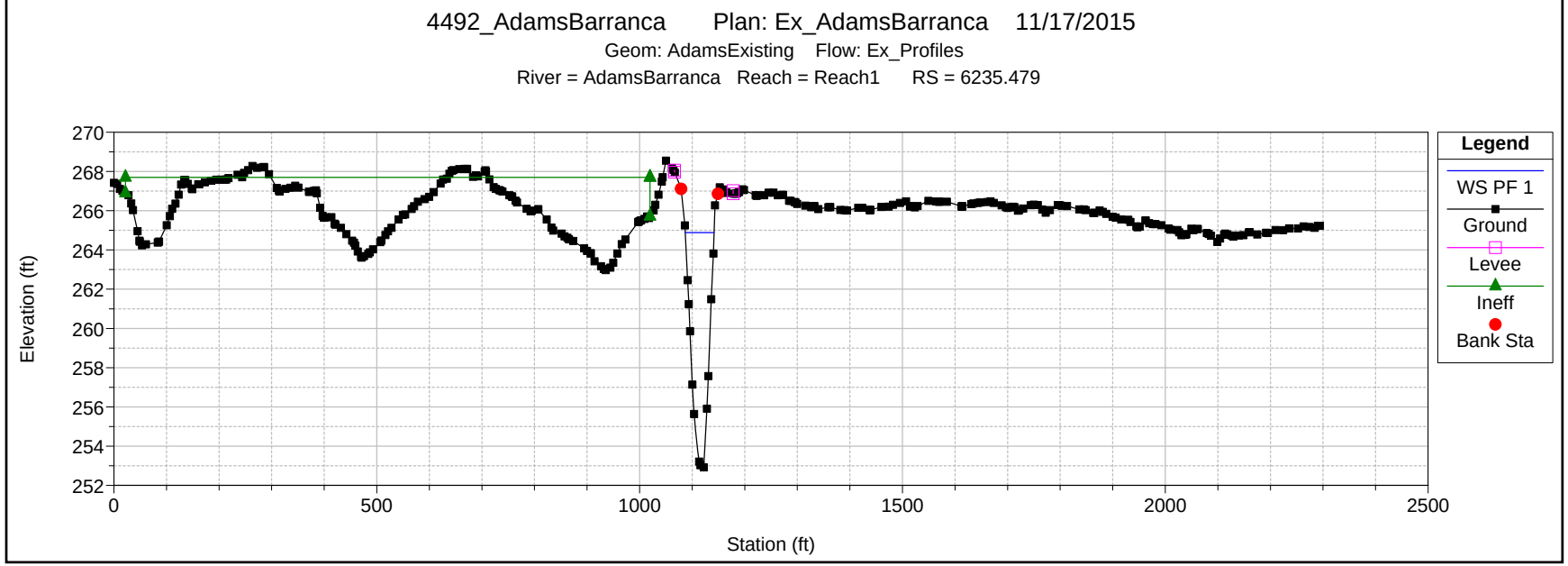
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 6475.816
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta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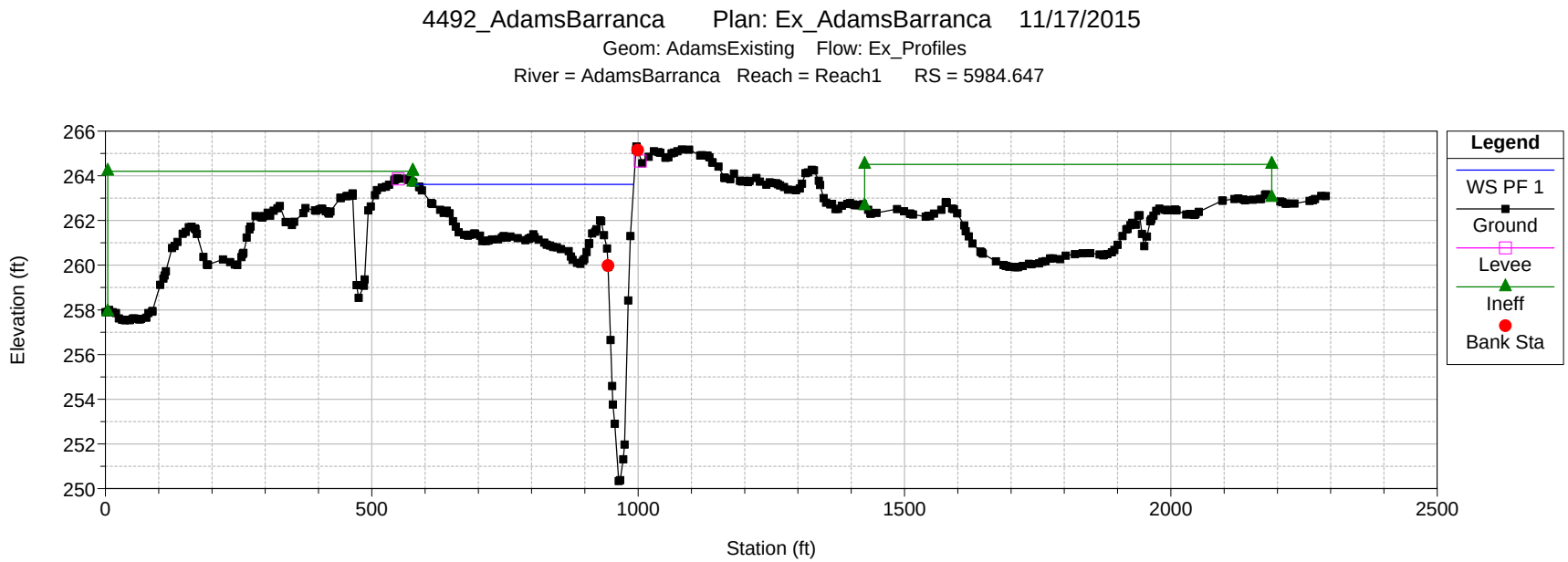
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 6235.479
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta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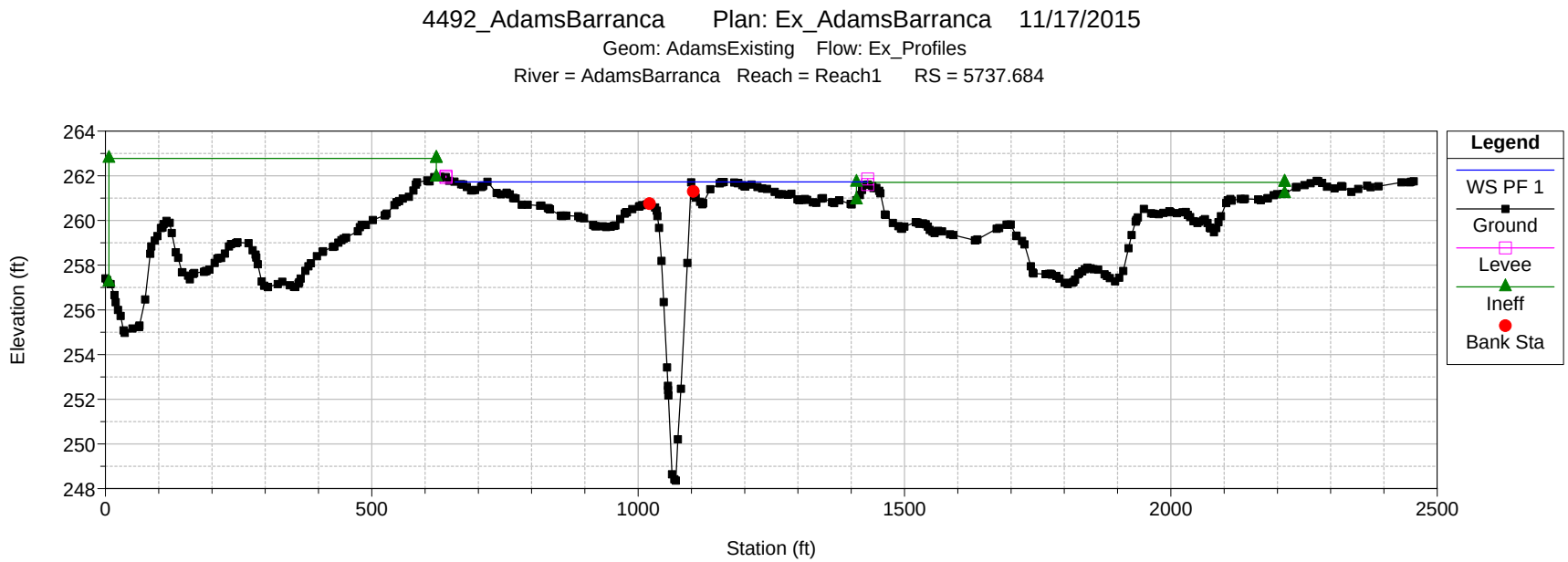
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5984.647
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta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Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5737.684
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

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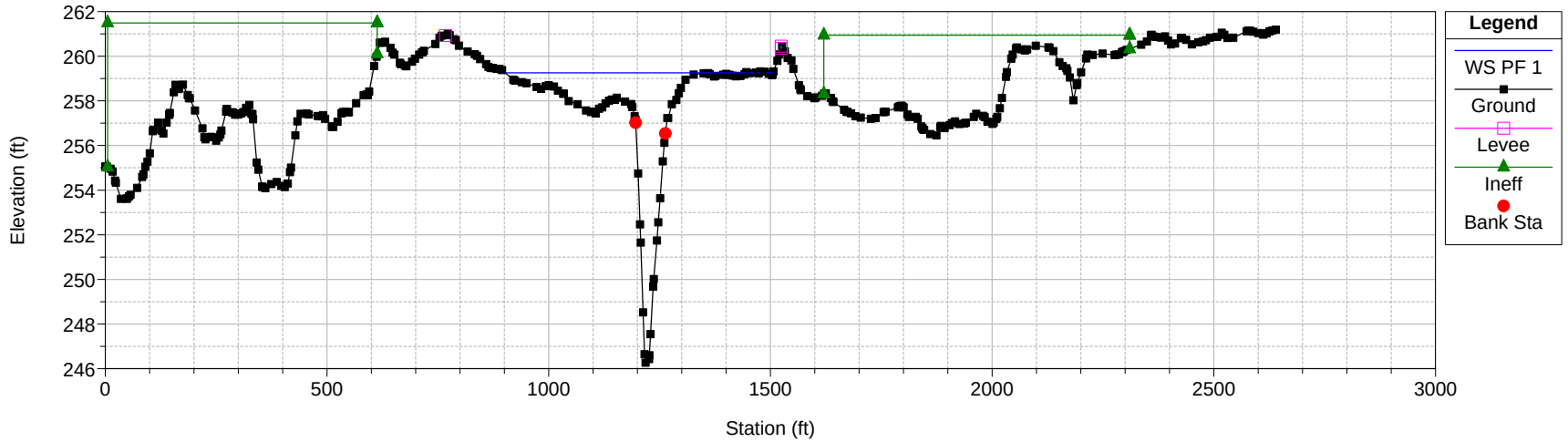
Geom: AdamsExisting Flow: Ex_Profiles

River = AdamsBarranca Reach = Reach1 RS = 5491.663



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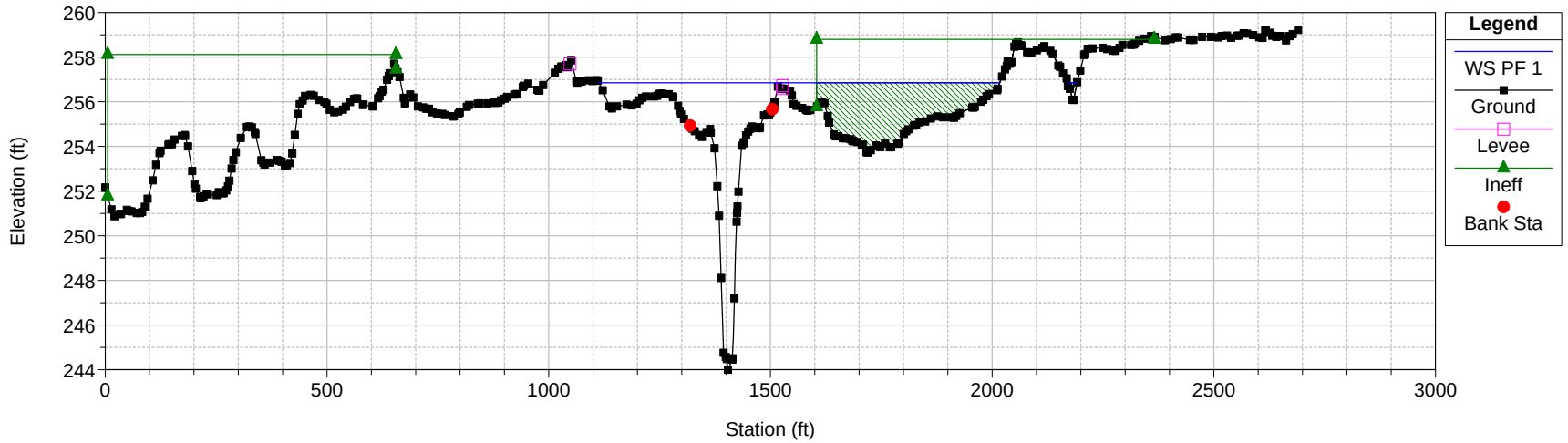
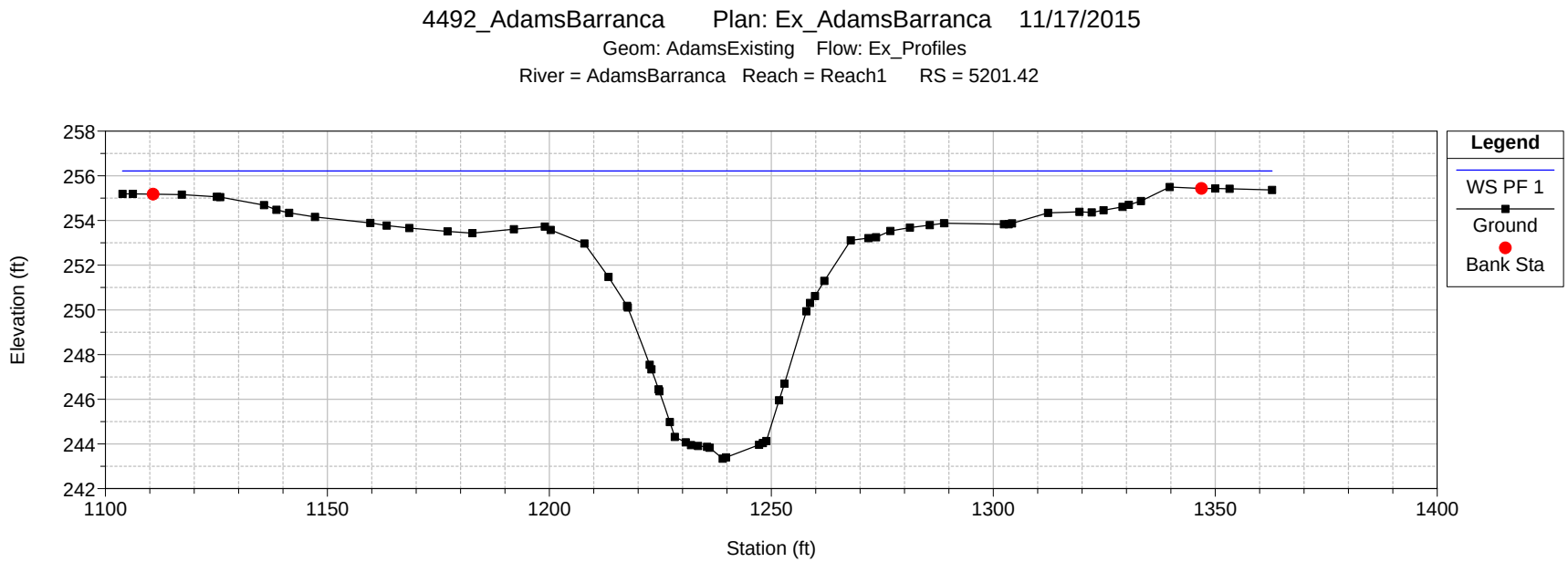
Geom: AdamsExisting Flow: Ex_Profiles

River = AdamsBarranca Reach = Reach1 RS = 5246.089

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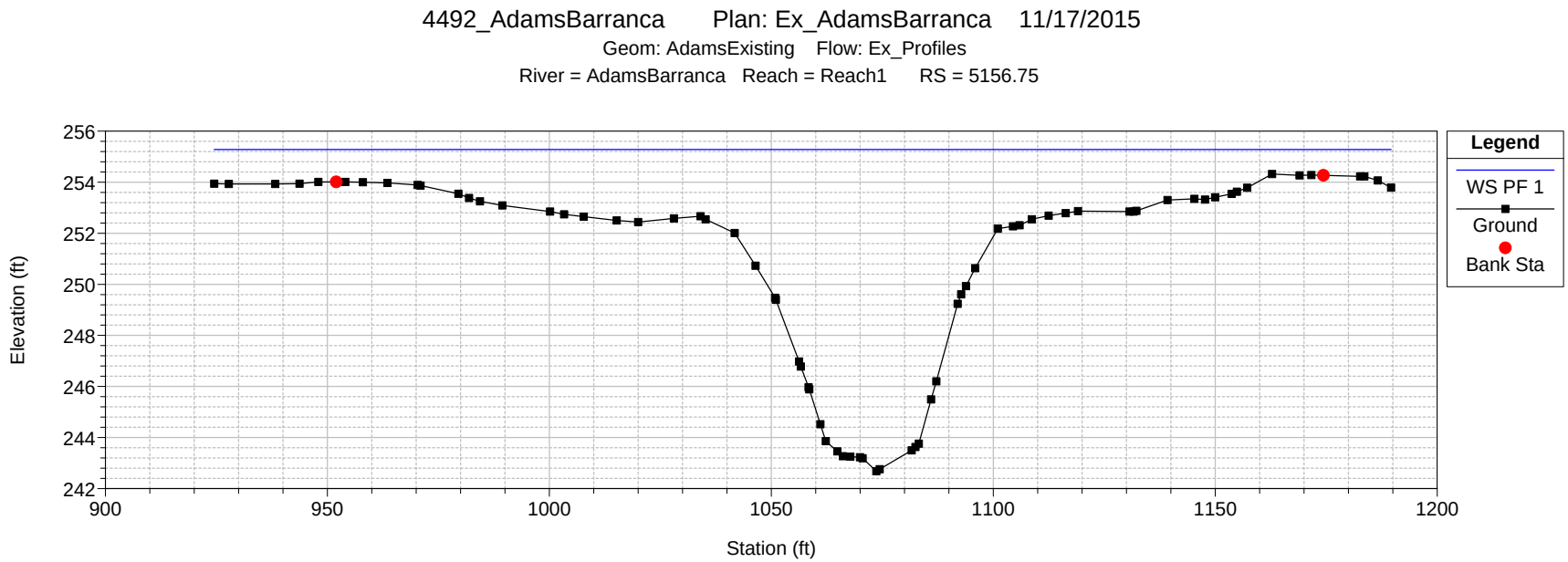
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5201.42
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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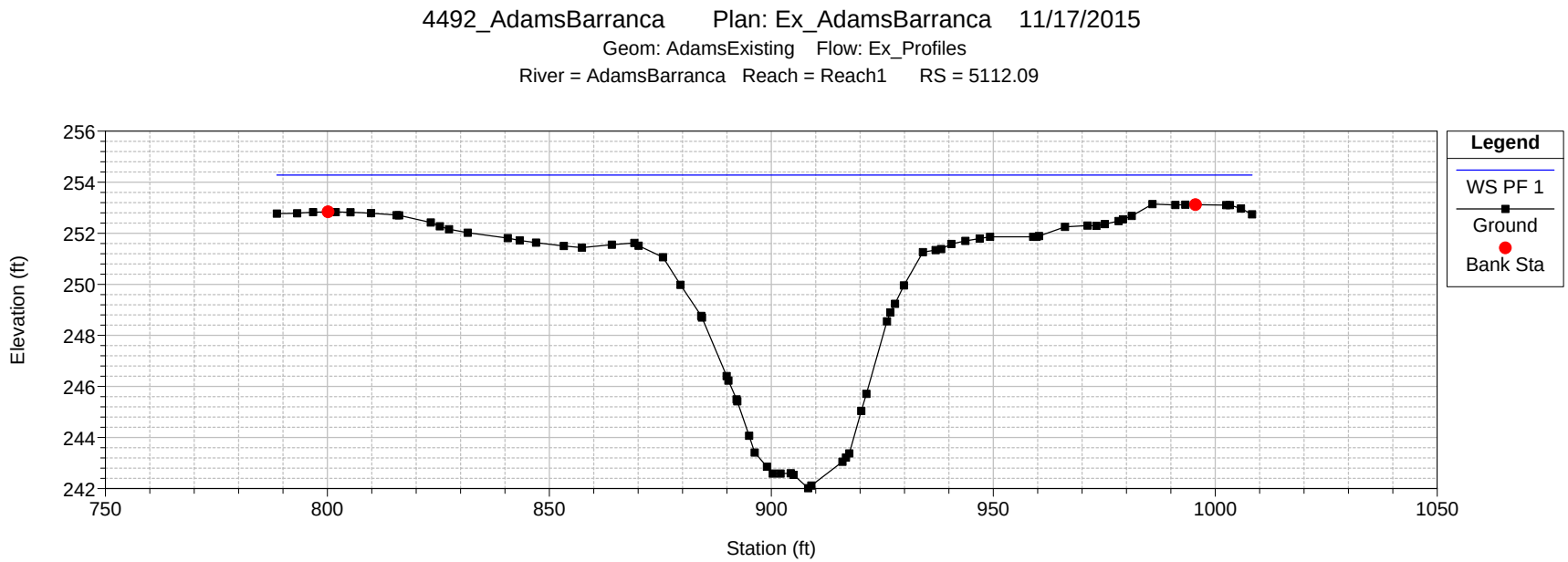
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5156.75
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5112.09
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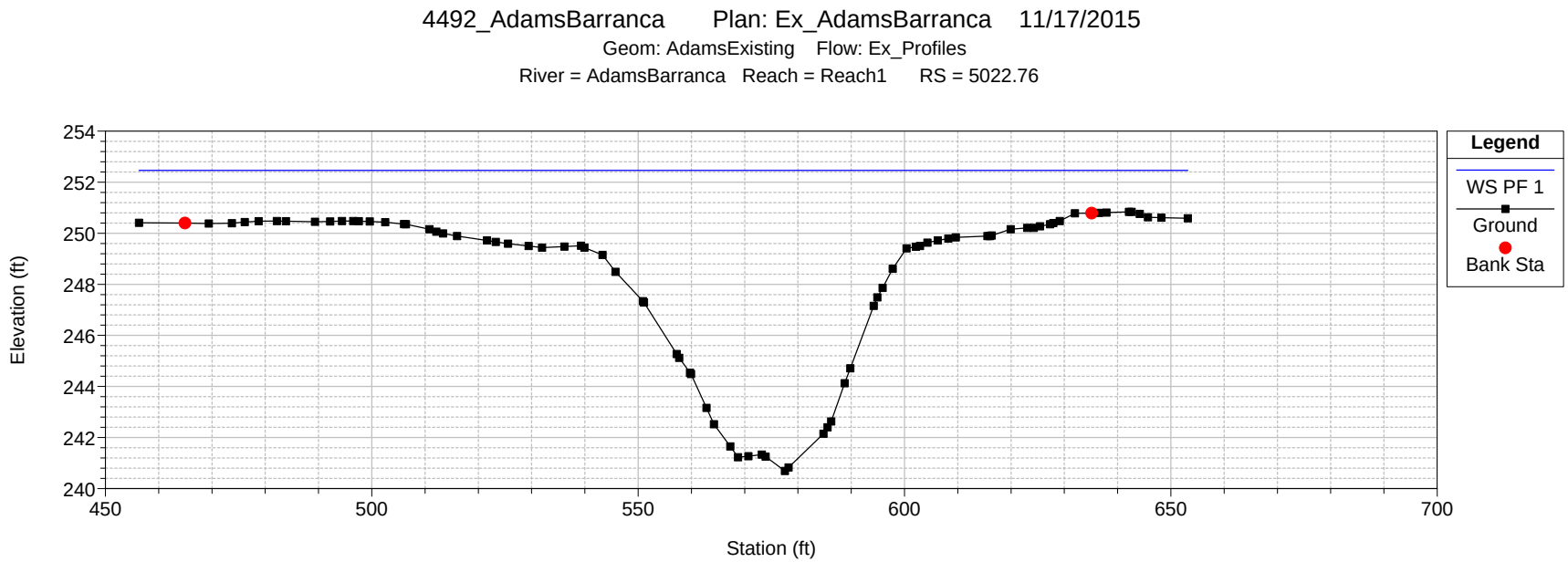
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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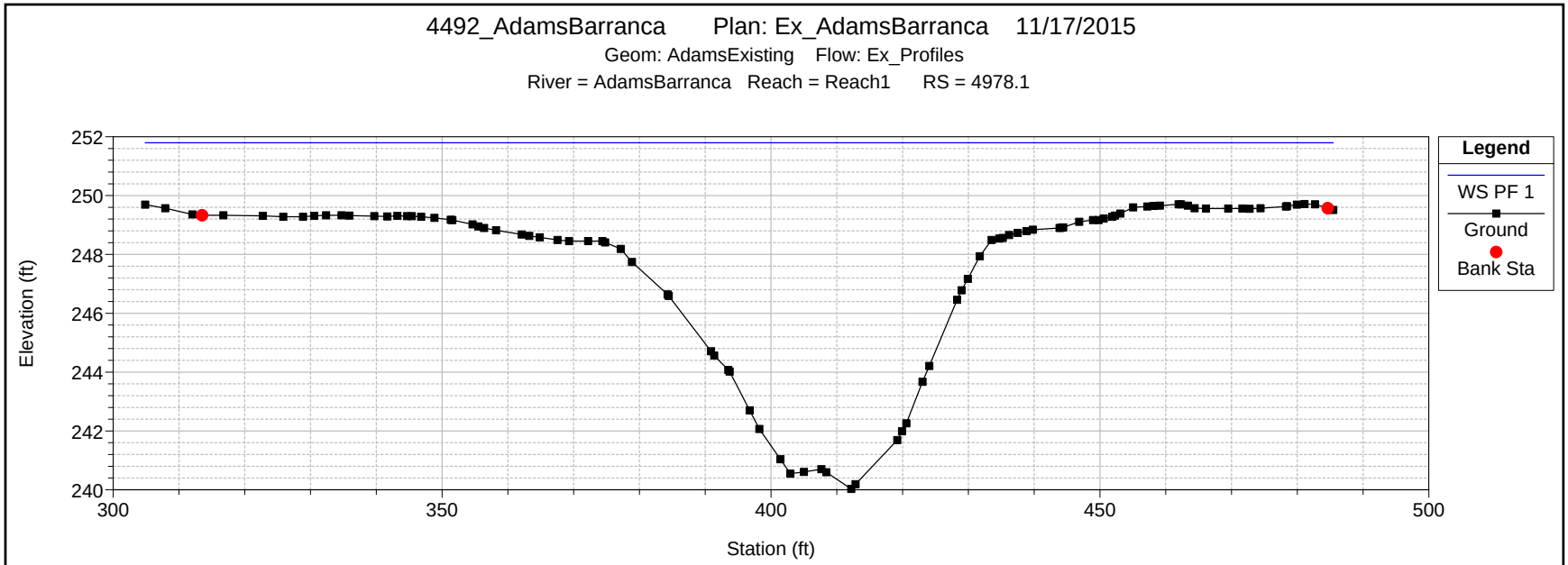
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5022.76
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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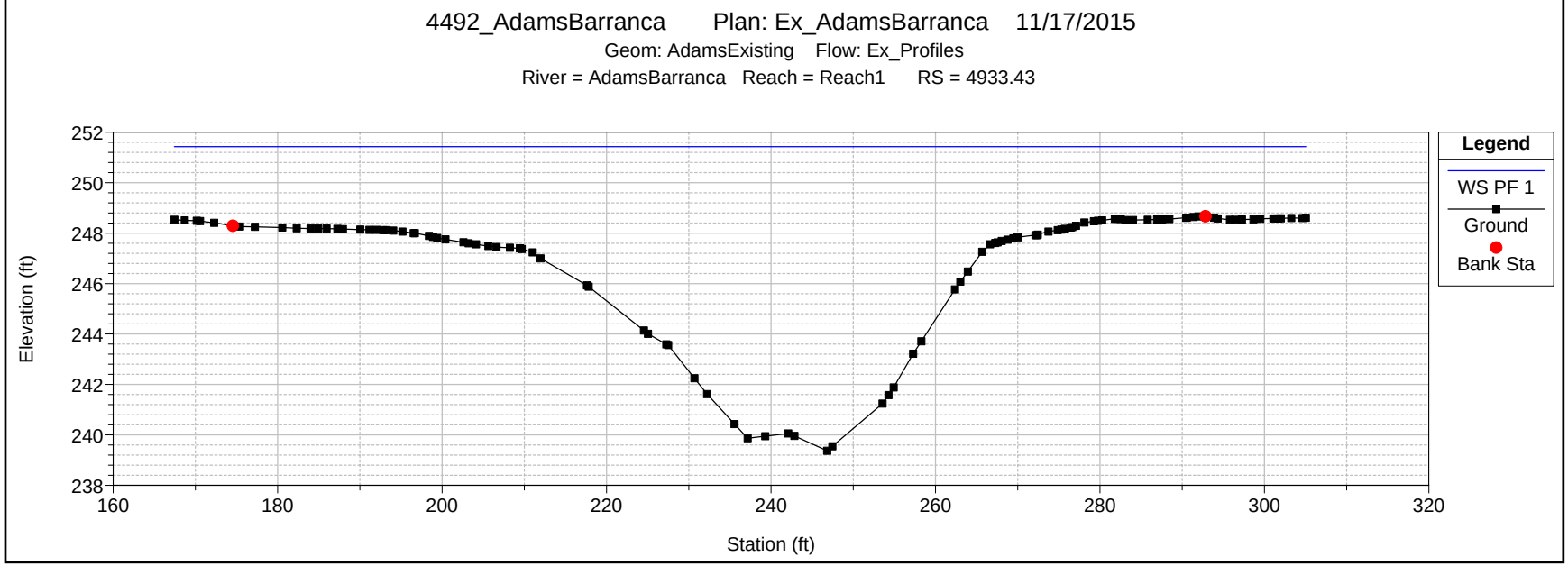
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4978.1
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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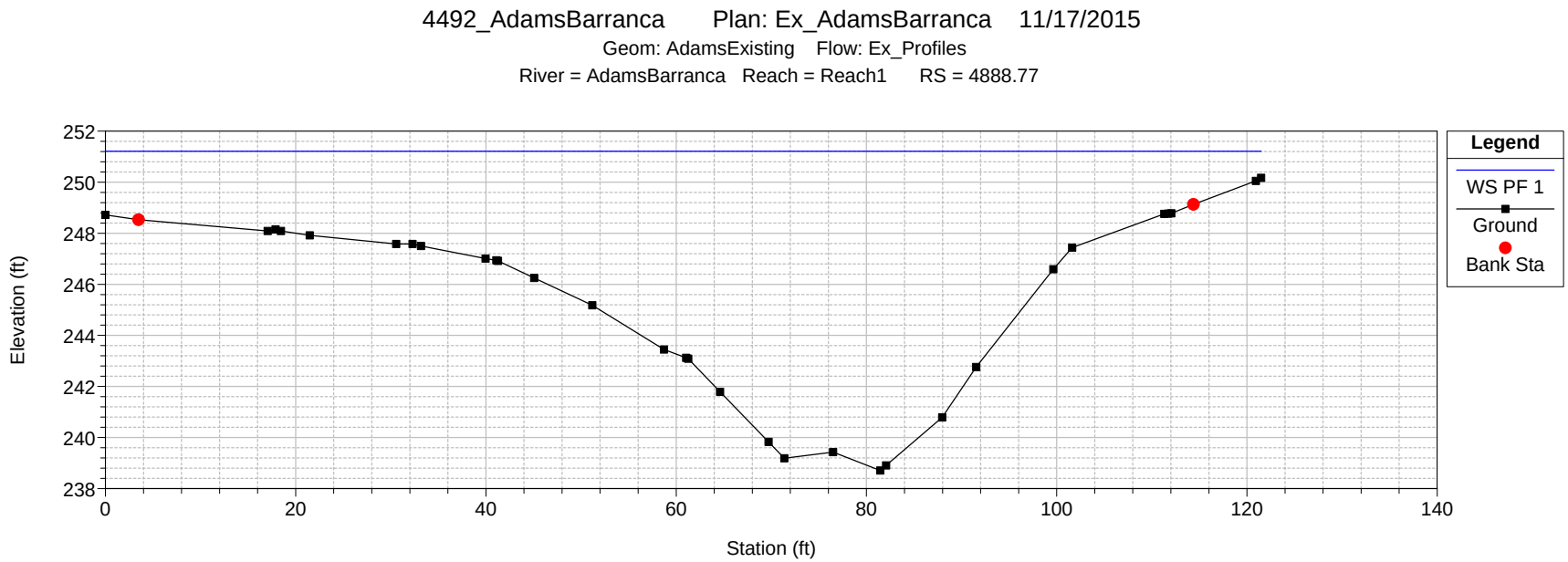
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4933.43
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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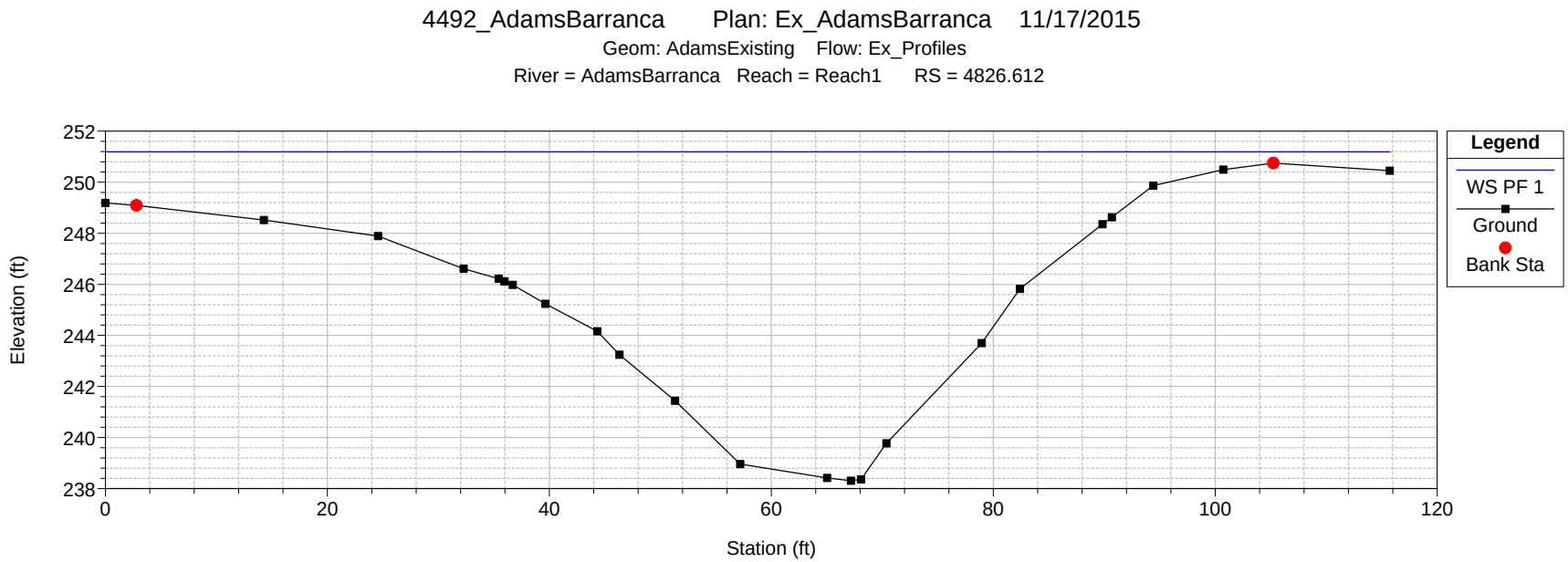
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4888.77
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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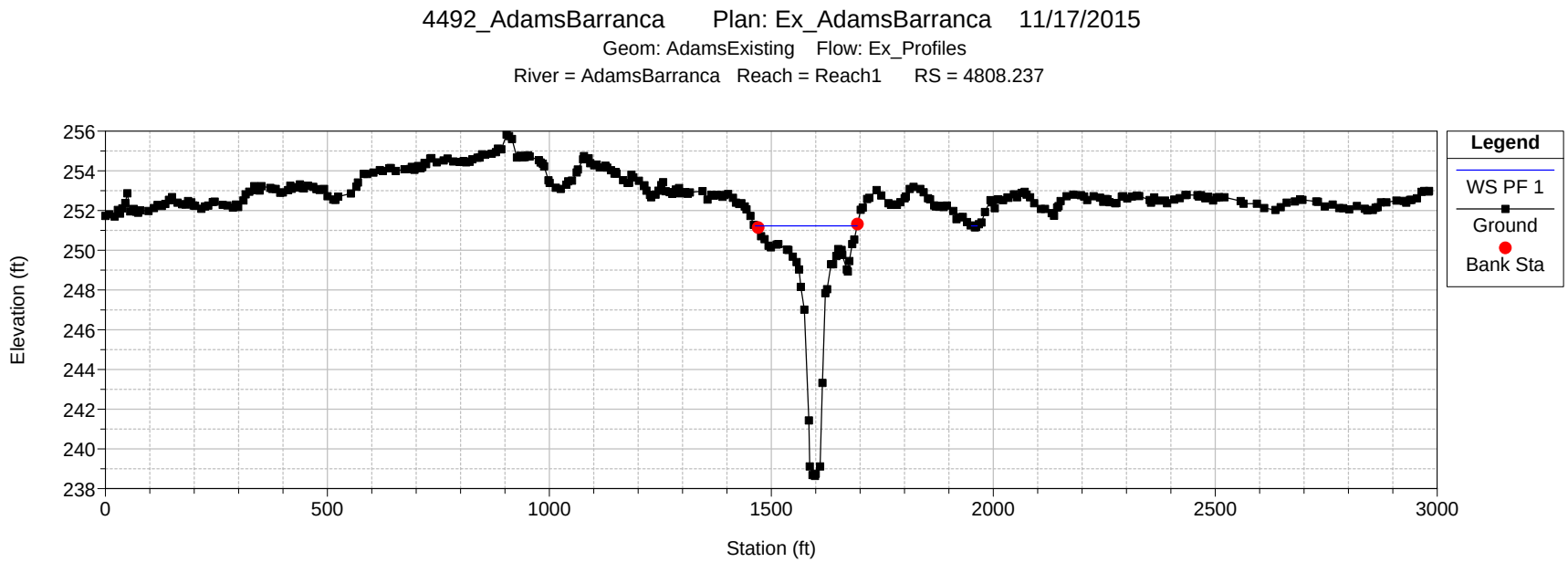
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4826.612
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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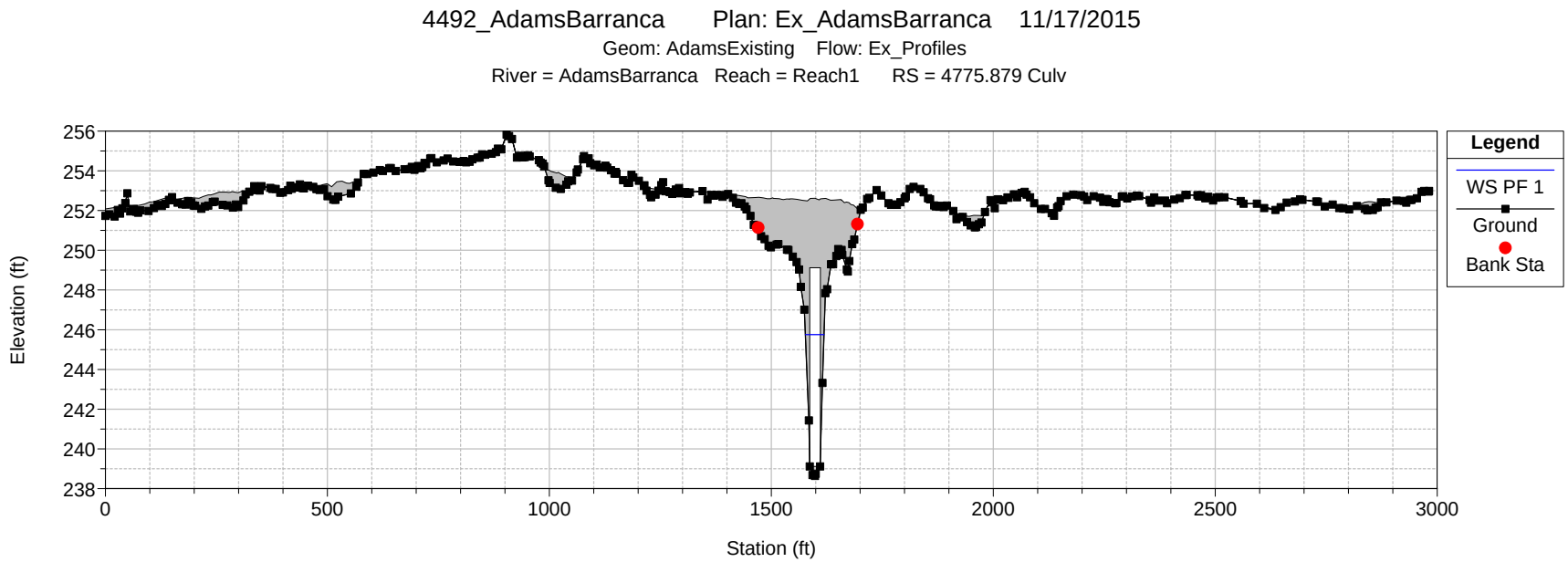
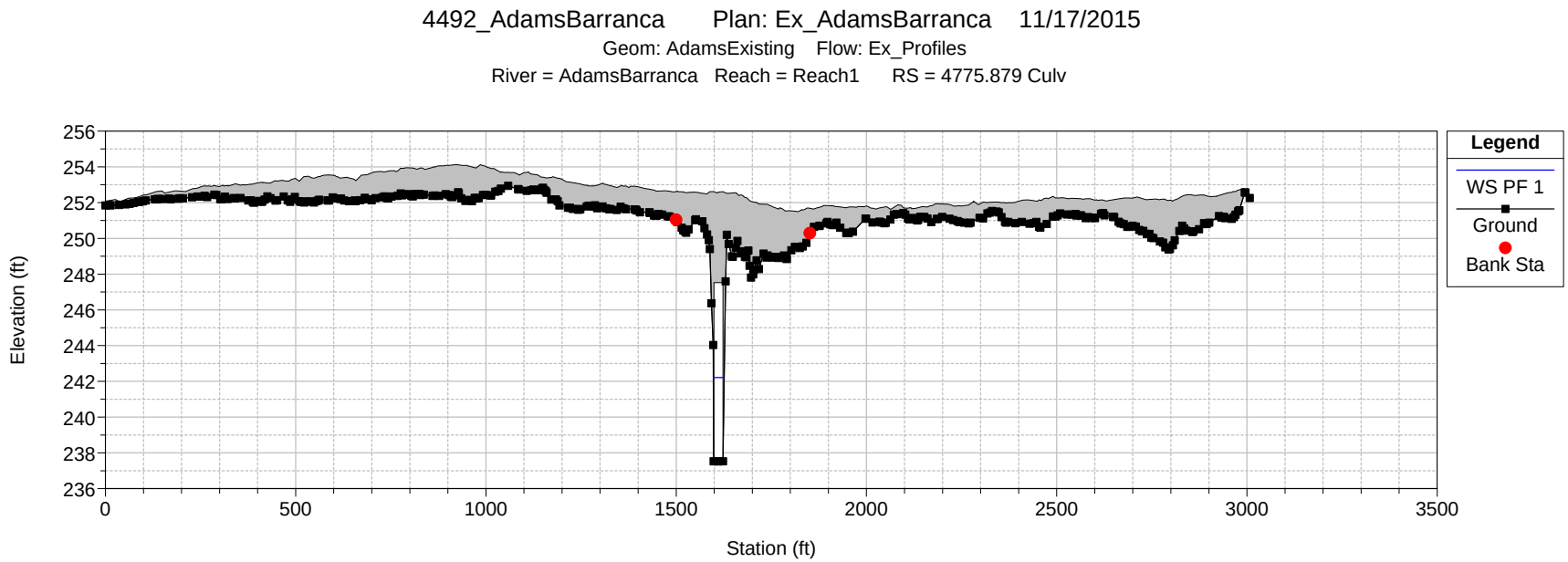
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4808.237
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4775.879 Culv
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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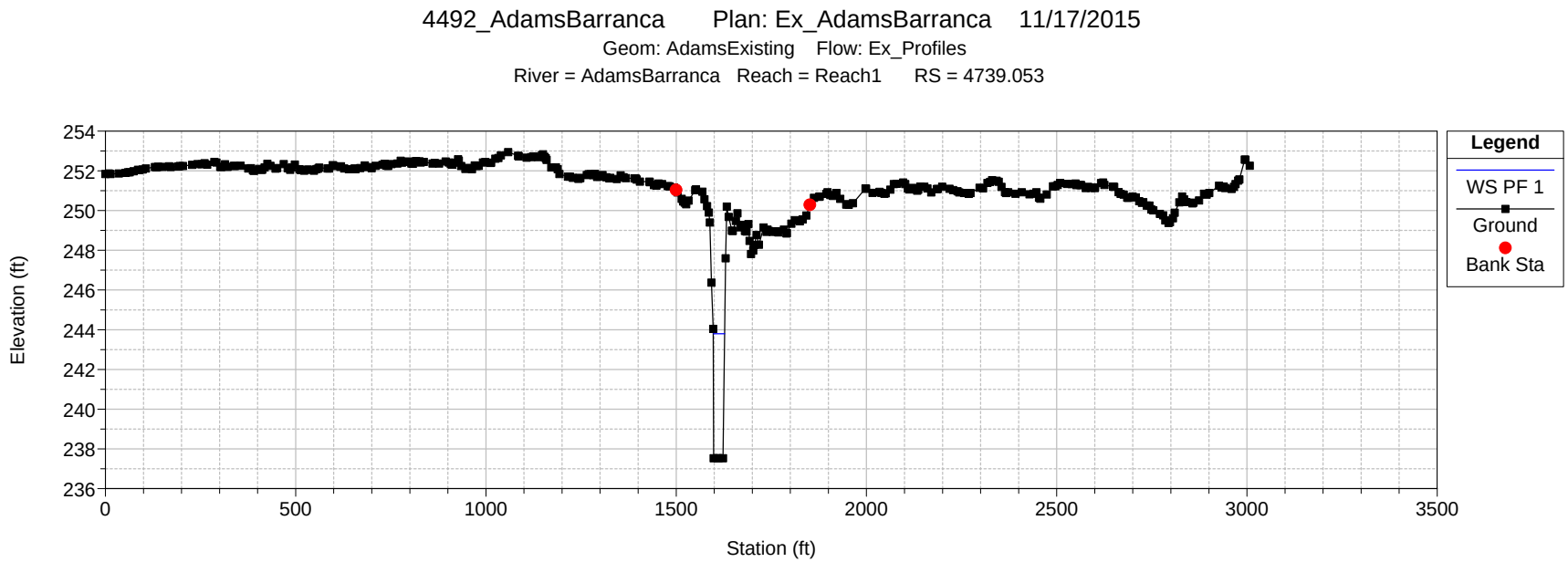
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4775.879 Culv
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta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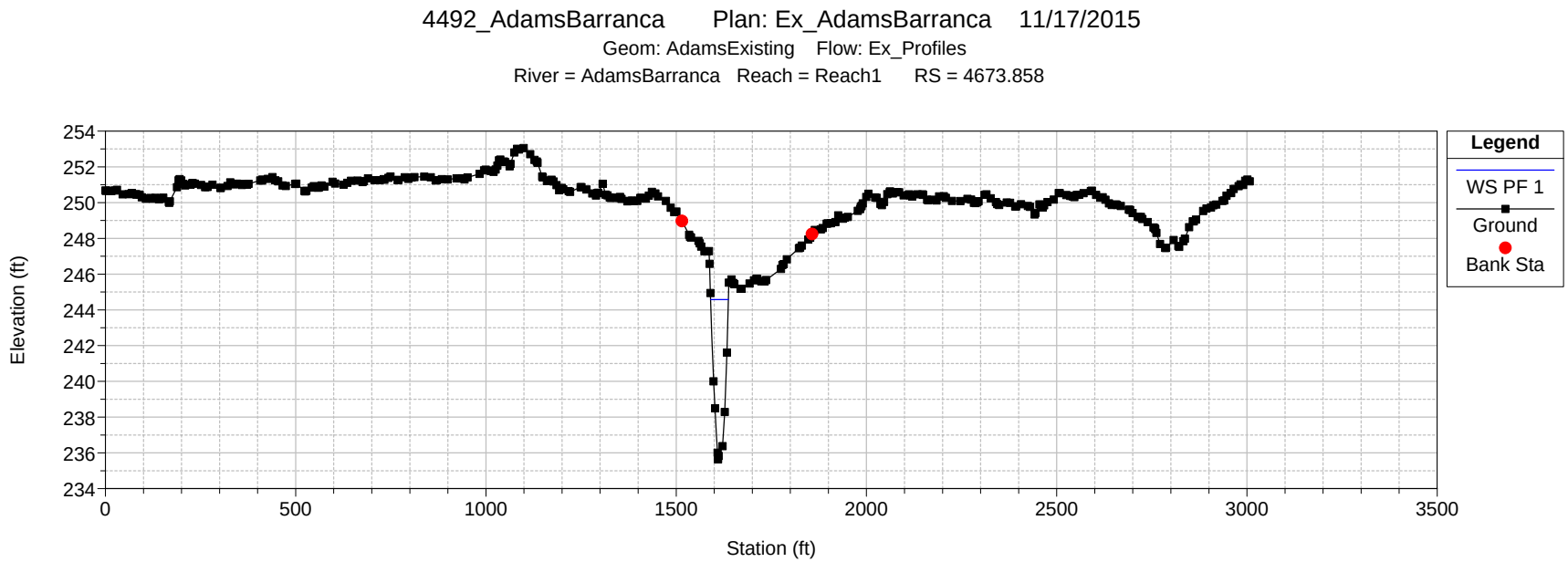
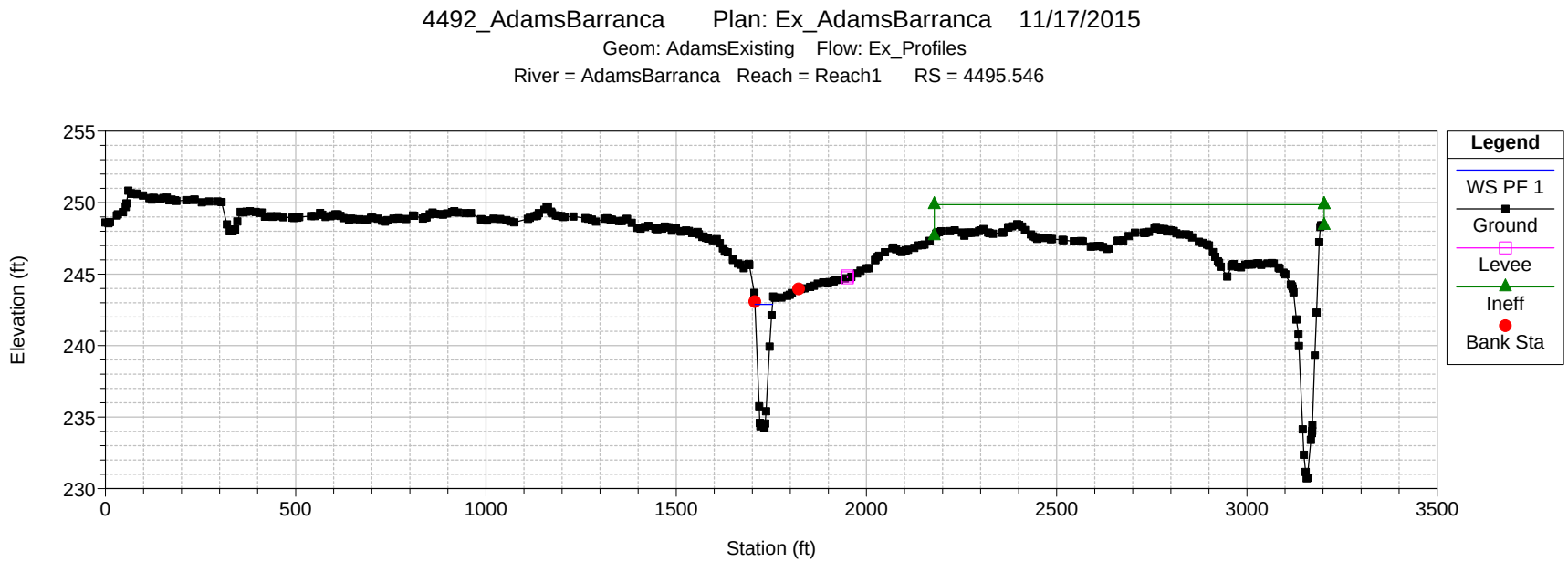
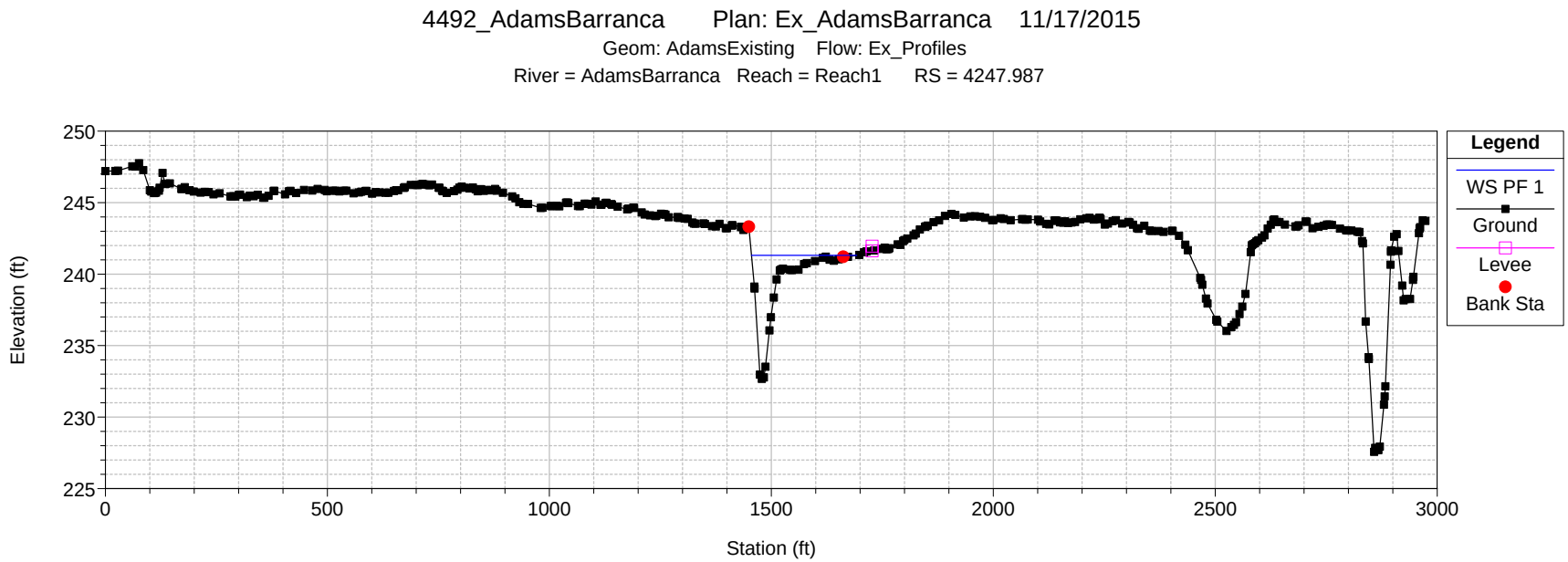
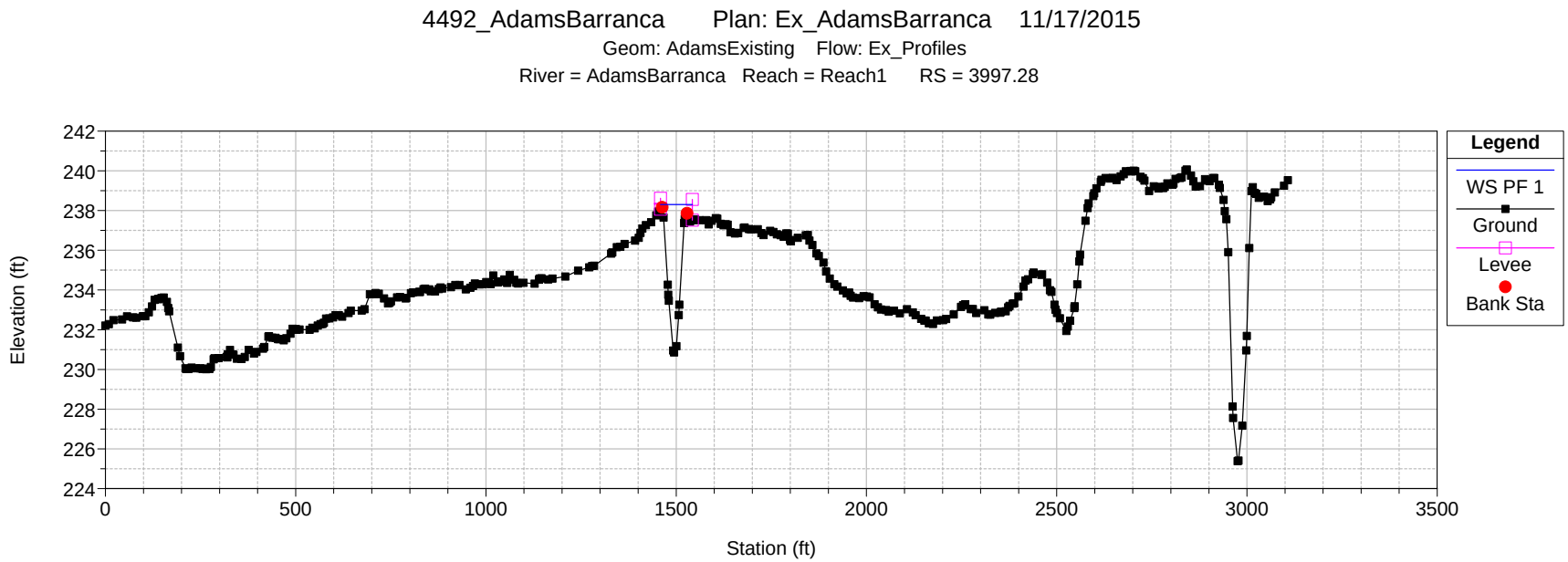
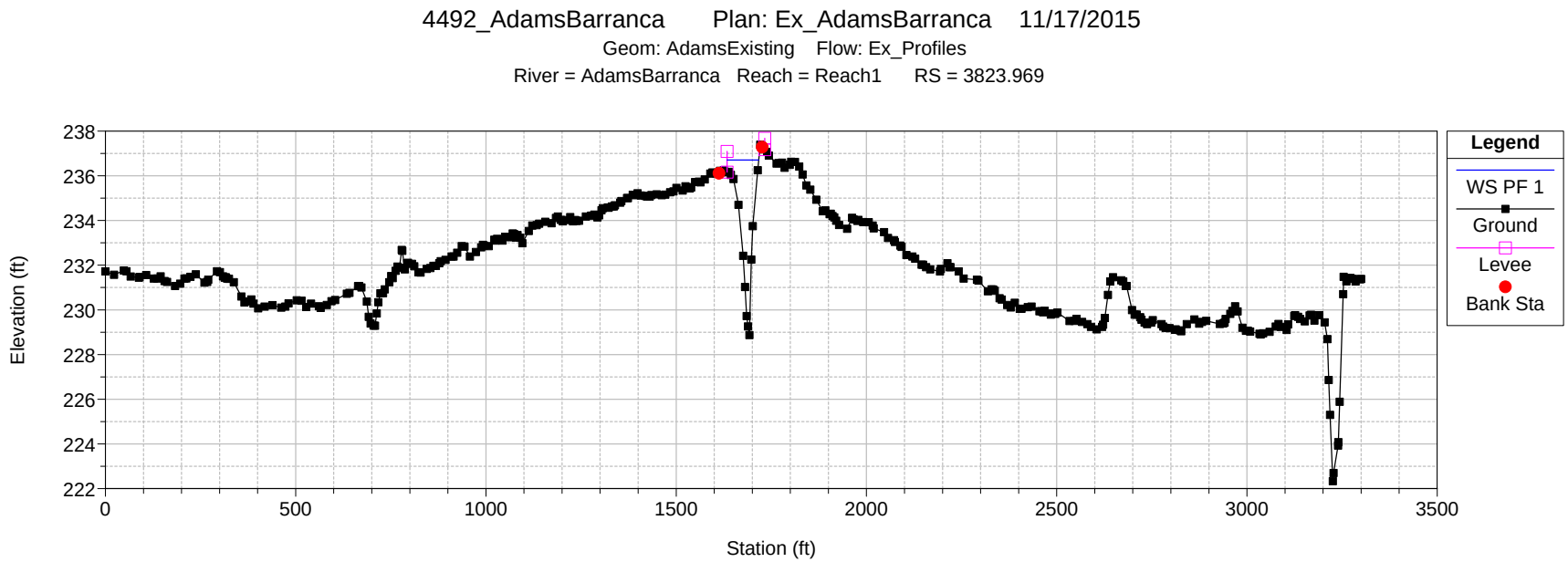
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4739.053
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

