GAVILAN PEAK FLOODPLAIN DELINEATION STUDY

Technical Data Notebook
Volume II of III

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APPENDIX D.1

HYDROLOGIC CALCULATIONS

HYDROLOGIC CALCULATIONS

D.1.1 Hydrologic Calculations

The peak 100-year flow rates used in this FDS were taken from RBF Consulting's *Hydrology Report – Gavilan Peak Watershed Floodplain Delineation Study*, completed under contract FCD 2008-C001. The date of this report is November 3, 2008.

RBF's full report has been included in this Appendix.

Comments by Michael Baker Corporation dated February 19, 2010 requested that the discharges in RBF's report be compared to the applicable envelope curves. A copy of this comparison has been placed in the Appendix prior to RBF's full report.

Digital copies of RBF's HEC-1 modeling has also been included in this Appendix. See the CD (folder Appendix D) at the front on this FDS for the files.

HYDROLOGIC CALCULATIONS

RBF'S HYDROLOGY REPORT FOR THE GAVLIAN PEAK WASH FLOODPLAIN DELINEATION STUDY

HYDROLOGY REPORT

GAVILAN PEAK WATERSHED FLOODPLAIN DELINEATION STUDY

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CONTRACT FCD 2008C001

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4.1 Method Description

The purpose of the hydrologic analysis is to provide peak flow data for the floodplain delineation of washes in the Gavilan Peak Watershed. Peak flows for both the 100-year 6-hour and 100-year 24-hour storms were computed using the U.S. Army Corps of Engineers' Flood Hydrograph Package HEC-1 Version 4.1, dated June 1998. Environmental Modeling Systems Incorporated's (EMS-I) Watershed Modeling System (WMS) version 7.1, dated March 10, 2005 was used to build the hydrological model using a 30 foot grid of elevation data and geographic information system (GIS) data provided by the Flood Control District of Maricopa County (FCDMC).

The Gavilan Peak Watershed has a drainage area of about 8.5 square miles, and is located near New River in the northern portion of Maricopa County, Arizona (Refer to Figure 4.1). It is located within portions of Township 7 North, Range 2 East (Sections 11, 12, 13, 14, 23, 24, 25, 26, 27, 34, 35, and 36) and Township 7 North, Range 3 East (Sections 7, 18, 19, 30, and 31). Gavilan Peak Watershed is a tributary of New River. This report is organized according to Arizona State Standard 1-97 *Instructions for Organizing and Submitting Technical Documentation for Flood Studies* developed by the Arizona Department of Water Resources (ADWR), Flood Mitigation Section, dated November, 1997 (ADWR, 1997).

4.2 Parameter Estimation

Hydrologic parameters were estimated using the FCDMC's methodology as outlined in *Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology* (Sabol et al., 1995). The following sections discuss the parameter estimation in detail.

4.2.1 Drainage Area Boundaries

Figure 4.2 and 4.3 show the sub-basin delineation for the Gavilan Peak Watershed with aerial photos and topo lines as their respective backgrounds. The drainage area is approximately 8.5 square miles. The watershed is bounded on the north by Table Mountain, on the south by Gavilan Peak, on the west by New River, on the east by the ridge west of Skunk Creek.

The majority of the sub-basin delineation was performed with the aid of WMS using a digital elevation model (DEM) produced from digital orthophotos, dated August 30, 2005. The grid spacing of the DEM is 30 feet and it has an accuracy of plus or minus one foot. A small portion of the upper watershed used a DEM produced from the 10 foot countywide contour data. The grid spacing of this DEM is 30 feet and it has an accuracy of plus or minus five feet.

Additional subdivision of the drainage areas was required for hydraulic modeling. The sub-basins were divided based on the concentration points or locations provided by the previous hydrology study prepared by the FCDMC. The watershed is divided into 46 sub-basins.

4.2.2 Watershed Work Maps

Figure 4.4 shows the sub-basin boundaries overlain on top of the soil map units, according to the Aguila-Carefree Area Parts of Maricopa and Pinal Counties, Arizona

Soil Survey. Figure 4.5 shows the land use designation. Figure 4.6 shows the longest watercourse used to calculate the basin lag time.

Figure 4.7 shows the sub-basin boundaries, confluence or concentration points, and routing reaches. Each sub-basin is labeled with a "B" and a number. The numbering for the sub-basins starts at the most downstream confluence with New River. The basin number increase going upstream. The concentration point for each sub-basin is labeled with a "CP" in front of the name of the upstream sub-basin. The routing reach is named by adding "R" to the reach downstream of the concentration point. Where two washes join together the combined flows uses the lower sub-basin concentration point with a "C" for combo.

4.2.3 Gage Data

There are no precipitation gages located within the watershed. Five FCDMC operating precipitation gages are located within a distance of less than three miles from the watershed boundary. Figure 4.8 shows the location of the FCDMC precipitation gages. One precipitation gage (FCDMC No. 5580 installed on 8/1/1981) at elevation of 2170 feet is about two and half miles from the southeast corner of the watershed boundary. The name of this gage is Cline Creek and is located in Section 33, Township 7 North Range 3 East (latitude: 33°54'3.5"; longitude: 112°03'17.9"). Based on historic data, there have been 67 storms with rainfall greater than 1.0 inch within 24 hours. There have been nine storms with rainfall greater than 2.0 inches within 24 hours. There have been two storms larger than 3.0 inches within 24 hours. The total annual rainfall depth at this gage ranges from 6.02 inches to 22.2 inches based on 26 years of records (1982-2007). The mean total annual rainfall depth is 11.37 inches.

Precipitation gage FCDMC No. 5625 installed on 6/10/1981 at an elevation of 1940 feet is about one and a quarter miles from the southwest corner of the watershed boundary. The name of this gage is Sunup Ranch and is located in Section 3, Township 6 North Range 2 East (latitude: 33°53'45.4"; longitude: 112°08'58.5"). Based on historic data, there have been 53 storms with rainfall greater than 1.0 inch within 24 hours. There have been seven storms with rainfall greater than 2.0 inches within 24 hours. There have been no storms greater than 3.0 inches within 24 hours. The total annual rainfall depth at this gage ranges from 3.46 inches to 19.49 inches based on 26 years of records (1982-2007). The mean total annual rainfall depth is 10.51 inches.

Precipitation gage FCDMC No. 5555 installed on 11/14/2001 at an elevation of 2390 feet is about one mile to the east of the watershed. The name of this gage is Fig Springs and is located in Section 17 of Township 7 North Range 3 East (latitude: 33°56'55.6"; longitude: 112°04'29.2"). Based on historic data, there have been 13 storms with rainfall greater than 1.0 inch within 24 hours. There have been two storms with rainfall greater than 2.0 inches within 24 hours. There have been no storms greater than 3.0 inches within 24 hours. The total annual rainfall depth at this gage ranges from 4.65 inches to 16.38 inches based on six years of records (2002-2007). The mean total annual rainfall depth is 10.76 inches.

Precipitation gage FCDMC No. 5585 installed on 6/28/2001 at an elevation of 2185 feet is about three quarters of a mile to the east of the watershed. The name of this gage is

Skunk Creek near New River and is located in Section 30 of Township 7 North Range 3 East (latitude: 33°55'34.1"; longitude: 112°04'57.6"). Based on historic data, there have been 20 storms with rainfall greater than 1.0 inch within 24 hours. There has been one storm with rainfall greater than 2.0 inches within 24 hours. There have been no storms greater than 3.0 inches within 24 hours. The total annual rainfall depth at this gage ranges from 4.13 inches to 14.53 inches based on six years of records (2002-2007). The mean total annual rainfall depth is 10.89 inches.

Precipitation gage FCDMC No. 5635 installed on 7/20/2005 at an elevation of 2485 feet is about one and three quarters of a miles northeast of the watershed. The name of this gage is New River Fire and is located in Section 4 of Township 7 North Range 3 East (latitude: 33°58'33.2"; longitude: 112°03'38.2"). Based on historic data, there have been five storms with rainfall greater than 1.0 inch within 24 hours. There has been one storm with rainfall greater than 2.0 inches within 24 hours. There have been no storms greater than 3.0 inches within 24 hours. The total annual rainfall depth at this gage ranges from 9.72 inches to 11.69 inches based on two years of records (2006-2007). The mean total annual rainfall depth is 10.71 inches.

There are no stream gages within the watershed. There are three FCDMC stream gages and two USGS stream gages near the Gavilan Peak Watershed. Figure 4.8 shows the location of these stream gages. FCDMC stream gage 5583 was installed November 20, 2001 at an elevation of 2171 feet is about two and half miles southeast of the watershed boundary. The name of this gage is Cline Creek and is located in Section 33 of Township 7 North Range 3 East (latitude: 33°54'2.5"; longitude: 112°03'18.3"). The peak flow for the period of record is 260 cfs.

FCDMC stream gage 5638 was installed July 18, 2005 at an elevation of 2470 feet is about one and three quarters mile northeast of the watershed boundary. The name of this gage is New River Fire and is located in Section 4 of Township 7 North Range 3 East (latitude: 33°58'33.6"; longitude: 112°03'38.4"). The peak flow for the period of record is 16,230 cfs.

FCDMC stream gage 5588 was installed June 21, 1995 at an elevation of 2188 feet is about three quarters of a mile east of the watershed boundary. The name of this gage is Skunk Creek near New River and is located in Section 29 Township 7 North Range 3 East (latitude: 33°55'34.5"; longitude: 112°04'58.1"). The peak flow for the period of record is 949 cfs.

One former USGS stream gage (09513800) in New River was located approximately 1 mile south of New River bridge on New River Road, and 2,200 feet south of the confluence of New River and Gavilan Peak Watershed. The latitude and longitude for this stream gage was 33°54'41" and 112°08'26", respectively. It was in Section 34 at Township 7 North and Range 2 East. There are twenty two years of runoff records (1961-1982) at this USGS stream gage (Garrett and Gelenbeck, 1991). The drainage area for this gage is 83.3 square miles. The mean basin elevation and main channel slope for this drainage area are 3,600 feet and 105 feet/mile, respectively. The annual peak discharge at the gage station ranges from 20 cfs (09-23-1981) to 19,500 cfs (09-05-1970). The 50-year and 100-year peak discharges estimated by using the

procedures in Water Resources Council Bulletin 17B (March 1982) are 28,300 cfs and 37,500 cfs, respectively (Garrett and Gelenbeck, 1991).

Another USGS stream gage (09513780) in New River (6 miles southeast of Rock Springs, AZ) is located approximately 0.6 miles north of the north boundary of Gavilan Peak Watershed. The latitude and longitude for this stream gage is 33°58'27" and 112°05'54", respectively. It is in Section 6 of Township 7 North and Range 3 East. There are twenty eight years of runoff records (1962-1989) at the USGS stream gage (09513780) in New River near Rock Spring (Garrett and Gelenbeck, 1991). The drainage area for this gage is 67.3 square miles. The mean basin elevation and main channel slope for this drainage area are 3,970 feet and 140 feet/mile, respectively. The annual peak discharge at the gage ranges from 4.0 cfs (08-16-1977) to 18,600 cfs (09-05-1970). The 50-year and 100-year peak discharges estimated by using the procedures in Water Resources Council Bulletin 17B (March 1982) are 25,600 cfs and 34,600 cfs, respectively (Garrett and Gelenbeck, 1991).

4.2.4 Statistical Parameters

Since there are no stream gages within the study watershed, the frequency analysis of Water Resources Council Bulletin 17B is not applicable to the study watershed.

4.2.5 Precipitation

4.2.5.1 Rainfall Depths

The National Oceanic and Atmospheric Administration (NOAA) Atlas 14 point rainfall depths were obtained from the NOAA National Weather Service (NWS) Precipitation Frequency Data Server. The mean precipitation values were used. The point rainfall depths of the 100-year 6-hour storm and 100-year 24-hour storm at the watershed centroid are 3.23 inches and 4.73 inches, respectively. The 100-year 24-hour NOAA Atlas 14 rainfall depth is the same as the 100-year 24-hour NOAA Atlas 2 rainfall depth used in the Upper New River Area Drainage Master Plan (ADMP).

The point rainfall depths are adjusted by areal reduction factors to develop the rainfall depths to be entered into WMS 7.1 and HEC-1 by using the JD records. The areal reduction factors for the 100-year 6-hour storm is performed by using the depth-area reduction curve developed from the historic storm of 1954 over the Queen Creek area (Figure 2.14 and Table 2.2 in Sabol et al.,1995). The areal reduction factors for the 100-year 24-hour storm is based on the depth-area curve in NOAA HYDRO-40 (Figure 15 in NOAA, 1984 or Table 2.1a in Sabol et al., 1995). Tables 4.1a and 4.1b list the adjusted rainfall depths for each drainage area size for the 6-hour and 24-hour, respectively.

Table 4.1a - Depth-Area Relation used in the 6-hour HEC-1 Model

Depth (in)	Area (sq mi)	Rainfall Distribution Pattern
3.23	0.01	1
3.21	0.5	1
3.15	2.8	2
2.98	16	3

Table 4.1b - 24-hour

Depth (in)	Area (sq mi)
4.73	0.01
4.49	10

4.2.5.2 Rainfall Distributions

The 6-hour rainfall distribution contains five dimensionless rainfall patterns documented in Sabol et al.(1995). Each pattern is associated with a drainage area size (Figure 2.17 in Sabol et al., 1995). The rainfall distributions are obtained from Table 2.4 in Sabol et al. (1995). More specifically, pattern numbers 1, 2, and 3 are used in this study. The rainfall distribution patterns are then imported into WMS 7.1. Each pattern (a set of PC records) follows each JD record which contains the adjusted rainfall depth and drainage area size. The 24-hour rainfall distribution is based on the SCS Type II distribution. It is entered into WMS 7.1 by using PC records. Unlike the 6-hour storm, the 24-hour rainfall distribution is not dependent on the drainage area size. Therefore, one set of PC records can be used for all JD records. The rainfall distributions can be found in the HEC-1 input files.

4.2.6 Physical Parameters

This section describes the methods used for estimation of the physical hydrologic parameters such as rainfall losses, the unit hydrograph, lag time, and routing.

4.2.6.1 Rainfall Losses

The Green-Ampt infiltration equations were used within HEC-1 to estimate rainfall losses according to the procedures outlined in Sabol et al. (1995). WMS was used to calculate the logarithmic area averages of the hydraulic conductivities of each map unit within each sub-basin. WMS also selects the wetting front capillary suction (PSIF) and soil moisture deficit (DTHETA) using the average XKSAT value. After PSIF and DTHETA are calculated the XKSAT value was adjusted for vegetative cover.

A GIS based soils map of data from the SCS (Now NRCS) Soil Surveys of Aguila-Carefree Area, Parts of Maricopa County and Pinal Counties, Arizona issued April 1986 was obtained from the FCDMC for input into WMS.

A table relating the Map Unit numbers to the XKSAT values was obtained from the FCDMC. Table 4.2 lists the map unit values that were input into WMS compute the rainfall losses.

Table 4.2- Soils Characteristics Used to Compute Green – Ampt Parameters

Soil ID	Description	XKSAT (in/hr)	% Impervious	% Effective
3	Antho-Carrizo-Maripo complex	0.58	0	100
6	Anthony-Arizo complex	0.62	0	100
8	Arizo cobbly sandy loam	0.96	0	100
10	Brios-Carrizo complex, 1 to 5 percent slopes	0.94	0	100
13	Carefree-Beardsley complex	0.01	0	100
22	Contine clay loam	0.04	0	100

Soil ID	Description	XKSAT (in/hr)	% Impervious	% Effective
24	Continental clay loam, 0 to 3 percent slopes	0.02	0	100
26	Continental cobbly clay loam, 1 to 8 percent slopes	0.01	0	100
28	Continental-Ohaco complex	0.02	0	100
34	Eba very gravelly loam, 8 to 20 percent slopes	0.23	0	100
40	Eba-Pinaleno complex, 3 to 20 percent slopes	0.17	0	100
41	Eba-Pinaleno complex, 20 to 40 percent slopes	0.17	0	100
44	Ebon very gravelly loam, 1 to 8 percent slopes	0.03	0	100
45	Ebon very gravelly loam, 8 to 20 percent slopes	0.03	0	100
48	Ebon-Pinamt complex, 3 to 20 percent slopes	0.06	0	100
49	Ebon-Pinamt complex, 20 to 40 percent slopes	0.06	0	100
52	Gachado-Lomitas-Rock outcrop complex, 7 to 55 percent slopes	0.16	20	100
66	Greyeagle-Suncity Variant complex, 1 to 7 percent slopes	0.23	0	100
68	Gunsight-Cipriano complex, 1 to 7 percent slopes	0.63	0	100
72	Lehmans-Rock outcrop complex, 8 to 65 percent slopes	0.09	30	100
89	Mohave-Tres Hermanos complex, 1 to 8 percent slopes	0.06	0	100
93	Nickel-Cave complex, 8 to 30 percent slopes	0.33	0	100
95	Ohaco gravelly loam	0.04	0	100
96	Pinaleno-Tres Hermanos complex, 1 to 10 percent slopes	0.07	0	100
98	Pinamt-Tremant complex, 1 to 10 percent slopes	0.37	0	100
103	Rock outcrop-Gachado complex, 5 to 55 percent slopes	0.10	65	100
104	Rock outcrop-Lehmans complex, 15 to 65 percent slopes	0.14	60	100
108	Schenco-Rock outcrop complex, 3 to 25 percent slopes	0.31	30	100
110	Suncity-Cipriano complex, 1 to 7 percent slopes	0.13	0	100
120	Tres Hermanos gravelly sandy loams	0.06	0	100

The surface retention losses, percent impervious, and vegetation cover for each land use type are estimated based on Sabol et al. (1995) and MAG Land Use (2004). The values used for surface retention loss values, percent impervious, and vegetation cover are shown in Table 4.3.

Table 4.3- Land Use Characteristics Used to Compute Green-Ampt Parameters

Land Use ID	Description	Initial Abstraction (in)	% Impervious	% Vegetation	Soil Condition
110	Rural Residential (<= 1/5 du per acre)	0.30	5	30	normal
120	Estate Residential (1/5 du per acre to 1 du per acre)	0.30	5	30	normal
130	Large Lot Residential – 1 du per acre to 2 du per acre)	0.30	15	50	normal
140	Medium Lot Residential - Single Family (2-4 du per acre)	0.25	30	50	normal
161	Very Small Lot Residential - Single Family (>6 du per acre-includes mobile home	0.25	40	50	normal
170	Medium Density Residential - Muli Family (5-10 du per acre)	0.25	45	50	normal
210	Specialty Commercial (<=50,000 sq. ft.)	0.10	80	65	normal
513	Tourist and Visitor Accommodations (Hotels, motels and resorts)	0.10	80	75	normal

532	Institutional (Includes hospitals and churches)	0.10	80	75	normal
552	Public Facilities (Includes community centers, power sub-stations, libraries)	0.10	80	75	normal
553	Public Facilities (Includes community centers, power sub-stations, libraries)	0.10	80	75	normal
711	Active Open Space (Includes parks)	0.10	5	90	normal
900	Vacant (Existing land use database only)	0.35	0	25	normal

The soil and land use information are used by WMS 7.1 to compute the Green-Ampt rainfall loss parameters for each sub-basin (The Maricopa County's procedure for the Green-Ampt method was already incorporated into WMS 7.1). The computed rainfall loss parameters are then automatically saved into a HEC-1 input file. The Green-Ampt rainfall loss parameters can be found in Table 4.4.

Table 4.4 Green-Ampt Parameters

BASIN	IA (in)	DTHETA	PSIF	XKSATA (in/hr)	RTIMP (%)
B1	0.324	0.251	7.487	0.1	22.576
B2	0.325	0.236	8.114	0.081	5.17
B3	0.3	0.25	5.469	0.207	5.0
B4	0.332	0.307	6.618	0.142	49.014
B5	0.297	0.226	6.8	0.135	39.73
B6	0.318	0.358	6.101	0.179	11.007
B7	0.329	0.286	6.786	0.131	61.698
B8	0.281	0.195	7.093	0.122	15.385
B9	0.324	0.307	6.454	0.155	46.754
B10	0.284	0.189	6.838	0.138	23.965
B11	0.3	0.204	7.044	0.125	13.182
B12	0.338	0.365	5.839	0.188	22.218
B13	0.317	0.308	5.32	0.241	14.583
B14	0.275	0.259	7.356	0.117	26.111
B15	0.338	0.332	4.611	0.331	20.392
B16	0.279	0.276	6.306	0.18	30.667
B17	0.33	0.335	5.616	0.213	19.35
B18	0.349	0.387	5.797	0.187	17.263
B19	0.35	0.337	7.192	0.109	13.42
B20	0.35	0.289	8.41	0.07	7.667
B21	0.319	0.292	6.445	0.157	16.506
B22	0.34	0.354	5.394	0.224	17.885
B23	0.347	0.385	6.118	0.17	15.952
B24	0.344	0.255	9.005	0.056	9.667
B25	0.34	0.367	5.381	0.227	22.5
B26	0.317	0.27	6.483	0.156	21.376
B27	0.345	0.306	7.431	0.10	11.528
B28	0.327	0.223	9.582	0.049	12.633
B29	0.35	0.291	8.343	0.072	7.348
B30	0.343	0.37	5.8	0.191	21.429

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BASIN	IA (in)	DTHETA	PSIF	XKSATA (in/hr)	RTIMP (%)
B31	0.31	0.197	7.17	0.115	12.469
B32	0.343	0.328	6.874	0.125	14.887
B33	0.283	0.297	3.4	0.58	26.667
B34	0.345	0.369	5.574	0.21	6.977
B35	0.338	0.349	5.428	0.223	6.055
B36	0.349	0.271	8.734	0.06	0.09
B37	0.35	0.244	9.776	0.044	2.805
B38	0.35	0.35	3.537	0.567	0
B39	0.35	0.35	4.569	0.324	1.414
B40	0.35	0.39	5.773	0.19	0.769
B41	0.35	0.33	7.294	0.105	29.888
B42	0.35	0.38	6.406	0.151	12.755
B43	0.35	0.35	4.332	0.365	2.195
B44	0.35	0.388	6.238	0.161	21.052
B45	0.35	0.35	4.664	0.299	1.406
B46	0.35	0.36	6.795	0.128	32.878

4.2.6.2 Unit Hydrographs

The S-Graph method documented in Sabol et al. (1995) was used to compute the unit hydrographs. Due to the steep slope in the watershed, the Phoenix Mountain S-Graphs was used to compute the unit hydrographs. The unit hydrographs are computed by WMS 7.1 (The Maricopa County's S-Graph procedure was already incorporated into WMS 7.1). The unit hydrographs can be found on the UI records in the HEC-1 files.

4.2.6.3 Lag Time

Lag time must be estimated before the S-Graph unit hydrographs can be computed. Four parameters must be computed to estimate the lag time for each sub-basin. These four parameters are the longest watercourse length measured from the concentration point to a most hydraulically distant point, the slope of the longest watercourse, the length from the concentration point along the longest watercourse to a point opposite the centroid, and the basin roughness.

Lag time is calculated using the following equation:

$$Lag = C*(L*L_{ca}/S^{p})^{m}$$

where Lag is the basin's lag time in hours and

- L = length of longest flow path in miles,
- L_{ca} = length along the watercourse to a point opposite the centroid in miles,
- S = watercourse slope in feet/mile,
- C = 24 k_n, Coefficient that relates the watersheds roughness.

C was obtained from Figure 5.11 of Appendix K in the Drainage Design Manual (Sabol

et al., 1995). The Kn value used (0.05) was obtained from Table 5-4 in the Drainage Design Manual (Sabol et al., 1995). p is equal to 0.5, and m is equal to 0.38 according to the U.S. Army Corps of Engineers' equations. Table 4.5 summarizes the Lag Time calculations

Table 4.5- Sub-Basin Lag Time Summary

Basin	L (mi)	Lca (mi)	Slope (ft/mi)	Lag (min)
B1	1.13	0.23	876.5	12.0
B2	0.98	0.35	459.4	15.0
B3	0.22	0.11	264.0	6.0
B4	0.90	0.25	1594.6	10.1
B5	0.41	0.15	813.1	7.1
B6	1.21	0.42	491.0	17.2
B7	0.58	0.29	607.2	10.9
B8	0.37	0.17	169.0	9.6
B9	1.40	0.76	976.8	19.9
B10	0.54	0.07	205.9	7.7
B11	0.23	0.05	132.0	5.1
B12	1.32	0.57	897.6	17.8
B13	0.42	0.12	290.4	7.8
B14	0.26	0.06	169.0	5.7
B15	0.39	0.17	380.2	8.3
B16	0.99	0.21	353.8	13.0
B17	0.74	0.11	454.1	8.8
B18	0.87	0.32	496.3	13.6
B19	1.25	0.41	807.8	15.6
B20	0.88	0.05	475.2	6.6
B21	0.95	0.28	353.8	14.2
B22	0.30	0.05	316.8	4.9
B23	0.93	0.35	554.4	14.2
B24	0.96	0.36	733.9	13.7
B25	0.54	0.26	396.0	11.0
B26	0.94	0.45	475.2	16.1
B27	0.74	0.20	359.0	11.3
B28	0.85	0.24	565.0	11.8
B29	1.08	0.53	844.8	16.2
B30	0.38	0.15	459.4	7.5
B31	1.54	0.61	332.6	23.4
B32	1.37	0.39	1098.2	15.0
B33	0.14	0.08	253.4	4.5
B34	1.17	0.36	580.8	15.6
B35	1.44	0.63	279.8	23.8
B36	1.34	0.17	586.1	12.3
B37	1.19	0.54	575.5	18.2
B38	0.34	0.14	401.3	7.2
B39	0.96	0.53	427.7	17.5
B40	0.94	0.52	359.0	18.0
B41	1.12	0.50	2032.8	13.6
B42	1.23	0.47	749.8	16.7

Basin	L (mi)	Lca (mi)	Slope (ft/mi)	Lag (min)
B43	0.77	0.40	327.4	15.2
B44	1.23	0.45	961.0	15.6
B45	1.11	0.48	570.2	17.0
B46	1.70	0.74	1768.8	18.9

4.2.6.4 Channel Routing Path Parameters

The normal depth storage-outflow channel routing is used to route runoff hydrographs through sub-basins. The routing paths are shown on Figure 4.7. The channel routing parameters include NSTEPS (the number of sub-reaches to be divided for the routing reach by HEC-1), initial outflow, left bank Manning's n, right bank Manning's n, main channel Manning's n, reach length, energy slope for the routing reach, and eight-point cross section X-Y data. The initial outflow is set at the initial inflow which is usually 0.0 cfs, implying that there is no flow in the channel when routing starts. The Manning's n values were based on previous work completed by the FCDMC. The eight-point cross section data were obtained using the provided DEM. The reach length and channel bed slope are automatically computed by WMS 7.1 and saved to the HEC-1 input file. The channel bed slope is used for energy slope because one of the assumptions for using Manning's equation is uniform flow (energy slope equals channel bed slope). The routing length, slope and Manning's n values are shown in Table 4.6.

Table 4.6- Channel Routing Summary

Reach	Reach Length (ft)	Slope (ft/ft)	LOB "n" value	Channel "n" value	ROB "n" value
CP2CR	2750	0.0068	0.06	0.032	0.05
CP4CR	925	0.0060	0.06	0.032	0.05
CP6R	921	0.0098	0.06	0.032	0.05
CP7CR	472	0.0085	0.06	0.032	0.05
CP9CR	270	0.0119	0.06	0.032	0.05
CP11CR	714	0.0099	0.06	0.032	0.05
CP12CR	398	0.0020	0.06	0.032	0.05
CP14R	839	0.0150	0.041	0.035	0.06
CP15CR	604	0.0007	0.041	0.035	0.06
CP16R	938	0.0019	0.041	0.035	0.06
CP17R	1545	0.0154	0.12	0.06	0.12
CP18CR	1452	0.0032	0.07	0.043	0.07
CP19CR	2331	0.0090	0.07	0.043	0.07
CP21R	782	0.0108	0.07	0.0675	0.07
CP23R	827	0.0145	0.07	0.0675	0.07
CP24R	2627	0.0134	0.07	0.0675	0.07
CP26CR	2156	0.0092	0.06	0.053	0.06
CP27R	4579	0.0169	0.053	0.045	0.06
CP28R	2112	0.0119	0.053	0.045	0.06
CP31R	1682	0.021	0.06	0.053	0.06
CP32R	5163	0.0119	0.046	0.05	0.05
CP34R	523	0.0181	0.049	0.041	0.05
CP35CR	4812	0.0109	0.049	0.041	0.05

Reach	Reach Length (ft)	Slope (ft/ft)	LOB "n" value	Channel "n" value	ROB "n" value
CP37CR	2353	0.0111	0.05	0.039	0.05
CP39CR	1269	0.0159	0.05	0.039	0.05
CP40CR	3862	0.0116	0.05	0.038	0.05
CP41R	4218	0.0329	0.05	0.038	0.05
CP44CR	3681	0.0148	0.05	0.039	0.05

4.2.6.4.1 NSTEPS Estimation

NSTEPS values for routing reaches are estimated by an iterative process. The estimation of NSTEPS is usually performed as the last step in HEC-1 model development. The iterative process for estimating NSTEPS is as follows. Estimation of NSTEPS for each routing reach must proceed from upstream to downstream. The criterion for estimating NSTEPS is that the final estimated NSTEPS satisfies

$$NSTEPS = \Delta TP/NMIN \qquad (1)$$

where ΔTP is the difference in time-to-peak between the inflow and outflow hydrographs for the routing reach and NMIN is the computation time step specified in IT record in HEC-1 models. One may start with any initial guess for NSTEPS. The initial guess may be obtained by assuming a velocity (V in ft/s) and using L/(V*NMIN*60) where L is the reach length (feet). The initial guess may be simply assumed by an arbitrary number. After the initial guess is obtained, it is entered into the HEC-1 model. Then, the HEC-1 model is run. The difference in time-to-peak between the inflow and outflow hydrographs is found from the HEC-1 output file. Then, the next NSTEPS is estimated by using Eq. (1). Check if the two consecutive NSTEPS are the same or close enough. If yes, NSTEP for this routing reach is found. If not, the found NSTEPS is entered into the HEC-1 model, and the HEC-1 model is run. Equation (1) is used again. Comparison between the current NSTEPS and the previous NSTEPS is made. This iterative process is continued until two consecutive NSTEPS are the same or close enough. The aforementioned iterative process is performed for each routing reach from upstream to downstream.

4.2.6.4.2 Manning's n and Channel Cross-Section Data for Routing Reaches

The Manning's n value was obtained from previous field trips conducted by the FCDMC. The cross section routing reaches were obtained in WMS using a representative cross section and the DEM data.

4.2.6.5 Reservoir Routing Parameters

There are no detention basins or retention basins located in the watershed. However, there are three roadway culvert crossings along New River Road, and one roadway culvert crossing at 27th Avenue, which may cause some ponding areas upstream of the culverts. Some of these culverts may not have any significant impact on the hydrology. When the survey for flood insurance study is finished, the issues of reservoir routing at these sites will be investigated. Reservoir routing may be performed for the site(s) if necessary.

4.2.6.6 Split Flows

No split flows or diversions were used in the hydrology models.

4.3 Problems Encountered During the Study

4.3.1 Special Problems and Solutions

The WMS sub-basin delineation of the area between B3 and B11 did not represent the contour data as expected. This area required some adjustment to match the contour data better. This was due to multiple washes close together or sheet flow conditions.

4.3.2 Modeling Warning and Error Messages

One warning message was found in the HEC-1 modeling. The warning message is that the excess at ponding is less than zero for period. Excess set to zero.

A message occurs when using the WMS files in a newer version of WMS that states "Duplicate basin Ids were encountered in your map data. If you read in DEM based delineation data, you need to assign your polygon basin Ids to the DEM." If these files are used with a newer version of WMS, please verify that the data matches the HEC-1 files provided with this report.

4.4 Calibration

No calibration was performed because there are no gages within the watershed. However, verification is performed by using USGS regional regression equations. Comparison is also made between this study and two previous flood insurance studies. Refer to Section 4.5.2 for more details about the verification.

4.5 Final Results

4.5.1 Hydrologic Analysis Results

The results for peak discharges are shown in Table 4.7. The higher peak discharge between the 6-hour and 24-hour storms is considered as the critical peak discharge, and should be used for floodplain delineation. The detailed results can be found in the HEC-1 output files.

Table 4.7- Hydrologic Analysis Results

Drainage ID	Area (sq mi)	100-YR Peak Discharge (cfs)		Unit Peak (cfs/sq mi)	
		24-HR	6-HR	24-HR	6-HR
B37	0.36	720	801	2000	2225
CP37R	0.36	720	801	2000	2225
B44	0.43	878	975	2042	2267
CP44R	0.43	878	975	2042	2267
B46	0.77	1458	1490	1894	1935
CP46R	0.77	1315	1354	1708	1758
B45	0.13	225	244	1731	1877
CP45	0.9	1470	1465	1633	1628
CP44C	1.32	2267	2024	1717	1533
CP44CR	1.32	2061	1873	1561	1419

Gavilan Peak Watershed
Floodplain Delineation Study

Drainage ID	Area (sq mi)	100-YR Peak Discharge (cfs)		Unit Peak (cfs/sq mi)	
		24-HR	6-HR	24-HR	6-HR
B43	0.07	135	147	1929	2100
CP43	1.39	2138	1923	1538	1383
B42	0.31	610	671	1968	2165
CP42R	0.31	610	671	1968	2165
B41	0.25	569	640	2276	2560
CP41R	0.25	500	561	2000	2244
B40	0.07	132	142	1886	2029
CP40	0.32	628	702	1963	2194
CP40C	0.63	1202	1276	1908	2025
CP40CR	0.63	1036	1099	1644	1744
B39	0.09	163	176	1811	1956
CP39	0.72	1154	1190	1603	1653
CP39C	2.11	3276	2640	1553	1251
CP39CR	2.11	3239	2614	1535	1239
B38	0.02	52	58	2600	2900
CP38	2.14	3245	2615	1516	1222
CP37C	2.49	3831	2982	1539	1198
CP37CR	2.49	3722	2919	1495	1172
B36	0.36	871	977	2419	2714
CP36	2.86	4038	3202	1412	1120
B35	0.32	494	538	1544	1681
CP35R	0.32	494	538	1544	1681
CP35C	3.18	4419	3458	1390	1087
CP35CR	3.18	4199	3324	1320	1045
B34	0.4	786	865	1965	2163
CP34	3.57	4494	3562	1259	998
CP34R	3.57	4486	3564	1257	998
B33	0.01	14	16	2800	3200
CP33	3.58	4487	3564	1253	996
B32	0.41	881	982	2149	2395
CP32R	0.41	672	747	1639	1822
B31	0.38	657	734	1729	1932
CP31	0.79	1238	1262	1567	1597
CP31R	0.79	1226	1256	1552	1590
B30	0.03	76	85	2533	2833
CP30	0.82	1236	1261	1507	1538
B29	0.17	360	398	2118	2341
B28	0.18	440	497	2444	2761
CP28C	0.35	797	895	2277	2557
CP28CR	0.35	698	783	1994	2237
B27	0.18	440	493	2444	2739
CP27	0.53	1076	1191	2030	2247
CP27R	0.53	939	1043	1772	1968
B26	0.16	340	379	2125	2369
CP26	0.69	1172	1235	1699	1790
CP26C	1.51	2350	2098	1556	1389
CP26CR	1.51	2310	2073	1530	1373

Gavilan Peak Watershed
Floodplain Delineation Study

Drainage ID	Area (sq mi)	100-YR Peak Discharge (cfs)		Unit Peak (cfs/sq mi)	
		24-HR	6-HR	24-HR	6-HR
B25	0.07	154	172	2200	2457
CP25	1.57	2352	2108	1498	1343
B24	0.2	462	518	2310	2590
CP24R	0.2	375	421	1875	2105
B23	0.22	482	534	2191	2427
CP23	0.42	761	856	1812	2038
CP23R	0.42	753	842	1793	2005
B22	0.03	82	92	2733	3067
CP22	0.45	769	860	1709	1911
B21	0.33	727	813	2203	2464
CP21R	0.33	679	762	2058	2309
B20	0.11	320	360	2909	3273
CP20	0.44	911	1020	2070	2318
B19	0.22	458	507	2082	2305
CP19R	0.22	458	507	2082	2305
CP19C	0.66	1363	1428	2065	2164
CP19CR	0.66	1178	1238	1785	1876
B18	0.17	380	422	2235	2482
CP18	0.83	1493	1488	1799	1793
CP18C	1.28	2250	2023	1758	1580
CP18CR	1.28	2119	1935	1655	1512
B17	0.2	498	557	2490	2785
CP17	1.48	2322	2053	1569	1387
CP17R	1.48	2157	2006	1457	1355
B16	0.2	458	517	2290	2585
CP16	1.67	2401	2164	1438	1296
CP16R	1.67	2373	2149	1421	1287
B15	0.05	119	133	2380	2660
CP15	1.72	2389	2165	1389	1259
CP15C	3.29	4715	3666	1433	1114
CP15CR	3.29	4572	3630	1390	1103
B14	0.02	58	65	2900	3250
CP14	3.31	4576	3635	1382	1098
CP14R	3.31	4602	3619	1390	1093
B13	0.03	90	101	3000	3367
CP13	3.35	4608	3627	1376	1083
B12	0.25	481	531	1924	2124
CP12R	0.25	481	531	1924	2124
CP12C	3.6	4813	3810	1337	1058
CP12CR	3.6	4854	3779	1348	1050
B11	0.01	37	41	3700	4100
CP11	3.61	4856	3781	1345	1047
CP11C	7.19	9291	6558	1292	912
CP11CR	7.19	9282	6552	1291	911
B10	0.06	161	182	2683	3033
CP10	7.25	9299	6569	1283	906
B9	0.32	608	688	1900	2150

Gavilan Peak Watershed
Floodplain Delineation Study

Drainage ID	Area (sq mi)	100-YR Peak Discharge (cfs)		Unit Peak (cfs/sq mi)	
		24-HR	6-HR	24-HR	6-HR
CP9R	0.32	608	688	1900	2150
CP9C	7.57	9618	6792	1271	897
CP9CR	7.57	9606	6796	1269	898
B8	0.01	42	47	4200	4700
B7	0.05	142	162	2840	3240
CP7C	7.64	9644	6829	1262	894
CP7CR	7.64	9643	6844	1262	896
B6	0.15	266	291	1773	1940
CP6C	7.78	9747	6907	1253	888
CP6CR	7.78	9684	6913	1245	889
B5	0.07	111	126	1586	1800
CP5	7.85	9694	6920	1235	882
B4	0.13	324	366	2492	2815
CP4R	0.13	324	366	2492	2815
CP4C	7.98	9753	6971	1222	874
CP4CR	7.98	9671	6940	1212	870
B3	0.01	25	28	2500	2800
CP3	7.99	9671	6941	1210	869
B2	0.17	376	419	2212	2465
CP2R	0.17	376	419	2212	2465
CP2C	8.16	9767	7029	1197	861
CP2CR	8.16	9455	6921	1159	848
B1	0.3	735	831	2450	2770
CP1	8.46	9581	7025	1133	830

4.5.2 Verification of Results

The verification of results was performed in two ways. The first method was to compare the results of this study with three previous flood insurance studies (CVL, 1987), (Zhao, 1998), and Upper New River ADMP (Stantec, 2007). The second method was to compare the results of this study with USGS regional regression equations (Mason, King, Thomas, 1999). The comparison shows that the results of this study are reasonable. Table 4.8 is a summary of the comparison.

4.5.2.1 Comparison with Previous Flood Insurance Studies

CVL's study watershed is for New River drainage area from Rock Springs to New River Dam, covering an area of 170 square miles (CVL, 1987). The Gavilan Peak Watershed is only one sub-basin in CVL's study. The comparison of peak discharges and time-to-peak at the outlet of Gavilan Peak Watershed can be made between CVL's study and this study. The 100-year, 24-hour peak discharge in this study is higher than that in CVL's study. The time-to-peak in this study is smaller than that in CVL's study. This may be due to the following reasons: (a) the watershed was divided into 46 sub-basins in this study while the same area was not sub-divided in CVL's study; (b) this study was based on the most current land use conditions while CVL study is based on the pre-1987 land use conditions; and (c) the Green-Ampt infiltration loss method is used in this study while the SCS curve number loss method was used in CVL's study.

Dr. Zhao's 1998 Gavilan Peak Watershed model used USGS topo with 1995 MAG land use data and subdivided the watershed into 18 sub-basins. The comparison of peak discharges and time-to-peak with this study are relatively close. The 100-year 24-hour storm is approximately 560 cfs more than the 1998 study. This may be due to the following reasons: (a) the watershed area of this study is 0.35 square miles larger due to the use of the 2 foot contour data; (b) the updated land use data shows more development within the watershed; and (c) this study subdivided the watershed into 46 sub-basins.

The Upper New River ADMP included the existing Gavilan Peak Watershed obtained from the FCDMC. This model was originally created in 1998 by Dr. Zhao. However, modifications to this model were made in 2001 and 2006. One of the modifications was the additional subdivision of the model into 45 sub-basins. The 100-year 24-hour peak discharge for this study is higher than the 100-year 24-hour peak discharge from the Upper New River ADMP. A complete comparison of discharges between these two studies can be found in Appendix 5.

4.5.2.2 Comparison with USGS Regional Regression Equations

One USGS regional regression equation was used. The regional equation computes the 100-year discharge by relating the 100-year peak discharge with drainage area and mean basin elevation as following where AREA is the drainage area in square miles and ELEV is the mean basin elevation in feet. The drainage area and mean basin elevation were computed by WMS 7.1 as 8.463 square miles and 2254 feet, respectively.

$$Q_{100} = 10^{(6.55-3.17\mathrm{AREA}^{-0.11})}(\mathrm{ELEV}/1000)^{-0.454} \qquad (2)$$

As can be seen in Table 4.8, the comparison shows the results from this study and the USGS regression equation are reasonable close to each other. It should be mentioned that the results of this study should be more accurate than those by using regression equation because this study is more detailed. The comparison of this study with the USGS regression equation only serves as a reference.

Table 4.8. Peak Discharges Comparison

	100-Year 6-Hour HEC-1 Model This Study	100-Year 6-Hour 1998 Dr. Zhao FCDMC HEC-1 Model	100-Year 6-Hour Upper New River ADMP	100-Year 24-Hour HEC-1 Model This Study	100-Year 24-Hour 1998 Dr. Zhao FCDMC HEC-1 Model	100-Year 24-Hour Upper New River ADMP	100-Year 24-Hour (CVL, 1987)	100-Year 1999 USGS Regression Equation
Peak Discharge (cfs) Gavilan Peak Watershed	**7,025**	**7,636**	**7,347**	**9,581**	**9,023**	**8,605**	**5,984**	**7,647**
Time to Peak (hrs)	**4.67**	**4.67**	**4.92**	**12.58**	**12.58**	**12.83**	**12.75**	**N/A**

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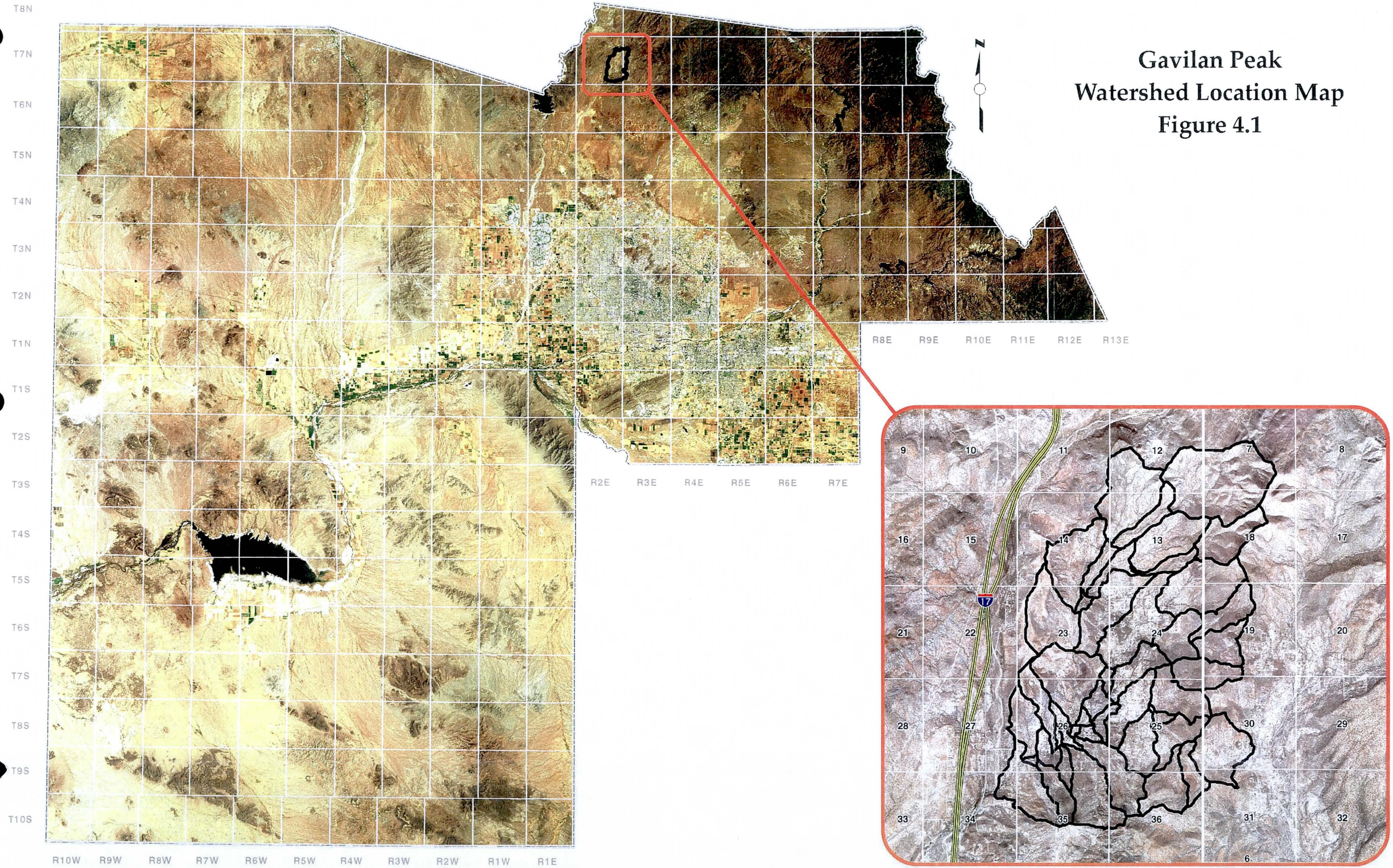
Gavilan Peak
Watershed Location Map
Figure 4.1



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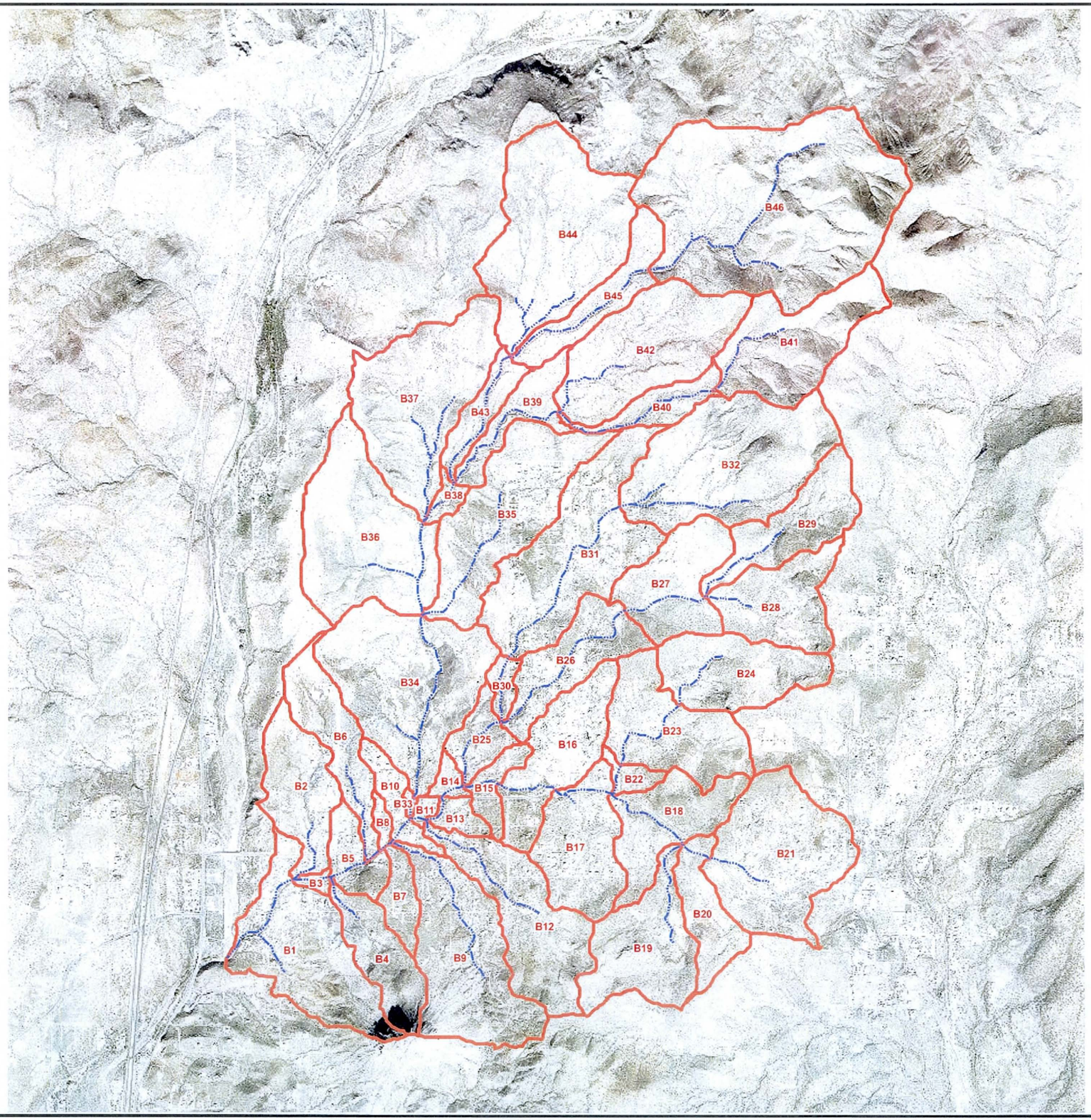

Legend

DRAINAGE FLOW PATH

SUB-BASIN BOUNDARY

0 625 1,250 2,500 3,750 5,000 Feet

1 inch equals 2,500 feet

GAVILAN PEAK
SUB-BASIN BOUNDARIES W/AERIAL
FIGURE 4.2

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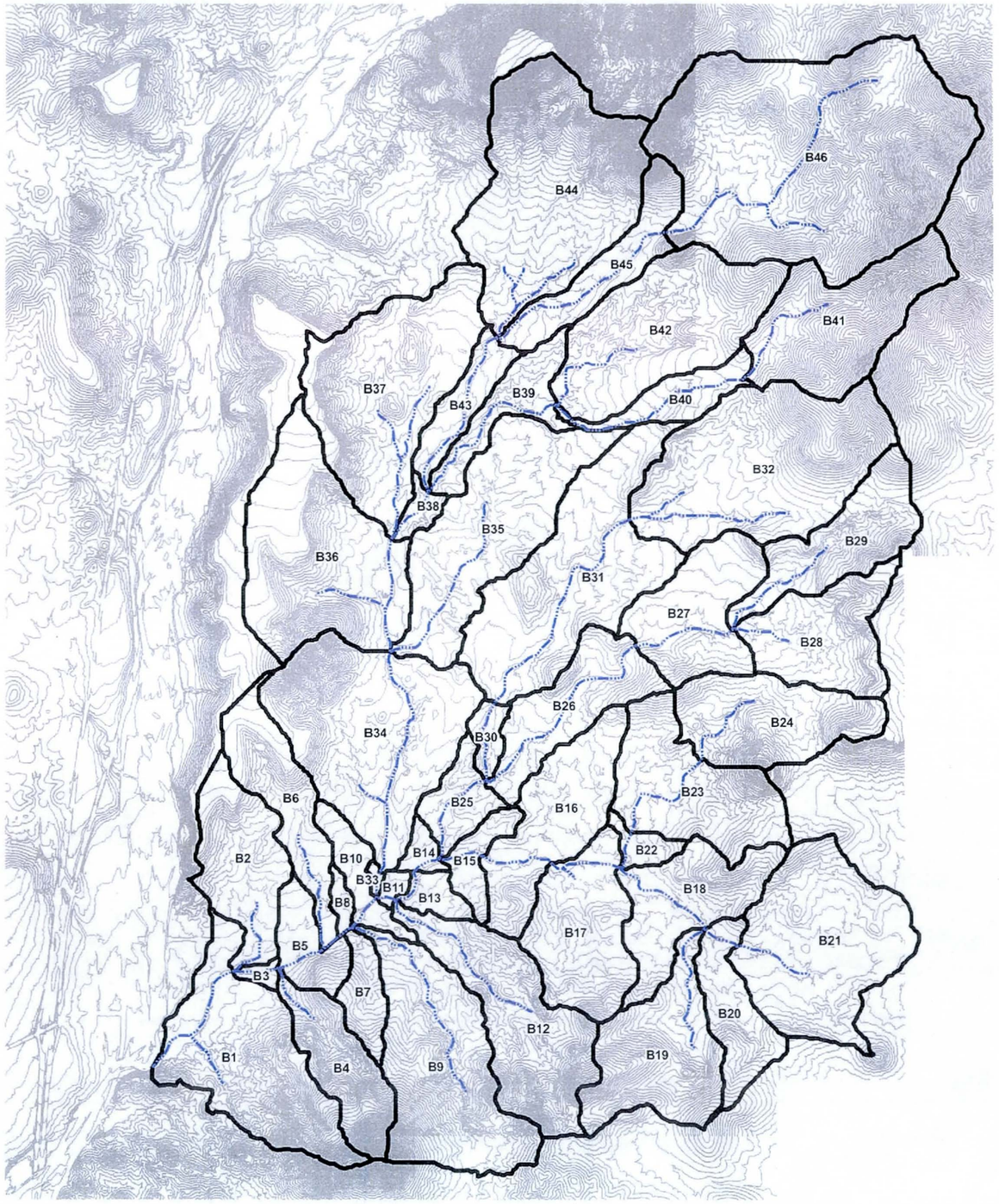

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DRAINAGE FLOW PATH

SUB-BASIN BOUNDARY

0 625 1,250 2,500 3,750 5,000 Feet

1 inch equals 2,500 feet

GAVILAN PEAK
SUB-BASIN BOUNDARIES W/TOPO
FIGURE 4.3

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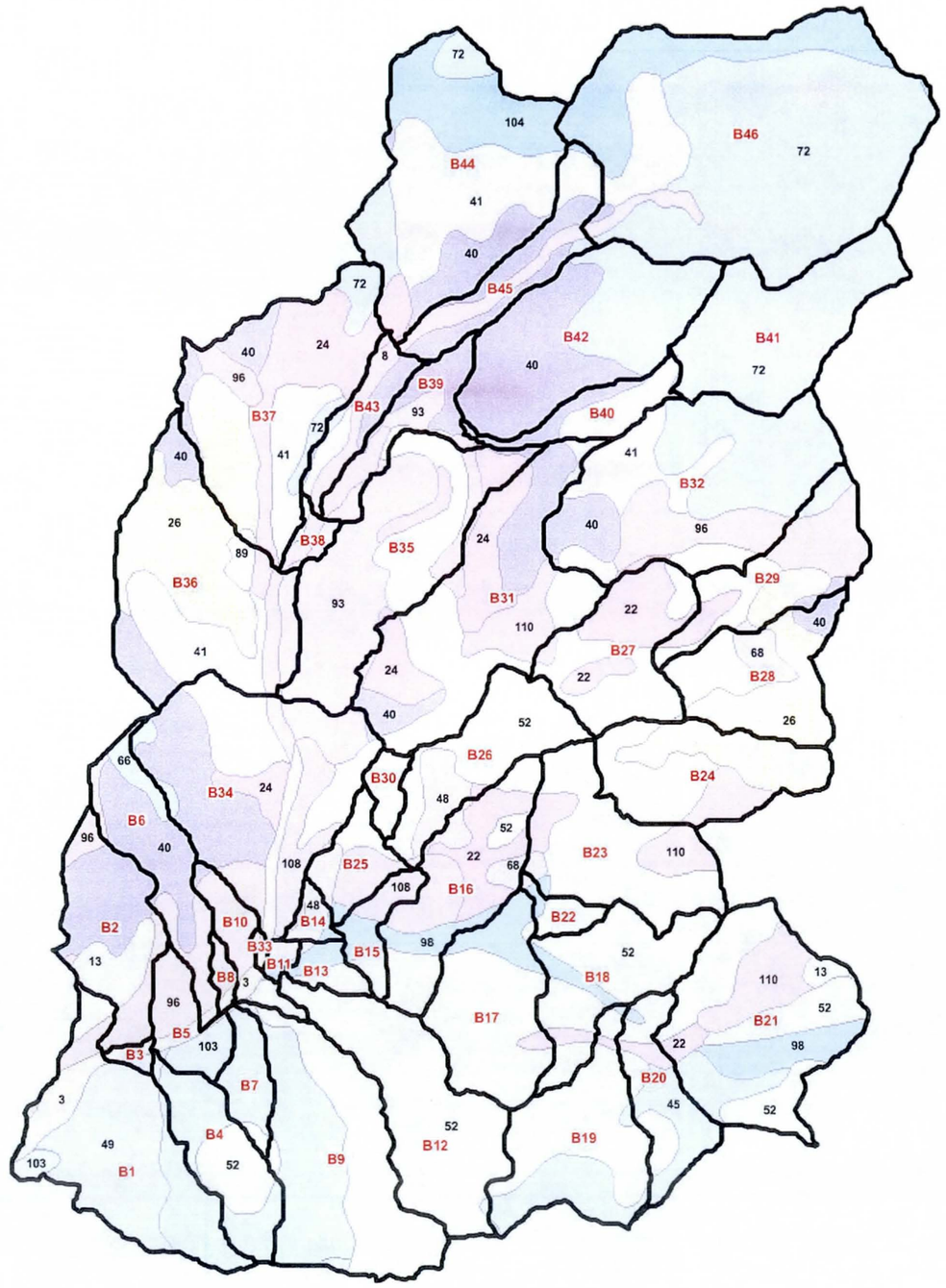