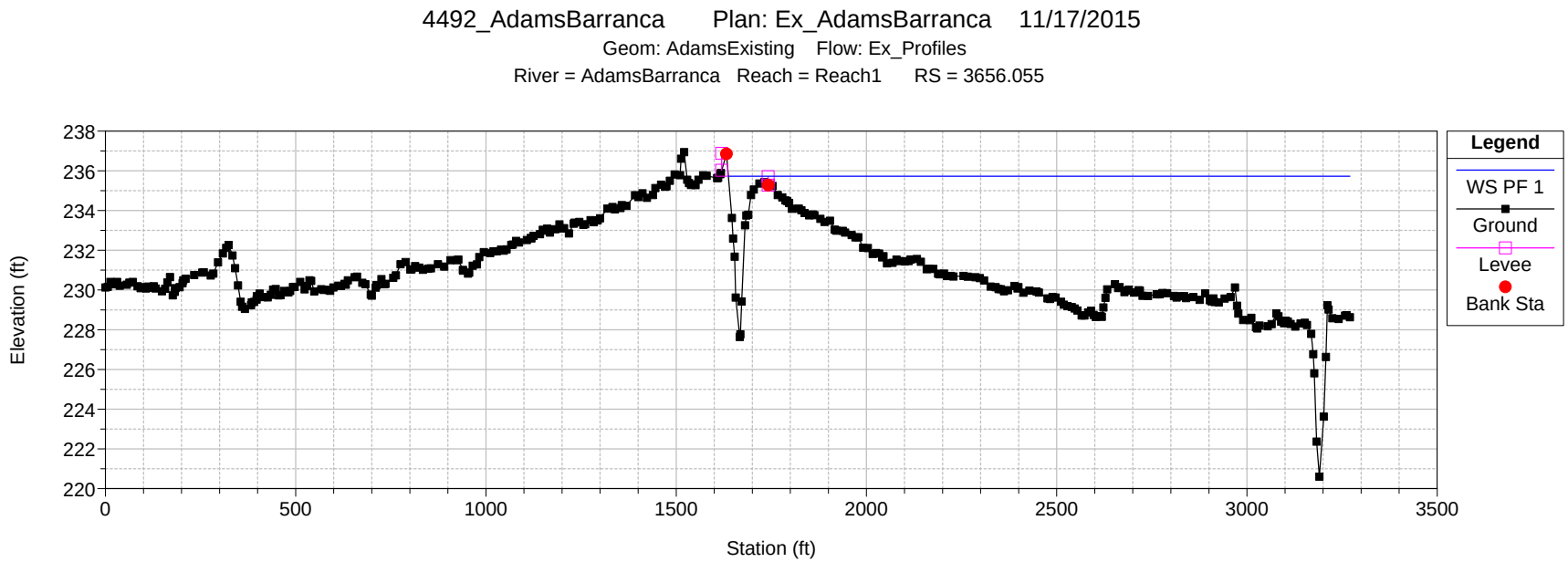

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4673.858
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

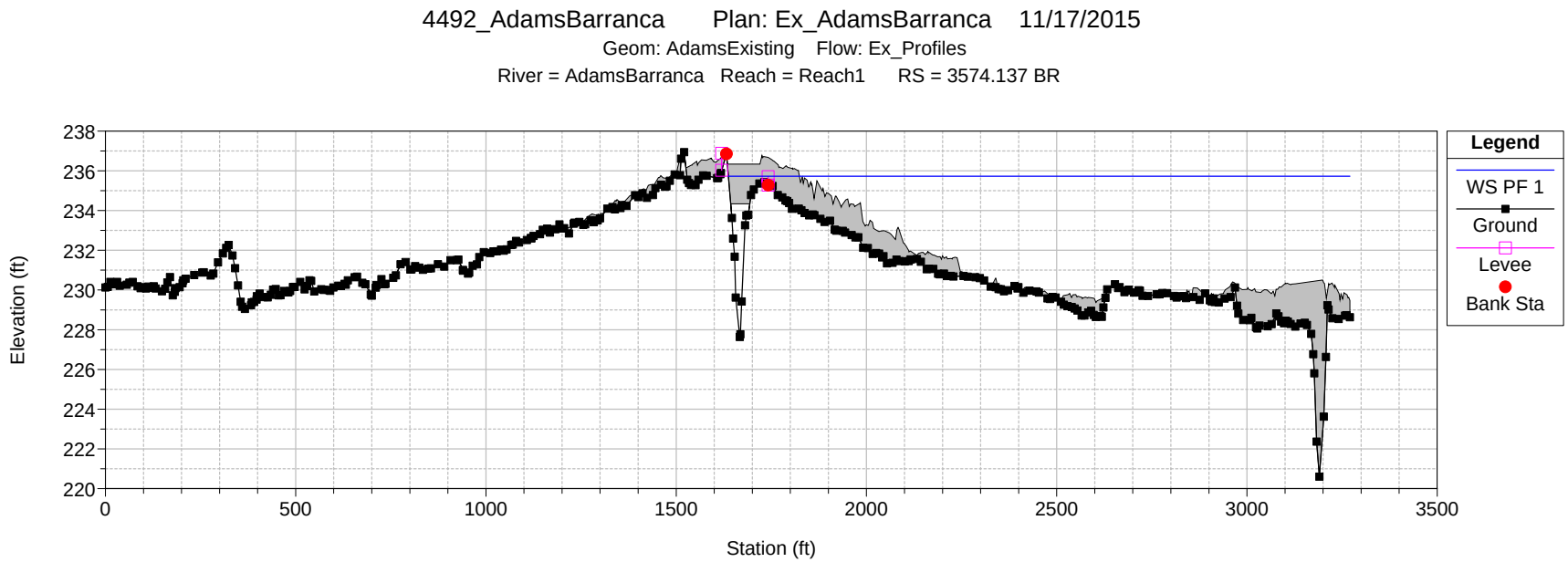

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4495.546
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

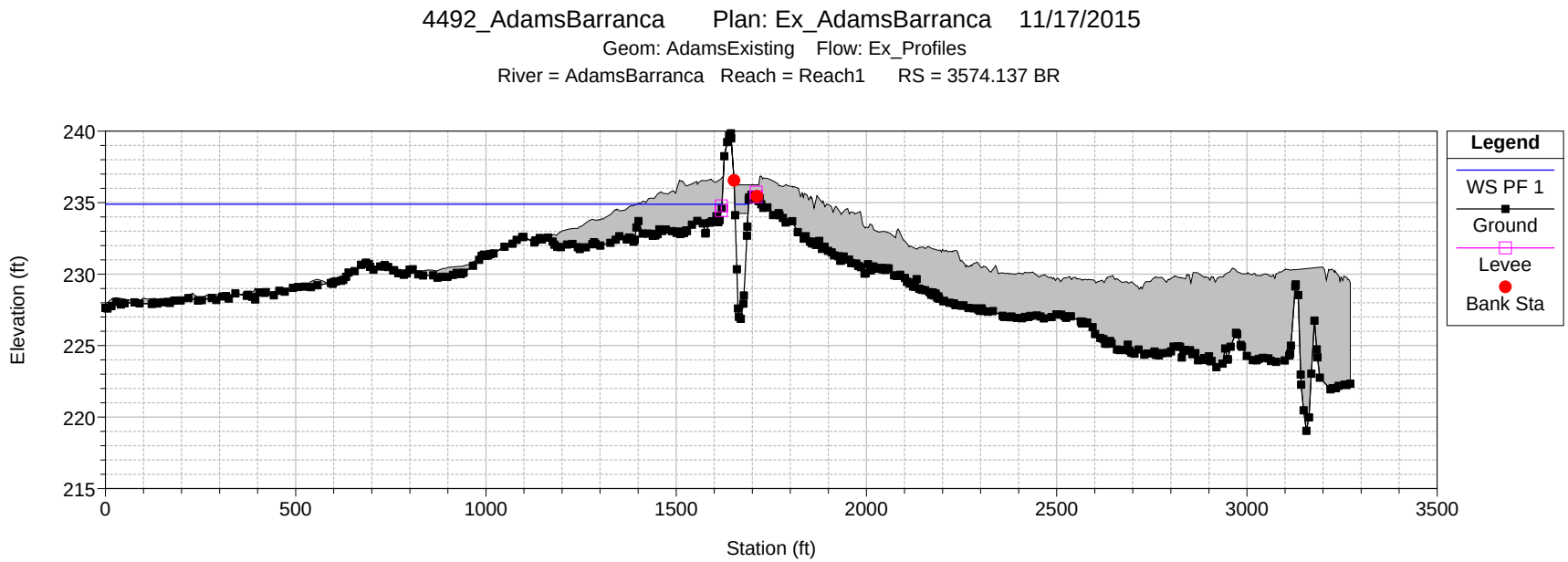

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4247.987
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

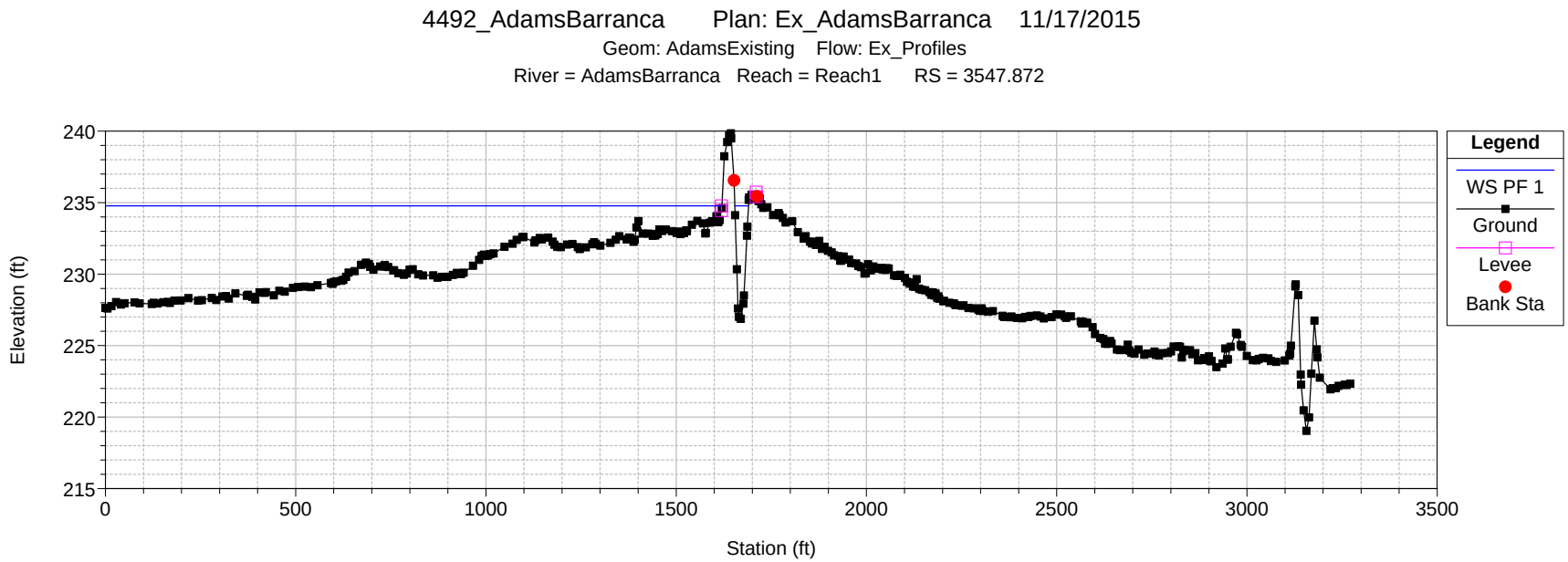

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3997.28
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

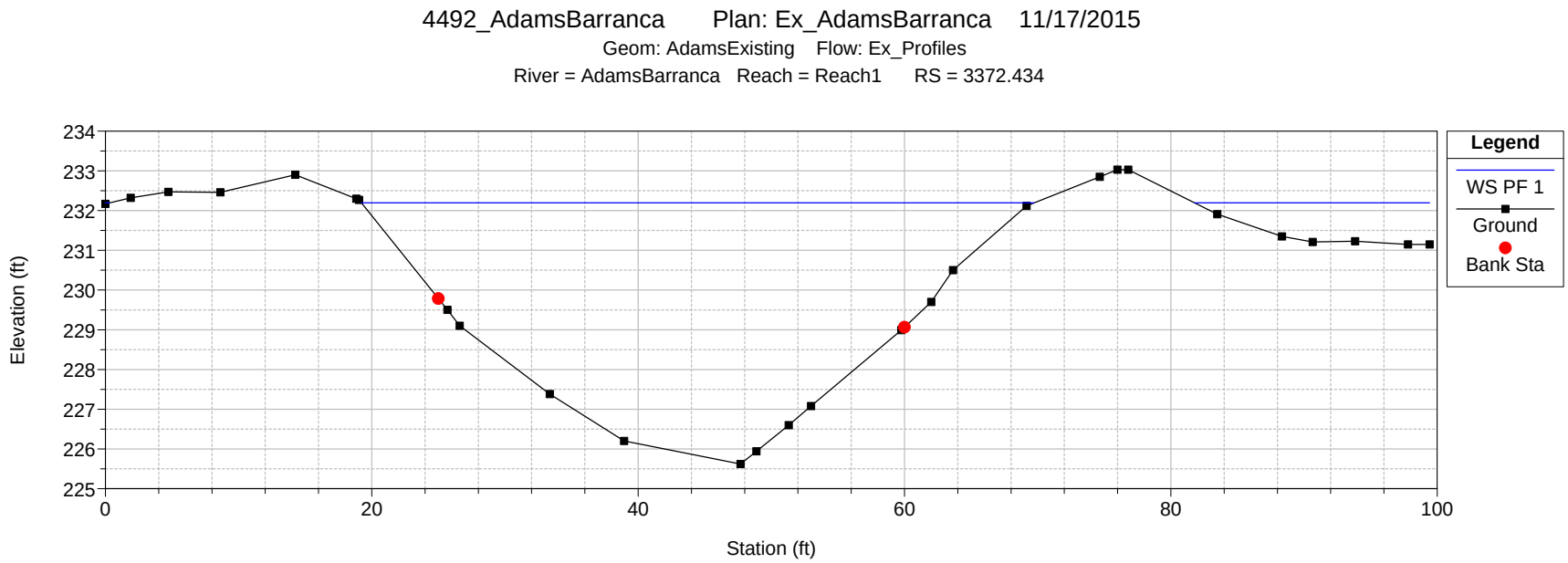

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3823.969
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

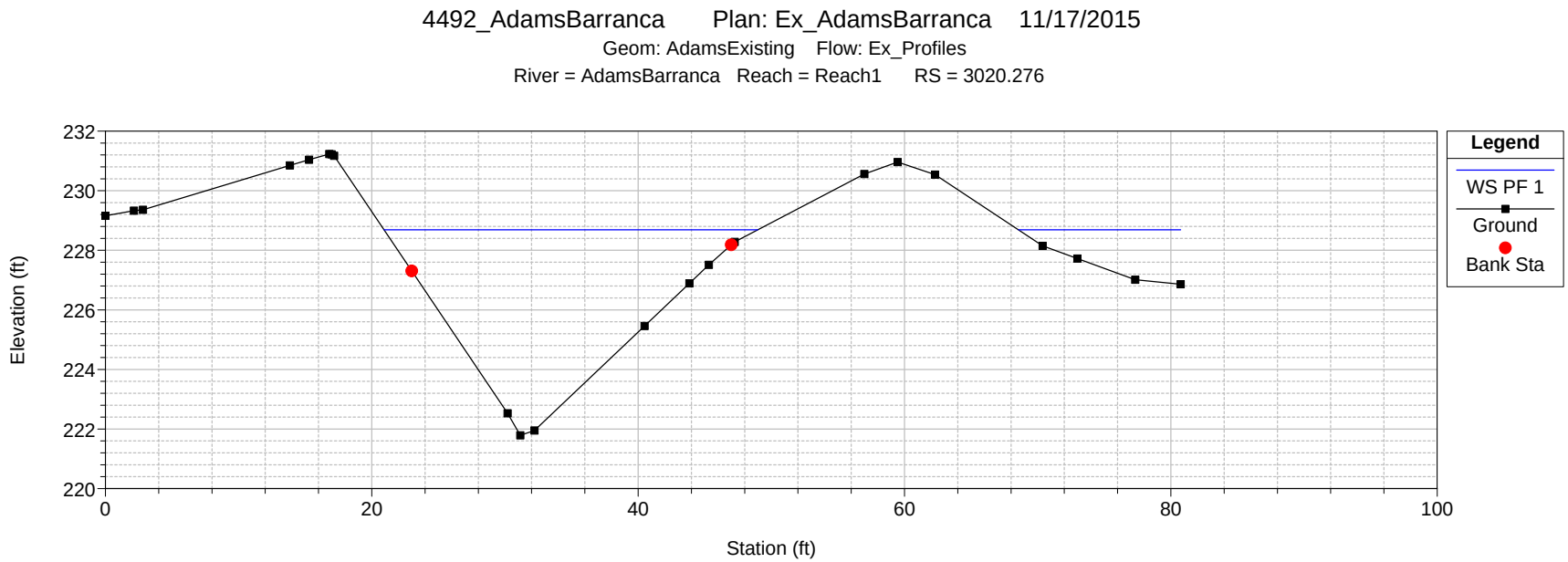

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3656.055
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

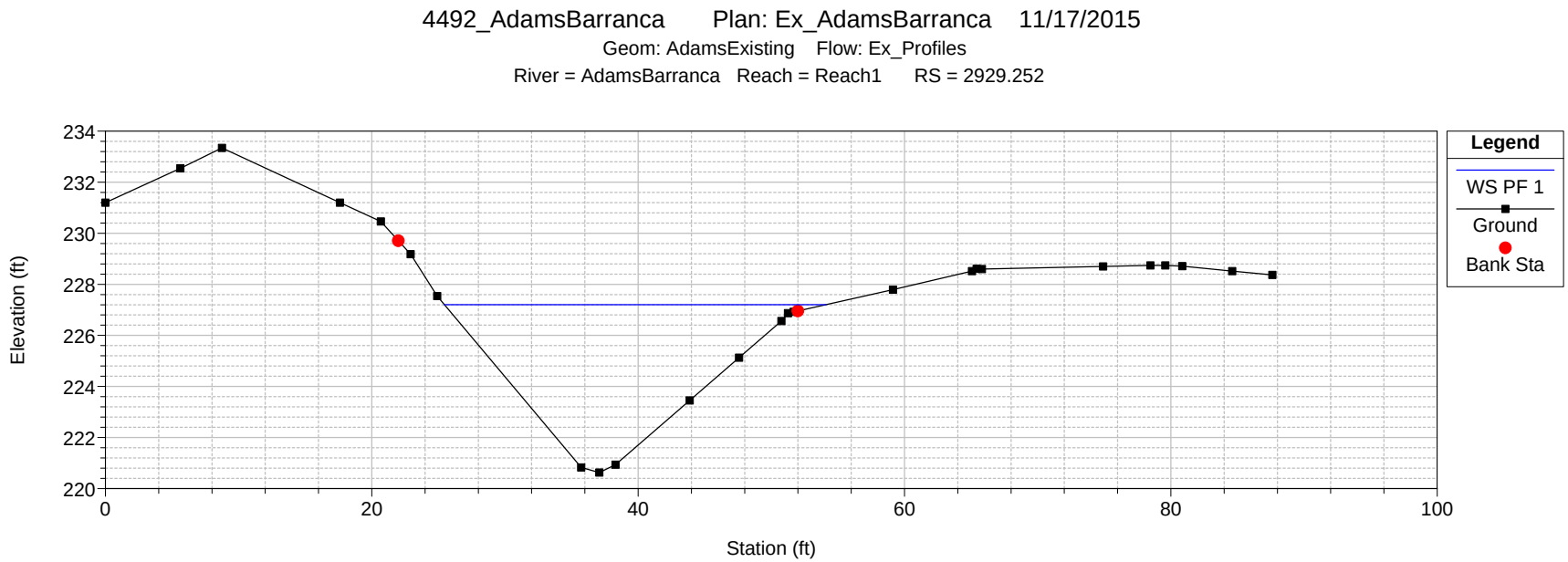

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3574.137 BR
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3574.137 BR
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3547.872
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3372.434
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

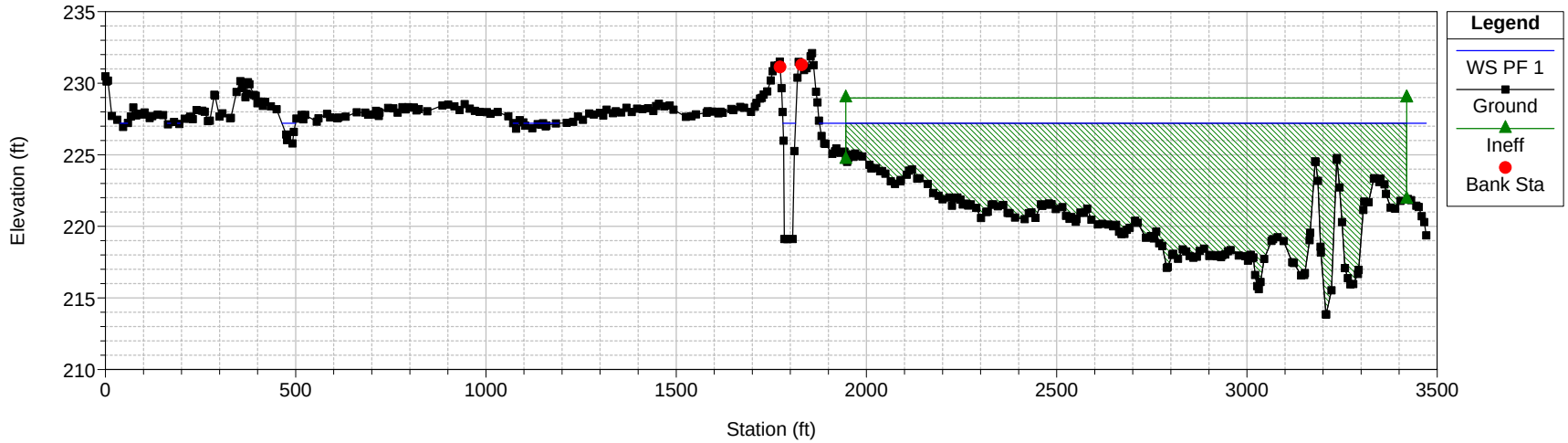

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3020.276
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2929.252
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015

Geom: AdamsExisting Flow: Ex_Profiles

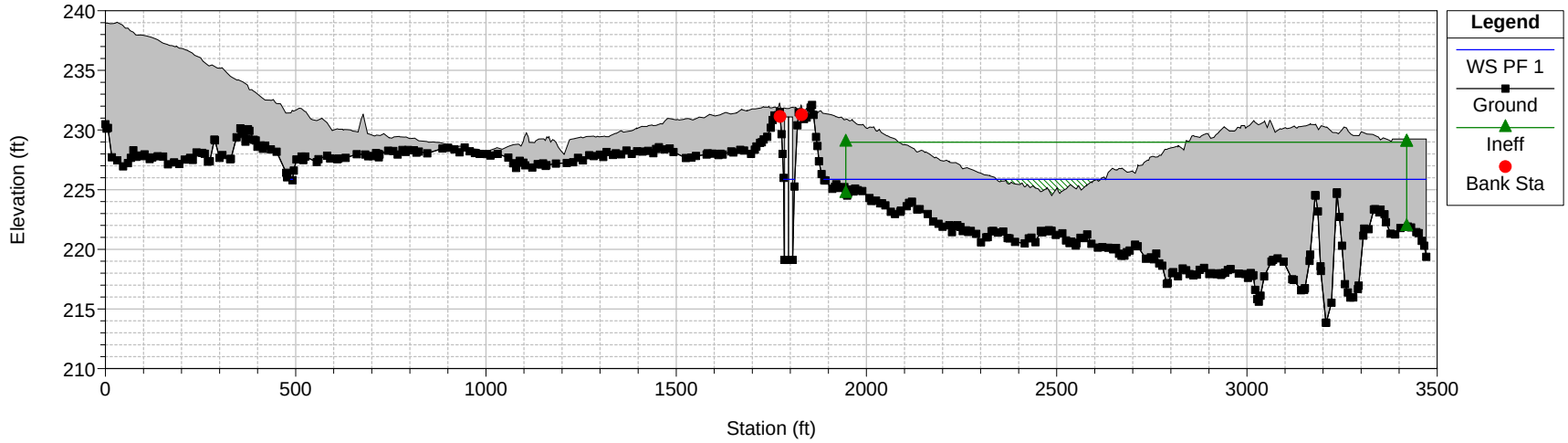
River = AdamsBarranca Reach = Reach1 RS = 2895.24

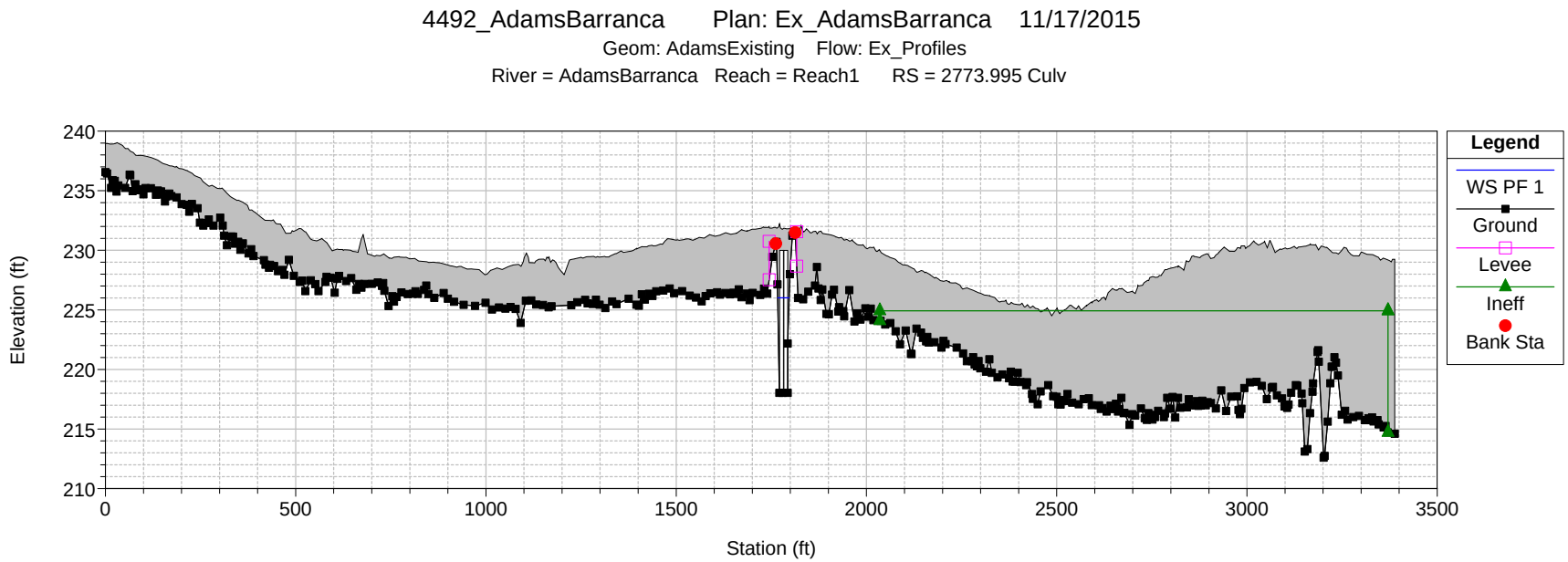


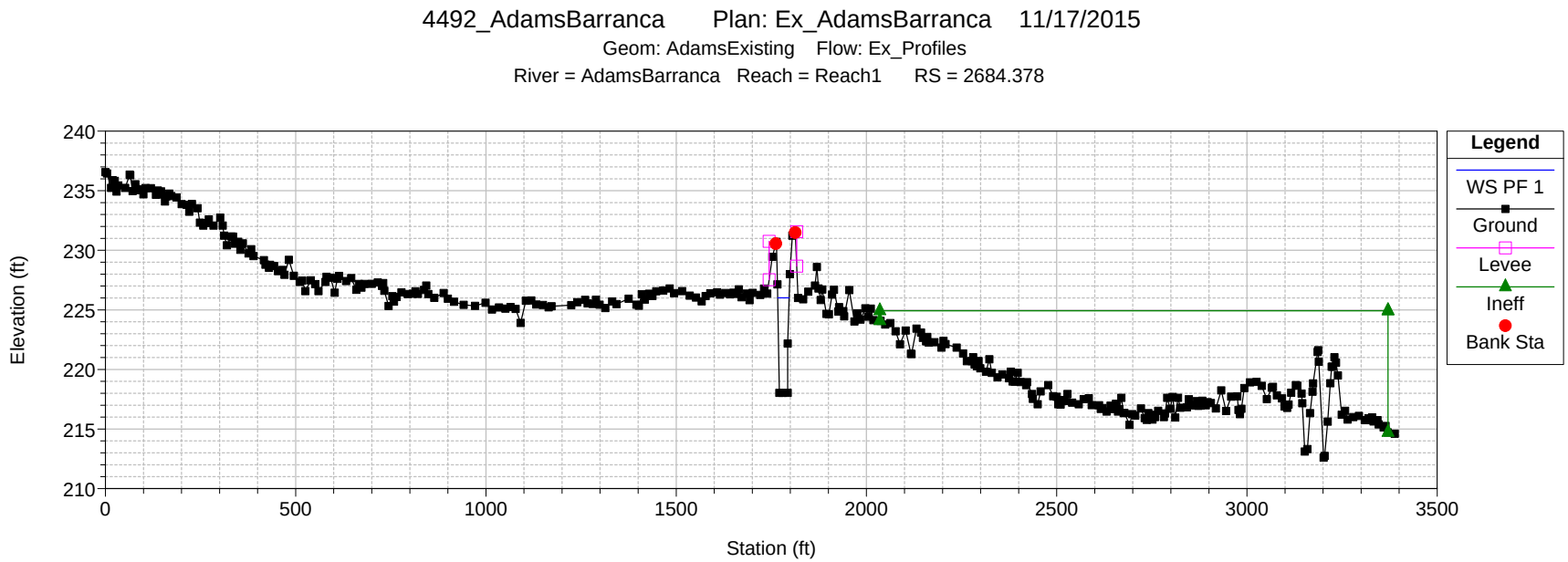
4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015

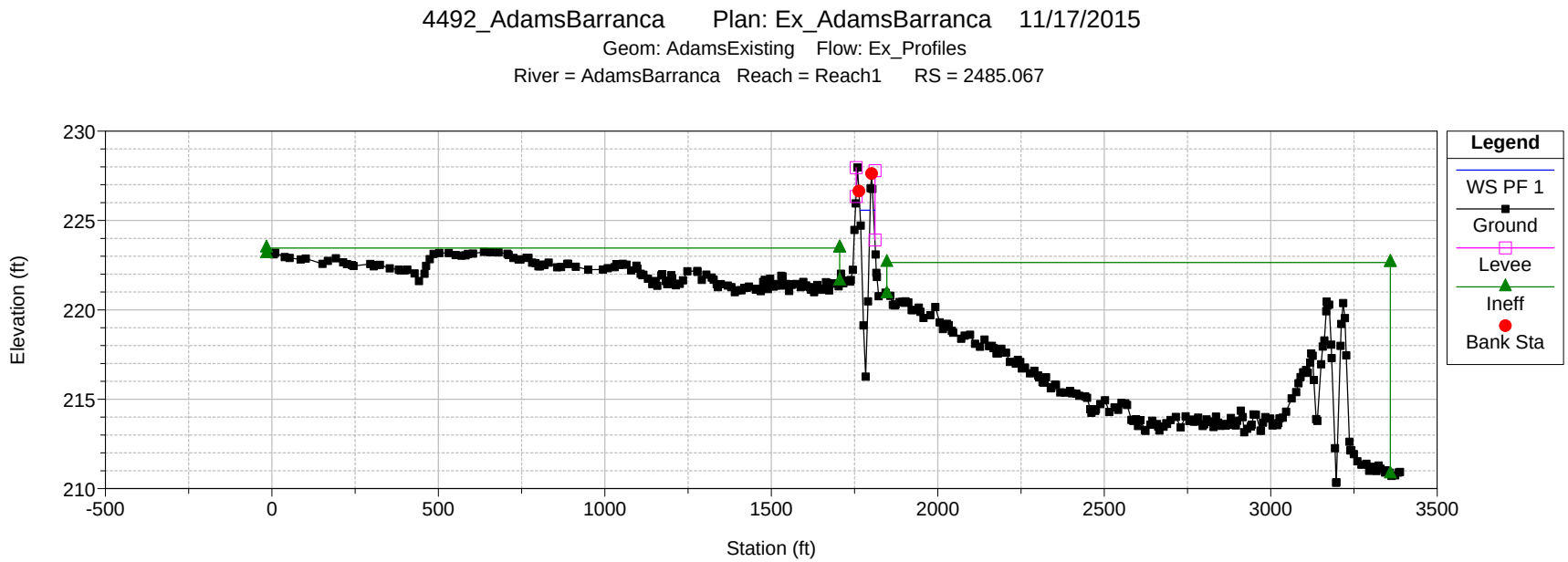
Geom: AdamsExisting Flow: Ex_Profiles

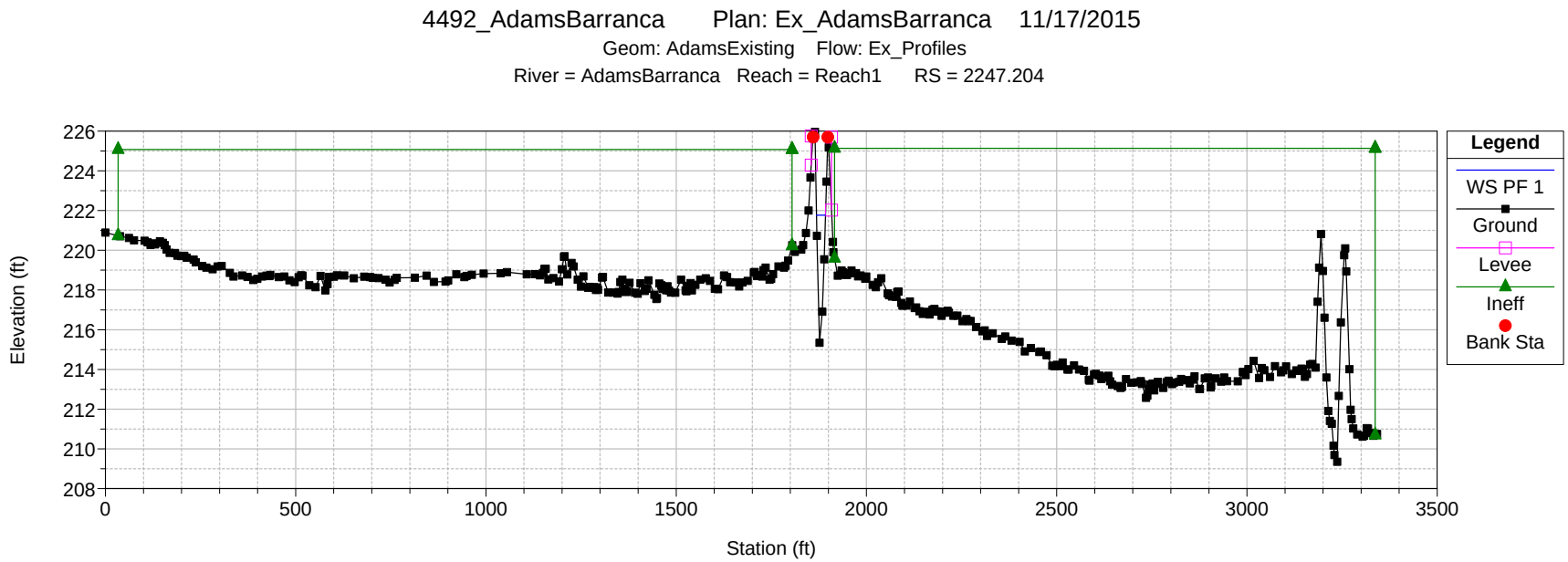
River = AdamsBarranca Reach = Reach1 RS = 2773.995 Culv




4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2773.995 Culv
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2684.378
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

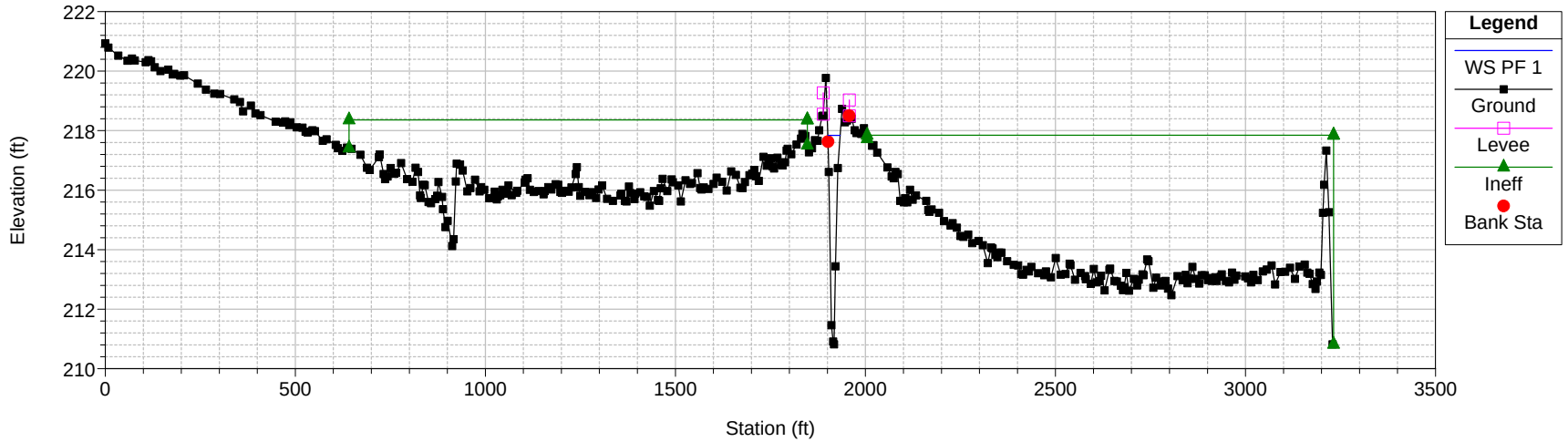

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2485.067
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2247.204
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015

Geom: AdamsExisting Flow: Ex_Profiles

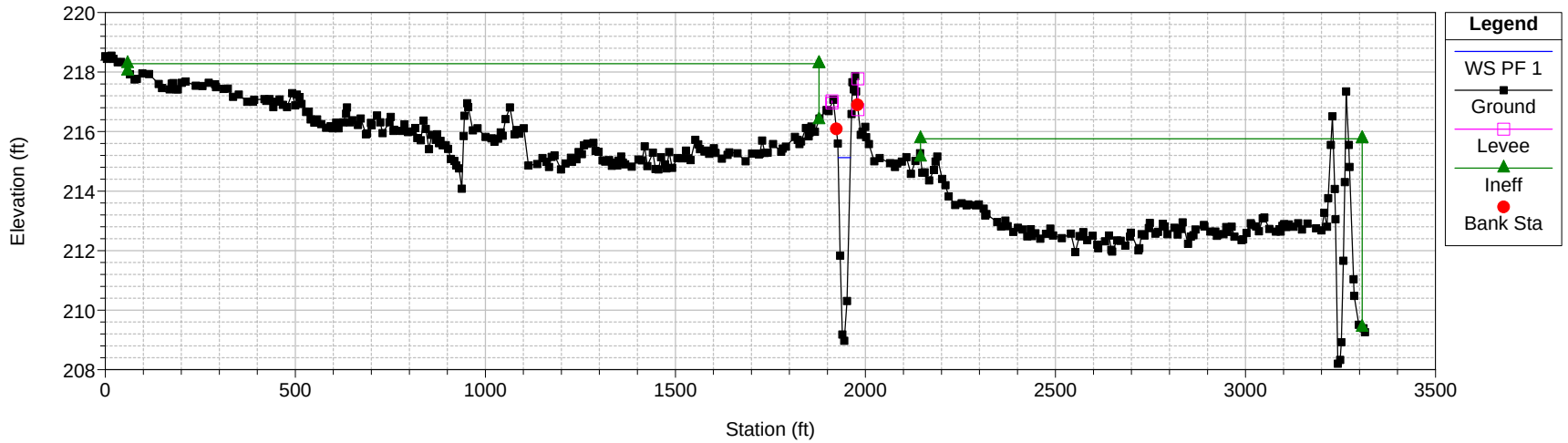
River = AdamsBarranca Reach = Reach1 RS = 1997.363

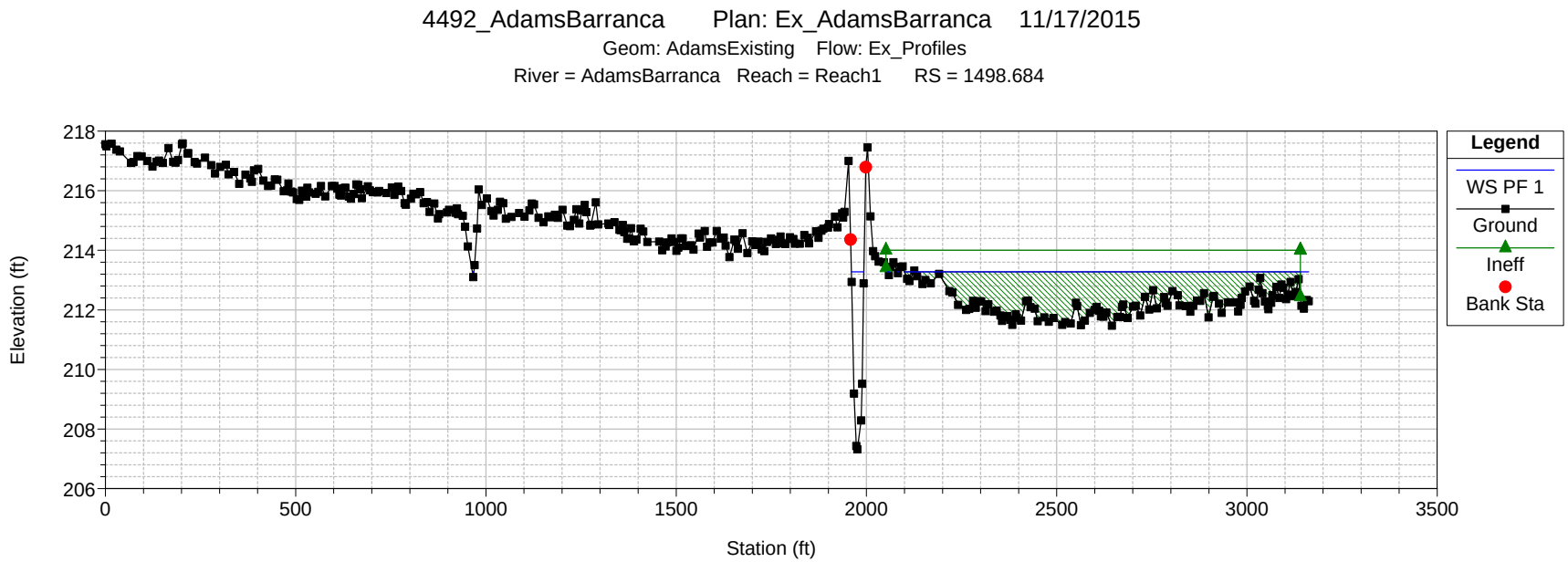


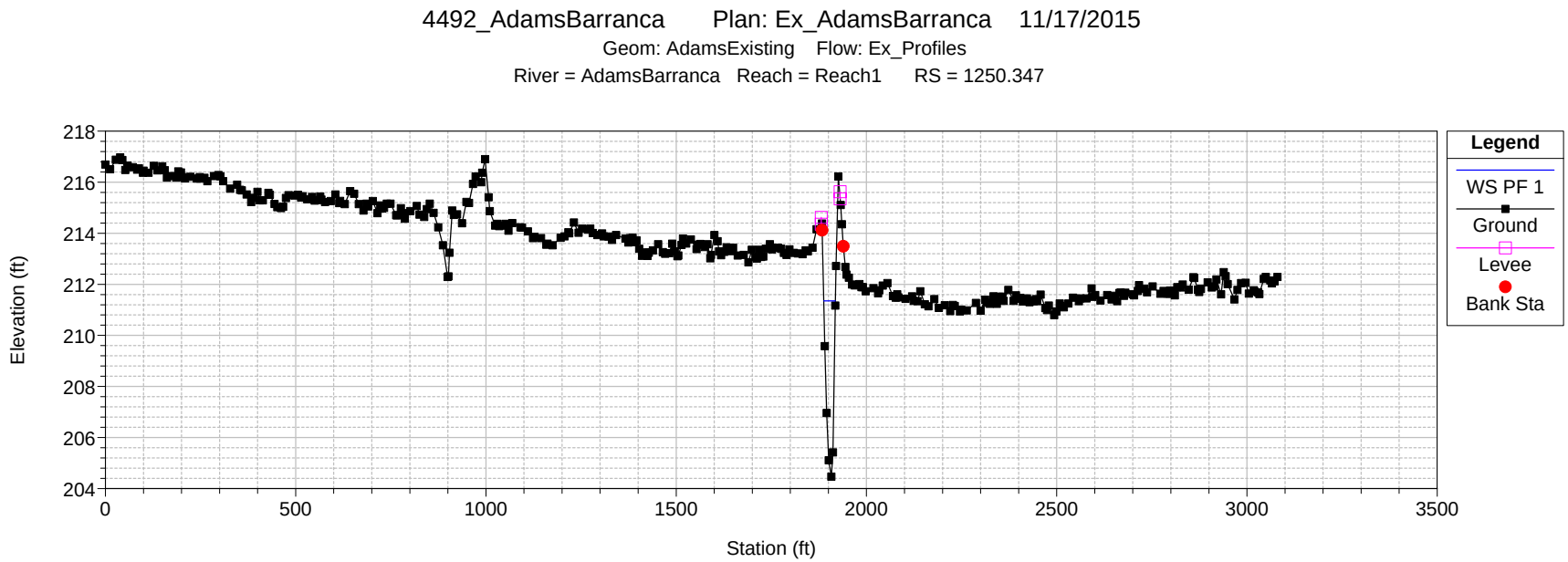
4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015

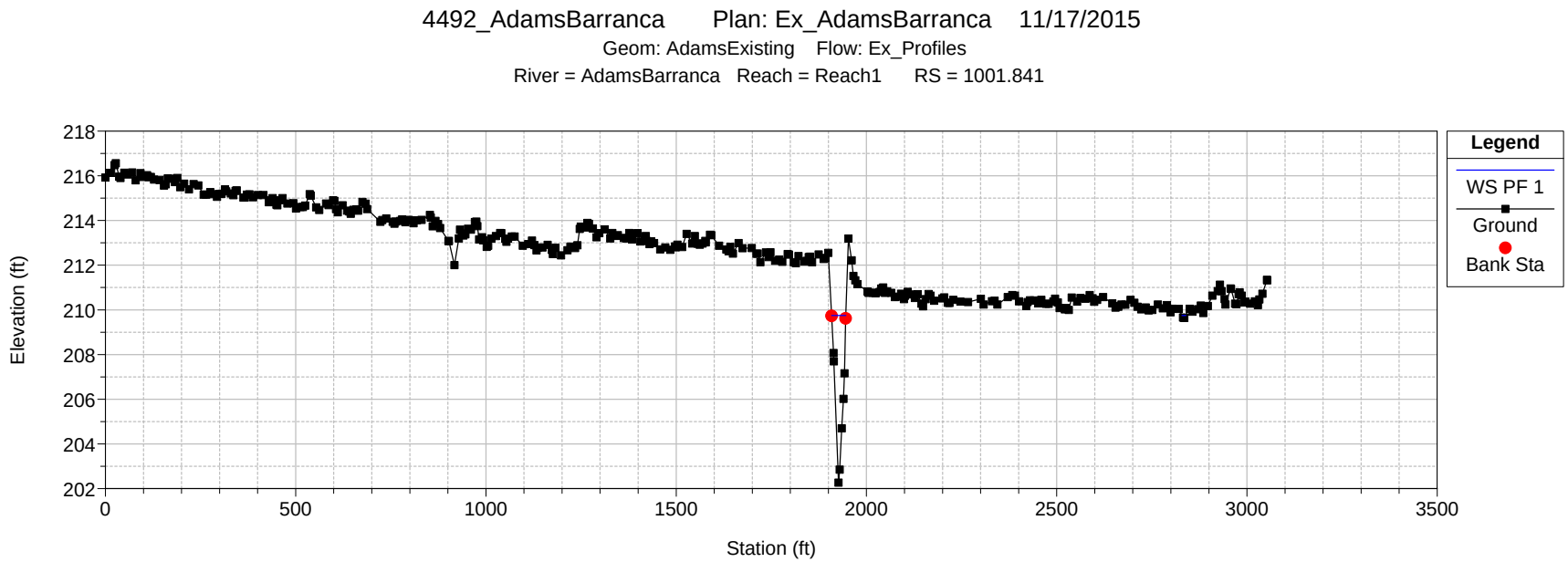
Geom: AdamsExisting Flow: Ex_Profiles

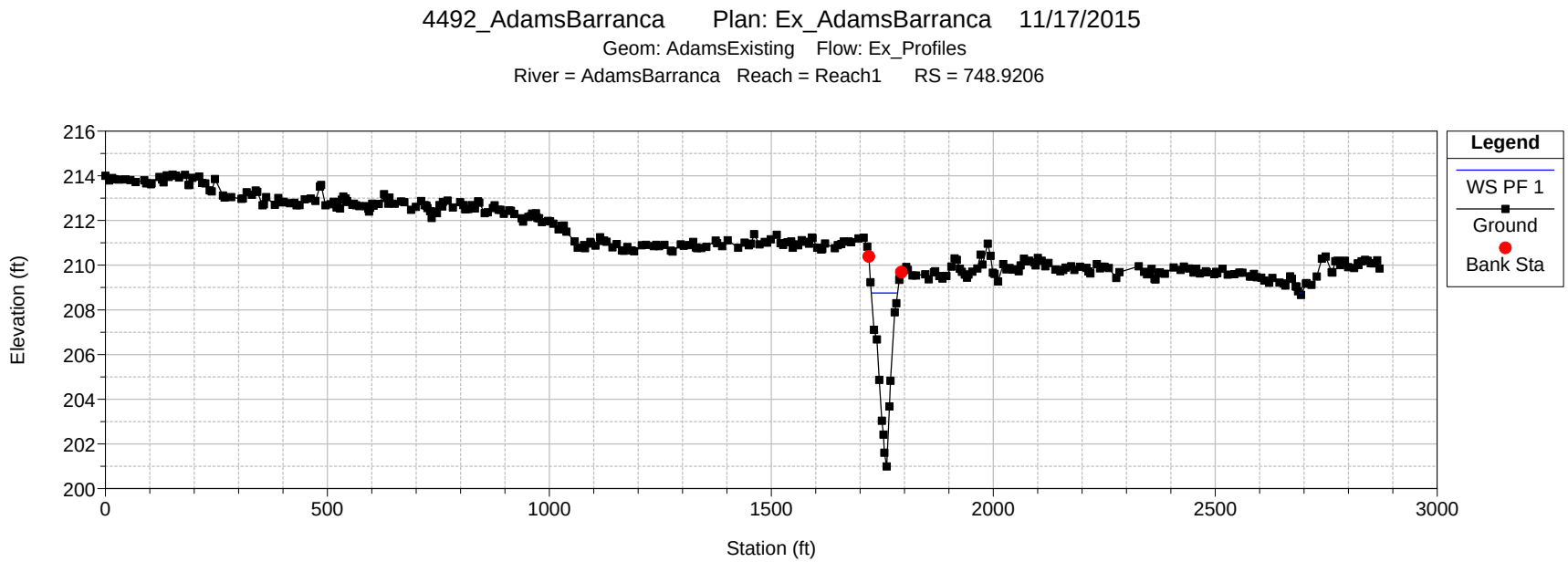
River = AdamsBarranca Reach = Reach1 RS = 1747.714

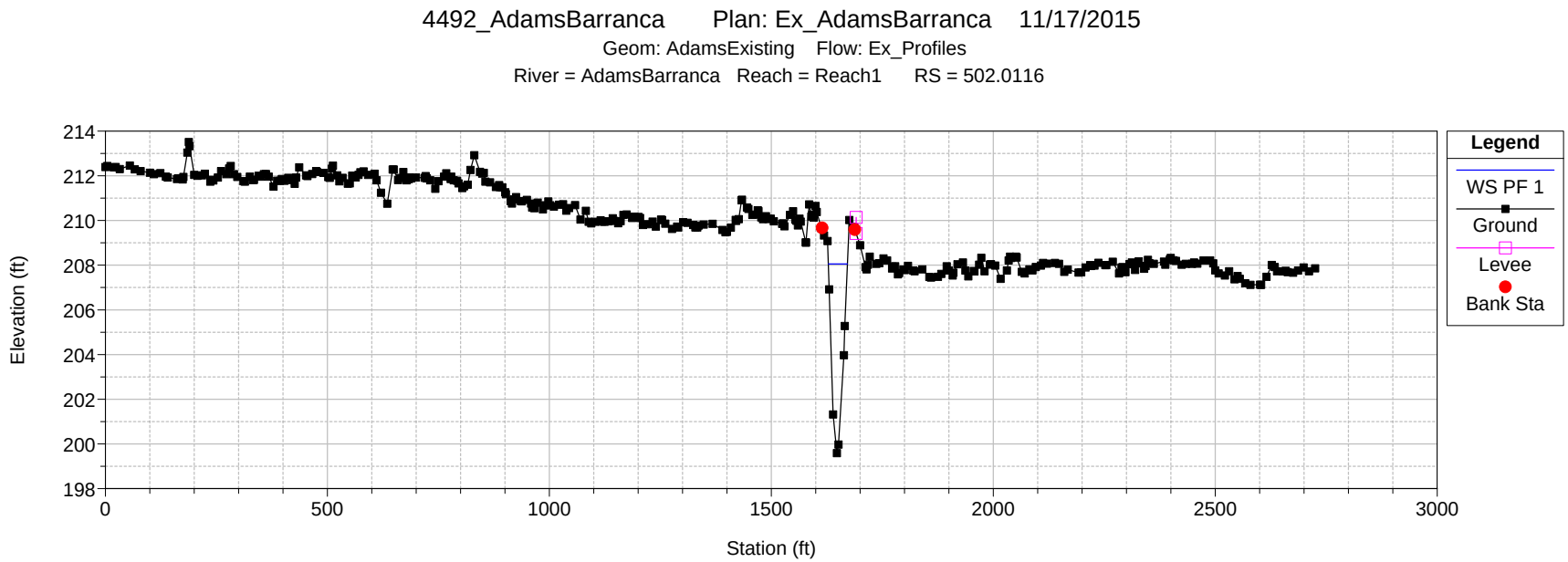


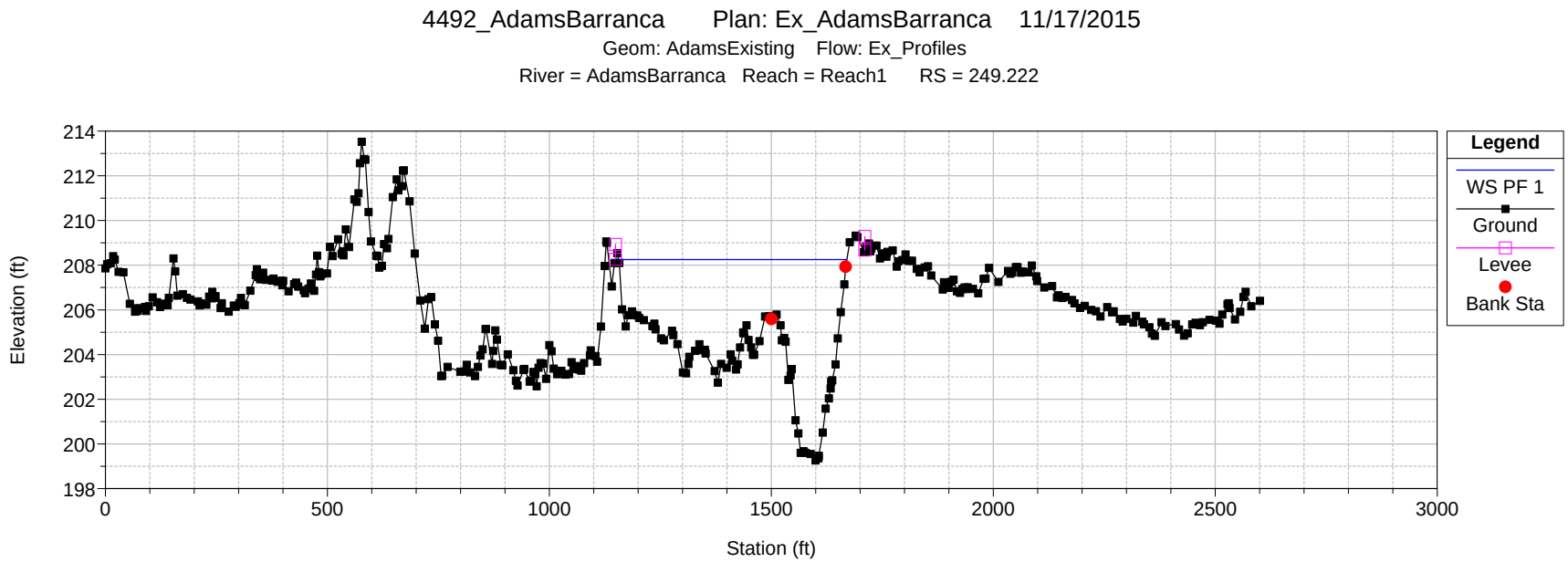

4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1498.684
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1250.347
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1001.841
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 748.9206
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 502.0116
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_AdamsBarranca 11/17/2015
Geom: AdamsExisting Flow: Ex_Profiles
River = AdamsBarranca Reach = Reach1 RS = 249.222
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

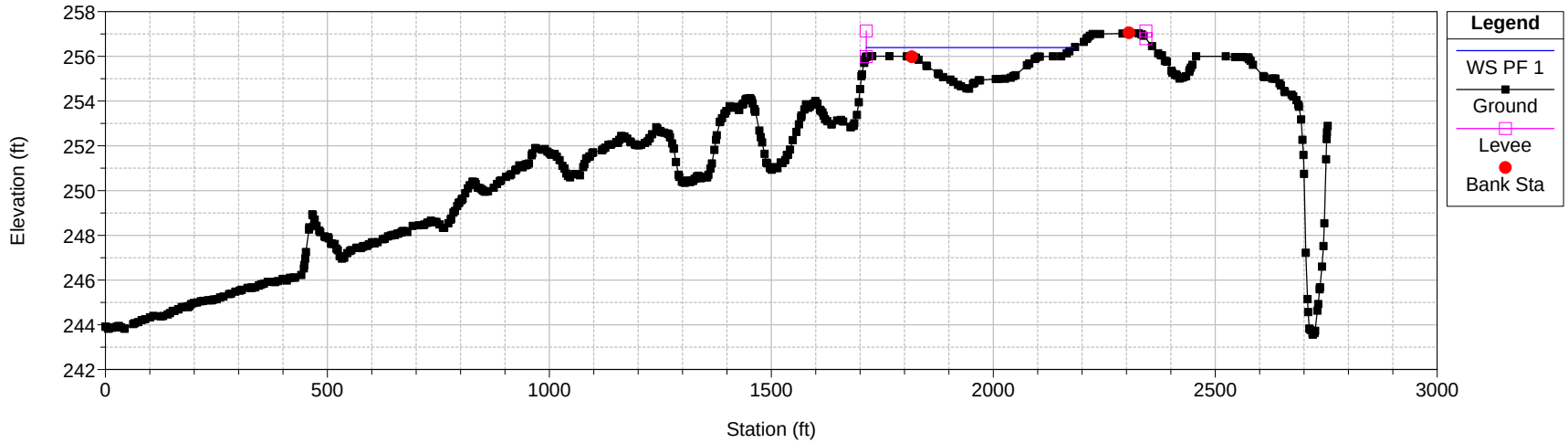
HEC-RAS Plan: East(LOB) River: AdamsBarranca Reach: EastFL Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
EastFL	5518.35	PF 1	2191.00	254.56	256.39	256.39	256.86	0.236921	5.61	409.61	468.35	0.98
EastFL	5352.199	PF 1	2191.00	252.61	252.67	252.67	252.78	0.009636	0.10	828.20	302.81	0.11
EastFL	5244.774	PF 1	2191.00	250.68	251.20	251.20	251.25	0.000750	0.41	1363.51	978.84	0.13
EastFL	5082.262	PF 1	2191.00	246.97	249.09	249.09	249.33	0.010247	2.27	771.91	1322.88	0.56
EastFL	4891.063	PF 1	2191.00	245.00	245.79	245.79	245.91	0.001535	0.74	828.35	360.19	0.20
EastFL	4629.338	PF 1	2191.00	233.74	235.64	235.24	235.86	0.010501	3.73	586.93	506.43	0.61
EastFL	4334.644	PF 1	2191.00	229.15	231.33	231.33	231.75	0.018102	5.23	418.89	477.65	0.98
EastFL	3941.169	PF 1	2292.00	227.41	229.18	228.51	229.22	0.003079	1.57	1458.47	1436.88	0.27
EastFL	3703.737	PF 1	2292.00	223.00	229.13	225.00	229.14	0.000108	0.60	3801.90	2605.01	0.09
EastFL	3442.721	PF 1	2292.00	227.00	228.60	228.60	229.02	0.002575	5.17	442.94	525.55	0.99
EastFL	3212.693	PF 1	2292.00	220.95	222.55	222.19	222.70	0.007369	3.05	753.18	933.58	0.60
EastFL	2929.015	PF 1	2292.00	217.93	219.18	219.18	219.53	0.019272	4.77	480.41	584.48	0.93
EastFL	2309.66	PF 1	2292.00	213.72	217.25	216.22	217.28	0.000738	1.37	1671.00	1253.99	0.21
EastFL	1672.838	PF 1	2292.00	212.39	213.90	213.90	214.21	0.030775	4.29	522.71	799.76	0.95
EastFL	909.8247	PF 1	2292.00	208.29	211.22	210.17	211.27	0.001000	1.79	1246.62	740.10	0.25

4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

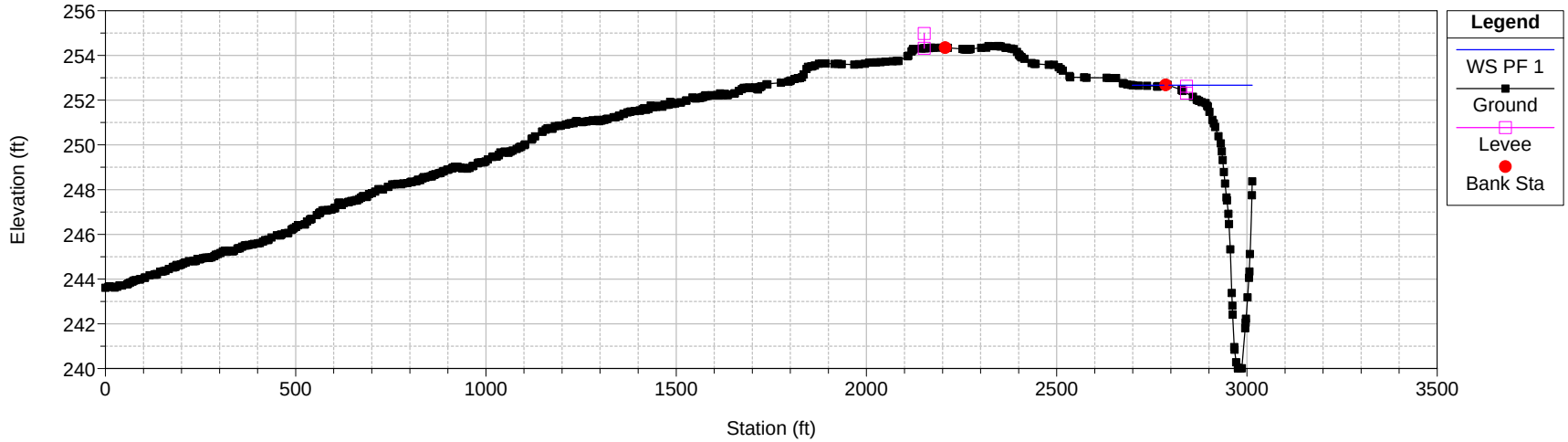
River = AdamsBarranca Reach = EastFL RS = 5518.35



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

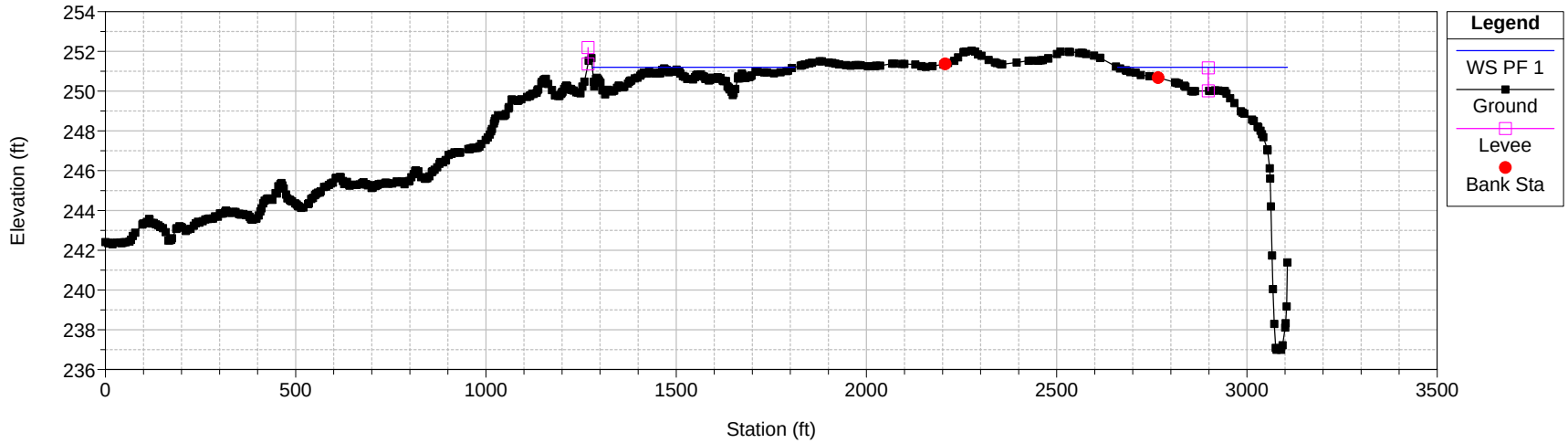
River = AdamsBarranca Reach = EastFL RS = 5352.199



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

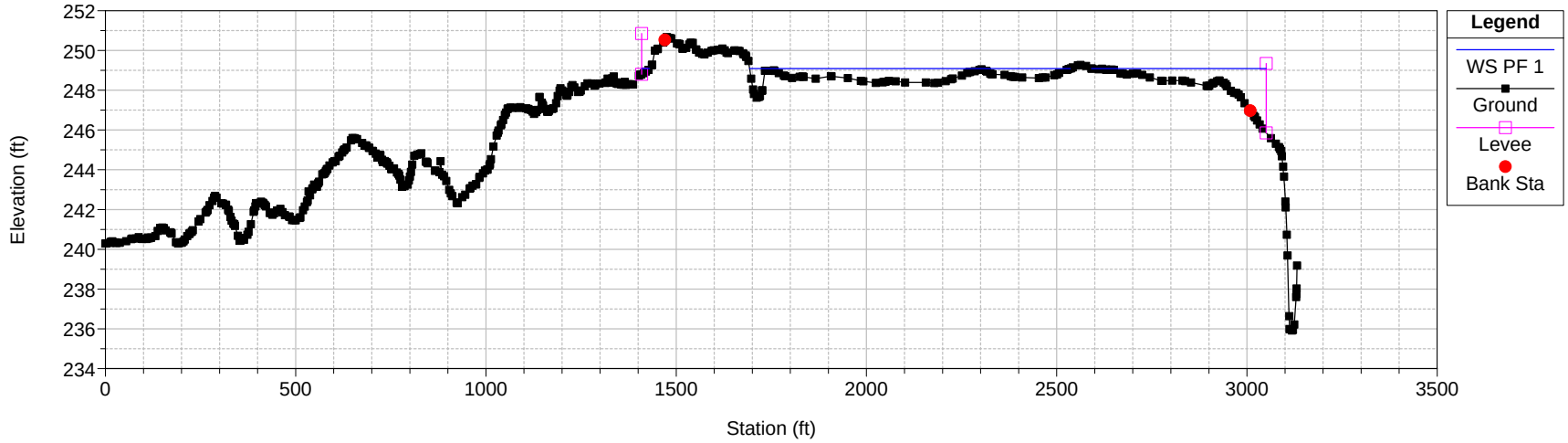
River = AdamsBarranca Reach = EastFL RS = 5244.774



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

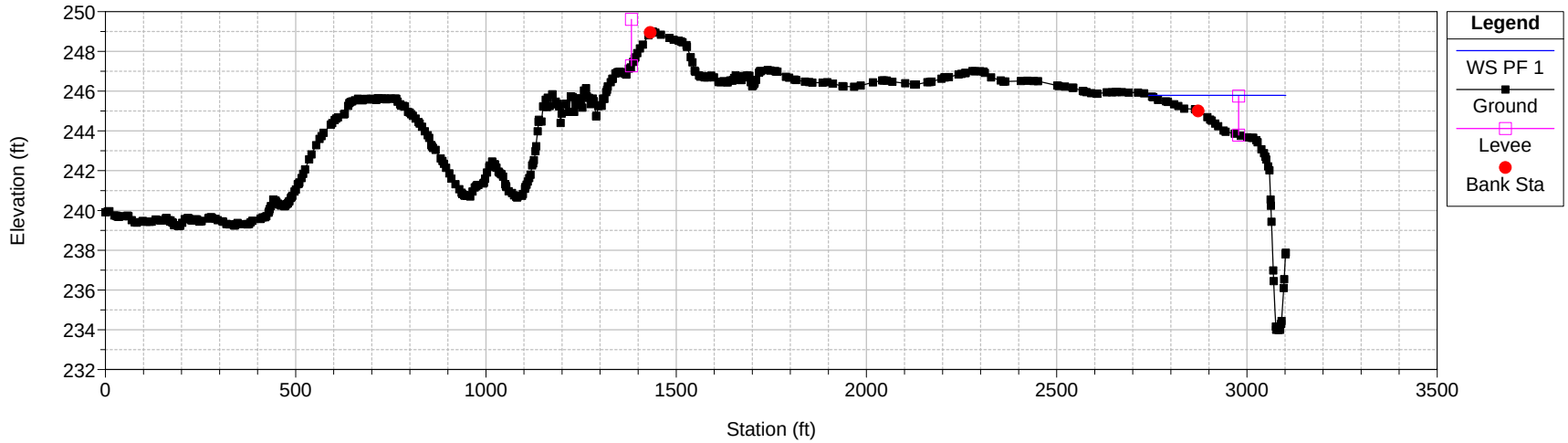
River = AdamsBarranca Reach = EastFL RS = 5082.262



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

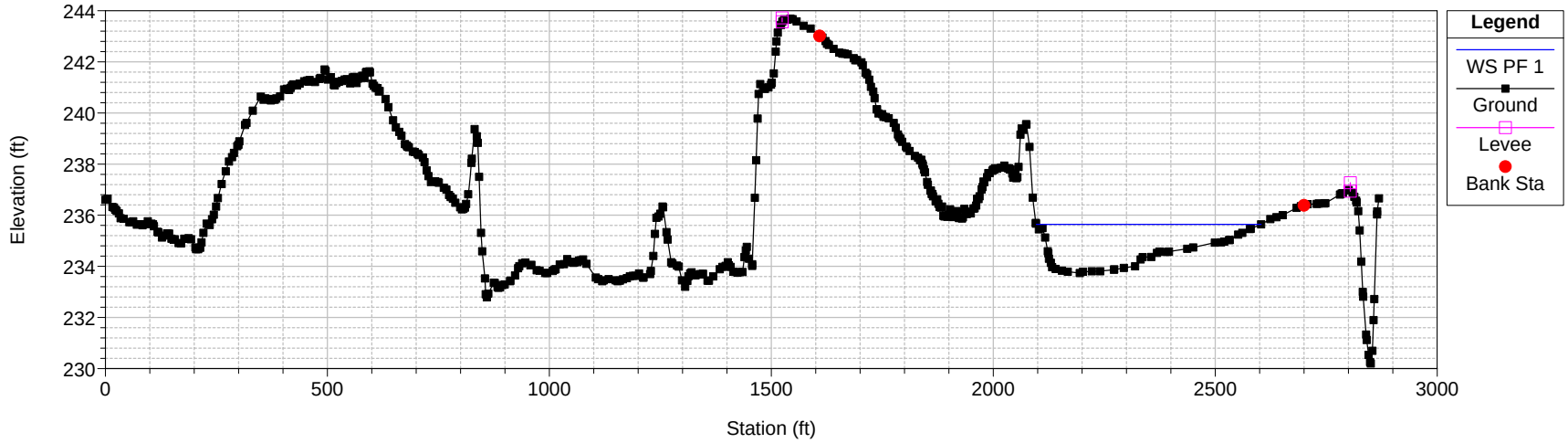
River = AdamsBarranca Reach = EastFL RS = 4891.063



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

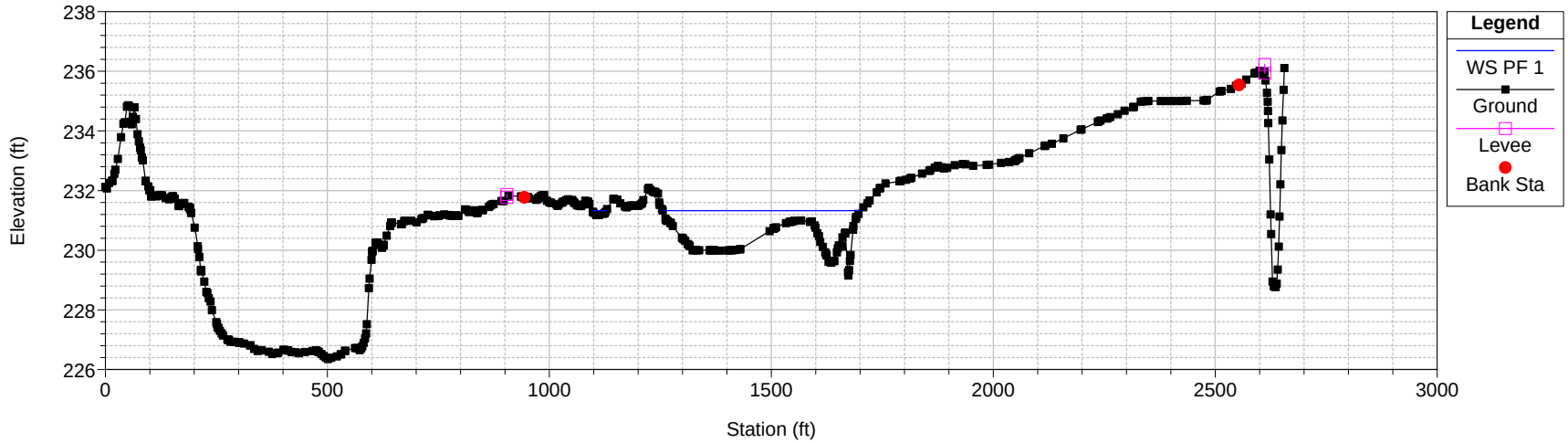
River = AdamsBarranca Reach = EastFL RS = 4629.338



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

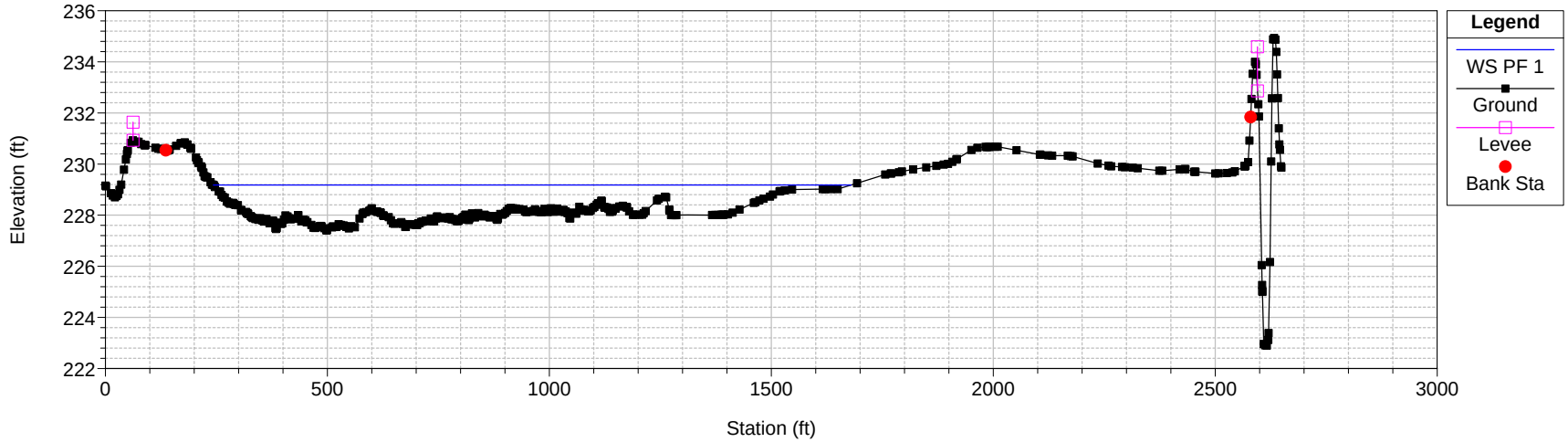
River = AdamsBarranca Reach = EastFL RS = 4334.644



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

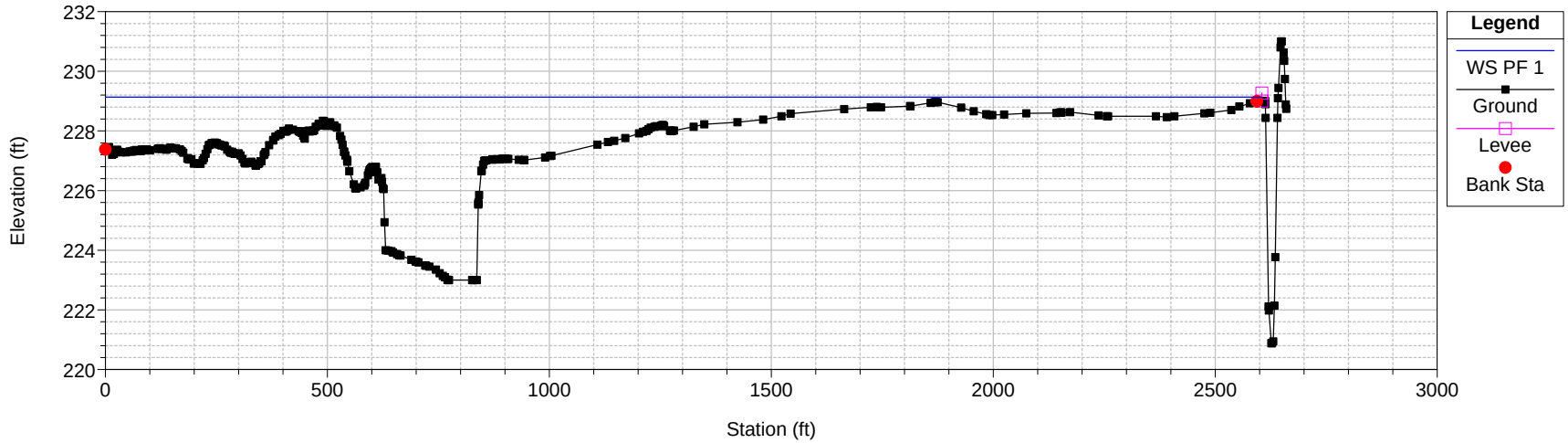
River = AdamsBarranca Reach = EastFL RS = 3941.169



4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

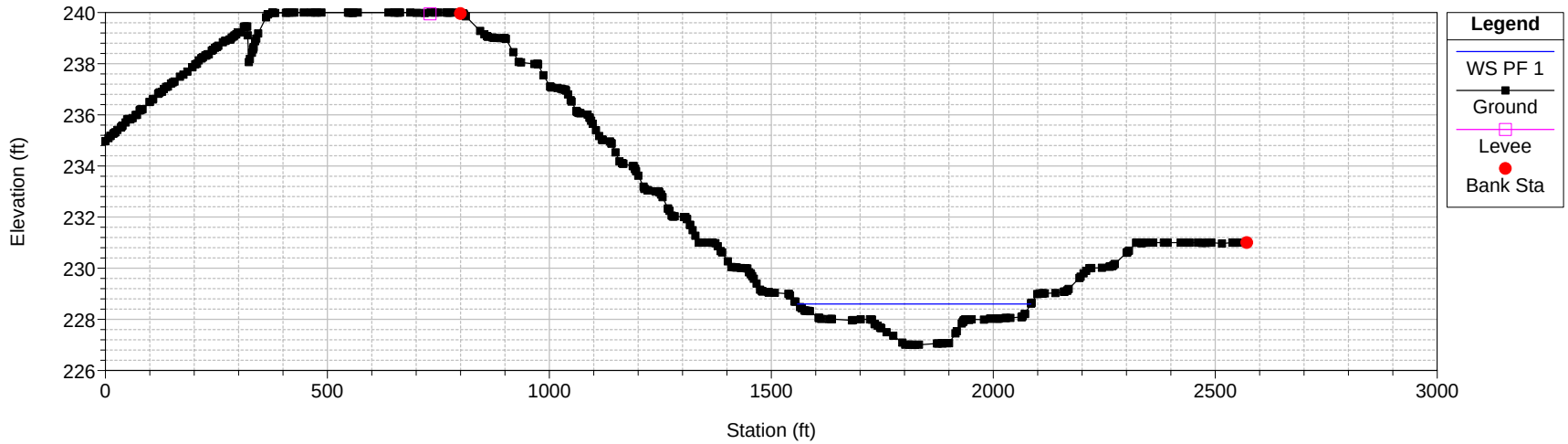
River = AdamsBarranca Reach = EastFL RS = 3703.737

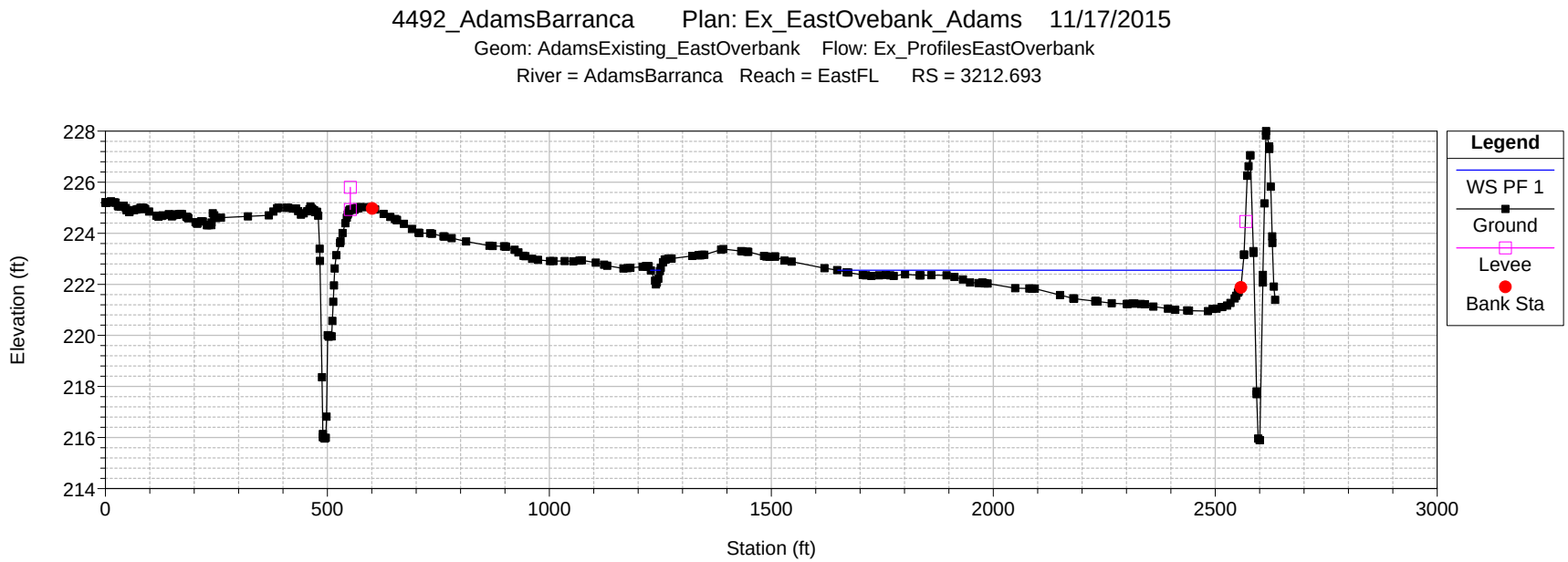


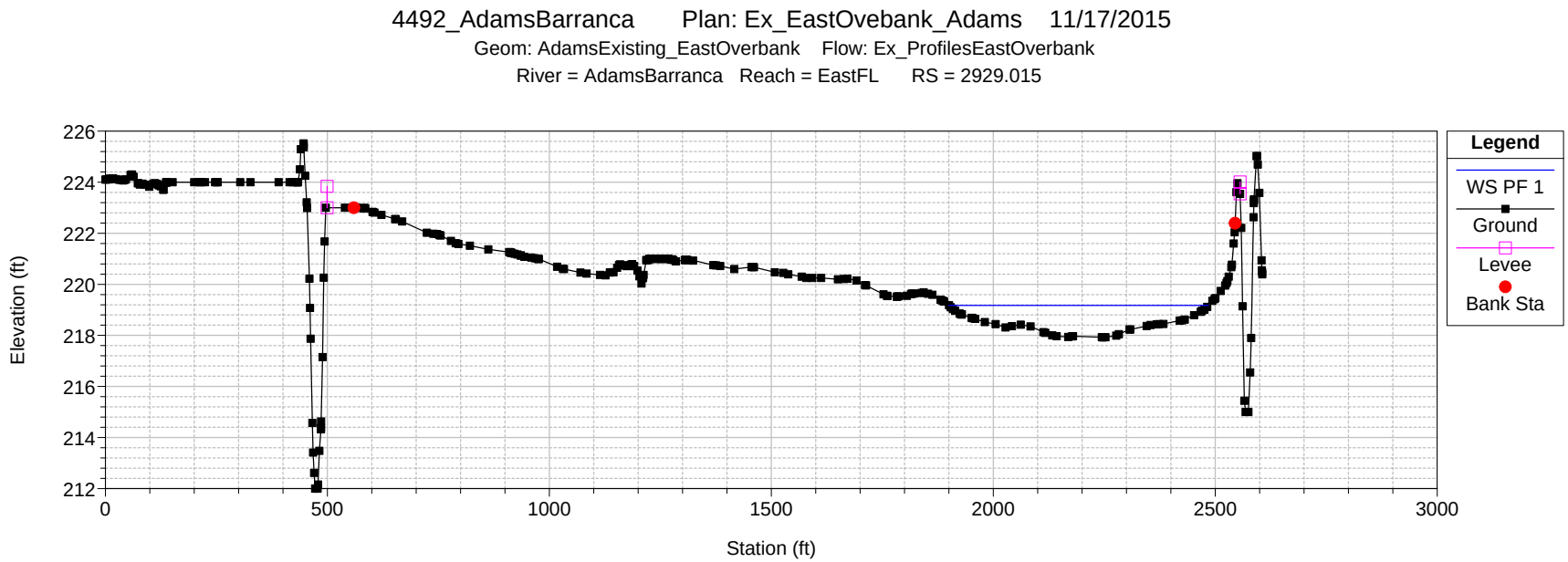
4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

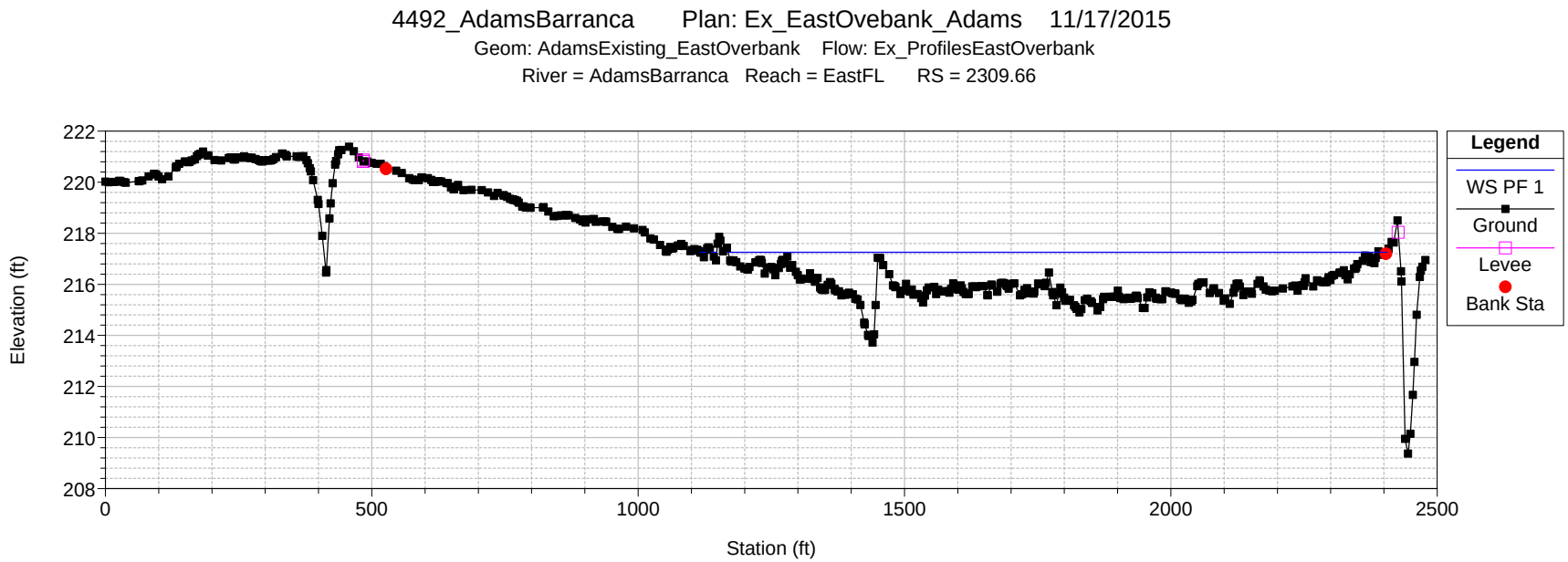
Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

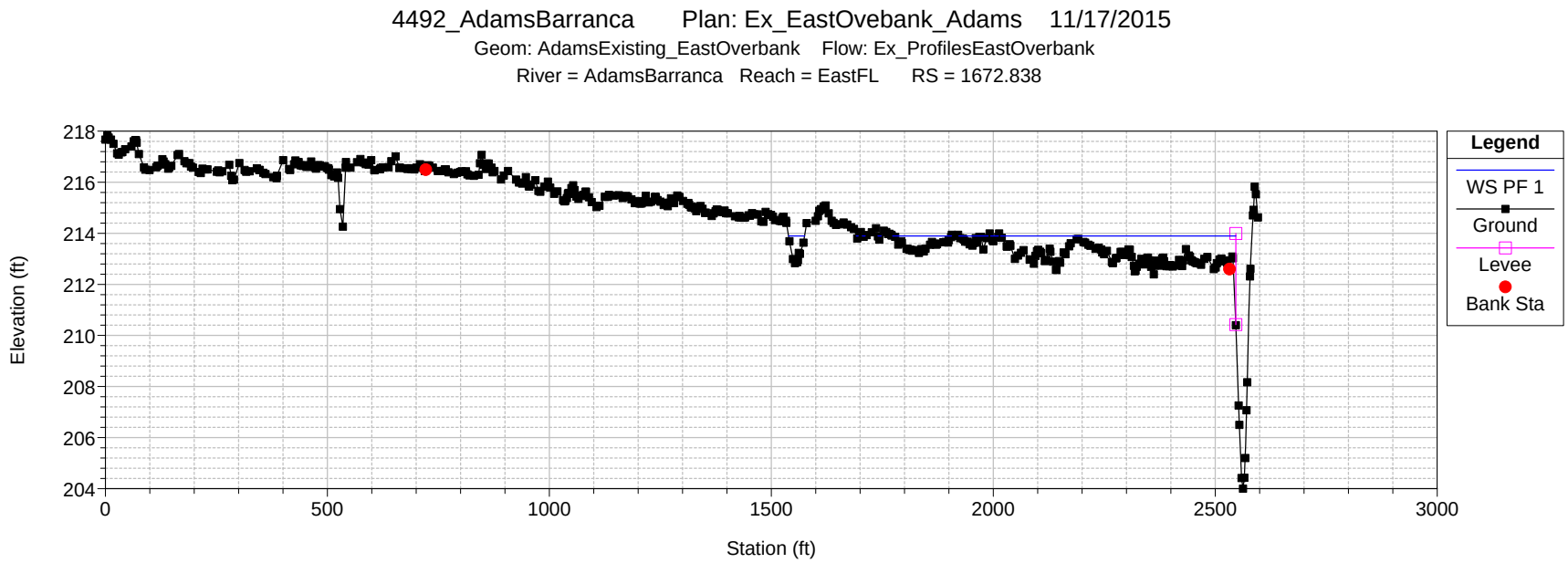
River = AdamsBarranca Reach = EastFL RS = 3442.721