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B1 SUB-BASIN BOUNDARY

Soils

3	Antho-Carrizo-Maripo complex
8	Arizo cobbly sandy loam
10	Brios-Carrizo complex, 1 to 5 percent slopes
13	Carefree-Beardsley complex
22	Contine clay loam
24	Continental clay loam, 0 to 3 percent slopes
26	Continental cobbly clay loam, 1 to 8 percent slopes
41	Eba-Pinaleno complex, 20 to 40 percent slopes
40	Eba-Pinaleno complex, 3 to 20 percent slopes
44	Ebon very gravelly loam, 1 to 8 percent slopes
45	Ebon very gravelly loam, 8 to 20 percent slopes
49	Ebon-Pinamt complex, 20 to 40 percent slopes
48	Ebon-Pinamt complex, 3 to 20 percent slopes
52	Gachado-Lomitas-Rock outcrop complex, 7 to 55 percent slopes
66	Greyeagle-Suncity Variant complex, 1 to 7 percent slopes
68	Gunsight-Cipriano complex, 1 to 7 percent slopes
72	Lehmans-Rock outcrop complex, 8 to 65 percent slopes
89	Mohave-Tres Hermanos complex, 1 to 8 percent slopes
93	Nickel-Cave complex, 8 to 30 percent slopes
96	Pinaleno-Tres Hermanos complex, 1 to 10 percent slopes
98	Pinamt-Tremant complex, 1 to 10 percent slopes
103	Rock outcrop-Gachado complex, 5 to 55 percent slopes
104	Rock outcrop-Lehmans complex, 15 to 65 percent slopes
108	Schenco-Rock outcrop complex, 3 to 25 percent slopes
110	Suncity-Cipriano complex, 1 to 7 percent slopes

0 625 1,250 2,500 3,750 5,000 Feet

1 inch equals 2,500 feet

GAVILAN PEAK
SUB-BASIN BOUNDARIES W/SOILS
FIGURE 4.4

RBF CONSULTING — PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602-467-2200 FAX 602-467-2201 www.RBF.com

LAYOUT	DRAFTED	CHECKED
NEF	JAG	NEF

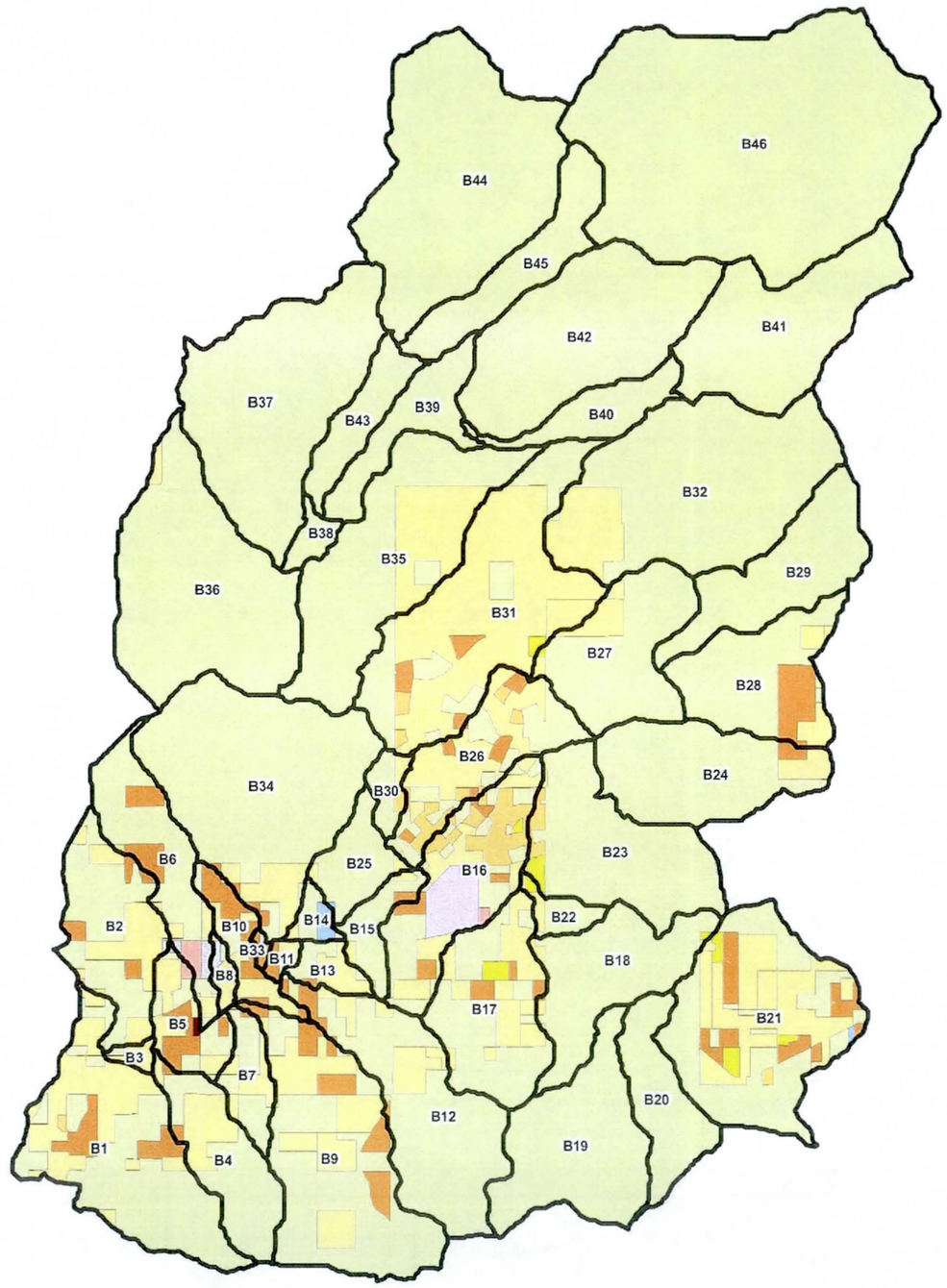
DRAWING SCALE: 1:30,000

LATEST REVISION:

PROJECT NUMBER: 45103870

SHEET NO. 1 OF 1 SHEET

Printing Date: October 21, 2008



Legend

SUB-BASIN BOUNDARY

Land Use

- Multi Family - Apartment/Condo
- Single Family High Density - Greater than 4 du/ac - Includes Mobile Homes
- Single Family Medium Density - 1 to 4 du/ac
- Single Family Low Density - Less than 1 du/ac
- Developing Residential
- Commercial Low - Amusement/Movie/Theatre/Specialty Retail/Neighborhood Retail
- Public/Special Event/Military
- Religious Institutions
- Tourist Accomodations - Motel/Hotel/Resort
- Vacant
- Active Open Space

0 625 1,250 2,500 3,750 5,000 Feet

1 inch equals 2,500 feet

GAVILAN PEAK
SUB-BASIN BOUNDARIES W/LAND USE
FIGURE 4.5

RBF CONSULTING
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LAYOUT	DRAFTED	CHECKED
NEF	JAG	NEF

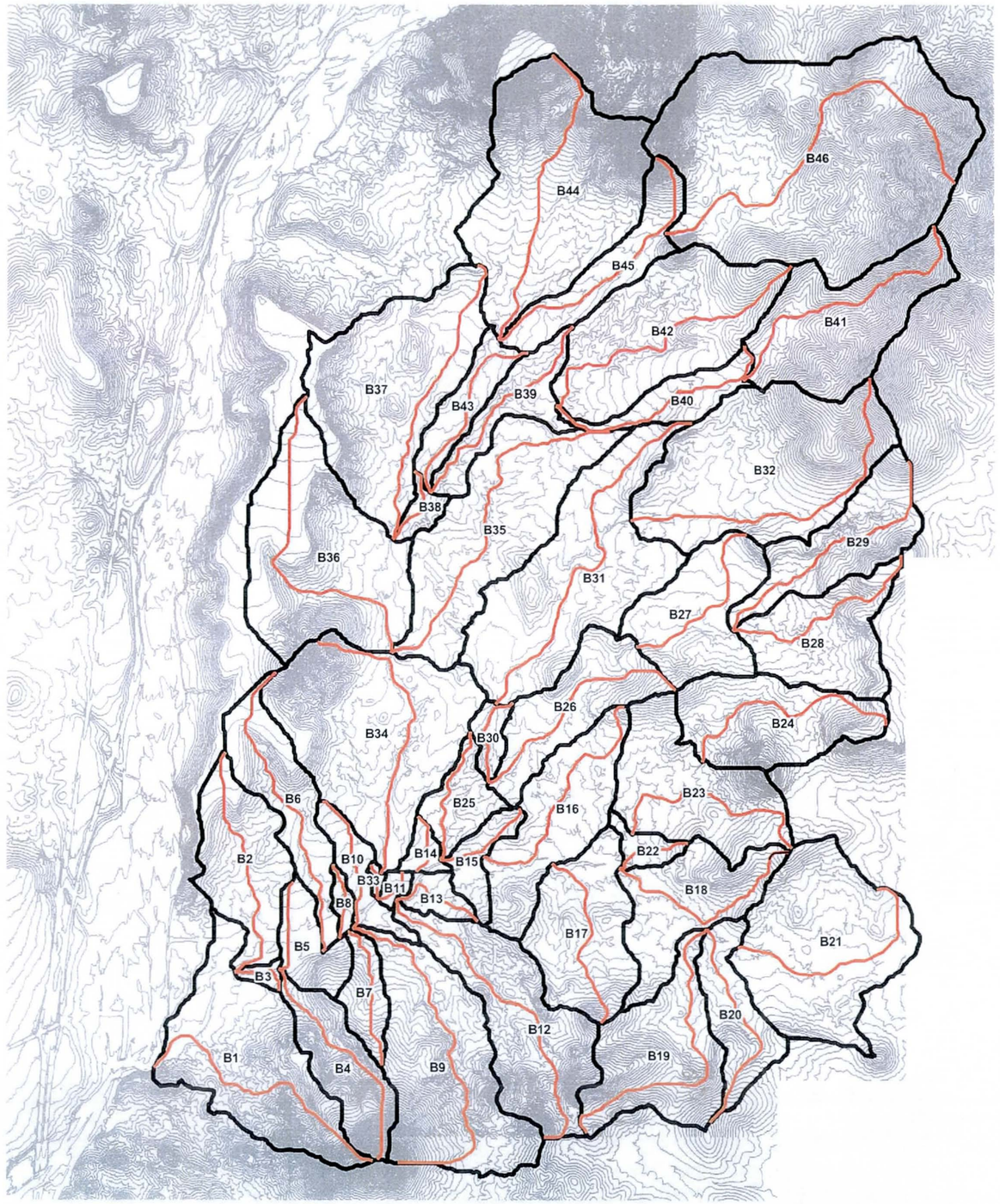
DRAWING SCALE: 1:30,000

LATEST REVISION:

PROJECT NUMBER: 45103870

SHEET NO: 1 OF 1 SHEET

Printing Date: September 22, 2008



Legend

LONGEST FLOW PATH

SUB-BASIN BOUNDARY

0 625 1,250 2,500 3,750 5,000 Feet

1 inch equals 2,500 feet

GAVILAN PEAK
SUB-BASIN LONGEST FLOW PATH
FIGURE 4.6

RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION

16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7555
602-467-2200 FAX 602-467-2201 www.RBF.com

LAYOUT	DRAFTED	CHECKED
NEF	JAG	NEF

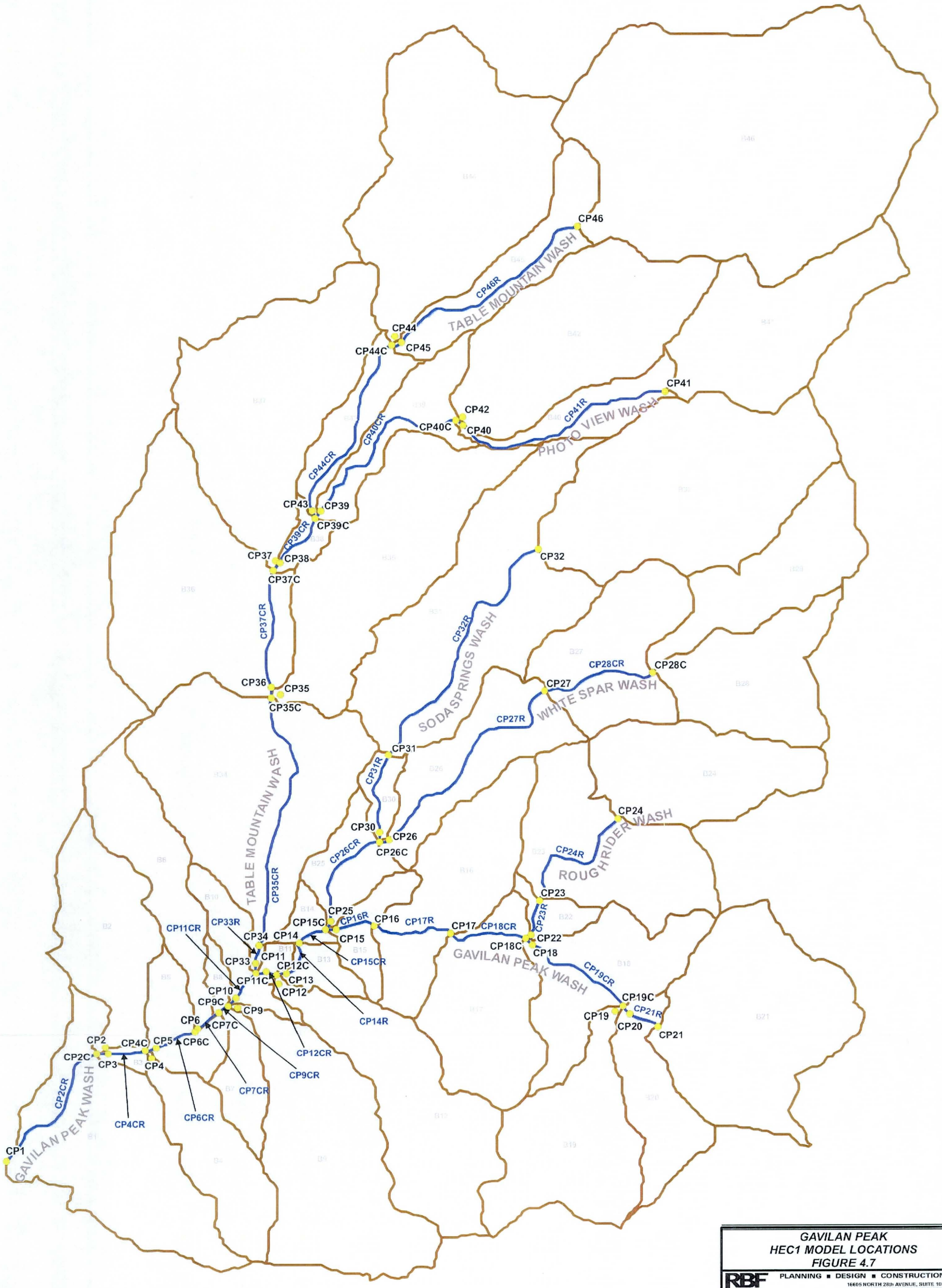
DRAWING SCALE: 1:30,000

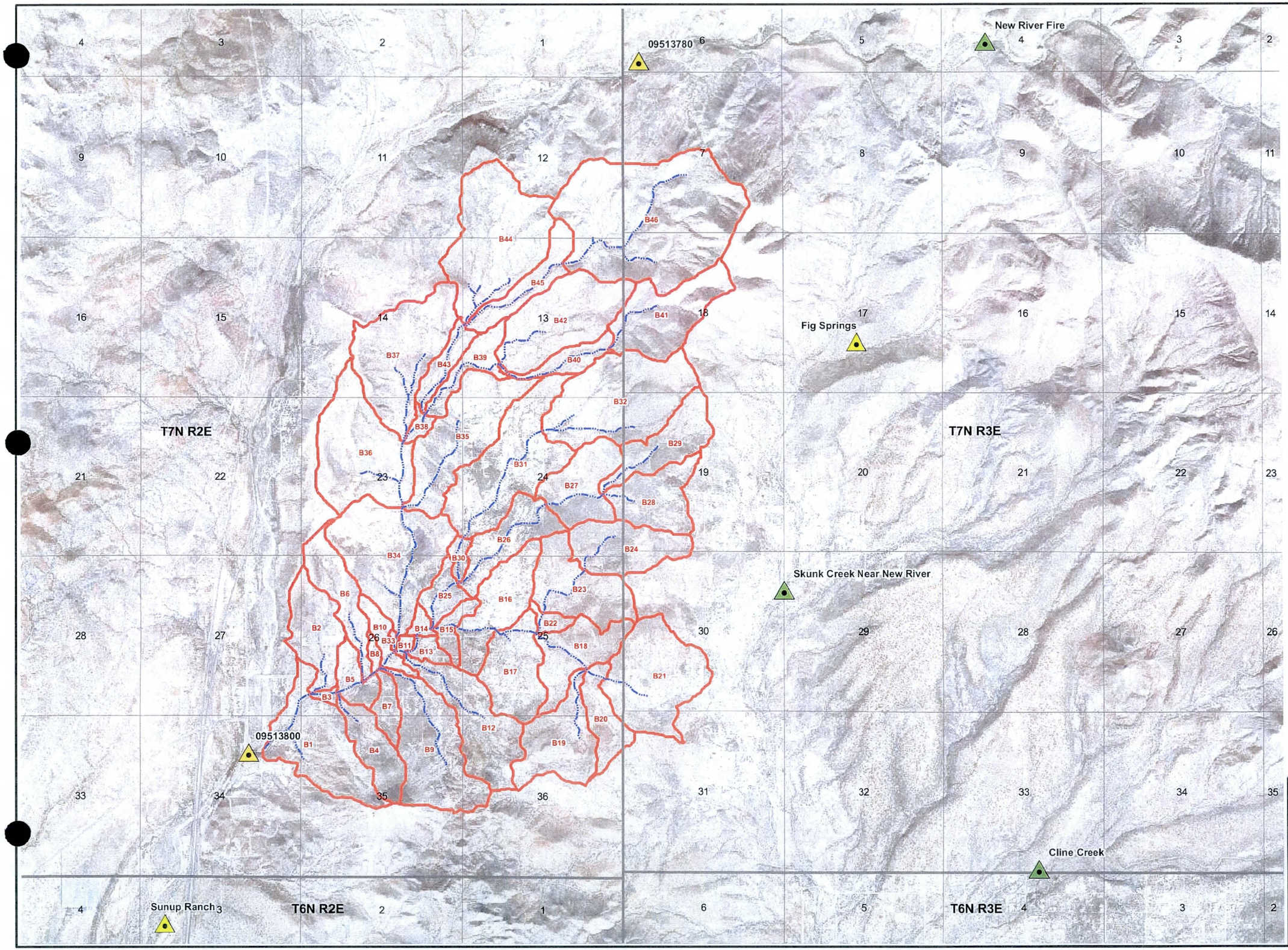
LATEST REVISION:

PROJECT NUMBER: 45103870

SHEET NO. 1 OF 1 SHEET

Printing Date: September 22, 2008


CP46
CP46R
TABLE MOUNTAIN WASH
CP44
CP44C
CP45
CP41
CP41R
PHOTO VIEW WASH
CP42
CP40C
CP40
CP40CR
CP44CR
CP43
CP39
CP39C
CP39CR
CP37
CP38
CP37C
CP32
CP32R
SODA SPRINGS WASH
CP37CR
CP28CR
CP28C
CP36
CP35
CP35C
CP27
WHITE SPAR WASH
CP27R
CP31
CP31R
TABLE MOUNTAIN WASH
CP35CR
CP24
ROUGHRIDER WASH
CP30
CP26
CP26C
CP26CR
CP24R
CP23
CP23R
CP25
CP15C
CP16R
CP16
CP17R
CP17
CP18CR
CP11CR
CP33R
CP34
CP14
CP15
CP22
CP18C
CP18
CP33
CP11
CP12C
CP15CR
GAVILAN PEAK WASH
CP11C
CP13
CP12
CP19CR
CP10
CP9C
CP9
CP19C
CP21R
CP19
CP20
CP21
CP6
CP7C
CP14R
CP2
CP4C
CP5
CP6C
CP2C
CP3
CP4
CP12CR
CP9CR
CP7CR
CP2CR
GAVILAN PEAK WASH
CP4CR
CP6CR
CP1
Legend
CONCENTRATION POINT
ROUTING
SUB-BASIN BOUNDARY
0 500 1,000 2,000
Feet
Printing Date: October 23, 2008
File: H:\PDATA\45103870\GIS\Gavilan\Sub_Basin_Boundaries_Routing.mxd
GAVILAN PEAK
HEC1 MODEL LOCATIONS
FIGURE 4.7
RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602-467-2200 FAX 602-467-2201 www.RBF.com
LAYOUT NEF
DRAFTED JAG
CHECKED NEF
DRAWING SCALE 1" = 1600'
LATEST REVISION
SHEET NO 1
OF 1 SHEET
PROJECT NUMBER 45103870
N
W
E
S



LEGEND

DRAINAGE FLOW PATH

SUB-BASIN BOUNDARY

GAGES

USGS STREAM

FCDMC PRECIPITATION

FCDMC PRECIPITATION & STREAM

0 1,250 2,500 5,000 Feet

1 inch equals 3,000 feet

GAGES NEAR GAVILAN PEAK WATERSHED
FIGURE 4.8

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602-487-2200 FAX 602-487-2201 www.RBF.com

LAYOUT	DRAFTED	CHECKED
NEF	JAG	NEF

DRAWING SCALE: 1:36,000

LATEST REVISION:

PROJECT NUMBER: 45103870

SHEET NO: 1 OF 1 SHEET

Printing Date: September 22, 2008

Appendix 1 HEC-1 Output File for 100-Year 6-Hour Storm

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            JUN  1998                 *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   19SEP08  TIME  10:02:53  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104              *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X    X         XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   1          ID   Gavilan Peak Watershed 100-YR 6-HR
   2          ID   RBF Consulting Job No. 45103870
   3          ID
              *DIAGRAM
   4          IT       5 01JAN94       0    2000
   5          IO       5
   6          IN      15 01JAN94       0
   7          JD    3.23    0.01
              * Pattern 1
   8          PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
   9          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
  10          PC   0.962   0.972   0.983   0.991     1.0
  11          IN      15 01JAN94       0
  12          JD    3.21     0.5
              * Pattern 1
  13          PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
  14          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
  15          PC   0.962   0.972   0.983   0.991     1.0
  16          IN      15 01JAN94       0
  17          JD    3.15     2.8
              * Pattern 2
  18          PC     0.0   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
  19          PC   0.087     0.1    0.12   0.163   0.252   0.451   0.694   0.837     0.9   0.938
  20          PC    0.95   0.963   0.975   0.988     1.0
  21          IN      15 01JAN94       0
  22          JD    2.98    16.0
              * Pattern 3
  23          PC     0.0   0.015    0.02    0.03   0.048   0.063   0.076    0.09   0.105   0.119
  24          PC   0.135   0.152   0.175   0.222   0.304   0.472    0.67   0.796   0.868   0.912
  25          PC   0.946    0.96   0.973   0.987     1.0

  26          KK     B37
  27          KO       0       0     0.0       0      22
  28          BA   0.358
  29          LG    0.35   0.244   9.776   0.044   2.805
              * B37 S_Graph
  30          UI     0.0   86.15  325.79  560.88  563.94  353.43  264.63  179.55  134.76    89.0
  31          UI   65.06    46.2   32.36   21.89   12.67   12.67   12.67     0.0

  32          KK   CP37R   CNAME    CP37
  33          KO       0       0     0.0       0      22
  34          RN   CP37R

  35          KK     B44
  36          KO       0       0     0.0       0      22
  37          BA   0.426
  38          LG    0.35   0.388   6.238   0.161  21.052
              * B 44 S_Graph
  39          UI     0.0  143.35  537.83  887.11  555.15  397.35  258.34  181.67  112.82   78.67
  40          UI   50.28   36.09   17.61   17.61   17.61     0.0
```

1 HEC-1 INPUT PAGE 2

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  41          KK   CP44R   CNAME    CP44
  42          KO       0       0     0.0       0      22
  43          RN   CP44R

  44          KK     B46
  45          KO       0       0     0.0       0      22
  46          BA   0.771
  47          LG    0.35    0.36   6.795   0.128  32.878
              * B46 S_Graph
  48          UI     0.0  170.36  646.49 1101.66 1260.91  765.29  586.55  406.45  308.87   204.7
  49          UI  156.15  106.62   73.52   64.99   26.28   26.28   26.28   26.28     0.0

  50          KK   CP46R   CNAME    CP46
```

```
 51          KO       0       0     0.0       0      22
 52          RS       1    FLOW     0.0     0.0
 53          RC   0.052   0.062   0.059  4229.3  0.0219     0.0
             * 46R
 54          RX     0.0    12.9    25.8    38.8    51.7    64.6    77.5    90.4
 55          RY  2250.0  2248.4  2244.3  2242.5  2242.2  2248.0  2249.4  2249.5

 56          KK     B45
 57          KO       0       0     0.0       0      22
 58          BA   0.125
 59          LG    0.35    0.35   4.664   0.299   1.406
             * B45 S_Graph
 60          UI     0.0   34.98  132.66  234.69   174.2  121.01   85.37   58.68   39.97   28.42
 61          UI   19.01   12.24    9.26    4.75    4.75    4.75     0.0

 62          KK    CP45   CNAME   CP45R
 63          KO       0       0     0.0       0      22
 64          HC       2

 65          KK   CP44C   CNAME  CP44CR
 66          KO       0       0     0.0       0      22
 67          HC       2

 68          KK  CP44CR   CNAME   CP44C
 69          KO       0       0     0.0       0      22
 70          RS       1    FLOW     0.0     0.0
 71          RC    0.05   0.039    0.05 3680.85  0.0148     0.0
             * 44CR
 72          RX     0.0    35.6    71.3   106.9   142.5   178.1   213.7   249.4
 73          RY  2184.7  2182.8  2179.4  2176.8  2181.6  2183.5  2183.8  2184.0

 74          KK     B43
 75          KO       0       0     0.0       0      22
 76          BA   0.072
 77          LG    0.35    0.35   4.332   0.365   2.195
             * B43 S_Graph
 78          UI     0.0   25.74   95.43  152.55   93.05   66.04   42.34    29.1   18.69   12.48
 79          UI    7.79     5.0    3.05    3.05    3.05
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 80          KK    CP43   CNAME   CP43R
 81          KO       0       0     0.0       0      22
 82          HC       2

 83          KK     B42
 84          KO       0       0     0.0       0      22
 85          BA   0.309
 86          LG    0.35    0.38   6.406   0.151  12.755
             * B42 S_Graph
 87          UI     0.0   89.89  341.65  601.31   418.9  296.59   205.9  143.61   93.54   66.29
 88          UI   44.86   30.57   19.23   11.98   11.98   11.98     0.0

 89          KK   CP42R   CNAME    CP42
 90          KO       0       0     0.0       0      22
 91          RN   CP42R

 92          KK     B41
 93          KO       0       0     0.0       0      22
 94          BA   0.245
 95          LG    0.35    0.33   7.294   0.105  29.888
             * B 41 S_Graph
 96          UI     0.0  112.98  408.47  541.11  309.51  199.61  128.55   76.96   50.78   30.13
 97          UI   17.04   11.68   11.68     0.0

 98          KK   CP41R   CNAME    CP41
 99          KO       0       0     0.0       0      22
100          RS       1    FLOW     0.0     0.0
101          RC    0.05   0.038    0.05 4217.84  0.0329     0.0
             * 41R
102          RX     0.0    16.8    33.6    50.3    67.1    83.9   100.7   117.5
103          RY  2269.6  2270.4  2269.6  2266.8  2264.6  2267.6  2269.0  2268.9

104          KK     B40
105          KO       0       0     0.0       0      22
106          BA   0.072
107          LG    0.35    0.39   5.773    0.19   0.769
             * B40 S_Graph
108          UI     0.0   18.16   68.61  118.76  112.74   71.86   53.22   35.94   26.87   17.48
109          UI   12.82    8.95     6.7    3.77    2.62    2.62    2.62     0.0

110          KK    CP40   CNAME   CP40R
111          KO       0       0     0.0       0      22
112          HC       2

113          KK   CP40C   CNAME  CP40CR
114          KO       0       0     0.0       0      22
115          HC       2

116          KK  CP40CR   CNAME   CP40C
117          KO       0       0     0.0       0      22
118          RS       1    FLOW     0.0     0.0
119          RC    0.05   0.038    0.05 3862.49  0.0116     0.0
             * 40CR
120          RX     0.0    23.4    46.8    70.1    93.5   116.9   140.3   163.6
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

121          RY  2180.9  2174.1  2171.2  2170.3  2173.6  2176.0  2178.5  2181.1

122          KK     B39
123          KO       0       0     0.0       0      22
124          BA   0.094
```

```
125          LG     0.35     0.35    4.569    0.324    1.414
             * B39 S_Graph
126          UI      0.0    24.56    92.77   162.56   139.61    92.13    66.91    45.24    32.94    21.61
127          UI    15.61    10.59     8.83     3.47     3.46     3.46     3.46      0.0

128          KK     CP39    CNAME    CP39R
129          KO        0        0      0.0        0       22
130          HC        2

131          KK    CP39C    CNAME   CP39CR
132          KO        0        0      0.0        0       22
133          HC        2

134          KK   CP39CR    CNAME    CP39C
135          KO        0        0      0.0        0       22
136          RS        2     FLOW      0.0      0.0
137          RC     0.05    0.039     0.05   1269.2   0.0159      0.0
             * 39CR
138          RX      0.0     28.6     57.1     85.7    114.2    142.8    171.4    199.9
139          RY   2156.7   2142.8   2145.9   2149.2   2149.7   2148.2   2148.8   2153.6

140          KK      B38
141          KO        0        0      0.0        0       22
142          BA    0.022
143          LG     0.35     0.35    3.537    0.567      0.0
             * B 38 S_Graph
144          UI      0.0    41.38    75.91    31.46    12.83     5.52     1.97      0.0

145          KK     CP38    CNAME    CP38R
146          KO        0        0      0.0        0       22
147          HC        2

148          KK    CP37C    CNAME   CP37CR
149          KO        0        0      0.0        0       22
150          HC        2

151          KK   CP37CR    CNAME    CP37C
152          KO        0        0      0.0        0       22
153          RS        2     FLOW      0.0      0.0
154          RC     0.05    0.039     0.05  2353.06   0.0111      0.0
             * 37CR
155          RX      0.0     64.3    128.6    192.8    257.1    321.4    385.7    449.9
156          RY   2128.1   2122.0   2122.9   2124.5   2124.8   2126.2   2126.5   2127.9

157          KK      B36
158          KO        0        0      0.0        0       22
159          BA    0.362
160          LG    0.349    0.271    8.734     0.06     0.09
             * B36 S_Graph
161          UI      0.0   207.83   741.79   771.12    437.7   260.92    157.2    93.56    55.96     31.8
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

162          UI    18.94    18.94      0.0

163          KK     CP36    CNAME    CP36R
164          KO        0        0      0.0        0       22
165          HC        2

166          KK      B35
167          KO        0        0      0.0        0       22
168          BA     0.32
169          LG    0.338    0.349    5.428    0.223    6.055
             * B35 S_Graph
170          UI      0.0    45.28   153.28   296.06   419.67    397.2   260.68   211.93   166.21   121.32
171          UI   100.63    72.15    54.65    43.81    34.71    22.65    22.16     12.4     8.68     8.68
172          UI     8.68     8.68      0.0

173          KK    CP35R    CNAME     CP35
174          KO        0        0      0.0        0       22
175          RN    CP35R

176          KK    CP35C    CNAME   CP35CR
177          KO        0        0      0.0        0       22
178          HC        2

179          KK   CP35CR    CNAME    CP35C
180          KO        0        0      0.0        0       22
181          RS        1     FLOW      0.0      0.0
182          RC    0.049    0.041     0.05  4812.22   0.0109      0.0
             * 35CR
183          RX      0.0     19.4     38.7     58.1     77.4     96.8    116.2    135.5
184          RY   2074.1   2073.5   2068.5   2063.0   2065.7   2067.4   2071.7   2074.9

185          KK      B34
186          KO        0        0      0.0        0       22
187          BA    0.398
188          LG    0.345    0.369    5.574     0.21    6.977
             * B34 S_Graph
189          UI      0.0   134.75   504.68   829.03   516.45   369.45   239.74   168.61   104.32    72.75
190          UI    46.25     32.8    16.47    16.47    16.47      0.0

191          KK     CP34    CNAME    CP34R
192          KO        0        0      0.0        0       22
193          HC        2

194          KK    CP34R    CNAME     CP34
195          KO        0        0      0.0        0       22
196          RS        1     FLOW      0.0      0.0
197          RC    0.049    0.041     0.05   523.41   0.0181      0.0
             * 34R
198          RX      0.0     60.8    121.5    182.3    243.0    303.8    364.5    425.3
199          RY   2050.1   2048.1   2048.7   2048.1   2040.9   2049.0   2049.6   2050.2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 200          KK      B33
 201          KO        0        0      0.0        0       22
 202          BA    0.005
 203          LG    0.283    0.297      3.4     0.58   26.667
              * B33 S_Graph
 204          UI      0.0     21.9    12.83     3.12     0.79

 205          KK     CP33    CNAME    CP33R
 206          KO        0        0      0.0        0       22
 207          HC        2

 208          KK      B32
 209          KO        0        0      0.0        0       22
 210          BA     0.41
 211          LG    0.343    0.328    6.874    0.125   14.887
              * B32 S_Graph
 212          UI      0.0   152.33   561.21   877.33   526.78   371.45   237.35   158.42   104.19    66.44
 213          UI    45.12     24.3    17.67    17.67      0.0

 214          KK    CP32R    CNAME     CP32
 215          KO        0        0      0.0        0       22
 216          RS        3     FLOW      0.0      0.0
 217          RC    0.046     0.05     0.05  5162.61   0.0119      0.0
              * 32R
 218          RX      0.0     35.4     70.9    106.3    141.7    177.2    212.6    248.0
 219          RY   2125.8   2124.3   2122.5   2121.7   2121.4   2123.4   2125.4   2129.6

 220          KK      B31
 221          KO        0        0      0.0        0       22
 222          BA    0.378
 223          LG     0.31    0.197     7.17    0.115   12.469
              * B31 S_Graph
 224          UI      0.0    54.42   190.83   360.38   520.91   452.37   306.83   248.01   193.19   140.14
 225          UI   116.32    80.89    63.71     48.8    38.69    26.63    26.59    10.43    10.43    10.43
 226          UI    10.43    10.43      0.0

 227          KK     CP31    CNAME    CP31R
 228          KO        0        0      0.0        0       22
 229          HC        2

 230          KK    CP31R    CNAME     CP31
 231          KO        0        0      0.0        0       22
 232          RS        2     FLOW      0.0      0.0
 233          RC     0.06    0.053     0.06  1681.89    0.021      0.0
              * 31R
 234          RX      0.0     17.6     35.1     52.7     70.2     87.8    105.3    122.9
 235          RY   2104.2   2103.7   2097.4   2091.8   2093.9   2094.7   2099.4   2102.9

 236          KK      B30
 237          KO        0        0      0.0        0       22
 238          BA    0.028
 239          LG    0.343     0.37      5.8    0.191   21.429
              * B30 S_Graph
 240          UI      0.0    48.17    95.77    41.77     18.2     7.66     2.96      0.0
```



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1                                                HEC-1 INPUT

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 241          KK     CP30    CNAME    CP30R
 242          KO        0        0      0.0        0       22
 243          HC        2

 244          KK      B29
 245          KO        0        0      0.0        0       22
 246          BA    0.169
 247          LG     0.35    0.291    8.343    0.072    7.348
              * B29 S_Graph
 248          UI      0.0    51.67   197.27   339.75   224.31   160.52   108.42    76.38    48.64    33.85
 249          UI    22.79    17.15     7.83     6.72     6.72     6.72

 250          KK      B28
 251          KO        0        0      0.0        0       22
 252          BA    0.177
 253          LG    0.327    0.223    9.582    0.049   12.633
              * B28 S_Graph
 254          UI      0.0   112.61   404.82   359.76   207.59   121.72    68.34    42.18    24.75     10.6
 255          UI     9.69      0.0

 256          KK    CP28C    CNAME   CP28CR
 257          KO        0        0      0.0        0       22
 258          HC        2

 259          KK   CP28CR    CNAME    CP28C
 260          KO        0        0      0.0        0       22
 261          RS        1     FLOW      0.0      0.0
 262          RC    0.053    0.045     0.06   2112.4   0.0119      0.0
              * 28CR
 263          RX      0.0     21.5     43.0     64.6     86.1    107.6    129.1    150.6
 264          RY   2165.8   2165.0   2163.7   2163.6   2162.8   2160.2   2164.1   2166.0

 265          KK      B27
 266          KO        0        0      0.0        0       22
 267          BA    0.182
 268          LG    0.345    0.306    7.431      0.1   11.528
              * B27 S_Graph
 269          UI      0.0   127.96   457.16   348.45   206.04   118.36     66.8    36.72    22.38    10.37
 270          UI    10.37      0.0

 271          KK     CP27    CNAME    CP27R
 272          KO        0        0      0.0        0       22
 273          HC        2
```

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274          KK   CP27R   CNAME    CP27
275          KO       0       0     0.0       0      22
276          RS       2    FLOW     0.0     0.0
277          RC   0.053   0.045    0.06 4578.95  0.0169     0.0
             * 27R
278          RX     0.0    30.4    60.8    91.2   121.6   152.0   182.4   212.8
279          RY  2119.9  2116.1  2114.3  2111.8  2113.3  2116.9  2118.6  2120.3
1                                          HEC-1 INPUT                                                    PAGE  8

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

280          KK     B26
281          KO       0       0     0.0       0      22
282          BA   0.163
283          LG   0.317    0.27   6.483   0.156  21.376
             * B26 S_Graph
284          UI     0.0    50.4  192.63  329.63   215.6  154.47  103.68   73.03   46.37   32.28
285          UI   21.58   16.64    6.94    6.52    6.52     0.0

286          KK    CP26   CNAME   CP26R
287          KO       0       0     0.0       0      22
288          HC       2

289          KK   CP26C   CNAME  CP26CR
290          KO       0       0     0.0       0      22
291          HC       2

292          KK  CP26CR   CNAME   CP26C
293          KO       0       0     0.0       0      22
294          RS       2    FLOW     0.0     0.0
295          RC    0.06   0.053    0.06 2155.67  0.0092     0.0
             * 26CR
296          RX     0.0    26.2    52.4    78.7   104.9   131.1   157.3   183.6
297          RY  2066.6  2065.8  2064.1  2063.4  2062.0  2055.8  2066.5  2068.0

298          KK     B25
299          KO       0       0     0.0       0      22
300          BA   0.066
301          LG    0.34   0.367   5.381   0.227    22.5
             * B25 S_Graph
302          UI     0.0   49.22  173.45  122.93   72.85   41.71   22.51   12.73    7.19    3.86
303          UI    3.86     0.0

304          KK    CP25   CNAME   CP25R
305          KO       0       0     0.0       0      22
306          HC       2

307          KK     B24
308          KO       0       0     0.0       0      22
309          BA   0.197
310          LG   0.344   0.255   9.005   0.056   9.667
             * B24 S_Graph
311          UI     0.0   88.47  319.86  433.09  248.46  162.34  104.19   62.77   41.47   25.03
312          UI   14.95    9.25    9.25     0.0

313          KK   CP24R   CNAME    CP24
314          KO       0       0     0.0       0      22
315          RS       2    FLOW     0.0     0.0
316          RC    0.07  0.0675    0.07  2627.3  0.0134     0.0
             * 24R
317          RX     0.0    31.2    62.3    93.5   124.6   155.8   187.0   218.1
318          RY  2114.7  2113.8  2111.3  2109.8  2111.4  2111.8  2114.1  2115.9
1                                          HEC-1 INPUT                                                    PAGE  9

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

319          KK     B23
320          KO       0       0     0.0       0      22
321          BA   0.224
322          LG   0.347   0.385   6.118    0.17  15.952
             * B23 S_Graph
323          UI     0.0   94.23  341.83  489.96  284.68  191.31  123.79   75.16    49.7   31.33
324          UI   21.13    10.2    10.2    10.2

325          KK    CP23   CNAME   CP23R
326          KO       0       0     0.0       0      22
327          HC       2

328          KK   CP23R   CNAME    CP23
329          KO       0       0     0.0       0      22
330          RS       1    FLOW     0.0     0.0
331          RC    0.07  0.0675    0.07  826.97  0.0145     0.0
             * 23R
332          RX     0.0    15.5    31.1    46.6    62.2    77.7    93.3   108.8
333          RY  2096.7  2095.4  2094.7  2091.7  2089.7  2094.0  2095.0  2095.9

334          KK     B22
335          KO       0       0     0.0       0      22
336          BA   0.028
337          LG    0.34   0.354   5.394   0.224  17.885
             * B22 S_Graph
338          UI     0.0  111.58   76.46   21.27    5.64     0.0

339          KK    CP22   CNAME   CP22R
340          KO       0       0     0.0       0      22
341          HC       2

342          KK     B21
343          KO       0       0     0.0       0      22
344          BA   0.331
345          LG   0.319   0.292   6.445   0.157  16.506
             * B21 S_Graph
346          UI     0.0  138.46  502.55  723.44  420.82  283.76  183.06  112.06   73.75   46.66
347          UI   31.73   15.04   15.04   15.04
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 348          KK   CP21R   CNAME    CP21
 349          KO       0       0     0.0       0      22
 350          RS       1    FLOW     0.0     0.0
 351          RC    0.07  0.0675    0.07  781.61  0.0108     0.0
              * 21R
 352          RX     0.0    24.2    48.5    72.7    97.0   121.2   145.4   169.7
 353          RY  2109.6  2108.7  2107.9  2106.0  2107.7  2108.3  2108.8  2110.1

 354          KK     B20
 355          KO       0       0     0.0       0      22
 356          BA   0.109
 357          LG    0.35   0.289    8.41    0.07   7.667
              * B20 S_Graph
 358          UI     0.0  245.91  374.92  140.05   52.33   19.17   10.66
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 359          KK    CP20   CNAME   CP20R
 360          KO       0       0     0.0       0      22
 361          HC       2

 362          KK     B19
 363          KO       0       0     0.0       0      22
 364          BA   0.216
 365          LG    0.35   0.337   7.192   0.109   13.42
              * B19 S_Graph
 366          UI     0.0   72.29   271.5   449.0   281.8  201.77  131.34   92.36   57.49   40.08
 367          UI    25.7   18.59    8.91    8.91    8.91     0.0

 368          KK   CP19R   CNAME    CP19
 369          KO       0       0     0.0       0      22
 370          RN   CP19R

 371          KK   CP19C   CNAME  CP19CR
 372          KO       0       0     0.0       0      22
 373          HC       2

 374          KK  CP19CR   CNAME   CP19C
 375          KO       0       0     0.0       0      22
 376          RS       1    FLOW     0.0     0.0
 377          RC    0.07   0.043    0.07 2331.21   0.009     0.0
              * 19R
 378          RX     0.0    21.2    42.3    63.5    84.7   105.8   127.0   148.2
 379          RY  2100.4  2095.9  2095.5  2097.9  2098.6  2098.9  2099.6  2100.2

 380          KK     B18
 381          KO       0       0     0.0       0      22
 382          BA   0.174
 383          LG   0.349   0.387   5.797   0.187  17.263
              * B18 S_Graph
 384          UI     0.0   80.15  289.77  382.77   218.8  140.95   90.78    54.3   35.83   21.21
 385          UI    11.9    8.27    8.27     0.0

 386          KK    CP18   CNAME   CP18R
 387          KO       0       0     0.0       0      22
 388          HC       2

 389          KK   CP18C   CNAME  CP18CR
 390          KO       0       0     0.0       0      22
 391          HC       2

 392          KK  CP18CR   CNAME   CP18C
 393          KO       0       0     0.0       0      22
 394          RS       1    FLOW     0.0     0.0
 395          RC    0.07   0.043    0.07 1451.54  0.0032     0.0
              * 18CR
 396          RX     0.0    22.1    44.2    66.3    88.4   110.5   132.6   154.7
 397          RY  2082.6  2081.3  2081.3  2072.2  2076.0  2079.6  2080.5  2081.8
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 398          KK     B17
 399          KO       0       0     0.0       0      22
 400          BA   0.196
 401          LG    0.33   0.335   5.616   0.213   19.35
              * B17 S_Graph
 402          UI     0.0  242.28   628.5  332.43  164.42   78.02   40.79   14.97   14.35

 403          KK    CP17   CNAME   CP17R
 404          KO       0       0     0.0       0      22
 405          HC       2

 406          KK   CP17R   CNAME    CP17
 407          KO       0       0     0.0       0      22
 408          RS       2    FLOW     0.0     0.0
 409          RC    0.12    0.06    0.12 1544.97  0.0154     0.0
              * 17R
 410          RX     0.0     6.4    11.2    16.0    32.9    38.8    51.9   268.8
 411          RY  2068.0  2066.0  2064.0  2062.0  2061.0  2062.0  2064.0  2066.0

 412          KK     B16
 413          KO       0       0     0.0       0      22
 414          BA   0.198
 415          LG   0.279   0.276   6.306    0.18  30.667
              * B16 S_Graph
 416          UI     0.0  100.73  359.91  433.07  245.52  152.18    96.3   57.65   34.69   23.55
 417          UI    9.82    9.82    9.82

 418          KK    CP16   CNAME   CP16R
 419          KO       0       0     0.0       0      22
 420          HC       2
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421          KK   CP16R   CNAME    CP16
422          KO       0       0     0.0       0      22
423          RS       1    FLOW     0.0     0.0
424          RC   0.041   0.035    0.06  937.81  0.0019     0.0
             * 16R
425          RX     0.0    23.2    46.4    69.6    92.8   116.0   139.2   162.4
426          RY  2061.1  2050.0  2053.8  2058.4  2057.2  2056.1  2057.6  2060.1

427          KK     B15
428          KO       0       0     0.0       0      22
429          BA   0.048
430          LG   0.338   0.332   4.611   0.331  20.392
             * B15 S_Graph
431          UI     0.0   65.75  155.23   76.38   36.03   16.87    7.56    3.65     0.0

432          KK    CP15   CNAME   CP15R
433          KO       0       0     0.0       0      22
434          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

435          KK   CP15C   CNAME  CP15CR
436          KO       0       0     0.0       0      22
437          HC       2

438          KK  CP15CR   CNAME   CP15C
439          KO       0       0     0.0       0      22
440          RS       1    FLOW     0.0     0.0
441          RC   0.041   0.035    0.06  603.95  0.0007     0.0
             * 15CR
442          RX     0.0    88.1   176.3   264.4   352.5   440.6   528.8   616.9
443          RY  2059.9  2058.3  2058.2  2054.0  2053.8  2053.5  2056.0  2058.2

444          KK     B14
445          KO       0       0     0.0       0      22
446          BA   0.021
447          LG   0.275   0.259   7.356   0.117  26.111
             * B14 S_Graph
448          UI     0.0   59.77    58.6   19.56    6.46    2.14     0.0

449          KK    CP14   CNAME   CP14R
450          KO       0       0     0.0       0      22
451          HC       2

452          KK   CP14R   CNAME    CP14
453          KO       0       0     0.0       0      22
454          RS       1    FLOW     0.0     0.0
455          RC   0.041   0.035    0.06  839.26   0.015     0.0
             * 14R
456          RX     0.0    11.8    23.5    35.3    47.0    58.8    70.5    82.3
457          RY  2053.1  2044.3  2043.3  2043.7  2048.1  2048.6  2049.3  2049.8

458          KK     B13
459          KO       0       0     0.0       0      22
460          BA   0.032
461          LG   0.317   0.308    5.32   0.241  14.583
             * B13 S_Graph
462          UI     0.0   54.07  115.02   52.45    23.6   10.37    4.34     2.8     0.0

463          KK    CP13   CNAME   CP13R
464          KO       0       0     0.0       0      22
465          HC       2

466          KK     B12
467          KO       0       0     0.0       0      22
468          BA   0.254
469          LG   0.338   0.365   5.839   0.188  22.218
             * B12 S_Graph
470          UI     0.0   64.63  244.15  424.82   385.8  249.75  182.95  123.77    92.0   59.14
471          UI   43.48   29.99   23.56    11.4    9.23    9.23    9.23     0.0
1                                          HEC-1 INPUT                                                    PAGE 13

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

472          KK   CP12R   CNAME    CP12
473          KO       0       0     0.0       0      22
474          RN   CP12R

475          KK   CP12C   CNAME  CP12CR
476          KO       0       0     0.0       0      22
477          HC       2

478          KK  CP12CR   CNAME   CP12C
479          KO       0       0     0.0       0      22
480          RS       1    FLOW     0.0     0.0
481          RC    0.06   0.032    0.05  397.88   0.002     0.0
             * 12CR
482          RX     0.0   114.6   229.2   343.7   458.3   572.9   687.5   802.0
483          RY  2052.0  2048.8  2048.3  2045.5  2047.2  2048.7  2049.4  2051.8

484          KK     B11
485          KO       0       0     0.0       0      22
486          BA   0.011
487          LG     0.3   0.204   7.044   0.125  13.182
             * B11 S_Graph
488          UI     0.0   44.77   33.88   10.33    2.81     0.0

489          KK    CP11   CNAME   CP11R
490          KO       0       0     0.0       0      22
491          HC       2

492          KK   CP11C   CNAME  CP11CR
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493          KO        0        0      0.0        0       22
494          HC        2

495          KK    CP11CR    CNAME    CP11C
496          KO        0        0      0.0        0       22
497          RS        1     FLOW      0.0      0.0
498          RC     0.06    0.032     0.05   714.08   0.0099      0.0
             * 11CR
499          RX      0.0     86.6    173.1    259.7    346.3    432.8    519.4    606.0
500          RY   2048.2   2044.2   2043.7   2041.7   2045.2   2045.1   2045.1   2048.3

501          KK      B10
502          KO        0        0      0.0        0       22
503          BA    0.057
504          LG    0.284    0.189    6.838    0.138   23.965
             * B10 S_Graph
505          UI      0.0    94.04   193.86    86.56    38.45    16.52      6.7     4.79

506          KK     CP10    CNAME    CP10R
507          KO        0        0      0.0        0       22
508          HC        2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

509          KK       B9
510          KO        0        0      0.0        0       22
511          BA     0.32
512          LG    0.324    0.307    6.454    0.155   46.754
             * B9 S_Graph
513          UI      0.0    62.84   241.21   411.03   532.07   320.62   248.68   183.13   131.61    99.19
514          UI    66.28    51.11    37.49    26.51    20.06    10.38    10.38    10.38    10.38      0.0

515          KK     CP9R    CNAME      CP9
516          KO        0        0      0.0        0       22
517          RN     CP9R

518          KK     CP9C    CNAME    CP9CR
519          KO        0        0      0.0        0       22
520          HC        2

521          KK    CP9CR    CNAME     CP9C
522          KO        0        0      0.0        0       22
523          RS        1     FLOW      0.0      0.0
524          RC     0.06    0.032     0.05   270.35   0.0119      0.0
             * 9CR
525          RX      0.0     24.3     48.7     73.0     97.3    121.7    146.0    170.4
526          RY   2041.7   2040.4   2035.6   2031.2   2028.8   2034.8   2036.9   2037.9

527          KK       B8
528          KO        0        0      0.0        0       22
529          BA    0.014
530          LG    0.281    0.195    7.093    0.122   15.385
             * B8 S_Graph
531          UI      0.0    16.46    48.54    28.15    15.09     7.71     3.93     2.02     1.08      0.0

532          KK       B7
533          KO        0        0      0.0        0       22
534          BA    0.054
535          LG    0.329    0.286    6.786    0.131   61.698
             * S_Graph
536          UI      0.0    43.52   150.81   103.17    60.57    34.32    18.55    10.44     5.52     3.33
537          UI     3.33

538          KK     CP7C    CNAME    CP7CR
539          KO        0        0      0.0        0       22
540          HC        3

541          KK    CP7CR    CNAME     CP7C
542          KO        0        0      0.0        0       22
543          RS        1     FLOW      0.0      0.0
544          RC     0.06    0.032     0.05   471.89   0.0085      0.0
             * 7CR
545          RX      0.0     24.3     48.7     73.0     97.3    121.7    146.0    170.4
546          RY   2041.7   2040.4   2035.6   2031.2   2029.8   2034.8   2036.9   2037.9
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

547          KK       B6
548          KO        0        0      0.0        0       22
549          BA    0.146
550          LG    0.318    0.358    6.101    0.179   11.007
             * B6 S_Graph
551          UI      0.0    37.75   142.94   252.96   197.76   135.04     96.8    65.62    46.04    31.71
552          UI    21.91    14.45    11.45      5.2      5.2      5.2      0.0

553          KK     CP6C    CNAME    CP6CR
554          KO        0        0      0.0        0       22
555          HC        2

556          KK    CP6CR    CNAME     CP6C
557          KO        0        0      0.0        0       22
558          RS        1     FLOW      0.0      0.0
559          RC     0.06    0.032     0.05   920.69   0.0098      0.0
             * 6CR
560          RX      0.0     82.3    164.7    247.0    329.4    411.7    494.0    576.4
561          RY   2032.0   2025.3   2028.8   2028.7   2028.2   2028.8   2029.4   2031.9

562          KK       B5
563          KO        0        0      0.0        0       22
564          BA    0.071
565          LG    0.297    0.226      6.8    0.135   39.73
             * B5 S_Graph
```

```
566          UI     0.0   74.38  131.46   53.27   21.07     8.8    3.47     0.0

567          KK     CP5   CNAME    CP5R
568          KO       0       0     0.0       0      22
569          HC       2

570          KK      B4
571          KO       0       0     0.0       0      22
572          BA   0.127
573          LG   0.332   0.307   6.618   0.142  49.014
             * B4 S_Graph
574          UI     0.0  117.04  369.92  227.13  126.68   67.83   36.66   19.42    8.13    8.13
575          UI     0.0

576          KK    CP4R   CNAME     CP4
577          KO       0       0     0.0       0      22
578          RN    CP4R

579          KK    CP4C   CNAME   CP4CR
580          KO       0       0     0.0       0      22
581          HC       2

582          KK   CP4CR   CNAME    CP4C
583          KO       0       0     0.0       0      22
584          RS       1    FLOW     0.0     0.0
585          RC    0.06   0.032    0.05  925.38   0.006     0.0
             * 4CR
586          RX     0.0    68.0   136.0   204.1   272.2   340.2   408.2   476.3
587          RY  2031.1  2029.3  2020.9  2025.1  2025.1  2025.0  2026.4  2029.8
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

588          KK      B3
589          KO       0       0     0.0       0      22
590          BA   0.011
591          LG     0.3    0.25   5.469   0.207     5.0
             * B3 S_Graph
592          UI     0.0   23.96   28.67    9.73    3.46    1.13     0.0

593          KK     CP3   CNAME    CP3R
594          KO       0       0     0.0       0      22
595          HC       2

596          KK      B2
597          KO       0       0     0.0       0      22
598          BA   0.169
599          LG   0.325   0.236   8.114   0.081    5.17
             * B2 S_Graph
600          UI     0.0   62.18  229.41  360.81  217.43  153.69   98.11   66.07    43.4   27.66
601          UI   18.52   10.46    7.25    7.25     0.0

602          KK    CP2R   CNAME     CP2
603          KO       0       0     0.0       0      22
604          RN    CP2R

605          KK    CP2C   CNAME   CP2CR
606          KO       0       0     0.0       0      22
607          HC       2

608          KK   CP2CR   CNAME    CP2C
609          KO       0       0     0.0       0      22
610          RS       2    FLOW     0.0     0.0
611          RC    0.06   0.032    0.05 2749.62  0.0068     0.0
             * 2CR
612          RX     0.0    95.9   191.7   287.6   383.5   479.4   575.2   671.1
613          RY  2017.6  2014.1  2007.7  2013.3  2013.0  2011.6  2014.0  2018.1

614          KK      B1
615          KO       0       0     0.0       0      22
616          BA     0.3
617          LG   0.324   0.251   7.487     0.1  22.576
             * B1 S_Graph
618          UI     0.0  185.38  666.79  627.71  359.87  211.26  122.24   75.03   43.24   21.18
619          UI   16.33   16.33

620          KK     CP1   CNAME    CP1R
621          KO       0       0     0.0       0      22
622          HC       2

623          KK    CP1R   CNAME     CP1
624          KO       0       0     0.0       0      22
625          RN    CP1R
626          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   26        B37
              V
              V
   32      CP37R
              .
              .
   35         .          B44
              .            V
              .            V
   41         .        CP44R
              .            .
              .            .
   44         .            .          B46
              .            .            V
```

```
                                                                  V
 50                                                          CP46R
                                                                  .
 56                                                                  B45
                                                                     .
 62                                                          CP45............
                                                                  .
 65                                                  CP44C............
                                                         V
                                                         V
 68                                                  CP44CR
                                                         .
 74                                                          B43
                                                                  .
 80                                                      CP43............
                                                         .
 83                                                          B42
                                                                  V
                                                                  V
 89                                                          CP42R
                                                                  .
 92                                                                  B41
                                                                        V
                                                                        V
 98                                                                 CP41R
                                                                        .
104                                                                     .          B40
                                                                        .            .
110                                                                CP40............
                                                                        .
113                                                         CP40C............
                                                                  V
                                                                  V
116                                                         CP40CR
                                                                  .
122                                                                 B39
                                                                     .
128                                                          CP39............
                                                                  .
131                                                     CP39C............
                                                         V
                                                         V
134                                                     CP39CR
                                                         .
140                                                          B38
                                                                  .
145                                                      CP38............
                                                         .
148                                         CP37C............
                                                 V
                                                 V
151                                         CP37CR
                                                 .
157                                                 B36
                                                     .
163                                          CP36............
                                                     .
166                                                 B35
                                                     V
                                                     V
173                                                CP35R
                                                     .
176                                          CP35C............
                                                     V
                                                     V
179                                          CP35CR
                                                     .
185                                                 B34
                                                     .
191                                          CP34............
                                                     V
                                                     V
194                                          CP34R
                                                     .
200                                                 B33
                                                     .
205                                          CP33............
                                                     .
208                                                 B32
                                                     V
                                                     V
```

```
214          CP32R
                 .
220                  B31
                     .
227          CP31............
                 V
                 V
230          CP31R
                 .
236                  B30
                     .
241          CP30............
                 .
244                  B29
                     .
250                          B28
                             .
256                  CP28C............
                         V
                         V
259                  CP28CR
                     .
265                          B27
                             .
271                  CP27............
                         V
                         V
274                  CP27R
                     .
280                          B26
                             .
286                  CP26............
                     .
289          CP26C............
                 V
                 V
292          CP26CR
                 .
298                  B25
                     .
304          CP25............
                 .
307                  B24
                         V
                         V
313                  CP24R
                     .
319                          B23
                             .
325                  CP23............
                         V
                         V
328                  CP23R
                     .
334                          B22
                             .
339                  CP22............
                     .
342                          B21
                             V
                             V
348                          CP21R
                             .
354                                  B20
                                     .
359                          CP20............
                             .
362                                  B19
                                     V
                                     V
368                                  CP19R
                                     .
371                          CP19C............
                             V
                             V
374                          CP19CR
                             .
380                                  B18
                                     .
386                          CP18............
```

```
                .          .          .          .
                .          .          .          .
389             .          .      CP18C...........
                .          .          V
                .          .          V
392             .          .     CP18CR
                .          .          .
                .          .          .
398             .          .          .        B17
                .          .          .          .
                .          .          .          .
403             .          .      CP17...........
                .          .          V
                .          .          V
406             .          .      CP17R
                .          .          .
                .          .          .
412             .          .          .        B16
                .          .          .          .
                .          .          .          .
418             .          .      CP16...........
                .          .          V
                .          .          V
421             .          .      CP16R
                .          .          .
                .          .          .
427             .          .          .        B15
                .          .          .          .
                .          .          .          .
432             .          .      CP15...........
                .          .          .
                .          .          .
435             .      CP15C...........
                .          V
                .          V
438             .     CP15CR
                .          .
                .          .
444             .          .        B14
                .          .          .
                .          .          .
449             .       CP14...........
                .          V
                .          V
452             .      CP14R
                .          .
                .          .
458             .          .        B13
                .          .          .
                .          .          .
463             .       CP13...........
                .          .
                .          .
466             .          .        B12
                .          .          V
                .          .          V
472             .          .      CP12R
                .          .          .
                .          .          .
475             .      CP12C...........
                .          V
                .          V
478             .     CP12CR
                .          .
                .          .
484             .          .        B11
                .          .          .
                .          .          .
489             .       CP11...........
                .          .
                .          .
492        CP11C...........
               V
               V
495       CP11CR
                .
                .
501             .        B10
                .          .
                .          .
506         CP10...........
                .
                .
509             .         B9
                .          V
                .          V
515             .        CP9R
                .          .
                .          .
518         CP9C...........
               V
               V
521        CP9CR
                .
                .
527             .         B8
                .          .
                .          .
532             .          .         B7
                .          .          .
                .          .          .
538         CP7C...........................
               V
               V
541        CP7CR
                .
```

```
547          .          B6
             .           .
             .           .
553       CP6C............
             V
             V
556       CP6CR
             .
             .
562          .          B5
             .           .
             .           .
567        CP5............
             .
             .
570          .          B4
             .           V
             .           V
576          .        CP4R
             .           .
             .           .
579       CP4C............
             V
             V
582       CP4CR
             .
             .
588          .          B3
             .           .
             .           .
593        CP3............
             .
             .
596          .          B2
             .           V
             .           V
602          .        CP2R
             .           .
             .           .
605       CP2C............
             V
             V
608       CP2CR
             .
             .
614          .          B1
             .           .
             .           .
620        CP1............
             V
             V
623       CP1R
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   19SEP08  TIME  10:02:53  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

Gavilan Peak Watershed 100-YR 6-HR
RBF Consulting Job No. 45103870

```
  5 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT        HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1JAN94  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     7JAN94  ENDING DATE
                   NDTIME       2235  ENDING TIME
                    ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL    0.08 HOURS
                     TOTAL TIME BASE  166.58 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

  7 JD        INDEX STORM NO. 1
                     STRM        3.23  PRECIPITATION DEPTH
                     TRDA        0.01  TRANSPOSITION DRAINAGE AREA

  8 PI          PRECIPITATION PATTERN
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
```

```
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00

 12 JD        INDEX STORM NO. 2
                STRM        3.21  PRECIPITATION DEPTH
                TRDA        0.50  TRANSPOSITION DRAINAGE AREA

 13 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00

 17 JD        INDEX STORM NO. 3
                STRM        3.15  PRECIPITATION DEPTH
                TRDA        2.80  TRANSPOSITION DRAINAGE AREA

 18 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                0.03      0.03      0.07      0.07      0.07      0.08      0.08      0.08      0.05      0.05
                0.05      0.02      0.02      0.02      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00

 22 JD        INDEX STORM NO. 4
                STRM        2.98  PRECIPITATION DEPTH
                TRDA       16.00  TRANSPOSITION DRAINAGE AREA

 23 PI          PRECIPITATION PATTERN
                0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.01
                0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.01      0.00      0.00      0.00      0.00      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                0.03      0.03      0.06      0.06      0.06      0.07      0.07      0.07      0.04      0.04
                0.04      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 26 KK      *      B37    *
            *             *
            ***************

 27 KO        OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                TIMINT     0.083  TIME INTERVAL IN HOURS

      WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 32 KK      *     CP37R   *        CNAME    CP37
            *             *
            ***************

 33 KO        OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                TIMINT     0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 35 KK      *      B44    *
            *             *
            ***************

 36 KO        OUTPUT CONTROL VARIABLES
```

```
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 41 KK    *    CP44R    *        CNAME    CP44
          *             *
          ***************

 42 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 44 KK    *      B46    *
          *             *
          ***************

 45 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 50 KK    *    CP46R    *        CNAME    CP46
          *             *
          ***************

 51 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 56 KK    *      B45    *
          *             *
          ***************

 57 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 62 KK    *    CP45     *        CNAME    CP45R
```

```
          *            *
          ***************

 63 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 65 KK    *     CP44C   *        CNAME  CP44CR
          *             *
          ***************

 66 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 68 KK    *    CP44CR   *        CNAME   CP44C
          *             *
          ***************

 69 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 74 KK    *        B43  *
          *             *
          ***************

 75 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 80 KK    *       CP43  *        CNAME   CP43R
          *             *
          ***************

 81 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
```

```
                ***************
                *             *
 83 KK          *     B42     *
                *             *
                ***************

 84 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
 89 KK          *    CP42R    *        CNAME    CP42
                *             *
                ***************

 90 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
 92 KK          *     B41     *
                *             *
                ***************

 93 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
 98 KK          *    CP41R    *        CNAME    CP41
                *             *
                ***************

 99 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
104 KK          *     B40     *
                *             *
                ***************

105 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 110 KK       *    CP40     *        CNAME   CP40R
              *             *
              ***************

 111 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 113 KK       *    CP40C    *        CNAME  CP40CR
              *             *
              ***************

 114 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 116 KK       *   CP40CR    *        CNAME   CP40C
              *             *
              ***************

 117 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 122 KK       *     B39     *
              *             *
              ***************

 123 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 128 KK       *    CP39     *        CNAME   CP39R
              *             *
              ***************

 129 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
```

```
                ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
131 KK    *     CP39C   *        CNAME  CP39CR
          *             *
          ***************

132 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
134 KK    *    CP39CR   *        CNAME   CP39C
          *             *
          ***************

135 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
140 KK    *       B38   *
          *             *
          ***************

141 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
145 KK    *      CP38   *        CNAME   CP38R
          *             *
          ***************

146 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
148 KK    *     CP37C   *        CNAME  CP37CR
          *             *
          ***************

149 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
```

```
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
151 KK    *    CP37CR   *        CNAME   CP37C
          *             *
          ***************

152 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
157 KK    *       B36   *
          *             *
          ***************

158 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
163 KK    *      CP36   *        CNAME   CP36R
          *             *
          ***************

164 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
166 KK    *       B35   *
          *             *
          ***************

167 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
173 KK    *     CP35R   *        CNAME    CP35
          *             *
          ***************
```

```
174 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
176 KK    *     CP35C   *        CNAME  CP35CR
          *             *
          ***************

177 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
179 KK    *    CP35CR   *        CNAME   CP35C
          *             *
          ***************

180 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
185 KK    *       B34   *
          *             *
          ***************

186 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
191 KK    *      CP34   *        CNAME   CP34R
          *             *
          ***************

192 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
```

```
                *             *
194 KK          *     CP34R   *        CNAME    CP34
                *             *
                ***************

195 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
200 KK          *       B33   *
                *             *
                ***************

201 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
205 KK          *      CP33   *        CNAME    CP33R
                *             *
                ***************

206 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
208 KK          *       B32   *
                *             *
                ***************

209 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
214 KK          *     CP32R   *        CNAME    CP32
                *             *
                ***************

215 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 220 KK     *      B31    *
            *             *
            ***************

 221 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 227 KK     *      CP31   *        CNAME   CP31R
            *             *
            ***************

 228 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 230 KK     *      CP31R  *        CNAME    CP31
            *             *
            ***************

 231 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 236 KK     *      B30    *
            *             *
            ***************

 237 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 241 KK     *      CP30   *        CNAME   CP30R
            *             *
            ***************

 242 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
244 KK    *      B29    *
          *             *
          ***************

245 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
250 KK    *      B28    *
          *             *
          ***************

251 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
256 KK    *     CP28C   *        CNAME  CP28CR
          *             *
          ***************

257 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
259 KK    *    CP28CR   *        CNAME   CP28C
          *             *
          ***************

260 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
265 KK    *      B27    *
          *             *
          ***************

266 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
```

```
                IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
               ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
               ISAV2      2000  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
271 KK    *     CP27    *        CNAME   CP27R
          *             *
          ***************

272 KO          OUTPUT CONTROL VARIABLES
                     IPRNT         5  PRINT CONTROL
                     IPLOT         0  PLOT CONTROL
                     QSCAL        0.  HYDROGRAPH PLOT SCALE
                     IPNCH         0  PUNCH COMPUTED HYDROGRAPH
                      IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2      2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT     0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
274 KK    *     CP27R   *        CNAME    CP27
          *             *
          ***************

275 KO          OUTPUT CONTROL VARIABLES
                     IPRNT         5  PRINT CONTROL
                     IPLOT         0  PLOT CONTROL
                     QSCAL        0.  HYDROGRAPH PLOT SCALE
                     IPNCH         0  PUNCH COMPUTED HYDROGRAPH
                      IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2      2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT     0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
280 KK    *      B26    *
          *             *
          ***************

281 KO          OUTPUT CONTROL VARIABLES
                     IPRNT         5  PRINT CONTROL
                     IPLOT         0  PLOT CONTROL
                     QSCAL        0.  HYDROGRAPH PLOT SCALE
                     IPNCH         0  PUNCH COMPUTED HYDROGRAPH
                      IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2      2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT     0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
286 KK    *     CP26    *        CNAME   CP26R
          *             *
          ***************

287 KO          OUTPUT CONTROL VARIABLES
                     IPRNT         5  PRINT CONTROL
                     IPLOT         0  PLOT CONTROL
                     QSCAL        0.  HYDROGRAPH PLOT SCALE
                     IPNCH         0  PUNCH COMPUTED HYDROGRAPH
                      IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2      2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT     0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
289 KK    *     CP26C   *        CNAME  CP26CR
          *             *
          ***************

290 KO          OUTPUT CONTROL VARIABLES
```

```
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
292 KK    *    CP26CR   *        CNAME   CP26C
          *             *
          ***************

293 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
298 KK    *        B25  *
          *             *
          ***************

299 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
304 KK    *      CP25   *        CNAME   CP25R
          *             *
          ***************

305 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
307 KK    *        B24  *
          *             *
          ***************

308 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
313 KK    *     CP24R   *        CNAME    CP24
```

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          *             *
          ***************

314 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
319 KK    *      B23    *
          *             *
          ***************

320 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
325 KK    *     CP23    *        CNAME   CP23R
          *             *
          ***************

326 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
328 KK    *     CP23R   *        CNAME    CP23
          *             *
          ***************

329 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
334 KK    *      B22    *
          *             *
          ***************

335 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
```

```
                ***************
                *             *
339 KK          *     CP22    *        CNAME   CP22R
                *             *
                ***************

340 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
342 KK          *      B21    *
                *             *
                ***************

343 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
348 KK          *    CP21R    *        CNAME    CP21
                *             *
                ***************

349 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
354 KK          *      B20    *
                *             *
                ***************

355 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
359 KK          *     CP20    *        CNAME   CP20R
                *             *
                ***************

360 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
362 KK    *       B19   *
          *             *
          ***************

363 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
368 KK    *     CP19R   *        CNAME    CP19
          *             *
          ***************

369 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
371 KK    *     CP19C   *        CNAME  CP19CR
          *             *
          ***************

372 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
374 KK    *    CP19CR   *        CNAME   CP19C
          *             *
          ***************

375 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
380 KK    *       B18   *
          *             *
          ***************

381 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
```

```
                ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
386 KK    *     CP18    *        CNAME   CP18R
          *             *
          ***************

387 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
389 KK    *     CP18C   *        CNAME  CP18CR
          *             *
          ***************

390 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
392 KK    *    CP18CR   *        CNAME   CP18C
          *             *
          ***************

393 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
398 KK    *       B17   *
          *             *
          ***************

399 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
403 KK    *     CP17    *        CNAME   CP17R
          *             *
          ***************

404 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
```

```
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
406 KK    *     CP17R   *        CNAME    CP17
          *             *
          ***************

407 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
412 KK    *       B16   *
          *             *
          ***************

413 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
418 KK    *     CP16    *        CNAME    CP16R
          *             *
          ***************

419 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
421 KK    *     CP16R   *        CNAME    CP16
          *             *
          ***************

422 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5   PRINT CONTROL
                IPLOT          0   PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          0   PUNCH COMPUTED HYDROGRAPH
                 IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083   TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
427 KK    *       B15   *
          *             *
          ***************
```

```
 428 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 432 KK    *     CP15    *        CNAME   CP15R
           *             *
           ***************

 433 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 435 KK    *     CP15C   *        CNAME  CP15CR
           *             *
           ***************

 436 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 438 KK    *    CP15CR   *        CNAME   CP15C
           *             *
           ***************

 439 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 444 KK    *       B14   *
           *             *
           ***************

 445 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
```

```
                *            *
 449 KK         *     CP14   *        CNAME   CP14R
                *            *
                **************

 450 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
 452 KK         *     CP14R  *        CNAME    CP14
                *            *
                **************

 453 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
 458 KK         *       B13  *
                *            *
                **************

 459 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
 463 KK         *      CP13  *        CNAME   CP13R
                *            *
                **************

 464 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
 466 KK         *       B12  *
                *            *
                **************

 467 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT       0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
472 KK    *    CP12R    *        CNAME    CP12
          *             *
          ***************

473 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
475 KK    *    CP12C    *        CNAME   CP12CR
          *             *
          ***************

476 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
478 KK    *    CP12CR   *        CNAME    CP12C
          *             *
          ***************

479 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
484 KK    *      B11    *
          *             *
          ***************

485 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
489 KK    *     CP11    *        CNAME    CP11R
          *             *
          ***************

490 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
492 KK        *    CP11C    *        CNAME  CP11CR
              *             *
              ***************

493 KO            OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
495 KK        *    CP11CR   *        CNAME   CP11C
              *             *
              ***************

496 KO            OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
501 KK        *      B10    *
              *             *
              ***************

502 KO            OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
506 KK        *     CP10    *        CNAME   CP10R
              *             *
              ***************

507 KO            OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
509 KK        *      B9     *
              *             *
              ***************

510 KO            OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
```

```
                IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
               ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
               ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
              TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 515 KK   *     CP9R    *        CNAME     CP9
          *             *
          ***************

 516 KO         OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 518 KK   *     CP9C    *        CNAME    CP9CR
          *             *
          ***************

 519 KO         OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 521 KK   *    CP9CR    *        CNAME     CP9C
          *             *
          ***************

 522 KO         OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 527 KK   *        B8   *
          *             *
          ***************

 528 KO         OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 532 KK   *        B7   *
          *             *
          ***************

 533 KO         OUTPUT CONTROL VARIABLES
```

```
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 538 KK   *     CP7C    *        CNAME   CP7CR
          *             *
          ***************

 539 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 541 KK   *     CP7CR   *        CNAME    CP7C
          *             *
          ***************

 542 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 547 KK   *       B6    *
          *             *
          ***************

 548 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 553 KK   *     CP6C    *        CNAME   CP6CR
          *             *
          ***************

 554 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 556 KK   *     CP6CR   *        CNAME    CP6C
```

```
          *            *
          ***************

557 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
562 KK    *        B5   *
          *             *
          ***************

563 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
567 KK    *       CP5   *        CNAME    CP5R
          *             *
          ***************

568 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
570 KK    *        B4   *
          *             *
          ***************

571 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
576 KK    *       CP4R  *        CNAME     CP4
          *             *
          ***************

577 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              ***************
              *             *
579 KK        *     CP4C    *        CNAME   CP4CR
              *             *
              ***************

580 KO            OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
582 KK        *     CP4CR   *        CNAME    CP4C
              *             *
              ***************

583 KO            OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
588 KK        *        B3   *
              *             *
              ***************

589 KO            OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
593 KK        *       CP3   *        CNAME    CP3R
              *             *
              ***************

594 KO            OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
596 KK        *        B2   *
              *             *
              ***************

597 KO            OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
602 KK    *     CP2R    *        CNAME     CP2
          *             *
          ***************

603 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
605 KK    *     CP2C    *        CNAME    CP2CR
          *             *
          ***************

606 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
608 KK    *    CP2CR    *        CNAME     CP2C
          *             *
          ***************

609 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
614 KK    *        B1   *
          *             *
          ***************

615 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
620 KK    *       CP1   *        CNAME     CP1R
          *             *
          ***************

621 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
```

```
ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
623 KK    *     CP1R   *        CNAME     CP1
          *            *
          **************

624 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS

1
                                   RUNOFF SUMMARY
                          FLOW IN CUBIC FEET PER SECOND
                       TIME IN HOURS,  AREA IN SQUARE MILES
```

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	B37	801.	4.17	81.	20.	7.	0.36		
+	ROUTED TO	CP37R	801.	4.17	81.	20.	7.	0.36		
+	HYDROGRAPH AT	B44	975.	4.17	90.	23.	8.	0.43		
+	ROUTED TO	CP44R	975.	4.17	90.	23.	8.	0.43		
+	HYDROGRAPH AT	B46	1490.	4.25	179.	45.	15.	0.77		
+	ROUTED TO	CP46R	1354.	4.33	179.	45.	15.	0.77		
+	HYDROGRAPH AT	B45	244.	4.17	20.	5.	2.	0.13		
+	2 COMBINED AT	CP45	1465.	4.33	196.	49.	16.	0.90		
+	2 COMBINED AT	CP44C	2024.	4.25	276.	69.	23.	1.32		
+	ROUTED TO	CP44CR	1873.	4.33	275.	69.	23.	1.32		
+	HYDROGRAPH AT	B43	147.	4.17	11.	3.	1.	0.07		
+	2 COMBINED AT	CP43	1923.	4.33	284.	72.	24.	1.39		
+	HYDROGRAPH AT	B42	671.	4.17	62.	15.	5.	0.31		
+	ROUTED TO	CP42R	671.	4.17	62.	15.	5.	0.31		
+	HYDROGRAPH AT	B41	640.	4.17	59.	15.	5.	0.25		
+	ROUTED TO	CP41R	561.	4.25	59.	15.	5.	0.25		
+	HYDROGRAPH AT	B40	142.	4.17	13.	3.	1.	0.07		
+	2 COMBINED AT	CP40	702.	4.25	71.	18.	6.	0.32		
+	2 COMBINED AT	CP40C	1276.	4.25	131.	33.	11.	0.63		
+	ROUTED TO	CP40CR	1099.	4.33	131.	33.	11.	0.63		
+	HYDROGRAPH AT	B39	176.	4.17	15.	4.	1.	0.09		
+	2 COMBINED AT	CP39	1190.	4.33	144.	36.	12.	0.72		
+	2 COMBINED AT	CP39C	2640.	4.33	409.	103.	34.	2.11		
+	ROUTED TO	CP39CR	2614.	4.42	409.	103.	34.	2.11		

+	HYDROGRAPH AT	B38	58.	4.08	3.	1.	0.	0.02
+	2 COMBINED AT	CP38	2615.	4.42	411.	103.	34.	2.14
+	2 COMBINED AT	CP37C	2982.	4.33	483.	122.	41.	2.49
+	ROUTED TO	CP37CR	2919.	4.42	483.	122.	41.	2.49
+	HYDROGRAPH AT	B36	977.	4.17	78.	19.	6.	0.36
+	2 COMBINED AT	CP36	3202.	4.42	551.	139.	46.	2.86
+	HYDROGRAPH AT	B35	538.	4.25	58.	14.	5.	0.32
+	ROUTED TO	CP35R	538.	4.25	58.	14.	5.	0.32
+	2 COMBINED AT	CP35C	3458.	4.42	593.	149.	50.	3.18
+	ROUTED TO	CP35CR	3324.	4.50	593.	149.	50.	3.18
+	HYDROGRAPH AT	B34	865.	4.17	72.	18.	6.	0.40
+	2 COMBINED AT	CP34	3562.	4.50	645.	163.	54.	3.57
+	ROUTED TO	CP34R	3564.	4.50	645.	163.	54.	3.57
+	HYDROGRAPH AT	B33	16.	4.08	1.	0.	0.	0.00
+	2 COMBINED AT	CP33	3564.	4.50	646.	163.	54.	3.58
+	HYDROGRAPH AT	B32	982.	4.17	87.	22.	7.	0.41
+	ROUTED TO	CP32R	747.	4.42	87.	22.	7.	0.41
+	HYDROGRAPH AT	B31	734.	4.25	85.	21.	7.	0.38
+	2 COMBINED AT	CP31	1262.	4.33	168.	42.	14.	0.79
+	ROUTED TO	CP31R	1256.	4.42	168.	42.	14.	0.79
+	HYDROGRAPH AT	B30	85.	4.08	6.	1.	0.	0.03
+	2 COMBINED AT	CP30	1261.	4.42	173.	44.	15.	0.82
+	HYDROGRAPH AT	B29	398.	4.17	37.	9.	3.	0.17
+	HYDROGRAPH AT	B28	497.	4.17	42.	11.	4.	0.18
+	2 COMBINED AT	CP28C	895.	4.17	79.	20.	7.	0.35
+	ROUTED TO	CP28CR	783.	4.25	79.	20.	7.	0.35
+	HYDROGRAPH AT	B27	493.	4.17	39.	10.	3.	0.18
+	2 COMBINED AT	CP27	1191.	4.17	118.	30.	10.	0.53
+	ROUTED TO	CP27R	1043.	4.33	118.	30.	10.	0.53
+	HYDROGRAPH AT	B26	379.	4.17	36.	9.	3.	0.16
+	2 COMBINED AT	CP26	1235.	4.33	152.	38.	13.	0.69
+	2 COMBINED AT	CP26C	2098.	4.33	314.	79.	26.	1.51
+	ROUTED TO	CP26CR	2073.	4.42	314.	79.	26.	1.51
+	HYDROGRAPH AT	B25	172.	4.17	14.	3.	1.	0.07
+	2 COMBINED AT	CP25	2108.	4.42	326.	82.	27.	1.57
	HYDROGRAPH AT							

+		B24	518.	4.17	45.	11.	4.	0.20
+	ROUTED TO	CP24R	421.	4.33	45.	11.	4.	0.20
+	HYDROGRAPH AT	B23	534.	4.17	45.	11.	4.	0.22
+	2 COMBINED AT	CP23	856.	4.25	90.	23.	8.	0.42
+	ROUTED TO	CP23R	842.	4.25	90.	23.	8.	0.42
+	HYDROGRAPH AT	B22	92.	4.08	6.	1.	0.	0.03
+	2 COMBINED AT	CP22	860.	4.25	96.	24.	8.	0.45
+	HYDROGRAPH AT	B21	813.	4.17	71.	18.	6.	0.33
+	ROUTED TO	CP21R	762.	4.25	71.	18.	6.	0.33
+	HYDROGRAPH AT	B20	360.	4.08	24.	6.	2.	0.11
+	2 COMBINED AT	CP20	1020.	4.17	95.	24.	8.	0.44
+	HYDROGRAPH AT	B19	507.	4.17	46.	12.	4.	0.22
+	ROUTED TO	CP19R	507.	4.17	46.	12.	4.	0.22
+	2 COMBINED AT	CP19C	1428.	4.17	138.	35.	12.	0.66
+	ROUTED TO	CP19CR	1238.	4.25	138.	35.	12.	0.66
+	HYDROGRAPH AT	B18	422.	4.17	35.	9.	3.	0.17
+	2 COMBINED AT	CP18	1488.	4.25	170.	43.	14.	0.83
+	2 COMBINED AT	CP18C	2023.	4.25	256.	64.	21.	1.28
+	ROUTED TO	CP18CR	1935.	4.33	256.	64.	21.	1.28
+	HYDROGRAPH AT	B17	557.	4.08	41.	10.	3.	0.20
+	2 COMBINED AT	CP17	2053.	4.33	291.	73.	24.	1.48
+	ROUTED TO	CP17R	2006.	4.42	291.	73.	24.	1.48
+	HYDROGRAPH AT	B16	517.	4.17	47.	12.	4.	0.20
+	2 COMBINED AT	CP16	2164.	4.33	331.	83.	28.	1.67
+	ROUTED TO	CP16R	2149.	4.42	331.	83.	28.	1.67
+	HYDROGRAPH AT	B15	133.	4.08	9.	2.	1.	0.05
+	2 COMBINED AT	CP15	2165.	4.42	339.	85.	28.	1.72
+	2 COMBINED AT	CP15C	3666.	4.42	636.	160.	53.	3.29
+	ROUTED TO	CP15CR	3630.	4.50	635.	160.	53.	3.29
+	HYDROGRAPH AT	B14	65.	4.08	5.	1.	0.	0.02
+	2 COMBINED AT	CP14	3635.	4.50	639.	161.	54.	3.31
+	ROUTED TO	CP14R	3619.	4.50	639.	161.	54.	3.31
+	HYDROGRAPH AT	B13	101.	4.08	7.	2.	1.	0.03
+	2 COMBINED AT	CP13	3627.	4.50	644.	162.	54.	3.35
+	HYDROGRAPH AT	B12	531.	4.17	54.	14.	5.	0.25
+	ROUTED TO	CP12R	531.	4.17	54.	14.	5.	0.25

+	2 COMBINED AT	CP12C	3810.	4.50	686.	173.	58.	3.60
+	ROUTED TO	CP12CR	3779.	4.50	686.	173.	58.	3.60
+	HYDROGRAPH AT	B11	41.	4.08	3.	1.	0.	0.01
+	2 COMBINED AT	CP11	3781.	4.50	688.	174.	58.	3.61
+	2 COMBINED AT	CP11C	6558.	4.50	1252.	316.	105.	7.19
+	ROUTED TO	CP11CR	6552.	4.58	1252.	316.	105.	7.19
+	HYDROGRAPH AT	B10	182.	4.08	14.	3.	1.	0.06
+	2 COMBINED AT	CP10	6569.	4.58	1262.	319.	106.	7.25
+	HYDROGRAPH AT	B9	688.	4.25	83.	21.	7.	0.32
+	ROUTED TO	CP9R	688.	4.25	83.	21.	7.	0.32
+	2 COMBINED AT	CP9C	6792.	4.58	1328.	336.	112.	7.57
+	ROUTED TO	CP9CR	6796.	4.58	1328.	336.	112.	7.57
+	HYDROGRAPH AT	B8	47.	4.08	4.	1.	0.	0.01
+	HYDROGRAPH AT	B7	162.	4.17	16.	4.	1.	0.05
+	3 COMBINED AT	CP7C	6829.	4.58	1344.	340.	113.	7.64
+	ROUTED TO	CP7CR	6844.	4.58	1344.	340.	113.	7.64
+	HYDROGRAPH AT	B6	291.	4.17	27.	7.	2.	0.15
+	2 COMBINED AT	CP6C	6907.	4.58	1362.	345.	115.	7.78
+	ROUTED TO	CP6CR	6913.	4.58	1362.	345.	115.	7.78
+	HYDROGRAPH AT	B5	126.	4.08	10.	2.	1.	0.07
+	2 COMBINED AT	CP5	6920.	4.58	1369.	347.	116.	7.85
+	HYDROGRAPH AT	B4	366.	4.08	34.	8.	3.	0.13
+	ROUTED TO	CP4R	366.	4.08	34.	8.	3.	0.13
+	2 COMBINED AT	CP4C	6971.	4.58	1395.	354.	118.	7.98
+	ROUTED TO	CP4CR	6940.	4.58	1395.	354.	118.	7.98
+	HYDROGRAPH AT	B3	28.	4.08	2.	0.	0.	0.01
+	2 COMBINED AT	CP3	6941.	4.58	1396.	354.	118.	7.99
+	HYDROGRAPH AT	B2	419.	4.17	37.	9.	3.	0.17
+	ROUTED TO	CP2R	419.	4.17	37.	9.	3.	0.17
+	2 COMBINED AT	CP2C	7029.	4.58	1425.	361.	120.	8.16
+	ROUTED TO	CP2CR	6921.	4.67	1425.	361.	120.	8.16
+	HYDROGRAPH AT	B1	831.	4.17	72.	18.	6.	0.30
+	2 COMBINED AT	CP1	7025.	4.67	1480.	375.	125.	8.46
+	ROUTED TO	CP1R	7025.	4.67	1480.	375.	125.	8.46

*** NORMAL END OF HEC-1 ***

Gavilan Peak Watershed
Floodplain Delineation Study

Appendix 2 HEC-1 Output File for 100-Year 24-Hour Storm

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   19SEP08  TIME  10:37:53  *
*                                      *
****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104              *
*                                      *
****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X       X     X         XX
X     X  X       X                X
XXXXXXX  XXXX    X        XXXXX   X
X     X  X       X                X
X     X  X       X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                          HEC-1 INPUT                                                    PAGE  1

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

    1           ID   Gavilan Peak Watershed 100-YR 24-HR
    2           ID   RBF Consulting Job No. 45103870
    3           ID
                *DIAGRAM
    4           IT       5 01JAN94       0    2000
    5           IO       5
    6           IN      15 01JAN94       0
    7           JD    4.73    0.001
                * SCS Type II 24-Hour Storm Distribution
    8           PC     0.0    0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
    9           PC   0.029    0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
   10           PC   0.064    0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
   11           PC    0.11    0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
   12           PC   0.181    0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   13           PC   0.735    0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   14           PC   0.856    0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   15           PC   0.913    0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
   16           PC   0.953    0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
   17           PC   0.983    0.986   0.989   0.992   0.995   0.998     1.0
   18           IN      15 01JAN94       0
   19           JD    4.49     10.0
                * SCS Type II 24-Hour Storm Distribution
   20           PC     0.0    0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
   21           PC   0.029    0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
   22           PC   0.064    0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
   23           PC    0.11    0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
   24           PC   0.181    0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   25           PC   0.735    0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   26           PC   0.856    0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   27           PC   0.913    0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
   28           PC   0.953    0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
   29           PC   0.983    0.986   0.989   0.992   0.995   0.998     1.0

   30           KK     B37
   31           KO       0       0     0.0       0      22
   32           BA   0.358
   33           LG    0.35   0.244   9.776   0.044   2.805
                * B37 S_Graph
   34           UI     0.0   86.15  325.79  560.88  563.94  353.43  264.63  179.55  134.76    89.0
   35           UI   65.06    46.2   32.36   21.89   12.67   12.67   12.67     0.0

   36           KK   CP37R   CNAME    CP37
   37           KO       0       0     0.0       0      22
   38           RN   CP37R

   39           KK     B44
   40           KO       0       0     0.0       0      22
   41           BA   0.426
   42           LG    0.35   0.388   6.238   0.161  21.052
                * B 44 S_Graph
   43           UI     0.0  143.35  537.83  887.11  555.15  397.35  258.34  181.67  112.82   78.67
   44           UI   50.28   36.09   17.61   17.61   17.61     0.0
1                                          HEC-1 INPUT                                                    PAGE  2

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   45           KK   CP44R   CNAME    CP44
   46           KO       0       0     0.0       0      22
   47           RN   CP44R

   48           KK     B46
   49           KO       0       0     0.0       0      22
   50           BA   0.771
   51           LG    0.35    0.36   6.795   0.128  32.878
                * B46 S_Graph
   52           UI     0.0  170.36  646.49 1101.66 1260.91  765.29  586.55  406.45  308.87   204.7
   53           UI  156.15  106.62   73.52   64.99   26.28   26.28   26.28   26.28     0.0
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 54          KK   CP46R   CNAME    CP46
 55          KO       0       0     0.0       0      22
 56          RS       1    FLOW     0.0     0.0
 57          RC   0.052   0.062   0.059  4229.3  0.0219     0.0
             * 46R
 58          RX     0.0    12.9    25.8    38.8    51.7    64.6    77.5    90.4
 59          RY  2250.0  2248.4  2244.3  2242.5  2242.2  2248.0  2249.4  2249.5

 60          KK     B45
 61          KO       0       0     0.0       0      22
 62          BA   0.125
 63          LG    0.35    0.35   4.664   0.299   1.406
             * B45 S_Graph
 64          UI     0.0   34.98  132.66  234.69   174.2  121.01   85.37   58.68   39.97   28.42
 65          UI   19.01   12.24    9.26    4.75    4.75    4.75     0.0

 66          KK    CP45   CNAME   CP45R
 67          KO       0       0     0.0       0      22
 68          HC       2

 69          KK   CP44C   CNAME  CP44CR
 70          KO       0       0     0.0       0      22
 71          HC       2

 72          KK  CP44CR   CNAME   CP44C
 73          KO       0       0     0.0       0      22
 74          RS       1    FLOW     0.0     0.0
 75          RC    0.05   0.039    0.05 3680.85  0.0148     0.0
             * 44CR
 76          RX     0.0    35.6    71.3   106.9   142.5   178.1   213.7   249.4
 77          RY  2184.7  2182.8  2179.4  2176.8  2181.6  2183.5  2183.8  2184.0

 78          KK     B43
 79          KO       0       0     0.0       0      22
 80          BA   0.072
 81          LG    0.35    0.35   4.332   0.365   2.195
             * B43 S_Graph
 82          UI     0.0   25.74   95.43  152.55   93.05   66.04   42.34    29.1   18.69   12.48
 83          UI    7.79     5.0    3.05    3.05    3.05
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 84          KK    CP43   CNAME   CP43R
 85          KO       0       0     0.0       0      22
 86          HC       2

 87          KK     B42
 88          KO       0       0     0.0       0      22
 89          BA   0.309
 90          LG    0.35    0.38   6.406   0.151  12.755
             * B42 S_Graph
 91          UI     0.0   89.89  341.65  601.31   418.9  296.59   205.9  143.61   93.54   66.29
 92          UI   44.86   30.57   19.23   11.98   11.98   11.98     0.0

 93          KK   CP42R   CNAME    CP42
 94          KO       0       0     0.0       0      22
 95          RN   CP42R

 96          KK     B41
 97          KO       0       0     0.0       0      22
 98          BA   0.245
 99          LG    0.35    0.33   7.294   0.105  29.888
             * B 41 S_Graph
100          UI     0.0  112.98  408.47  541.11  309.51  199.61  128.55   76.96   50.78   30.13
101          UI   17.04   11.68   11.68     0.0

102          KK   CP41R   CNAME    CP41
103          KO       0       0     0.0       0      22
104          RS       1    FLOW     0.0     0.0
105          RC    0.05   0.038    0.05 4217.84  0.0329     0.0
             * 41R
106          RX     0.0    16.8    33.6    50.3    67.1    83.9   100.7   117.5
107          RY  2269.6  2270.4  2269.6  2266.8  2264.6  2267.6  2269.0  2268.9

108          KK     B40
109          KO       0       0     0.0       0      22
110          BA   0.072
111          LG    0.35    0.39   5.773    0.19   0.769
             * B40 S_Graph
112          UI     0.0   18.16   68.61  118.76  112.74   71.86   53.22   35.94   26.87   17.48
113          UI   12.82    8.95     6.7    3.77    2.62    2.62    2.62     0.0

114          KK    CP40   CNAME   CP40R
115          KO       0       0     0.0       0      22
116          HC       2

117          KK   CP40C   CNAME  CP40CR
118          KO       0       0     0.0       0      22
119          HC       2

120          KK  CP40CR   CNAME   CP40C
121          KO       0       0     0.0       0      22
122          RS       1    FLOW     0.0     0.0
123          RC    0.05   0.038    0.05 3862.49  0.0116     0.0
             * 40CR
124          RX     0.0    23.4    46.8    70.1    93.5   116.9   140.3   163.6
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

125          RY  2180.9  2174.1  2171.2  2170.3  2173.6  2176.0  2178.5  2181.1

126          KK     B39
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127          KO       0       0     0.0       0      22
128          BA   0.094
129          LG    0.35    0.35   4.569   0.324   1.414
             * B39 S_Graph
130          UI     0.0   24.56   92.77  162.56  139.61   92.13   66.91   45.24   32.94   21.61
131          UI   15.61   10.59    8.83    3.47    3.46    3.46    3.46     0.0

132          KK    CP39   CNAME   CP39R
133          KO       0       0     0.0       0      22
134          HC       2

135          KK   CP39C   CNAME  CP39CR
136          KO       0       0     0.0       0      22
137          HC       2

138          KK  CP39CR   CNAME   CP39C
139          KO       0       0     0.0       0      22
140          RS       1    FLOW     0.0     0.0
141          RC    0.05   0.039    0.05  1269.2  0.0159     0.0
             * 39CR
142          RX     0.0    28.6    57.1    85.7   114.2   142.8   171.4   199.9
143          RY  2156.7  2142.8  2145.9  2149.2  2149.7  2148.2  2148.8  2153.6

144          KK     B38
145          KO       0       0     0.0       0      22
146          BA   0.022
147          LG    0.35    0.35   3.537   0.567     0.0
             * B 38 S_Graph
148          UI     0.0   41.38   75.91   31.46   12.83    5.52    1.97     0.0

149          KK    CP38   CNAME   CP38R
150          KO       0       0     0.0       0      22
151          HC       2

152          KK   CP37C   CNAME  CP37CR
153          KO       0       0     0.0       0      22
154          HC       2

155          KK  CP37CR   CNAME   CP37C
156          KO       0       0     0.0       0      22
157          RS       2    FLOW     0.0     0.0
158          RC    0.05   0.039    0.05 2353.06  0.0111     0.0
             * 37CR
159          RX     0.0    64.3   128.6   192.8   257.1   321.4   385.7   449.9
160          RY  2128.1  2122.0  2122.9  2124.5  2124.8  2126.2  2126.5  2127.9

161          KK     B36
162          KO       0       0     0.0       0      22
163          BA   0.362
164          LG   0.349   0.271   8.734    0.06    0.09
             * B36 S_Graph
165          UI     0.0  207.83  741.79  771.12   437.7  260.92   157.2   93.56   55.96    31.8
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

166          UI   18.94   18.94     0.0

167          KK    CP36   CNAME   CP36R
168          KO       0       0     0.0       0      22
169          HC       2

170          KK     B35
171          KO       0       0     0.0       0      22
172          BA    0.32
173          LG   0.338   0.349   5.428   0.223   6.055
             * B35 S_Graph
174          UI     0.0   45.28  153.28  296.06  419.67   397.2  260.68  211.93  166.21  121.32
175          UI  100.63   72.15   54.65   43.81   34.71   22.65   22.16    12.4    8.68    8.68
176          UI    8.68    8.68     0.0

177          KK   CP35R   CNAME    CP35
178          KO       0       0     0.0       0      22
179          RN   CP35R

180          KK   CP35C   CNAME  CP35CR
181          KO       0       0     0.0       0      22
182          HC       2

183          KK  CP35CR   CNAME   CP35C
184          KO       0       0     0.0       0      22
185          RS       1    FLOW     0.0     0.0
186          RC   0.049   0.041    0.05 4812.22  0.0109     0.0
             * 35CR
187          RX     0.0    19.4    38.7    58.1    77.4    96.8   116.2   135.5
188          RY  2074.1  2073.5  2068.5  2063.0  2065.7  2067.4  2071.7  2074.9

189          KK     B34
190          KO       0       0     0.0       0      22
191          BA   0.398
192          LG   0.345   0.369   5.574    0.21   6.977
             * B34 S_Graph
193          UI     0.0  134.75  504.68  829.03  516.45  369.45  239.74  168.61  104.32   72.75
194          UI   46.25    32.8   16.47   16.47   16.47     0.0

195          KK    CP34   CNAME   CP34R
196          KO       0       0     0.0       0      22
197          HC       2

198          KK   CP34R   CNAME    CP34
199          KO       0       0     0.0       0      22
200          RS       1    FLOW     0.0     0.0
201          RC   0.049   0.041    0.05  523.41  0.0181     0.0
             * 34R
202          RX     0.0    60.8   121.5   182.3   243.0   303.8   364.5   425.3
203          RY  2050.1  2048.1  2048.7  2048.1  2040.9  2049.0  2049.6  2050.2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 204          KK     B33
 205          KO       0       0     0.0       0      22
 206          BA   0.005
 207          LG   0.283   0.297     3.4    0.58  26.667
              * B33 S_Graph
 208          UI     0.0    21.9   12.83    3.12    0.79

 209          KK    CP33   CNAME   CP33R
 210          KO       0       0     0.0       0      22
 211          HC       2

 212          KK     B32
 213          KO       0       0     0.0       0      22
 214          BA    0.41
 215          LG   0.343   0.328   6.874   0.125  14.887
              * B32 S_Graph
 216          UI     0.0  152.33  561.21  877.33  526.78  371.45  237.35  158.42  104.19   66.44
 217          UI   45.12    24.3   17.67   17.67     0.0

 218          KK   CP32R   CNAME    CP32
 219          KO       0       0     0.0       0      22
 220          RS       3    FLOW     0.0     0.0
 221          RC   0.046    0.05    0.05 5162.61  0.0119     0.0
              * 32R
 222          RX     0.0    35.4    70.9   106.3   141.7   177.2   212.6   248.0
 223          RY  2125.8  2124.3  2122.5  2121.7  2121.4  2123.4  2125.4  2129.6

 224          KK     B31
 225          KO       0       0     0.0       0      22
 226          BA   0.378
 227          LG    0.31   0.197    7.17   0.115  12.469
              * B31 S_Graph
 228          UI     0.0   54.42  190.83  360.38  520.91  452.37  306.83  248.01  193.19  140.14
 229          UI  116.32   80.89   63.71    48.8   38.69   26.63   26.59   10.43   10.43   10.43
 230          UI   10.43   10.43     0.0

 231          KK    CP31   CNAME   CP31R
 232          KO       0       0     0.0       0      22
 233          HC       2

 234          KK   CP31R   CNAME    CP31
 235          KO       0       0     0.0       0      22
 236          RS       2    FLOW     0.0     0.0
 237          RC    0.06   0.053    0.06 1681.89   0.021     0.0
              * 31R
 238          RX     0.0    17.6    35.1    52.7    70.2    87.8   105.3   122.9
 239          RY  2104.2  2103.7  2097.4  2091.8  2093.9  2094.7  2099.4  2102.9

 240          KK     B30
 241          KO       0       0     0.0       0      22
 242          BA   0.028
 243          LG   0.343    0.37     5.8   0.191  21.429
              * B30 S_Graph
 244          UI     0.0   48.17   95.77   41.77    18.2    7.66    2.96     0.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 245          KK    CP30   CNAME   CP30R
 246          KO       0       0     0.0       0      22
 247          HC       2

 248          KK     B29
 249          KO       0       0     0.0       0      22
 250          BA   0.169
 251          LG    0.35   0.291   8.343   0.072   7.348
              * B29 S_Graph
 252          UI     0.0   51.67  197.27  339.75  224.31  160.52  108.42   76.38   48.64   33.85
 253          UI   22.79   17.15    7.83    6.72    6.72    6.72

 254          KK     B28
 255          KO       0       0     0.0       0      22
 256          BA   0.177
 257          LG   0.327   0.223   9.582   0.049  12.633
              * B28 S_Graph
 258          UI     0.0  112.61  404.82  359.76  207.59  121.72   68.34   42.18   24.75    10.6
 259          UI    9.69     0.0

 260          KK   CP28C   CNAME  CP28CR
 261          KO       0       0     0.0       0      22
 262          HC       2

 263          KK  CP28CR   CNAME   CP28C
 264          KO       0       0     0.0       0      22
 265          RS       1    FLOW     0.0     0.0
 266          RC   0.053   0.045    0.06  2112.4  0.0119     0.0
              * 28CR
 267          RX     0.0    21.5    43.0    64.6    86.1   107.6   129.1   150.6
 268          RY  2165.8  2165.0  2163.7  2163.6  2162.8  2160.2  2164.1  2166.0

 269          KK     B27
 270          KO       0       0     0.0       0      22
 271          BA   0.182
 272          LG   0.345   0.306   7.431     0.1  11.528
              * B27 S_Graph
 273          UI     0.0  127.96  457.16  348.45  206.04  118.36    66.8   36.72   22.38   10.37
 274          UI   10.37     0.0

 275          KK    CP27   CNAME   CP27R
 276          KO       0       0     0.0       0      22
```

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277          HC       2

278          KK   CP27R   CNAME    CP27
279          KO       0       0     0.0       0      22
280          RS       2    FLOW     0.0     0.0
281          RC   0.053   0.045    0.06 4578.95  0.0169     0.0
             * 27R
282          RX     0.0    30.4    60.8    91.2   121.6   152.0   182.4   212.8
283          RY  2119.9  2116.1  2114.3  2111.8  2113.3  2116.9  2118.6  2120.3
1                                         HEC-1 INPUT                                                    PAGE  8

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

284          KK     B26
285          KO       0       0     0.0       0      22
286          BA   0.163
287          LG   0.317    0.27   6.483   0.156  21.376
             * B26 S_Graph
288          UI     0.0    50.4  192.63  329.63   215.6  154.47  103.68   73.03   46.37   32.28
289          UI   21.58   16.64    6.94    6.52    6.52     0.0

290          KK    CP26   CNAME   CP26R
291          KO       0       0     0.0       0      22
292          HC       2

293          KK   CP26C   CNAME  CP26CR
294          KO       0       0     0.0       0      22
295          HC       2

296          KK  CP26CR   CNAME   CP26C
297          KO       0       0     0.0       0      22
298          RS       2    FLOW     0.0     0.0
299          RC    0.06   0.053    0.06 2155.67  0.0092     0.0
             * 26CR
300          RX     0.0    26.2    52.4    78.7   104.9   131.1   157.3   183.6
301          RY  2066.6  2065.8  2064.1  2063.4  2062.0  2055.8  2066.5  2068.0

302          KK     B25
303          KO       0       0     0.0       0      22
304          BA   0.066
305          LG    0.34   0.367   5.381   0.227    22.5
             * B25 S_Graph
306          UI     0.0   49.22  173.45  122.93   72.85   41.71   22.51   12.73    7.19    3.86
307          UI    3.86     0.0

308          KK    CP25   CNAME   CP25R
309          KO       0       0     0.0       0      22
310          HC       2

311          KK     B24
312          KO       0       0     0.0       0      22
313          BA   0.197
314          LG   0.344   0.255   9.005   0.056   9.667
             * B24 S_Graph
315          UI     0.0   88.47  319.86  433.09  248.46  162.34  104.19   62.77   41.47   25.03
316          UI   14.95    9.25    9.25     0.0

317          KK   CP24R   CNAME    CP24
318          KO       0       0     0.0       0      22
319          RS       2    FLOW     0.0     0.0
320          RC    0.07  0.0675    0.07  2627.3  0.0134     0.0
             * 24R
321          RX     0.0    31.2    62.3    93.5   124.6   155.8   187.0   218.1
322          RY  2114.7  2113.8  2111.3  2109.8  2111.4  2111.8  2114.1  2115.9
1                                         HEC-1 INPUT                                                    PAGE  9

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

323          KK     B23
324          KO       0       0     0.0       0      22
325          BA   0.224
326          LG   0.347   0.385   6.118    0.17  15.952
             * B23 S_Graph
327          UI     0.0   94.23  341.83  489.96  284.68  191.31  123.79   75.16    49.7   31.33
328          UI   21.13    10.2    10.2    10.2

329          KK    CP23   CNAME   CP23R
330          KO       0       0     0.0       0      22
331          HC       2

332          KK   CP23R   CNAME    CP23
333          KO       0       0     0.0       0      22
334          RS       1    FLOW     0.0     0.0
335          RC    0.07  0.0675    0.07  826.97  0.0145     0.0
             * 23R
336          RX     0.0    15.5    31.1    46.6    62.2    77.7    93.3   108.8
337          RY  2096.7  2095.4  2094.7  2091.7  2089.7  2094.0  2095.0  2095.9

338          KK     B22
339          KO       0       0     0.0       0      22
340          BA   0.028
341          LG    0.34   0.354   5.394   0.224  17.885
             * B22 S_Graph
342          UI     0.0  111.58   76.46   21.27    5.64     0.0

343          KK    CP22   CNAME   CP22R
344          KO       0       0     0.0       0      22
345          HC       2

346          KK     B21
347          KO       0       0     0.0       0      22
348          BA   0.331
349          LG   0.319   0.292   6.445   0.157  16.506
             * B21 S_Graph
```

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 350          UI     0.0  138.46  502.55  723.44  420.82  283.76  183.06  112.06   73.75   46.66
 351          UI   31.73   15.04   15.04   15.04

 352          KK   CP21R   CNAME    CP21
 353          KO       0       0     0.0       0      22
 354          RS       1    FLOW     0.0     0.0
 355          RC    0.07  0.0675    0.07  781.61  0.0108     0.0
              * 21R
 356          RX     0.0    24.2    48.5    72.7    97.0   121.2   145.4   169.7
 357          RY  2109.6  2108.7  2107.9  2106.0  2107.7  2108.3  2108.8  2110.1

 358          KK     B20
 359          KO       0       0     0.0       0      22
 360          BA   0.109
 361          LG    0.35   0.289    8.41    0.07   7.667
              * B20 S_Graph
 362          UI     0.0  245.91  374.92  140.05   52.33   19.17   10.66
1                                          HEC-1 INPUT                                          PAGE 10

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 363          KK    CP20   CNAME   CP20R
 364          KO       0       0     0.0       0      22
 365          HC       2

 366          KK     B19
 367          KO       0       0     0.0       0      22
 368          BA   0.216
 369          LG    0.35   0.337   7.192   0.109   13.42
              * B19 S_Graph
 370          UI     0.0   72.29   271.5   449.0   281.8  201.77  131.34   92.36   57.49   40.08
 371          UI    25.7   18.59    8.91    8.91    8.91     0.0

 372          KK   CP19R   CNAME    CP19
 373          KO       0       0     0.0       0      22
 374          RN   CP19R

 375          KK   CP19C   CNAME  CP19CR
 376          KO       0       0     0.0       0      22
 377          HC       2

 378          KK  CP19CR   CNAME   CP19C
 379          KO       0       0     0.0       0      22
 380          RS       1    FLOW     0.0     0.0
 381          RC    0.07   0.043    0.07 2331.21   0.009     0.0
              * 19R
 382          RX     0.0    21.2    42.3    63.5    84.7   105.8   127.0   148.2
 383          RY  2100.4  2095.9  2095.5  2097.9  2098.6  2098.9  2099.6  2100.2

 384          KK     B18
 385          KO       0       0     0.0       0      22
 386          BA   0.174
 387          LG   0.349   0.387   5.797   0.187  17.263
              * B18 S_Graph
 388          UI     0.0   80.15  289.77  382.77   218.8  140.95   90.78    54.3   35.83   21.21
 389          UI    11.9    8.27    8.27     0.0

 390          KK    CP18   CNAME   CP18R
 391          KO       0       0     0.0       0      22
 392          HC       2

 393          KK   CP18C   CNAME  CP18CR
 394          KO       0       0     0.0       0      22
 395          HC       2

 396          KK  CP18CR   CNAME   CP18C
 397          KO       0       0     0.0       0      22
 398          RS       1    FLOW     0.0     0.0
 399          RC    0.07   0.043    0.07 1451.54  0.0032     0.0
              * 18CR
 400          RX     0.0    22.1    44.2    66.3    88.4   110.5   132.6   154.7
 401          RY  2082.6  2081.3  2081.3  2072.2  2076.0  2079.6  2080.5  2081.8
1                                          HEC-1 INPUT                                          PAGE 11

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 402          KK     B17
 403          KO       0       0     0.0       0      22
 404          BA   0.196
 405          LG    0.33   0.335   5.616   0.213   19.35
              * B17 S_Graph
 406          UI     0.0  242.28   628.5  332.43  164.42   78.02   40.79   14.97   14.35

 407          KK    CP17   CNAME   CP17R
 408          KO       0       0     0.0       0      22
 409          HC       2

 410          KK   CP17R   CNAME    CP17
 411          KO       0       0     0.0       0      22
 412          RS       1    FLOW     0.0     0.0
 413          RC    0.12    0.06    0.12 1544.97  0.0154     0.0
              * 17R
 414          RX     0.0     6.4    11.2    16.0    32.9    38.8    51.9   268.8
 415          RY  2068.0  2066.0  2064.0  2062.0  2061.0  2062.0  2064.0  2066.0

 416          KK     B16
 417          KO       0       0     0.0       0      22
 418          BA   0.198
 419          LG   0.279   0.276   6.306    0.18  30.667
              * B16 S_Graph
 420          UI     0.0  100.73  359.91  433.07  245.52  152.18    96.3   57.65   34.69   23.55
 421          UI    9.82    9.82    9.82

 422          KK    CP16   CNAME   CP16R
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423          KO       0       0     0.0       0      22
424          HC       2

425          KK   CP16R   CNAME    CP16
426          KO       0       0     0.0       0      22
427          RS       2    FLOW     0.0     0.0
428          RC   0.041   0.035    0.06  937.81  0.0019     0.0
             * 16R
429          RX     0.0    23.2    46.4    69.6    92.8   116.0   139.2   162.4
430          RY  2061.1  2050.0  2053.8  2058.4  2057.2  2056.1  2057.6  2060.1

431          KK     B15
432          KO       0       0     0.0       0      22
433          BA   0.048
434          LG   0.338   0.332   4.611   0.331  20.392
             * B15 S_Graph
435          UI     0.0   65.75  155.23   76.38   36.03   16.87    7.56    3.65     0.0

436          KK    CP15   CNAME   CP15R
437          KO       0       0     0.0       0      22
438          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

439          KK   CP15C   CNAME  CP15CR
440          KO       0       0     0.0       0      22
441          HC       2

442          KK  CP15CR   CNAME   CP15C
443          KO       0       0     0.0       0      22
444          RS       1    FLOW     0.0     0.0
445          RC   0.041   0.035    0.06  603.95  0.0007     0.0
             * 15CR
446          RX     0.0    88.1   176.3   264.4   352.5   440.6   528.8   616.9
447          RY  2059.9  2058.3  2058.2  2054.0  2053.8  2053.5  2056.0  2058.2

448          KK     B14
449          KO       0       0     0.0       0      22
450          BA   0.021
451          LG   0.275   0.259   7.356   0.117  26.111
             * B14 S_Graph
452          UI     0.0   59.77    58.6   19.56    6.46    2.14     0.0

453          KK    CP14   CNAME   CP14R
454          KO       0       0     0.0       0      22
455          HC       2

456          KK   CP14R   CNAME    CP14
457          KO       0       0     0.0       0      22
458          RS       1    FLOW     0.0     0.0
459          RC   0.041   0.035    0.06  839.26   0.015     0.0
             * 14R
460          RX     0.0    11.8    23.5    35.3    47.0    58.8    70.5    82.3
461          RY  2053.1  2044.3  2043.3  2043.7  2048.1  2048.6  2049.3  2049.8

462          KK     B13
463          KO       0       0     0.0       0      22
464          BA   0.032
465          LG   0.317   0.308    5.32   0.241  14.583
             * B13 S_Graph
466          UI     0.0   54.07  115.02   52.45    23.6   10.37    4.34     2.8     0.0

467          KK    CP13   CNAME   CP13R
468          KO       0       0     0.0       0      22
469          HC       2

470          KK     B12
471          KO       0       0     0.0       0      22
472          BA   0.254
473          LG   0.338   0.365   5.839   0.188  22.218
             * B12 S_Graph
474          UI     0.0   64.63  244.15  424.82   385.8  249.75  182.95  123.77    92.0   59.14
475          UI   43.48   29.99   23.56    11.4    9.23    9.23    9.23     0.0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

476          KK   CP12R   CNAME    CP12
477          KO       0       0     0.0       0      22
478          RN   CP12R

479          KK   CP12C   CNAME  CP12CR
480          KO       0       0     0.0       0      22
481          HC       2

482          KK  CP12CR   CNAME   CP12C
483          KO       0       0     0.0       0      22
484          RS       1    FLOW     0.0     0.0
485          RC    0.06   0.032    0.05  397.88   0.002     0.0
             * 12CR
486          RX     0.0   114.6   229.2   343.7   458.3   572.9   687.5   802.0
487          RY  2052.0  2048.8  2048.3  2045.5  2047.2  2048.7  2049.4  2051.8