4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015
Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank
River = AdamsBarranca Reach = EastFL RS = 3212.693
Elevation (ft)
228
226
224
222
220
218
216
214
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015
Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank
River = AdamsBarranca Reach = EastFL RS = 2929.015
Elevation (ft)
226
224
222
220
218
216
214
212
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

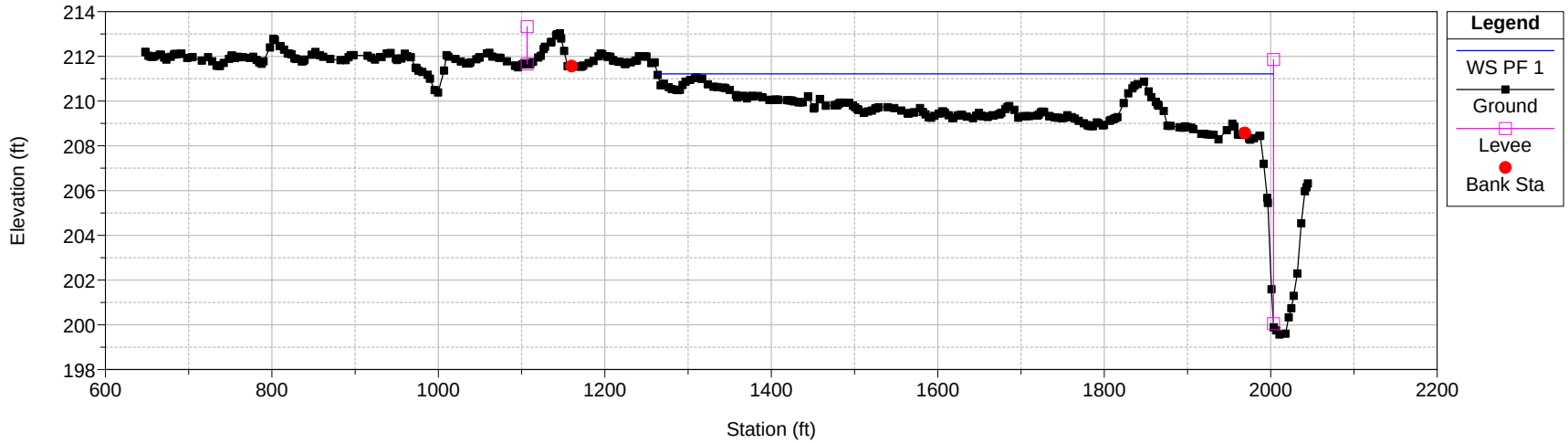

4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015
Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank
River = AdamsBarranca Reach = EastFL RS = 2309.66
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015
Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank
River = AdamsBarranca Reach = EastFL RS = 1672.838
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

4492_AdamsBarranca Plan: Ex_EastOvebank_Adams 11/17/2015

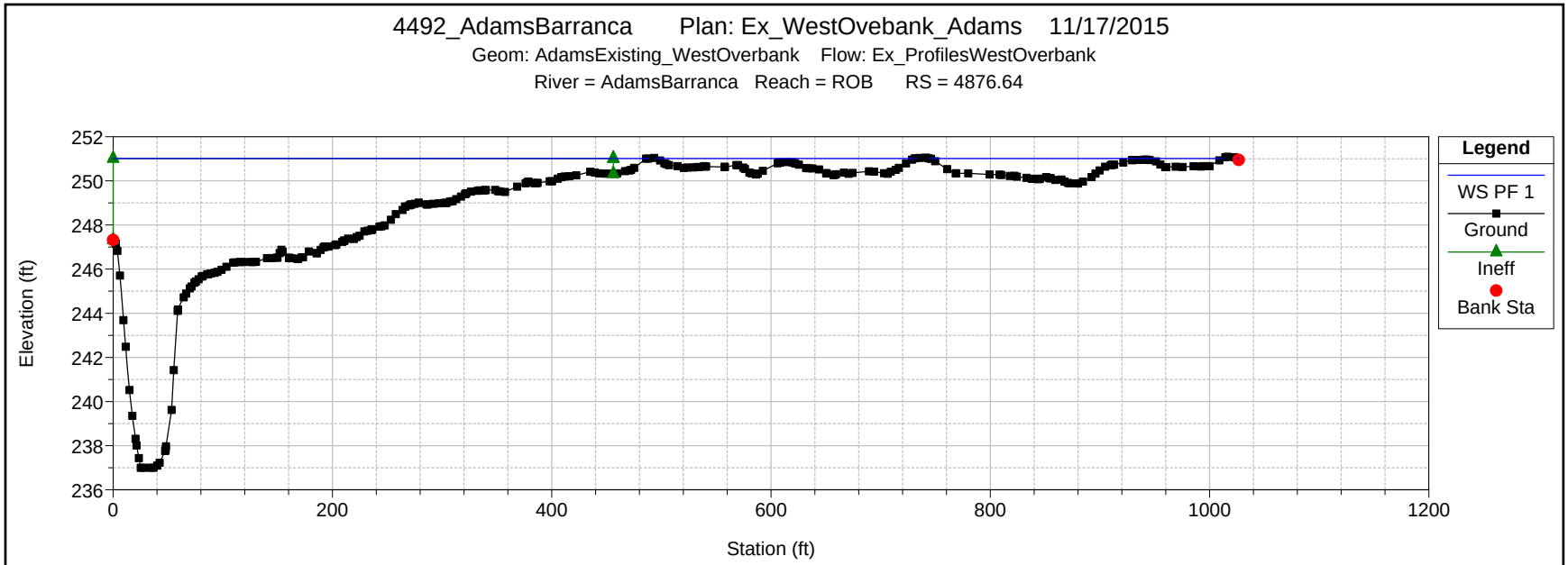
Geom: AdamsExisting_EastOverbank Flow: Ex_ProfilesEastOverbank

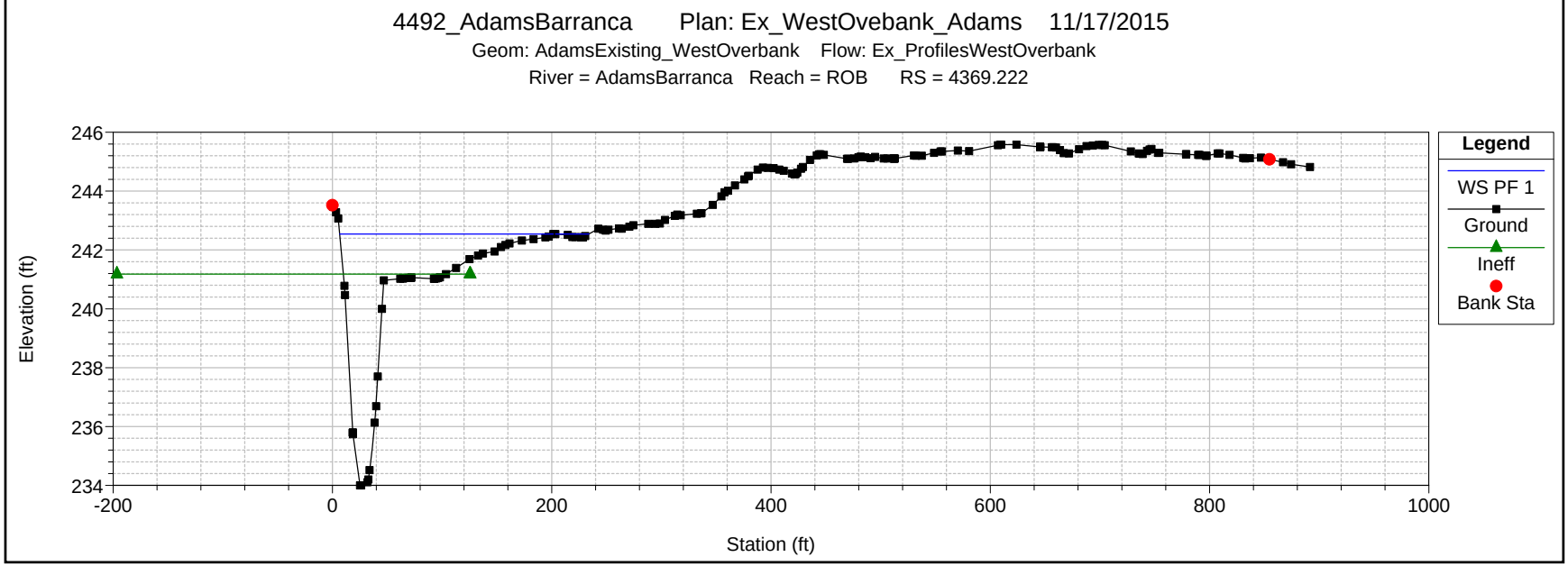
River = AdamsBarranca Reach = EastFL RS = 909.8247

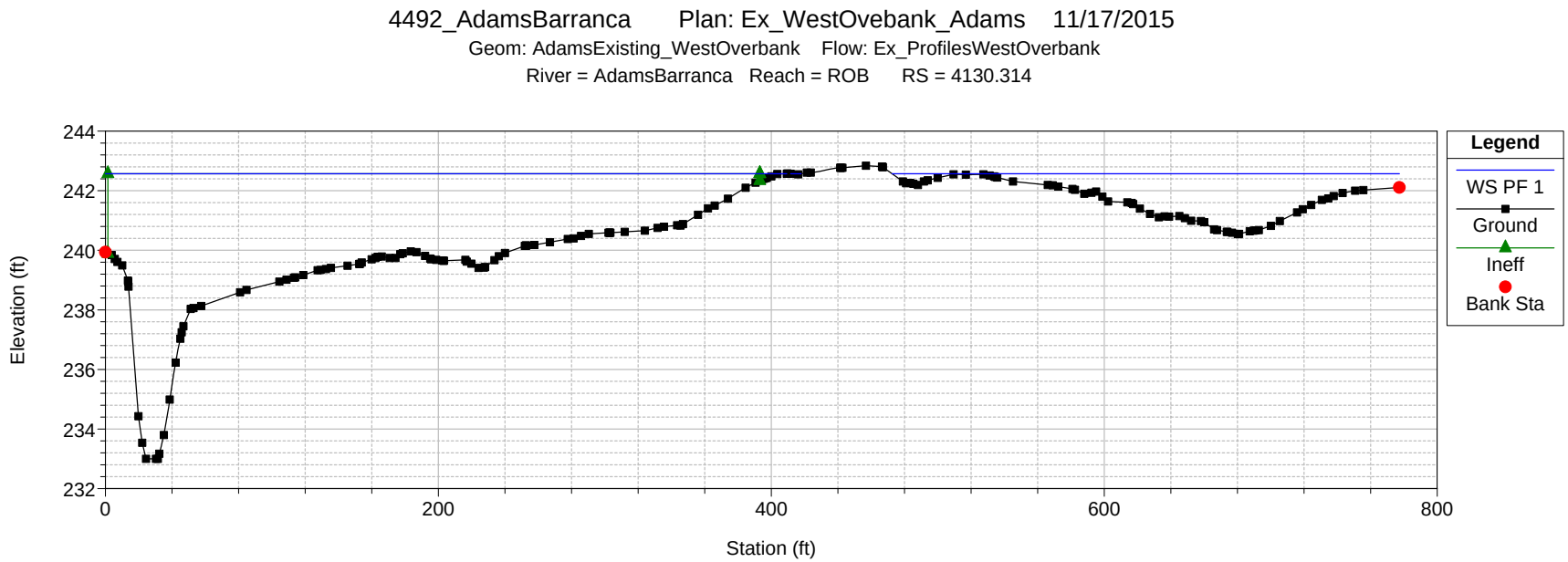


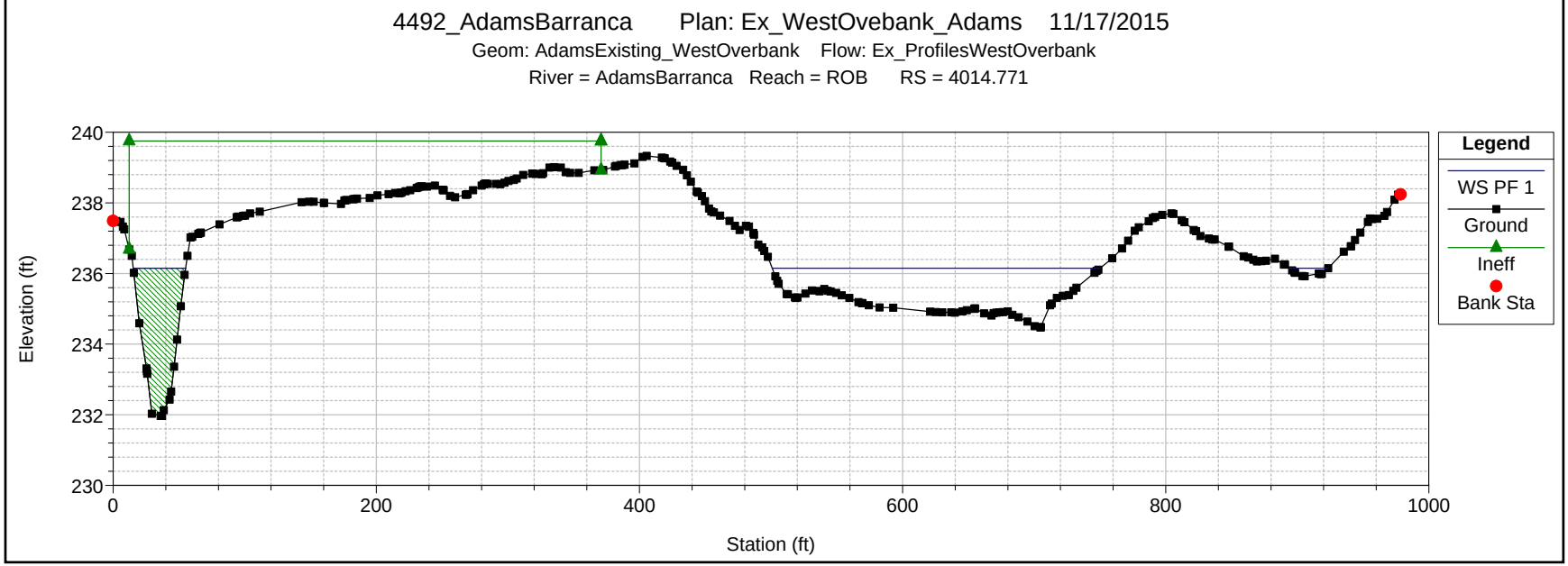
HEC-RAS Plan: ROB River: AdamsBarranca Reach: ROB Profile: PF 1

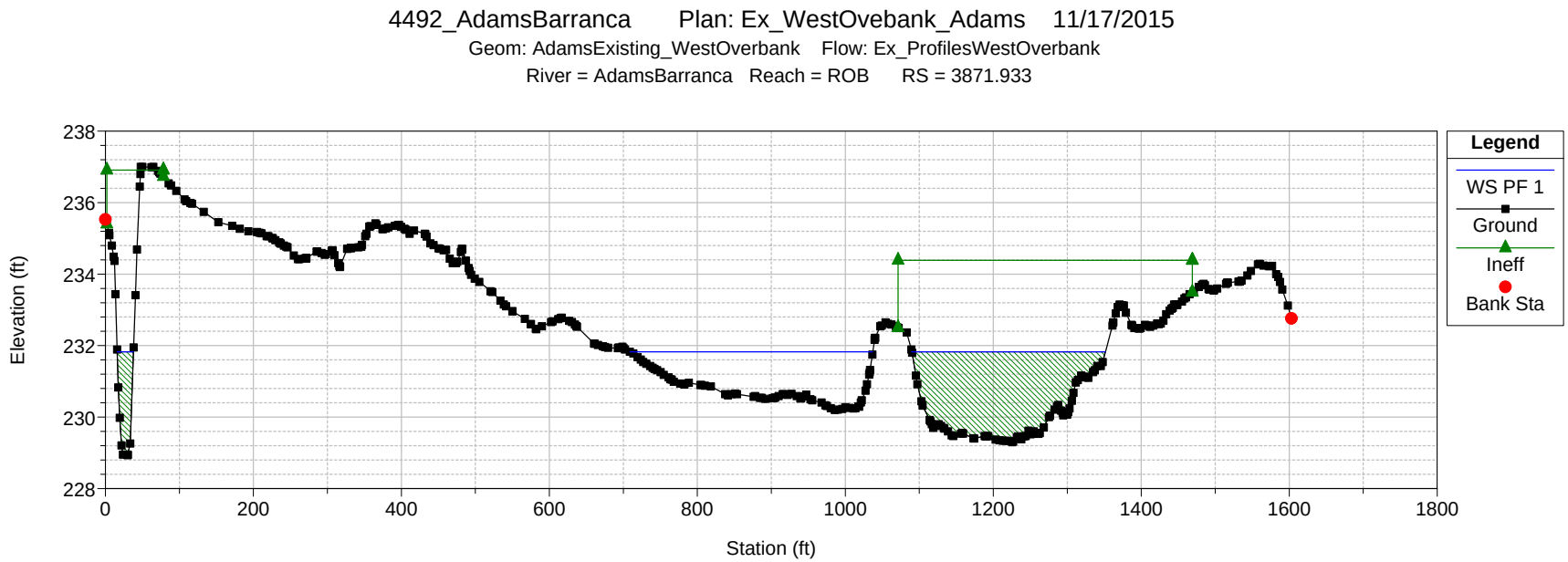
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
ROB	4876.64	PF 1	1359.00	237.00	251.01	251.01	251.02	0.000058	0.66	2067.35	994.77	0.08
ROB	4369.222	PF 1	1359.00	234.00	242.54		242.75	0.003313	3.70	366.82	225.38	0.51
ROB	4130.314	PF 1	1359.00	233.00	242.57	242.57	242.58	0.000172	0.93	1469.12	720.39	0.11
ROB	4014.771	PF 1	1359.00	231.97	236.15	236.15	236.60	0.018617	5.41	251.41	318.63	1.00
ROB	3871.933	PF 1	1359.00	228.94	231.82	231.54	232.06	0.007642	3.88	350.40	611.56	0.66
ROB	3800.783	PF 1	1359.00	227.98	231.48	230.95	231.62	0.004478	3.10	438.55	901.74	0.51
ROB	3592.327	PF 1	2656.00	226.85	230.46	230.46	230.60	0.005163	2.96	896.68	958.88	0.53
ROB	3269.723	PF 1	2656.00	221.00	227.91	224.40	227.92	0.000059	0.66	4031.73	1435.10	0.07
ROB	2837.474	PF 1	2656.00	218.22	227.91	221.52	227.91	0.000008	0.36	7340.28	1375.16	0.03
ROB	2537.857	PF 1	2656.00	225.08	227.33	227.33	227.85	0.002466	5.75	461.63	452.00	1.00
ROB	2157.755	PF 1	2656.00	212.65	215.20	214.50	215.32	0.002720	2.74	970.72	712.50	0.41
ROB	1945.575	PF 1	2656.00	211.33	214.62	214.07	214.71	0.002959	2.49	1067.25	968.74	0.41
ROB	1526.76	PF 1	2656.00	208.00	213.42	212.91	213.50	0.002820	2.29	1160.33	1163.75	0.40
ROB	1028.893	PF 1	2656.00	203.26	212.14	211.54	212.21	0.002381	2.16	1231.19	1195.79	0.37
ROB	549.033	PF 1	2656.00	200.74	209.34	209.34	209.61	0.021869	4.20	631.65	1215.05	1.00
ROB	272.1645	PF 1	2656.00	199.75	208.33	207.11	208.37	0.001000	1.63	1625.66	1312.25	0.25

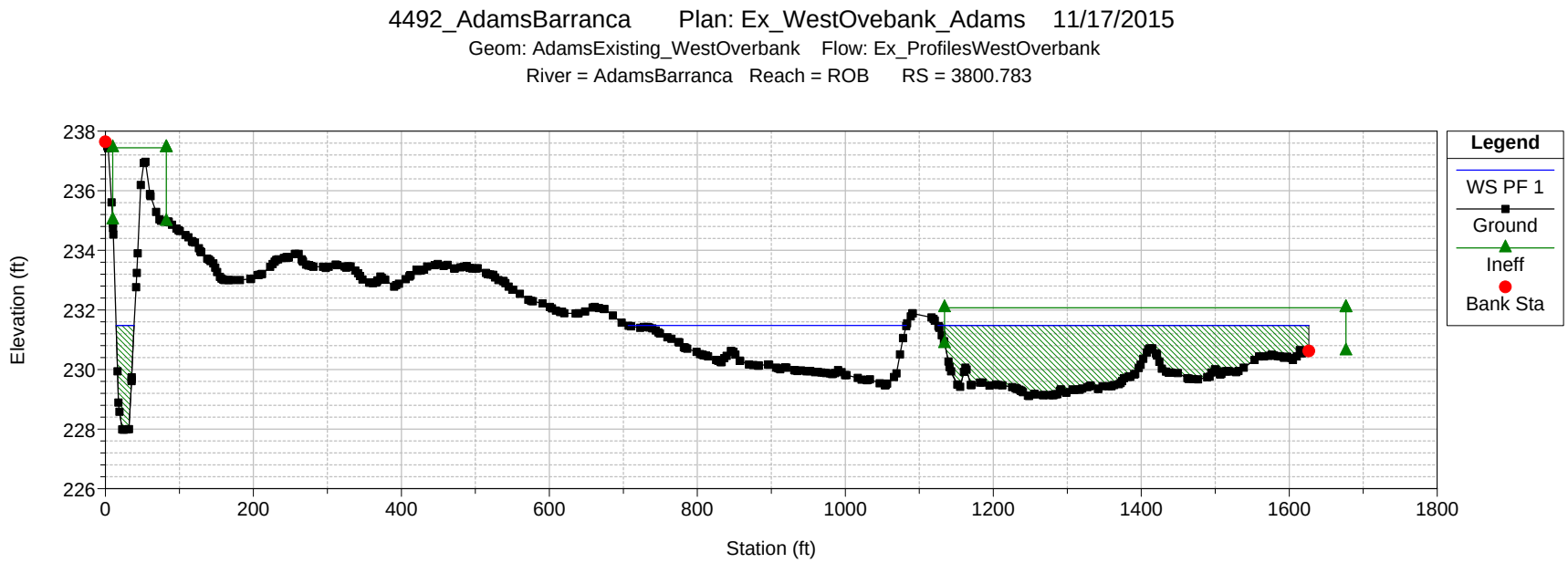

4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015
Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 4876.64
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015
Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 4369.222
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015
Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 4130.314
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015
Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 4014.771
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

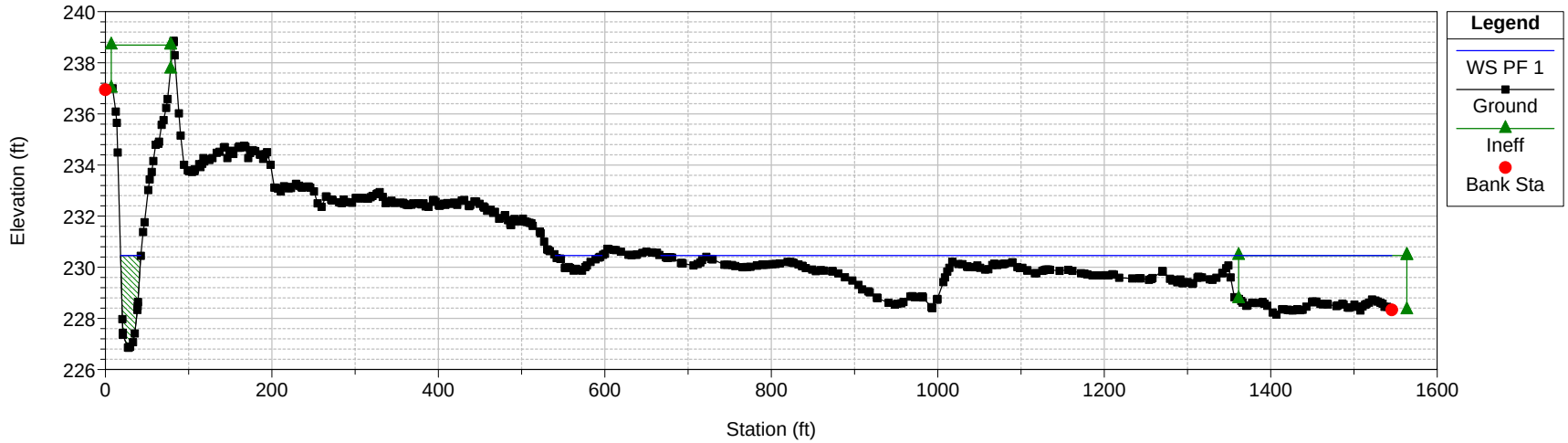

4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015
Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 3871.933
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015
Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 3800.783
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

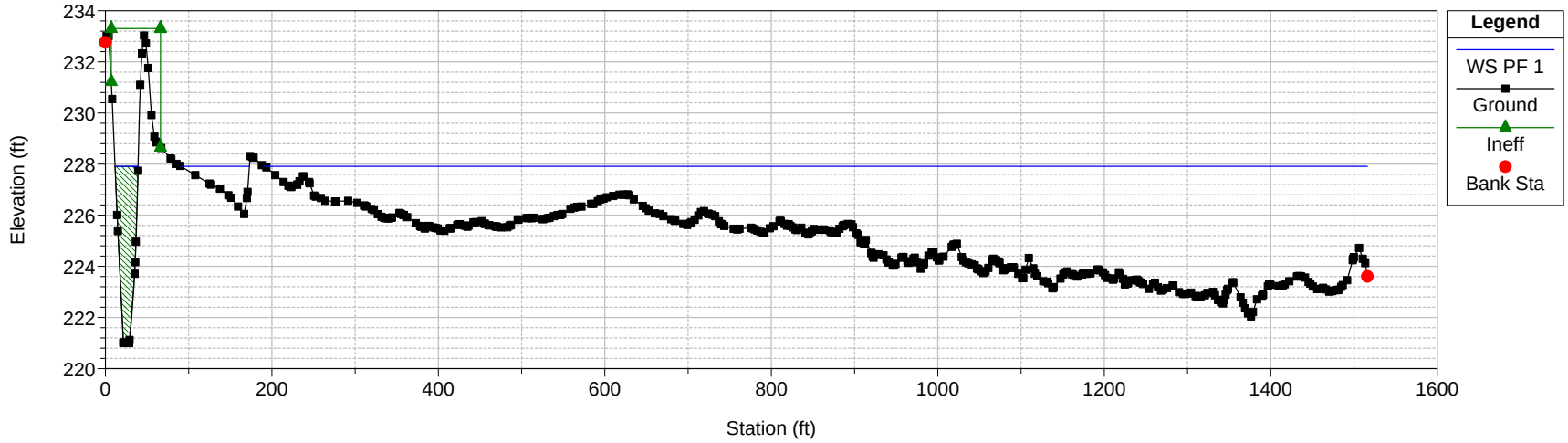
River = AdamsBarranca Reach = ROB RS = 3592.327



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

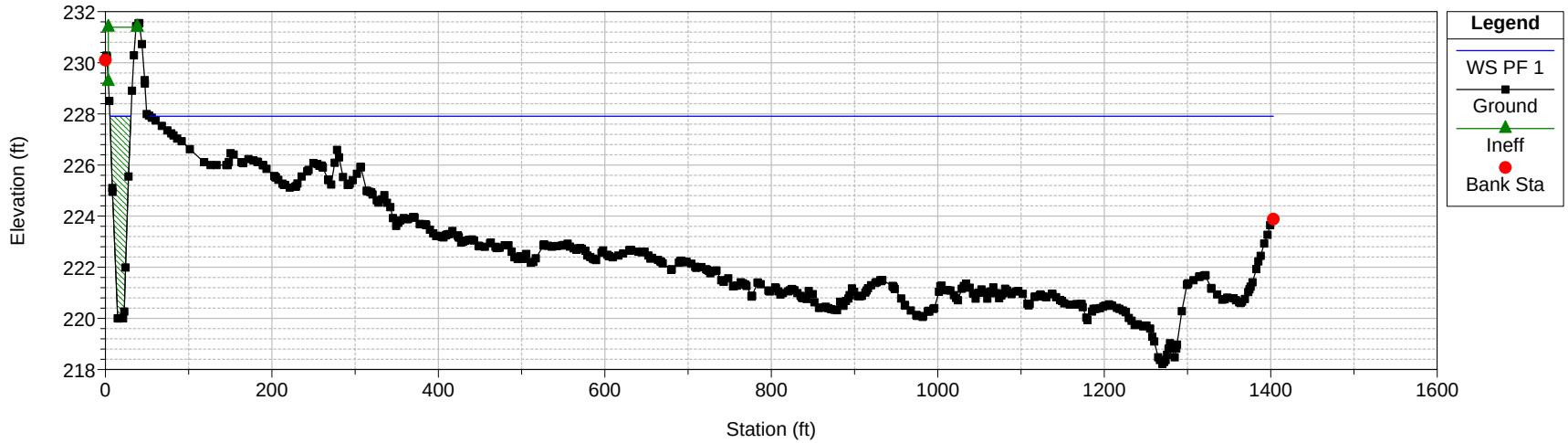
River = AdamsBarranca Reach = ROB RS = 3269.723



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

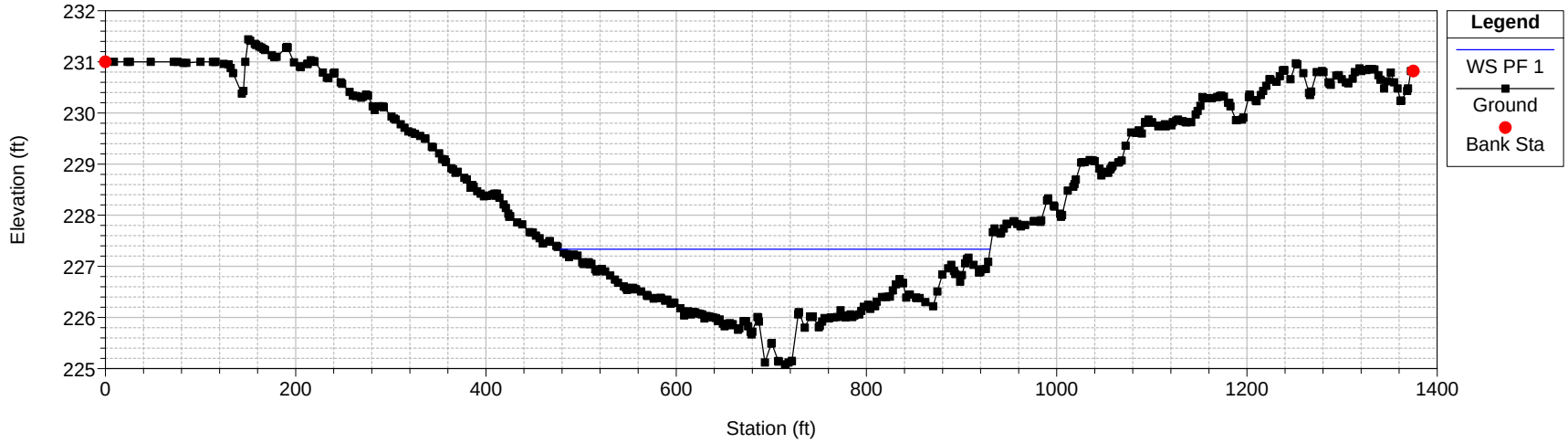
River = AdamsBarranca Reach = ROB RS = 2837.474



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

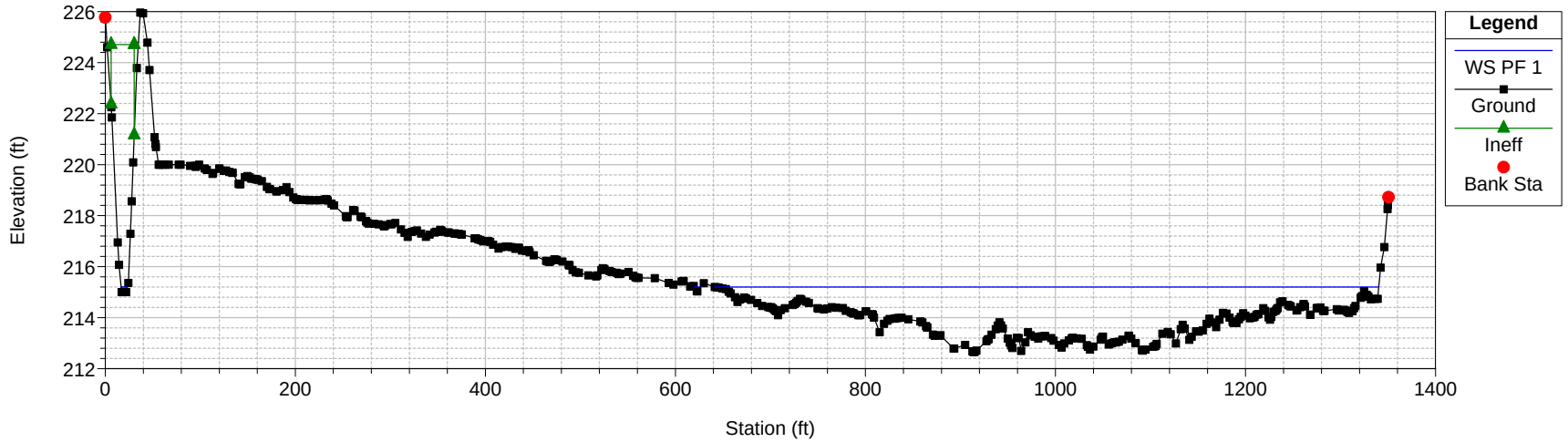
River = AdamsBarranca Reach = ROB RS = 2537.857



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

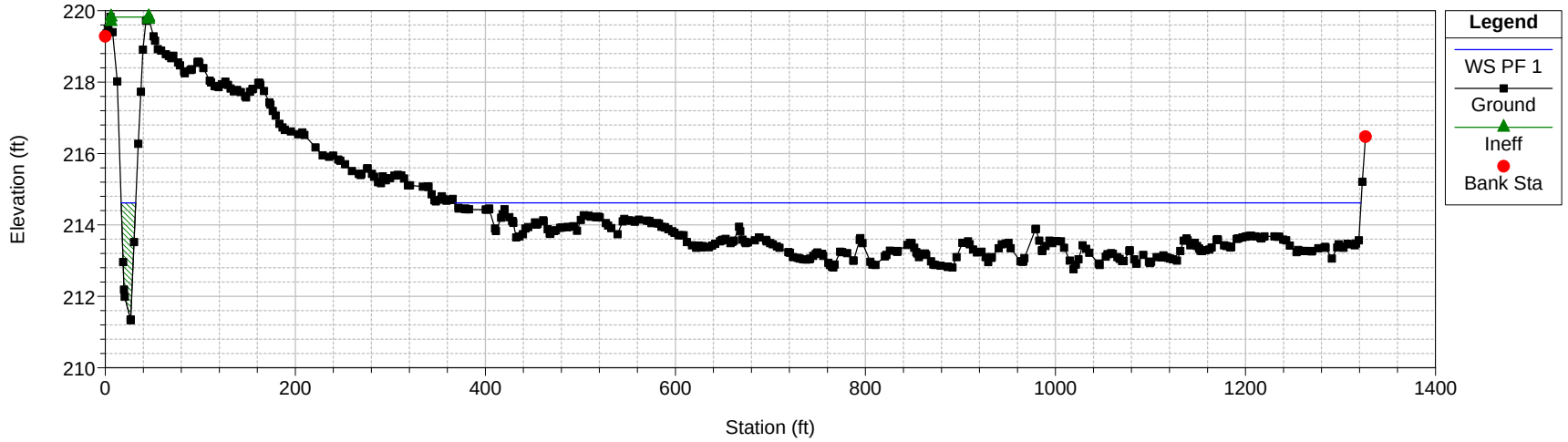
River = AdamsBarranca Reach = ROB RS = 2157.755



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

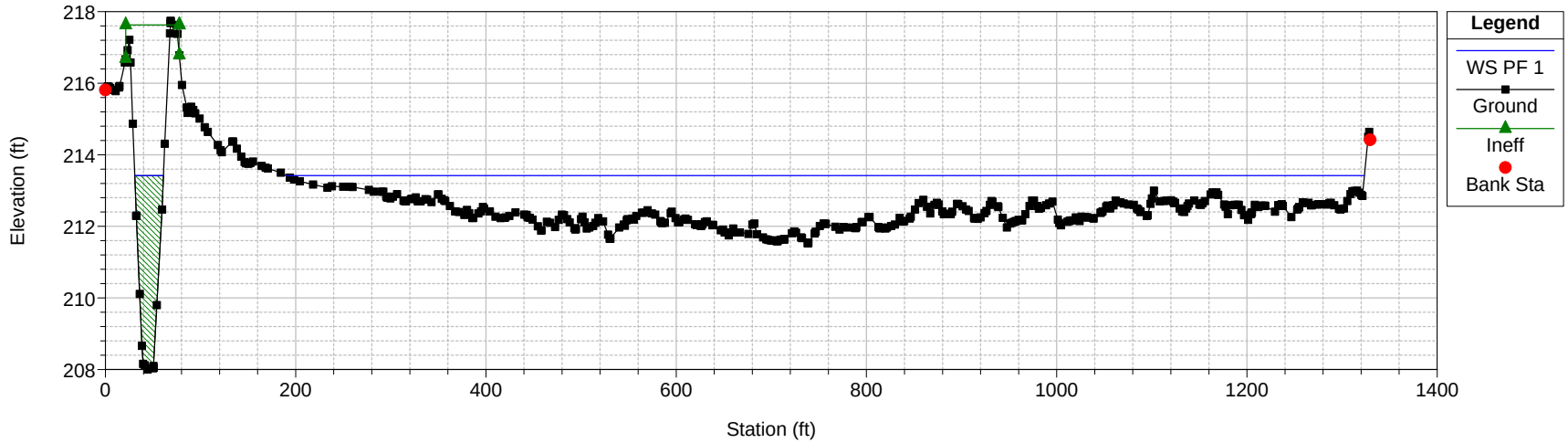
River = AdamsBarranca Reach = ROB RS = 1945.575



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

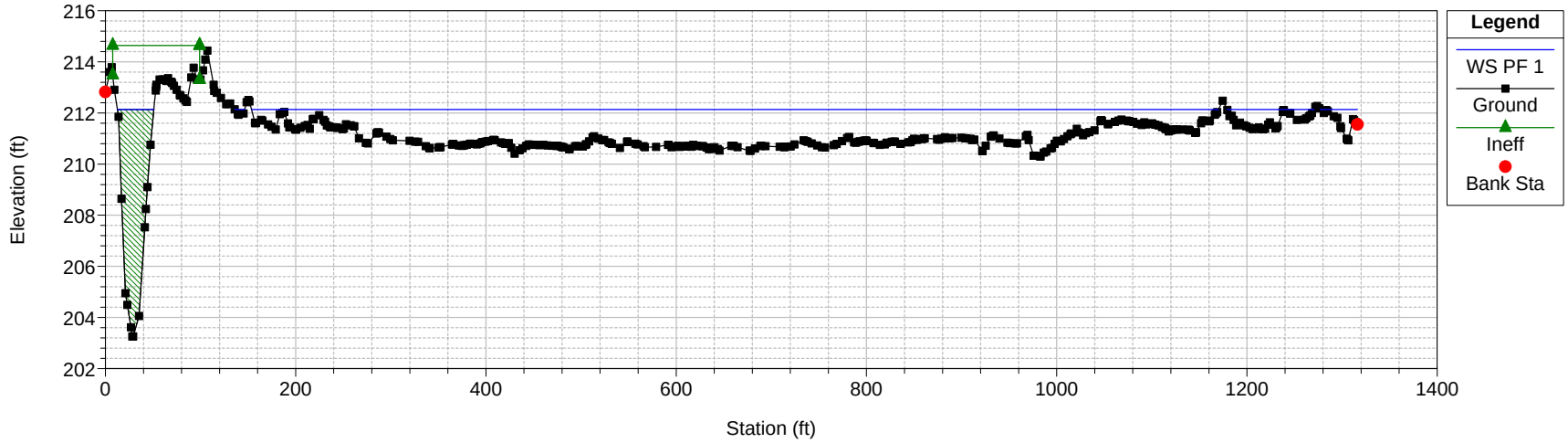
River = AdamsBarranca Reach = ROB RS = 1526.76



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

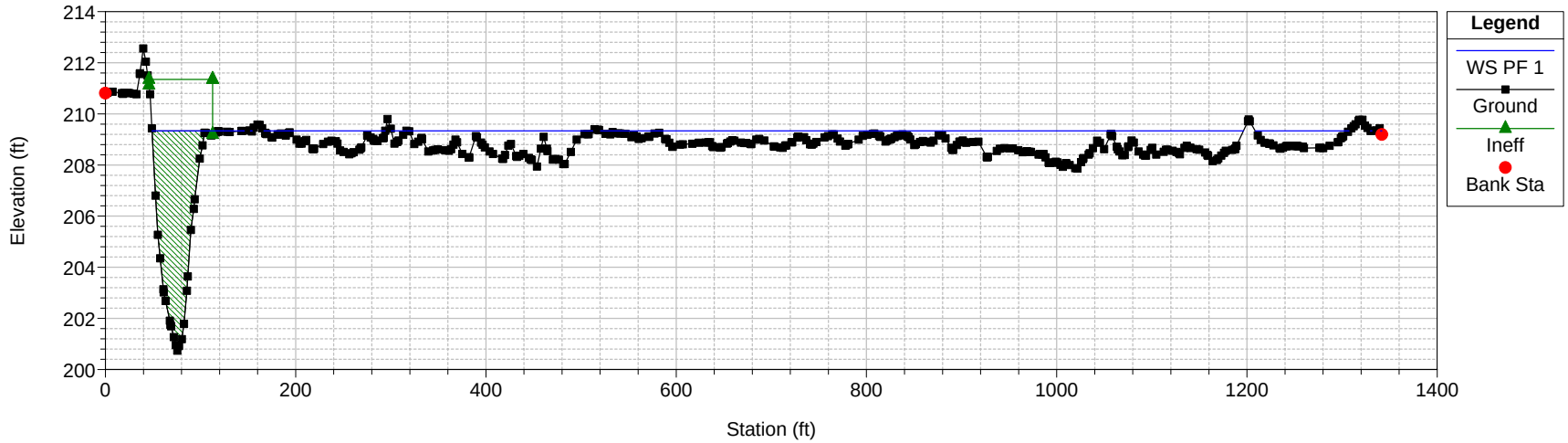
River = AdamsBarranca Reach = ROB RS = 1028.893



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

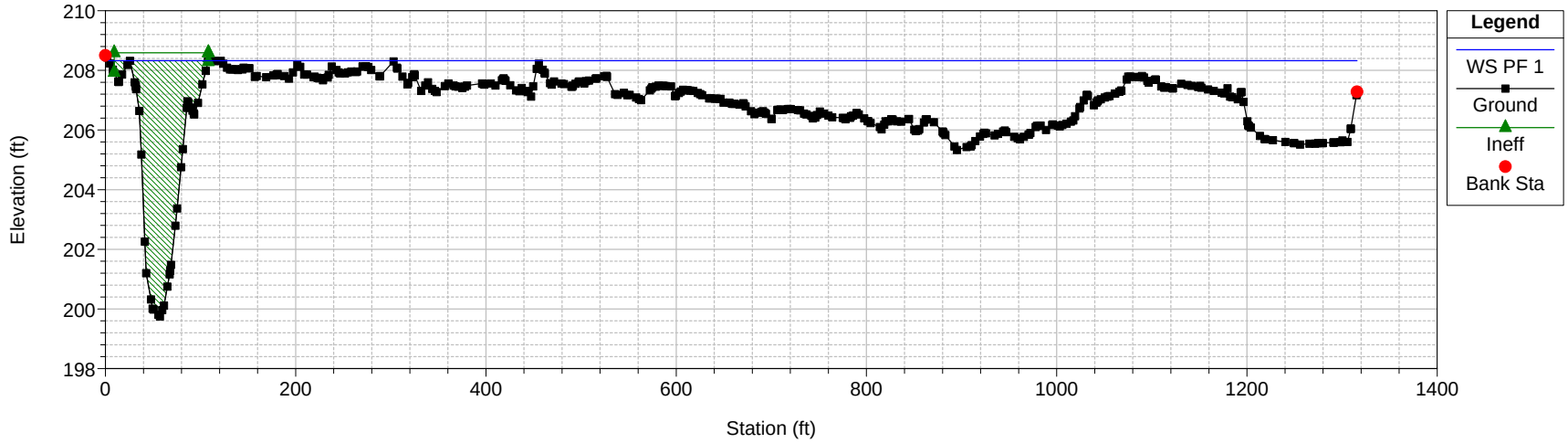
River = AdamsBarranca Reach = ROB RS = 549.033



4492_AdamsBarranca Plan: Ex_WestOvebank_Adams 11/17/2015

Geom: AdamsExisting_WestOverbank Flow: Ex_ProfilesWestOverbank

River = AdamsBarranca Reach = ROB RS = 272.1645

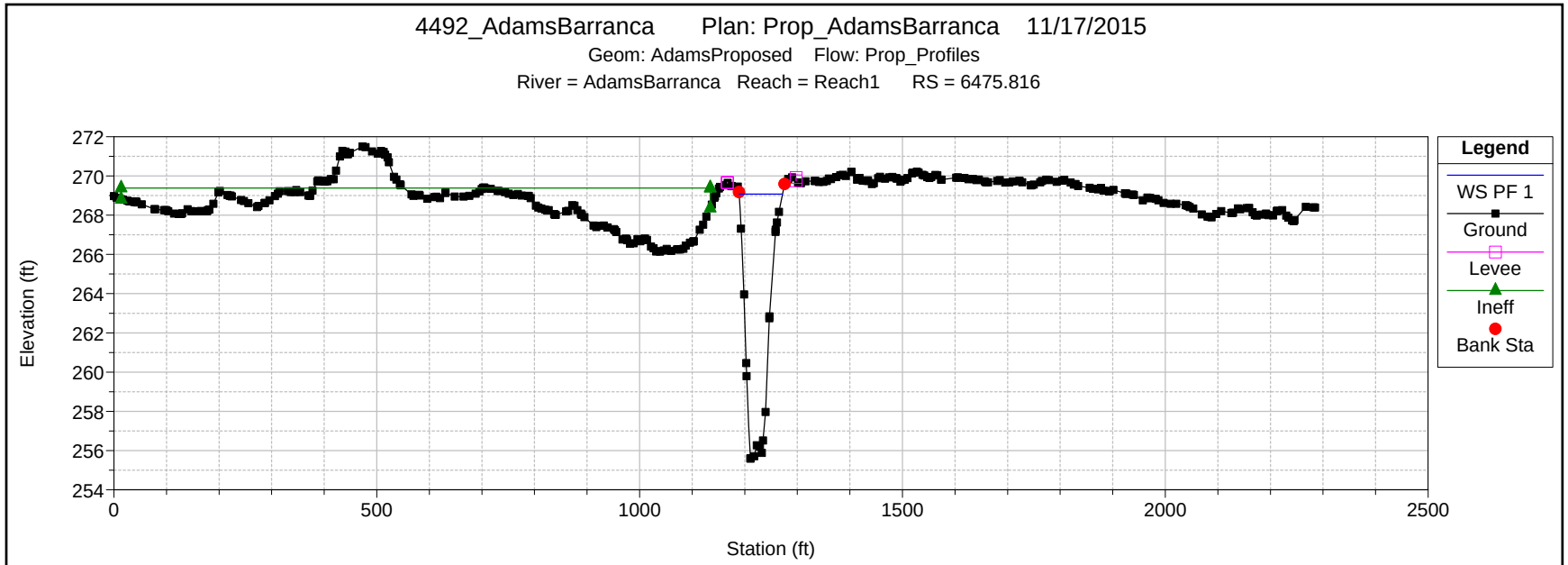


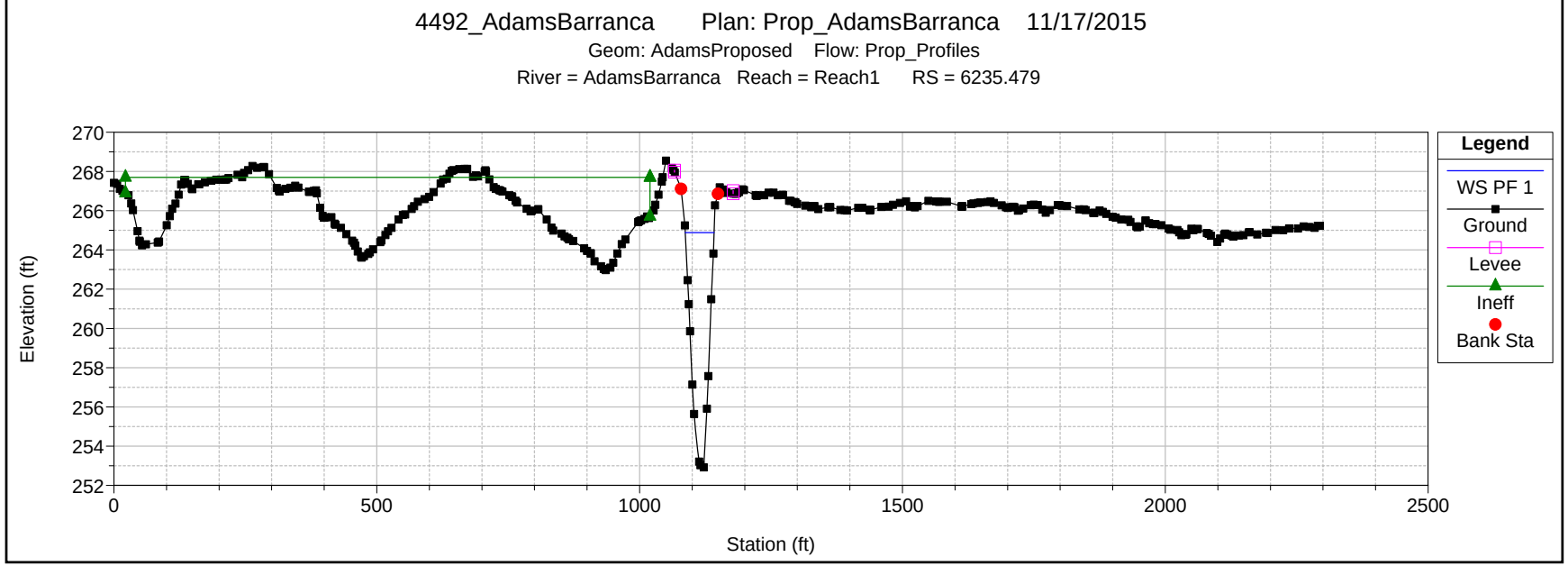
HEC-RAS Plan: prop River: AdamsBarranca Reach: Reach1 Profile: PF 1