488          KK     B11
489          KO       0       0     0.0       0      22
490          BA   0.011
491          LG     0.3   0.204   7.044   0.125  13.182
             * B11 S_Graph
492          UI     0.0   44.77   33.88   10.33    2.81     0.0

493          KK    CP11   CNAME   CP11R
494          KO       0       0     0.0       0      22
495          HC       2
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496          KK   CP11C   CNAME  CP11CR
497          KO       0       0     0.0       0      22
498          HC       2

499          KK  CP11CR   CNAME   CP11C
500          KO       0       0     0.0       0      22
501          RS       1    FLOW     0.0     0.0
502          RC    0.06   0.032    0.05  714.08  0.0099     0.0
             * 11CR
503          RX     0.0    86.6   173.1   259.7   346.3   432.8   519.4   606.0
504          RY  2048.2  2044.2  2043.7  2041.7  2045.2  2045.1  2045.1  2048.3

505          KK     B10
506          KO       0       0     0.0       0      22
507          BA   0.057
508          LG   0.284   0.189   6.838   0.138  23.965
             * B10 S_Graph
509          UI     0.0   94.04  193.86   86.56   38.45   16.52     6.7    4.79

510          KK    CP10   CNAME   CP10R
511          KO       0       0     0.0       0      22
512          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

513          KK      B9
514          KO       0       0     0.0       0      22
515          BA    0.32
516          LG   0.324   0.307   6.454   0.155  46.754
             * B9 S_Graph
517          UI     0.0   62.84  241.21  411.03  532.07  320.62  248.68  183.13  131.61   99.19
518          UI   66.28   51.11   37.49   26.51   20.06   10.38   10.38   10.38   10.38     0.0

519          KK    CP9R   CNAME     CP9
520          KO       0       0     0.0       0      22
521          RN    CP9R

522          KK    CP9C   CNAME   CP9CR
523          KO       0       0     0.0       0      22
524          HC       2

525          KK   CP9CR   CNAME    CP9C
526          KO       0       0     0.0       0      22
527          RS       1    FLOW     0.0     0.0
528          RC    0.06   0.032    0.05  270.35  0.0119     0.0
             * 9CR
529          RX     0.0    24.3    48.7    73.0    97.3   121.7   146.0   170.4
530          RY  2041.7  2040.4  2035.6  2031.2  2028.8  2034.8  2036.9  2037.9

531          KK      B8
532          KO       0       0     0.0       0      22
533          BA   0.014
534          LG   0.281   0.195   7.093   0.122  15.385
             * B8 S_Graph
535          UI     0.0   16.46   48.54   28.15   15.09    7.71    3.93    2.02    1.08     0.0

536          KK      B7
537          KO       0       0     0.0       0      22
538          BA   0.054
539          LG   0.329   0.286   6.786   0.131  61.698
             * S_Graph
540          UI     0.0   43.52  150.81  103.17   60.57   34.32   18.55   10.44    5.52    3.33
541          UI    3.33

542          KK    CP7C   CNAME   CP7CR
543          KO       0       0     0.0       0      22
544          HC       3

545          KK   CP7CR   CNAME    CP7C
546          KO       0       0     0.0       0      22
547          RS       1    FLOW     0.0     0.0
548          RC    0.06   0.032    0.05  471.89  0.0085     0.0
             * 7CR
549          RX     0.0    24.3    48.7    73.0    97.3   121.7   146.0   170.4
550          RY  2041.7  2040.4  2035.6  2031.2  2029.8  2034.8  2036.9  2037.9
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

551          KK      B6
552          KO       0       0     0.0       0      22
553          BA   0.146
554          LG   0.318   0.358   6.101   0.179  11.007
             * B6 S_Graph
555          UI     0.0   37.75  142.94  252.96  197.76  135.04    96.8   65.62   46.04   31.71
556          UI   21.91   14.45   11.45     5.2     5.2     5.2     0.0

557          KK    CP6C   CNAME   CP6CR
558          KO       0       0     0.0       0      22
559          HC       2

560          KK   CP6CR   CNAME    CP6C
561          KO       0       0     0.0       0      22
562          RS       1    FLOW     0.0     0.0
563          RC    0.06   0.032    0.05  920.69  0.0098     0.0
             * 6CR
564          RX     0.0    82.3   164.7   247.0   329.4   411.7   494.0   576.4
565          RY  2032.0  2025.3  2028.8  2028.7  2028.2  2028.8  2029.4  2031.9

566          KK      B5
567          KO       0       0     0.0       0      22
568          BA   0.071
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 569          LG   0.297   0.226     6.8   0.135   39.73
              * B5 S_Graph
 570          UI     0.0   74.38  131.46   53.27   21.07     8.8    3.47     0.0

 571          KK     CP5   CNAME    CP5R
 572          KO       0       0     0.0       0      22
 573          HC       2

 574          KK      B4
 575          KO       0       0     0.0       0      22
 576          BA   0.127
 577          LG   0.332   0.307   6.618   0.142  49.014
              * B4 S_Graph
 578          UI     0.0  117.04  369.92  227.13  126.68   67.83   36.66   19.42    8.13    8.13
 579          UI     0.0

 580          KK    CP4R   CNAME     CP4
 581          KO       0       0     0.0       0      22
 582          RN    CP4R

 583          KK    CP4C   CNAME   CP4CR
 584          KO       0       0     0.0       0      22
 585          HC       2

 586          KK   CP4CR   CNAME    CP4C
 587          KO       0       0     0.0       0      22
 588          RS       1    FLOW     0.0     0.0
 589          RC    0.06   0.032    0.05  925.38   0.006     0.0
              * 4CR
 590          RX     0.0    68.0   136.0   204.1   272.2   340.2   408.2   476.3
 591          RY  2031.1  2029.3  2020.9  2025.1  2025.1  2025.0  2026.4  2029.8
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 592          KK      B3
 593          KO       0       0     0.0       0      22
 594          BA   0.011
 595          LG     0.3    0.25   5.469   0.207     5.0
              * B3 S_Graph
 596          UI     0.0   23.96   28.67    9.73    3.46    1.13     0.0

 597          KK     CP3   CNAME    CP3R
 598          KO       0       0     0.0       0      22
 599          HC       2

 600          KK      B2
 601          KO       0       0     0.0       0      22
 602          BA   0.169
 603          LG   0.325   0.236   8.114   0.081    5.17
              * B2 S_Graph
 604          UI     0.0   62.18  229.41  360.81  217.43  153.69   98.11   66.07    43.4   27.66
 605          UI   18.52   10.46    7.25    7.25     0.0

 606          KK    CP2R   CNAME     CP2
 607          KO       0       0     0.0       0      22
 608          RN    CP2R

 609          KK    CP2C   CNAME   CP2CR
 610          KO       0       0     0.0       0      22
 611          HC       2

 612          KK   CP2CR   CNAME    CP2C
 613          KO       0       0     0.0       0      22
 614          RS       1    FLOW     0.0     0.0
 615          RC    0.06   0.032    0.05 2749.62  0.0068     0.0
              * 2CR
 616          RX     0.0    95.9   191.7   287.6   383.5   479.4   575.2   671.1
 617          RY  2017.6  2014.1  2007.7  2013.3  2013.0  2011.6  2014.0  2018.1

 618          KK      B1
 619          KO       0       0     0.0       0      22
 620          BA     0.3
 621          LG   0.324   0.251   7.487     0.1  22.576
              * B1 S_Graph
 622          UI     0.0  185.38  666.79  627.71  359.87  211.26  122.24   75.03   43.24   21.18
 623          UI   16.33   16.33

 624          KK     CP1   CNAME    CP1R
 625          KO       0       0     0.0       0      22
 626          HC       2

 627          KK    CP1R   CNAME     CP1
 628          KO       0       0     0.0       0      22
 629          RN    CP1R
 630          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   30        B37
              V
              V
   36      CP37R
              .
              .
   39         .          B44
              .            V
              .            V
   45         .        CP44R
              .            .
              .            .
```

```
 48          .           .         B46
             .           .           V
             .           .           V
 54          .           .       CP46R
             .           .           .
             .           .           .         B45
 60          .           .           .           .
             .           .           .           .
             .           .           .           .
 66          .           .       CP45............
             .           .           .
             .           .           .
 69          .       CP44C............
             .           V
             .           V
 72          .      CP44CR
             .           .
             .           .
 78          .           .         B43
             .           .           .
             .           .           .
 84          .        CP43............
             .           .
             .           .
 87          .           .         B42
             .           .           V
             .           .           V
 93          .           .       CP42R
             .           .           .
             .           .           .         B41
 96          .           .           .           V
             .           .           .           V
102          .           .           .       CP41R
             .           .           .           .
             .           .           .           .
108          .           .           .           .         B40
             .           .           .           .           .
             .           .           .           .           .
114          .           .           .       CP40............
             .           .           .           .
             .           .           .           .
117          .           .       CP40C............
             .           .           V
             .           .           V
120          .           .      CP40CR
             .           .           .
             .           .           .         B39
126          .           .           .           .
             .           .           .           .
132          .           .       CP39............
             .           .           .
             .           .           .
135          .       CP39C............
             .           V
             .           V
138          .      CP39CR
             .           .
             .           .
144          .           .         B38
             .           .           .
             .           .           .
149          .        CP38............
             .           .
             .           .
152      CP37C............
             V
             V
155      CP37CR
             .
             .
161          .         B36
             .           .
             .           .
167       CP36............
             .
             .
170          .         B35
             .           V
             .           V
177          .       CP35R
             .           .
             .           .
180       CP35C............
             V
             V
183      CP35CR
             .
             .
189          .         B34
             .           .
             .           .
195       CP34............
             V
             V
198       CP34R
             .
             .
204          .         B33
             .           .
             .           .
209       CP33............
             .
             .
212          .         B32
```

```
                 V
                 V
218           CP32R
                 .
224              .        B31
                 .         .
                 .         .
231           CP31............
                 V
                 V
234           CP31R
                 .
                 .
240              .        B30
                 .         .
                 .         .
245           CP30............
                 .
                 .
248              .        B29
                 .         .
                 .         .
254              .         .        B28
                 .         .         .
                 .         .         .
260              .      CP28C............
                 .         V         .
                 .         V         .
263              .      CP28CR
                 .         .
                 .         .
269              .         .        B27
                 .         .         .
                 .         .         .
275              .       CP27............
                 .         V         .
                 .         V         .
278              .      CP27R
                 .         .
                 .         .
284              .         .        B26
                 .         .         .
                 .         .         .
290              .       CP26............
                 .         .         .
                 .         .         .
293           CP26C............
                 V
                 V
296           CP26CR
                 .
                 .
302              .        B25
                 .         .
                 .         .
308           CP25............
                 .
                 .
311              .        B24
                 .         V
                 .         V
317              .      CP24R
                 .         .
                 .         .
323              .         .        B23
                 .         .         .
                 .         .         .
329              .       CP23............
                 .         V         .
                 .         V         .
332              .      CP23R
                 .         .
                 .         .
338              .         .        B22
                 .         .         .
                 .         .         .
343              .       CP22............
                 .         .         .
                 .         .         .
346              .         .        B21
                 .         .         V
                 .         .         V
352              .         .      CP21R
                 .         .         .
                 .         .         .
358              .         .         .        B20
                 .         .         .         .
                 .         .         .         .
363              .         .      CP20............
                 .         .         .
                 .         .         .
366              .         .         .        B19
                 .         .         .         V
                 .         .         .         V
372              .         .         .      CP19R
                 .         .         .         .
                 .         .         .         .
375              .         .      CP19C............
                 .         .         V
                 .         .         V
378              .         .      CP19CR
                 .         .         .
                 .         .         .
384              .         .         .        B18
                 .         .         .         .
```

```
390                                   CP18............
                                        .
393                             CP18C............
                                    V
                                    V
396                             CP18CR
                                        .
402                                     .       B17
                                        .         .
407                              CP17............
                                    V
                                    V
410                             CP17R
                                        .
416                                     .       B16
                                        .         .
422                              CP16............
                                    V
                                    V
425                             CP16R
                                        .
431                                     .       B15
                                        .         .
436                              CP15............
                                        .
439                        CP15C............
                                V
                                V
442                        CP15CR
                                .
448                                     .   B14
                                        .     .
453                         CP14............
                                V
                                V
456                         CP14R
                                .
462                                     .   B13
                                        .     .
467                         CP13............
                                .
470                                     .   B12
                                        .     V
                                        .     V
476                                     .CP12R
                                        .     .
479                         CP12C............
                                V
                                V
482                        CP12CR
                                .
488                                     .   B11
                                        .     .
493                         CP11............
                                .
496                    CP11C............
                           V
                           V
499                    CP11CR
                           .
505                            B10
                               .
510                     CP10............
                           .
513                            B9
                               V
                               V
519                            CP9R
                               .
522                     CP9C............
                           V
                           V
525                    CP9CR
                           .
531                            B8
                               .
536                                     .       B7
                                        .         .
542                     CP7C........................
                           V
                           V
```

```
545       CP7CR
              .
              .
551           .          B6
              .           .
              .           .
557        CP6C............
              V
              V
560       CP6CR
              .
              .
566           .          B5
              .           .
              .           .
571         CP5............
              .
              .
574           .          B4
              .           V
              .           V
580           .        CP4R
              .           .
              .           .
583        CP4C............
              V
              V
586       CP4CR
              .
              .
592           .          B3
              .           .
              .           .
597         CP3............
              .
              .
600           .          B2
              .           V
              .           V
606           .        CP2R
              .           .
              .           .
609        CP2C............
              V
              V
612       CP2CR
              .
              .
618           .          B1
              .           .
              .           .
624         CP1............
              V
              V
627         CP1R
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   19SEP08  TIME  10:37:53  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
                    Gavilan Peak Watershed 100-YR 24-HR
                    RBF Consulting Job No. 45103870

  5 IO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE     1JAN94  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     7JAN94  ENDING DATE
                     NDTIME       2235  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

  7 JD          INDEX STORM NO. 1
                       STRM       4.73  PRECIPITATION DEPTH
                       TRDA       0.00  TRANSPOSITION DRAINAGE AREA

  8 PI            PRECIPITATION PATTERN
```

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03
0.03	0.09	0.09	0.09	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

19 JD INDEX STORM NO. 2

STRM	4.49	PRECIPITATION DEPTH
TRDA	10.00	TRANSPOSITION DRAINAGE AREA

20 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03
0.03	0.09	0.09	0.09	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

*** ***

```
             **************
             *            *
30 KK        *     B37    *
             *            *
             **************
```

31 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	2000	LAST ORDINATE PUNCHED OR SAVED
TIMINT	0.083	TIME INTERVAL IN HOURS

*** ***

```
             **************
             *            *
36 KK        *   CP37R    *        CNAME     CP37
             *            *
             **************
```

37 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	2000	LAST ORDINATE PUNCHED OR SAVED

```
                TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 39 KK    *      B44    *
          *             *
          ***************

 40 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 45 KK    *     CP44R   *        CNAME    CP44
          *             *
          ***************

 46 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 48 KK    *      B46    *
          *             *
          ***************

 49 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 54 KK    *     CP46R   *        CNAME    CP46
          *             *
          ***************

 55 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 60 KK    *      B45    *
          *             *
          ***************

 61 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
```

```
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 66 KK    *     CP45    *        CNAME   CP45R
          *             *
          ***************

 67 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 69 KK    *     CP44C   *        CNAME   CP44CR
          *             *
          ***************

 70 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 72 KK    *     CP44CR  *        CNAME   CP44C
          *             *
          ***************

 73 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 78 KK    *       B43   *
          *             *
          ***************

 79 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 84 KK    *     CP43    *        CNAME   CP43R
          *             *
          ***************
```

```
 85 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 87 KK      *     B42     *
            *             *
            ***************

 88 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 93 KK      *    CP42R    *        CNAME    CP42
            *             *
            ***************

 94 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 96 KK      *     B41     *
            *             *
            ***************

 97 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS

        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
102 KK      *    CP41R    *        CNAME    CP41
            *             *
            ***************

103 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
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```
                *             *
108 KK          *       B40   *
                *             *
                ***************

109 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
114 KK          *      CP40   *        CNAME   CP40R
                *             *
                ***************

115 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
117 KK          *     CP40C   *        CNAME  CP40CR
                *             *
                ***************

118 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
120 KK          *    CP40CR   *        CNAME   CP40C
                *             *
                ***************

121 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
126 KK          *       B39   *
                *             *
                ***************

127 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 132 KK   *     CP39    *        CNAME   CP39R
          *             *
          ***************

 133 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 135 KK   *    CP39C    *        CNAME  CP39CR
          *             *
          ***************

 136 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 138 KK   *    CP39CR   *        CNAME   CP39C
          *             *
          ***************

 139 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 144 KK   *      B38    *
          *             *
          ***************

 145 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 149 KK   *     CP38    *        CNAME   CP38R
          *             *
          ***************

 150 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
152 KK    *     CP37C   *        CNAME  CP37CR
          *             *
          ***************

153 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
155 KK    *    CP37CR   *        CNAME   CP37C
          *             *
          ***************

156 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
161 KK    *       B36   *
          *             *
          ***************

162 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS

        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
167 KK    *      CP36   *        CNAME   CP36R
          *             *
          ***************

168 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
170 KK    *       B35   *
          *             *
          ***************

171 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
```

```
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
177 KK    *     CP35R   *        CNAME    CP35
          *             *
          ***************

178 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
180 KK    *     CP35C   *        CNAME  CP35CR
          *             *
          ***************

181 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
183 KK    *    CP35CR   *        CNAME   CP35C
          *             *
          ***************

184 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
189 KK    *       B34   *
          *             *
          ***************

190 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
195 KK    *      CP34   *        CNAME   CP34R
          *             *
          ***************
```

```
196 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
198 KK    *     CP34R   *        CNAME    CP34
          *             *
          ***************

199 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
204 KK    *       B33   *
          *             *
          ***************

205 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
209 KK    *     CP33    *        CNAME    CP33R
          *             *
          ***************

210 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
212 KK    *       B32   *
          *             *
          ***************

213 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
```

```
218 KK      *     CP32R  *        CNAME    CP32
            *            *
            ***************

219 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            ***************
            *             *
224 KK      *       B31   *
            *             *
            ***************

225 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            ***************
            *             *
231 KK      *      CP31   *        CNAME   CP31R
            *             *
            ***************

232 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            ***************
            *             *
234 KK      *     CP31R   *        CNAME    CP31
            *             *
            ***************

235 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            ***************
            *             *
240 KK      *       B30   *
            *             *
            ***************

241 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
```

```
                ***************
                *             *
245 KK          *     CP30    *        CNAME   CP30R
                *             *
                ***************

246 KO               OUTPUT CONTROL VARIABLES
                           IPRNT          5  PRINT CONTROL
                           IPLOT          0  PLOT CONTROL
                           QSCAL         0.  HYDROGRAPH PLOT SCALE
                           IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                            IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
248 KK          *      B29    *
                *             *
                ***************

249 KO               OUTPUT CONTROL VARIABLES
                           IPRNT          5  PRINT CONTROL
                           IPLOT          0  PLOT CONTROL
                           QSCAL         0.  HYDROGRAPH PLOT SCALE
                           IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                            IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
254 KK          *      B28    *
                *             *
                ***************

255 KO               OUTPUT CONTROL VARIABLES
                           IPRNT          5  PRINT CONTROL
                           IPLOT          0  PLOT CONTROL
                           QSCAL         0.  HYDROGRAPH PLOT SCALE
                           IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                            IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
260 KK          *     CP28C   *        CNAME  CP28CR
                *             *
                ***************

261 KO               OUTPUT CONTROL VARIABLES
                           IPRNT          5  PRINT CONTROL
                           IPLOT          0  PLOT CONTROL
                           QSCAL         0.  HYDROGRAPH PLOT SCALE
                           IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                            IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
263 KK          *    CP28CR   *        CNAME   CP28C
                *             *
                ***************

264 KO               OUTPUT CONTROL VARIABLES
                           IPRNT          5  PRINT CONTROL
                           IPLOT          0  PLOT CONTROL
                           QSCAL         0.  HYDROGRAPH PLOT SCALE
                           IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                            IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT      0.083  TIME INTERVAL IN HOURS
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 269 KK   *     B27     *
          *             *
          ***************

 270 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 275 KK   *     CP27    *        CNAME   CP27R
          *             *
          ***************

 276 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 278 KK   *    CP27R    *        CNAME    CP27
          *             *
          ***************

 279 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 284 KK   *     B26     *
          *             *
          ***************

 285 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 290 KK   *     CP26    *        CNAME   CP26R
          *             *
          ***************

 291 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
```

```
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 293 KK   *     CP26C   *        CNAME  CP26CR
          *             *
          ***************

 294 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 296 KK   *    CP26CR   *        CNAME   CP26C
          *             *
          ***************

 297 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 302 KK   *       B25   *
          *             *
          ***************

 303 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 308 KK   *      CP25   *        CNAME   CP25R
          *             *
          ***************

 309 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 311 KK   *       B24   *
          *             *
          ***************

 312 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
```

```
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
317 KK    *     CP24R   *        CNAME    CP24
          *             *
          ***************

318 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
323 KK    *       B23   *
          *             *
          ***************

324 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
329 KK    *     CP23    *        CNAME    CP23R
          *             *
          ***************

330 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
332 KK    *     CP23R   *        CNAME    CP23
          *             *
          ***************

333 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
338 KK    *       B22   *
          *             *
```

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              ***************

 339 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 343 KK       *     CP22    *        CNAME   CP22R
              *             *
              ***************

 344 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 346 KK       *      B21    *
              *             *
              ***************

 347 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 352 KK       *     CP21R   *        CNAME    CP21
              *             *
              ***************

 353 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 358 KK       *      B20    *
              *             *
              ***************

 359 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
```

```
                ***************
                *             *
363 KK          *     CP20    *        CNAME   CP20R
                *             *
                ***************

364 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
366 KK          *      B19    *
                *             *
                ***************

367 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
372 KK          *    CP19R    *        CNAME    CP19
                *             *
                ***************

373 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
375 KK          *    CP19C    *        CNAME  CP19CR
                *             *
                ***************

376 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                ***************
                *             *
378 KK          *   CP19CR    *        CNAME   CP19C
                *             *
                ***************

379 KO                OUTPUT CONTROL VARIABLES
                            IPRNT           5  PRINT CONTROL
                            IPLOT           0  PLOT CONTROL
                            QSCAL          0.  HYDROGRAPH PLOT SCALE
                            IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                             IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                            ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                            ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                           TIMINT       0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
384 KK      *     B18     *
            *             *
            ***************

385 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
390 KK      *    CP18     *        CNAME   CP18R
            *             *
            ***************

391 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
393 KK      *    CP18C    *        CNAME  CP18CR
            *             *
            ***************

394 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
396 KK      *   CP18CR    *        CNAME   CP18C
            *             *
            ***************

397 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
402 KK      *     B17     *
            *             *
            ***************

403 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
```

```
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 407 KK     *      CP17   *        CNAME   CP17R
            *             *
            ***************

 408 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 410 KK     *     CP17R   *        CNAME    CP17
            *             *
            ***************

 411 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 416 KK     *       B16   *
            *             *
            ***************

 417 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 422 KK     *      CP16   *        CNAME   CP16R
            *             *
            ***************

 423 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 425 KK     *     CP16R   *        CNAME    CP16
            *             *
            ***************

 426 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
```

```
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 431 KK   *      B15    *
          *             *
          ***************

 432 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 436 KK   *     CP15    *        CNAME   CP15R
          *             *
          ***************

 437 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 439 KK   *     CP15C   *        CNAME   CP15CR
          *             *
          ***************

 440 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 442 KK   *    CP15CR   *        CNAME   CP15C
          *             *
          ***************

 443 KO         OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 448 KK   *      B14    *
          *             *
          ***************
```

```
449 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
453 KK    *     CP14    *        CNAME   CP14R
          *             *
          ***************

454 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
456 KK    *     CP14R   *        CNAME    CP14
          *             *
          ***************

457 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
462 KK    *       B13   *
          *             *
          ***************

463 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
467 KK    *      CP13   *        CNAME   CP13R
          *             *
          ***************

468 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
```

```
470 KK      *       B12  *
            *            *
            ***************

471 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
476 KK      *     CP12R   *        CNAME    CP12
            *             *
            ***************

477 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
479 KK      *     CP12C   *        CNAME  CP12CR
            *             *
            ***************

480 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
482 KK      *    CP12CR   *        CNAME   CP12C
            *             *
            ***************

483 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
488 KK      *       B11   *
            *             *
            ***************

489 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
```

```
                ***************
                *             *
 493 KK         *     CP11    *        CNAME   CP11R
                *             *
                ***************

 494 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
 496 KK         *     CP11C   *        CNAME  CP11CR
                *             *
                ***************

 497 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
 499 KK         *    CP11CR   *        CNAME   CP11C
                *             *
                ***************

 500 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
 505 KK         *       B10   *
                *             *
                ***************

 506 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                ***************
                *             *
 510 KK         *      CP10   *        CNAME   CP10R
                *             *
                ***************

 511 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT      0.083  TIME INTERVAL IN HOURS
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
513 KK    *        B9   *
          *             *
          ***************

514 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
519 KK    *      CP9R   *        CNAME     CP9
          *             *
          ***************

520 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
522 KK    *      CP9C   *        CNAME   CP9CR
          *             *
          ***************

523 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
525 KK    *     CP9CR   *        CNAME    CP9C
          *             *
          ***************

526 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
531 KK    *        B8   *
          *             *
          ***************

532 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
```

```
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 536 KK     *        B7   *
            *             *
            ***************

 537 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 542 KK     *      CP7C   *        CNAME   CP7CR
            *             *
            ***************

 543 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 545 KK     *     CP7CR   *        CNAME    CP7C
            *             *
            ***************

 546 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 551 KK     *        B6   *
            *             *
            ***************

 552 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 557 KK     *      CP6C   *        CNAME   CP6CR
            *             *
            ***************

 558 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
```

```
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 560 KK   *     CP6CR   *        CNAME    CP6C
          *             *
          ***************

 561 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 566 KK   *        B5   *
          *             *
          ***************

 567 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS

        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 571 KK   *       CP5   *        CNAME    CP5R
          *             *
          ***************

 572 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 574 KK   *        B4   *
          *             *
          ***************

 575 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.083  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 580 KK   *      CP4R   *        CNAME     CP4
```

```
          *            *
          **************

 581 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 583 KK   *      CP4C  *        CNAME   CP4CR
          *            *
          **************

 584 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 586 KK   *     CP4CR  *        CNAME    CP4C
          *            *
          **************

 587 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 592 KK   *        B3  *
          *            *
          **************

 593 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 597 KK   *       CP3  *        CNAME    CP3R
          *            *
          **************

 598 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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                **************
                *            *
 600 KK         *        B2  *
                *            *
                **************

 601 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                **************
                *            *
 606 KK         *      CP2R  *        CNAME     CP2
                *            *
                **************

 607 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                **************
                *            *
 609 KK         *      CP2C  *        CNAME   CP2CR
                *            *
                **************

 610 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                **************
                *            *
 612 KK         *     CP2CR  *        CNAME    CP2C
                *            *
                **************

 613 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                **************
                *            *
 618 KK         *        B1  *
                *            *
                **************

 619 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       0.083  TIME INTERVAL IN HOURS
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 624 KK   *     CP1     *        CNAME    CP1R
          *             *
          ***************

 625 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 627 KK   *     CP1R    *        CNAME    CP1
          *             *
          ***************

 628 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT      0.083  TIME INTERVAL IN HOURS

1
                                                  RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES
```

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	B37	720.	12.17	88.	22.	7.	0.36		
+	ROUTED TO	CP37R	720.	12.17	88.	22.	7.	0.36		
+	HYDROGRAPH AT	B44	878.	12.17	88.	25.	8.	0.43		
+	ROUTED TO	CP44R	878.	12.17	88.	25.	8.	0.43		
+	HYDROGRAPH AT	B46	1458.	12.25	181.	54.	18.	0.77		
+	ROUTED TO	CP46R	1315.	12.33	181.	54.	18.	0.77		
+	HYDROGRAPH AT	B45	225.	12.17	19.	5.	2.	0.13		
+	2 COMBINED AT	CP45	1470.	12.25	200.	59.	20.	0.90		
+	2 COMBINED AT	CP44C	2267.	12.25	286.	84.	28.	1.32		
+	ROUTED TO	CP44CR	2061.	12.33	286.	84.	28.	1.32		
+	HYDROGRAPH AT	B43	135.	12.17	11.	3.	1.	0.07		
+	2 COMBINED AT	CP43	2138.	12.33	297.	86.	29.	1.39		
+	HYDROGRAPH AT	B42	610.	12.17	60.	16.	5.	0.31		
+	ROUTED TO	CP42R	610.	12.17	60.	16.	5.	0.31		
+	HYDROGRAPH AT	B41	569.	12.17	59.	17.	6.	0.25		
+	ROUTED TO	CP41R	500.	12.25	59.	17.	6.	0.25		
+	HYDROGRAPH AT	B40	132.	12.17	12.	3.	1.	0.07		
+	2 COMBINED AT	CP40	628.	12.25	71.	20.	7.	0.32		

+	2 COMBINED AT	CP40C	1202.	12.25	130.	37.	12.	0.63
+	ROUTED TO	CP40CR	1036.	12.33	130.	37.	12.	0.63
+	HYDROGRAPH AT	B39	163.	12.17	14.	4.	1.	0.09
+	2 COMBINED AT	CP39	1154.	12.33	144.	40.	13.	0.72
+	2 COMBINED AT	CP39C	3276.	12.33	439.	126.	42.	2.11
+	ROUTED TO	CP39CR	3239.	12.33	439.	126.	42.	2.11
+	HYDROGRAPH AT	B38	52.	12.08	3.	1.	0.	0.02
+	2 COMBINED AT	CP38	3245.	12.33	441.	126.	42.	2.14
+	2 COMBINED AT	CP37C	3831.	12.33	528.	148.	50.	2.49
+	ROUTED TO	CP37CR	3722.	12.42	528.	148.	50.	2.49
+	HYDROGRAPH AT	B36	871.	12.17	82.	20.	7.	0.36
+	2 COMBINED AT	CP36	4038.	12.42	608.	168.	56.	2.86
+	HYDROGRAPH AT	B35	494.	12.25	55.	15.	5.	0.32
+	ROUTED TO	CP35R	494.	12.25	55.	15.	5.	0.32
+	2 COMBINED AT	CP35C	4419.	12.42	661.	182.	61.	3.18
+	ROUTED TO	CP35CR	4199.	12.50	661.	182.	61.	3.18
+	HYDROGRAPH AT	B34	786.	12.17	69.	18.	6.	0.40
+	2 COMBINED AT	CP34	4494.	12.42	728.	200.	67.	3.57
+	ROUTED TO	CP34R	4486.	12.50	728.	200.	67.	3.57
+	HYDROGRAPH AT	B33	14.	12.08	1.	0.	0.	0.00
+	2 COMBINED AT	CP33	4487.	12.50	729.	200.	67.	3.58
+	HYDROGRAPH AT	B32	881.	12.17	86.	24.	8.	0.41
+	ROUTED TO	CP32R	672.	12.42	86.	24.	8.	0.41
+	HYDROGRAPH AT	B31	657.	12.25	85.	23.	8.	0.38
+	2 COMBINED AT	CP31	1238.	12.33	170.	46.	15.	0.79
+	ROUTED TO	CP31R	1226.	12.42	170.	46.	15.	0.79
+	HYDROGRAPH AT	B30	76.	12.08	6.	2.	1.	0.03
+	2 COMBINED AT	CP30	1236.	12.42	175.	48.	16.	0.82
+	HYDROGRAPH AT	B29	360.	12.17	38.	10.	3.	0.17
+	HYDROGRAPH AT	B28	440.	12.17	46.	12.	4.	0.18
+	2 COMBINED AT	CP28C	797.	12.17	83.	22.	7.	0.35
+	ROUTED TO	CP28CR	698.	12.25	83.	22.	7.	0.35
+	HYDROGRAPH AT	B27	440.	12.17	39.	11.	4.	0.18
+	2 COMBINED AT	CP27	1076.	12.17	122.	32.	11.	0.53
+	ROUTED TO	CP27R	939.	12.33	122.	32.	11.	0.53
	HYDROGRAPH AT							

+	B26	340.	12.17	36.	10.	3.	0.16
+ 2 COMBINED AT	CP26	1172.	12.25	157.	42.	14.	0.69
+ 2 COMBINED AT	CP26C	2350.	12.33	330.	90.	30.	1.51
+ ROUTED TO	CP26CR	2310.	12.42	330.	90.	30.	1.51
+ HYDROGRAPH AT	B25	154.	12.17	14.	4.	1.	0.07
+ 2 COMBINED AT	CP25	2352.	12.42	343.	93.	31.	1.57
+ HYDROGRAPH AT	B24	462.	12.17	48.	13.	4.	0.20
+ ROUTED TO	CP24R	375.	12.33	48.	13.	4.	0.20
+ HYDROGRAPH AT	B23	482.	12.17	44.	12.	4.	0.22
+ 2 COMBINED AT	CP23	761.	12.25	92.	25.	8.	0.42
+ ROUTED TO	CP23R	753.	12.25	92.	25.	8.	0.42
+ HYDROGRAPH AT	B22	82.	12.08	6.	2.	1.	0.03
+ 2 COMBINED AT	CP22	769.	12.25	97.	26.	9.	0.45
+ HYDROGRAPH AT	B21	727.	12.17	69.	19.	6.	0.33
+ ROUTED TO	CP21R	679.	12.25	69.	19.	6.	0.33
+ HYDROGRAPH AT	B20	320.	12.08	25.	7.	2.	0.11
+ 2 COMBINED AT	CP20	911.	12.17	93.	26.	9.	0.44
+ HYDROGRAPH AT	B19	458.	12.17	46.	12.	4.	0.22
+ ROUTED TO	CP19R	458.	12.17	46.	12.	4.	0.22
+ 2 COMBINED AT	CP19C	1363.	12.17	138.	38.	13.	0.66
+ ROUTED TO	CP19CR	1178.	12.25	138.	38.	13.	0.66
+ HYDROGRAPH AT	B18	380.	12.17	34.	10.	3.	0.17
+ 2 COMBINED AT	CP18	1493.	12.25	172.	47.	16.	0.83
+ 2 COMBINED AT	CP18C	2250.	12.25	268.	73.	24.	1.28
+ ROUTED TO	CP18CR	2119.	12.33	268.	73.	24.	1.28
+ HYDROGRAPH AT	B17	498.	12.08	39.	11.	4.	0.20
+ 2 COMBINED AT	CP17	2322.	12.25	306.	84.	28.	1.48
+ ROUTED TO	CP17R	2157.	12.33	306.	84.	28.	1.48
+ HYDROGRAPH AT	B16	458.	12.17	46.	14.	5.	0.20
+ 2 COMBINED AT	CP16	2401.	12.33	350.	97.	33.	1.67
+ ROUTED TO	CP16R	2373.	12.42	350.	97.	33.	1.67
+ HYDROGRAPH AT	B15	119.	12.08	9.	3.	1.	0.05
+ 2 COMBINED AT	CP15	2389.	12.42	359.	100.	33.	1.72
+ 2 COMBINED AT	CP15C	4715.	12.42	698.	192.	64.	3.29
+ ROUTED TO	CP15CR	4572.	12.50	698.	192.	64.	3.29
+ HYDROGRAPH AT	B14	58.	12.08	5.	1.	0.	0.02

+	2 COMBINED AT	CP14	4576.	12.42	702.	194.	65.	3.31
+	ROUTED TO	CP14R	4602.	12.50	702.	194.	65.	3.31
+	HYDROGRAPH AT	B13	90.	12.08	7.	2.	1.	0.03
+	2 COMBINED AT	CP13	4608.	12.50	709.	195.	65.	3.35
+	HYDROGRAPH AT	B12	481.	12.17	53.	15.	5.	0.25
+	ROUTED TO	CP12R	481.	12.17	53.	15.	5.	0.25
+	2 COMBINED AT	CP12C	4813.	12.50	760.	210.	70.	3.60
+	ROUTED TO	CP12CR	4854.	12.50	760.	210.	70.	3.60
+	HYDROGRAPH AT	B11	37.	12.08	3.	1.	0.	0.01
+	2 COMBINED AT	CP11	4856.	12.50	762.	211.	70.	3.61
+	2 COMBINED AT	CP11C	9291.	12.50	1483.	409.	137.	7.19
+	ROUTED TO	CP11CR	9282.	12.50	1483.	409.	137.	7.19
+	HYDROGRAPH AT	B10	161.	12.08	14.	4.	1.	0.06
+	2 COMBINED AT	CP10	9299.	12.50	1496.	412.	138.	7.25
+	HYDROGRAPH AT	B9	608.	12.25	83.	26.	9.	0.32
+	ROUTED TO	CP9R	608.	12.25	83.	26.	9.	0.32
+	2 COMBINED AT	CP9C	9618.	12.50	1576.	437.	146.	7.57
+	ROUTED TO	CP9CR	9606.	12.50	1576.	437.	146.	7.57
+	HYDROGRAPH AT	B8	42.	12.08	4.	1.	0.	0.01
+	HYDROGRAPH AT	B7	142.	12.17	16.	5.	2.	0.05
+	3 COMBINED AT	CP7C	9644.	12.50	1595.	443.	148.	7.64
+	ROUTED TO	CP7CR	9643.	12.50	1595.	443.	148.	7.64
+	HYDROGRAPH AT	B6	266.	12.17	26.	7.	2.	0.15
+	2 COMBINED AT	CP6C	9747.	12.50	1620.	450.	151.	7.78
+	ROUTED TO	CP6CR	9684.	12.50	1620.	450.	151.	7.78
+	HYDROGRAPH AT	B5	111.	12.08	10.	3.	1.	0.07
+	2 COMBINED AT	CP5	9694.	12.50	1629.	453.	152.	7.85
+	HYDROGRAPH AT	B4	324.	12.08	34.	11.	4.	0.13
+	ROUTED TO	CP4R	324.	12.08	34.	11.	4.	0.13
+	2 COMBINED AT	CP4C	9753.	12.50	1661.	463.	155.	7.98
+	ROUTED TO	CP4CR	9671.	12.58	1661.	463.	155.	7.98
+	HYDROGRAPH AT	B3	25.	12.08	2.	0.	0.	0.01
+	2 COMBINED AT	CP3	9671.	12.58	1663.	464.	155.	7.99
+	HYDROGRAPH AT	B2	376.	12.17	38.	10.	3.	0.17
+	ROUTED TO	CP2R	376.	12.17	38.	10.	3.	0.17

+	2 COMBINED AT	CP2C	9767.	12.58	1699.	473.	158.	8.16
+	ROUTED TO	CP2CR	9455.	12.58	1699.	473.	158.	8.16
+	HYDROGRAPH AT	B1	735.	12.17	72.	21.	7.	0.30
+	2 COMBINED AT	CP1	9581.	12.58	1769.	493.	165.	8.46
+	ROUTED TO	CP1R	9581.	12.58	1769.	493.	165.	8.46

*** NORMAL END OF HEC-1 ***

Appendix 3 Rainfall Depths

POINT PRECIPITATION FREQUENCY ESTIMATES FROM NOAA ATLAS 14

Arizona 33.934724 N 112.112088 W 2198 feet

from "Precipitation-Frequency Atlas of the United States" NOAA Atlas 14, Volume 1, Version 4
G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley
NOAA, National Weather Service, Silver Spring, Maryland, 2006

Extracted: Fri Sep 12 2008

Confidence Limits | Seasonality | Location Maps | Other Info | GIS data | Maps | Docs | U.S. Map

Precipitation Frequency Estimates (inches)

ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.24	0.37	0.46	0.61	0.76	0.89	0.96	1.13	1.36	1.61	1.75	2.10	2.44	2.67	3.37	3.98	4.73	5.33
2	0.31	0.48	0.59	0.80	0.99	1.15	1.23	1.43	1.71	2.03	2.22	2.68	3.10	3.40	4.31	5.10	6.07	6.83
5	0.42	0.65	0.80	1.08	1.33	1.52	1.60	1.81	2.15	2.60	2.87	3.51	4.06	4.44	5.59	6.62	7.90	8.88
10	0.51	0.77	0.96	1.29	1.60	1.82	1.90	2.11	2.49	3.06	3.39	4.18	4.85	5.28	6.57	7.79	9.29	10.39
25	0.62	0.95	1.17	1.58	1.96	2.22	2.31	2.54	2.96	3.69	4.11	5.14	5.96	6.47	7.89	9.36	11.16	12.40
50	0.71	1.08	1.34	1.81	2.23	2.53	2.64	2.88	3.32	4.20	4.68	5.92	6.86	7.43	8.92	10.57	12.59	13.92
100	0.80	1.22	1.51	2.04	2.52	2.85	2.99	3.23	3.69	4.73	5.28	6.75	7.83	8.45	9.98	11.81	14.06	15.46
200	0.90	1.36	1.69	2.28	2.82	3.19	3.36	3.59	4.06	5.29	5.90	7.63	8.87	9.53	11.06	13.07	15.56	17.00
500	1.02	1.56	1.93	2.60	3.22	3.64	3.88	4.09	4.56	6.05	6.76	8.89	10.34	11.07	12.54	14.78	17.59	19.06
1000	1.12	1.71	2.12	2.85	3.53	4.00	4.30	4.49	4.96	6.66	7.44	9.92	11.55	12.32	13.70	16.10	19.17	20.65

* These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval.
Please refer to the documentation for more information. NOTE: Formatting forces estimates near zero to appear as zero.

*** Upper bound of the 90% confidence interval**
Precipitation Frequency Estimates (inches)

ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.29	0.45	0.56	0.75	0.93	1.07	1.15	1.32	1.57	1.85	2.06	2.44	2.85	3.08	3.84	4.57	5.41	6.06
2	0.38	0.58	0.72	0.97	1.20	1.38	1.47	1.67	1.97	2.34	2.61	3.11	3.62	3.93	4.91	5.85	6.94	7.78
5	0.51	0.78	0.97	1.31	1.62	1.83	1.91	2.10	2.46	2.98	3.36	4.06	4.75	5.13	6.37	7.60	9.03	10.10
10	0.61	0.94	1.16	1.56	1.93	2.18	2.26	2.45	2.85	3.51	3.96	4.83	5.66	6.10	7.48	8.94	10.63	11.83
25	0.75	1.14	1.42	1.91	2.36	2.65	2.74	2.94	3.38	4.23	4.80	5.95	6.96	7.48	9.01	10.76	12.78	14.14
50	0.85	1.30	1.61	2.17	2.68	3.02	3.12	3.31	3.79	4.81	5.48	6.87	8.04	8.62	10.21	12.18	14.46	15.91
100	0.96	1.46	1.81	2.44	3.02	3.39	3.53	3.72	4.21	5.43	6.20	7.87	9.21	9.84	11.48	13.66	16.21	17.74
200	1.07	1.63	2.02	2.72	3.37	3.79	3.96	4.15	4.64	6.09	6.96	8.95	10.52	11.18	12.80	15.19	18.04	19.63
500	1.23	1.87	2.31	3.12	3.86	4.33	4.58	4.73	5.25	7.02	8.03	10.52	12.39	13.14	14.66	17.33	20.59	22.23
1000	1.35	2.06	2.55	3.44	4.26	4.78	5.10	5.19	5.75	7.78	8.92	11.85	13.99	14.77	16.19	19.02	22.60	24.29

* The upper bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are greater than.
** These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval.

Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

*** Lower bound of the 90% confidence interval**
Precipitation Frequency Estimates (inches)

ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.20	0.31	0.38	0.52	0.64	0.76	0.82	0.99	1.20	1.42	1.51	1.83	2.11	2.33	2.96	3.47	4.14	4.67
2	0.26	0.40	0.50	0.67	0.83	0.97	1.05	1.25	1.51	1.78	1.91	2.33	2.68	2.97	3.79	4.45	5.31	6.00
5	0.35	0.54	0.66	0.89	1.11	1.29	1.37	1.58	1.88	2.28	2.46	3.04	3.51	3.86	4.89	5.77	6.89	7.78
10	0.42	0.64	0.79	1.07	1.32	1.52	1.61	1.83	2.17	2.66	2.88	3.61	4.16	4.57	5.73	6.76	8.08	9.08

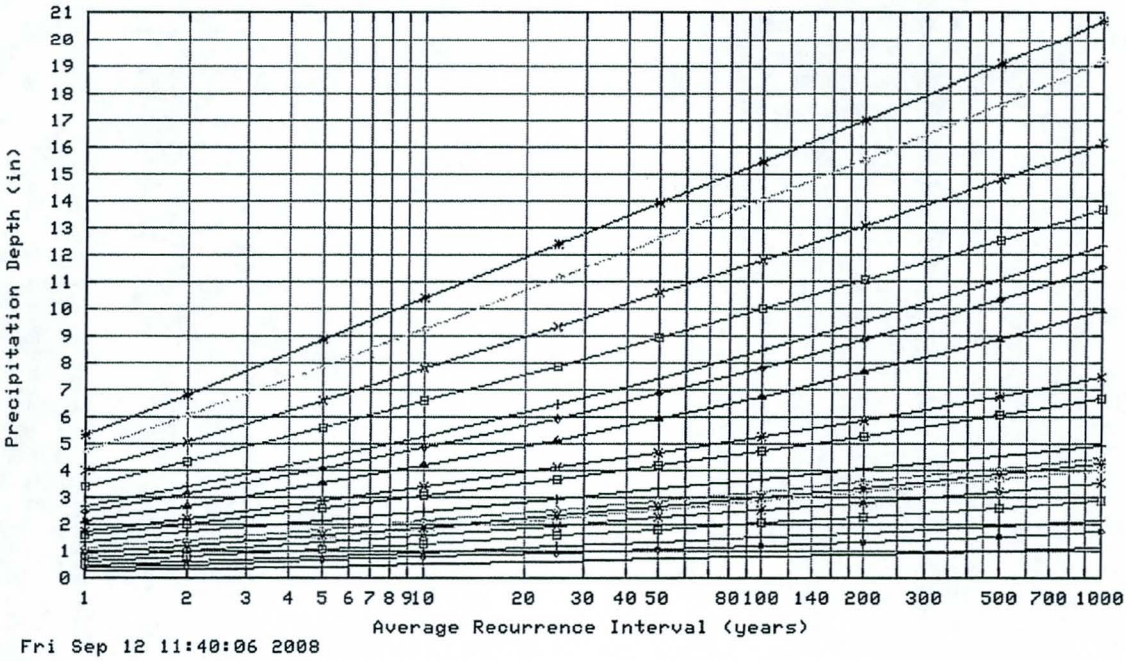
25	0.51	0.77	0.96	1.29	1.60	1.83	1.93	2.17	2.55	3.19	3.47	4.40	5.07	5.54	6.83	8.07	9.65	10.77
50	0.57	0.87	1.08	1.46	1.80	2.07	2.18	2.43	2.83	3.58	3.91	5.02	5.78	6.31	7.67	9.07	10.84	12.03
100	0.64	0.97	1.20	1.62	2.00	2.30	2.43	2.69	3.11	3.99	4.36	5.67	6.53	7.11	8.51	10.06	12.01	13.26
200	0.70	1.07	1.32	1.78	2.21	2.53	2.69	2.94	3.38	4.39	4.81	6.33	7.30	7.93	9.35	11.05	13.18	14.47
500	0.78	1.19	1.48	1.99	2.46	2.83	3.02	3.27	3.71	4.93	5.40	7.24	8.36	9.04	10.44	12.32	14.71	16.04
1000	0.84	1.28	1.59	2.14	2.65	3.05	3.27	3.51	3.97	5.33	5.85	7.95	9.18	9.90	11.25	13.27	15.83	17.19

* The lower bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are less than.
** These precipitation frequency estimates are based on a partial duration maxima series. ARI is the Average Recurrence Interval.

Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

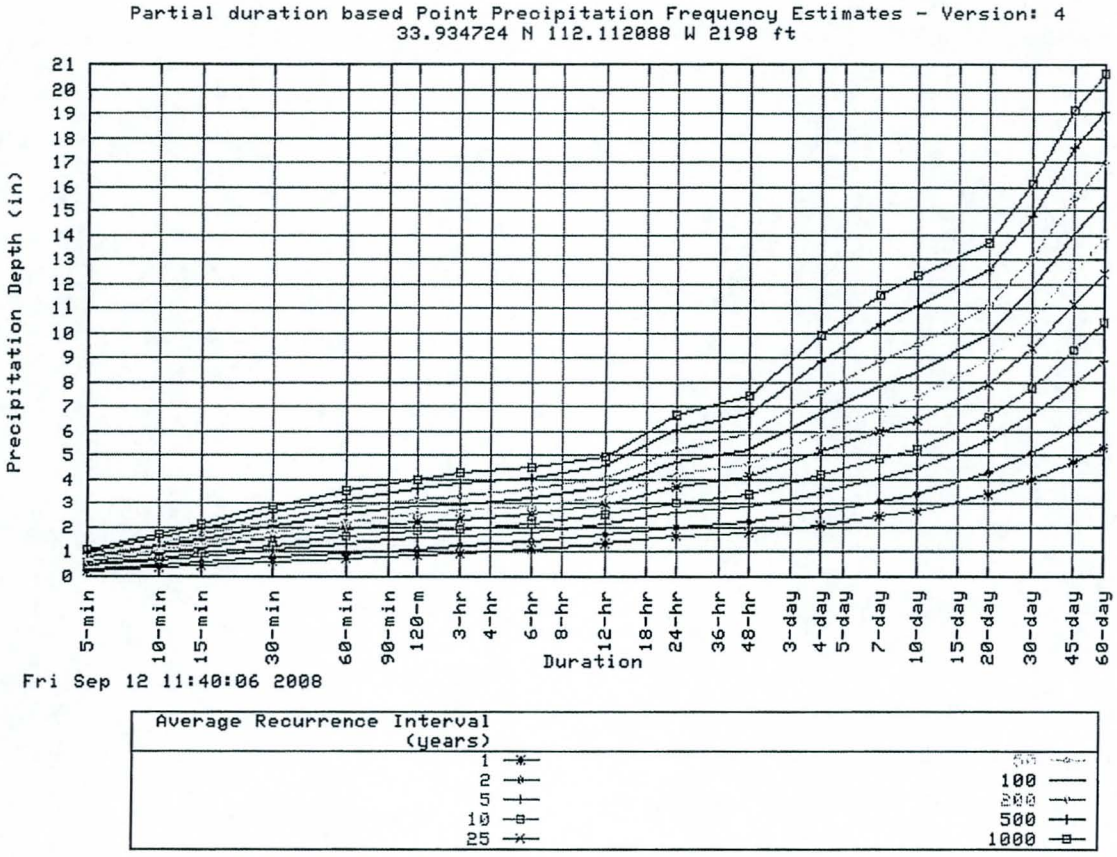
Text version of tables

Partial duration based Point Precipitation Frequency Estimates - Version: 4
33.934724 N 112.112088 W 2198 ft



Fri Sep 12 11:40:06 2008

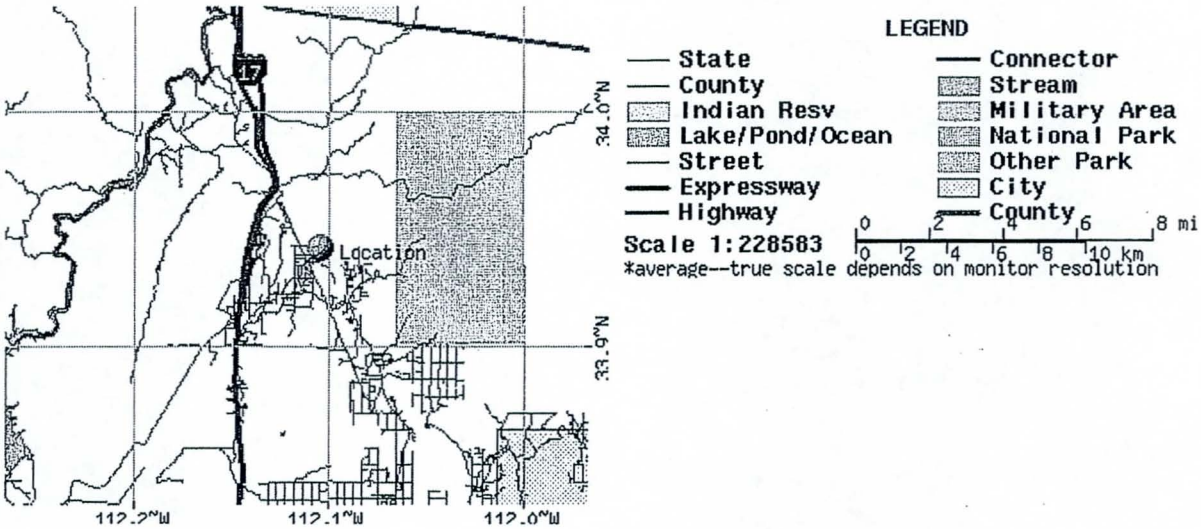
Duration			
5-min	120-hr	48-hr	30-day
10-min	3-hr	4-day	45-day
15-min	6-hr	7-day	60-day
30-min	12-hr	10-day	
60-min	24-hr	20-day	



Maps -

These maps were produced using a direct map request from the U.S. Census Bureau Mapping and Cartographic Resources Tiger Map Server.

Please read disclaimer for more information.



Other Maps/Photographs -

View USGS digital orthophoto quadrangle (DOQ) covering this location from TerraServer; **USGS Aerial Photograph** may also be available
from this site. A DOQ is a computer-generated image of an aerial photograph in which image displacement caused by terrain relief and camera tilts has been removed. It combines the image characteristics of a photograph with the geometric qualities of a map. Visit the USGS for more information.

Watershed/Stream Flow Information -

Find the Watershed for this location using the U.S. Environmental Protection Agency's site.

Climate Data Sources -

Precipitation frequency results are based on data from a variety of sources, but largely NCDC. The following links provide general information
about observing sites in the area, regardless of if their data was used in this study. For detailed information about the stations used in this study,
please refer to our documentation.

Using the **National Climatic Data Center's (NCDC)** station search engine, locate other climate stations within:

+/-30 minutes ...OR... +/-1 degree of this location (33.934724/-112.112088). Digital ASCII data can be obtained directly from **NCDC**.

Find Natural Resources Conservation Service (NRCS) SNOTEL (SNOwpack TELemetry) stations by visiting the
Western Regional Climate Center's state-specific SNOTEL station maps.

Hydrometeorological Design Studies Center
DOC/NOAA/National Weather Service
1325 East-West Highway
Silver Spring, MD 20910

(301) 713-1669
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix 4 Information and Output File for USGS Regression Equation

Input Parameters:

State: Arizona

Region: Central Arizona Region 12

Variable values:

Variable Name	Abbreviation	Value	Units	Minimum	Maximum
Drainage Area	AREA	8.463	mi2	0.6	1520
Mean Basin Elevation	ELEV	2253.9	ft	1730	8700

Output:

Type	Peak [cfs]	Recurrence [years]	Equivalent Years	Error [%]
Rural	157	2	0.23	110
Rural	772	5	1.9	68
Rural	1422	10	6.24	52
Rural	2650	25	17.8	40
Rural	4894	50	27.5	37
Rural	7647	100	32.1	39
Rural	16383	500	0	0

Appendix 5 Upper New River ADMP Peak Discharge Comparison

Gavilan Peak Wash FDS
FCD Contract 2007-C036
June, 2008
File = GavilanPeak-Hydrology.xls

The flow rates in cubic feet per second (cfs) in the following tables were used to complete the RAS modeling for the Gavilan Peak Wash FDS.

This information was compiled from the HEC-1 models constructed for the Upper New River ADMP and provided to PBS&J by FCDMC.

The HEC-1 models used were:

File Name	Time Stamp	File Size (kB)	Run Date
EX100-24.DAT	8/22/2007	343	--
EX100-24.OUT	8/23/2007	8225	8/23/2007
EX100-6.DAT	8/22/2007	344	--
EX100-6.OUT	8/23/2007	7912	8/23/2007

A few shapefiles from the Upper New River ADMP were used, too. These files were:

File Name	Time Stamp	Description
cpoint.shp	11/21/2006	Upper New River ADMP concentration points.
drnbsn.shp	11/21/2006	Upper New River ADMP sub-basin boundaries.
drnpth.shp	6/6/2007	Upper New River ADMP drainage paths.

At the direction of FCDMC, the shapefiles from the ADMP have not been included in this report.

There are three tables below. The concentration points in the first table are the set of concentration points from the Upper New River ADMP that were found in cpoint.shp.

The second table contains additional concentration points that PBS&J added to cpoint.shp for this study. Note that no new modeling was completed by PBS&J. PBS&J extracted additional information from the Upper New River ADMP HEC-1 models to supplement the original set of points.

The third table also contains points that PBS&J added to cpoint.shp for this study. The points in this table differ from those in the second table in that the flows at these points were generated by splitting some of the sub-basins in order to linearly interpolate flow rates along certain reaches. These interpolations were completed because the difference in the flow rate at the upstream end of the basin and the downstream end of the basin was large, and it was desirable to increase the flow rates in the hydraulic modeling gradually as one moved downstream.

For each concentration point, the 100-yr 6-hr and 24-hr peak flow rates are listed. At each concentration point, the higher of the two flows is identified for use in the new study's RAS modeling.

Table 1: Concentration points from the Upper New River ADMP.

Table 1 contains the concentration points from the file cpoint.shp, received from FCDMC and dated 11-21-2006. These concentration points formed the basis for the file cpoint-pbsj.shp, which contains all of the concentration points used in the Gavilan Peak Wash FDS.