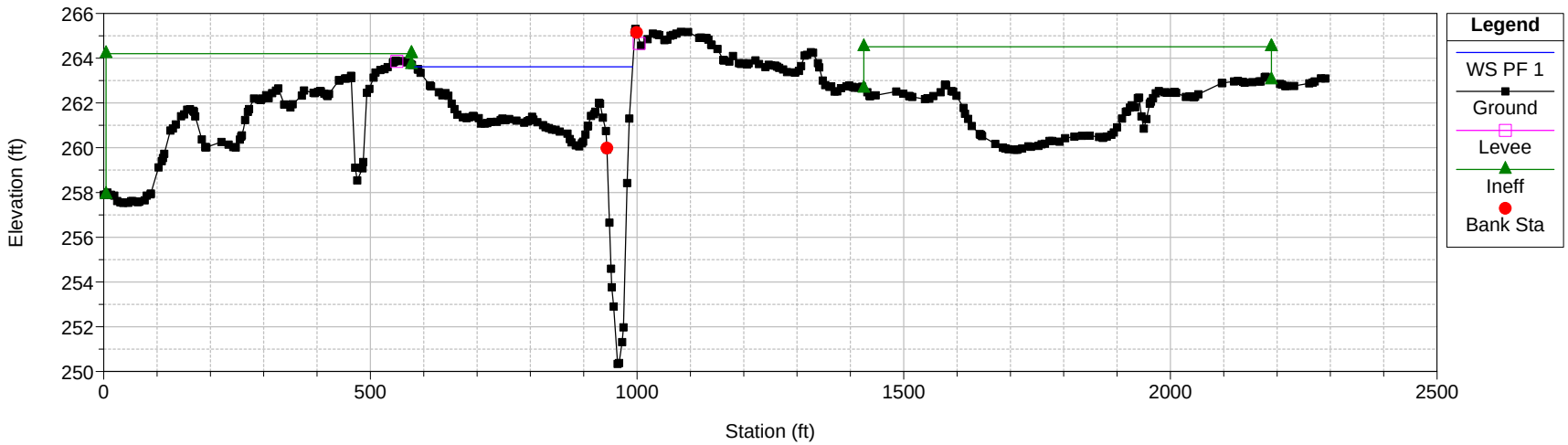
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach1	6475.816	PF 1	5861.00	255.59	269.07	265.60	270.40	0.005718	9.24	634.64	82.48	0.59
Reach1	6235.479	PF 1	5861.00	252.92	264.88	264.48	268.10	0.015115	14.39	407.16	54.89	0.93
Reach1	5984.647	PF 1	5861.00	250.34	263.62	263.40	264.92	0.007116	10.60	1203.57	409.16	0.64
Reach1	5737.684	PF 1	5861.00	248.36	261.73	261.73	263.08	0.008277	10.12	1057.11	774.57	0.73
Reach1	5491.663	PF 1	5861.00	246.27	259.26	257.43	260.62	0.011731	9.80	919.14	577.34	0.61
Reach1	5246.089	PF 1	5861.00	244.00	256.84	255.82	257.54	0.012104	6.93	1036.35	925.60	0.60
Reach1	5246 Tel_East		Lat Struct									
Reach1	5221.13 Tele_West		Lat Struct									
Reach1	5201.42	PF 1	5605.92	243.34	256.21		256.81	0.021972	6.23	906.83	258.94	0.57
Reach1	5156.75	PF 1	5399.83	242.68	255.26		255.84	0.020898	6.16	901.07	265.07	0.56
Reach1	5112.09	PF 1	5168.68	242.02	254.25		254.89	0.021159	6.45	812.63	219.68	0.57
Reach1	5022.76	PF 1	4603.68	240.69	252.44		253.01	0.020220	5.97	770.88	196.87	0.51
Reach1	4978.1	PF 1	4137.01	240.03	251.79		252.24	0.013382	5.42	776.57	180.61	0.45
Reach1	4933.43	PF 1	3411.42	239.37	251.43		251.78	0.006709	4.66	735.89	137.60	0.34
Reach1	4888.77	PF 1	2693.30	238.71	251.22		251.45	0.006286	3.87	701.53	121.48	0.28
Reach1	4826.612	PF 1	2334.55	238.31	251.20		251.43	0.000115	3.88	610.47	115.72	0.28
Reach1	4808.237	PF 1	2330.25	238.64	251.24	245.02	251.40	0.196426	3.18	733.92	244.53	0.31
Reach1	4775.879 Teleraph		Culvert									
Reach1	4739.053	PF 1	2330.25	237.53	244.47		246.69	0.001364	11.94	195.11	31.69	0.85
Reach1	4673.858	PF 1	2330.25	235.63	245.33	242.54	246.12	0.004226	7.15	341.49	90.26	0.49
Reach1	4495.546	PF 1	2330.25	234.23	242.47	242.17	244.65	0.016189	11.87	197.75	39.99	0.91
Reach1	4247.987	PF 1	2330.25	232.68	241.04	240.45	241.90	0.006289	7.95	358.98	169.47	0.59
Reach1	3997.28	PF 1	2330.25	230.86	238.03	238.03	239.57	0.013701	10.22	249.58	83.79	0.85
Reach1	3823.969	PF 1	2330.25	228.87	237.06	234.12	237.06	0.000009	0.28	8286.51	1732.86	0.02
Reach1	3656.055	PF 1	2330.25	227.64	237.06	233.35	237.06	0.000001	0.08	20227.59	3270.56	0.01
Reach1	3574.137 RRxing		Bridge									
Reach1	3547.872	PF 1	2330.25	226.88	234.54	234.54	236.83	0.019991	12.14	191.90	42.00	1.00
Reach1	3525.703 Hwy_West		Lat Struct									
Reach1	3454.093	PF 1	2146.18	226.05	234.70	223.42	234.70	0.000002	0.12	12790.54	1553.11	0.01
Reach1	3372.434	PF 1	1708.86	225.19	232.34	232.34	234.48	0.013768	11.74	145.51	33.93	1.00
Reach1	3370 Hwy_East		Lat Struct									
Reach1	3230.667	PF 1	1482.69	222.00	229.47	229.47	231.88	0.022826	12.46	119.03	24.65	1.00
Reach1	3089.225	PF 1	1481.73	220.99	228.25	224.85	228.38	0.000965	2.92	507.88	102.45	0.23
Reach1	3020.276	PF 1	1363.66	220.83	227.58		228.22	0.004152	6.30	213.32	49.44	0.55
Reach1	2929.252	PF 1	1027.13	220.00	226.94		227.75	0.006448	7.40	148.49	54.62	0.69
Reach1	2895.24	PF 1	1027.13	219.12	227.12	223.23	227.48	0.002490	4.84	212.01	33.62	0.34
Reach1	2773.995 HWy126		Culvert									
Reach1	2684.378	PF 1	1027.13	218.04	226.19	222.04	226.57	0.000222	4.99	205.68	30.41	0.34
Reach1	2485.067	PF 1	1027.13	216.26	225.75	223.42	226.42	0.005866	6.58	159.28	36.23	0.52
Reach1	2247.204	PF 1	1027.13	215.34	221.91	221.91	223.83	0.023010	11.12	92.33	24.05	1.00
Reach1	1997.363	PF 1	1027.13	210.82	218.00	217.16	219.11	0.013323	8.48	121.30	33.65	0.78
Reach1	1747.714	PF 1	1027.13	208.97	215.23	214.20	216.19	0.010093	7.87	130.55	32.88	0.70
Reach1	1498.684	PF 1	1027.13	207.32	213.44	212.52	214.07	0.006657	6.59	168.19	1134.41	0.57

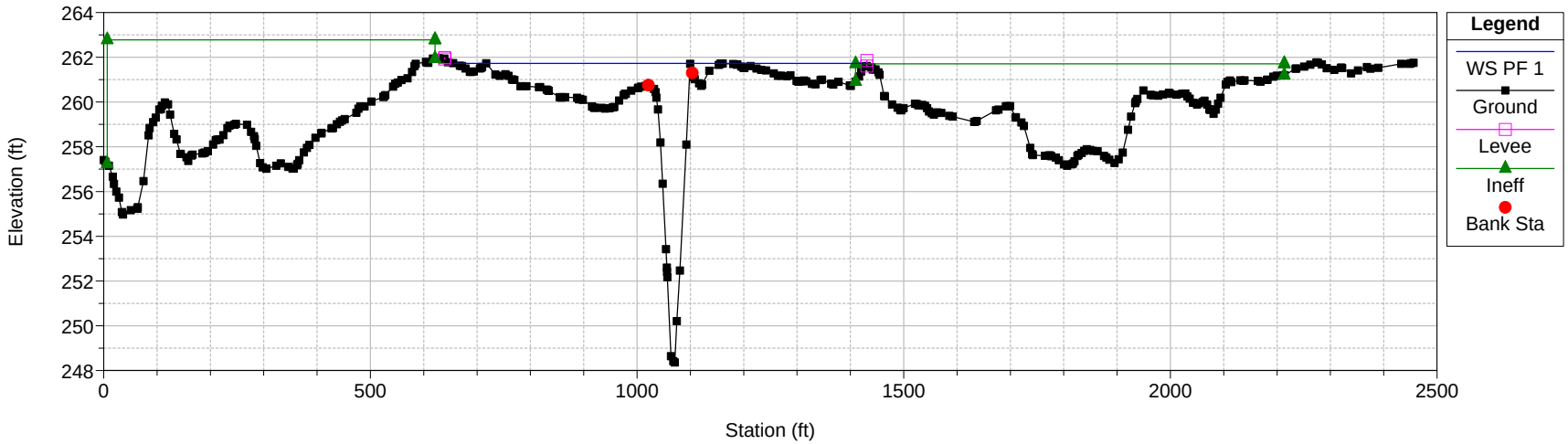
HEC-RAS Plan: prop River: AdamsBarranca Reach: Reach1 Profile: PF 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach1	1250.347	PF 1	1027.13	204.47	211.48	209.88	212.30	0.007443	7.25	141.65	30.81	0.60
Reach1	1001.841	PF 1	1027.13	202.27	209.85	208.21	210.52	0.006540	6.60	157.50	53.95	0.57
Reach1	748.9206	PF 1	1027.13	200.99	208.81		209.16	0.003960	4.76	216.39	68.66	0.44
Reach1	502.0116	PF 1	1027.13	199.59	208.03	204.83	208.38	0.002592	4.71	218.16	42.74	0.37
Reach1	249.222	PF 1	1027.13	199.26	208.25	201.84	208.25	0.000024	0.56	2221.21	514.17	0.04


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 6475.816
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 6235.479
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

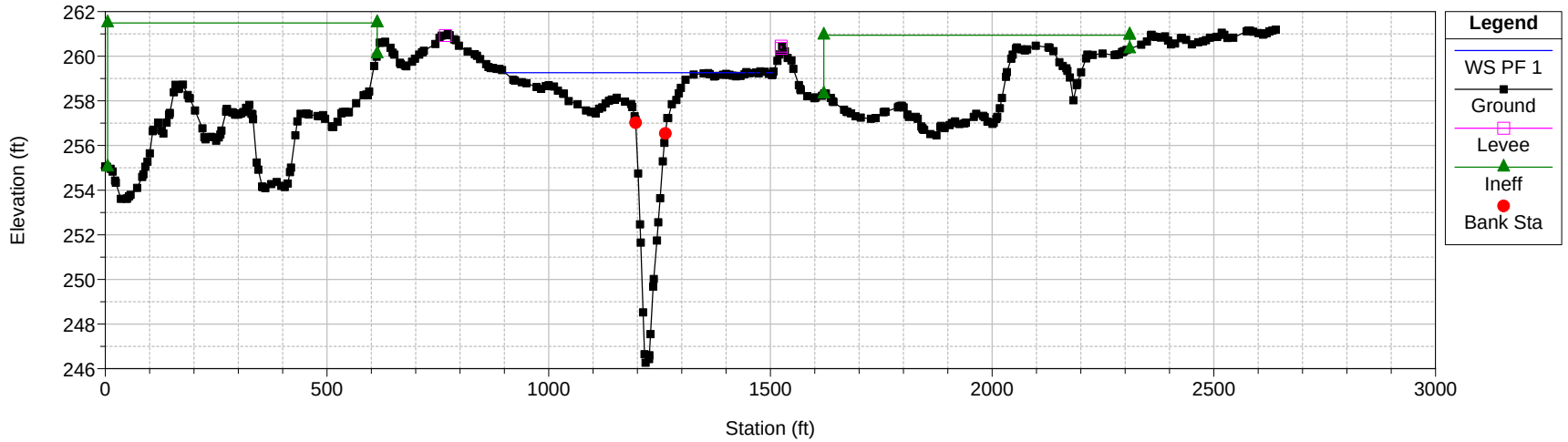

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5984.647
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5737.684
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

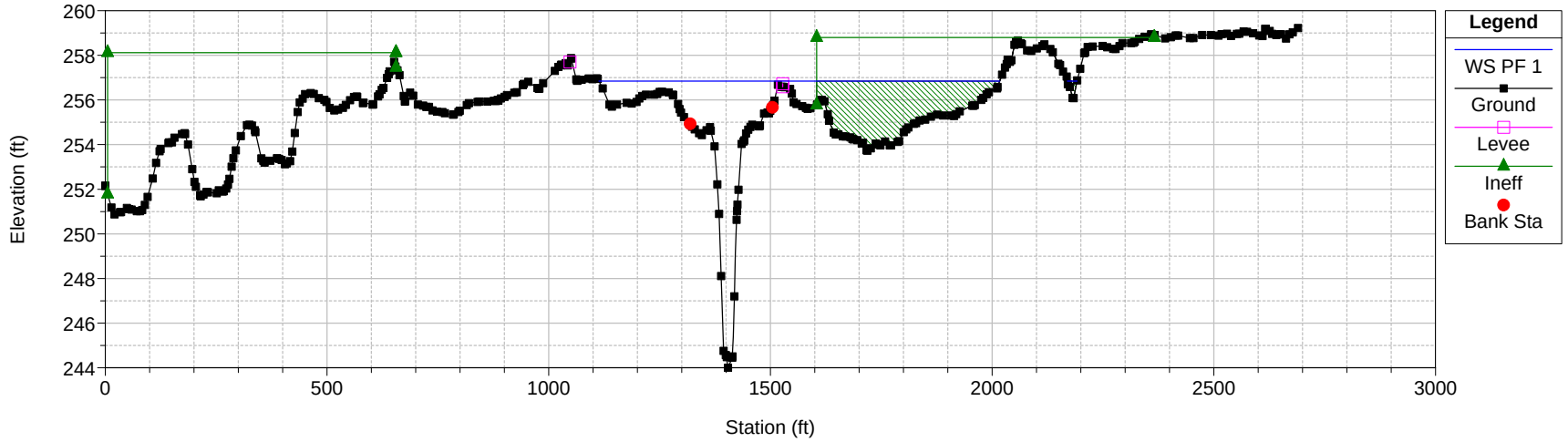
River = AdamsBarranca Reach = Reach1 RS = 5491.663



4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

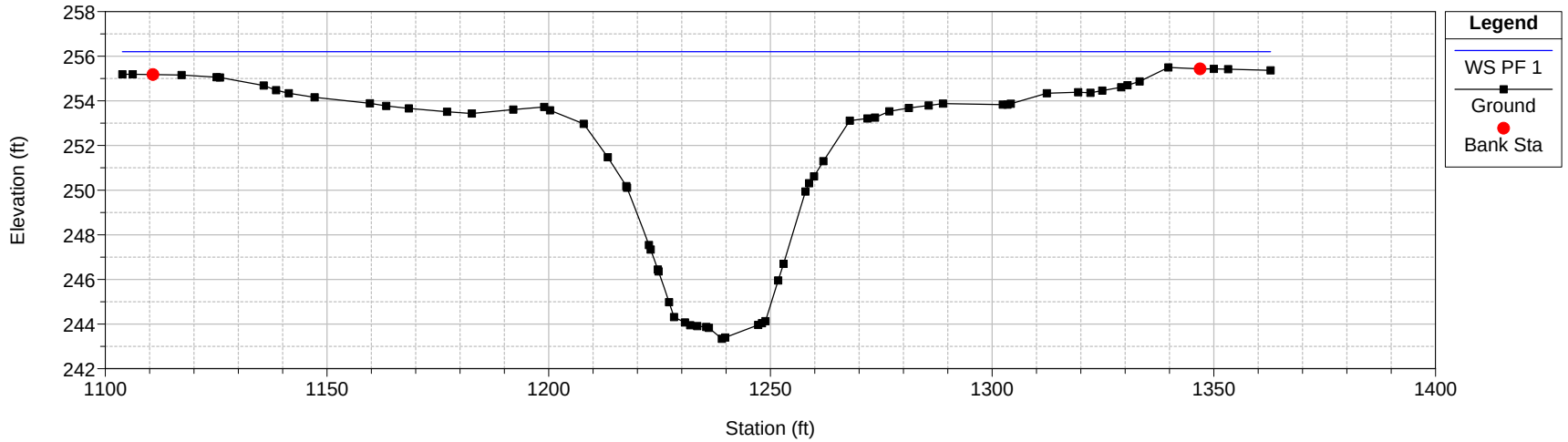
River = AdamsBarranca Reach = Reach1 RS = 5246.089



4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

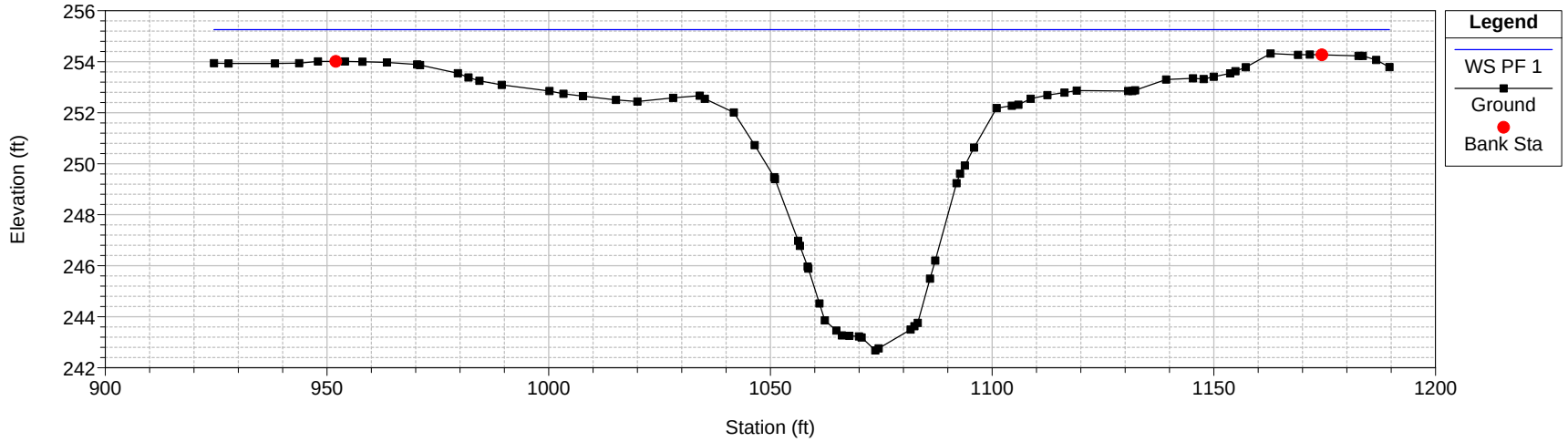
River = AdamsBarranca Reach = Reach1 RS = 5201.42

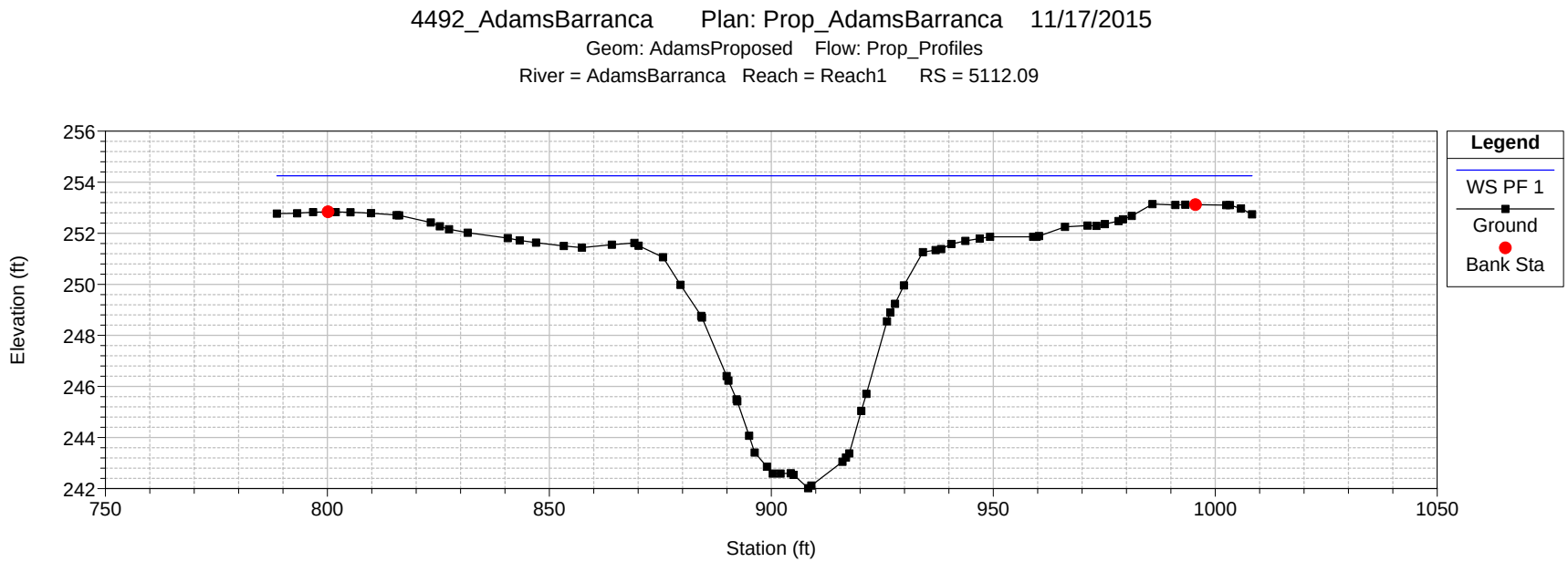


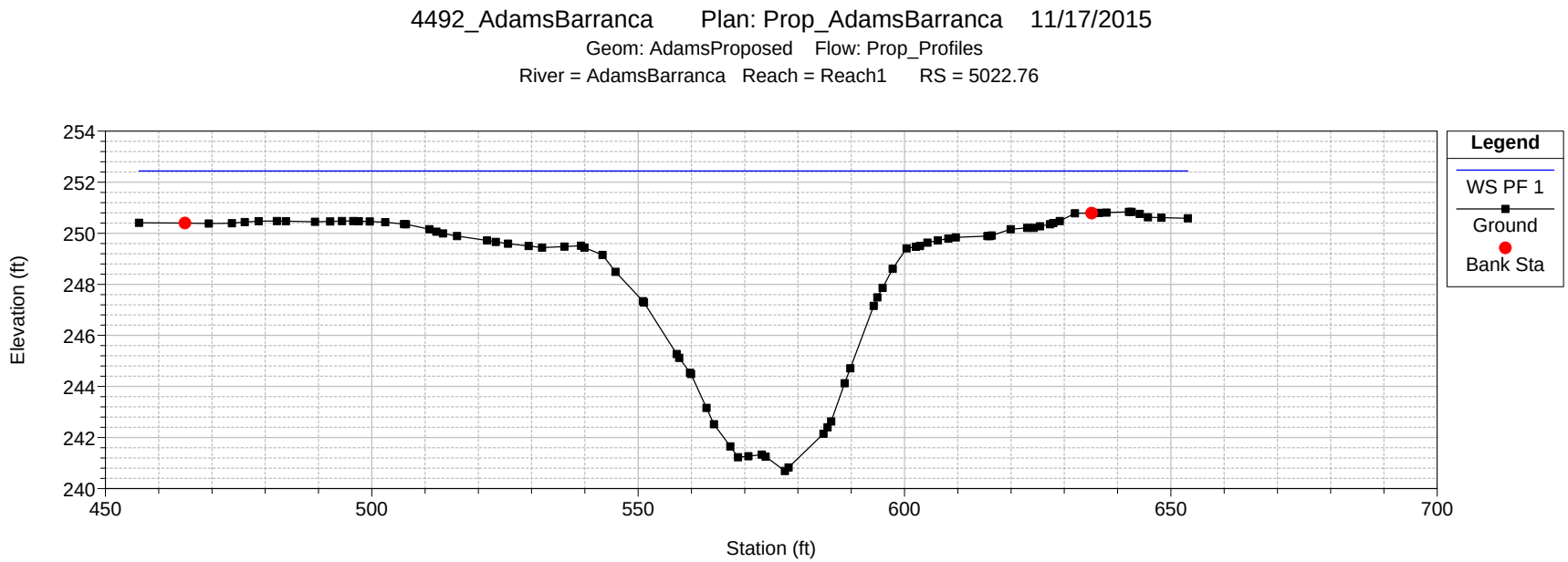
4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

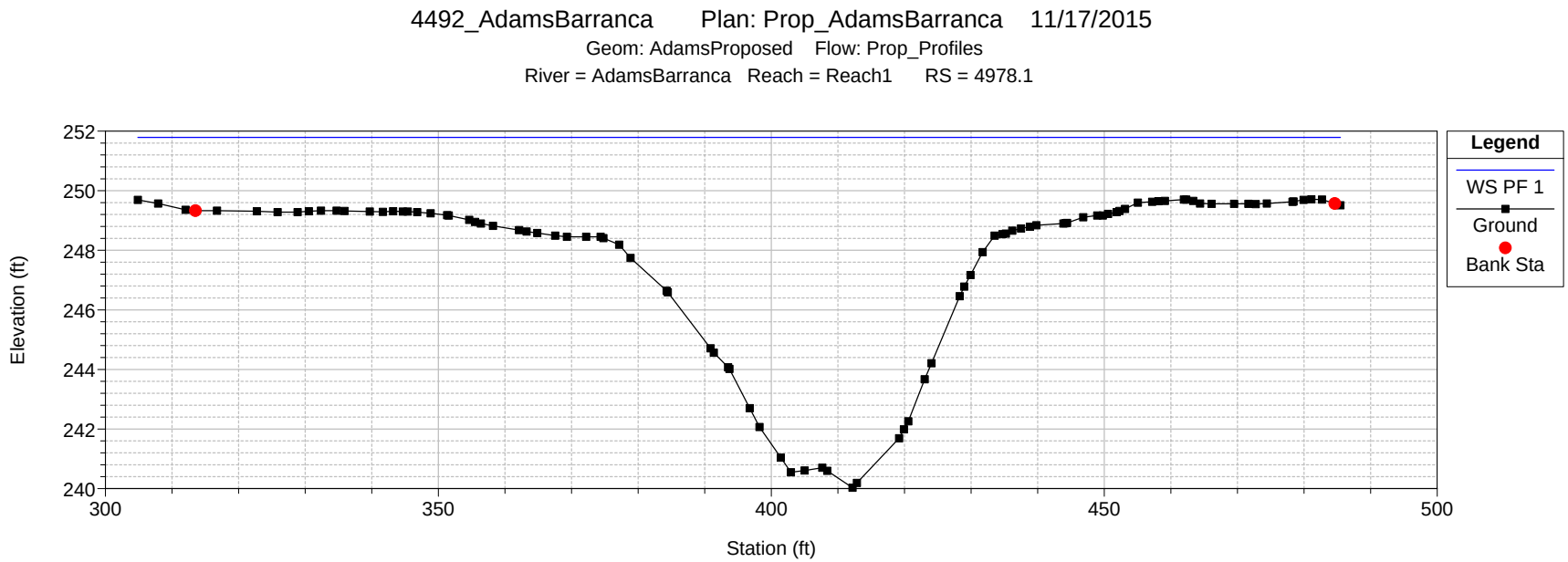
Geom: AdamsProposed Flow: Prop_Profiles

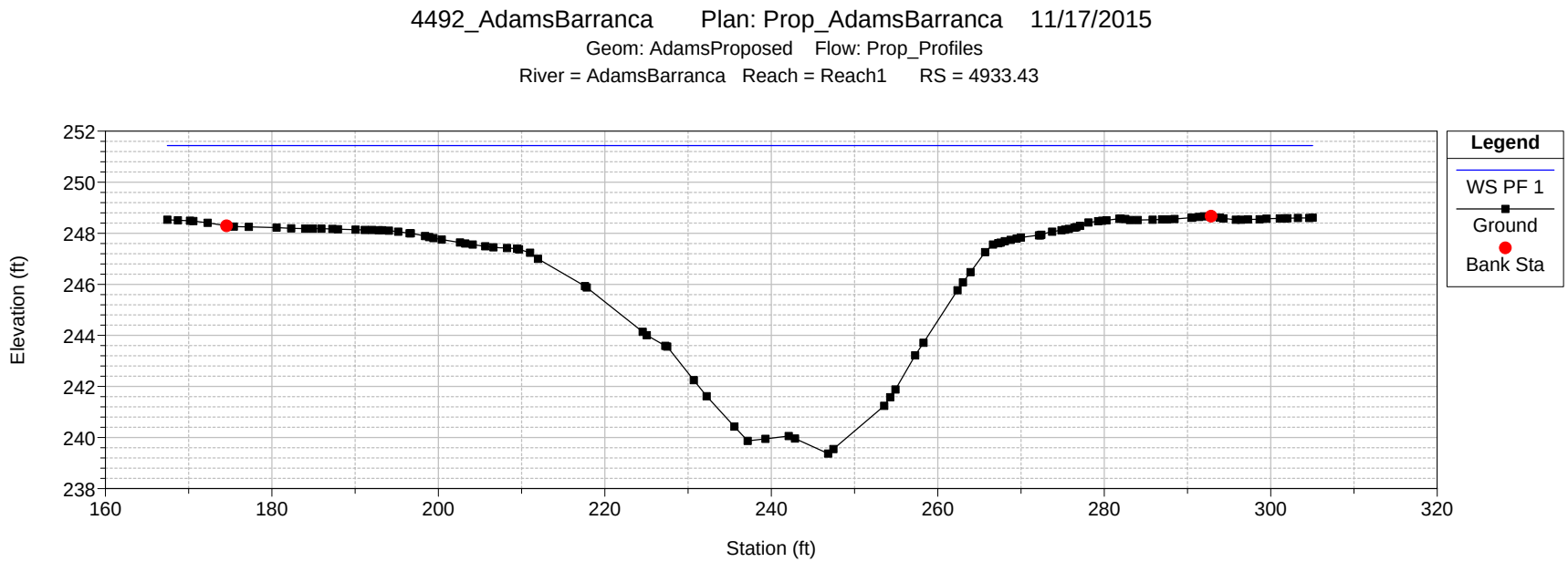
River = AdamsBarranca Reach = Reach1 RS = 5156.75




4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5112.09
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 5022.76
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

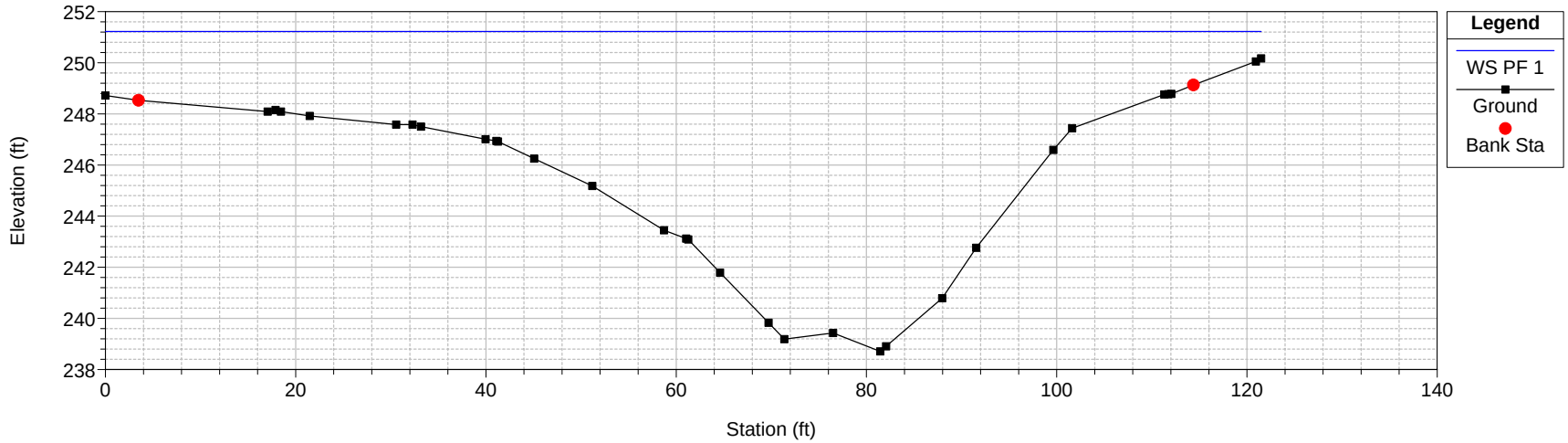

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4978.1
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4933.43
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

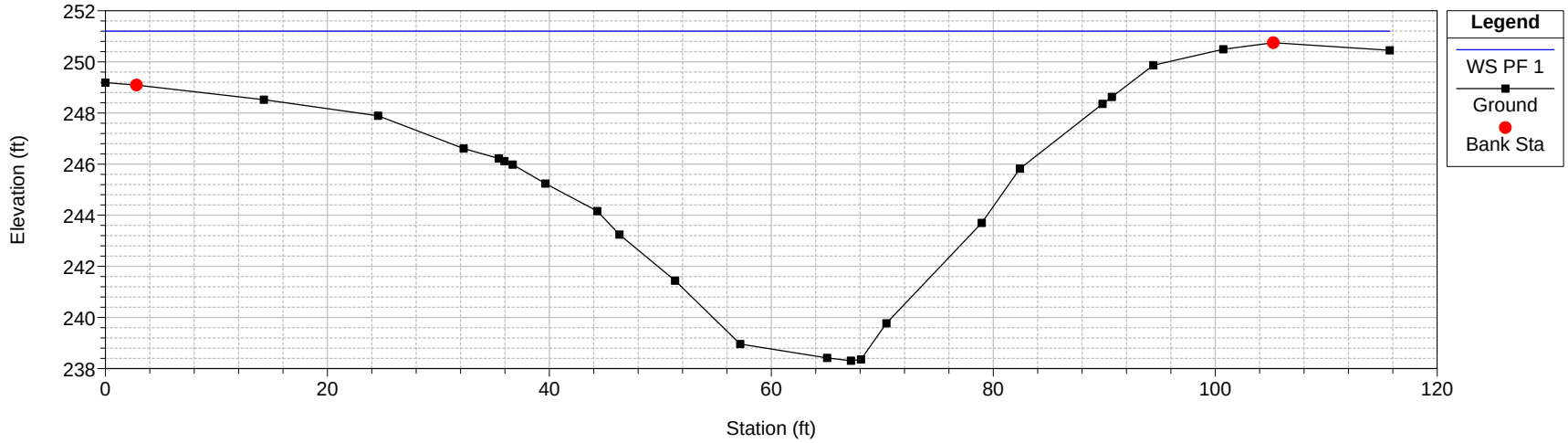
River = AdamsBarranca Reach = Reach1 RS = 4888.77

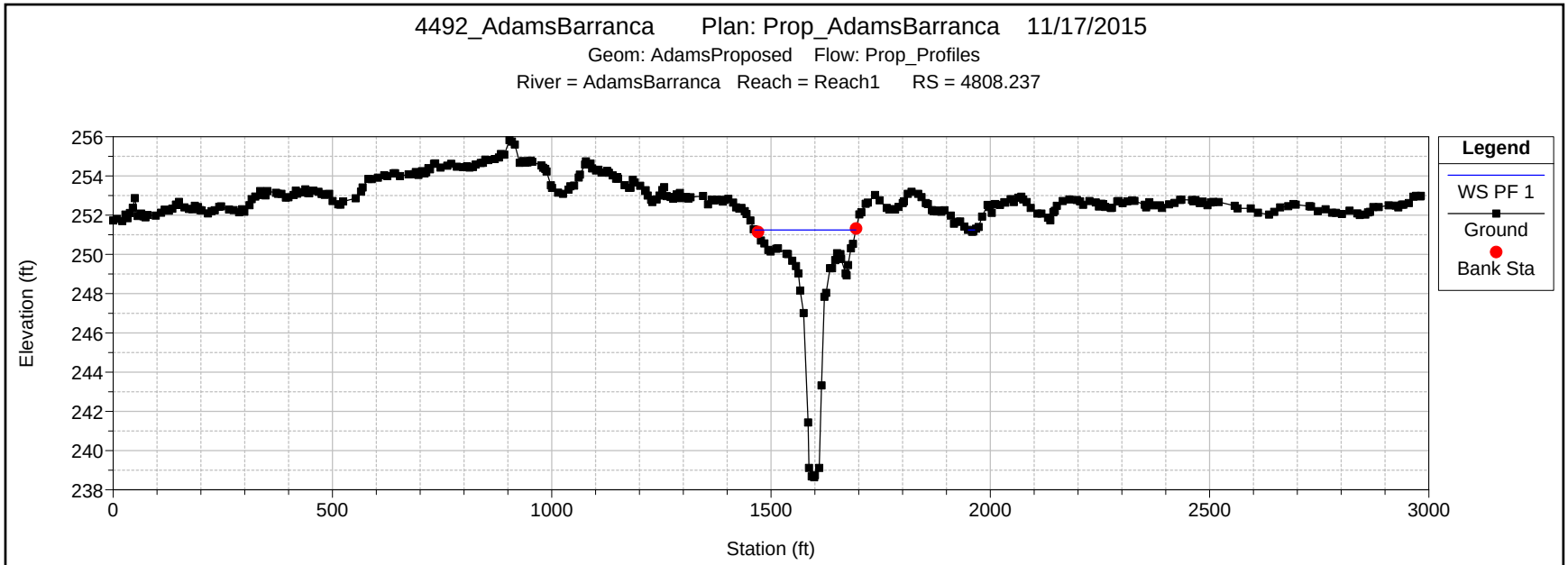


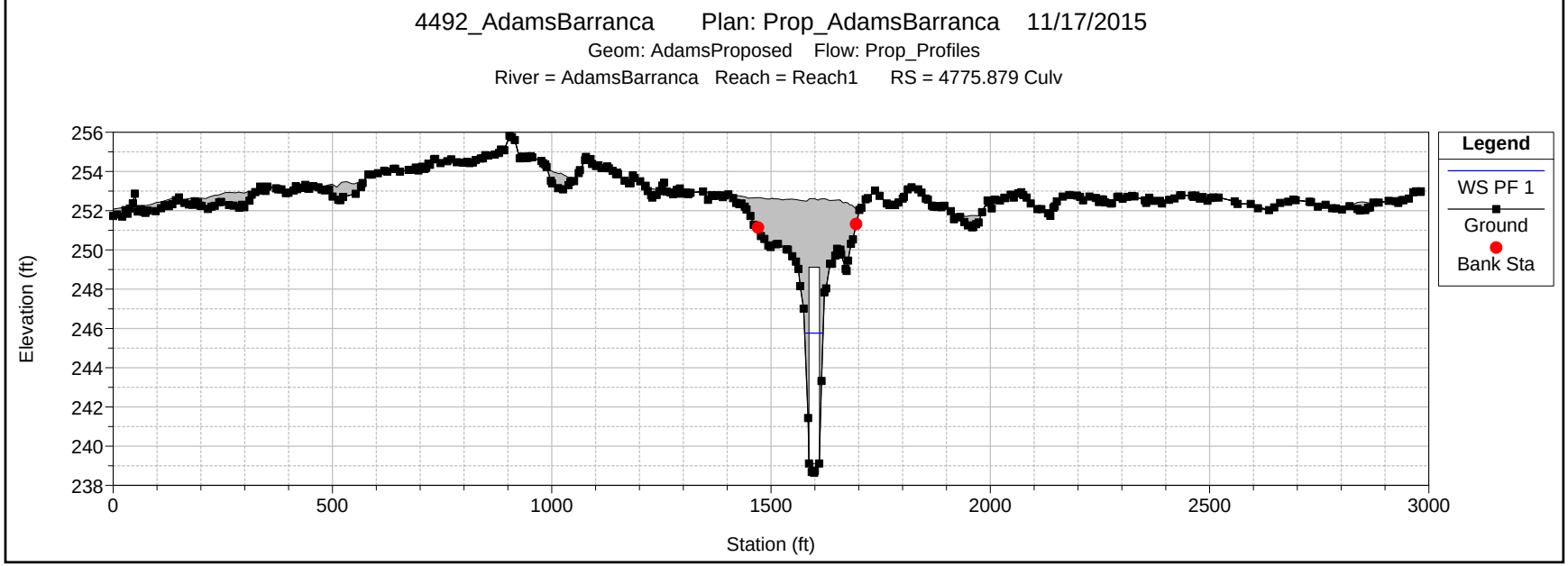
4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

River = AdamsBarranca Reach = Reach1 RS = 4826.612



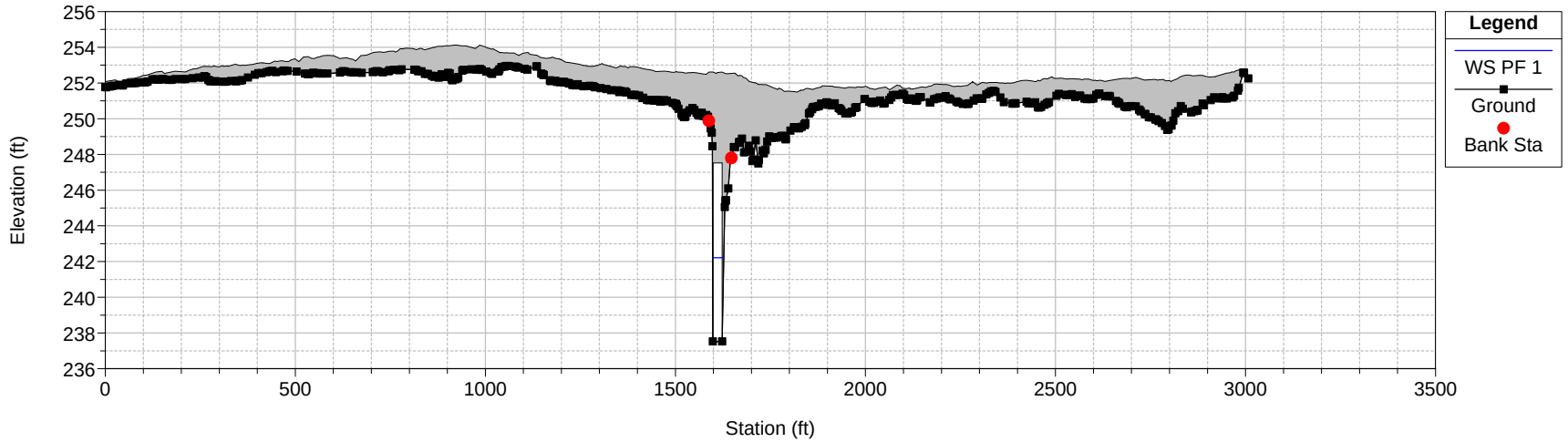

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4808.237
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4775.879 Culv
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

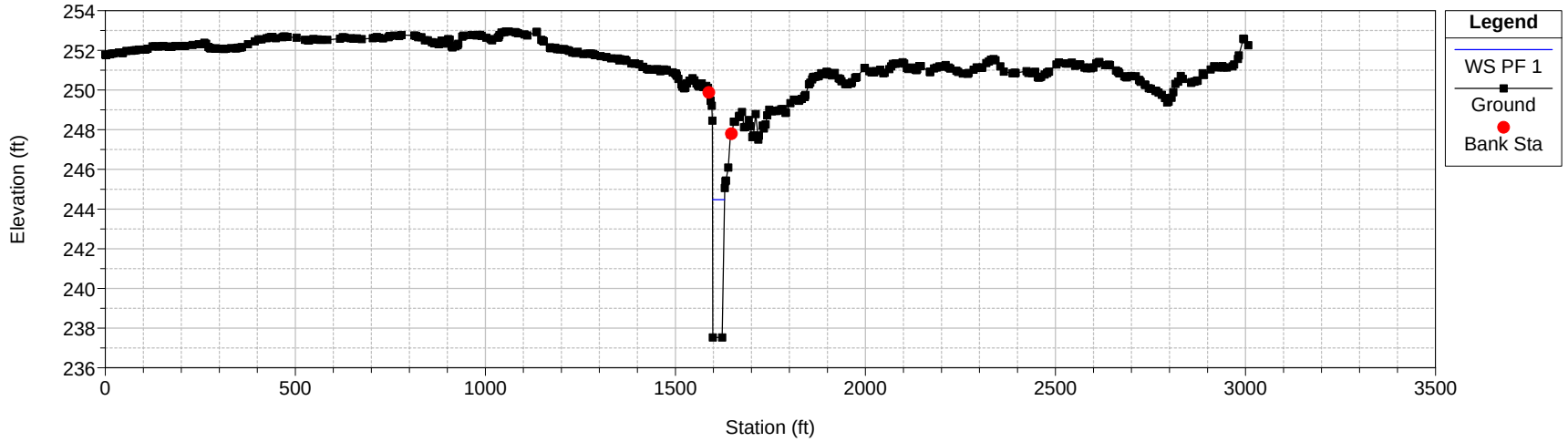
River = AdamsBarranca Reach = Reach1 RS = 4775.879 Culv

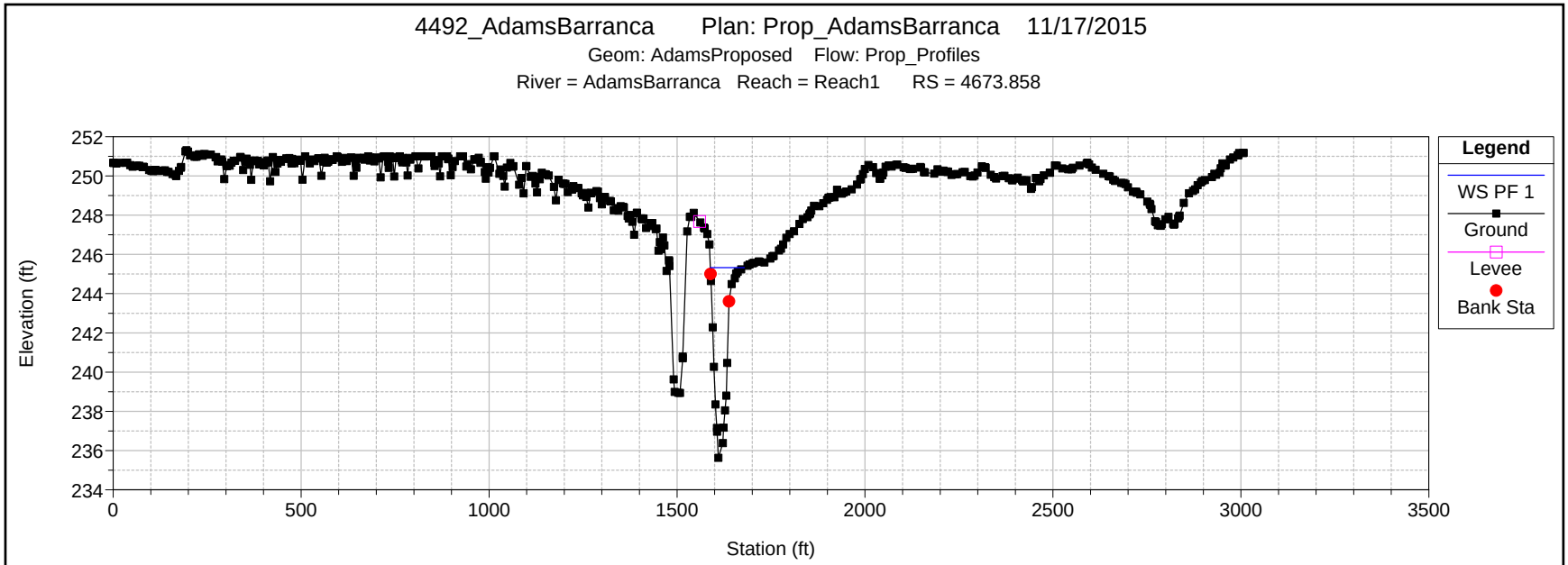


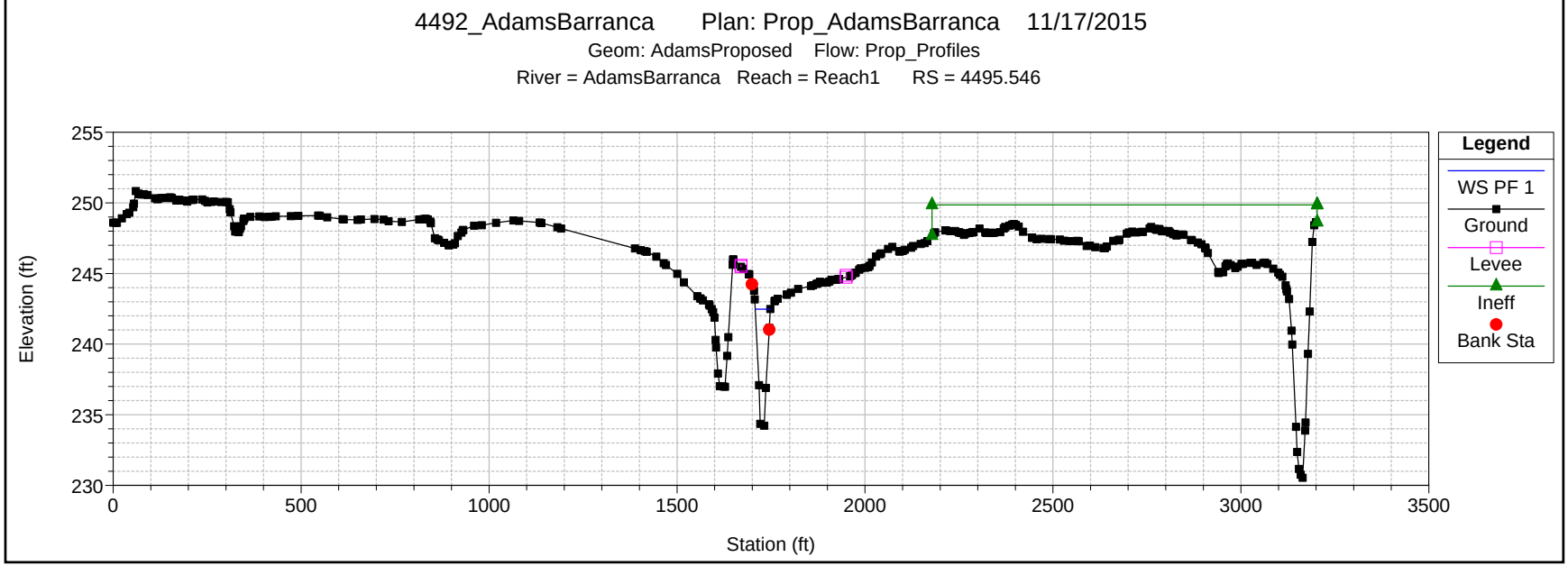
4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