SHP FID	Conc Pt.	100-yr 6-hr Flow	100-yr 24-hr Flow	Higher Flow	Higher Flow from which event?	RBF Conc Pt.	RBF 100-yr 6-hr Flow	RBF 100-yr 24-hr Flow	RBF Higher Flow	RBF Higher Flow from which event?	Difference (cfs)	Difference (%)
0	IC2B	986	840	986	6-hr	CP20	1020	911	1020	6-hr	34	3.4
1	CP3	1180	1065	1180	6-hr	CP19C	1428	1363	1428	6-hr	248	21.0
2	CP4	1353	1266	1353	6-hr	CP18	1488	1493	1493	24-hr	140	10.3
3	CP6	948	803	948	6-hr	CP23	856	761	856	6-hr	-92	-9.7
4	CP7	984	835	984	6-hr	CP22	860	769	860	6-hr	-124	-12.6
5	CP8	2123	2221	2221	24-hr	CP17	2053	2322	2322	24-hr	101	4.5
6	CP9	2249	2346	2346	24-hr	CP16	2164	2401	2401	24-hr	55	2.3
7	CP10	2251	2364	2364	24-hr	CP15	2165	2389	2389	24-hr	25	1.1
8	IC8B	1988	2020	2020	24-hr	CP18C	2023	2250	2250	24-hr	230	11.4
9	CP12	787	670	787	6-hr	CP28C	895	797	895	6-hr	108	13.7
10	CP13	1095	946	1095	6-hr	CP27	1191	1076	1191	6-hr	96	8.8
11	CP14	1162	1034	1162	6-hr	CP26	1235	1172	1235	6-hr	73	6.3
12	CP16	1482	1382	1482	6-hr	CP31	1262	1238	1262	6-hr	-220	-14.8
13	CP17	1475	1372	1475	6-hr	CP30	1261	1236	1261	6-hr	-214	-14.5
14	IC18B	2308	2387	2387	24-hr	CP26C	2098	2350	2350	24-hr	-37	-1.6
15	CP18	2321	2392	2392	24-hr	CP25	2108	2352	2352	24-hr	-40	-1.7
16	CP19	3991	4649	4649	24-hr	CP14	3635	4576	4576	24-hr	-73	-1.6
17	CP20	3935	4534	4534	24-hr	CP13	3627	4608	4608	24-hr	74	1.6
18	IC21B	4144	4752	4752	24-hr	CP12C	3810	4813	4813	24-hr	61	1.3
19	CP21	4128	4760	4760	24-hr	CP11	3781	4856	4856	24-hr	96	2.0
20	CP24	657	559	657	6-hr	CP40	702	628	702	6-hr	45	6.8
21	IC26B	1174	1049	1174	6-hr	CP40C	1276	1202	1276	6-hr	102	8.7
22	CP26	1158	1055	1158	6-hr	CP39	1190	1154	1190	6-hr	32	2.8
23	CP28	1480	1397	1480	6-hr	CP45	1465	1470	1470	24-hr	-10	-0.7
24	IC30B	1996	2045	2045	24-hr	CP44C	2024	2267	2267	24-hr	222	10.9
25	CP30	1946	1986	1986	24-hr	CP43	1923	2138	2138	24-hr	152	7.7
26	IC31B	2731	3016	3016	24-hr	CP39C	2640	3276	3276	24-hr	260	8.6
27	CP31	2730	3006	3006	24-hr	CP38	2615	3245	3245	24-hr	239	8.0
28	IC33B	3070	3408	3408	24-hr	CP37C	2982	3831	3831	24-hr	423	12.4
29	CP33	3280	3635	3635	24-hr	CP36	3202	4038	4038	24-hr	403	11.1
30	IC34B	3544	3957	3957	24-hr	CP35C	3458	4419	4419	24-hr	462	11.7
31	CP34	3695	4052	4052	24-hr	CP34	3562	4494	4494	24-hr	442	10.9
32	CP36	3661	4006	4006	24-hr	CP33	3564	4487	4487	24-hr	481	12.0
33	IC37B	6999	8290	8290	24-hr	CP11C	6558	9291	9291	24-hr	1001	12.1
34	CP37	6970	8329	8329	24-hr	CP10	6569	9299	9299	24-hr	970	11.6
35	IC39B	7217	8574	8574	24-hr	CP9C	6792	9618	9618	24-hr	1044	12.2
36	CP39	7215	8547	8547	24-hr	CP7C	6829	9644	9644	24-hr	1097	12.8
37	IC41B	7284	8635	8635	24-hr	CP6C	6907	9747	9747	24-hr	1112	12.9
38	CP41	7263	8558	8558	24-hr	CP5	6920	9694	9694	24-hr	1136	13.3
39	IC43B	7321	8605	8605	24-hr	CP4C	6971	9753	9753	24-hr	1148	13.3
40	CP43	7283	8594	8594	24-hr	CP3	6941	9671	9671	24-hr	1077	12.5
41	IC44B	7364	8683	8683	24-hr	CP2C	7029	9767	9767	24-hr	1084	12.5
42	CP45	7347	8605	8605	24-hr	CP1	7025	9581	9581	24-hr	976	11.3

Table 2: Additional concentration points identified by PBS&J

To complete the Gavilan Peak Wash FDS RAS modeling, additional flow rates beyond what was available in cpoint.shp were needed. These points were created by PBS&J using data from the Upper New River ADMP HEC-1 models. They have been combined with the information in Table 1 to create the file cpoint-pbsj.shp which contains all of the concentration points that apply to the Gavilan Peak Wash FDS.

SHP FID	Conc Pt.	100-yr 6-hr Flow	100-yr 24-hr Flow	Higher Flow	Higher Flow from which event?	RBF Conc Pt.	RBF 100-yr 6-hr Flow	RBF 100-yr 24-hr Flow	RBF Higher Flow	RBF Higher Flow from which event?	Difference (cfs)	Difference (%)
43	40b	267	230	267	6-hr	CP6	291	266	291	6-hr	24	9.0
44	12b	329	281	329	6-hr	B29	398	360	398	6-hr	69	21.0
45	3b	336	289	336	6-hr	CP19	507	458	507	6-hr	171	50.9
46	44b	396	335	396	6-hr	CP2	419	376	419	6-hr	23	5.8
47	80b	470	399	470	6-hr	CP12	531	481	531	6-hr	61	13.0
48	5b	484	409	484	6-hr	CP24	518	462	518	6-hr	34	7.0
49	22b	533	458	533	6-hr	CP35	538	494	538	6-hr	5	0.9
50	23b	612	518	612	6-hr	CP41	640	569	640	6-hr	28	4.6
51	1b	742	630	742	6-hr	CP21	813	727	813	6-hr	71	9.6
52	32b	753	642	753	6-hr	CP37	801	720	801	6-hr	48	6.4
53	38b	796	671	796	6-hr	CP9	688	608	688	6-hr	-108	-13.6
54	15b	979	837	979	6-hr	CP32	982	881	982	6-hr	3	0.3
55	27b	1429	1329	1429	6-hr	CP46	1490	1458	1490	6-hr	61	4.3

APPENDIX E.1

MANNING'S *n* VALUE DETERMINATIONS

MANNING'S *n* VALUE DETERMINATIONS

I. INTRODUCTION

The channel and overbank Manning's *n* values used for the streams modeled as part of the Gavilan Peak Wash Floodplain Delineation Study (FDS) were estimated using the methodology described in ***Estimated Manning's Roughness Coefficients for Stream Channel and Flood Plains in Maricopa County, Arizona***, a manual prepared by the United States Geological Survey (USGS) in April, 1991 for the Flood Control District of Maricopa County (FCDMC). Many of the photographs in this document are from Baker's study of Gavilan Peak Wash (October, 2004) and were acquired over two field visits on August 3 and August 24, 2000. PBS&J conducted a site visit for this revised FDS April 14 and April 16, 2008. PBS&J determined that the vegetation characteristics present at the site today are similar to those conditions present during Baker's trip.

Please note that Baker's discussion on the Manning's *n* value determination completed as part of their Gavilan Peak Wash FDS provided the foundation for this document.

II. METHODOLOGY

Three major land uses were identified in the Gavilan Peak watershed—vacant, rural, and small lot residential. An appropriate Manning's *n* value was selected by considering field observation, aerial photograph, soil map, land use map, and field photographs. Fifteen locations were investigated to estimate Manning's *n* values for the study streams. These locations are shown on Figure 1. The Manning's *n* values were estimated using the methodology described in the USGS's ***Estimated Manning's Roughness Coefficients for Stream Channel and Flood Plains in Maricopa County, Arizona***. Using Table 1 in the USGS document, a base *n* value (n_b) was assigned according to the bed material. In the channels, n_b was either 0.030 or 0.033, depending on whether the channel material was average-sized gravel (0.030) or larger-than-average-sized gravel (0.033). In the overbanks, n_b was 0.024 nearly everywhere due to the consistent presence of fine gravel.

In accordance with the USGS manual, n_1, n_2, and n_3 were added to n_b to determine the overall *n* value in a given location. n_1 represents the degree of irregularity of the flow surface, n_2 represents the effects of obstructions located along the flow path, and n_3 represents the impacts causes by vegetation. In places where the channel n_b equals 0.030, it has been assumed that the channel is smooth with no obstructions or vegetation. The assignment of 0.030 to the channel surface was confined mostly to the downstream half of Gavilan Peak Wash. Most of the tributaries to Gavilan Peak Wash were assigned a channel value of 0.035 based on the presence of material similar to that found in Gavilan Peak Wash but with additional irregularity in the channel surface. In some places, 0.038 was assigned to the channel based on the presence of larger rocks in the channel. Note that by definition, the channel was considered to be free of vegetation.

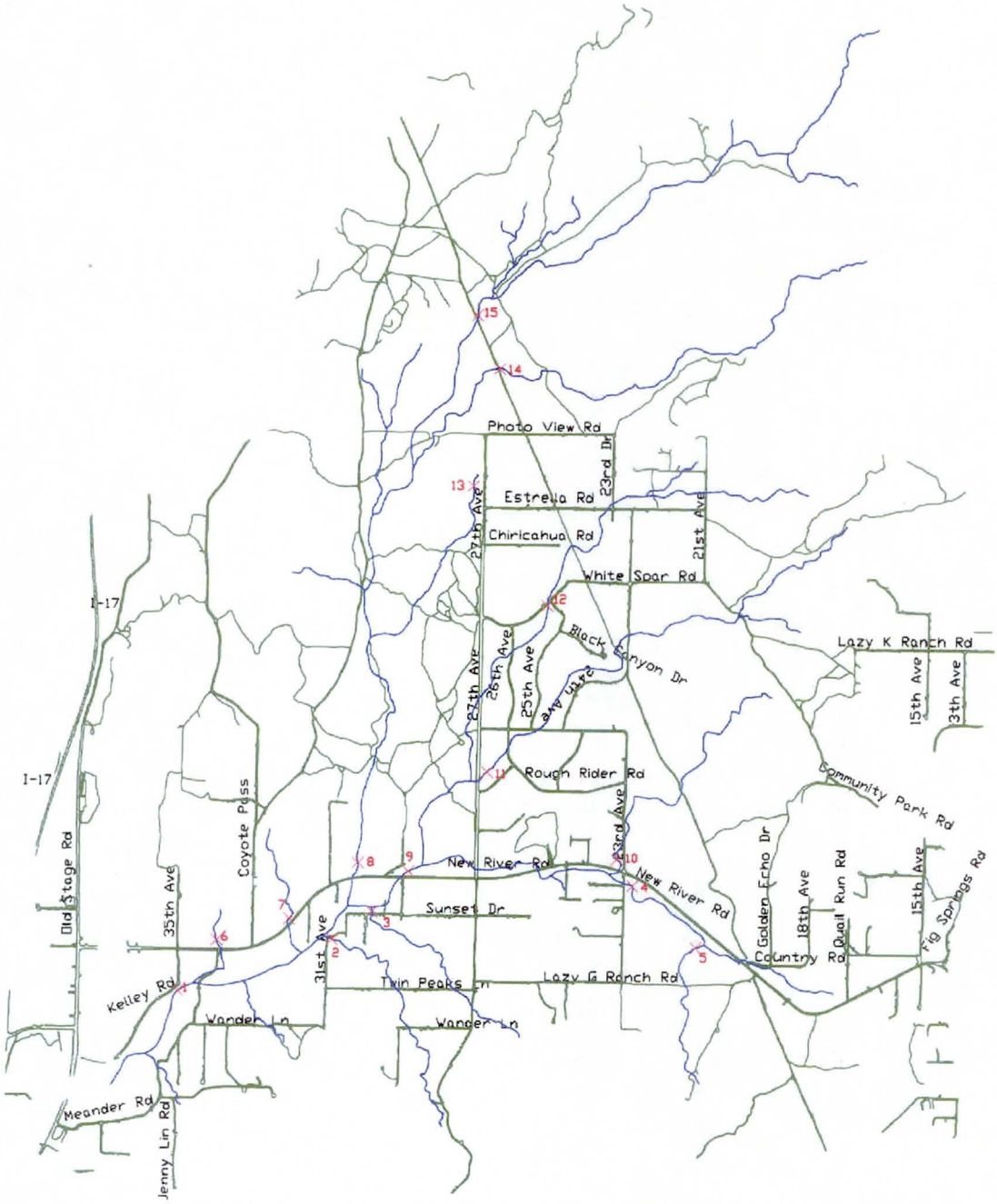


Figure 1: Locations Where Manning's *n* Values Were Computed

In the overbanks, the computed *n* values were either 0.050, 0.055, or 0.060, depending upon the density of the vegetation at a particular location. For each overbank area, n_1 and n_2 were both set to 0.005 to account for the natural undulation of the ground in the overbank area (n_1) and for the general presence of minor obstructions throughout the overbanks (n_2). n_3 was varied from 0.016 to 0.026 to account for the vegetation present in the overbank. After the overbank *n* values were calculated, the aerial photography was referenced to see what areas with low density

vegetation looked like (overbank n = 0.050), what areas of medium density vegetation looked like (overbank n = 0.055), and what areas of high density vegetation looked like (overbank n = 0.060). Once this review was complete, overbank n values were assigned to areas where overbank n values were not calculated by reviewing the aerial photography and assigning n values based on whether the density of the vegetation was low, medium, or high on the aerial photographs..

Some portions of the overbank in the study areas have been developed. In these locations, the cleared ground was assumed to be firm soil with an n value of 0.025. These areas were identified using the aerial photography. Finally, to account for the presence of homes in the overbanks, an n value of 0.50 was used in those locations where either a home was physically present on the cross section or where the flow shadow of a structure impacted the cross section.

The Manning's n values computed for each location are listed in Table 1.

Table 1: Manning's n Value Assignments

Location #	Manning's n		
	Left Bank	Main Channel	Right Bank
1	0.055	0.030	0.055
2	0.050	0.038	0.025
3	0.050	0.035	0.050
4	0.055	0.035	0.055
5	0.055	0.035	0.055
6	0.060	0.035	0.060
7	0.060	0.035	0.060
8	0.055	0.035	0.055
9	0.060	0.030	0.060
10	0.055	0.035	0.055
11	0.060	0.035	0.060
12	0.055	0.035	0.055
13	0.055	0.038	0.055
14	0.055	0.038	0.055
15	0.055	0.038	0.055

Overall, the values computed by PBS&J are lower than those calculated by Baker. Revised channel values vary from 0.030 to 0.038 while Baker's values varied from 0.040 to 0.050. In the overbanks, PBS&J's values vary from 0.050 to 0.060, and Baker's ranged from 0.060 to 0.070. Baker compared several of their n values with those computed by FCDMC as part of the ***Report for Gavilan Peak Watershed***. In Table 2, please find a comparison among PBS&J's values, Baker's values, and FCDMC's values at seven of the 15 locations.

Table 2: Comparisons of Manning's *n* Values

Location #	Description	Portion of Cross Section	Manning's *n* Values		
			Estimated by Baker	Estimated by FCDMC	Estimated by PBS&J
1	Close to FCDMC cross section 1	Left bank	0.065	0.060	0.055
		Channel	0.040	0.032	0.030
		Right bank	0.065	0.050	0.055
8	Close to FCDMC cross section 2	Left bank	0.060	0.049	0.055
		Channel	0.045	0.041	0.035
		Right bank	0.060	0.050	0.055
9	Close to FCDMC cross section 3	Left bank	0.065	0.041	0.060
		Channel	0.045	0.035	0.030
		Right bank	0.065	0.060	0.060
4	Close to FCDMC cross section 6	Left bank	0.070	0.070	0.055
		Channel	0.045	0.068	0.035
		Right bank	0.070	0.070	0.055
11	Close to FCDMC cross section 7	Left bank	0.065	0.053	0.060
		Channel	0.050	0.045	0.035
		Right bank	0.065	0.060	0.060
12	Close to FCDMC cross section 8	Left bank	0.060	0.046	0.055
		Channel	0.045	0.050	0.035
		Right bank	0.060	0.050	0.055
15	Close to FCDMC cross section 11	Left bank	0.065	0.052	0.055
		Channel	0.050	0.062	0.038
		Right bank	0.065	0.060	0.055

III. PHOTOGRAPHS AND *n* VALUE ASSIGNMENTS

The remainder of this document presents the Manning's *n* value calculations for each of the 15 locations where a determinations was completed. For each location, a representative photograph has been included, which provided the basis for the calculations. PBS&J provided the photographs for locations 4, 9, and 13, while Baker provided the photographs for the remaining locations. These 15 photographs are shown in Figures 2 through 16.

Location #1: In Gavilan Peak Wash, about 600 feet south of New River Road and 100 feet east of Kelley Road, looking downstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.030	0.030
	n_1=0.000	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 2: In Gavilan Peak Wash, about 600 feet south of New River Road and 100 feet east of Kelley Road, looking downstream.

Location # 2: In Sharman Wash, about 900 feet south of New River Road and 150 feet east of 31st Avenue, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.050
	n_1=0.005	
	n_2=0.005	
	n_3=0.016	
Channel	n_b=0.033	0.038
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=	0.025*
	n_1=	
	n_2=	
	n_3=	

* The right overbank is not visible in the picture below. Note that the photograph is looking upstream so the right overbank is on the left side of the photograph. The *n* value in the right overbank was assigned via inspection of the aerial photograph of this area.

Figure 3: In Sharman Wash, about 900 feet south of New River Road and 150 feet east of 31st Avenue, looking upstream.

Location #3: In Twin Peaks Wash, at Sunset Drive and approximately 100 feet east of 30th Avenue, looking downstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.050
	n_1=0.005	
	n_2=0.005	
	n_3=0.016	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.050
	n_1=0.005	
	n_2=0.005	
	n_3=0.016	

Figure 4: In Twin Peaks Wash, at Sunset Drive and approximately 100 feet east of 30th Avenue, looking downstream.

Location #4: In Gavilan Peak Wash, about 200 feet south of New River Road and 50 feet east of 23rd Avenue, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 5: In Gavilan Peak Wash, about 200 feet south of New River Road and 50 feet east of 23rd Avenue, looking upstream.

Location #5: In Lazy G Wash, about 350 south of New River Road and approximately 1,400 feet east of 23rd Avenue, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 6: In Lazy G Wash, about 350 south of New River Road and approximately 1,400 feet east of 23rd Avenue, looking upstream.

Location #6: Standing on New River Road, approximately 500 feet west of Coyote Pass Road, looking upstream at Kelley Road Wash.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	

Figure 7: Standing on New River Road, approximately 500 feet west of Coyote Pass Road, looking upstream at Kelley Road Wash.

Location #7: On New River Road, approximately 800 feet east of Coyote Pass Road, looking upstream at Coyote Pass Wash.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	

Figure 8: On New River Road, approximately 800 feet east of Coyote Pass Road, looking upstream at Coyote Pass Wash.

Location #8: In Table Mountain Wash, about 20 feet north of New River Road, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 9: In Table Mountain Wash, about 20 feet north of New River Road, looking upstream.

Location #9: In Gavilan Peak Wash, about 100 feet north of New River Road and along the 29th Avenue alignment, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	
Channel	n_b=0.030	0.030
	n_1=0.000	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	

Figure 10: In Gavilan Peak Wash, about 100 feet north of New River Road and along the 29th Avenue alignment, looking upstream.

Location #10: In Rough Rider Wash, about 400 feet north of New River Road and 100 feet west of 23rd Avenue, looking downstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 11: In Rough Rider Wash, about 400 feet north of New River Road and 100 feet west of 23rd Avenue, looking downstream.

Location #11: In White Spar Wash, about 100 feet upstream of 27th Avenue, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.060
	n_1=0.005	
	n_2=0.005	
	n_3=0.026	

Figure 12: In White Spar Wash, about 100 feet upstream of 27th Avenue, looking upstream.

Location #12: In Soda Springs Wash at White Spar Road, looking downstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.030	0.035
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 13: In Soda Springs Wash at White Spar Road, looking upstream.

Location #13: In River Creek, about 500 feet north of Estrella Road and 50 feet west of 27th Avenue, looking downstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.033	0.038
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 14: In River Creek, about 500 feet north of Estrella Road and 50 feet west of 27th Avenue, looking downstream.

Location #14: In Photo View Wash, about 1,200 feet north of Photo View Road and 50 feet east of the power line corridor, looking upstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.033	0.038
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 15: In Photo View Wash, about 1,200 feet north of Photo View Road and 50 feet east of the power line corridor, looking upstream.

Location #15: In Table Mountain Wash, about 2,000 feet north of Photo View Road and in the power line corridor, looking downstream.

Portion of Cross Section	Components	Composite Values
Left Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	
Channel	n_b=0.033	0.038
	n_1=0.005	
	n_2=0.000	
	n_3=0.000	
Right Bank	n_b=0.024	0.055
	n_1=0.005	
	n_2=0.005	
	n_3=0.021	

Figure 16: In Table Mountain Wash, about 2,000 feet north of Photo View Road and in the power line corridor, looking downstream.

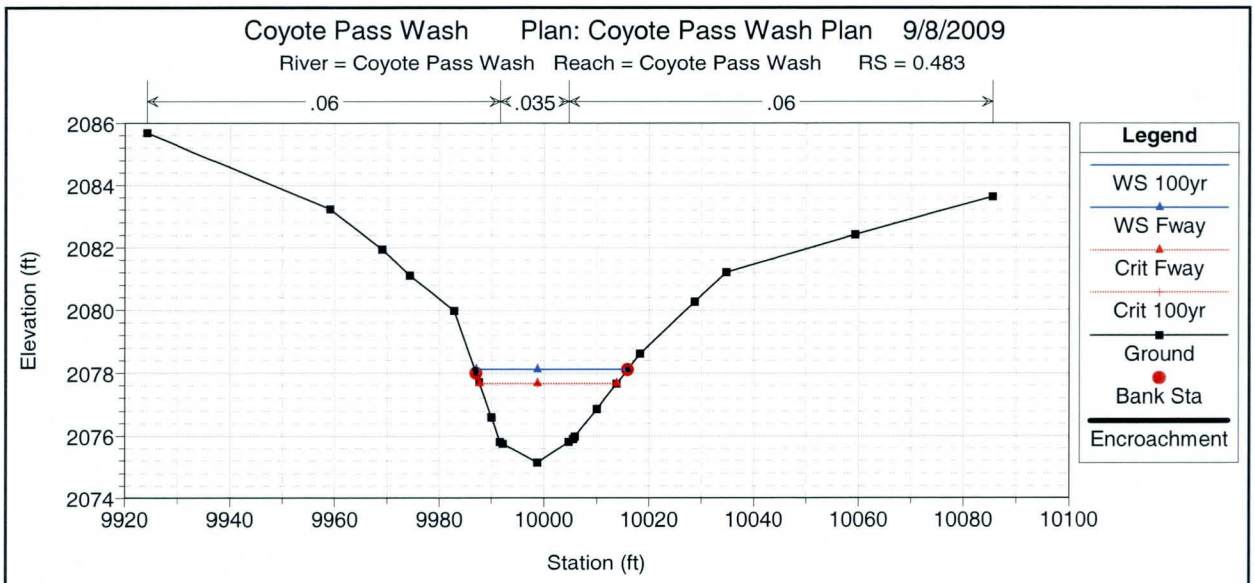
APPENDIX E.2

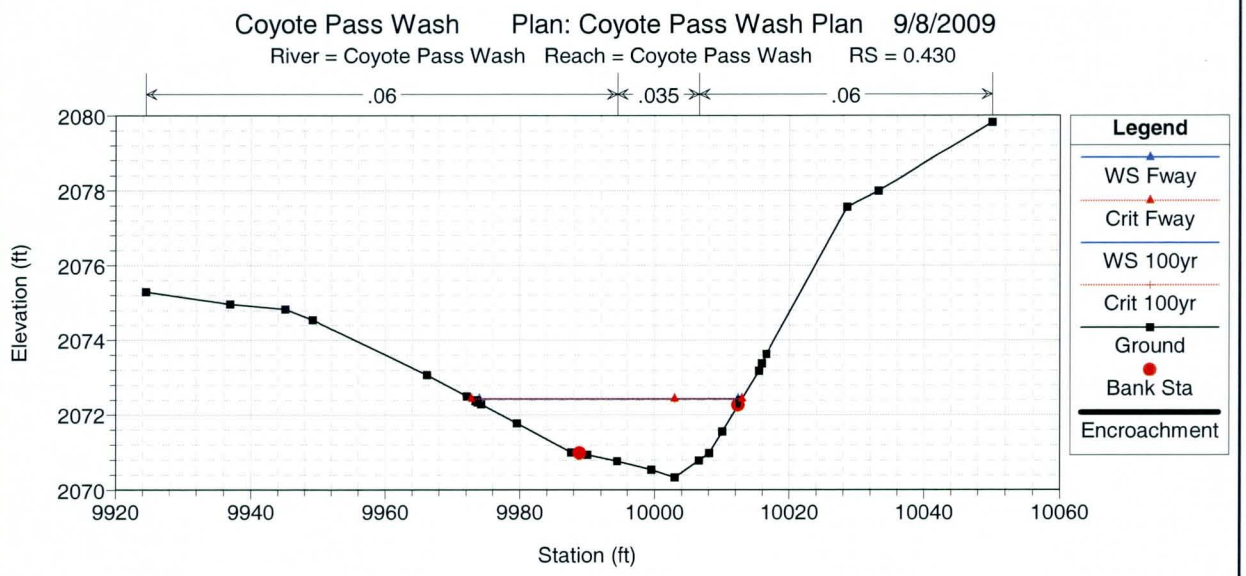
CROSS SECTION PLOTS

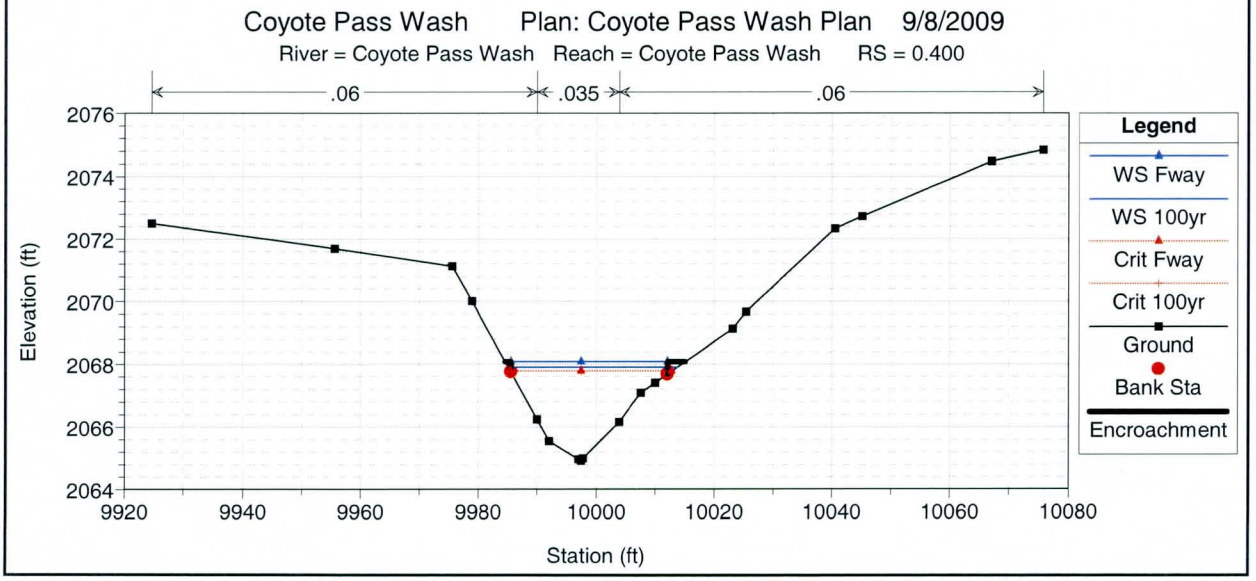
Please see the following pages for the
cross section plots. They have been organized by wash.

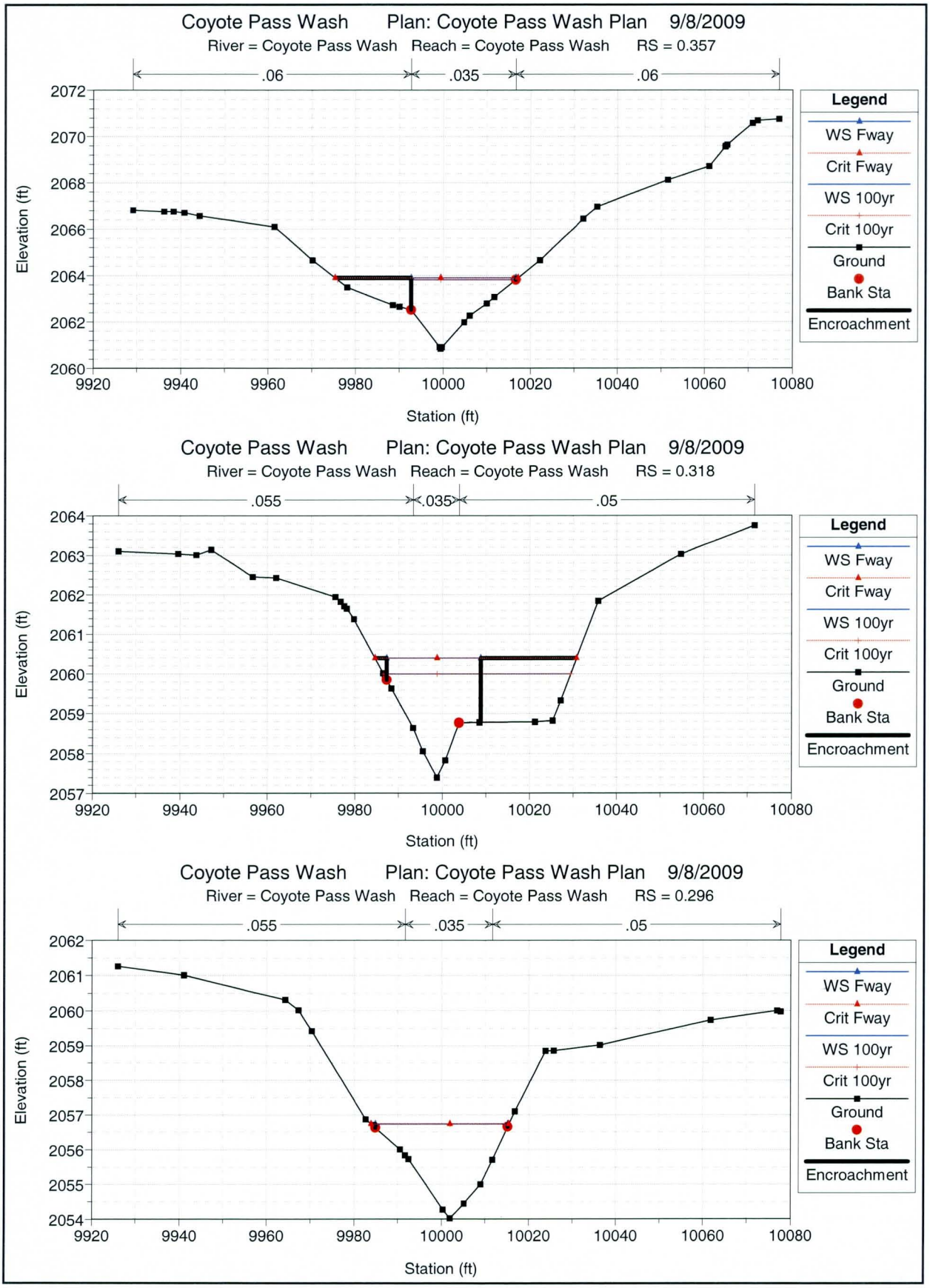
CROSS SECTION PLOTS FOR

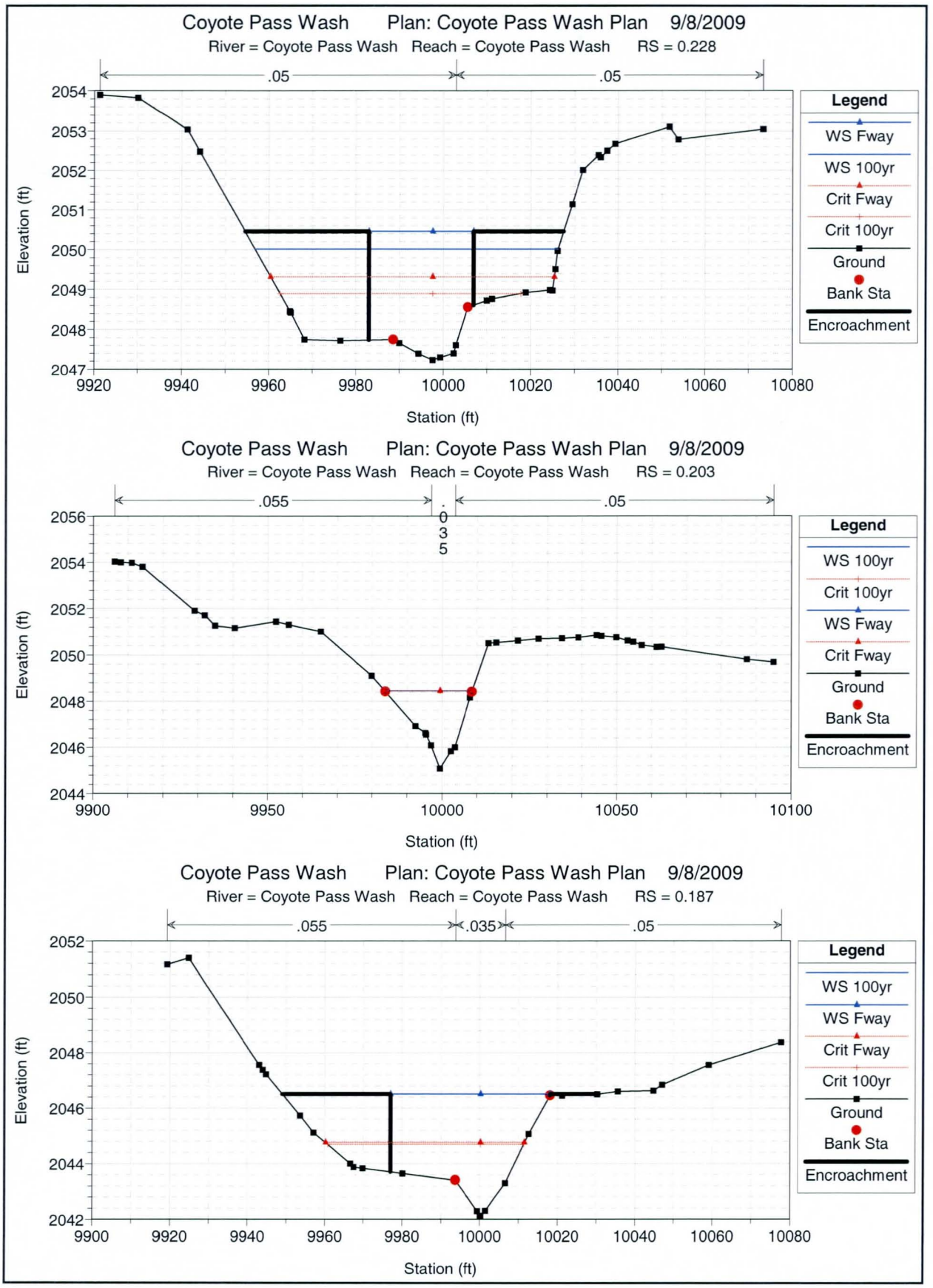
COYOTE PASS WASH

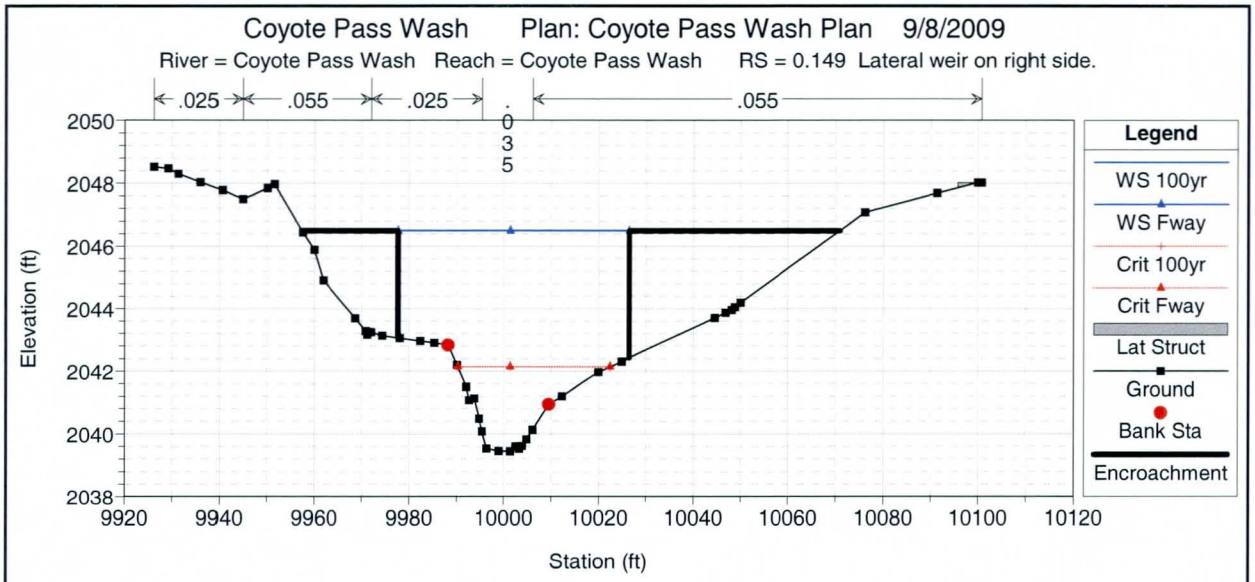

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.483
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

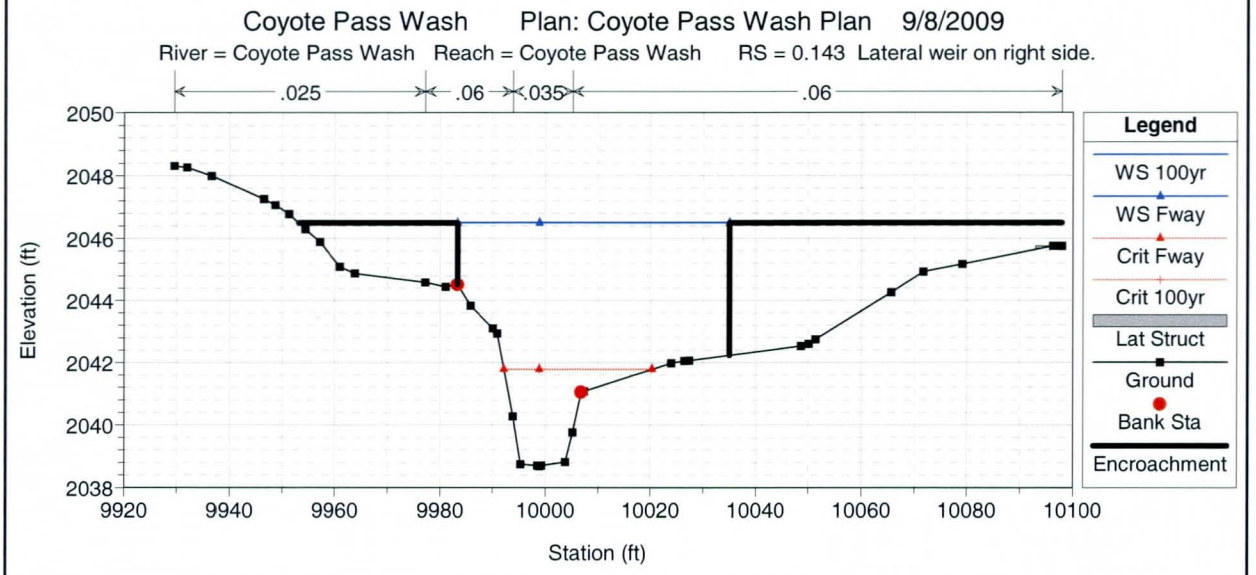

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.430
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

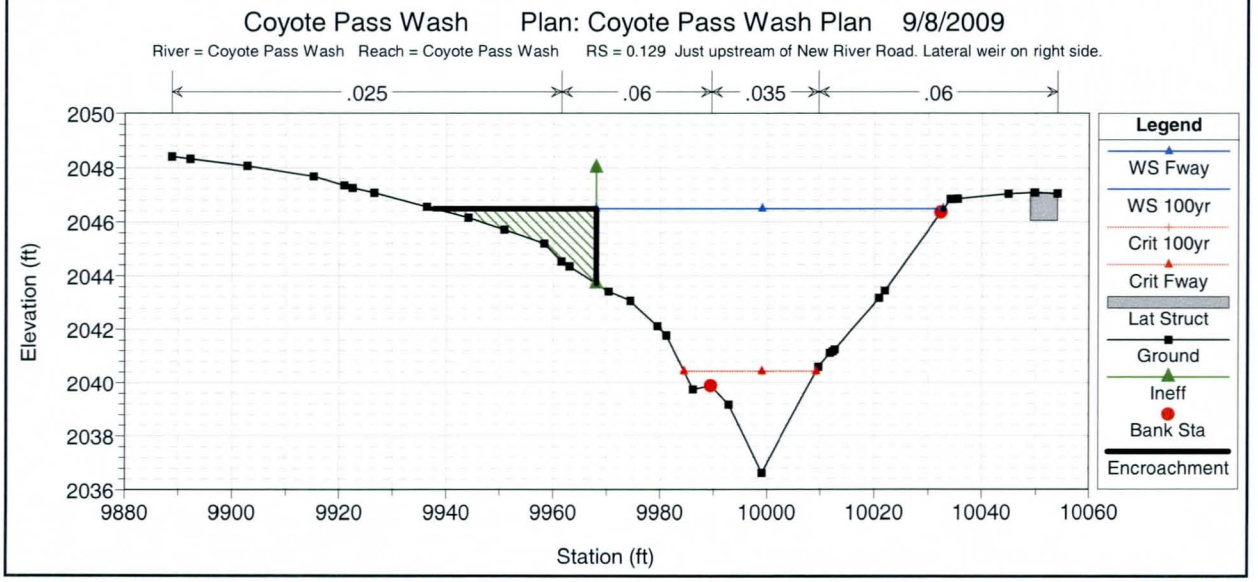

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.400
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

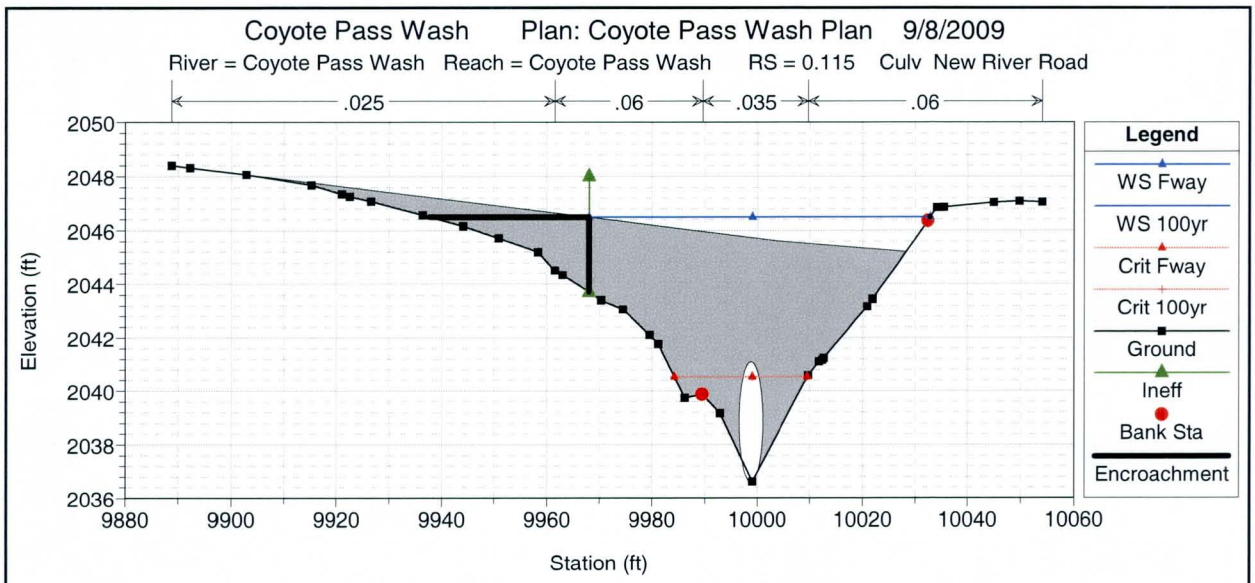

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.357
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.318
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.296
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

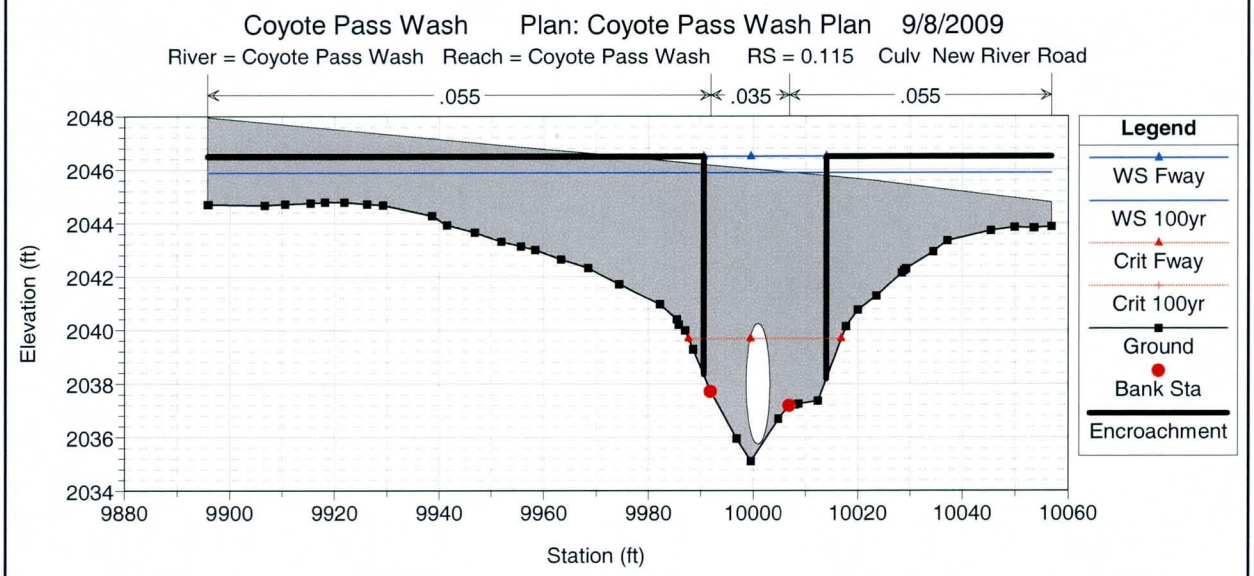

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.228
.05
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.203
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment
Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.187
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

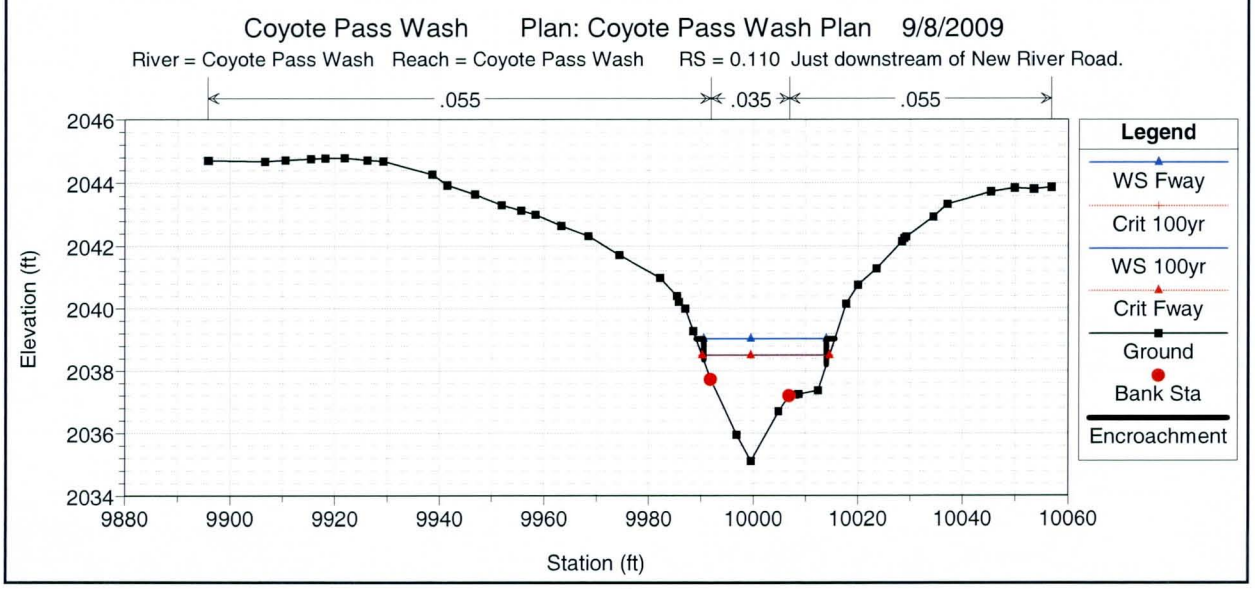

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.149 Lateral weir on right side.
.025
.055
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Lat Struct
Ground
Bank Sta
Encroachment

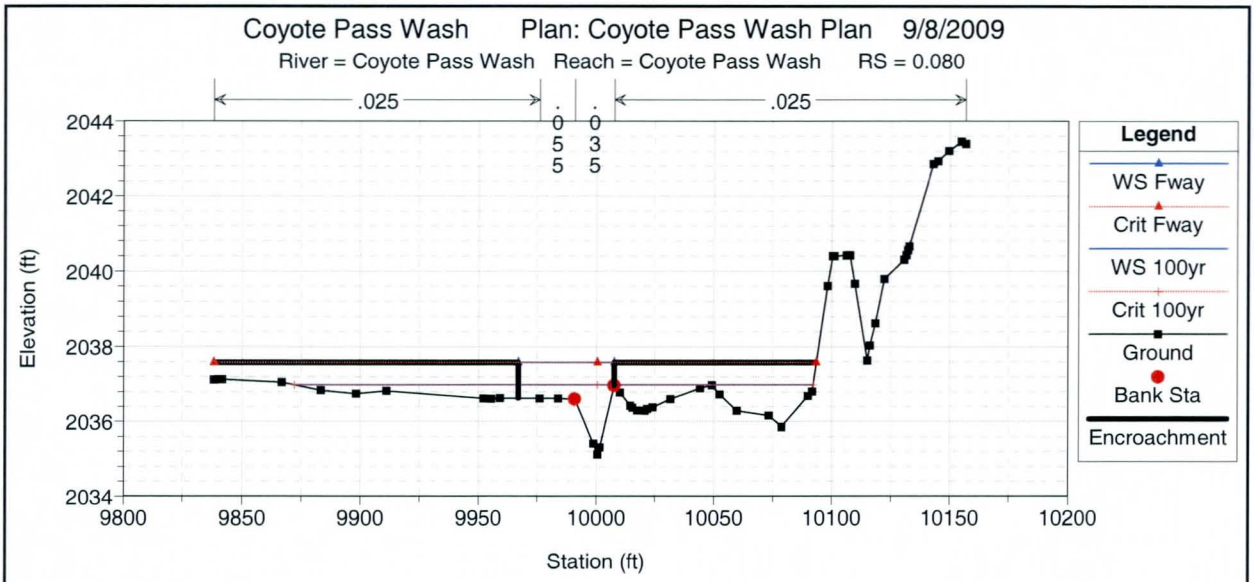

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.143 Lateral weir on right side.
.025
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

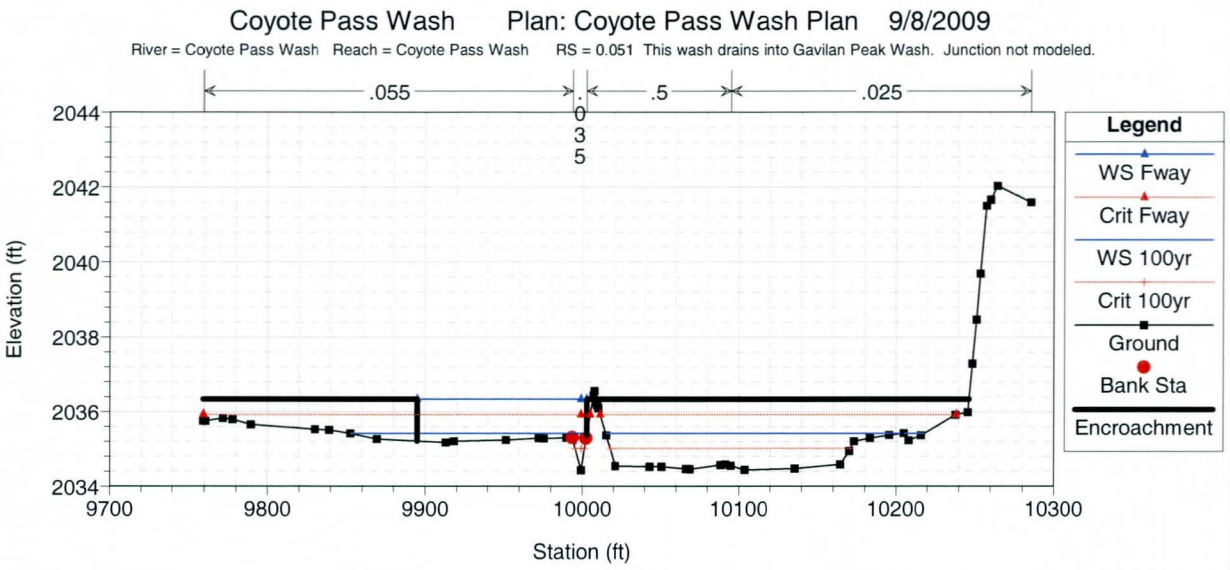

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.129 Just upstream of New River Road. Lateral weir on right side.
.025
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Lat Struct
Ground
Ineff
Bank Sta
Encroachment


Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.115 Culv New River Road
.025
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment


Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.115 Culv New River Road
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.110 Just downstream of New River Road.
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment


Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.080
.025
.055
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

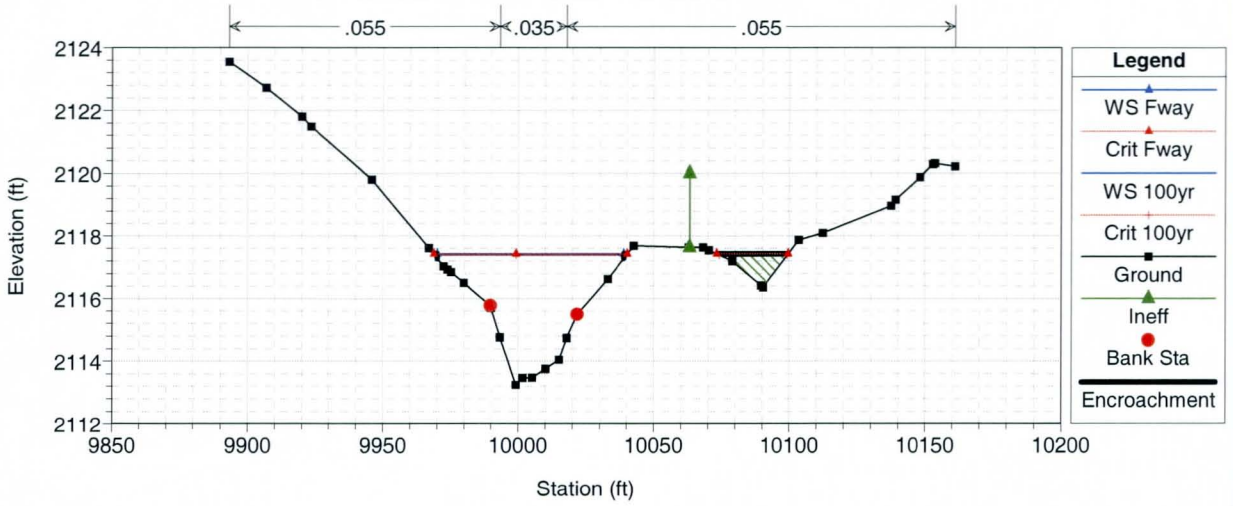

Coyote Pass Wash Plan: Coyote Pass Wash Plan 9/8/2009
River = Coyote Pass Wash Reach = Coyote Pass Wash RS = 0.051 This wash drains into Gavilan Peak Wash. Junction not modeled.
.055
.035
.5
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

CROSS SECTION PLOTS FOR

GAVILAN PEAK WASH

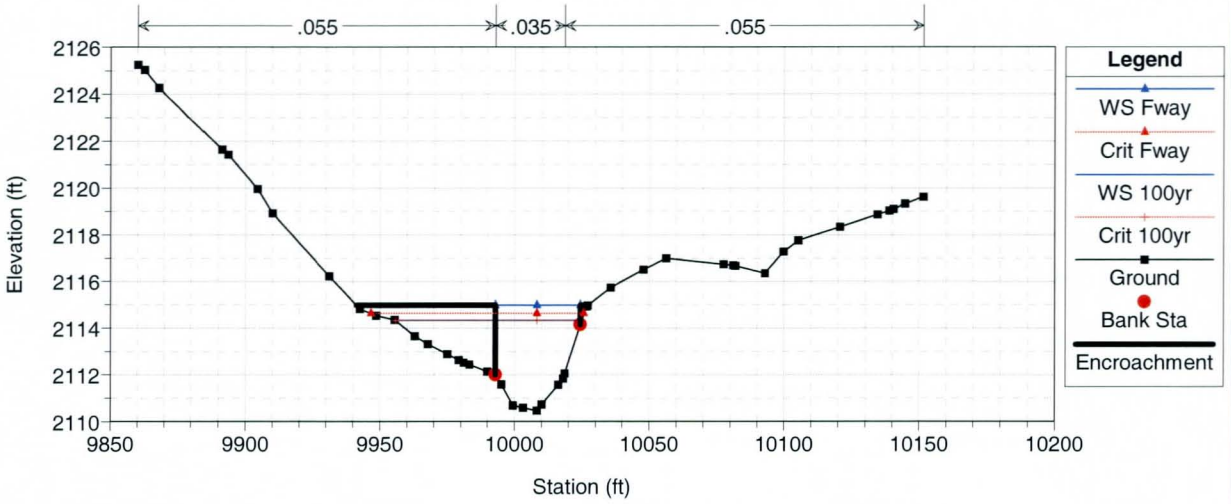
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009

River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.723



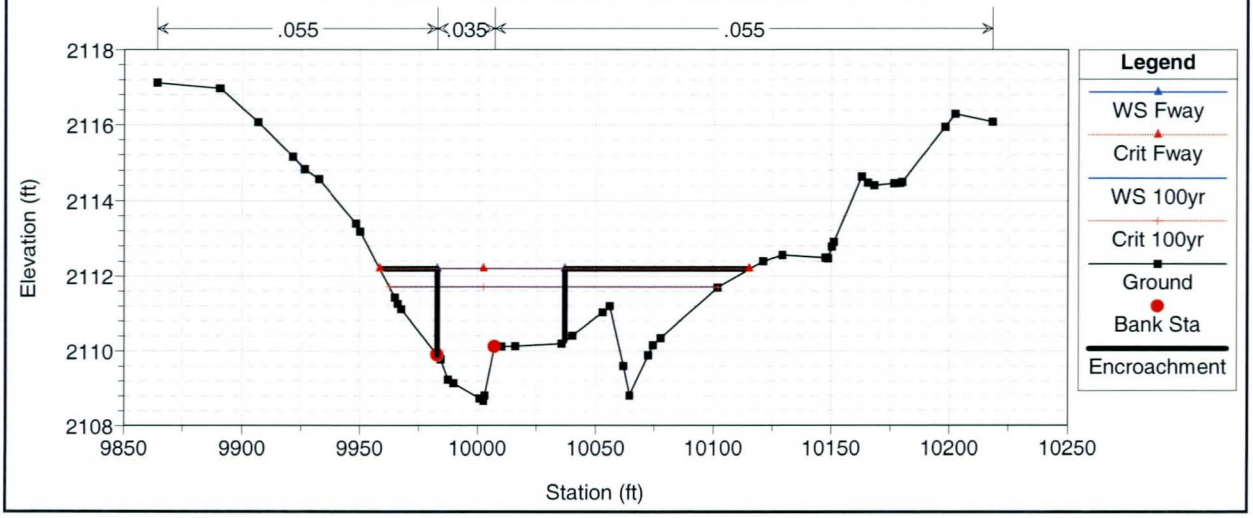
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009

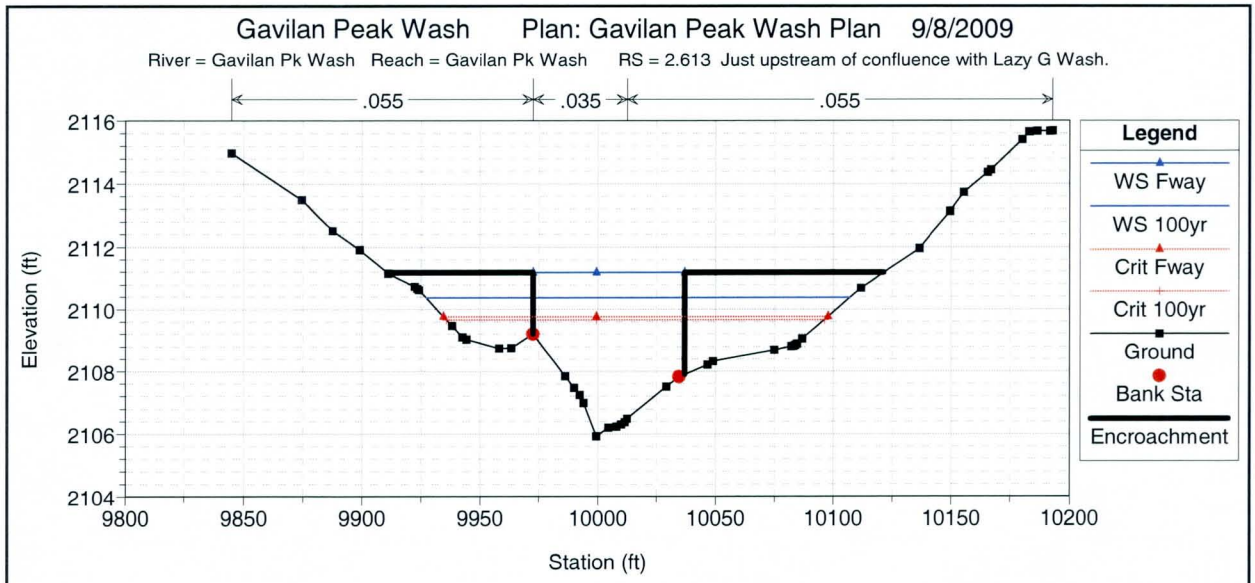
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.692

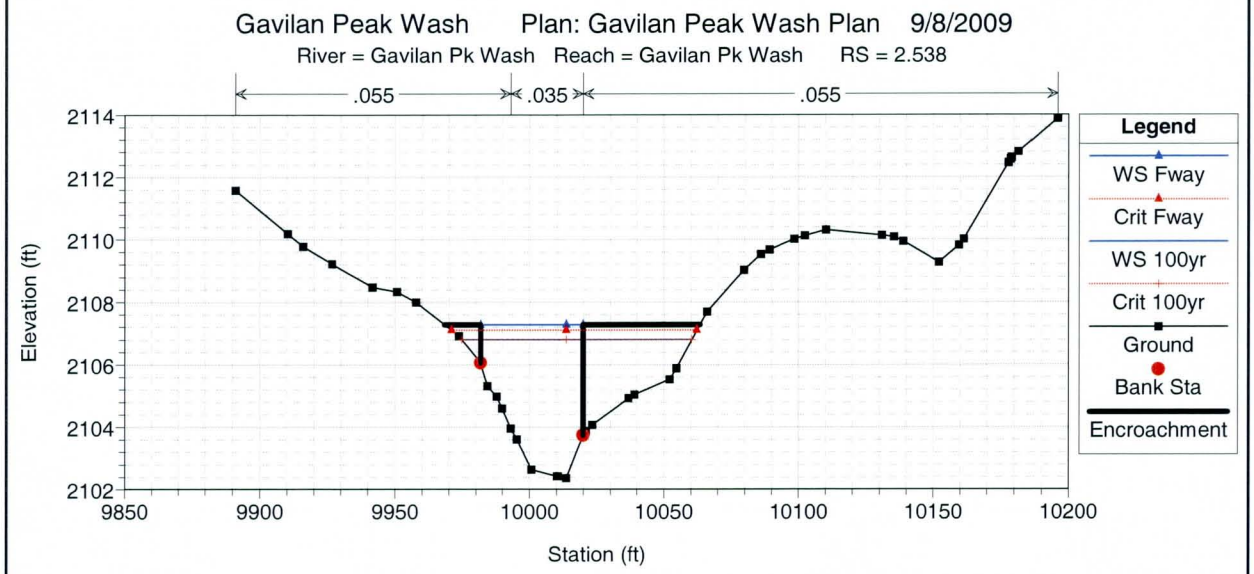


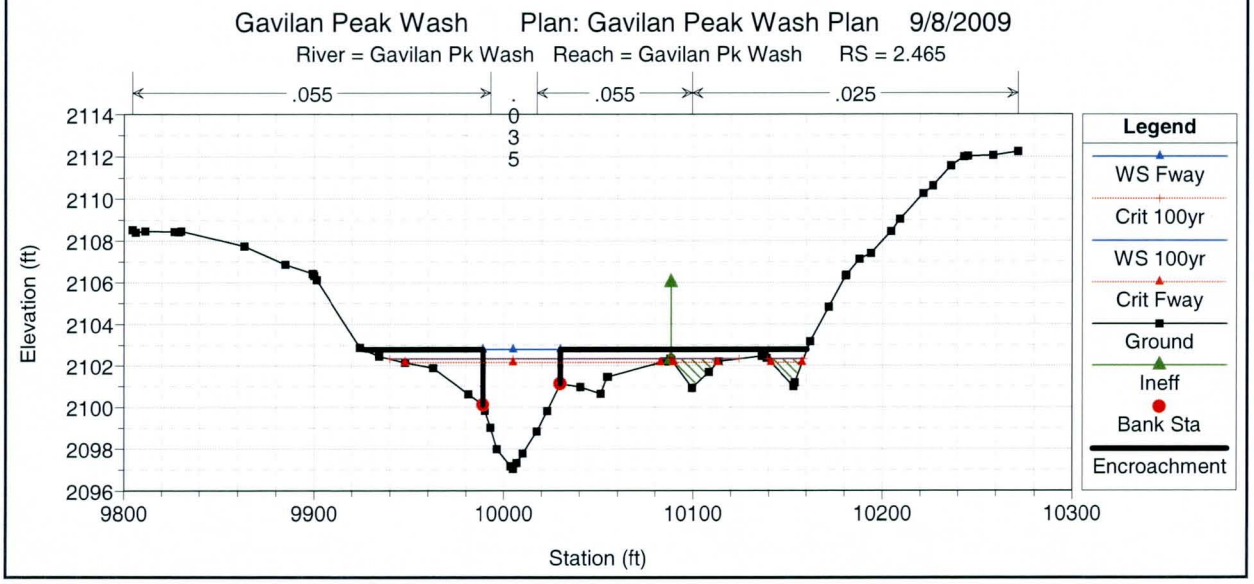
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009

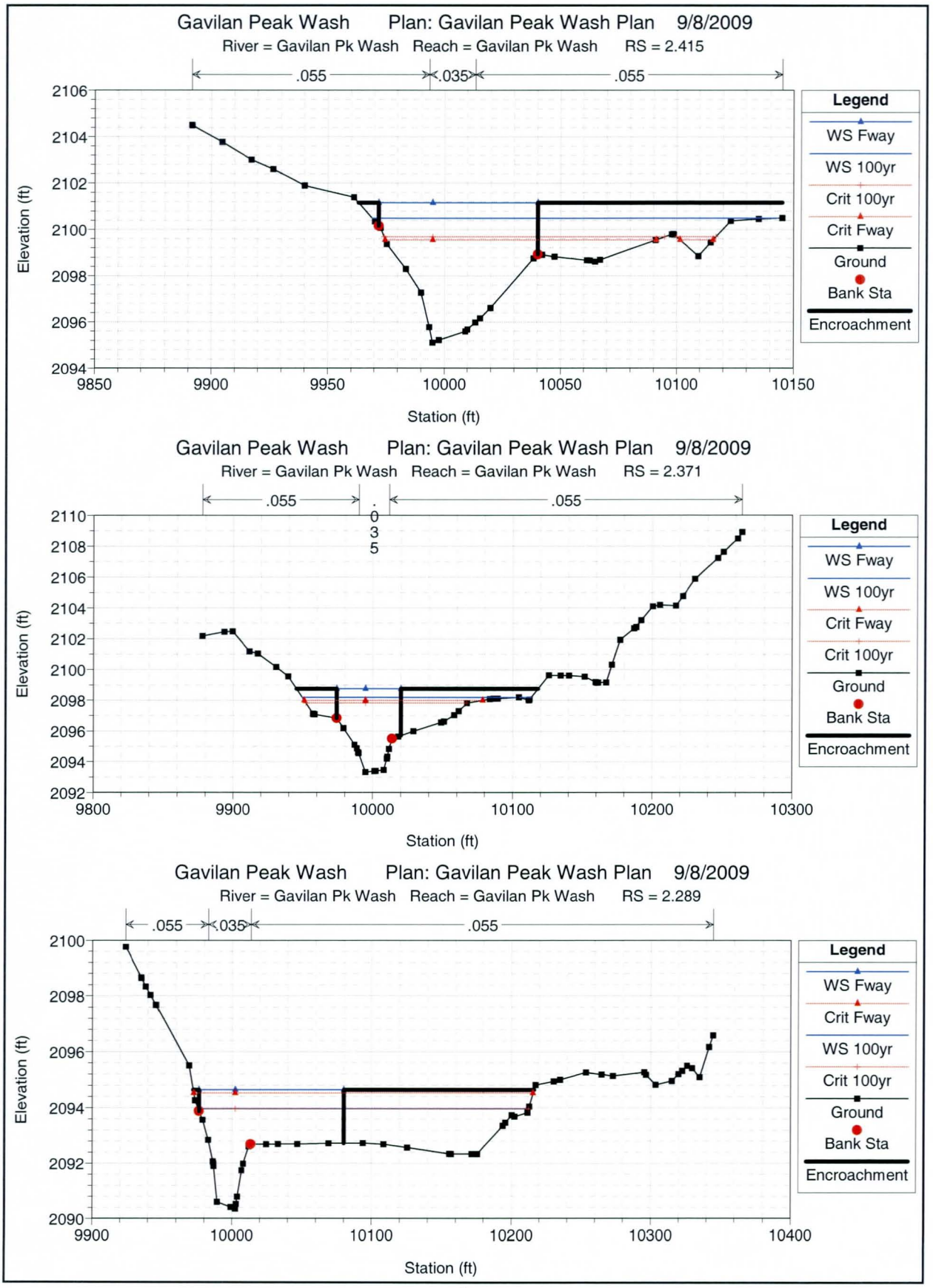
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.651

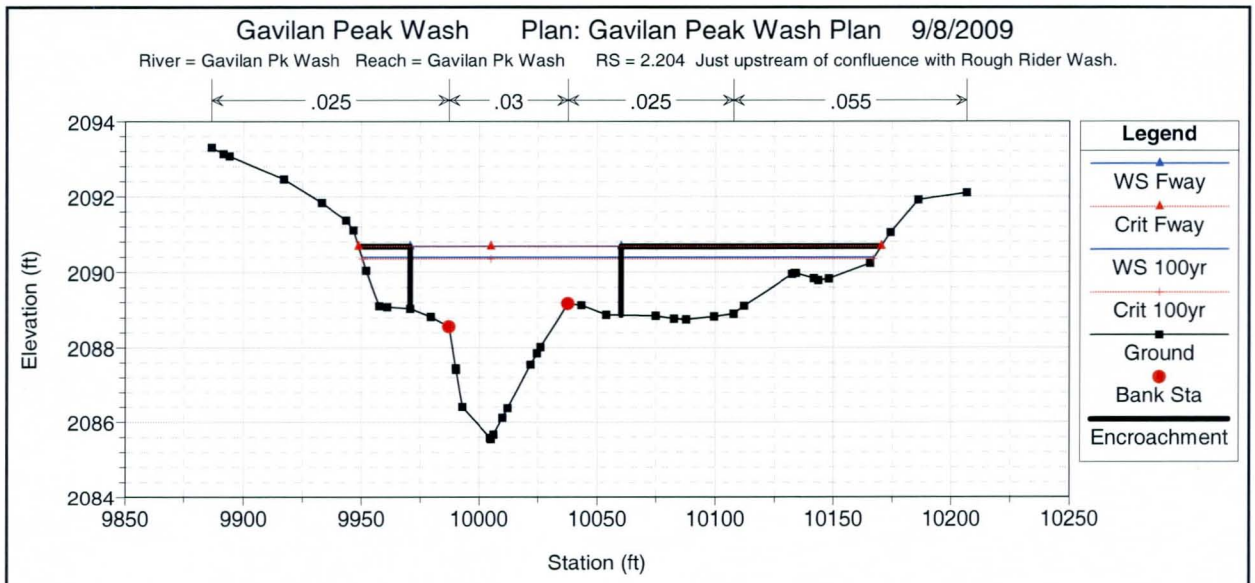


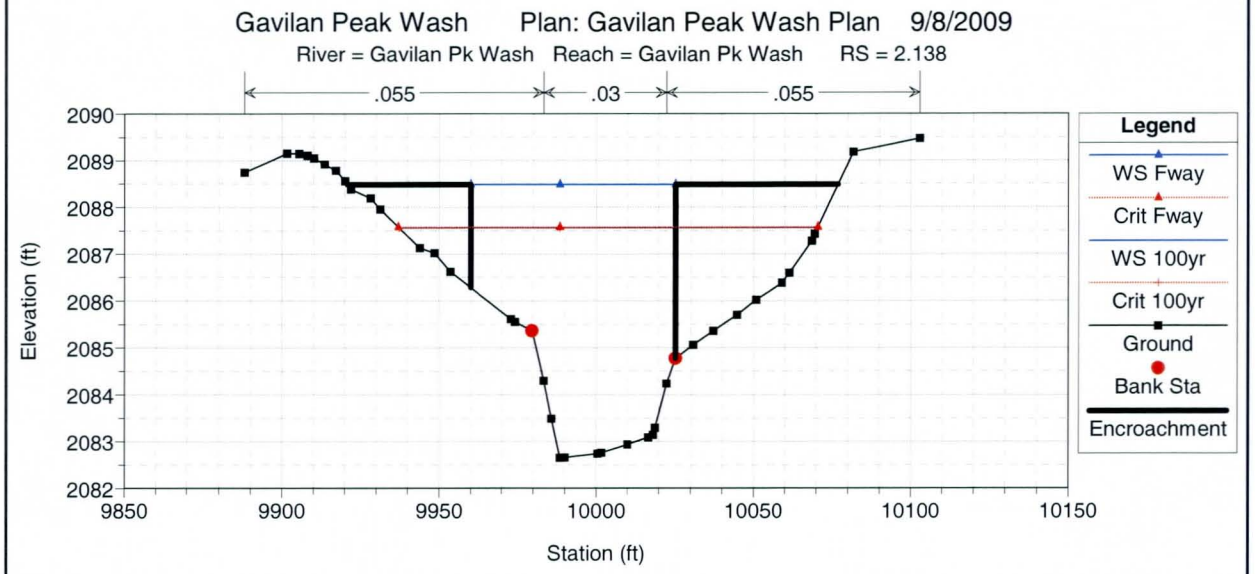

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.613 Just upstream of confluence with Lazy G Wash.
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

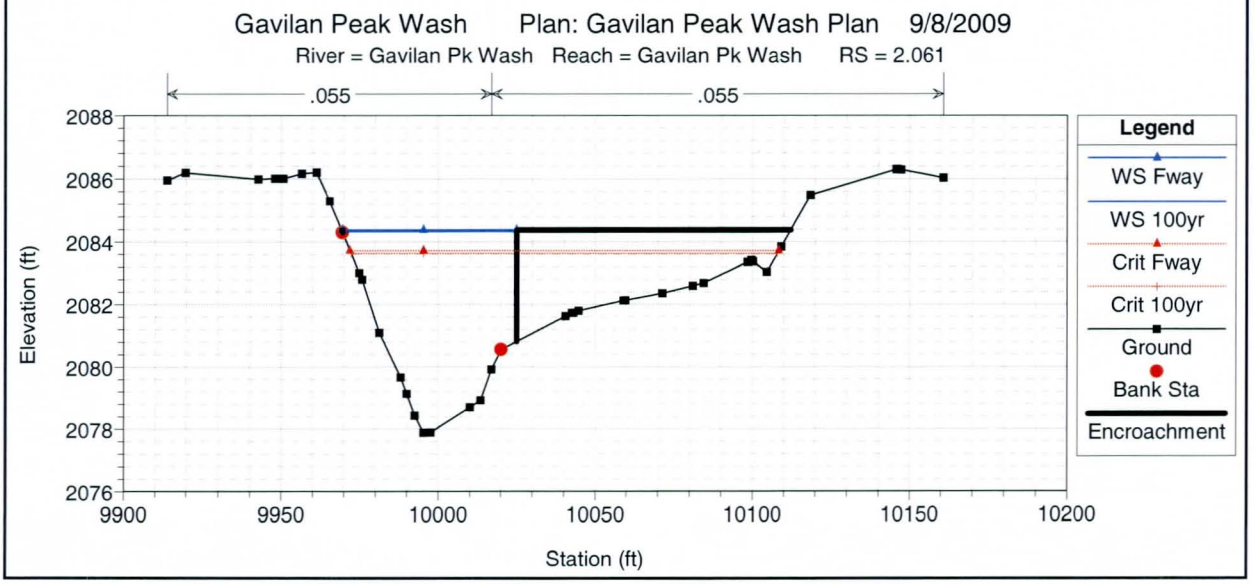

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.538
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

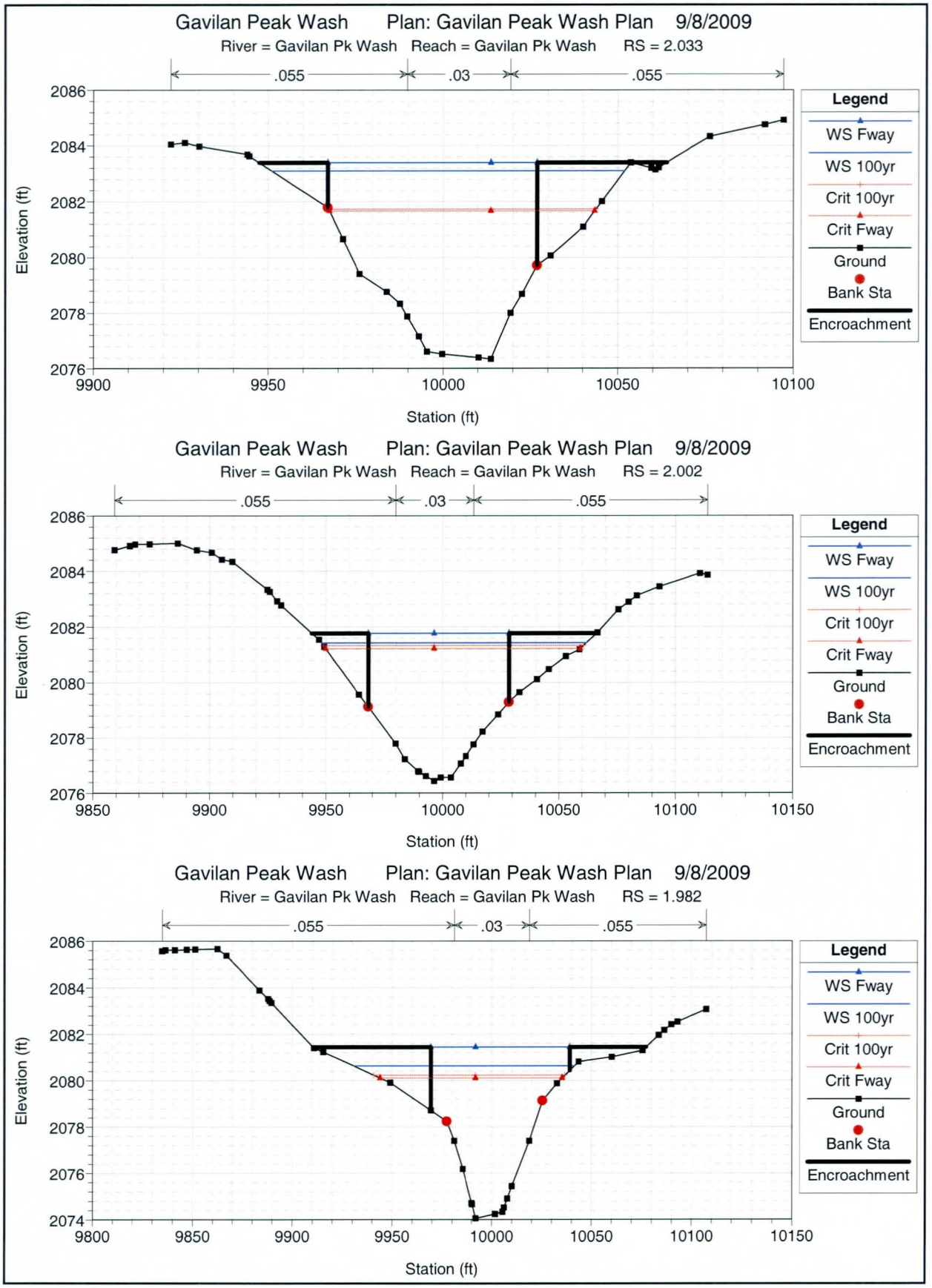

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.465
.055
.035
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

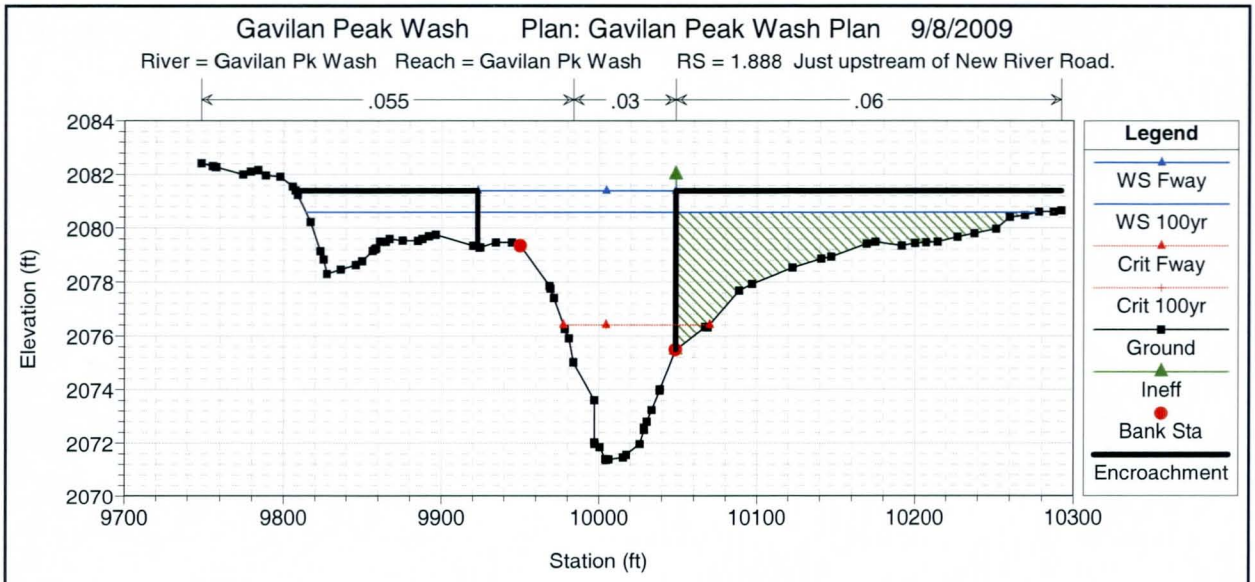

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.415
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.371
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.289
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

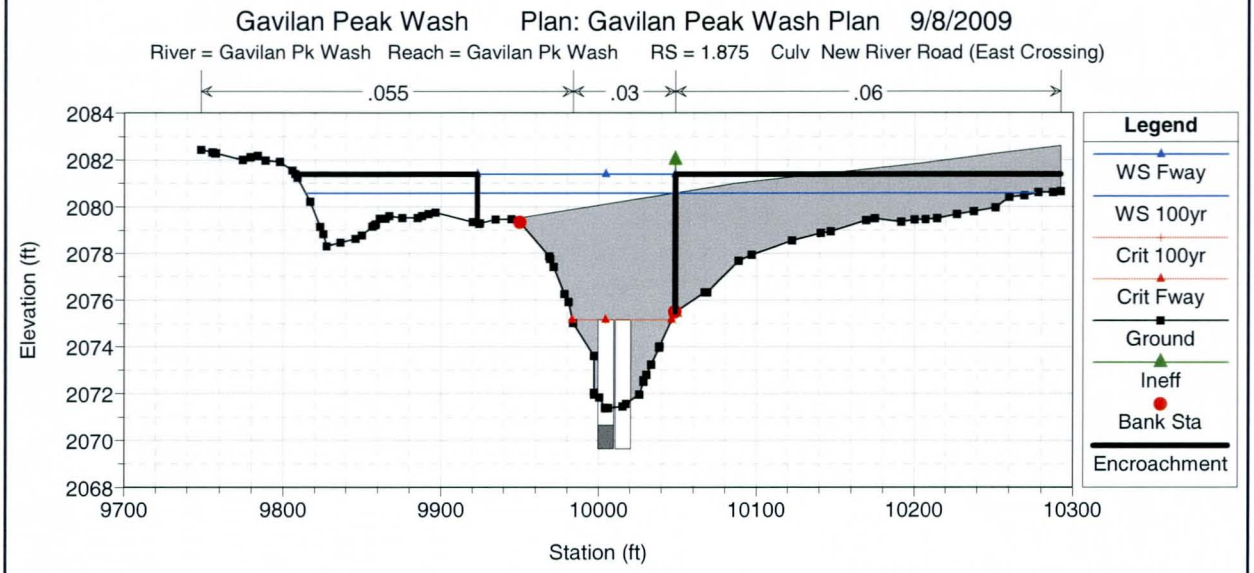

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.204 Just upstream of confluence with Rough Rider Wash.
.025
.03
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

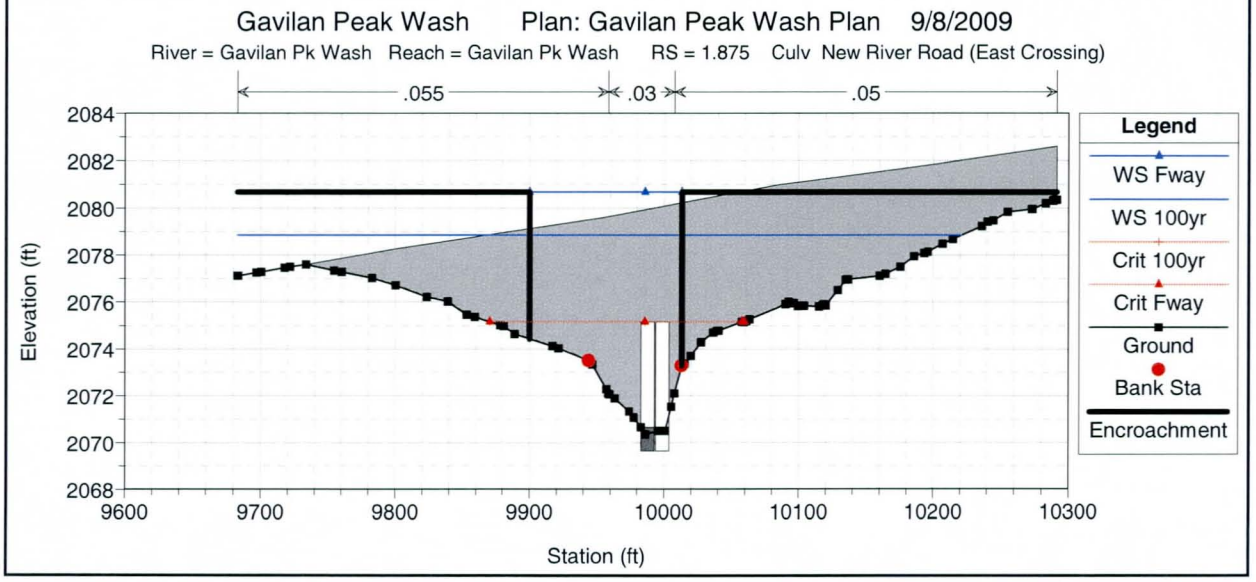

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.138
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

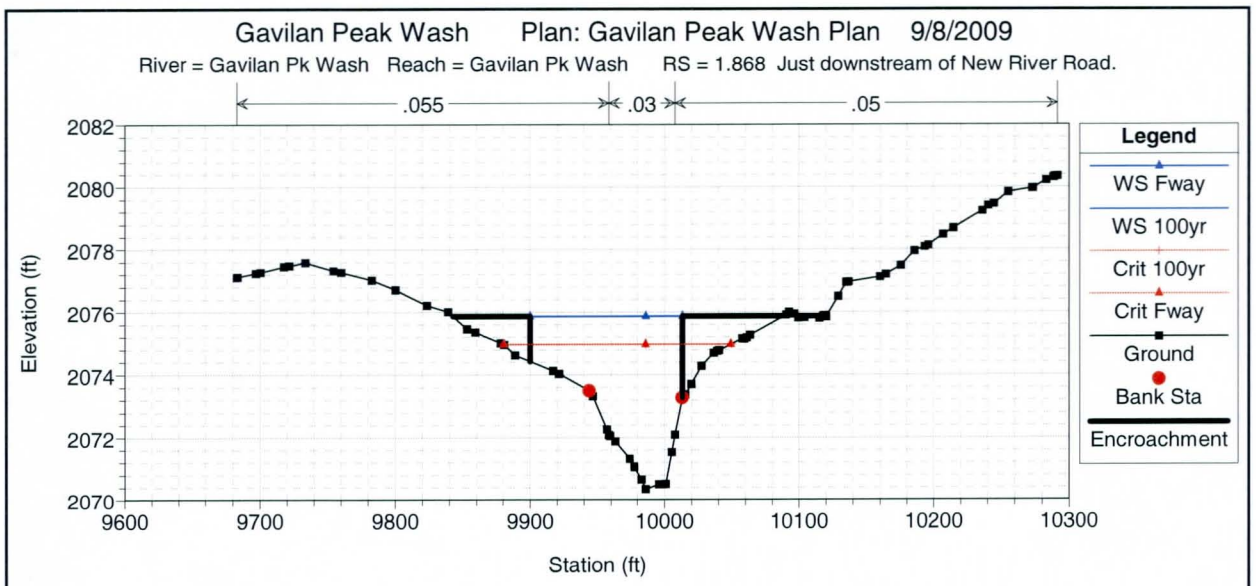

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.061
.055
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

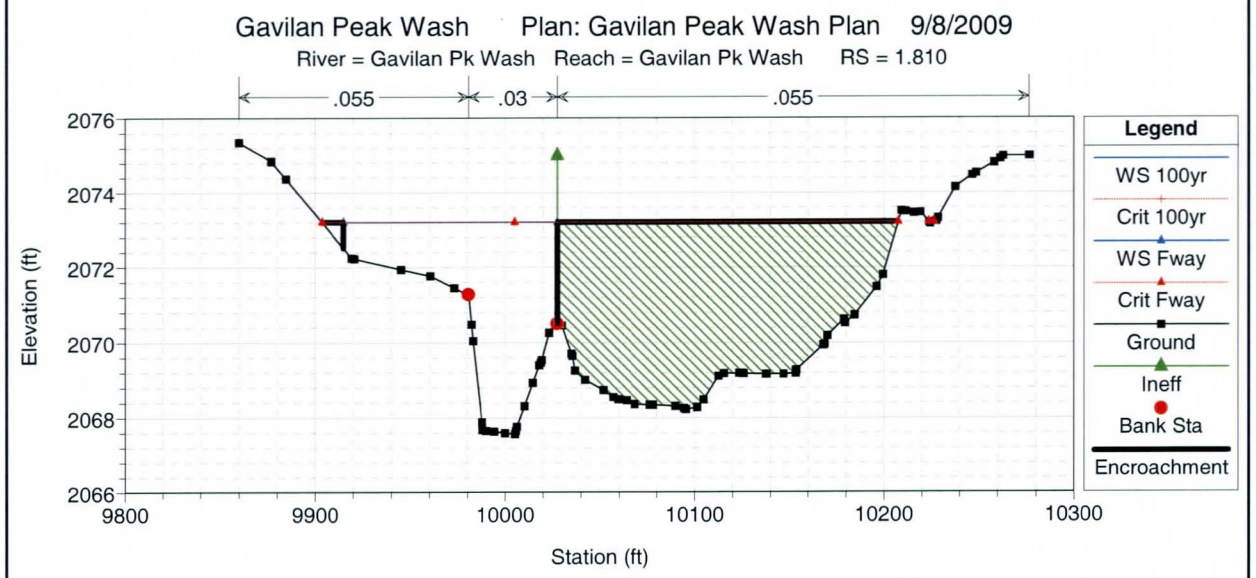

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.033
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 2.002
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.982
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

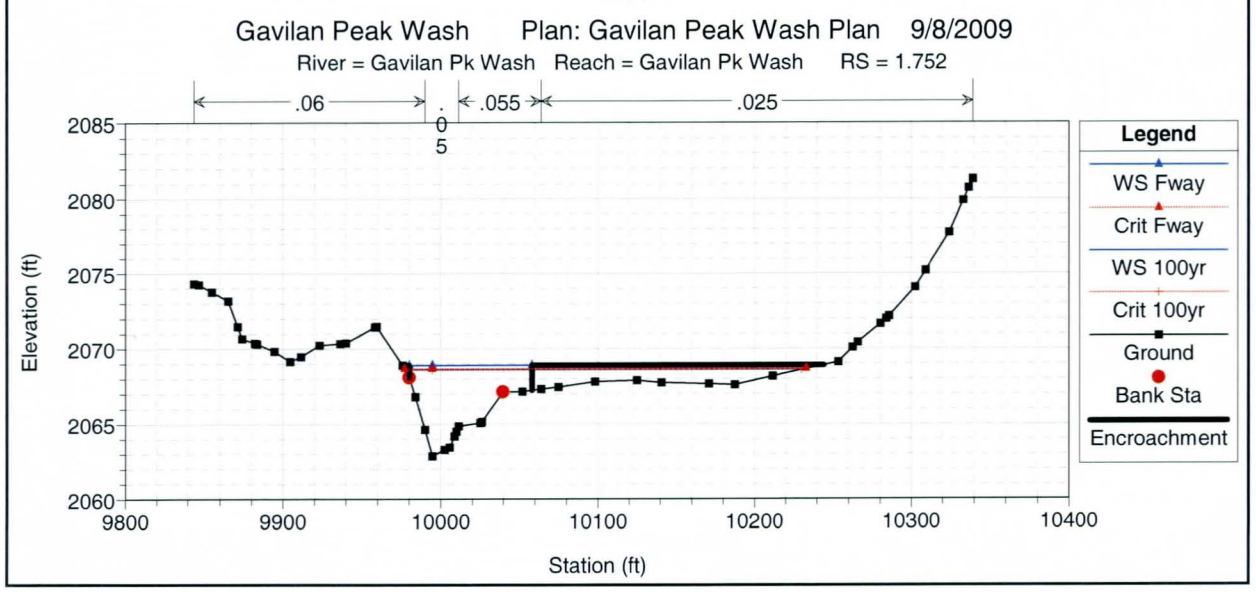

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.888 Just upstream of New River Road.
.055
.03
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

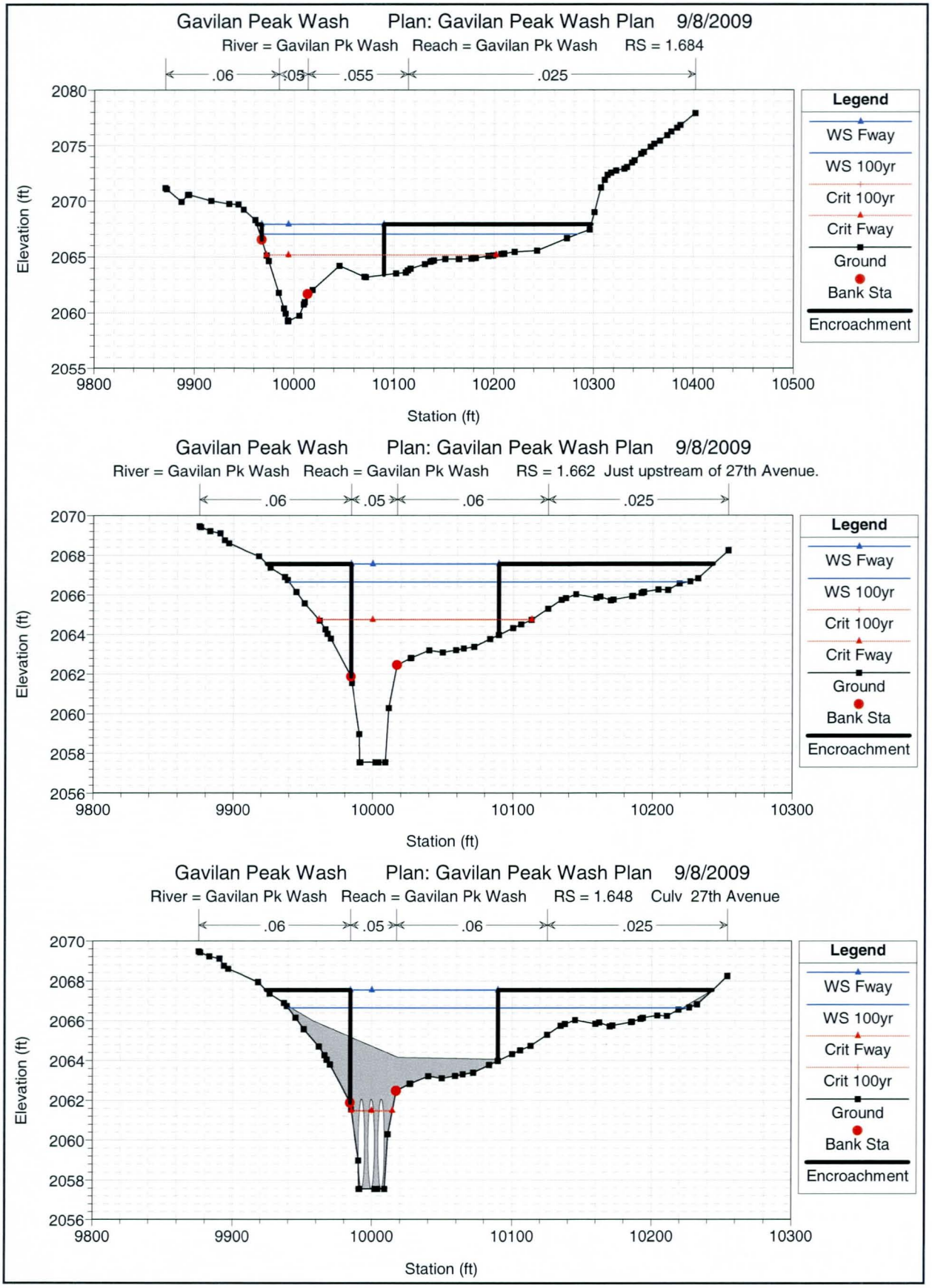

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.875 Culv New River Road (East Crossing)
.055
.03
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

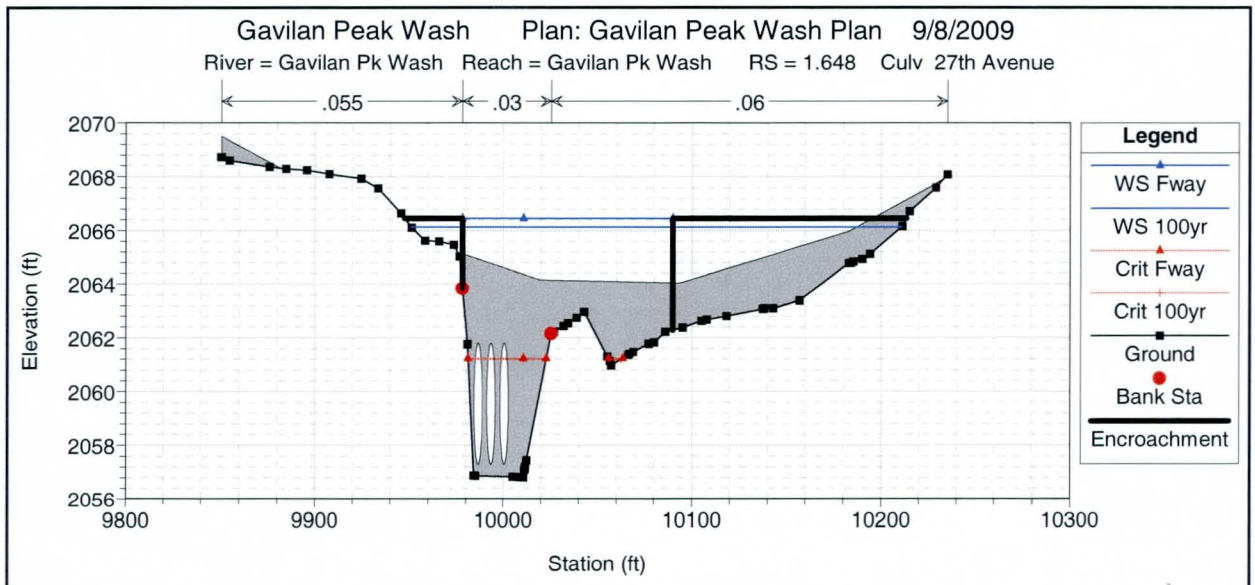

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.875 Culv New River Road (East Crossing)
.055
.03
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

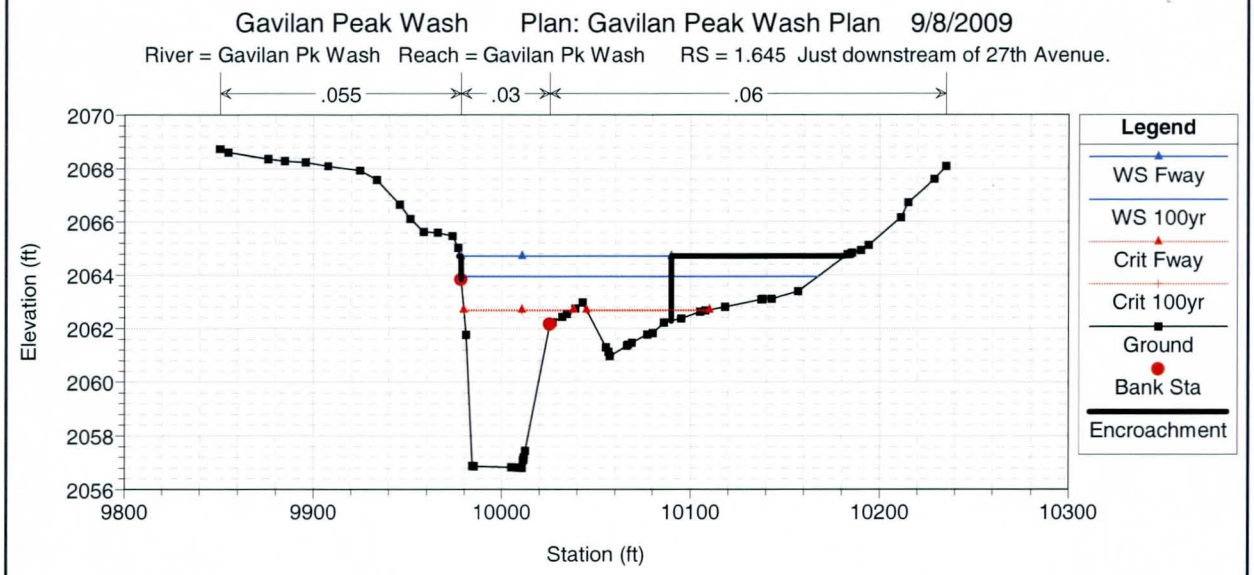

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.868 Just downstream of New River Road.
.055
.03
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

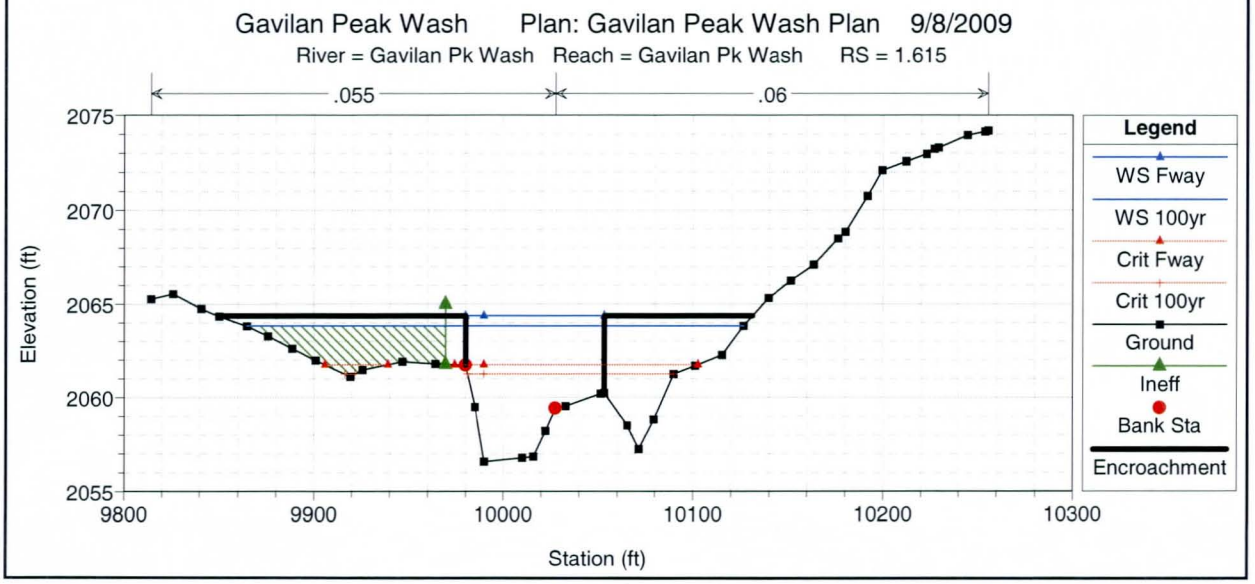

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.810
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

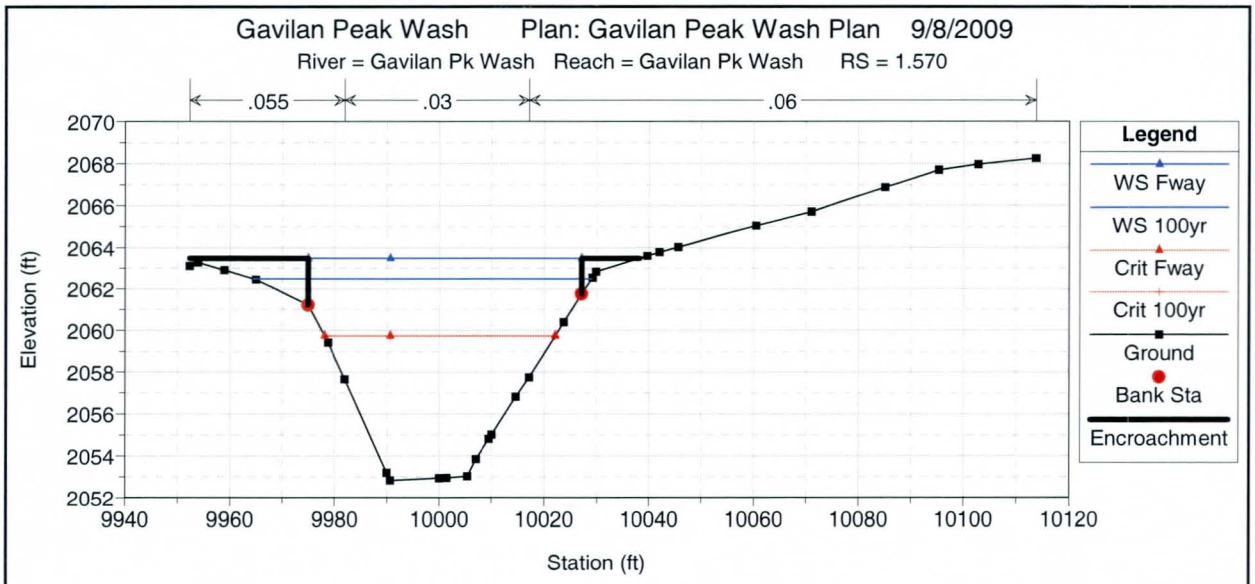

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.752
.06
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

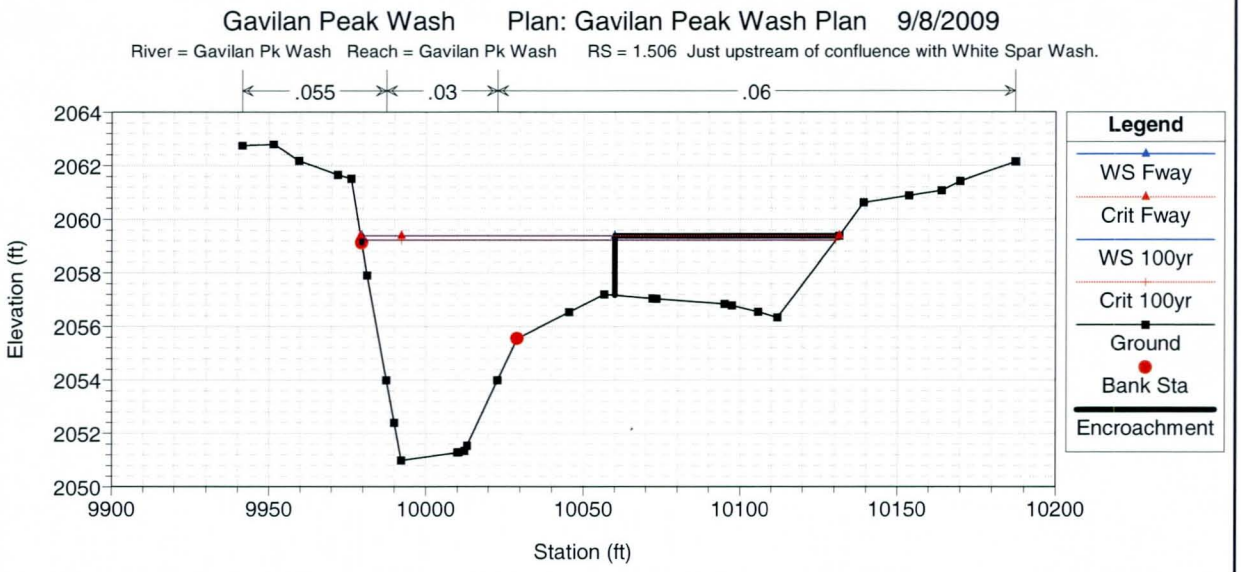

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.684
.06
.05
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.662 Just upstream of 27th Avenue.
.06
.05
.06
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.648 Culv 27th Avenue
.06
.05
.06
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

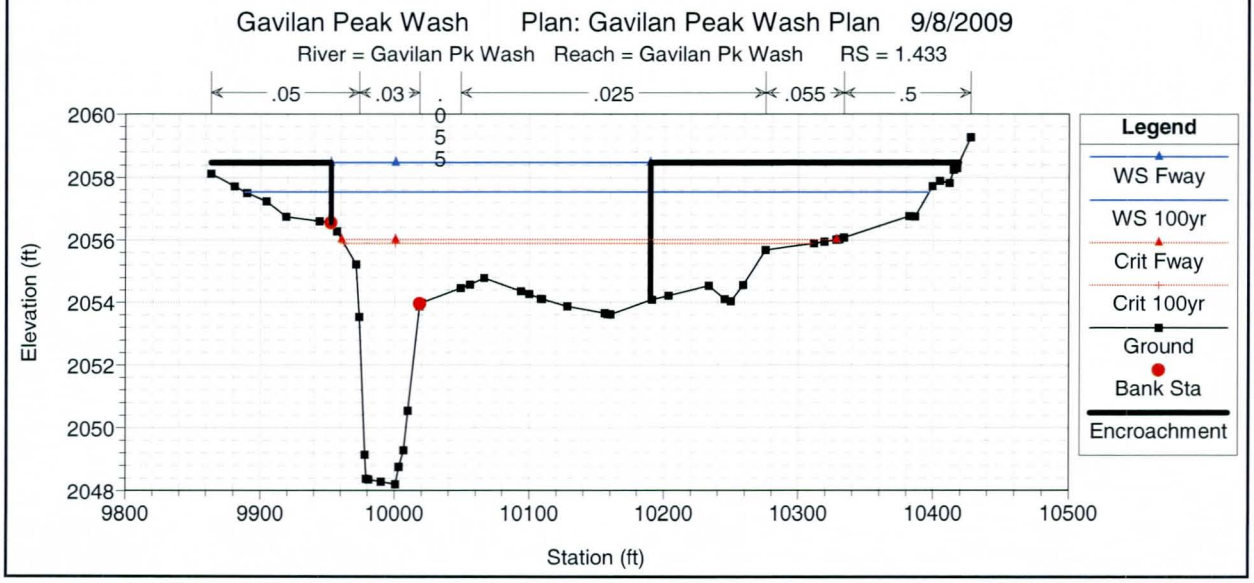

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.648 Culv 27th Avenue
.055
.03
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