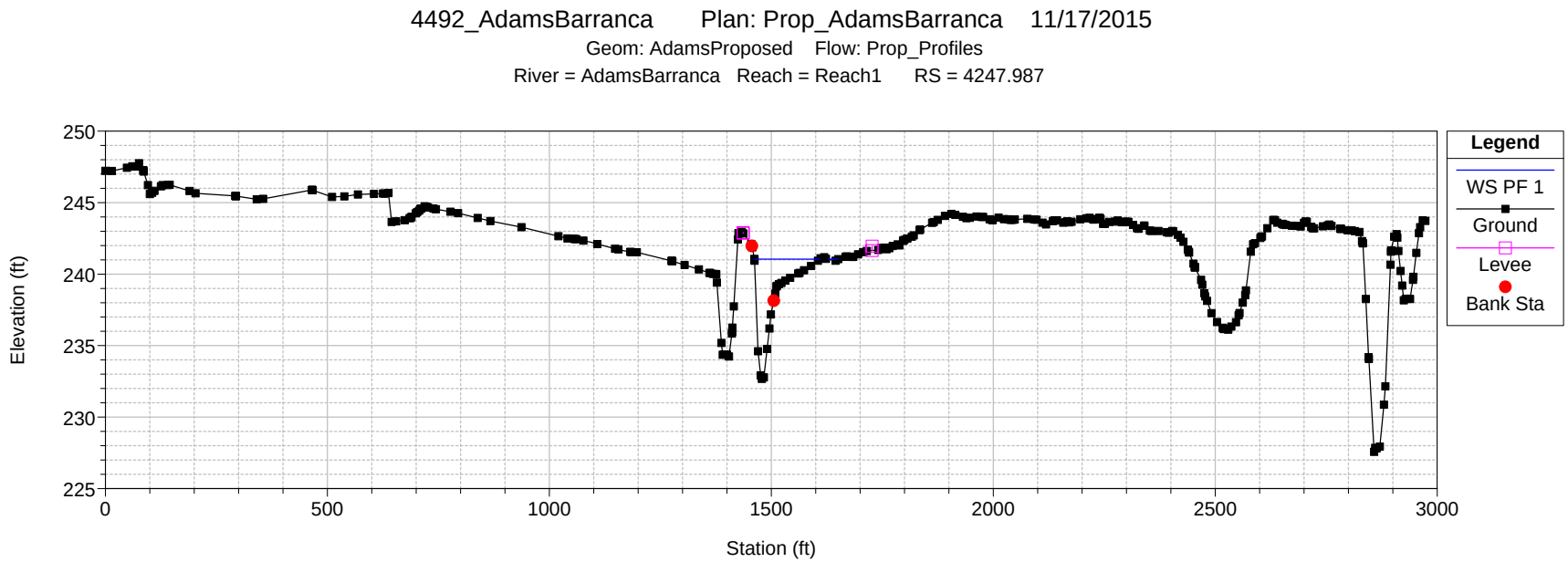
Geom: AdamsProposed Flow: Prop_Profiles

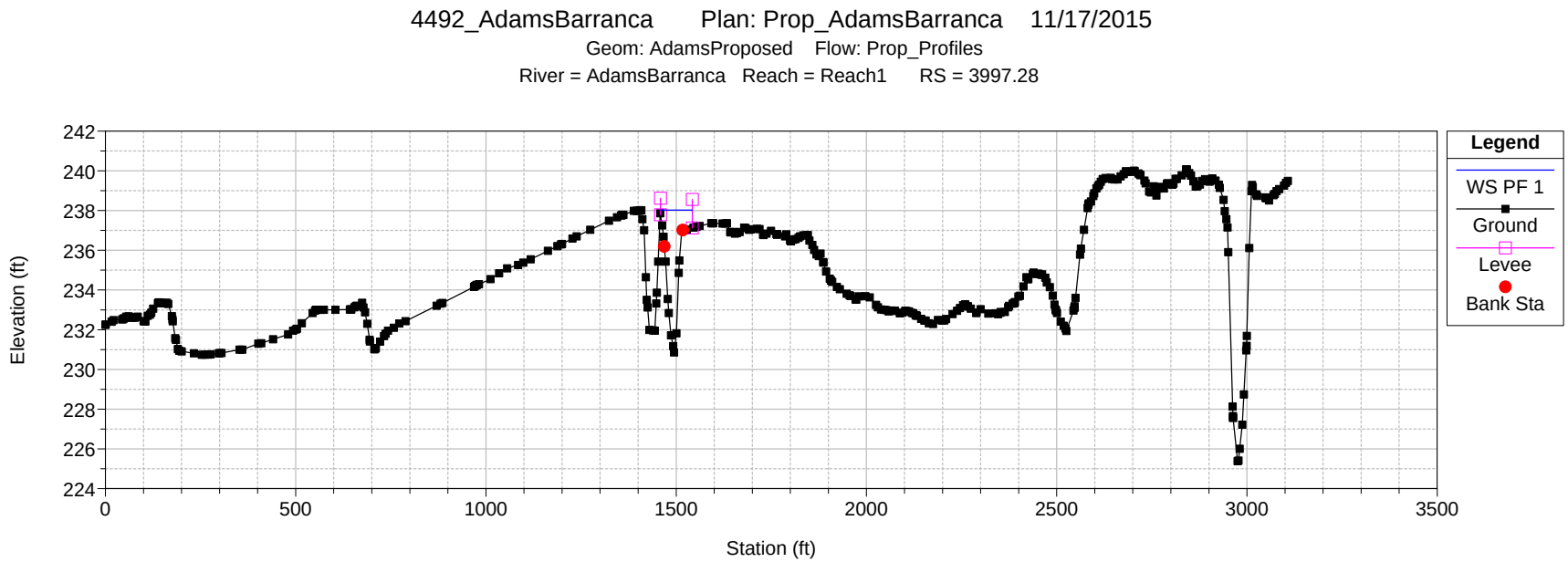
River = AdamsBarranca Reach = Reach1 RS = 4739.053




4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4673.858
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4495.546
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

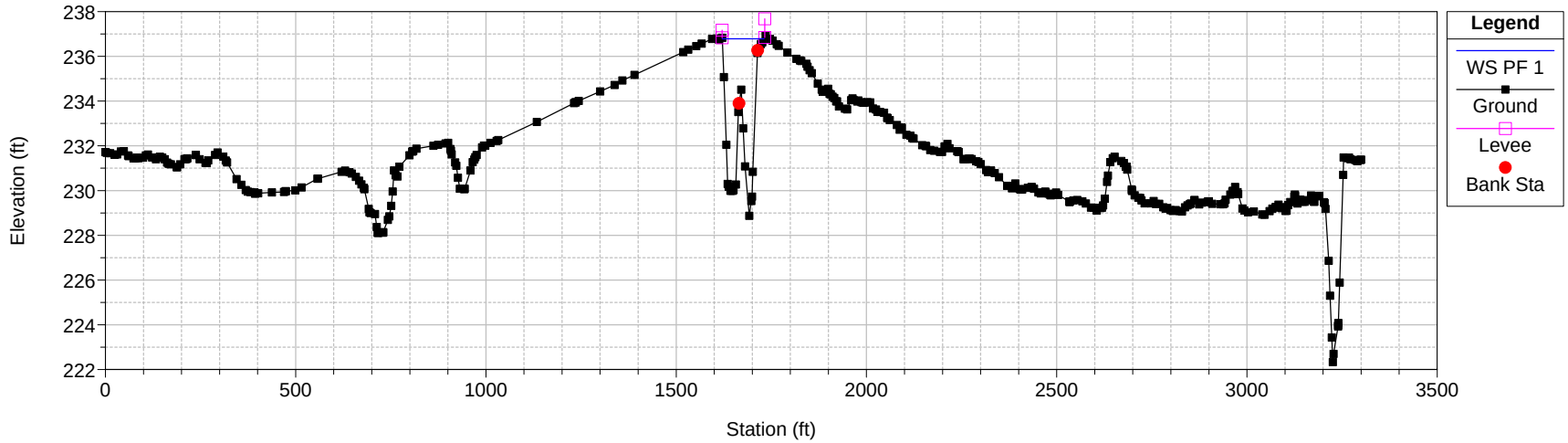

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 4247.987
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3997.28
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

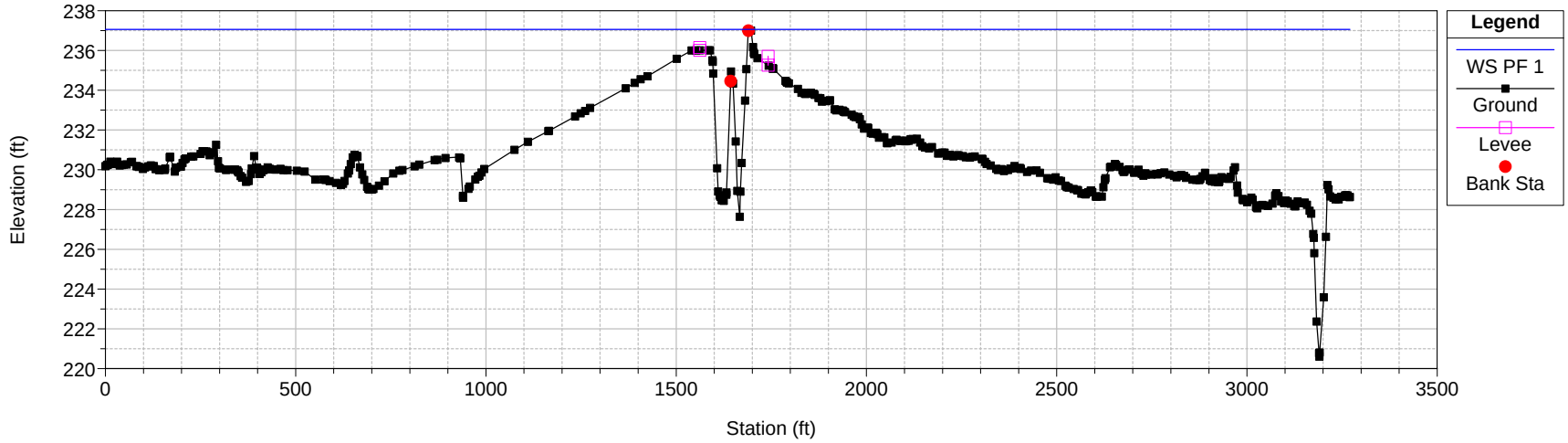
River = AdamsBarranca Reach = Reach1 RS = 3823.969

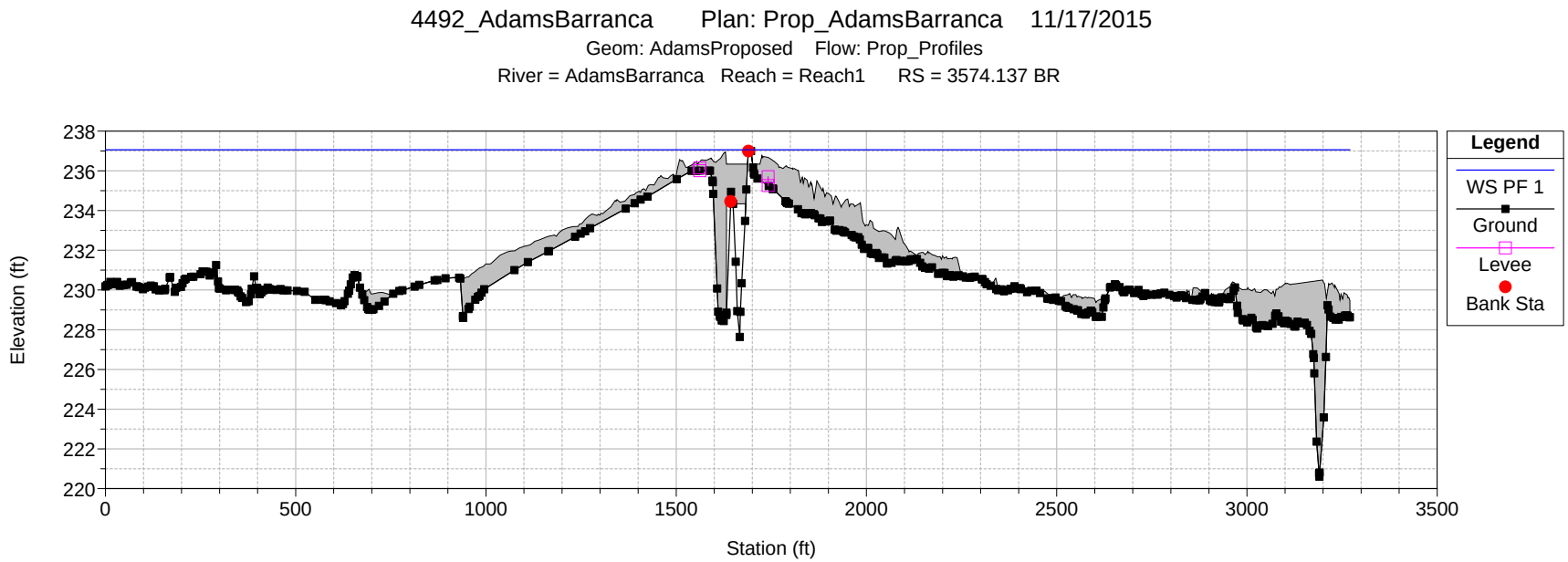


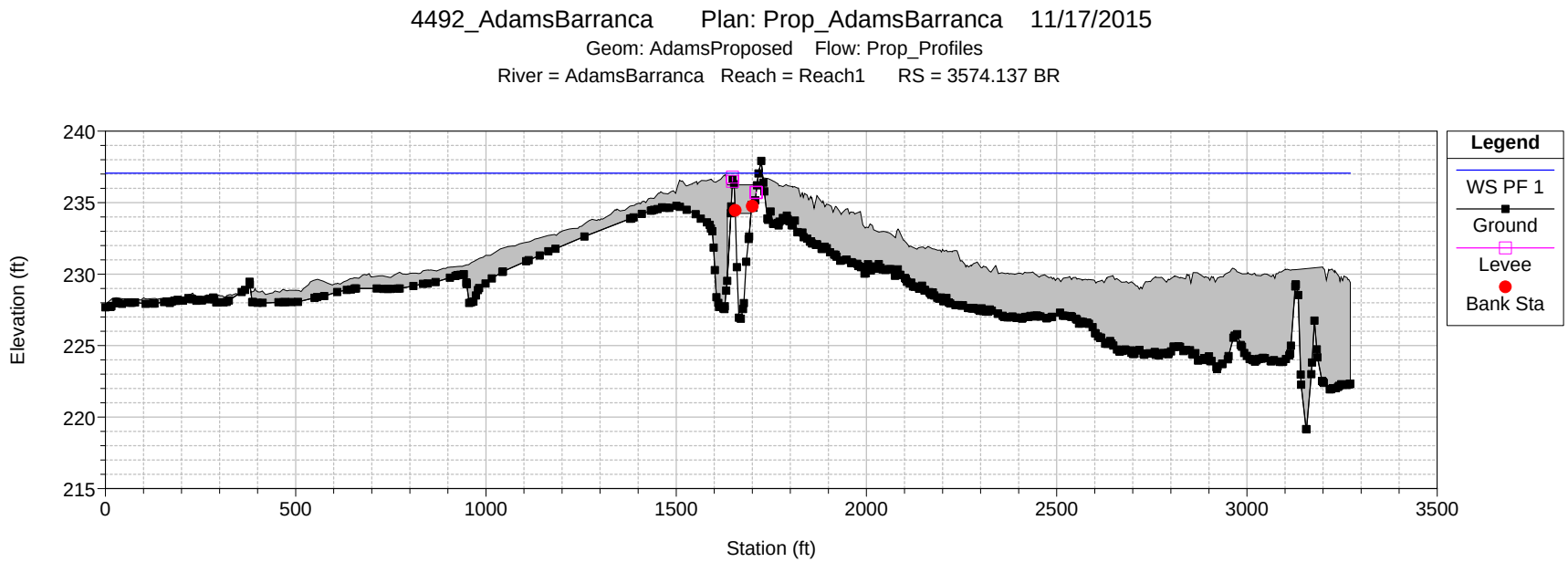
4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

River = AdamsBarranca Reach = Reach1 RS = 3656.055



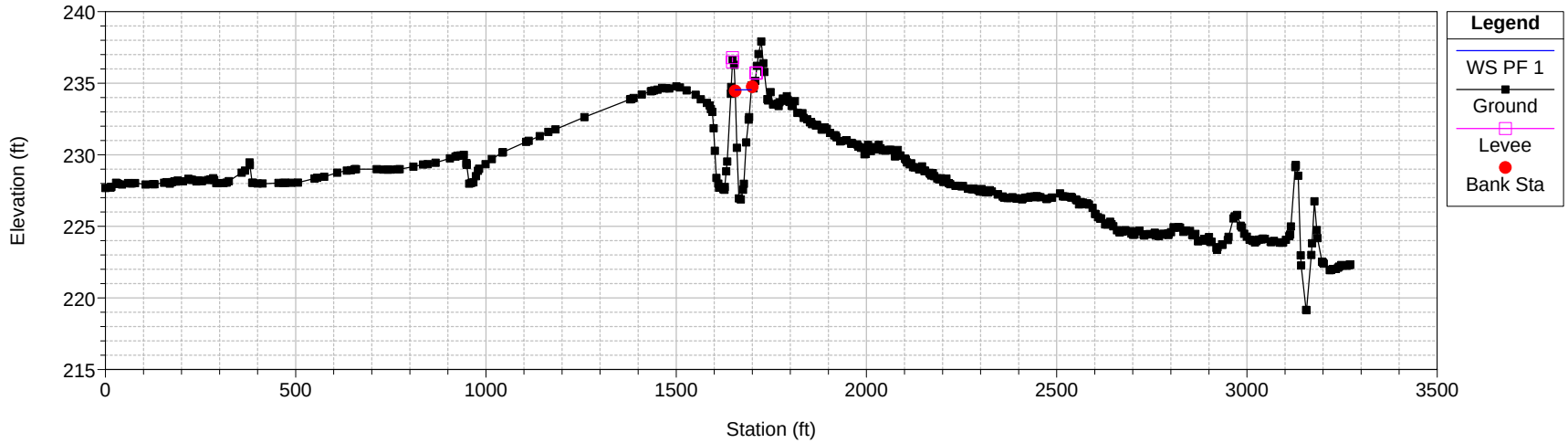

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3574.137 BR
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3574.137 BR
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

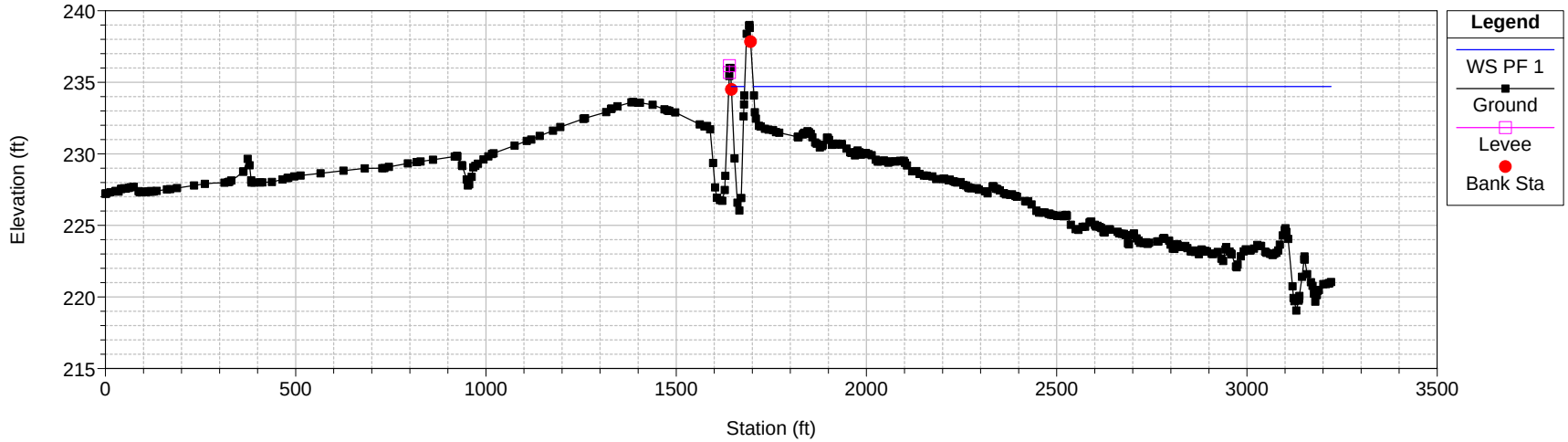
River = AdamsBarranca Reach = Reach1 RS = 3547.872

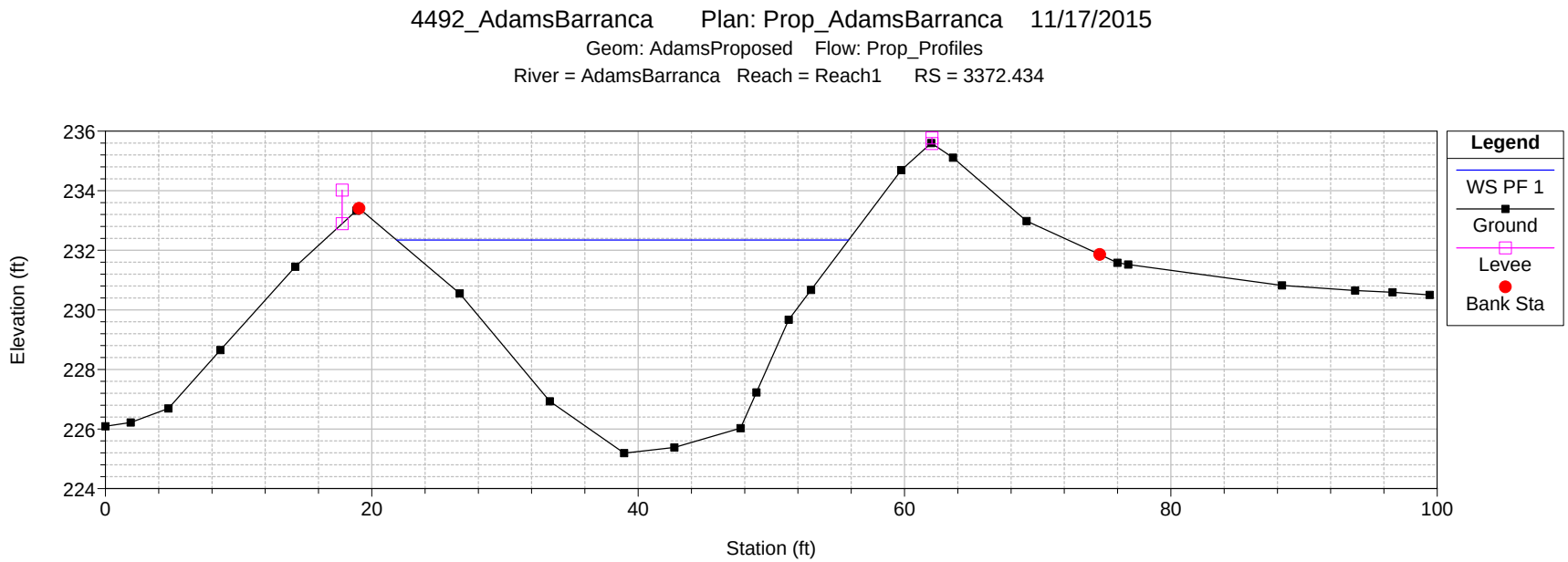


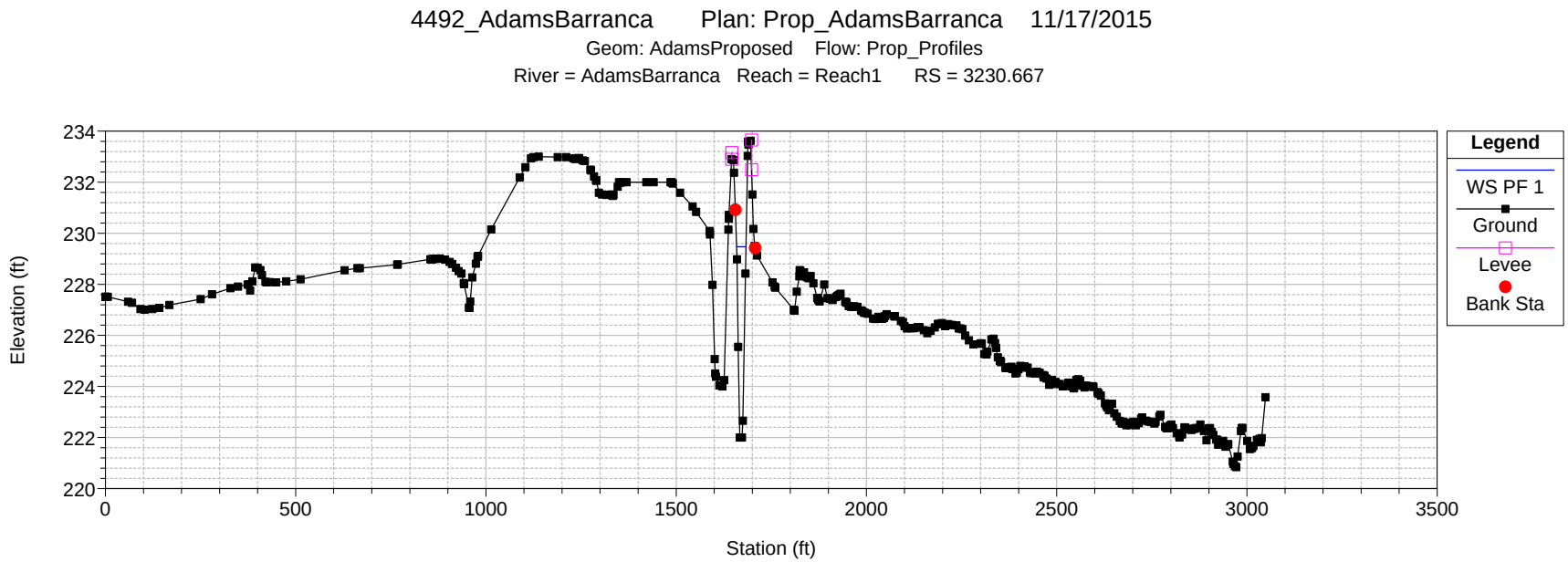
4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

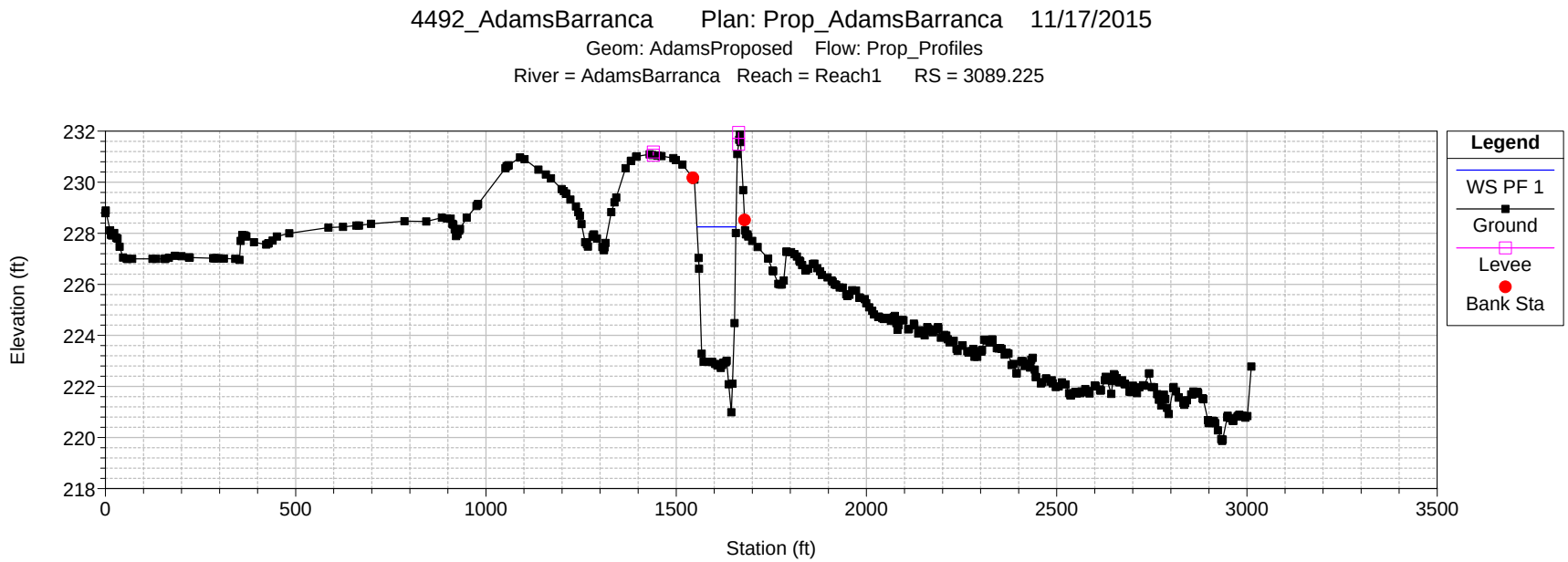
Geom: AdamsProposed Flow: Prop_Profiles

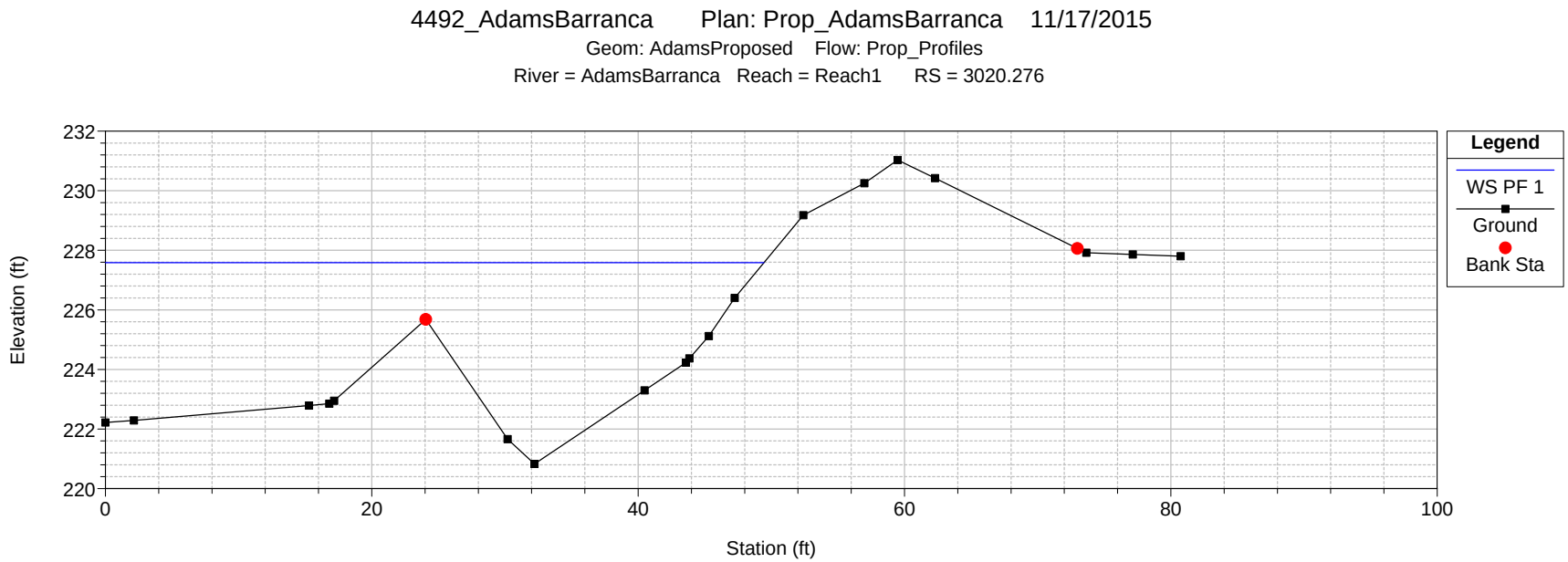
River = AdamsBarranca Reach = Reach1 RS = 3454.093

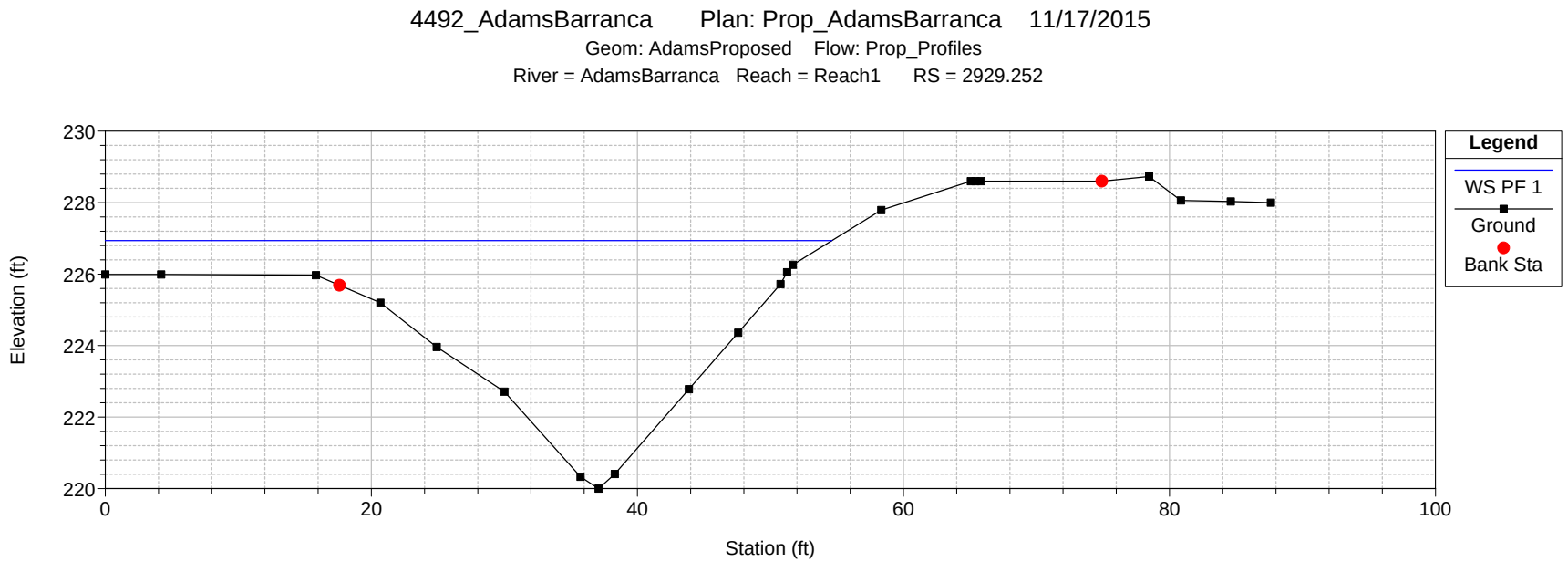


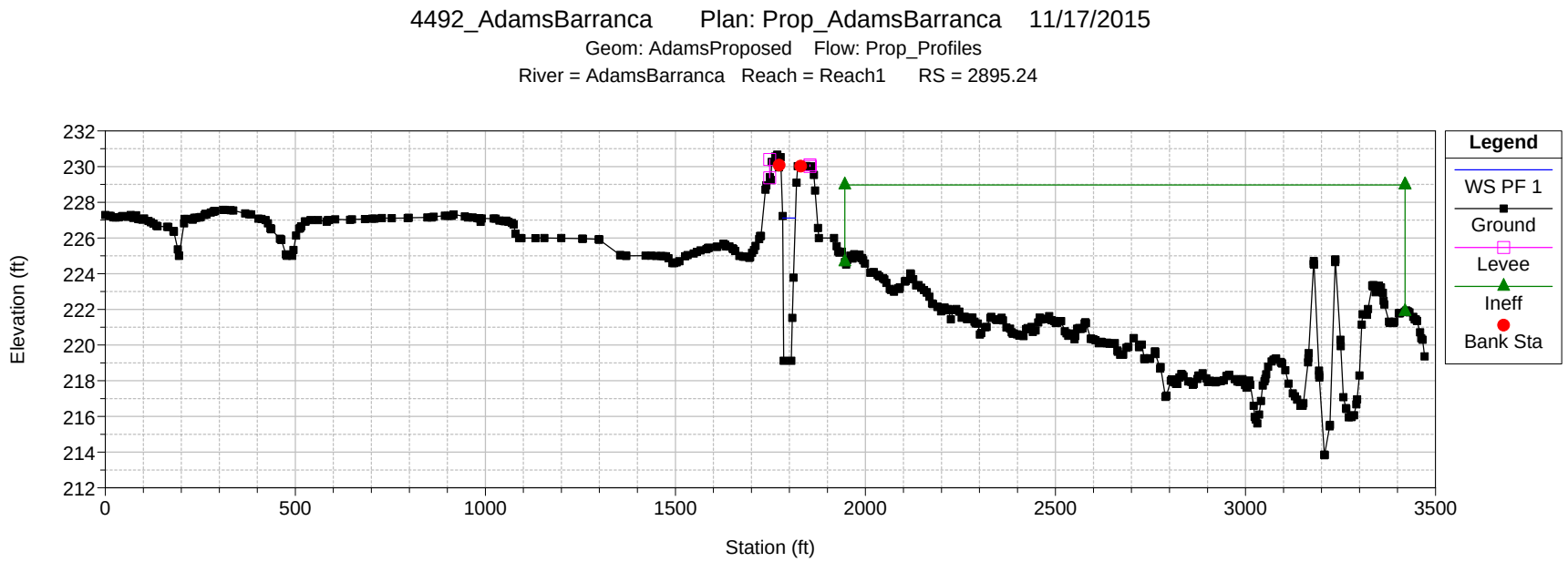

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3372.434
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

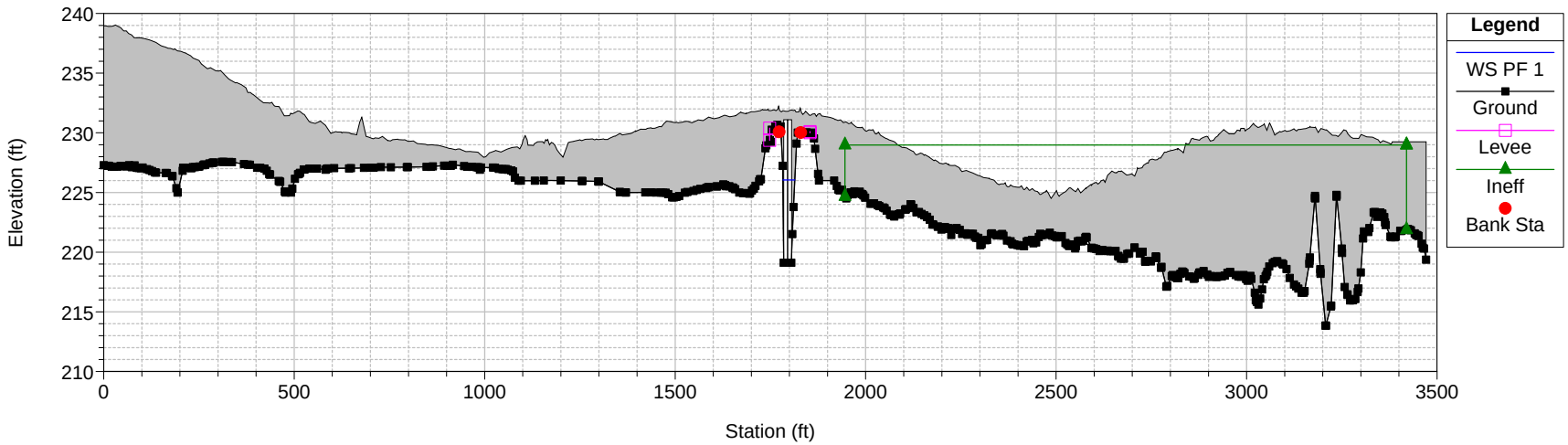

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3230.667
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

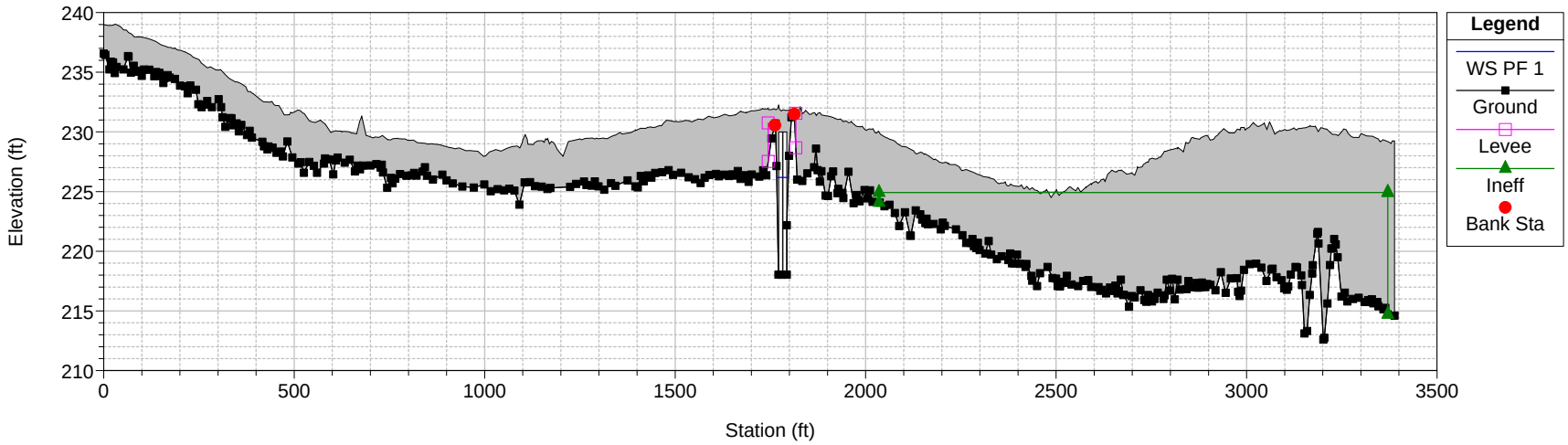

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3089.225
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 3020.276
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2929.252
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2895.24
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

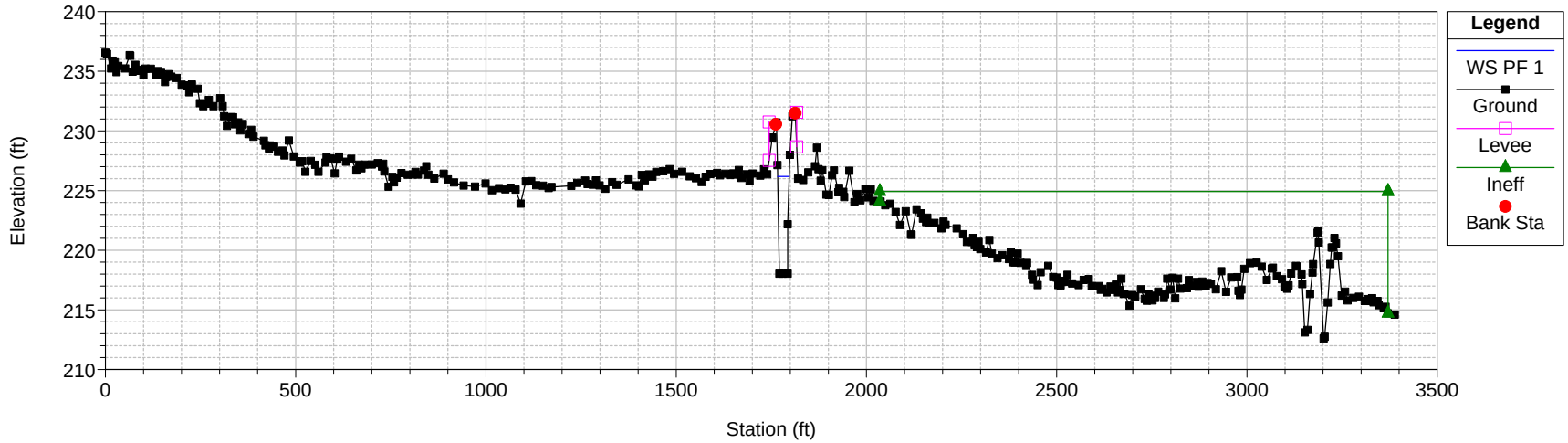

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2773.995 Culv
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 2773.995 Culv
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

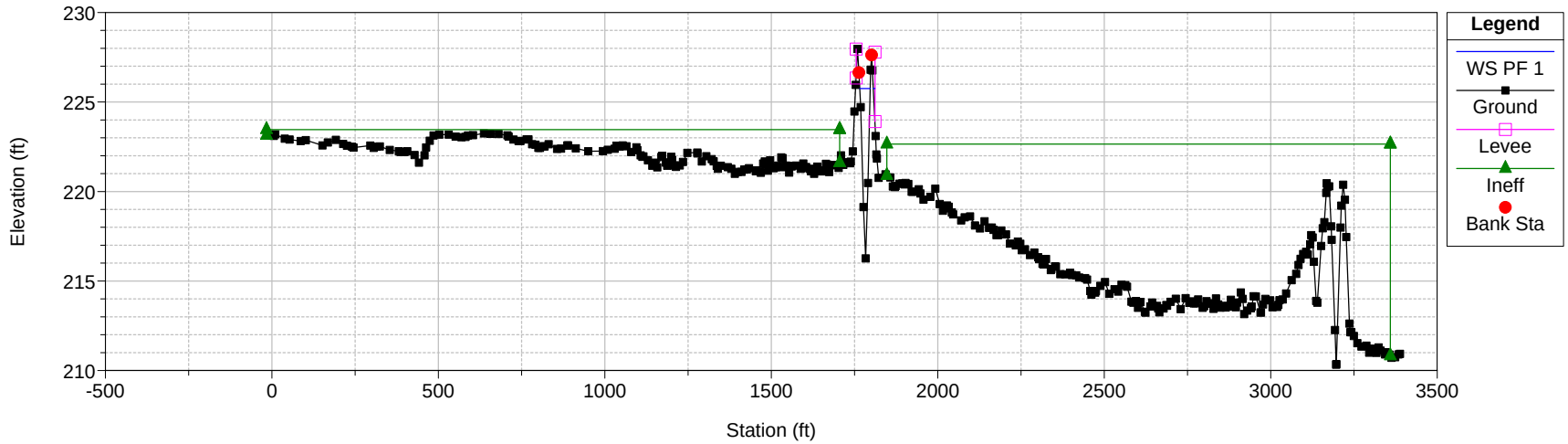
River = AdamsBarranca Reach = Reach1 RS = 2684.378



4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

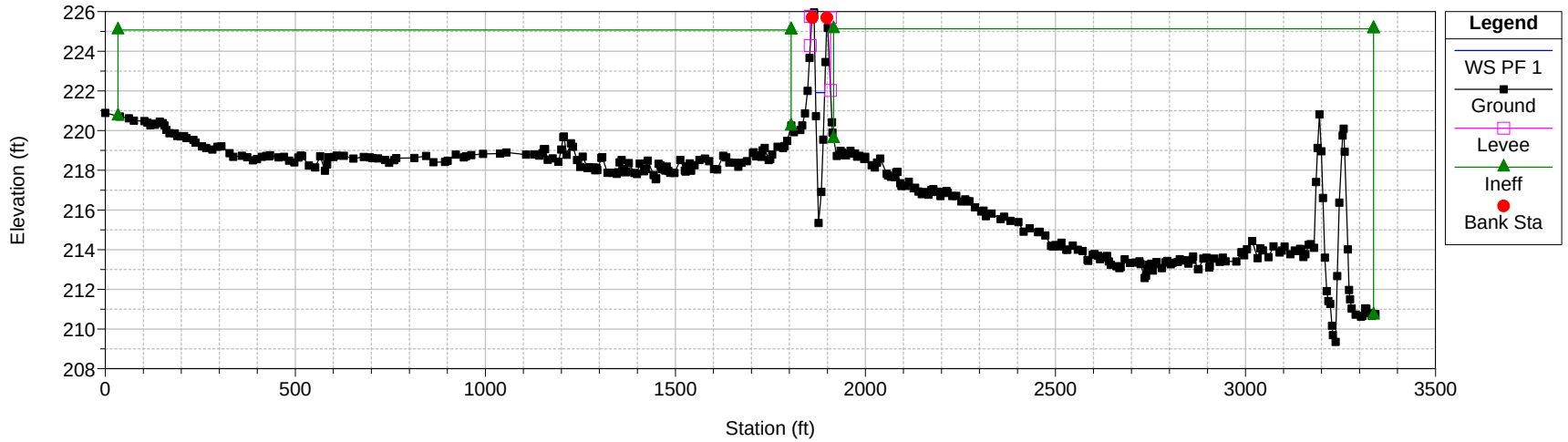
River = AdamsBarranca Reach = Reach1 RS = 2485.067



4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

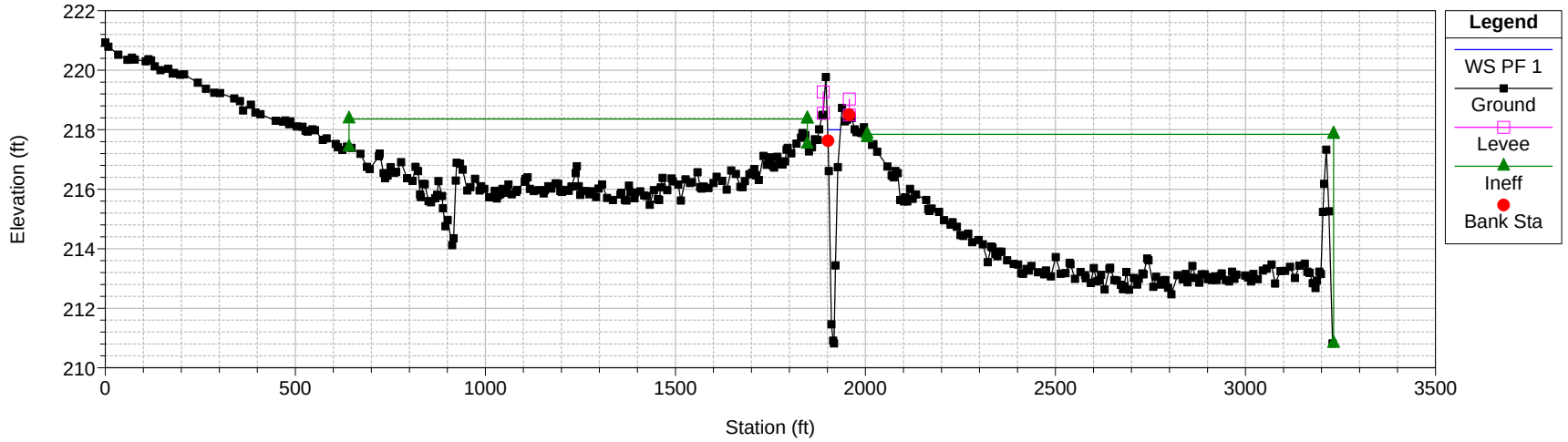
River = AdamsBarranca Reach = Reach1 RS = 2247.204

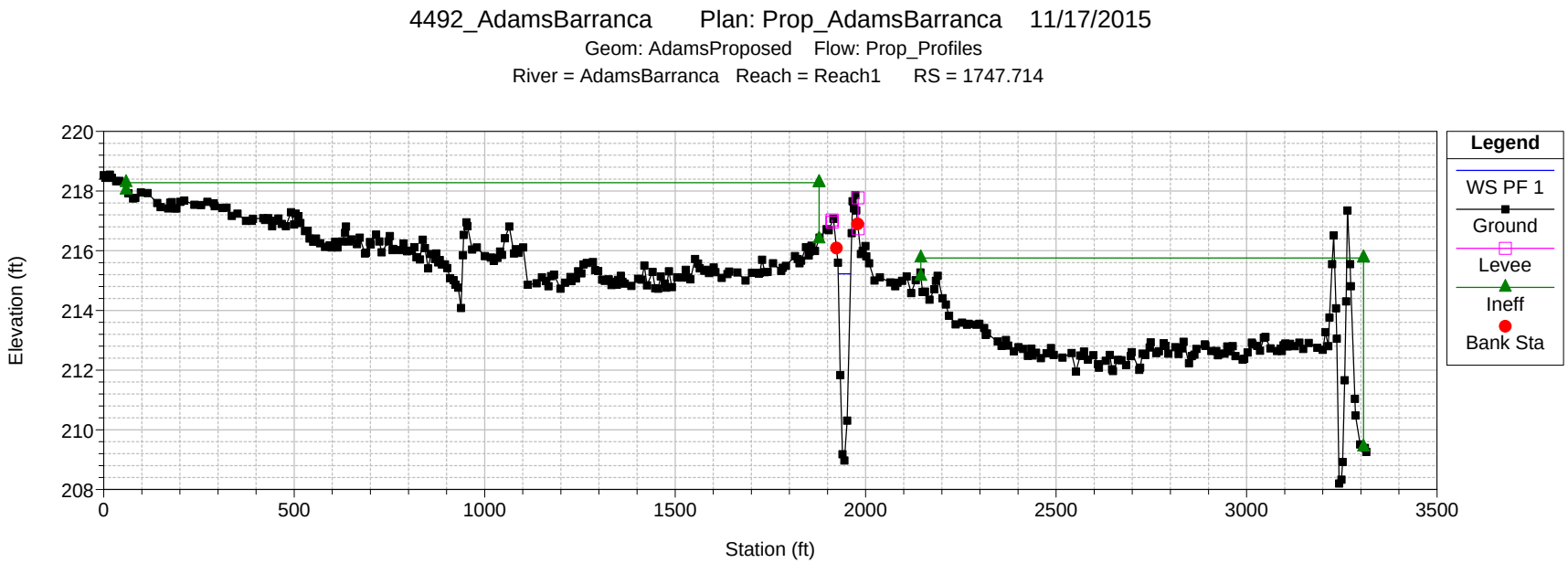


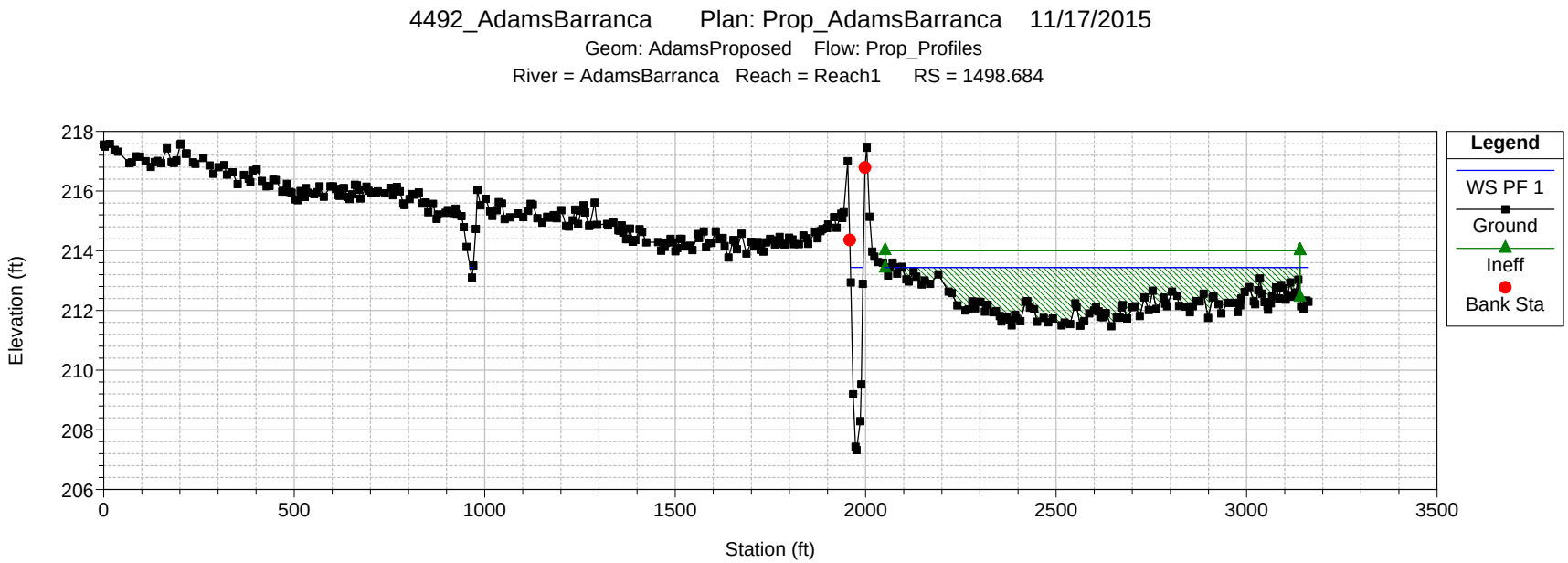
4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