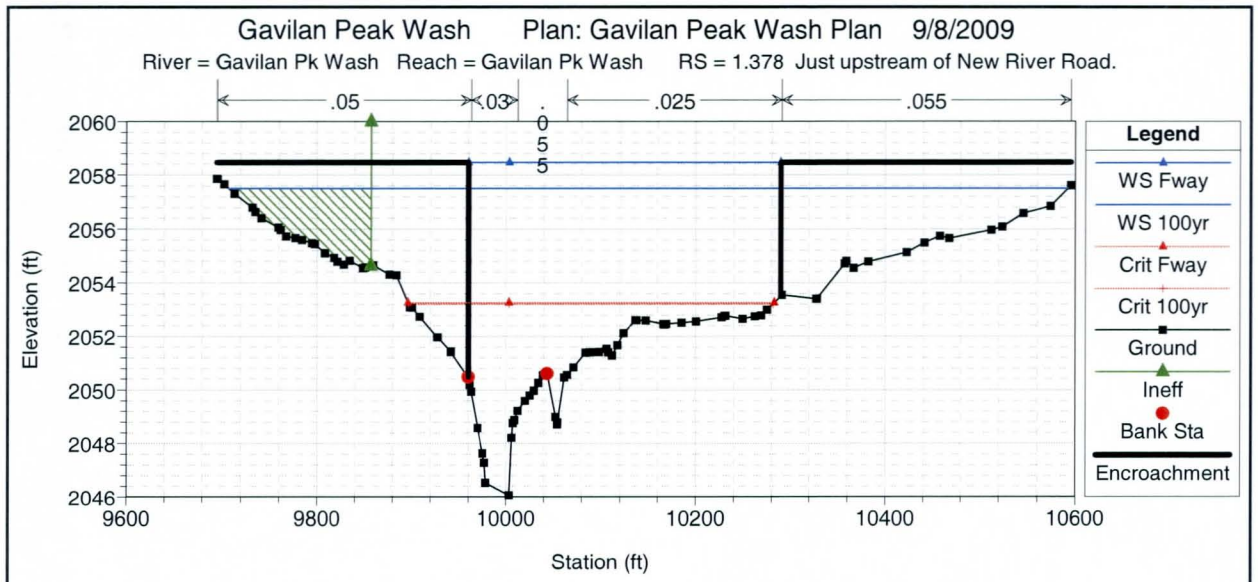

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.645 Just downstream of 27th Avenue.
.055
.03
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

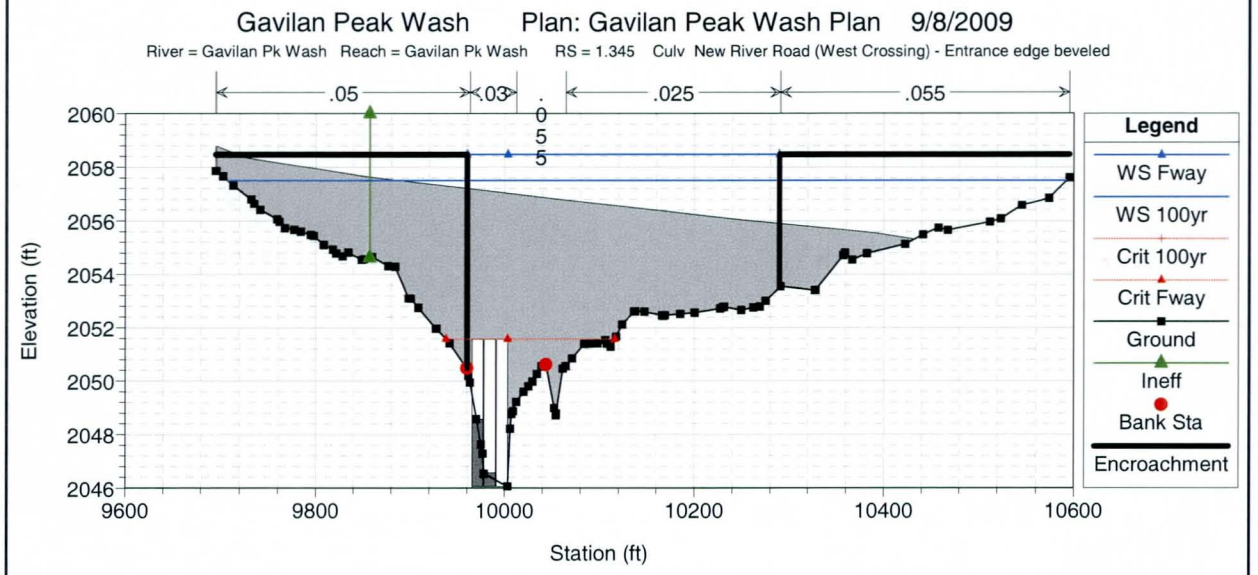

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.615
.055
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

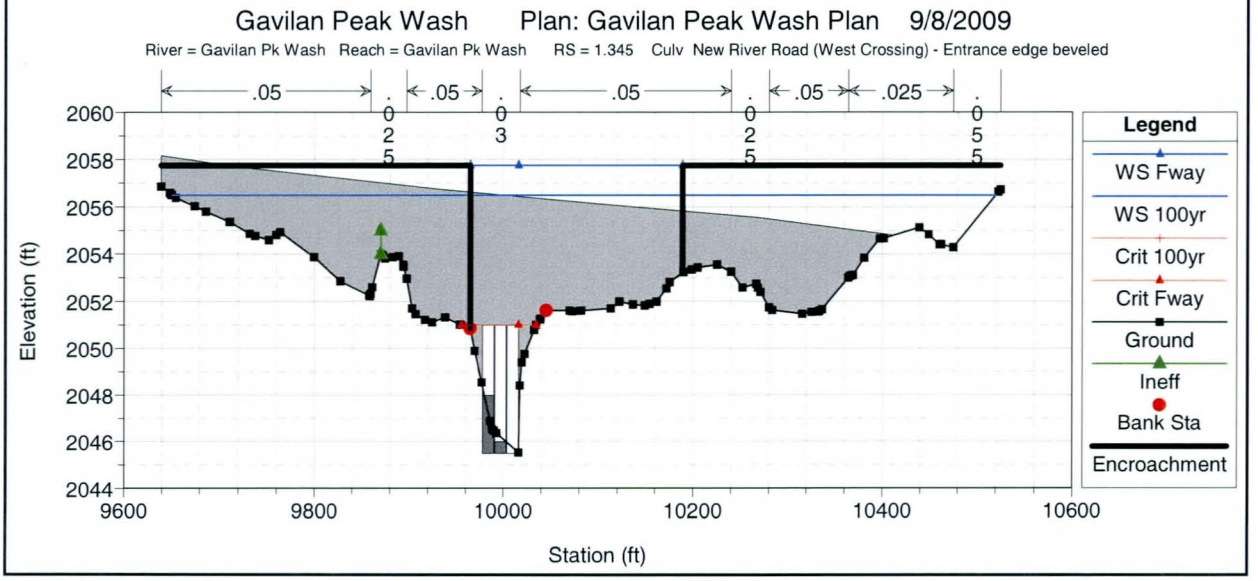

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.570
.055
.03
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

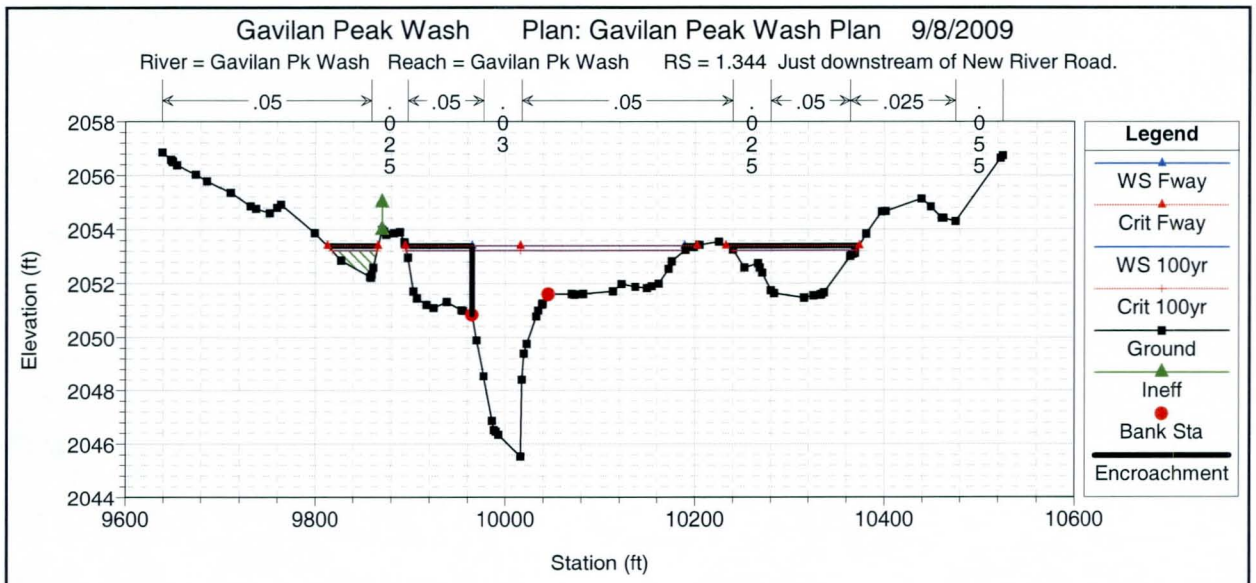

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.506 Just upstream of confluence with White Spar Wash.
.055
.03
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

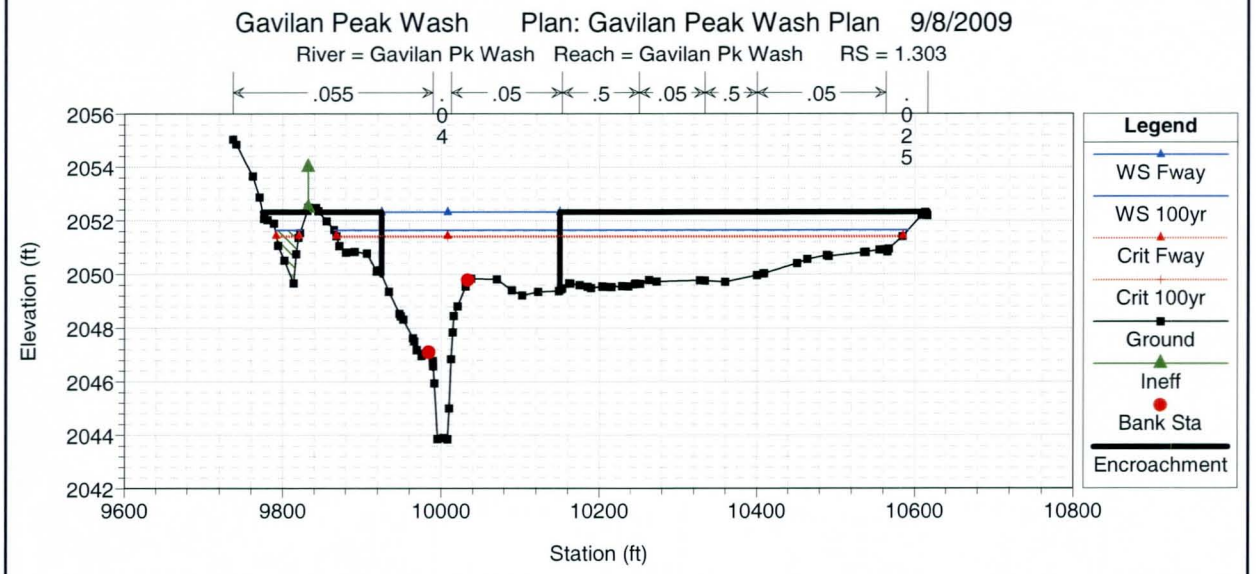

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.433
.05
.03
.025
.055
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

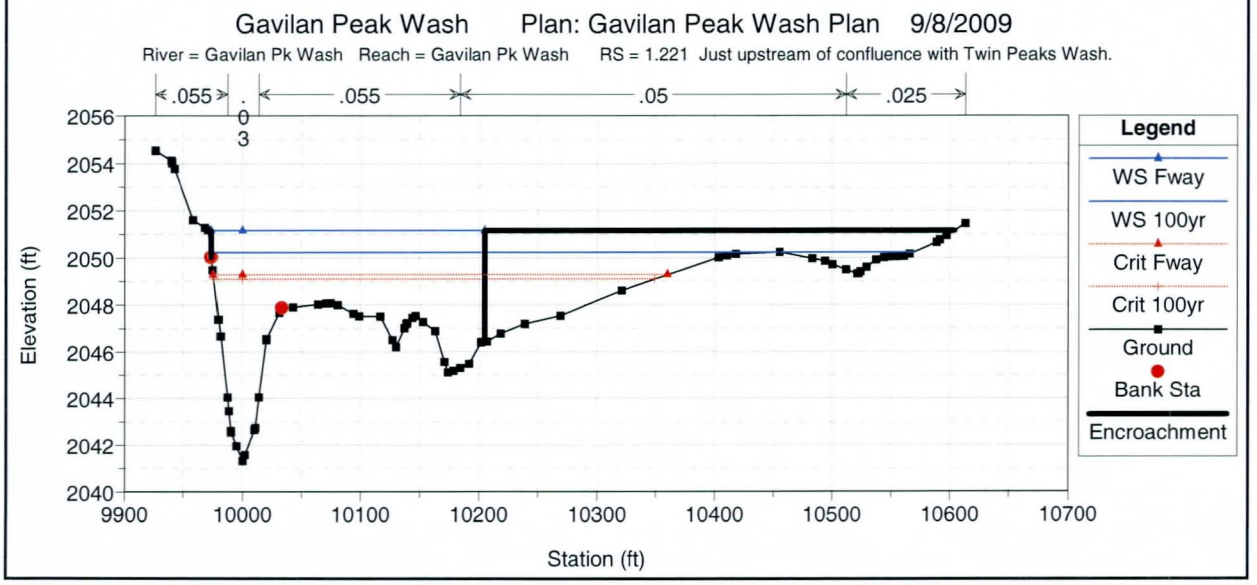

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.378 Just upstream of New River Road.
.05
.03
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

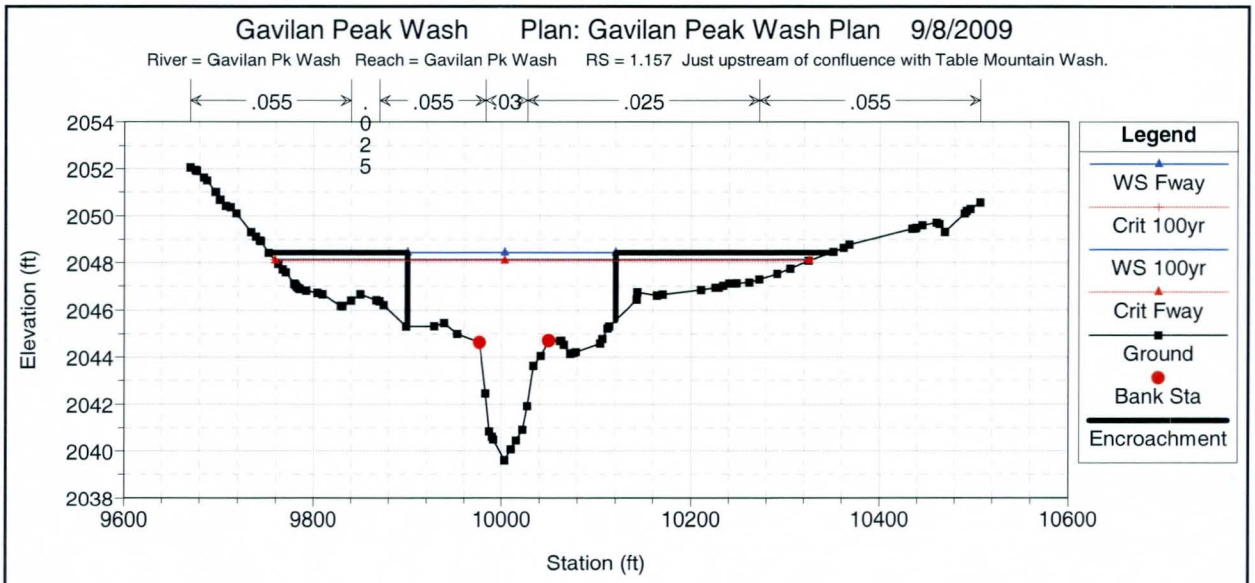

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.345 Culv New River Road (West Crossing) - Entrance edge beveled
.05
.03
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

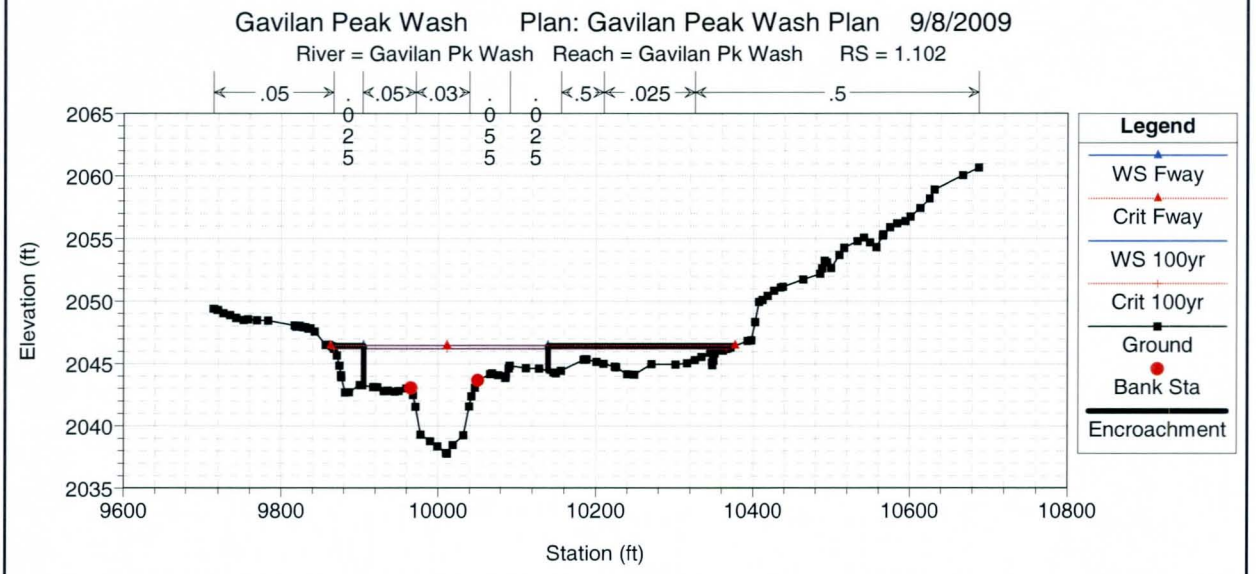

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.345 Culv New River Road (West Crossing) - Entrance edge beveled
.05
.05
.05
.05
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

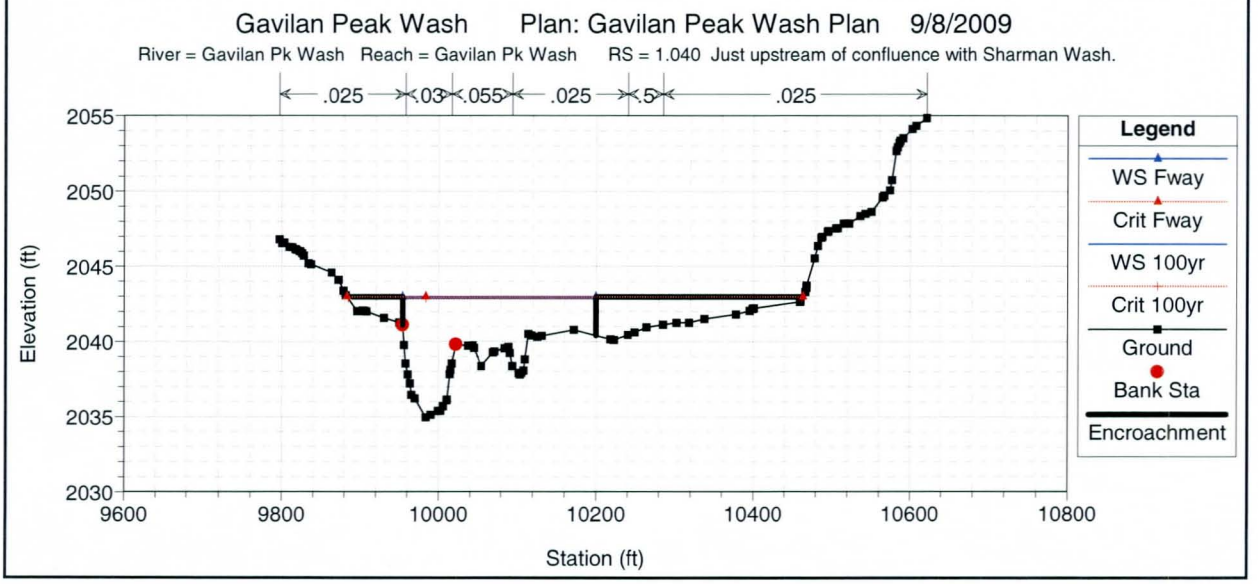

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.344 Just downstream of New River Road.
.05
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

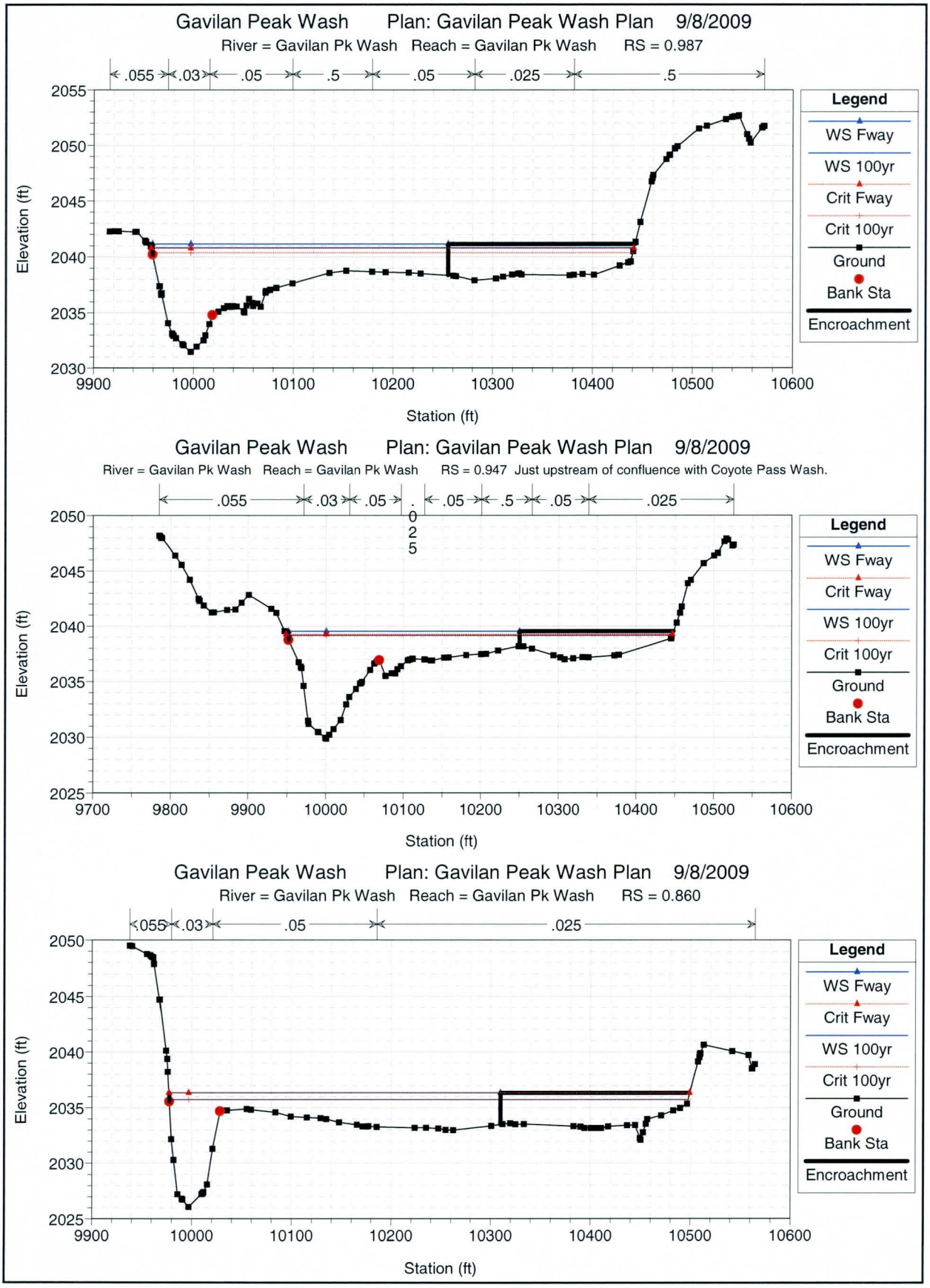

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.303
.055
.05
.5
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

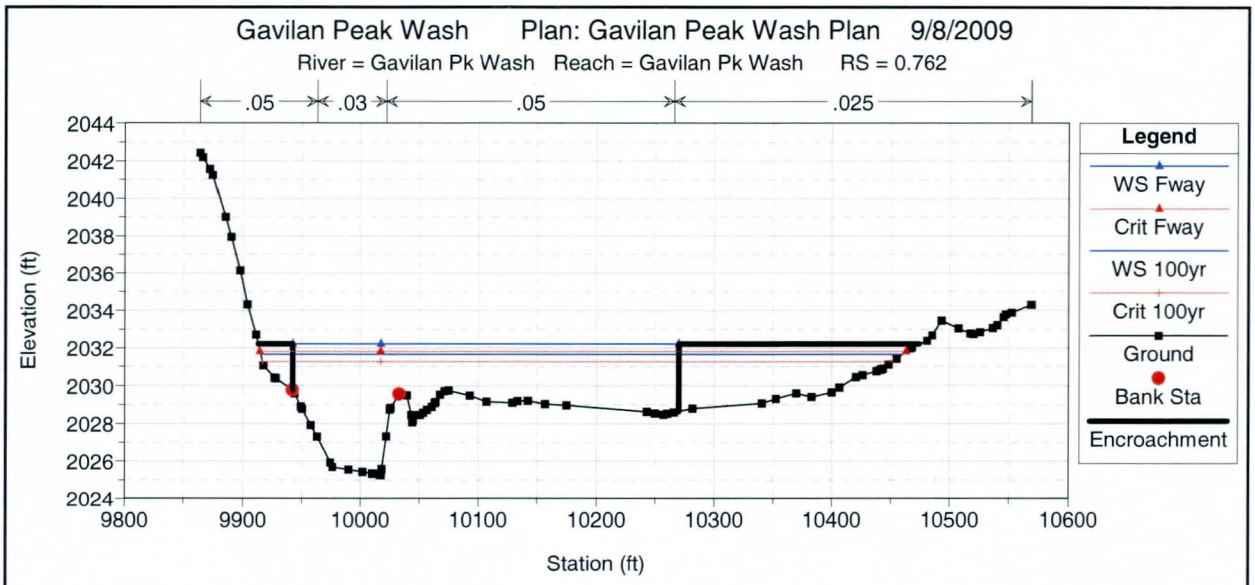

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.221 Just upstream of confluence with Twin Peaks Wash.
.055
.05
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

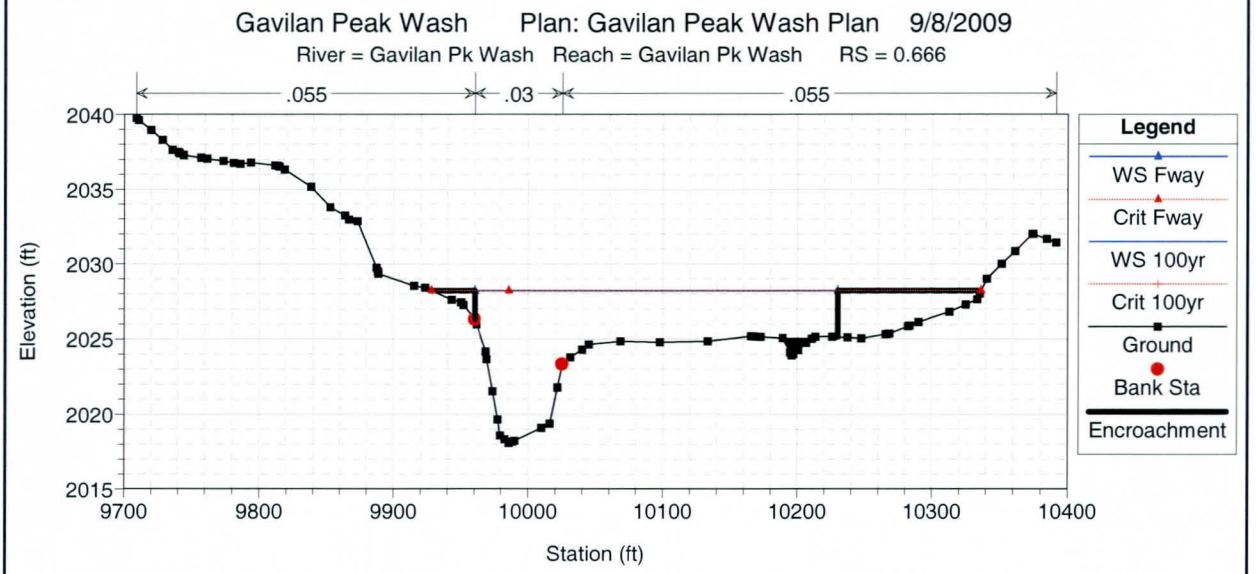

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.157 Just upstream of confluence with Table Mountain Wash.
.055
.025
.055
.03
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

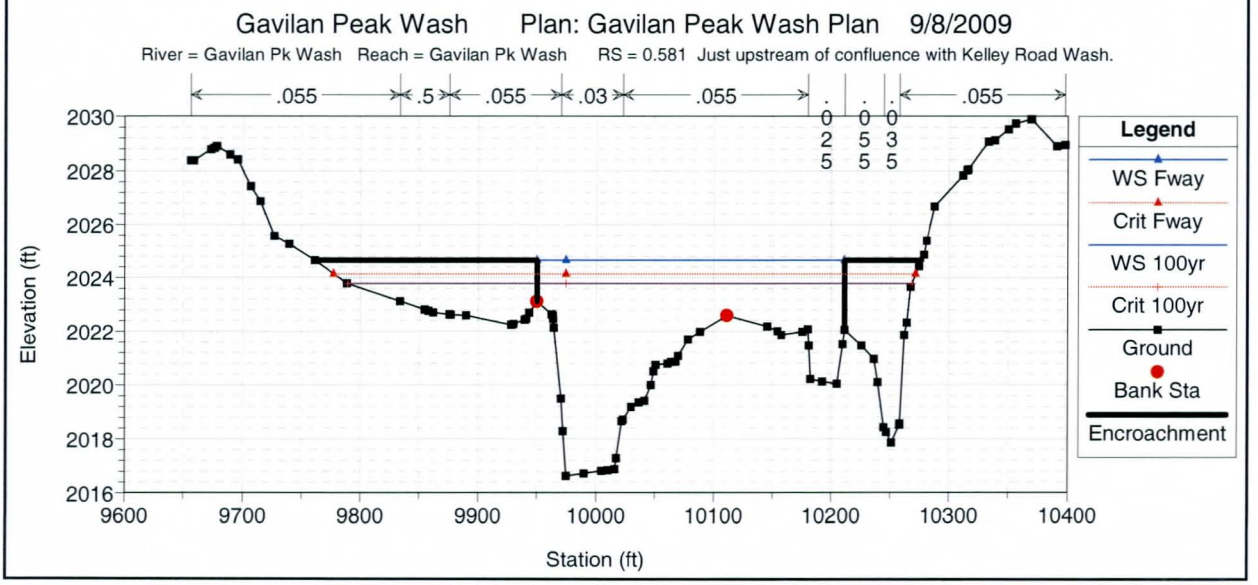

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.102
.05
.025
.05
.03
.055
.025
.5
.025
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

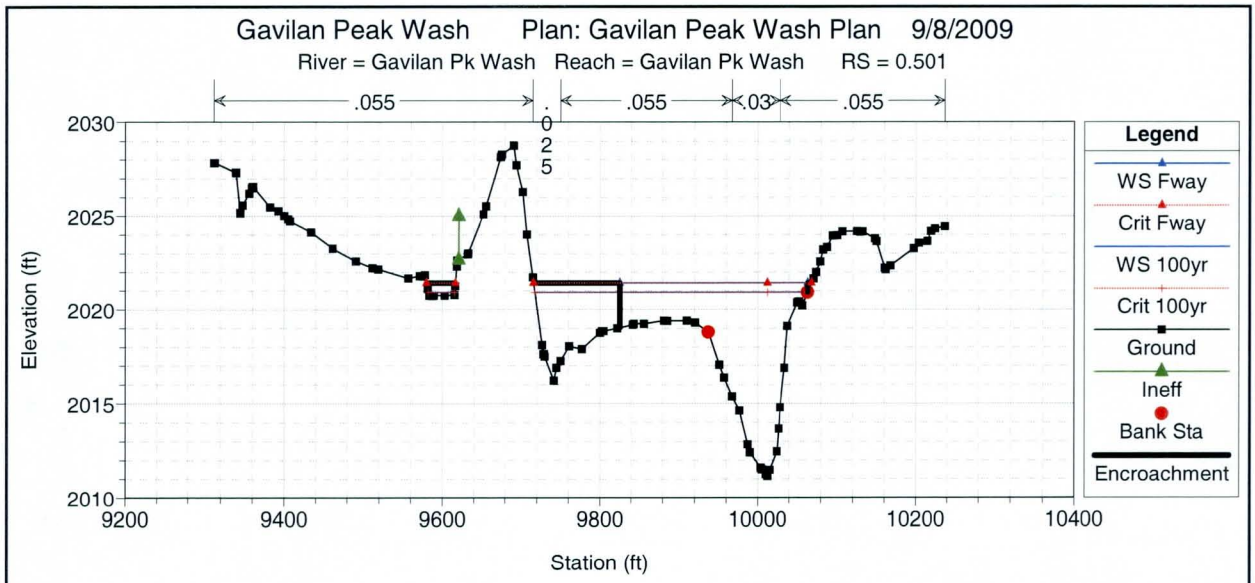

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 1.040 Just upstream of confluence with Sharman Wash.
.025
.03
.055
.025
.5
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

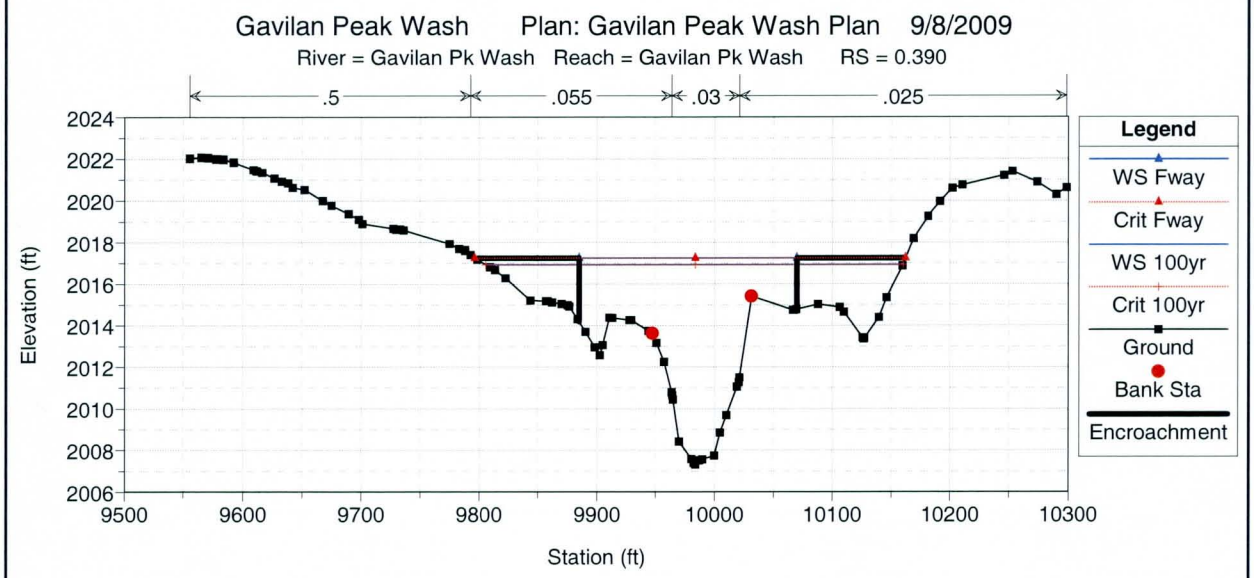

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.987
.055 .03 .05 .5 .05 .025 .5
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.947 Just upstream of confluence with Coyote Pass Wash.
.055 .03 .05 .025 .05 .5 .05 .025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.860
.055 .03 .05 .025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

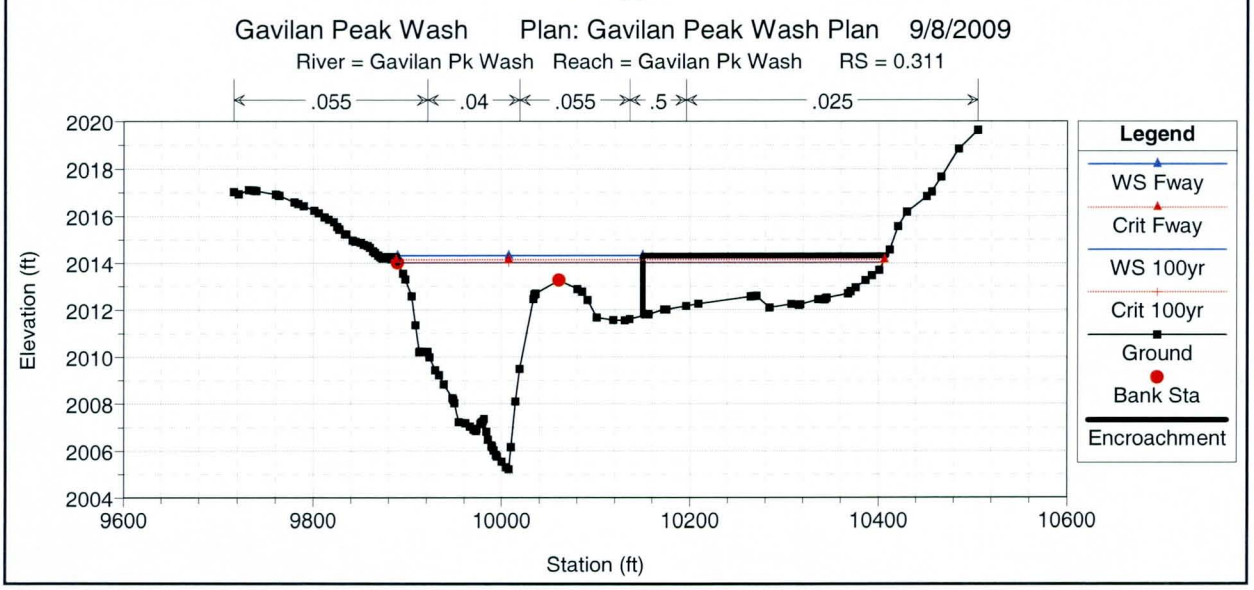

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.762
.05
.03
.05
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

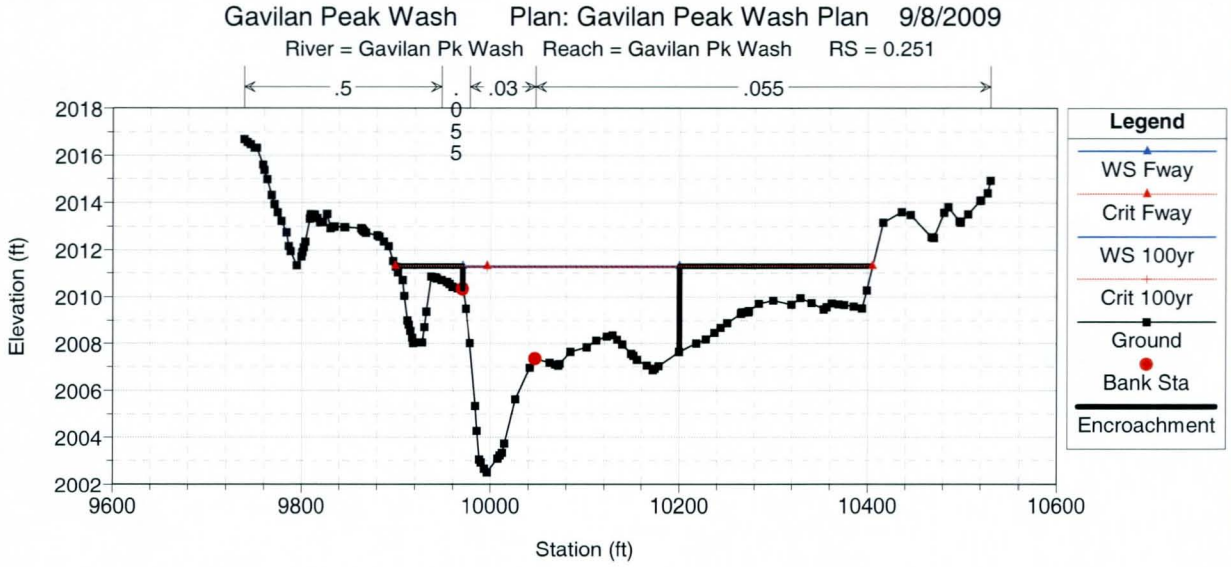

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.666
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

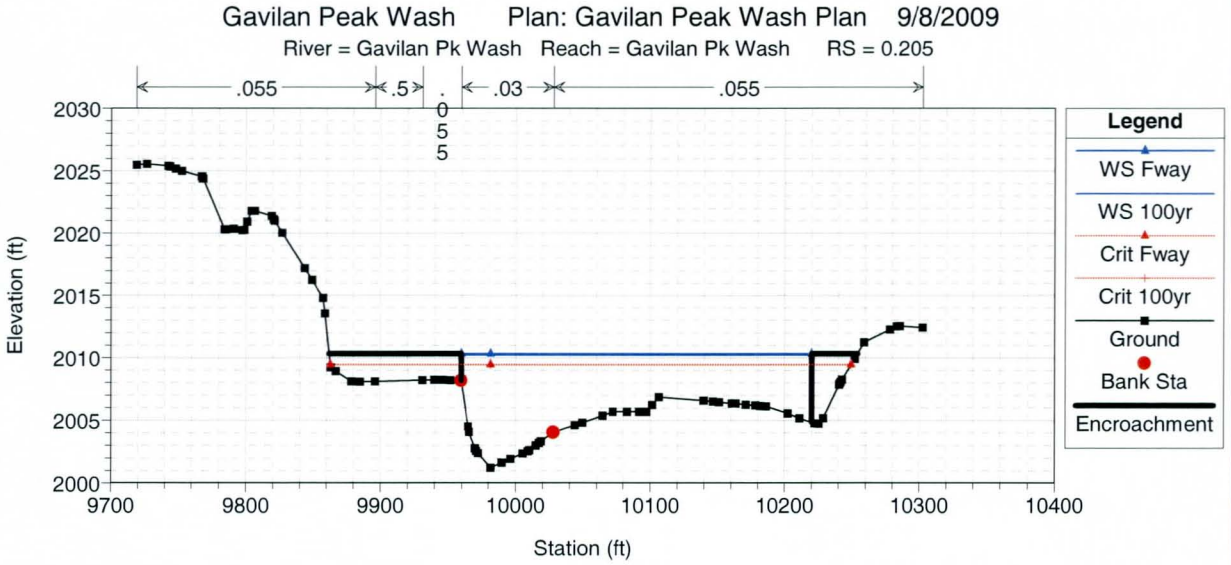

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.581 Just upstream of confluence with Kelley Road Wash.
.055
.5
.055
.03
.055
.025
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

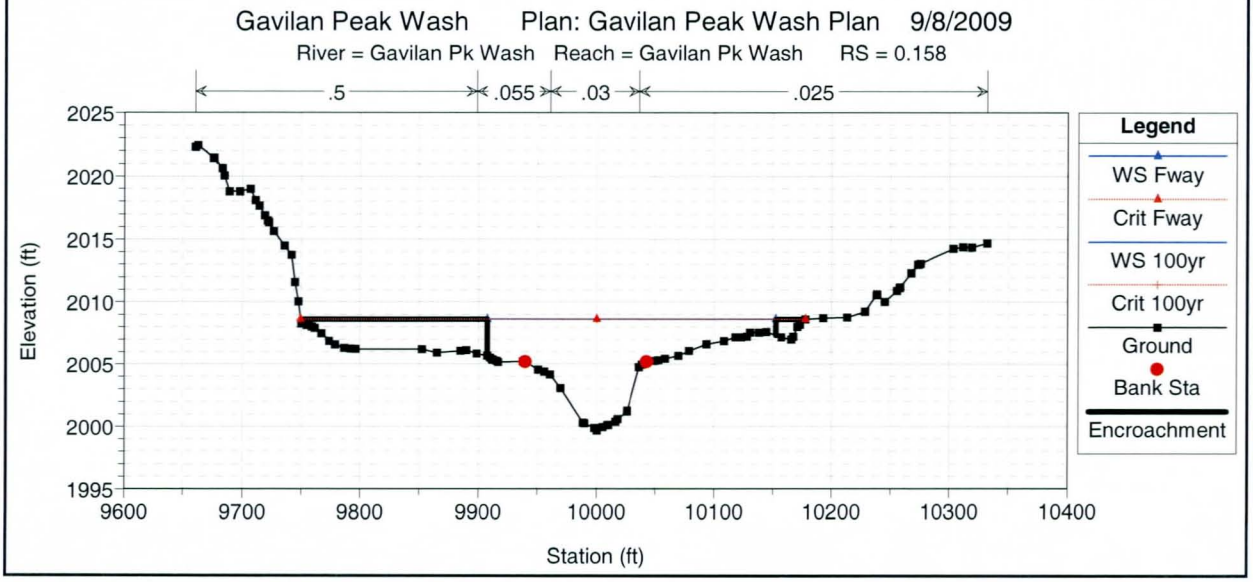

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.501
.055
.025
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

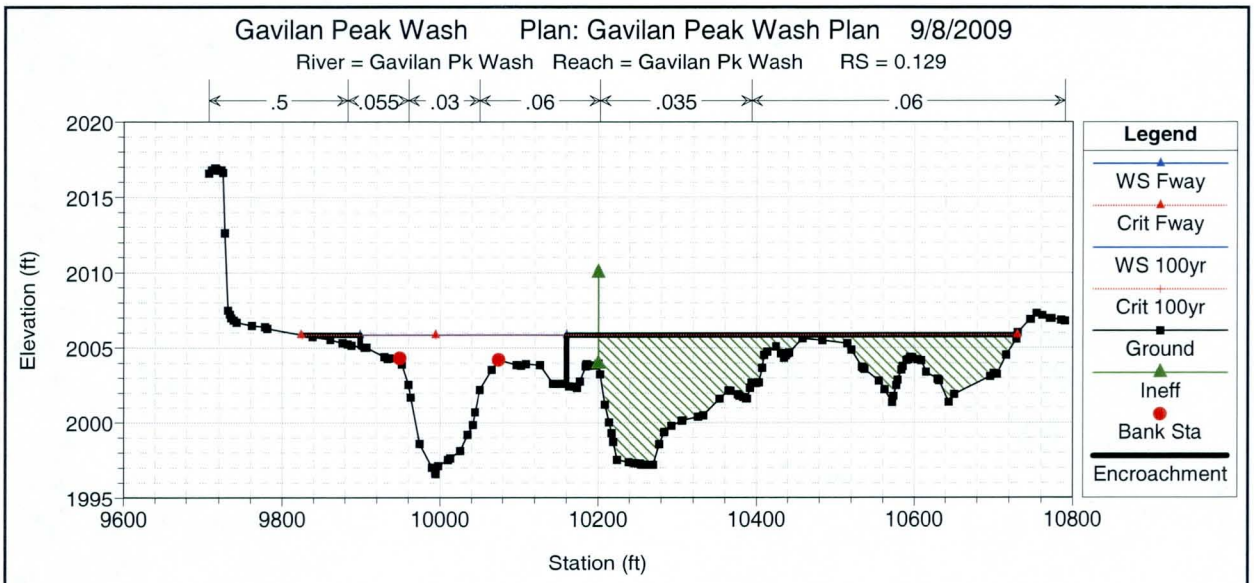

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.390
.5
.055
.03
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

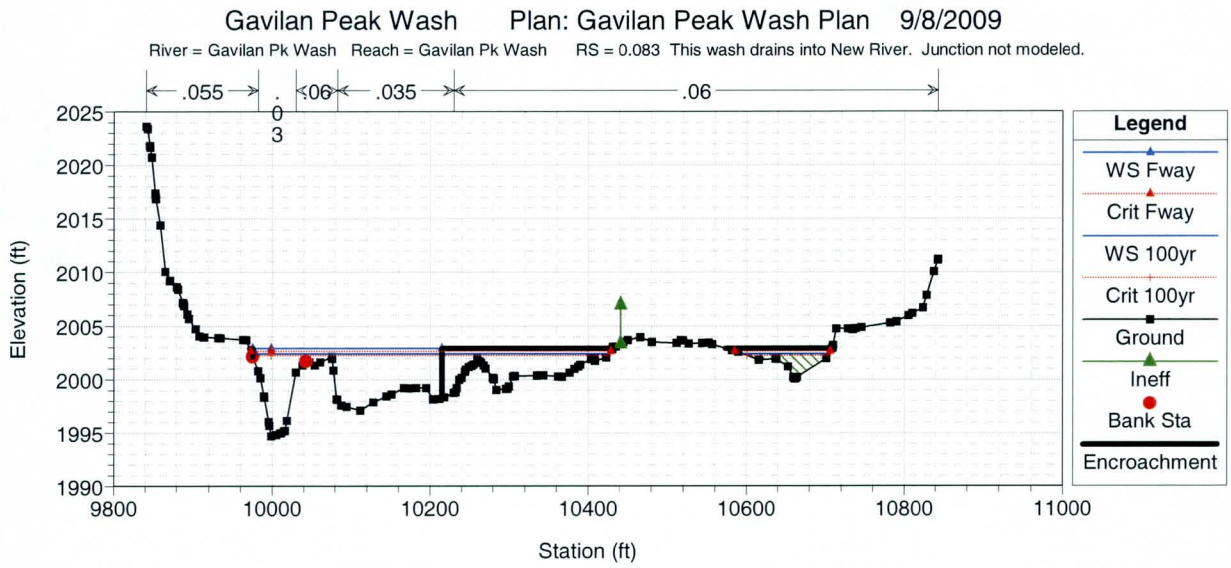

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.311
.055
.04
.055
.5
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.251
.5
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.205
.055
.5
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

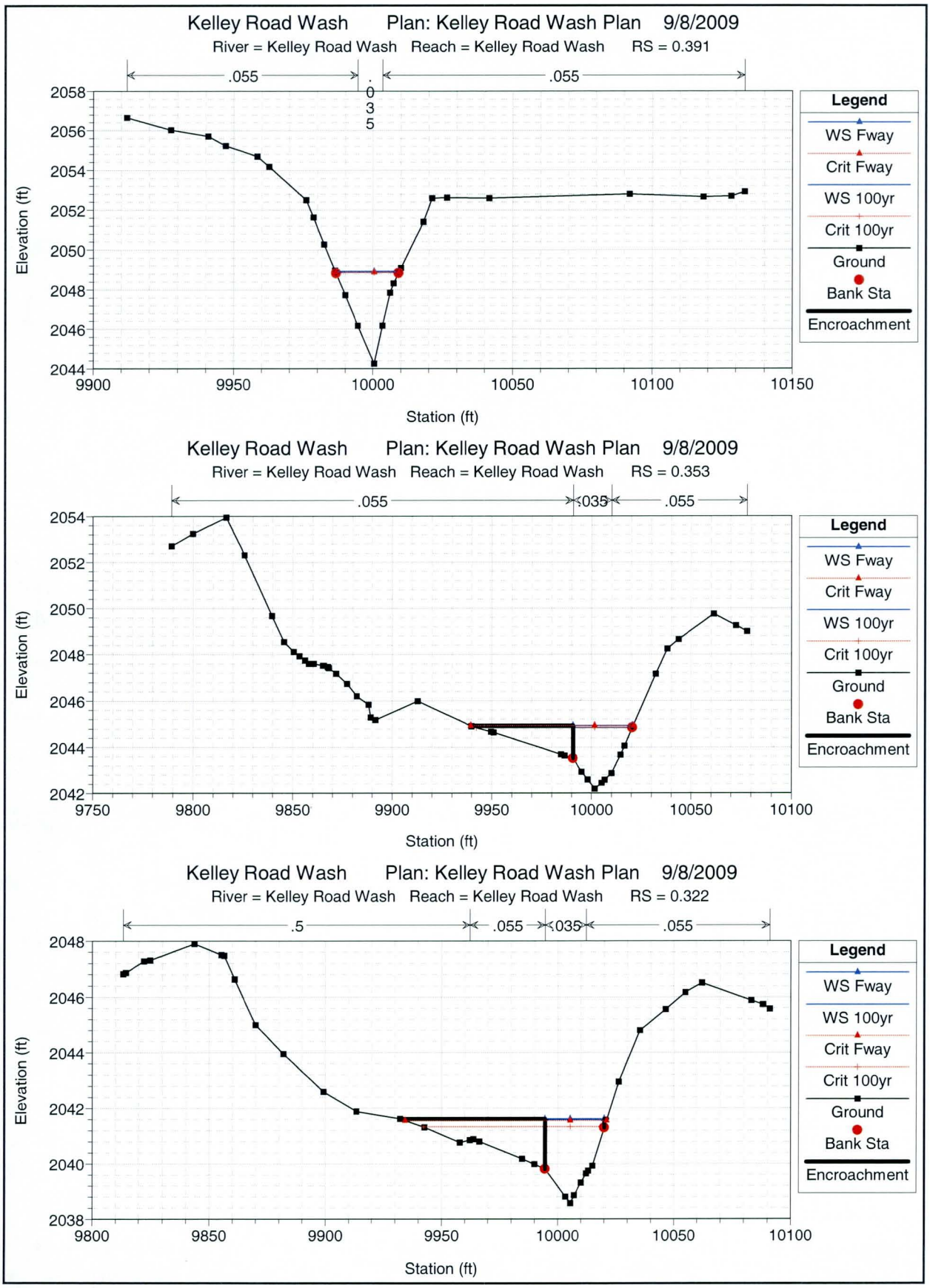

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.158
.5
.055
.03
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

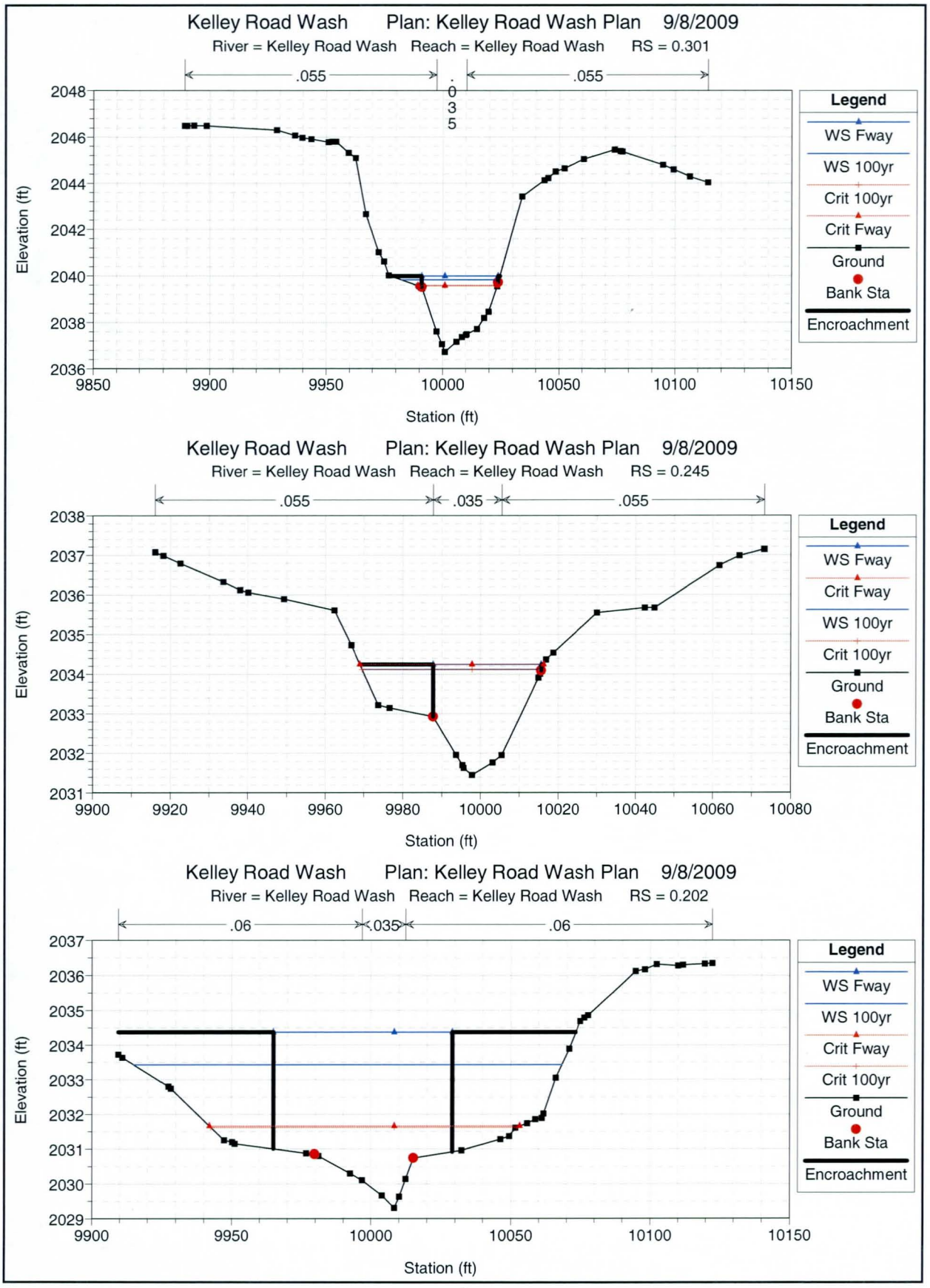

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.129
.5
.055
.03
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