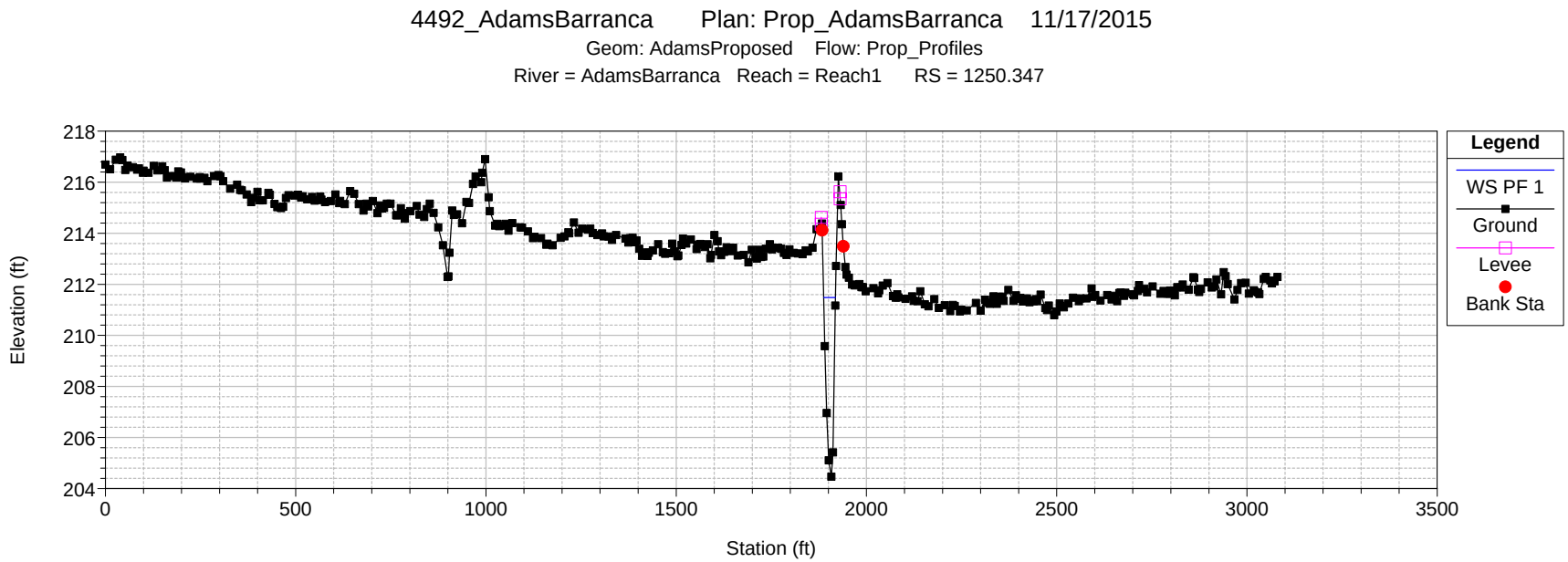
Geom: AdamsProposed Flow: Prop_Profiles

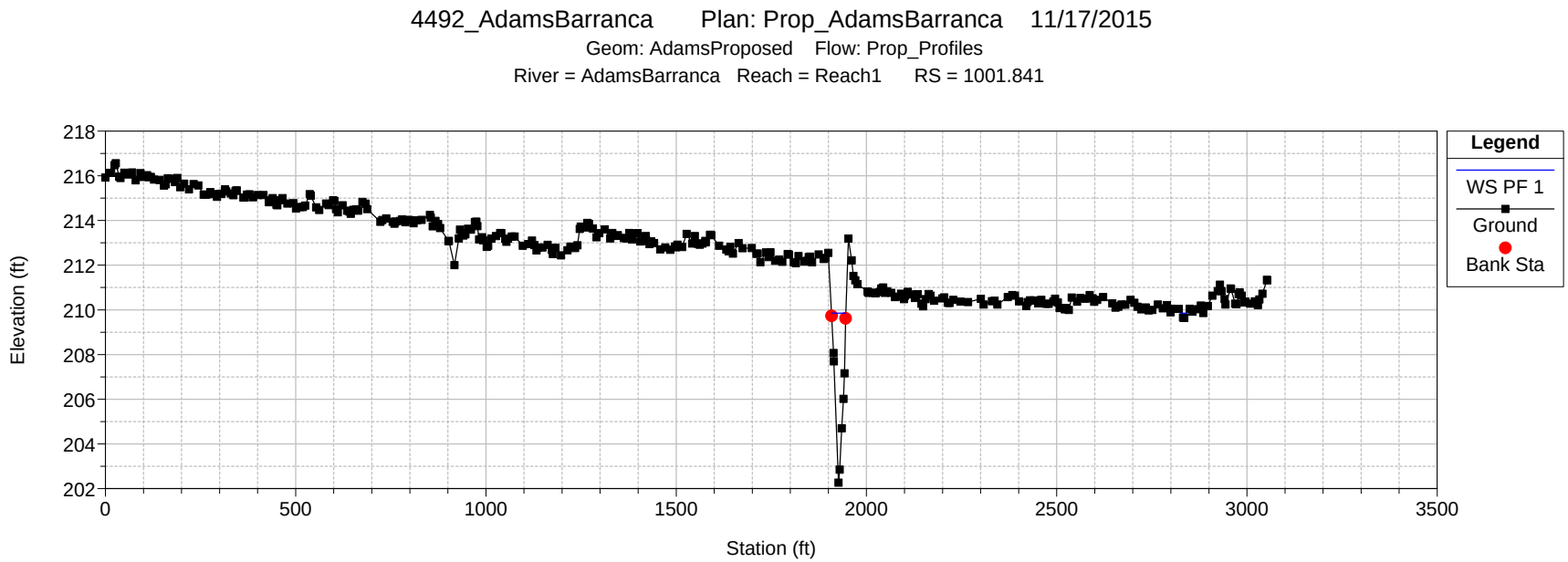
River = AdamsBarranca Reach = Reach1 RS = 1997.363




4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1747.714
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1498.684
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

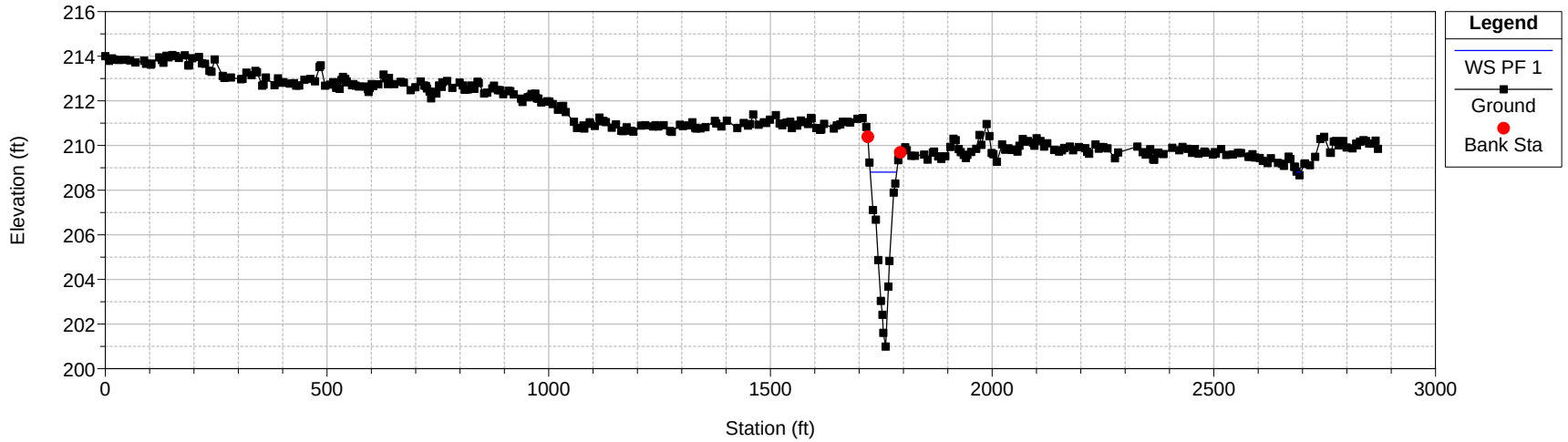

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1250.347
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015
Geom: AdamsProposed Flow: Prop_Profiles
River = AdamsBarranca Reach = Reach1 RS = 1001.841
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

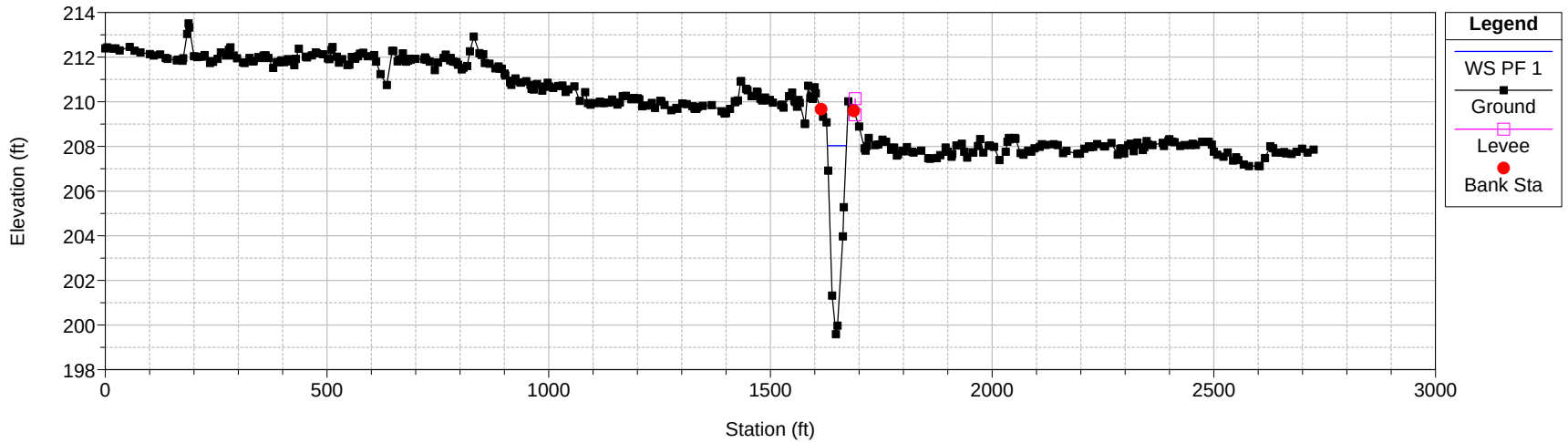
River = AdamsBarranca Reach = Reach1 RS = 748.9206



4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

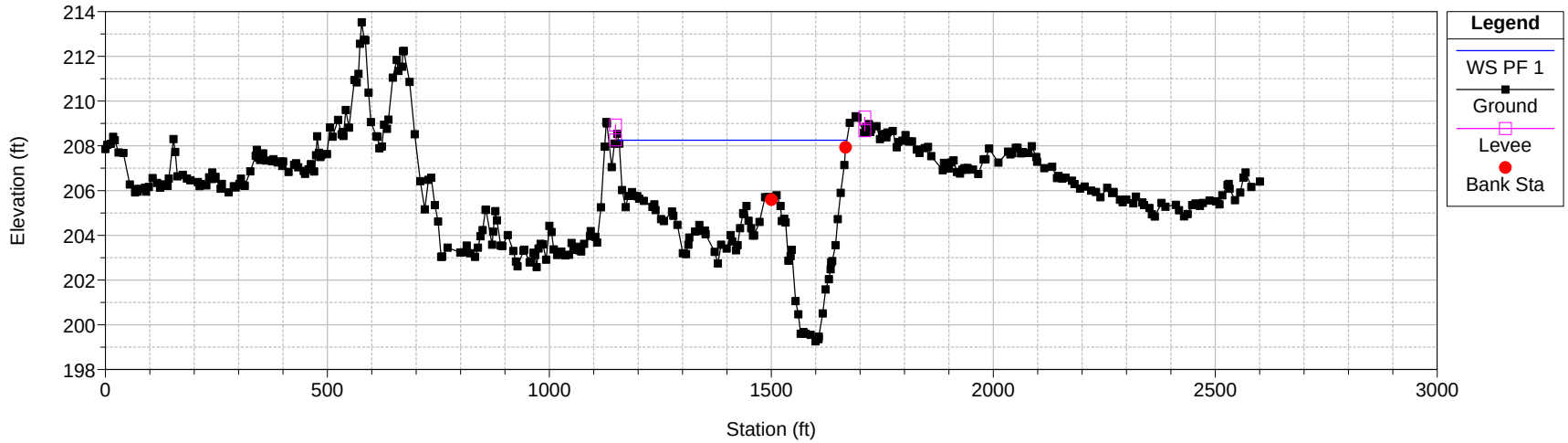
River = AdamsBarranca Reach = Reach1 RS = 502.0116



4492_AdamsBarranca Plan: Prop_AdamsBarranca 11/17/2015

Geom: AdamsProposed Flow: Prop_Profiles

River = AdamsBarranca Reach = Reach1 RS = 249.222



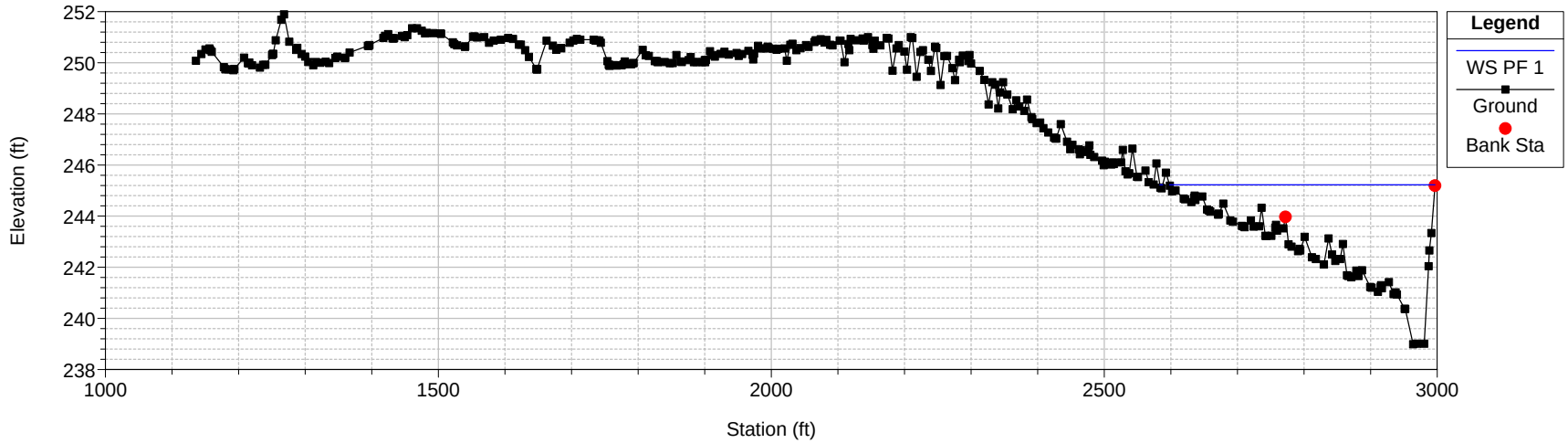
HEC-RAS Plan: PropEast River: AdamsBarranca Reach: propLOB Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
propLOB	5653.369	PF 1	2177.00	238.99	245.23		245.31	0.000609	2.43	1000.34	402.72	0.23
propLOB	5484.759	PF 1	2177.00	236.98	244.13		244.98	0.008736	7.38	294.83	113.64	0.81
propLOB	5288.458	PF 1	2177.00	234.97	241.82	241.82	242.72	0.015840	7.59	286.64	166.72	1.02
propLOB	5002.825	PF 1	2177.00	231.98	238.07	238.07	238.09	0.000366	1.53	1794.24	986.02	0.16
propLOB	4286.143	PF 1	2637.00	224.96	231.69	231.69	232.80	0.011024	8.43	313.46	150.02	0.99
propLOB	4095.103	PF 1	2637.00	222.98	230.11	227.76	230.85	0.004801	6.89	382.53	69.84	0.52
propLOB	3408.064	PF 1	2637.00	223.45	226.82	226.82	228.10	0.003283	9.06	290.91	115.18	1.01
propLOB	3194.191	PF 1	2637.00	221.41	222.97	222.97	223.35	0.019430	4.99	528.84	682.16	1.00
propLOB	2863.473	PF 1	2637.00	217.88	219.49	219.12	219.68	0.005857	3.49	755.78	678.15	0.58
propLOB	2308.391	PF 1	2637.00	213.72	216.73	216.30	216.85	0.004401	2.80	941.49	949.06	0.50
propLOB	1672.413	PF 1	2637.00	204.49	214.10	213.57	214.24	0.003812	3.04	918.69	932.56	0.49
propLOB	910.8447	PF 1	2637.00	199.57	206.31	206.31	208.46	0.019372	11.76	224.21	51.98	1.00
propLOB	425.6386	PF 1	2637.00	201.50	206.40	203.84	206.48	0.001001	2.21	1193.09	386.80	0.22

4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

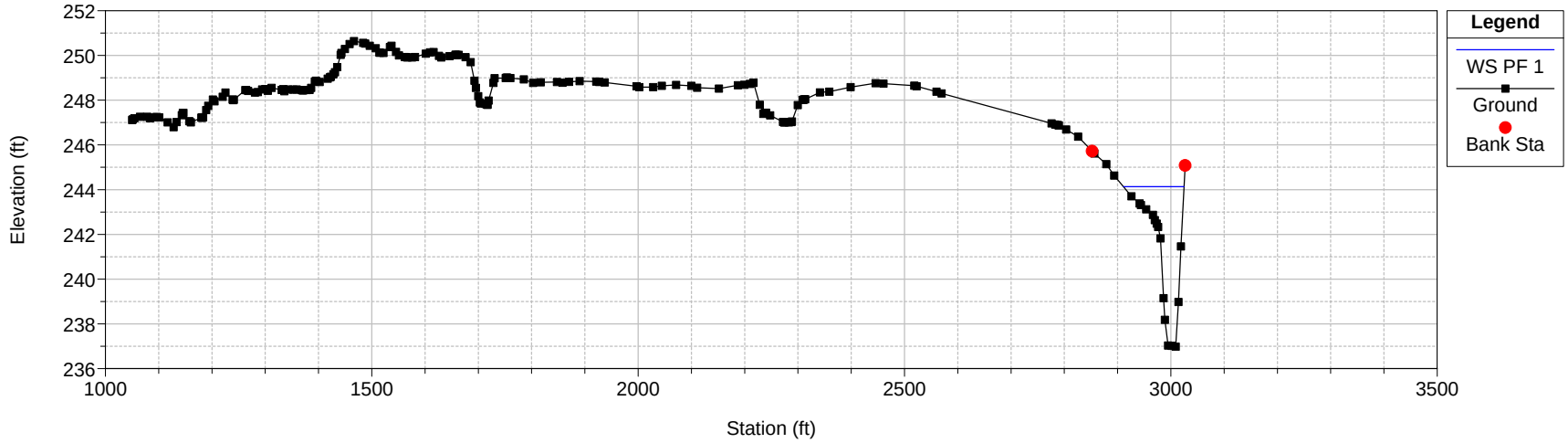
River = AdamsBarranca Reach = propLOB RS = 5653.369

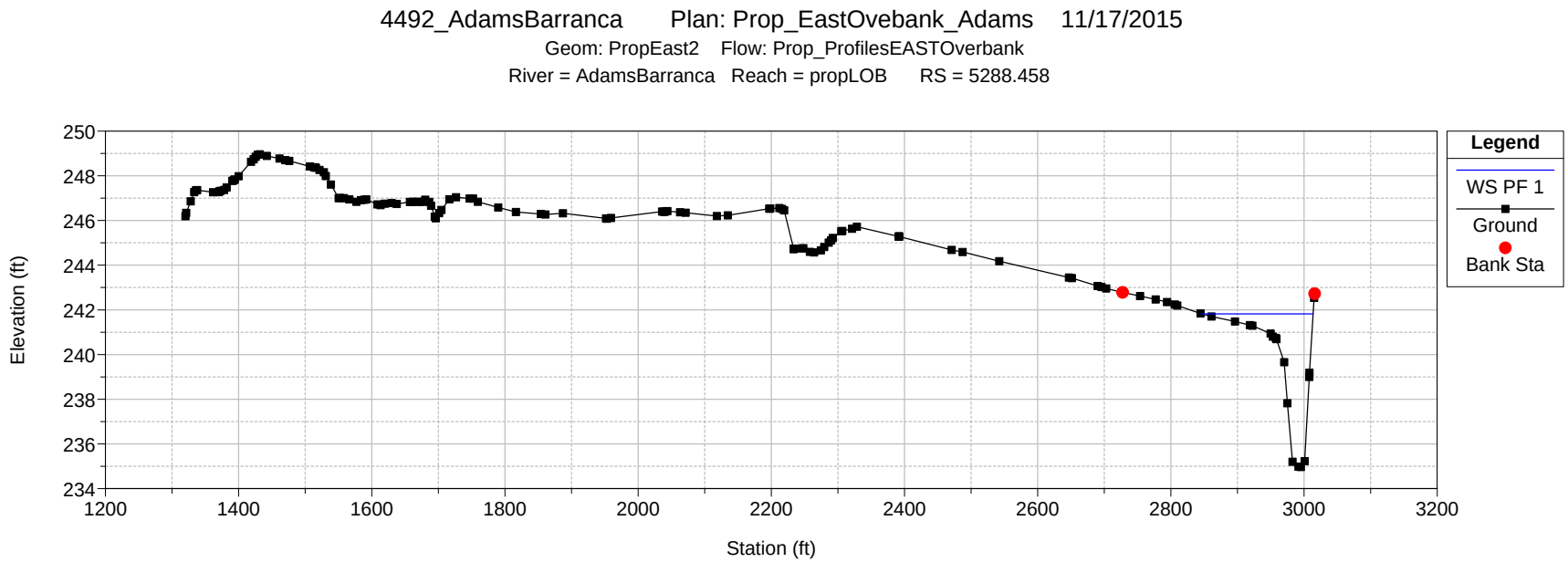


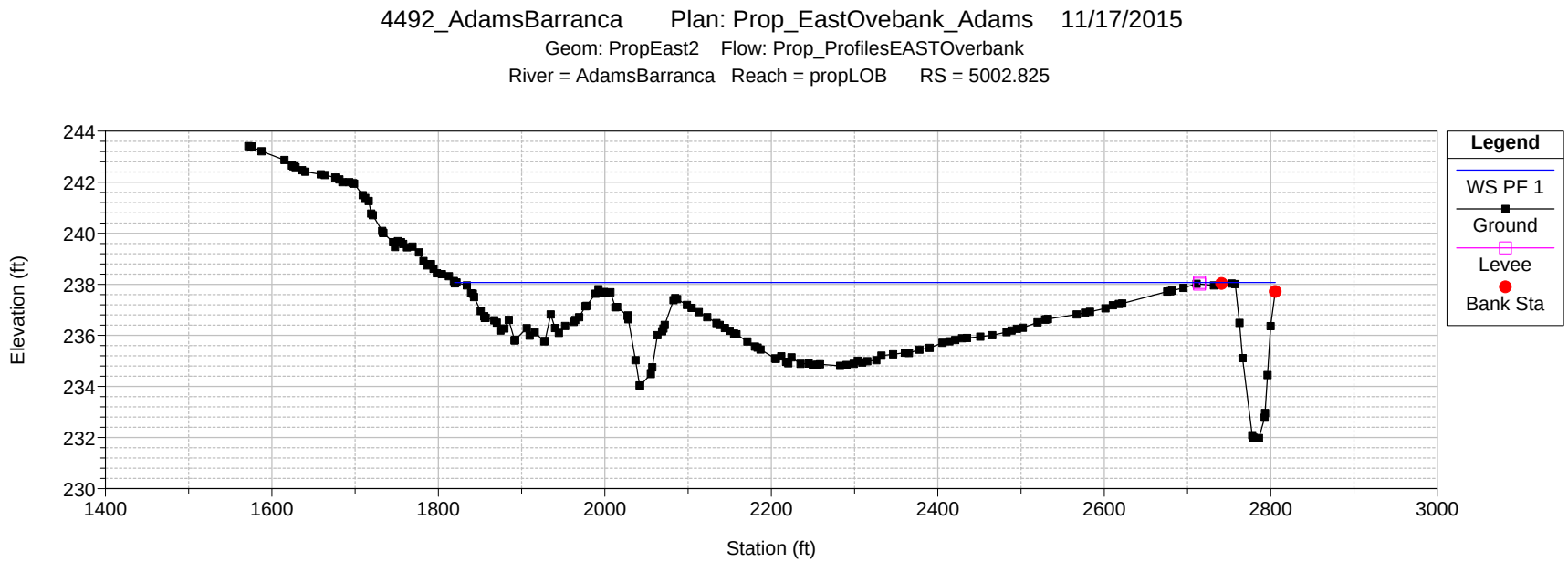
4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

River = AdamsBarranca Reach = propLOB RS = 5484.759



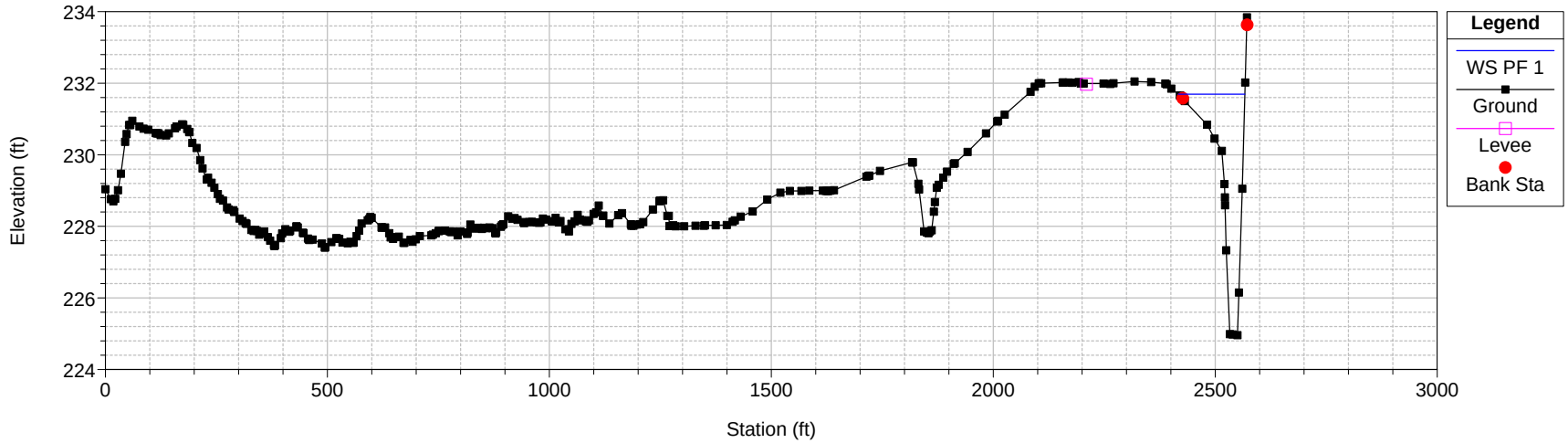

4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank
River = AdamsBarranca Reach = propLOB RS = 5288.458
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank
River = AdamsBarranca Reach = propLOB RS = 5002.825
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta

4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

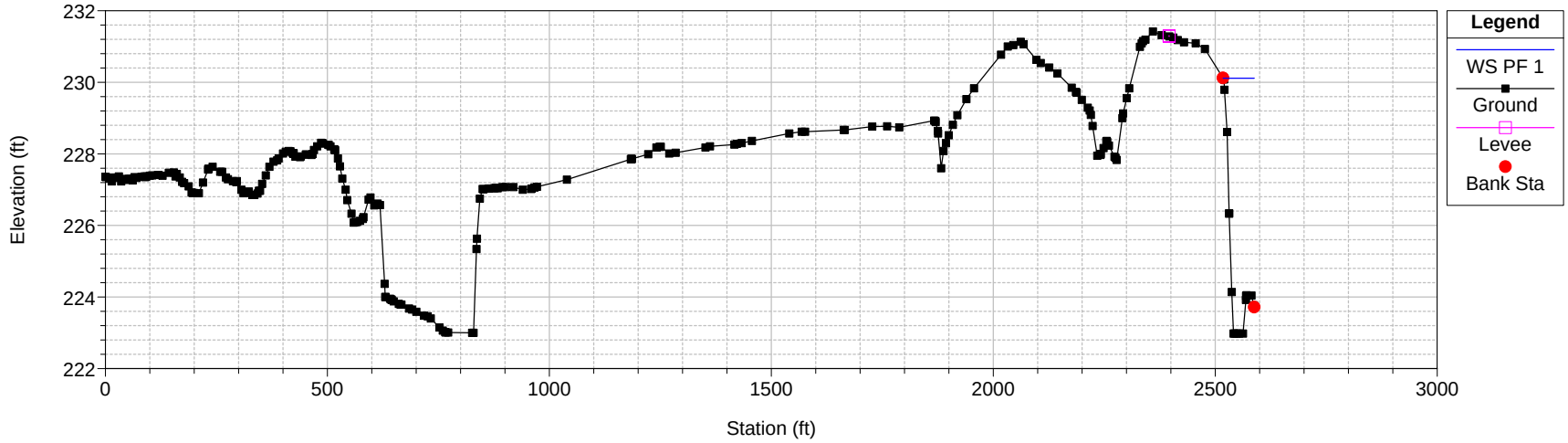
River = AdamsBarranca Reach = propLOB RS = 4286.143



4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

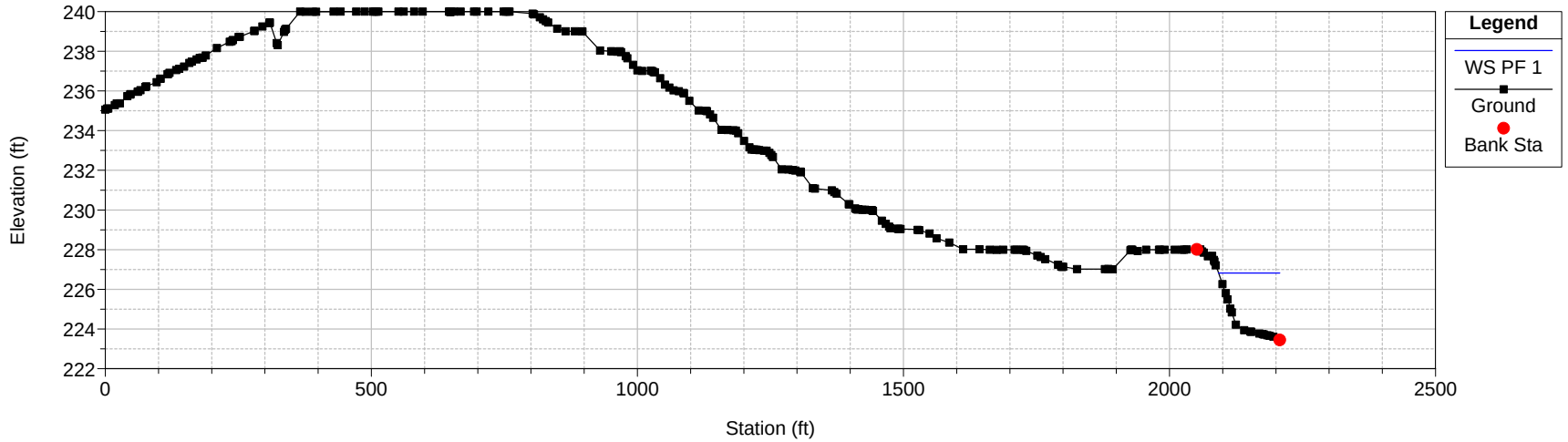
River = AdamsBarranca Reach = propLOB RS = 4095.103



4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

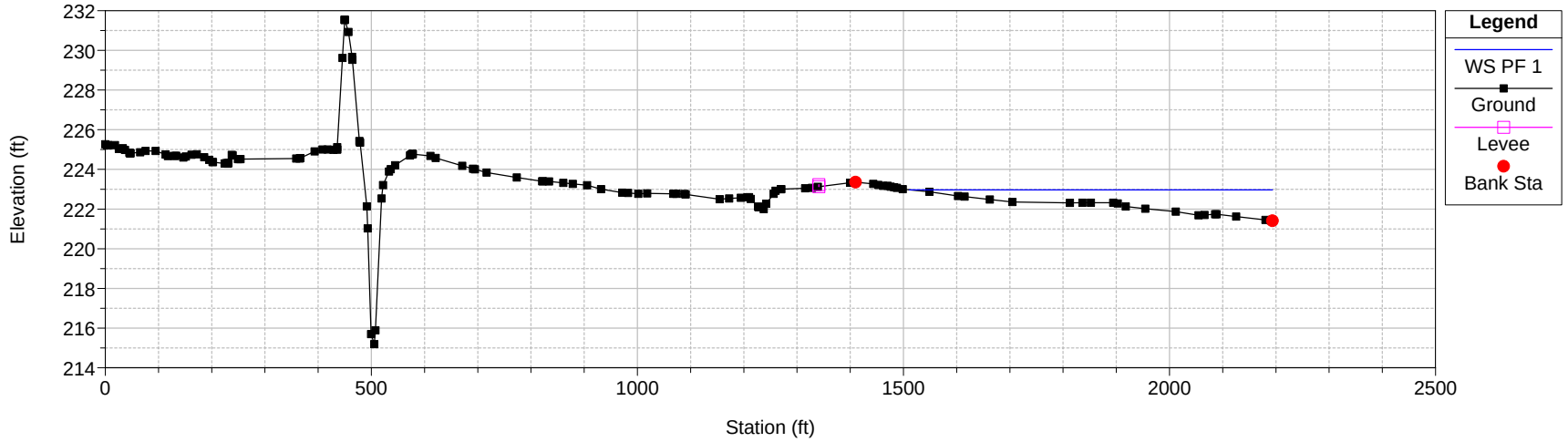
River = AdamsBarranca Reach = propLOB RS = 3408.064

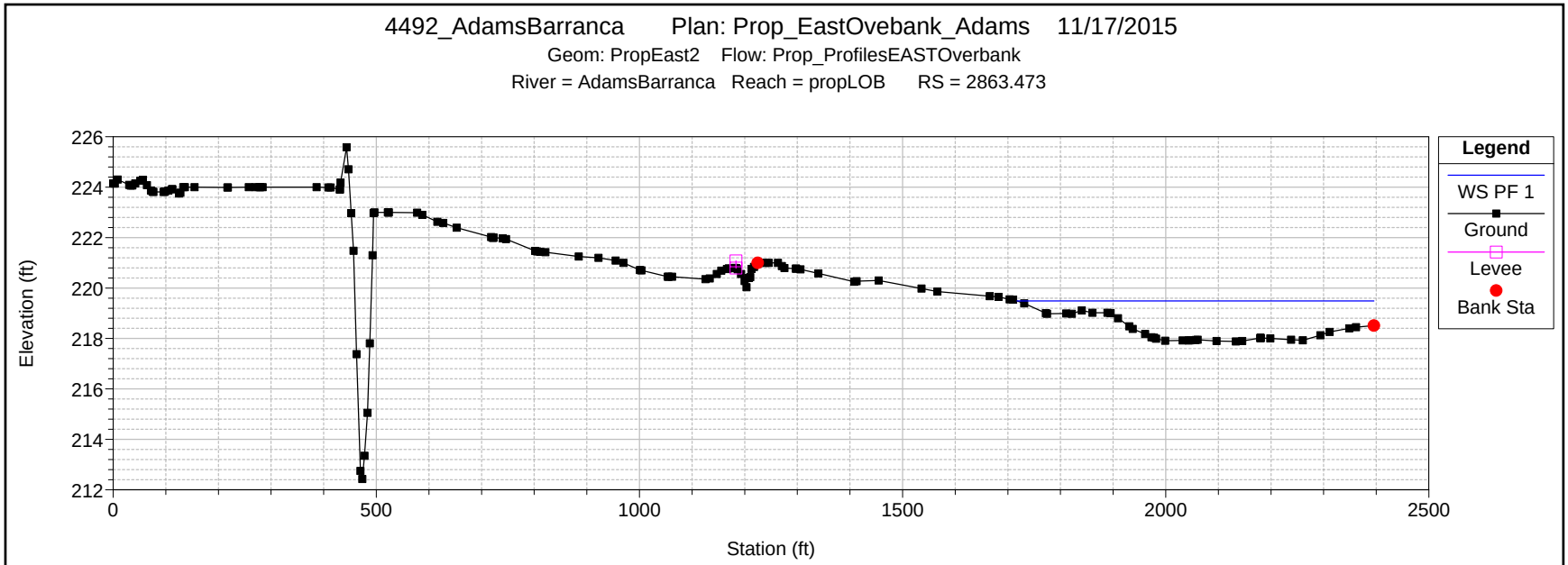


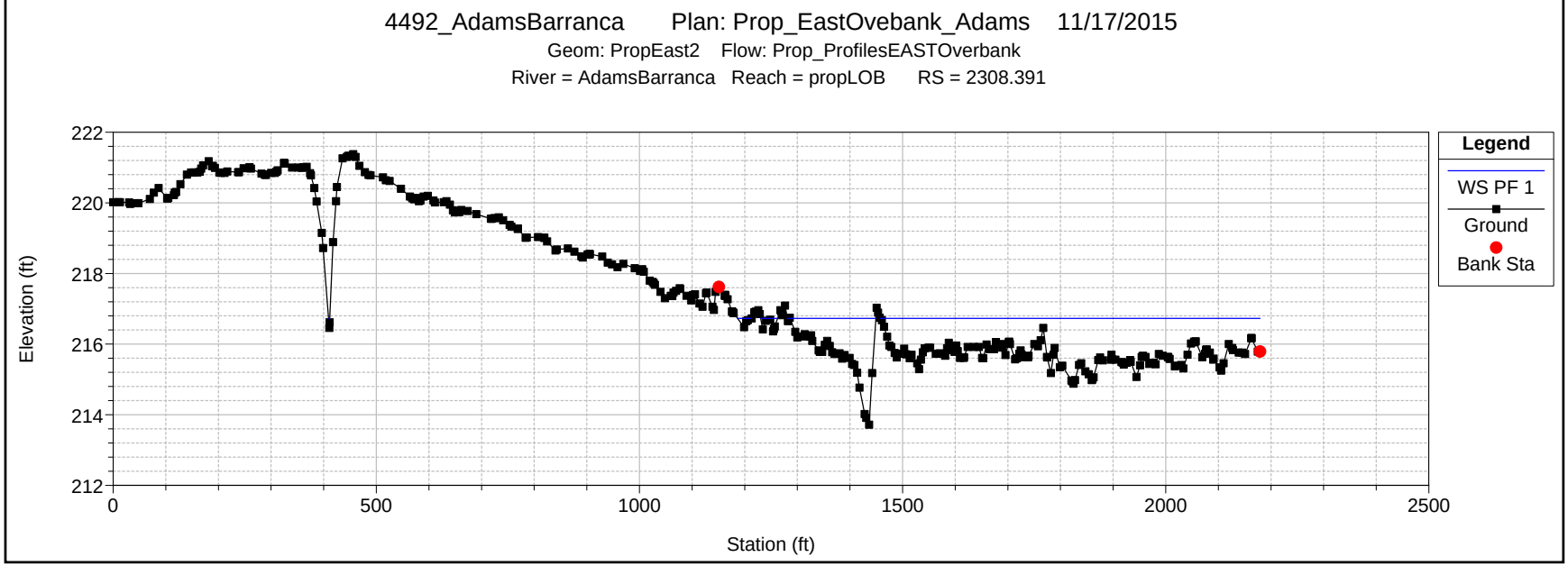
4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

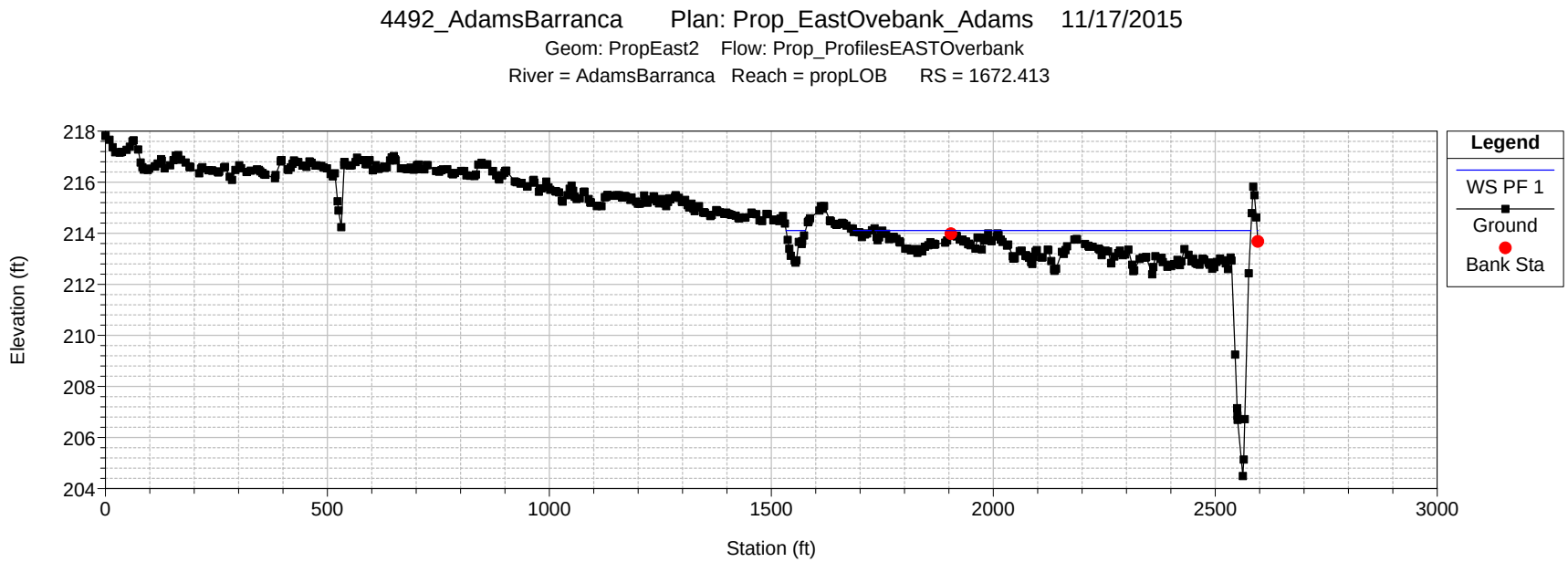
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

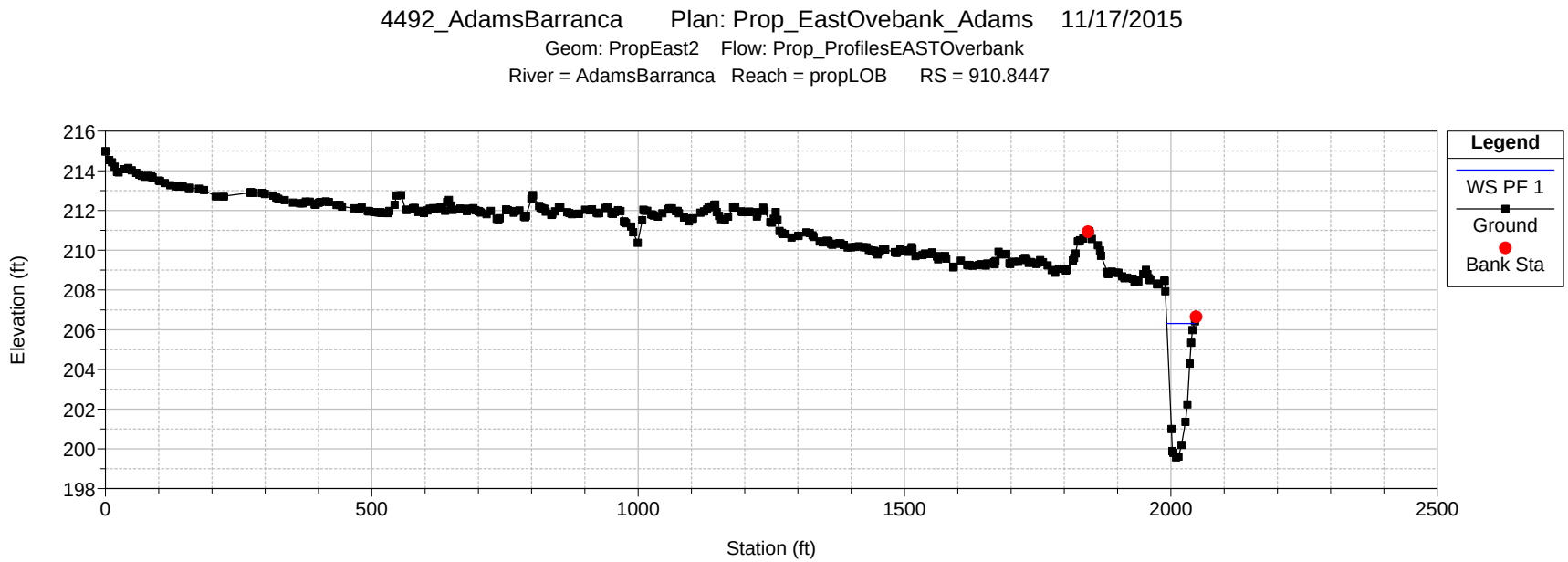
River = AdamsBarranca Reach = propLOB RS = 3194.191




4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank
River = AdamsBarranca Reach = propLOB RS = 2863.473
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Levee
Bank Sta


4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank
River = AdamsBarranca Reach = propLOB RS = 2308.391
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

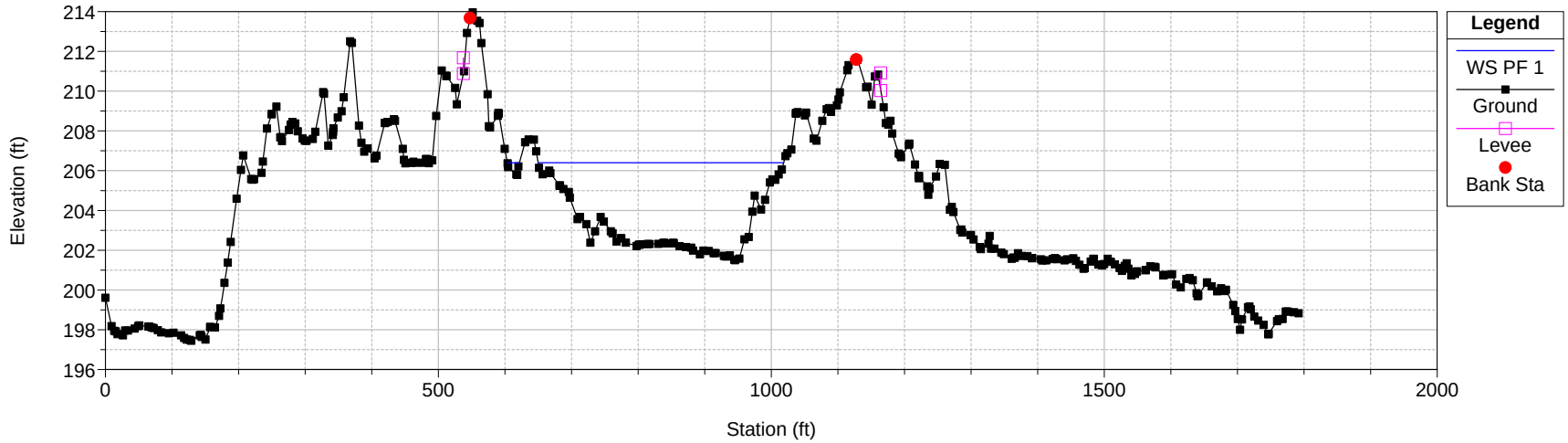

4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank
River = AdamsBarranca Reach = propLOB RS = 1672.413
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015
Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank
River = AdamsBarranca Reach = propLOB RS = 910.8447
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

4492_AdamsBarranca Plan: Prop_EastOvebank_Adams 11/17/2015

Geom: PropEast2 Flow: Prop_ProfilesEASTOverbank

River = AdamsBarranca Reach = propLOB RS = 425.6386



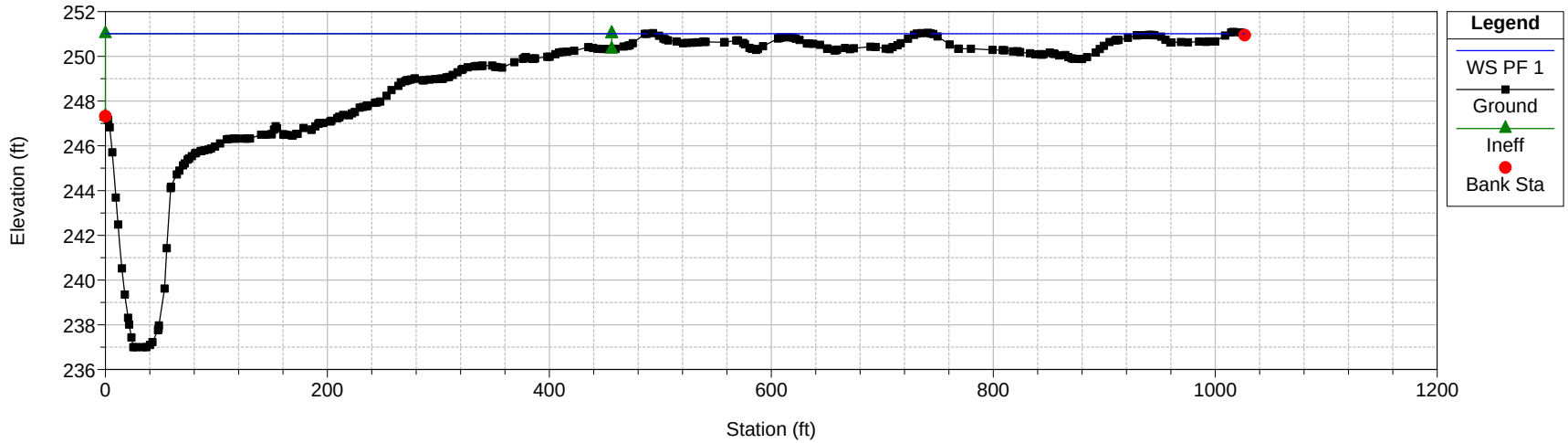
HEC-RAS Plan: Prop_ROB River: AdamsBarranca Reach: ROB Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
ROB	4876.64	PF 1	1348.00	237.00	251.01	251.01	251.02	0.000057	0.65	2067.35	994.77	0.08
ROB	4369.222	PF 1	1348.00	234.00	242.54		242.75	0.003262	3.67	366.95	227.34	0.51
ROB	4130.314	PF 1	1348.00	233.00	242.57	242.57	242.58	0.000169	0.92	1469.12	720.39	0.11
ROB	4014.771	PF 1	1348.00	231.97	236.15	236.15	236.60	0.018570	5.39	250.22	318.14	1.00
ROB	3871.933	PF 1	1348.00	228.94	232.04	231.53	232.20	0.004677	3.16	427.09	666.61	0.52
ROB	3800.783	PF 1	1348.00	227.98	231.90	230.94	231.97	0.001898	2.20	613.50	992.03	0.34
ROB	3592.327	PF 1	2203.00	226.85	230.38	230.38	230.71	0.020840	4.61	478.30	941.84	1.01
ROB	3269.723	PF 1	2203.00	221.00	227.72	224.28	227.73	0.000050	0.58	3769.66	1417.18	0.06
ROB	2837.474	PF 1	2203.00	218.22	227.72	221.41	227.72	0.000006	0.31	7089.13	1367.09	0.02
ROB	2537.857	PF 1	2203.00	225.08	227.20	227.20	227.67	0.002601	5.51	399.64	434.31	1.01
ROB	2157.755	PF 1	2203.00	212.65	215.06	214.37	215.16	0.002560	2.52	873.91	691.96	0.39
ROB	1945.575	PF 1	2203.00	211.33	214.50	213.98	214.59	0.002892	2.30	959.34	965.38	0.40
ROB	1526.76	PF 1	2203.00	208.00	213.30	212.83	213.37	0.002885	2.15	1026.43	1153.33	0.40
ROB	1028.893	PF 1	2203.00	203.26	212.02	211.46	212.08	0.002338	2.01	1097.32	1171.15	0.36
ROB	549.033	PF 1	2203.00	200.74	209.27	209.27	209.51	0.021938	3.98	553.26	1160.58	0.99
ROB	272.1645	PF 1	2203.00	199.75	208.17	206.98	208.21	0.001001	1.53	1440.42	1280.12	0.24

4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

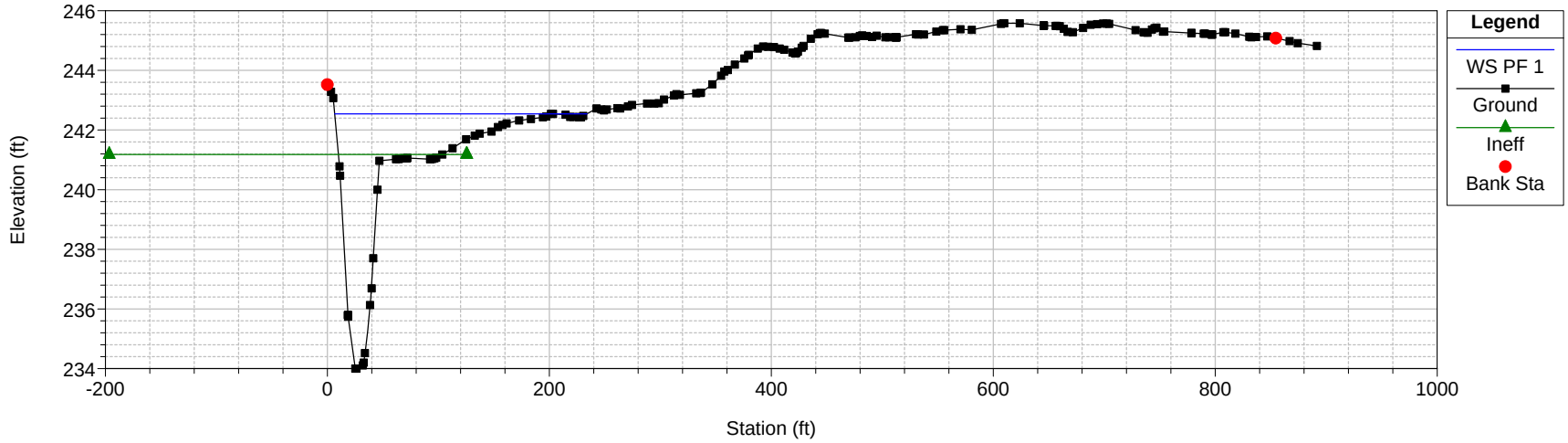
River = AdamsBarranca Reach = ROB RS = 4876.64

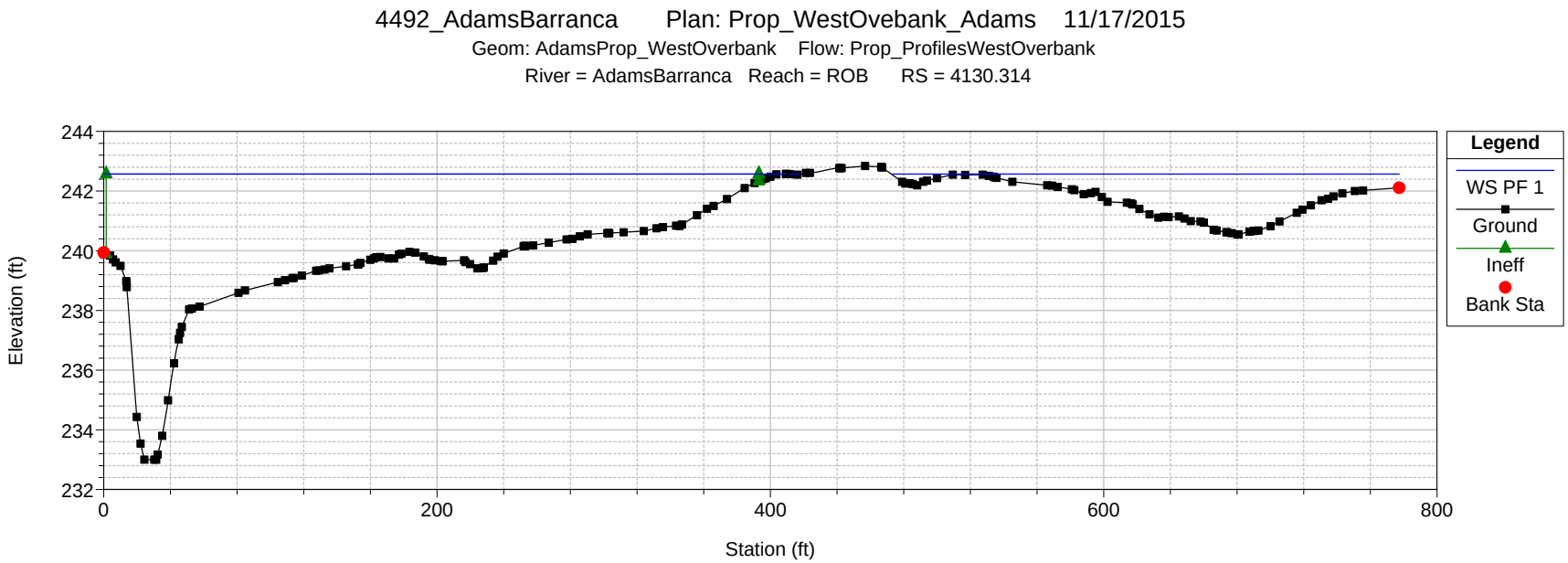


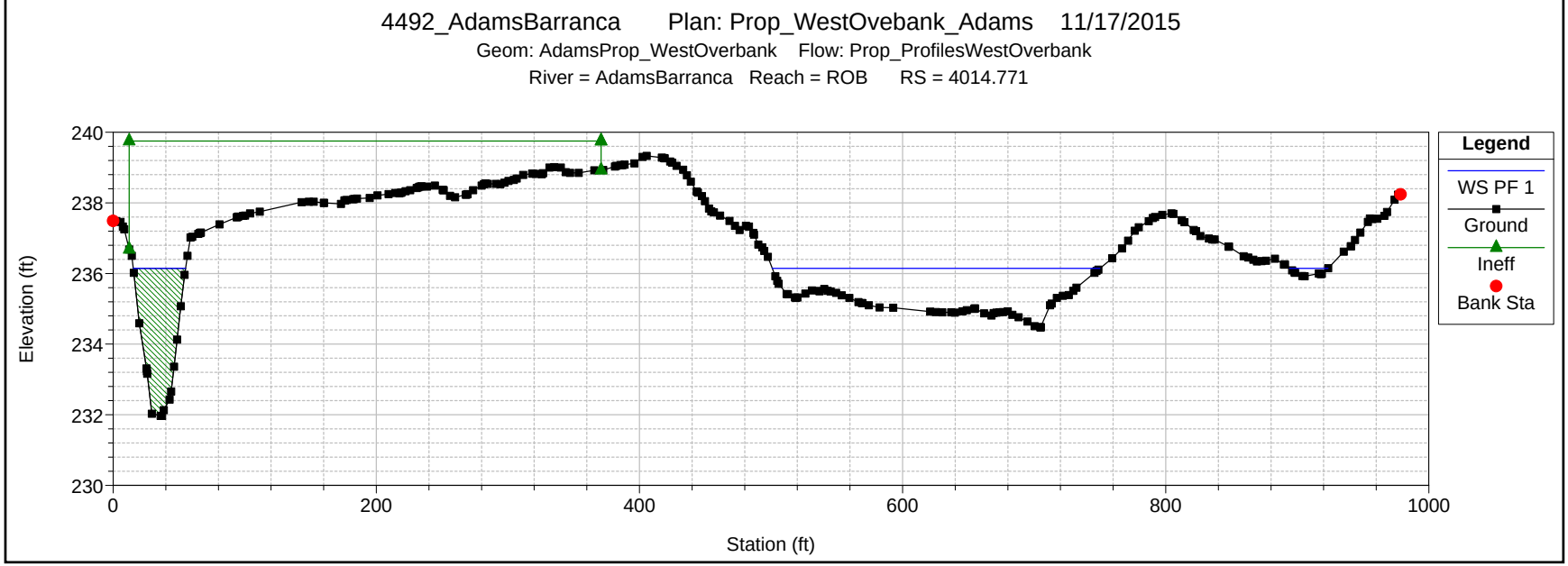
4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

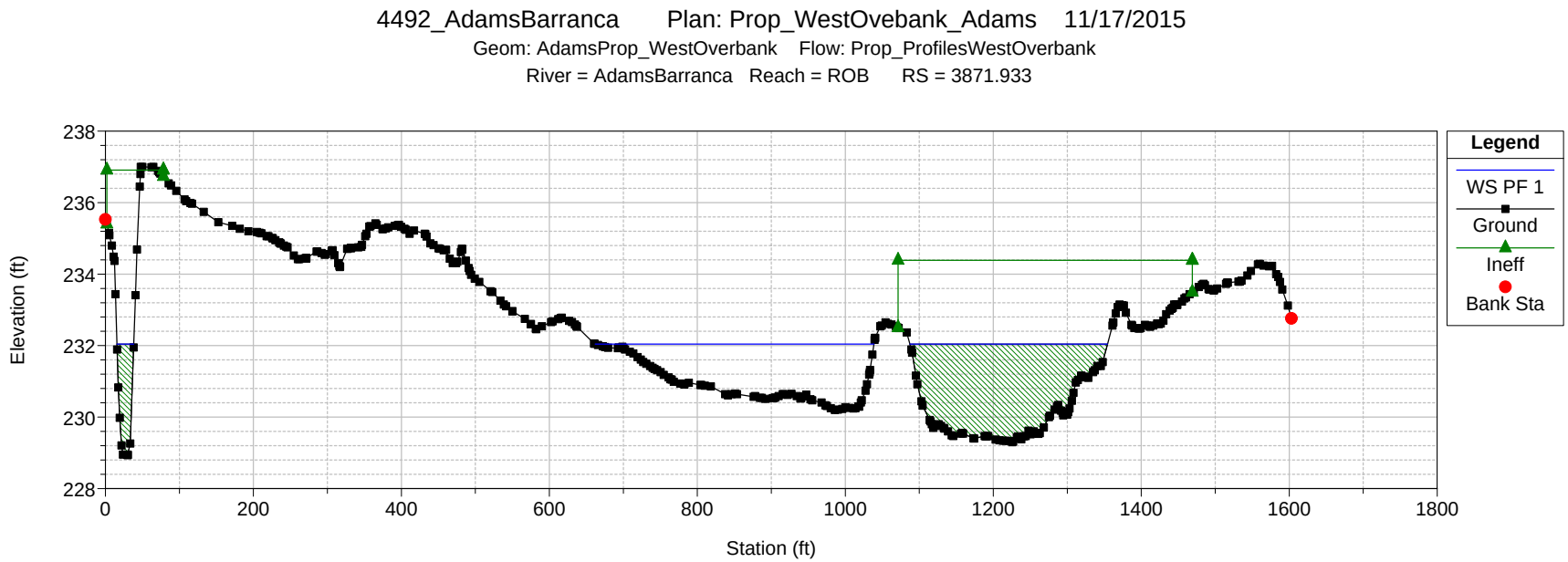
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

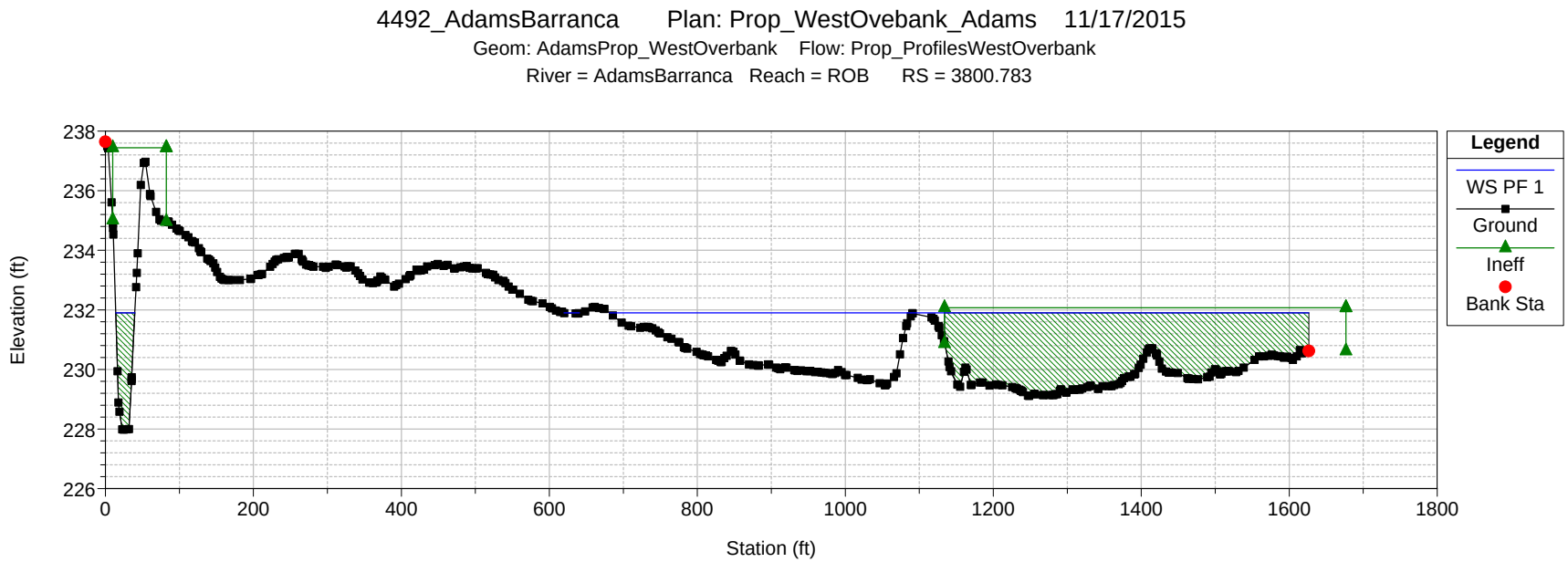
River = AdamsBarranca Reach = ROB RS = 4369.222

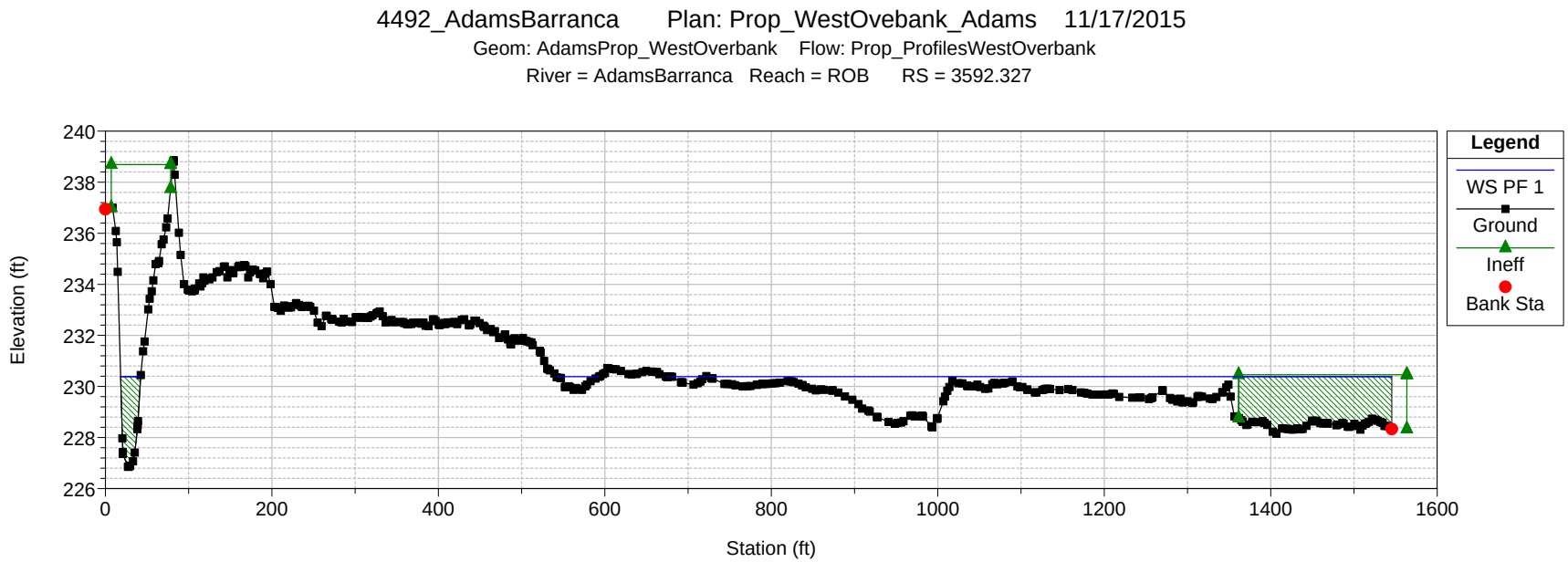


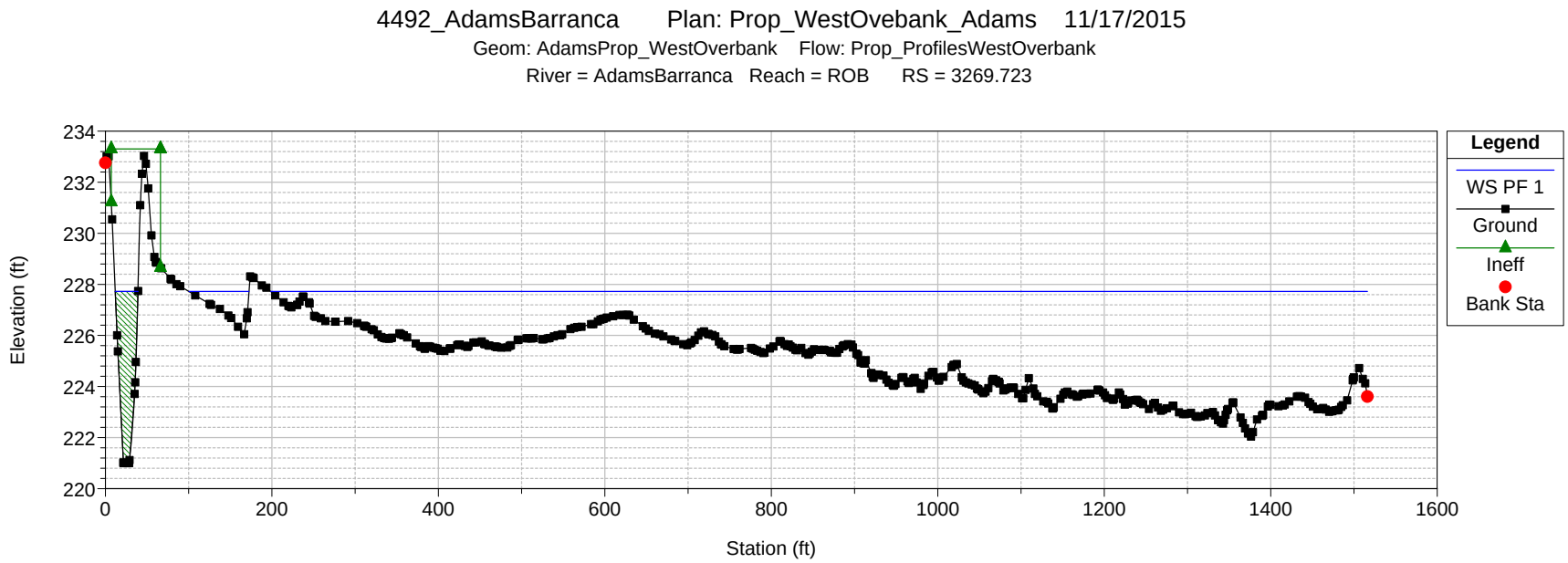

4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 4130.314
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

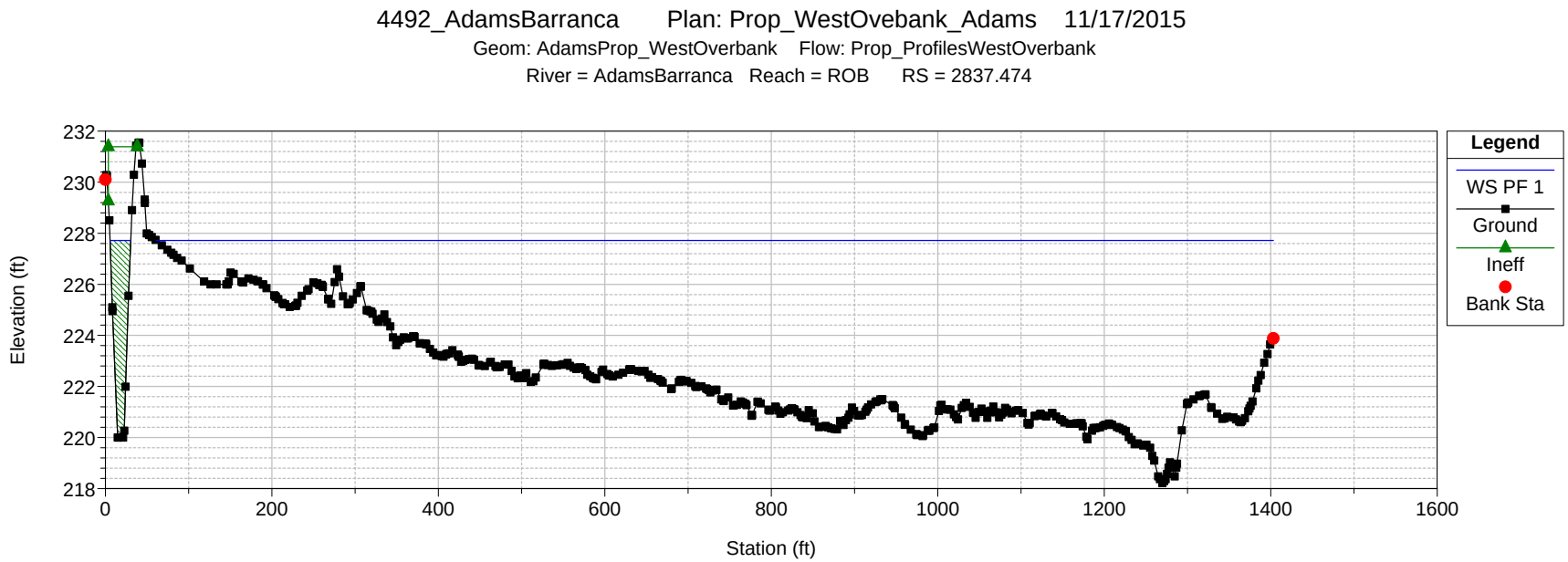

4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 4014.771
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

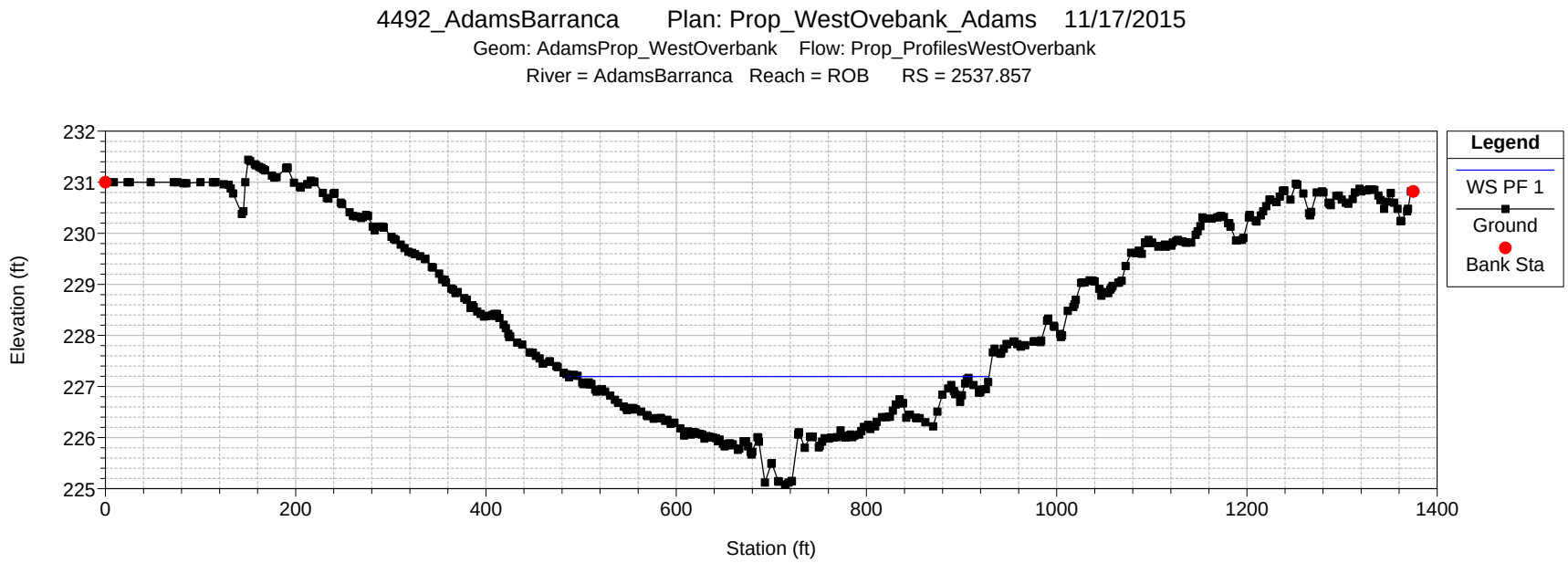

4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 3871.933
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 3800.783
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 3592.327
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 3269.723
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

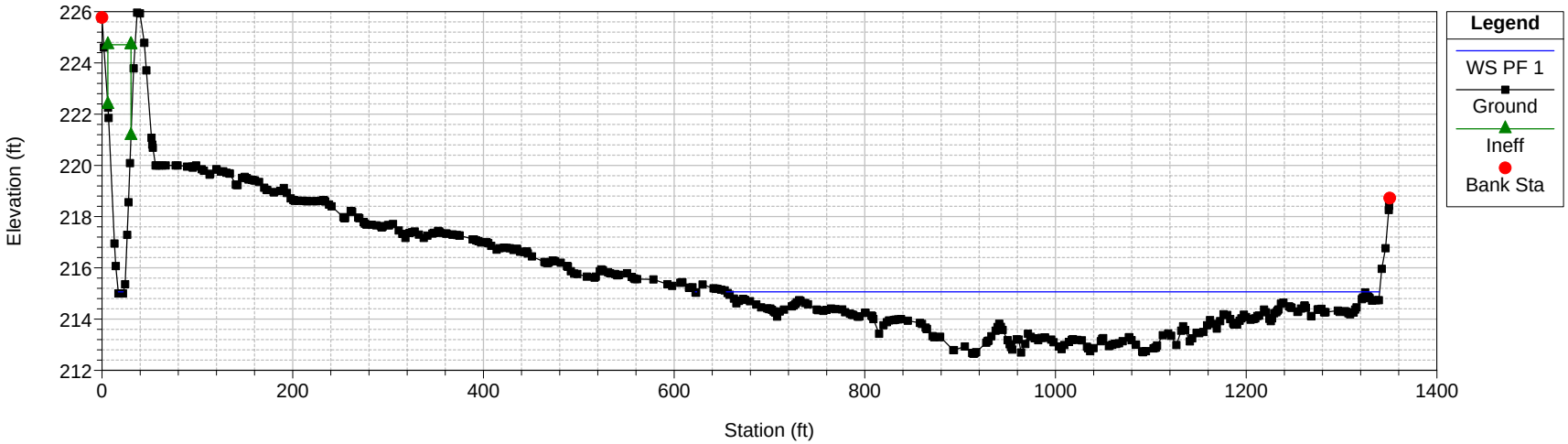

4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 2837.474
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015
Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank
River = AdamsBarranca Reach = ROB RS = 2537.857
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

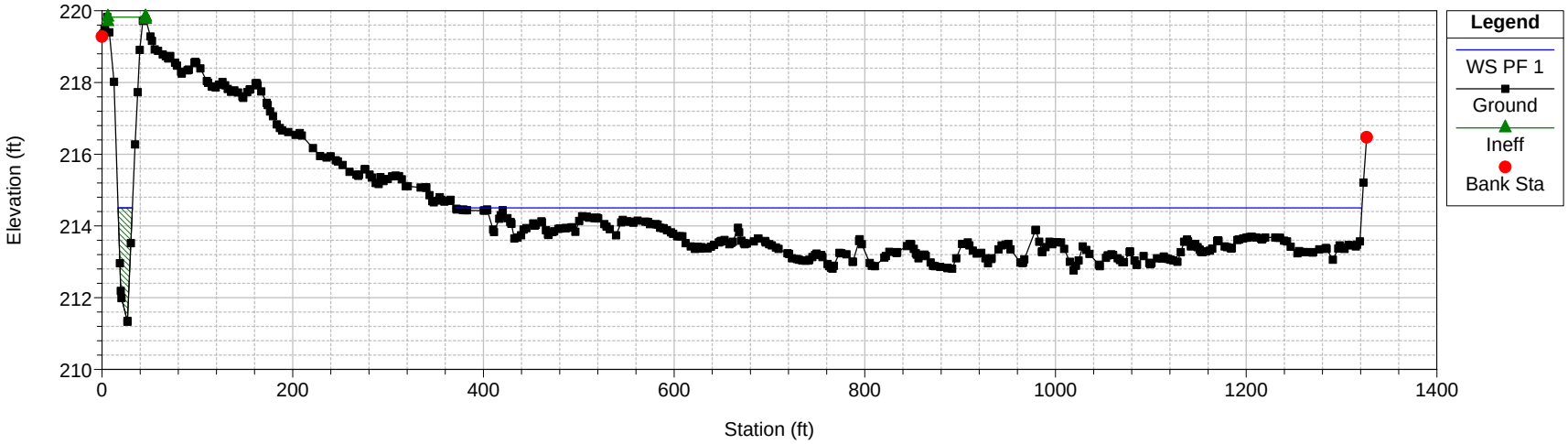
River = AdamsBarranca Reach = ROB RS = 2157.755



4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

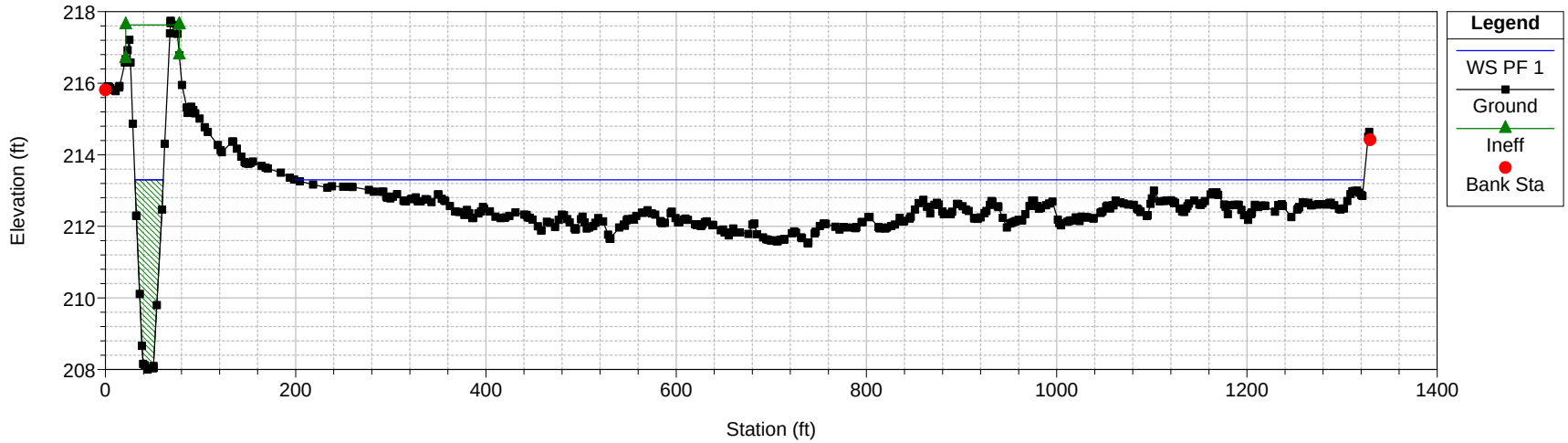
River = AdamsBarranca Reach = ROB RS = 1945.575



4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

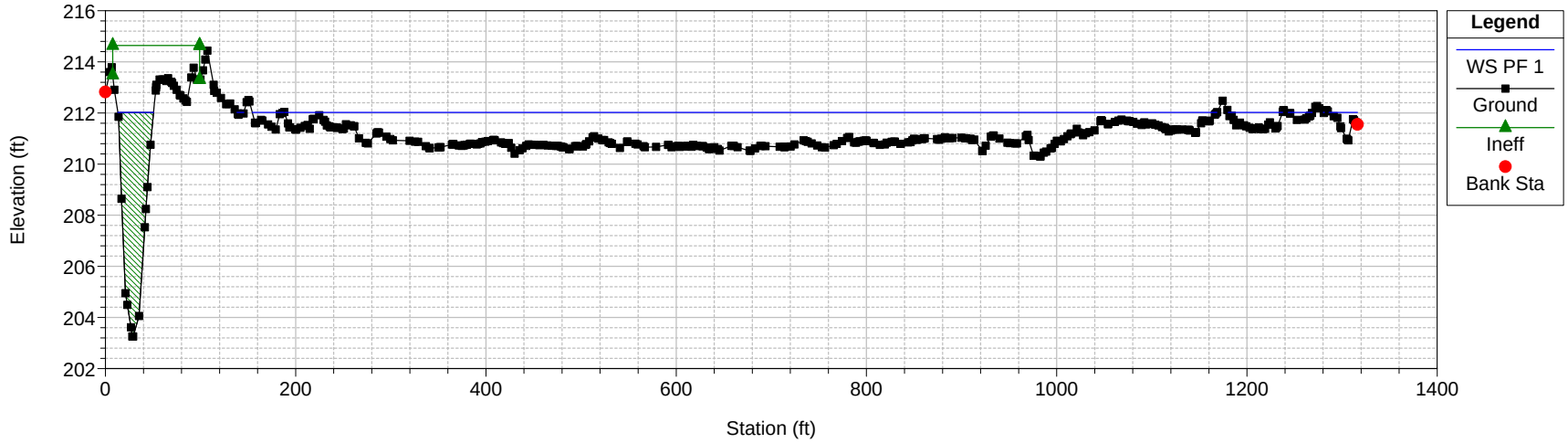
River = AdamsBarranca Reach = ROB RS = 1526.76



4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

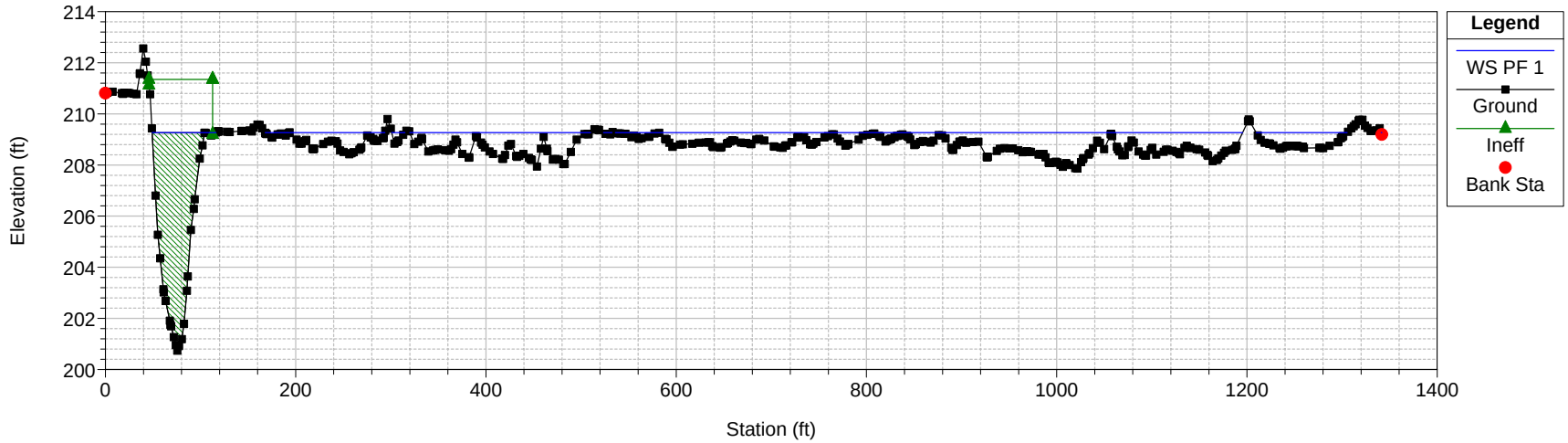
River = AdamsBarranca Reach = ROB RS = 1028.893



4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

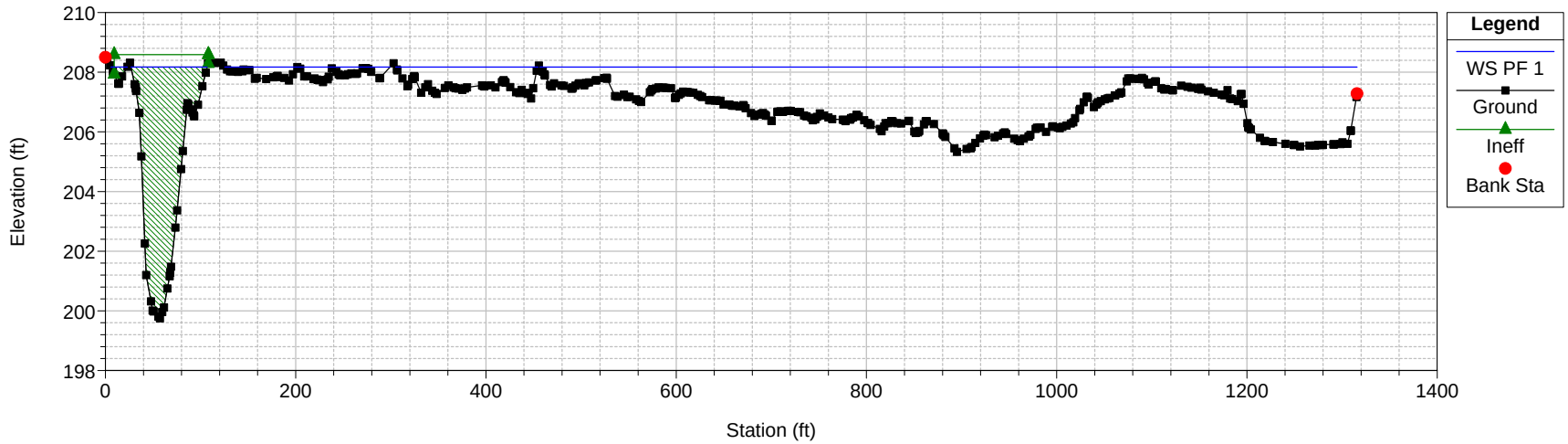
River = AdamsBarranca Reach = ROB RS = 549.033

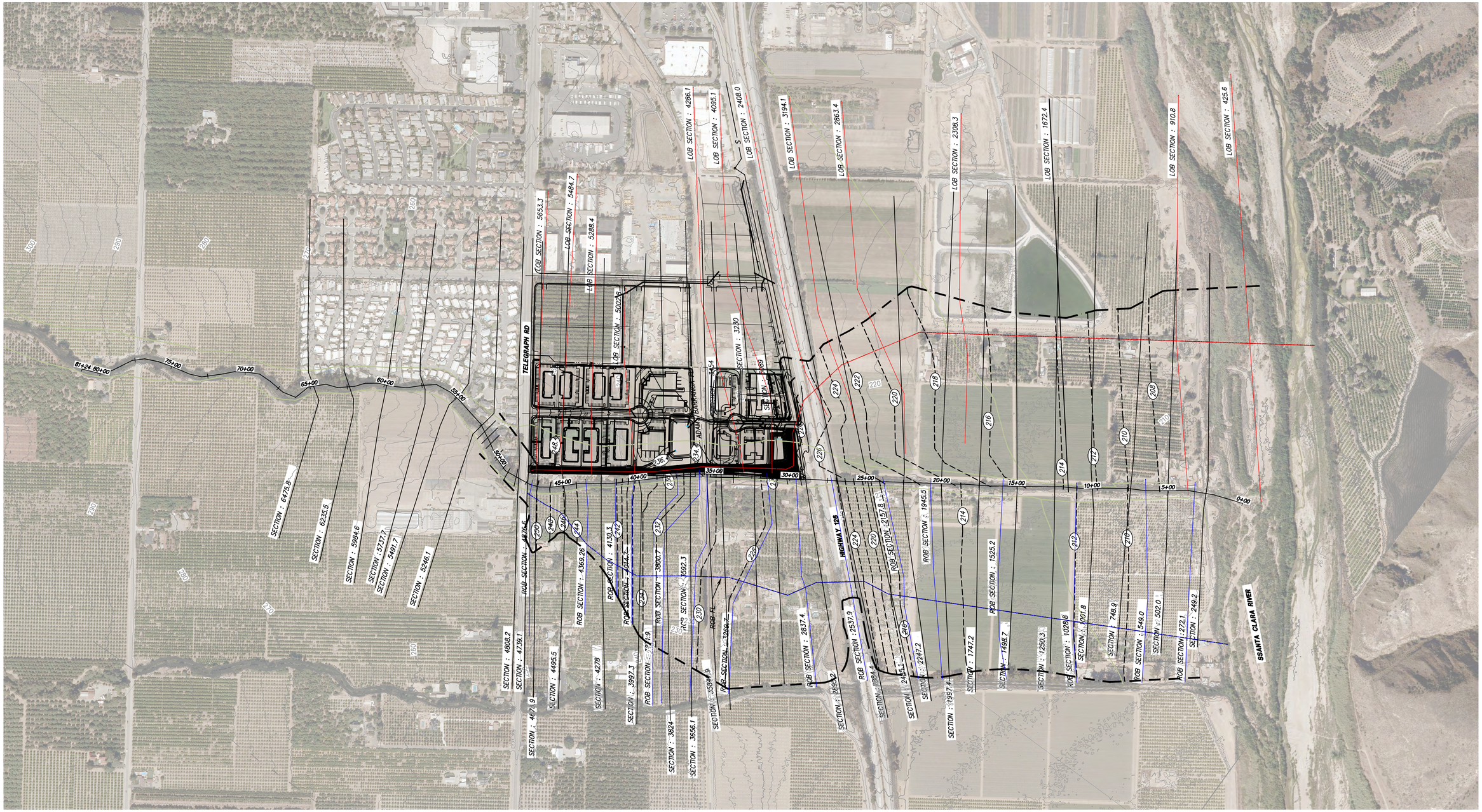


4492_AdamsBarranca Plan: Prop_WestOvebank_Adams 11/17/2015

Geom: AdamsProp_WestOverbank Flow: Prop_ProfilesWestOverbank

River = AdamsBarranca Reach = ROB RS = 272.1645





LEGEND

- 100 YEAR FLOODPLAIN ZONE AO LIMITS (Q=5,861 CFS)
- 100 YEAR FLOODPLAIN ZONE AO
- 100 YEAR CHANNEL FLOODZONE LIMITS
- FEMA 100 YEAR FLOODPLAIN PER FIRM PANEL No. 0604130755C
- (200) 100 YEAR WATER SURFACE ELEVATION
- (200) PROPOSED CONTOUR
- 200 EXISTING CONTOUR
- PROPERTY LINE

NOTE:

INFORMATION SHOWN HEREON, SUCH AS ASSESSOR'S PARCEL LINES & NUMBERS ARE PROVIDED BY THE COUNTY OF VENTURA GEOGRAPHIC INFORMATION SYSTEMS AND IS NOT BASED ON A FIELD SURVEY. ADDITIONAL EASEMENTS OF RECORD NOT SHOWN ON THIS MAP MAY EXIST AS A TITLE REPORT WAS NOT PROVIDED FOR THIS PROJECT. THIS DATA IS FOR CONCEPTUAL AND VISUAL PURPOSES ONLY AND IS NOT TO BE USED FOR MAPPING AND/OR FINAL DESIGN.

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

SCALE: 1" = 300' | J.N.: ____

DATE: 8/27/2012 | DWG. NAME: 4492 EX-FLOOD PLAIN_WorkMap.dwg

EXHIBIT B
PROPOSED FLOODPLAIN
ADAMS BARRANCA

SANTA PAULA

COUNTY OF VENTURA | STATE OF CALIFORNIA

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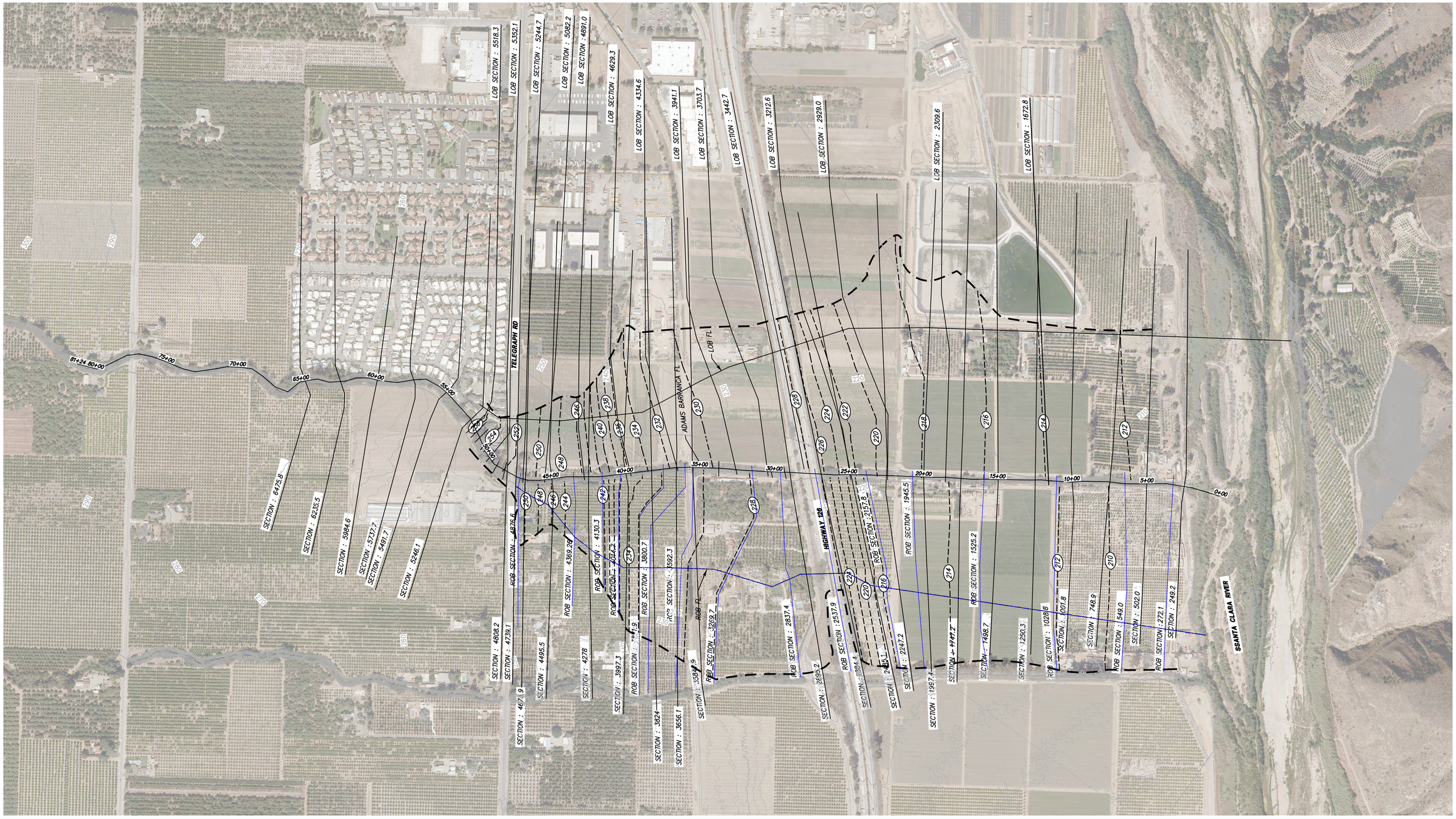

LEGEND

- 100 YEAR FLOODPLAIN ZONE AO LIMITS (Q=5,861 CFS)
- 100 YEAR FLOODPLAIN ZONE AO
- 100 YEAR CHANNEL FLOODZONE LIMITS
- FEMA 100 YEAR FLOODPLAIN PER FIRM PANEL No. 0604130755C
- (200) 100 YEAR WATER SURFACE ELEVATION
- (200) PROPOSED CONTOUR
- 200 EXISTING CONTOUR
- PROPERTY LINE

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SCALE: 1" = 300'	J.N.: ____
DATE: 8/27/2012	DWG. NAME: 4492 EX-FLOOD PLAIN_WorkMap.dwg

EXHIBIT A
EXISTING FLOODPLAIN
ADAMS BARRANCA

SANTA PAULA

COUNTY OF VENTURA STATE OF CALIFORNIA

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