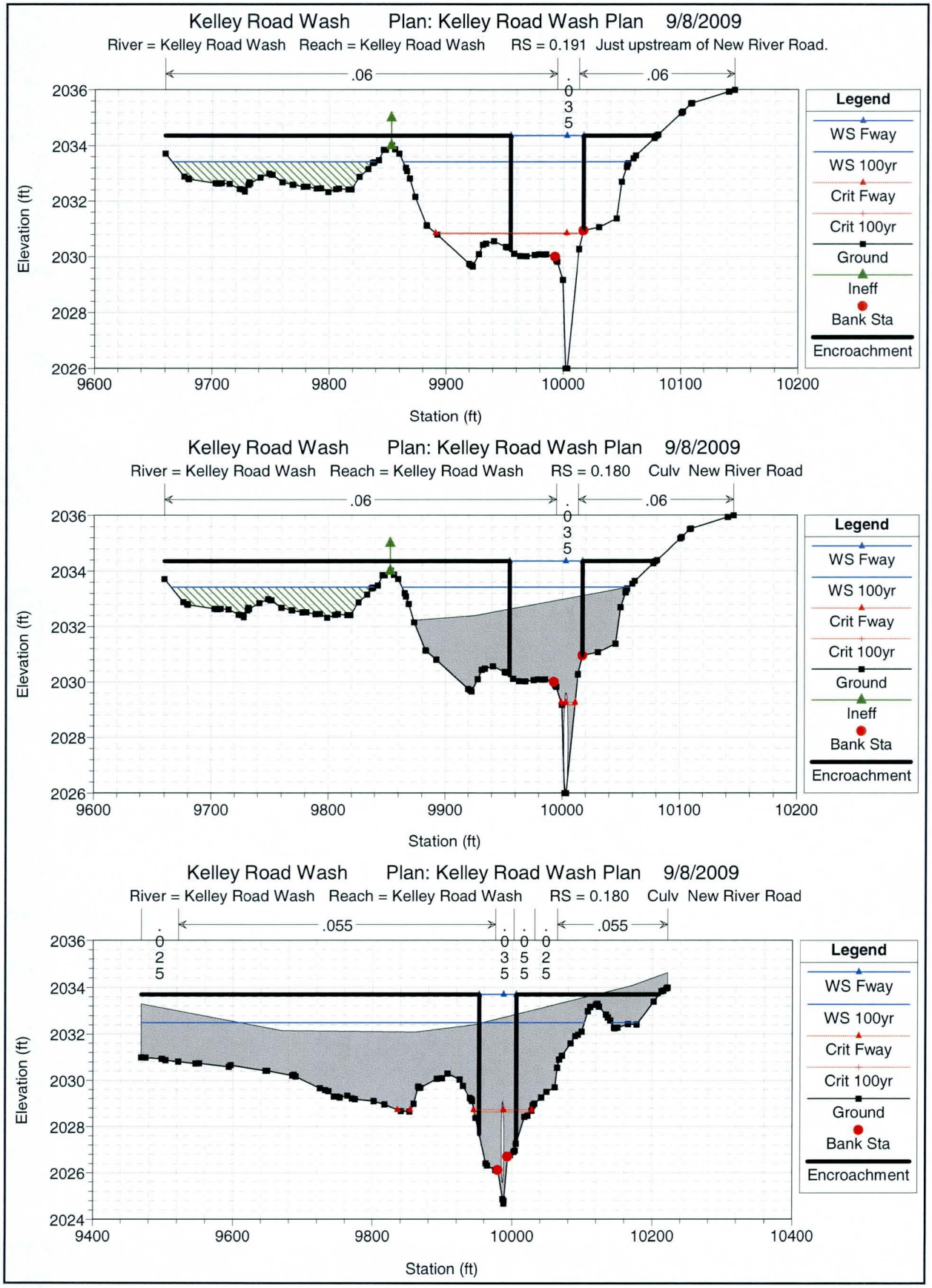

Gavilan Peak Wash Plan: Gavilan Peak Wash Plan 9/8/2009
River = Gavilan Pk Wash Reach = Gavilan Pk Wash RS = 0.083 This wash drains into New River. Junction not modeled.
.055
.03
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

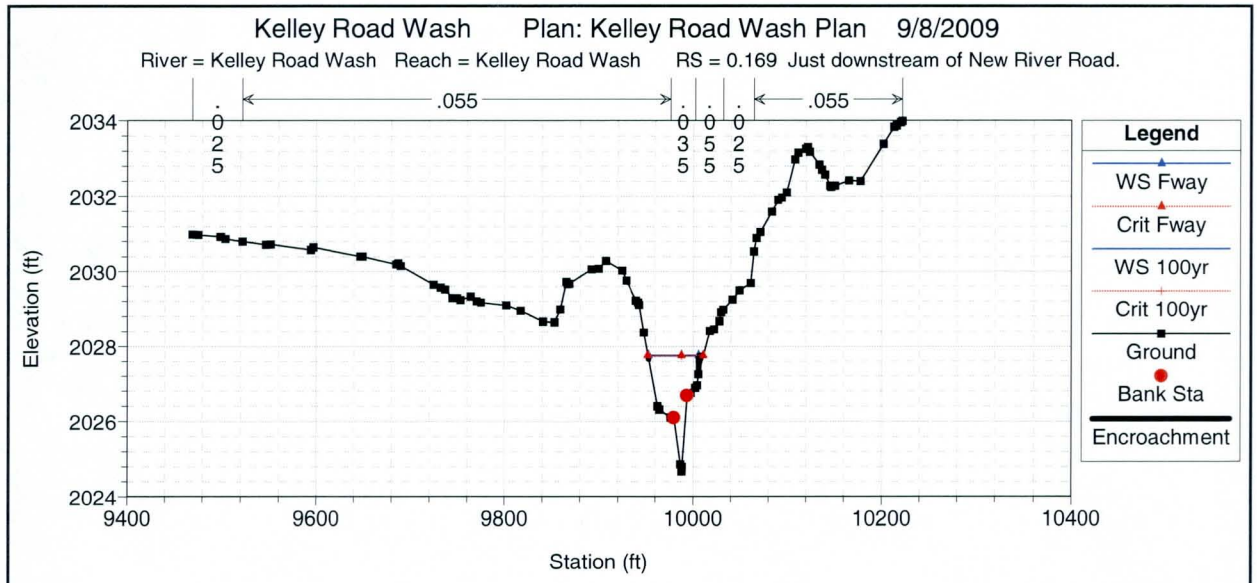
CROSS SECTION PLOTS FOR

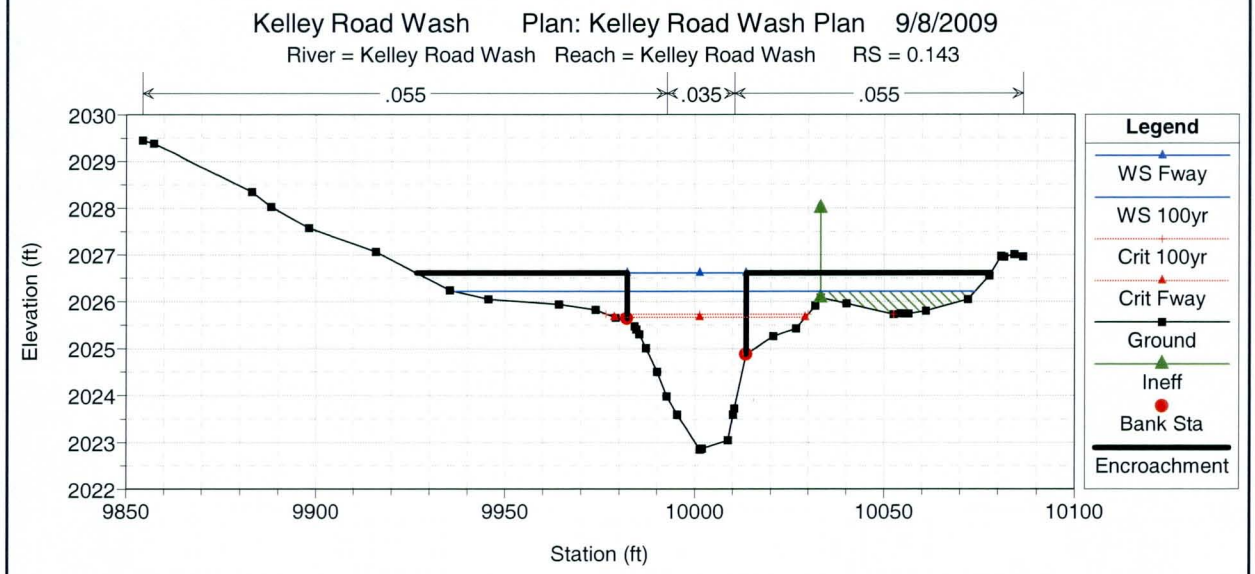
KELLEY ROAD WASH

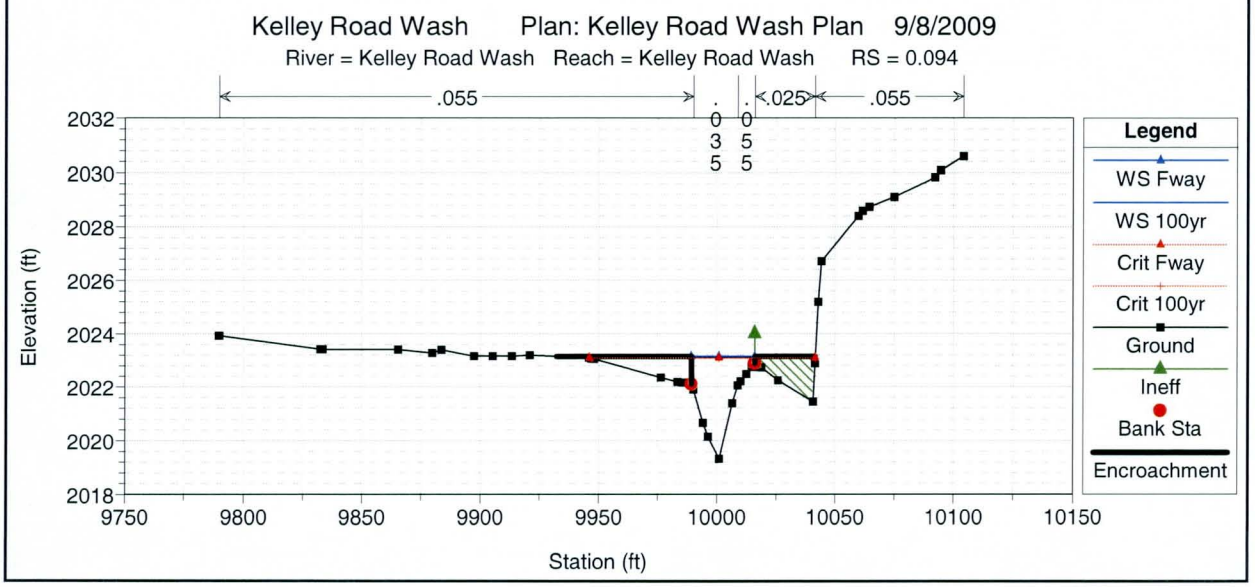

Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.391
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.353
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.322
.5
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

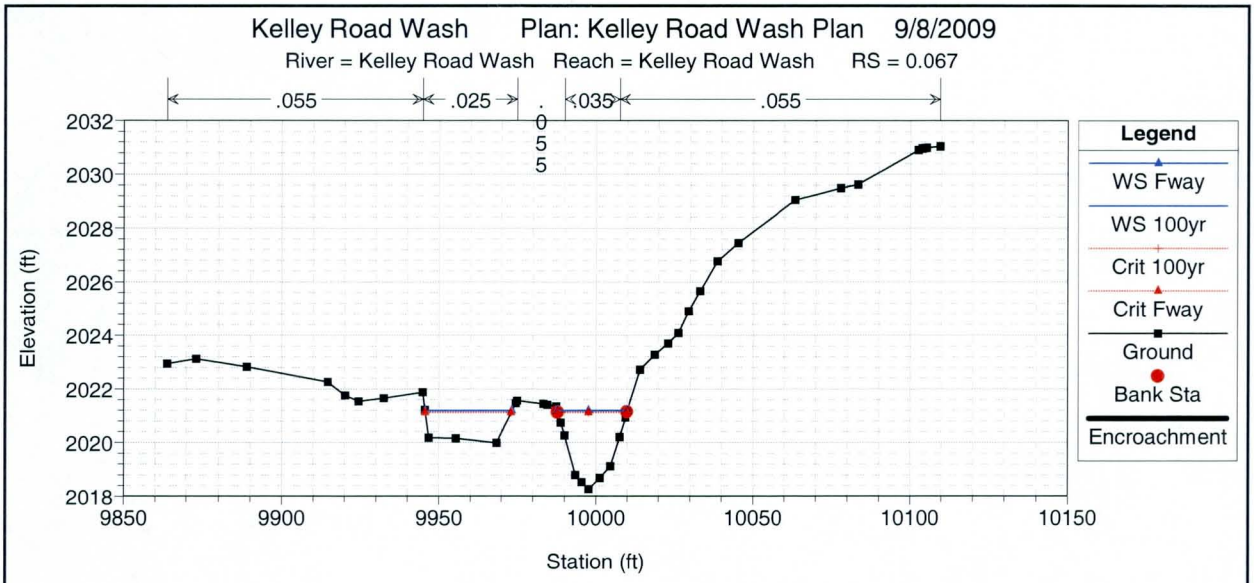

Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.301
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.245
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.202
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

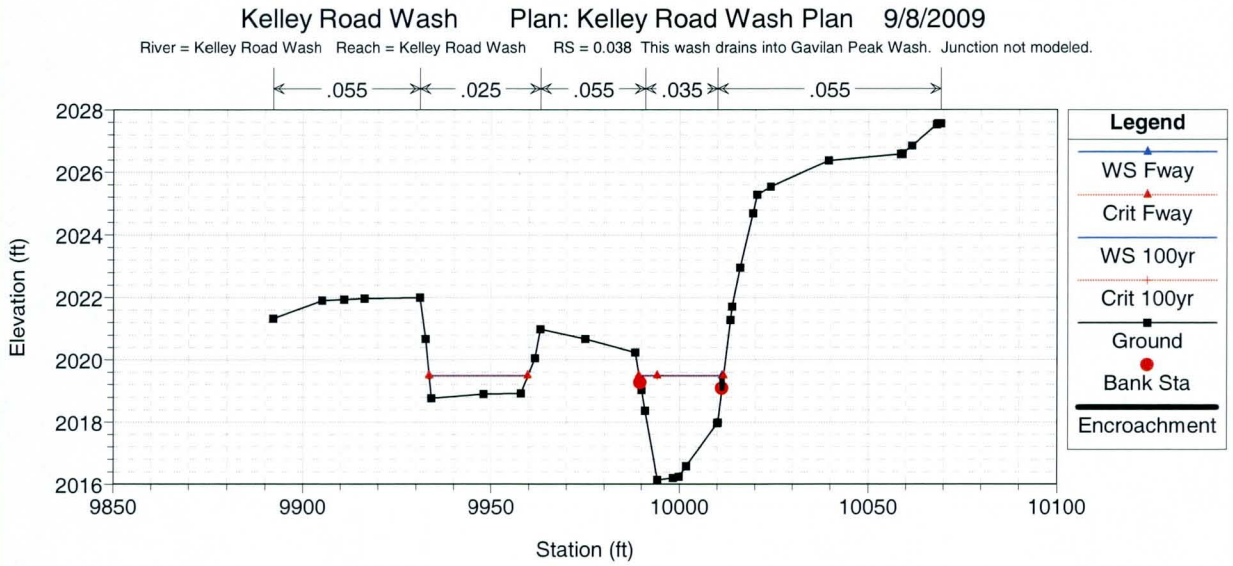

Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.191 Just upstream of New River Road.
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.180 Culv New River Road
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.180 Culv New River Road
.025
.055
.035
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.169 Just downstream of New River Road.
.025
.055
.035
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.143
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

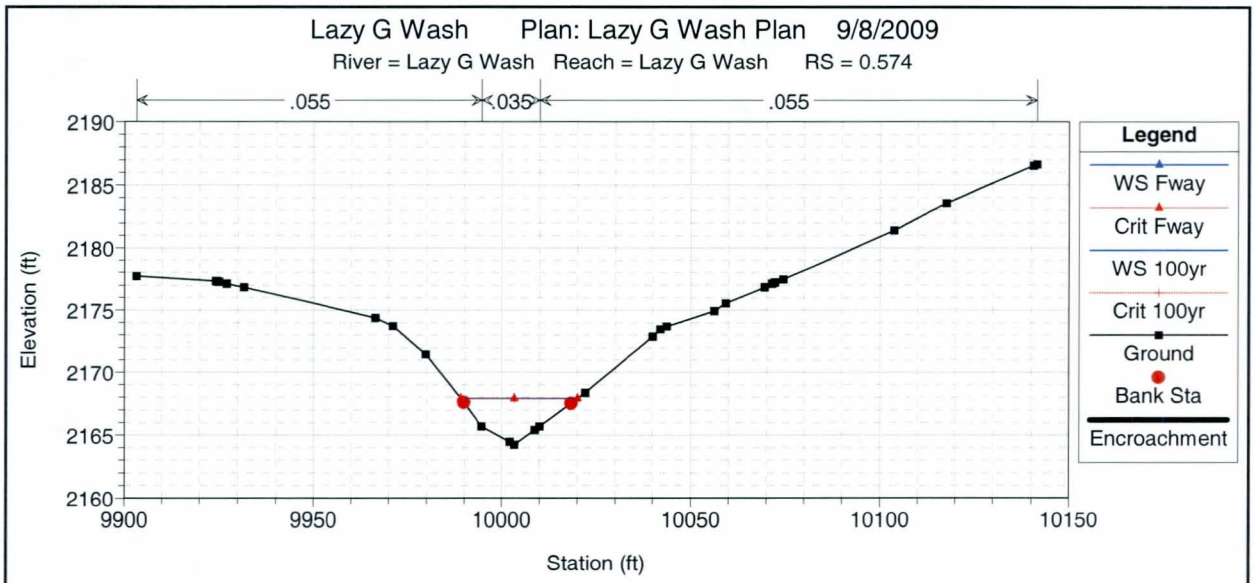

Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.094
.055
.035
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

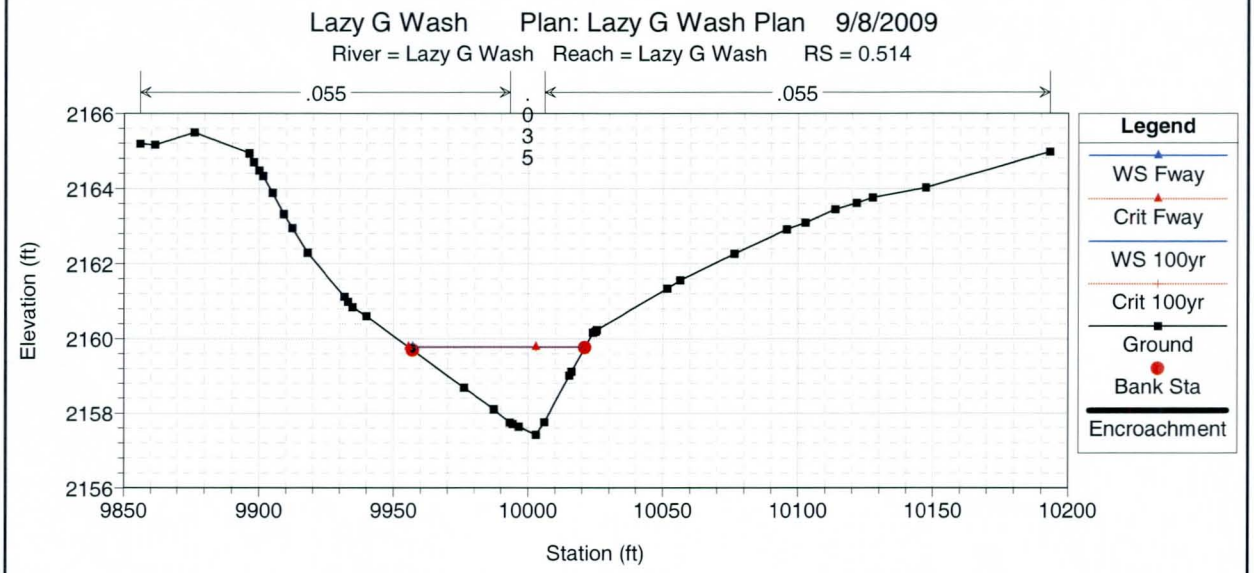

Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.067
.055
.025
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

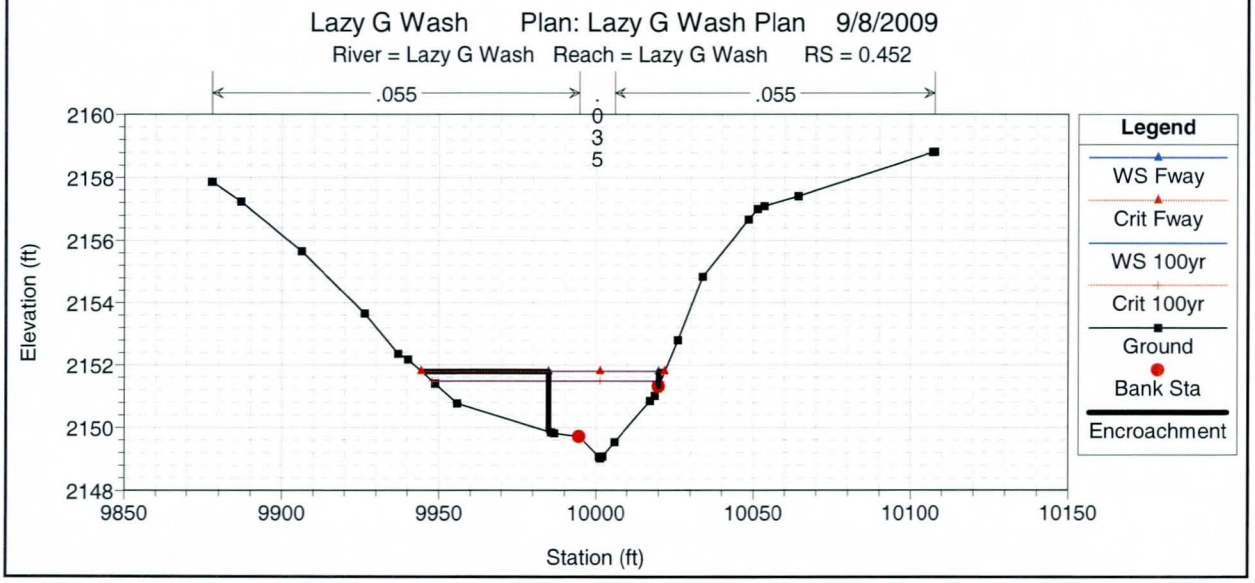

Kelley Road Wash Plan: Kelley Road Wash Plan 9/8/2009
River = Kelley Road Wash Reach = Kelley Road Wash RS = 0.038 This wash drains into Gavilan Peak Wash. Junction not modeled.
.055
.025
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

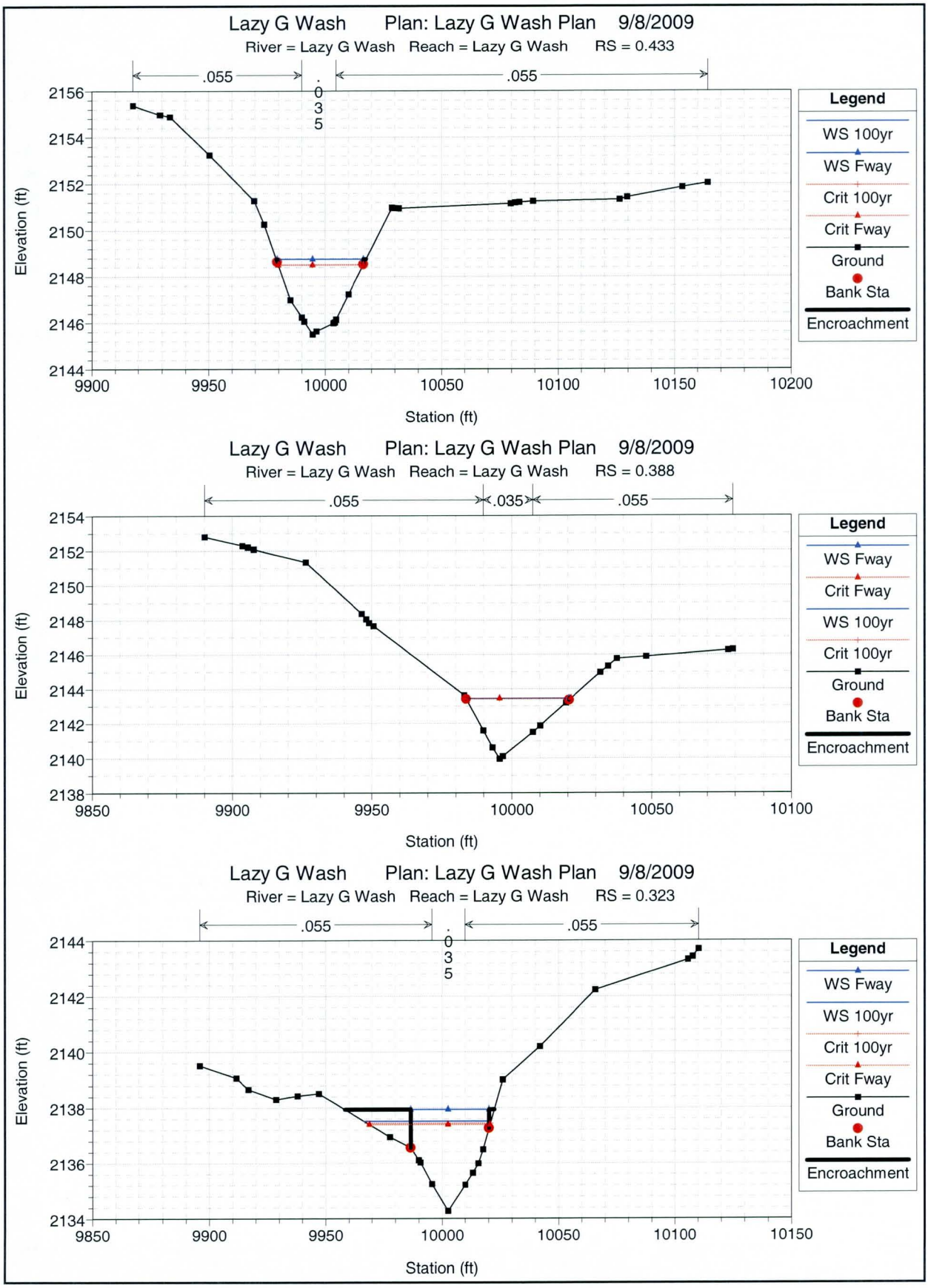
CROSS SECTION PLOTS FOR

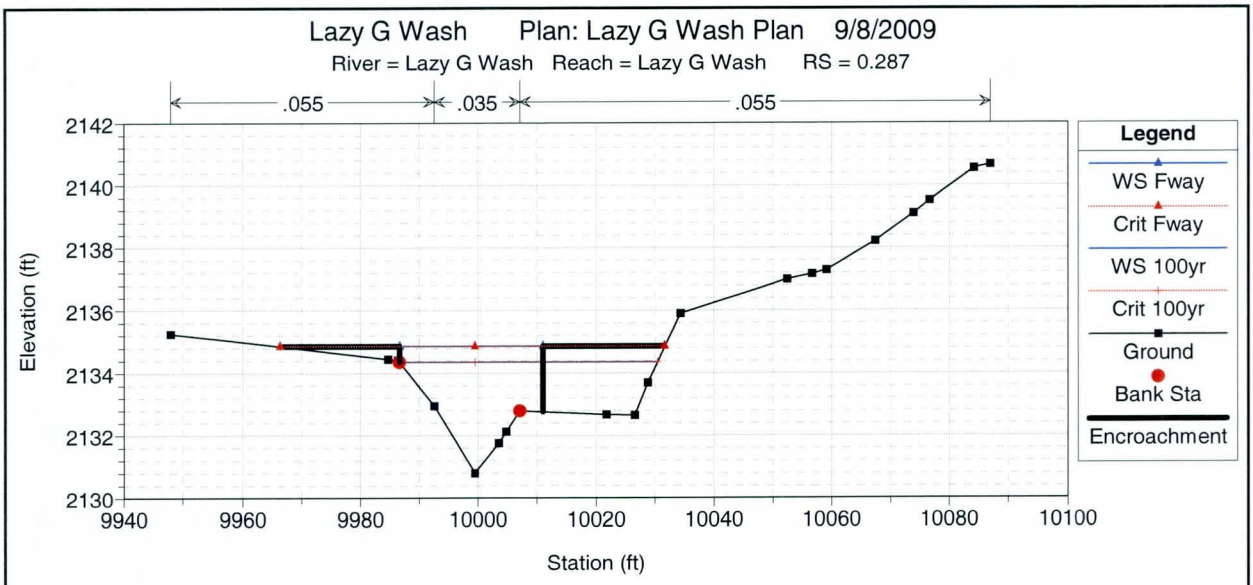
LAZY G WASH

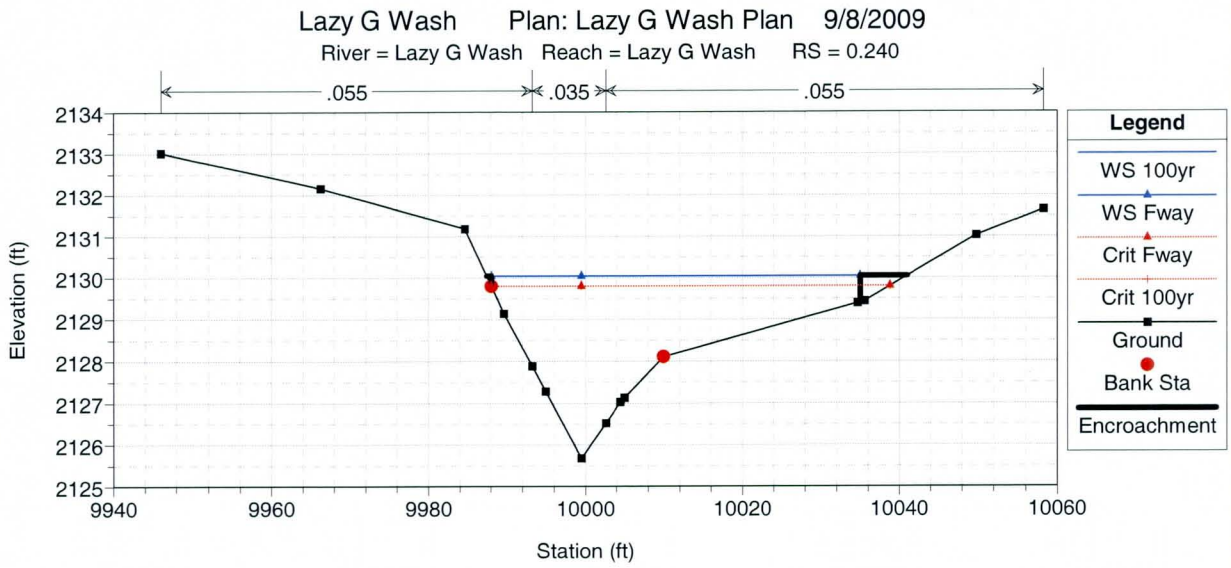

Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.574
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

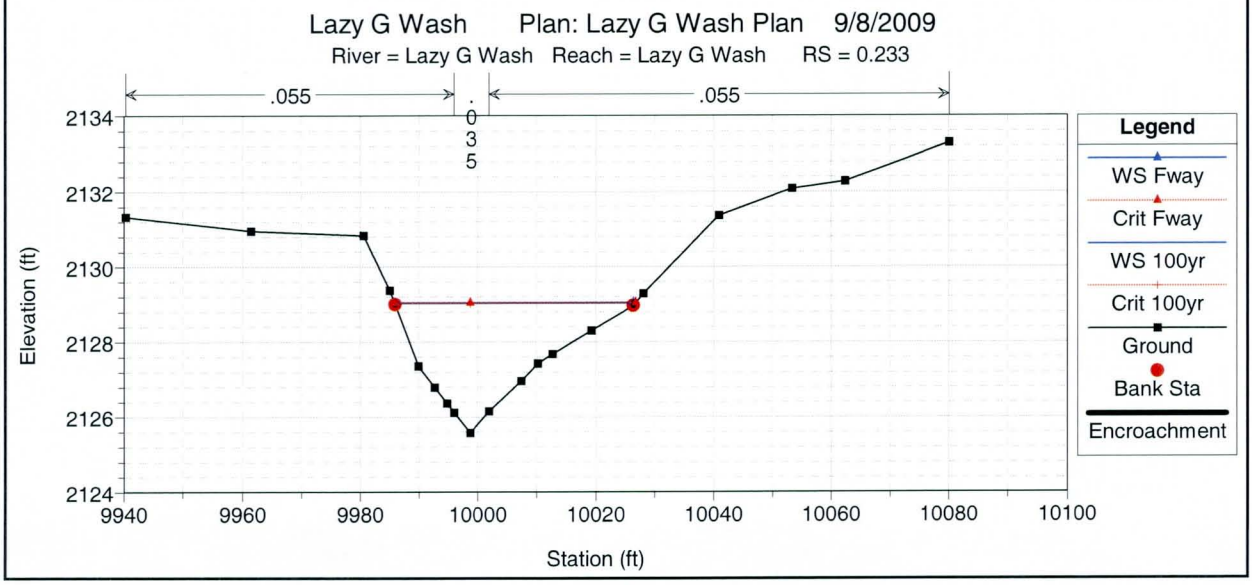

Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.514
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

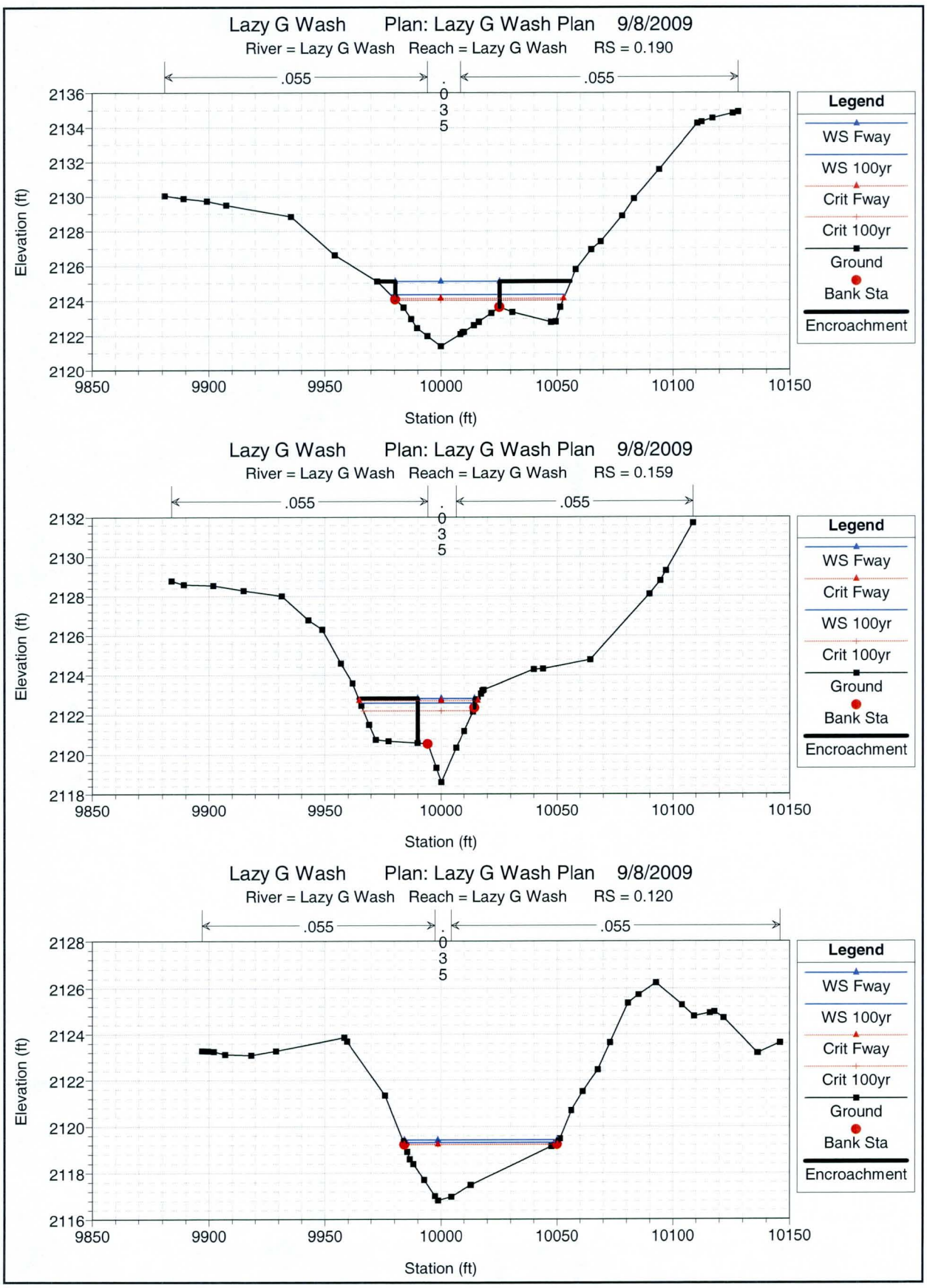

Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.452
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

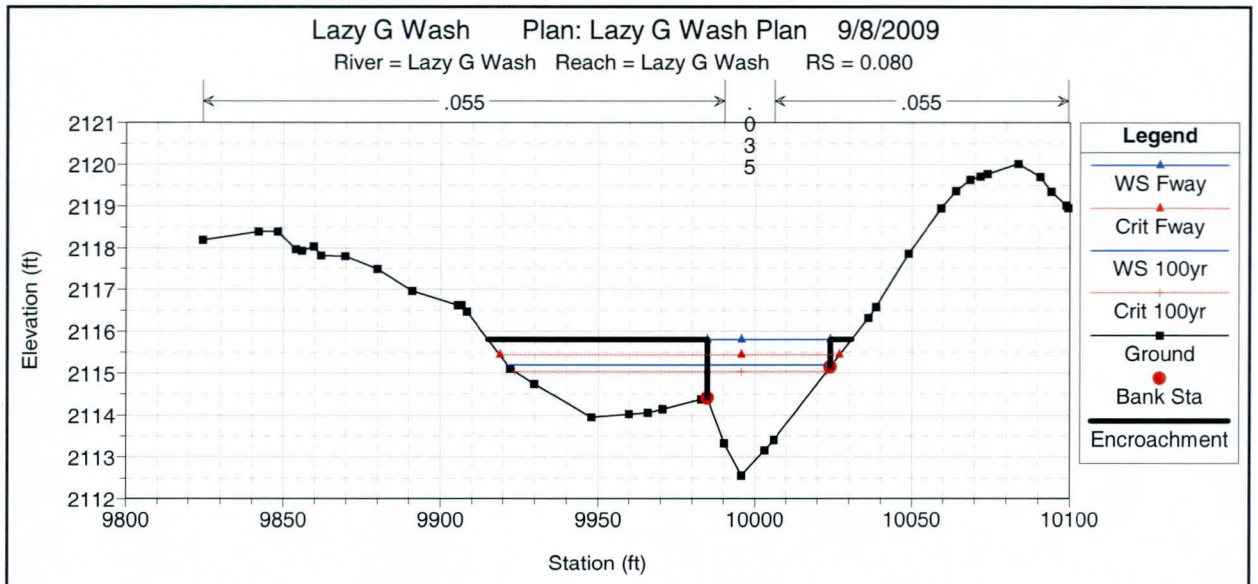

Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.433
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.388
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.323
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

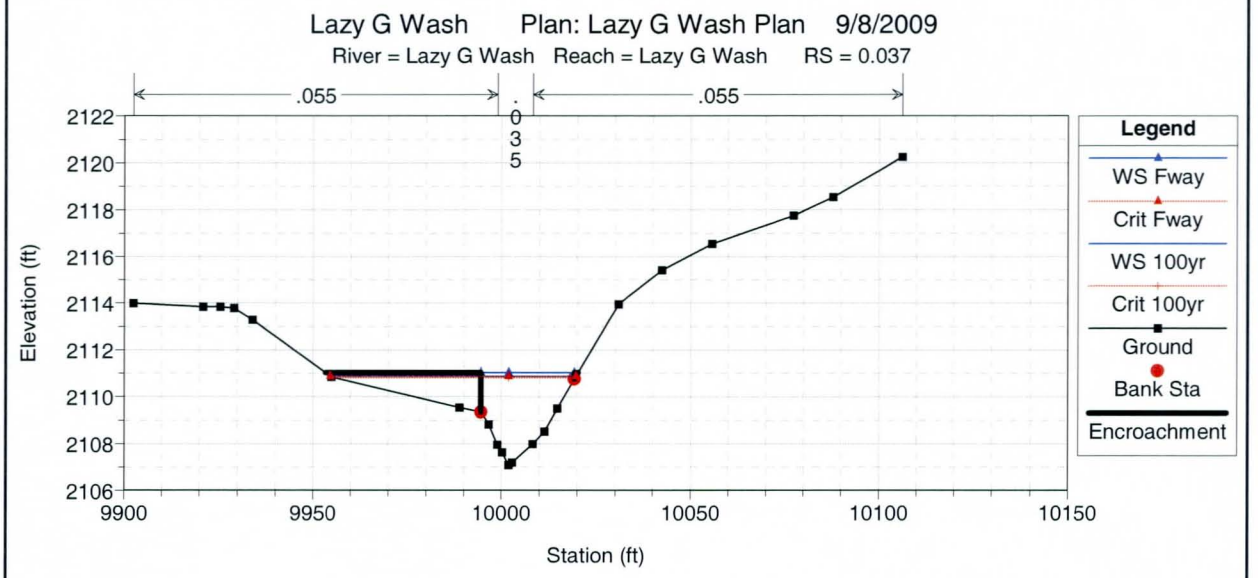

Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.287
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

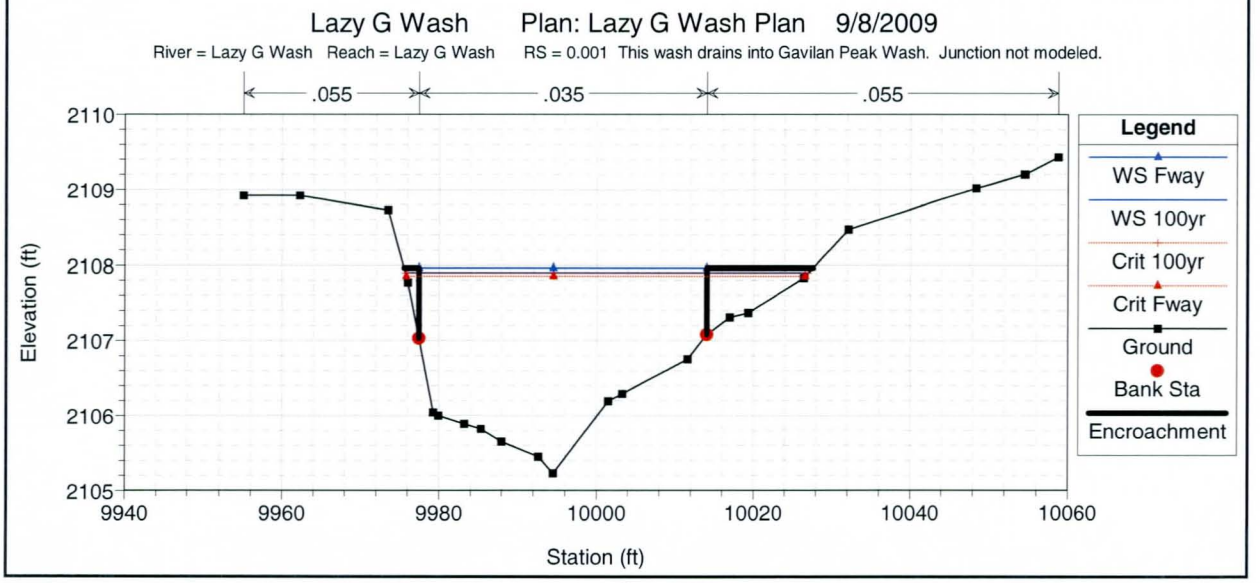

Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.240
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.233
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.190
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.159
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.120
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.080
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.037
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Lazy G Wash Plan: Lazy G Wash Plan 9/8/2009
River = Lazy G Wash Reach = Lazy G Wash RS = 0.001 This wash drains into Gavilan Peak Wash. Junction not modeled.
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

CROSS SECTION PLOTS FOR

PHOTO VIEW WASH

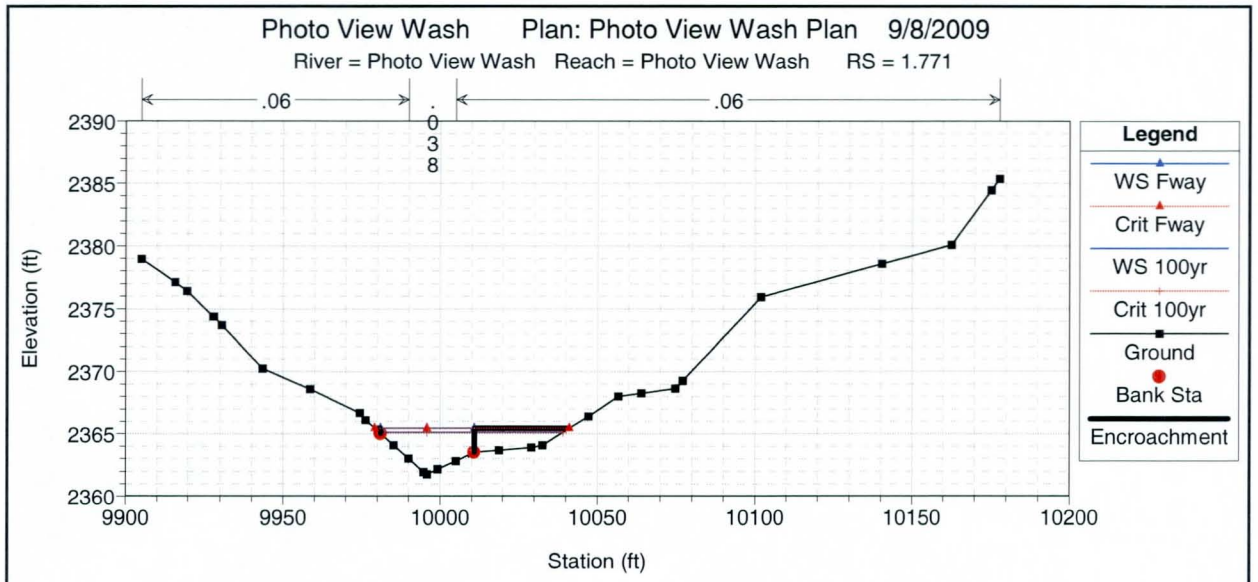


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.771
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

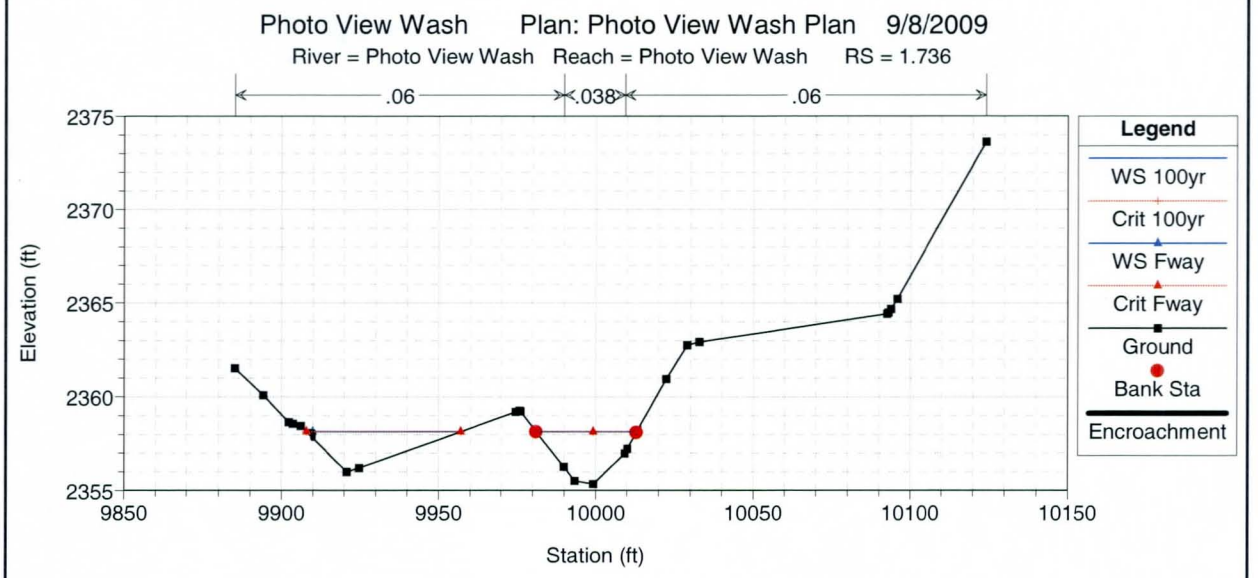


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.736
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

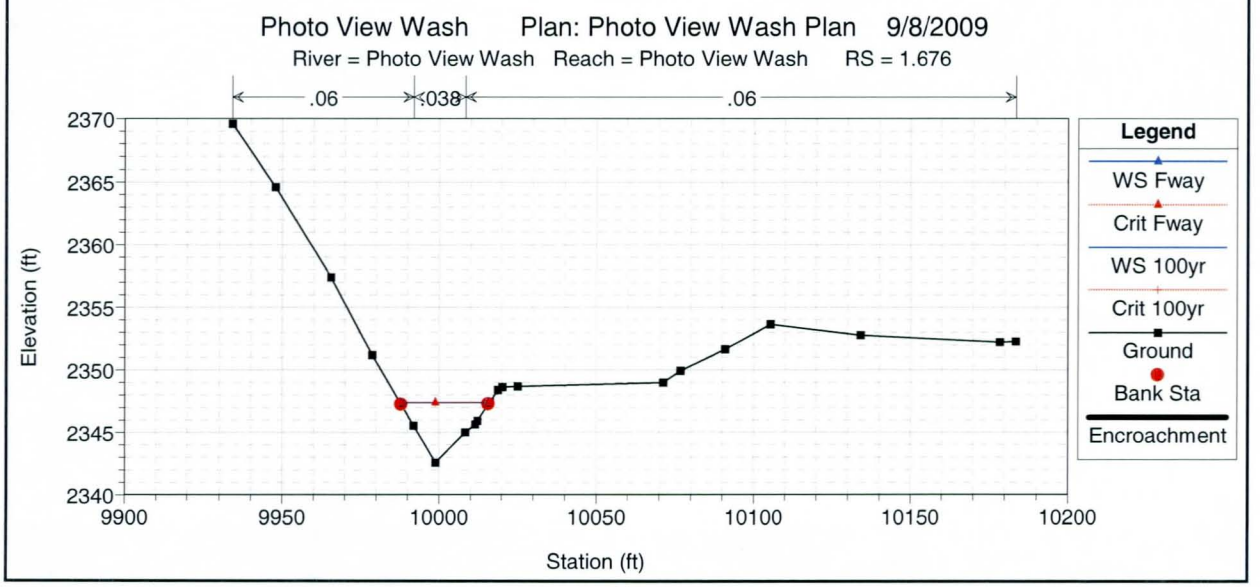


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.676
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

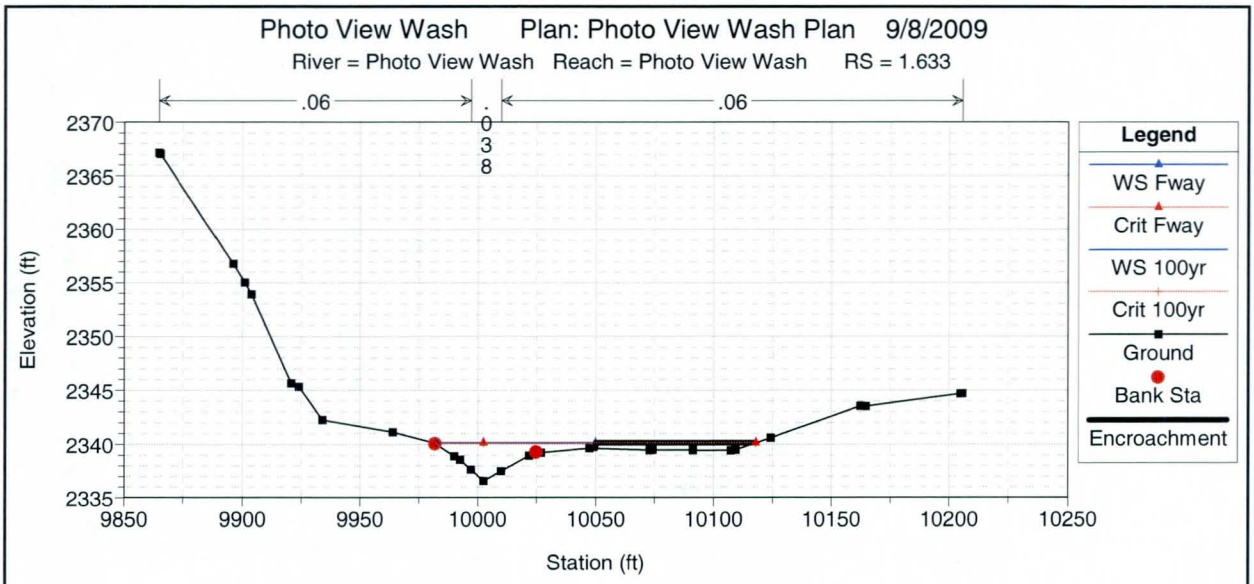


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.633
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

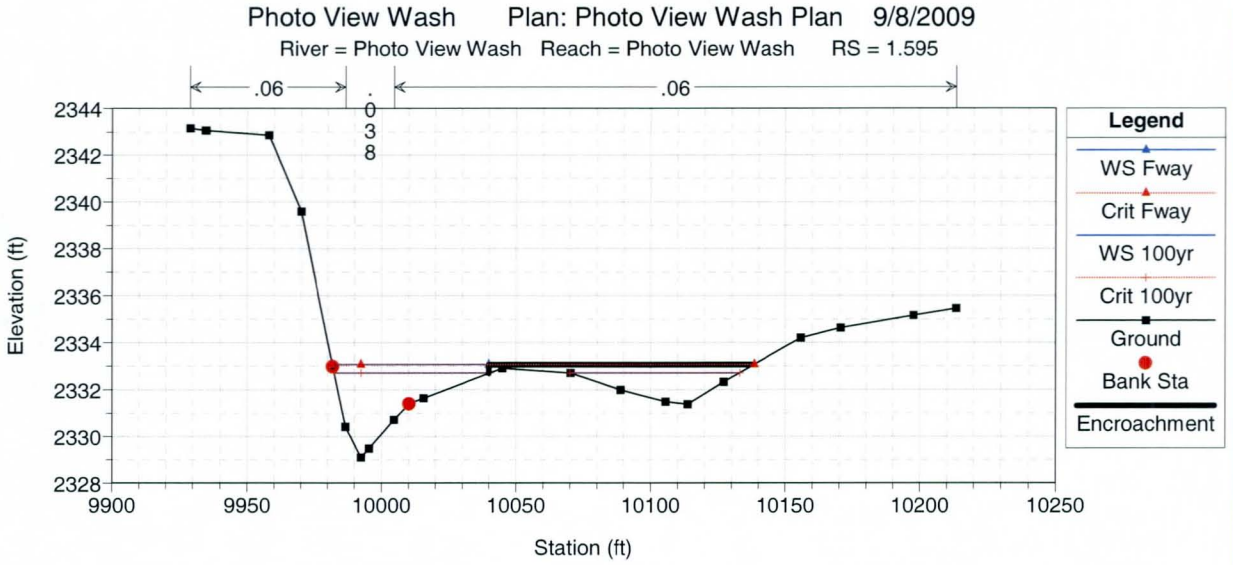


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.595
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

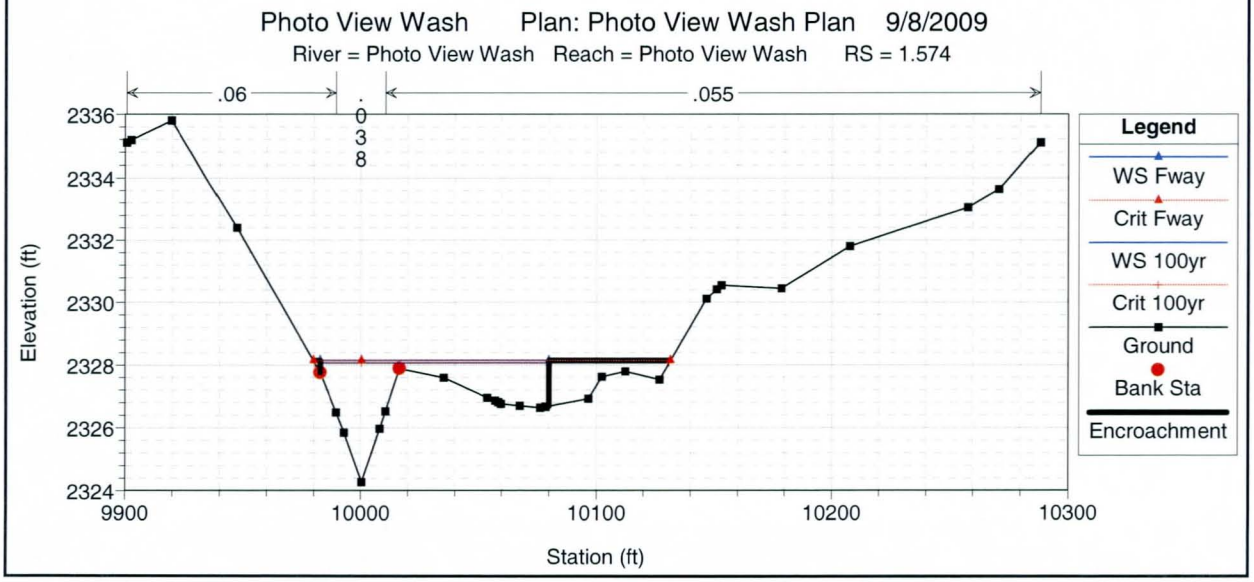


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.574
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

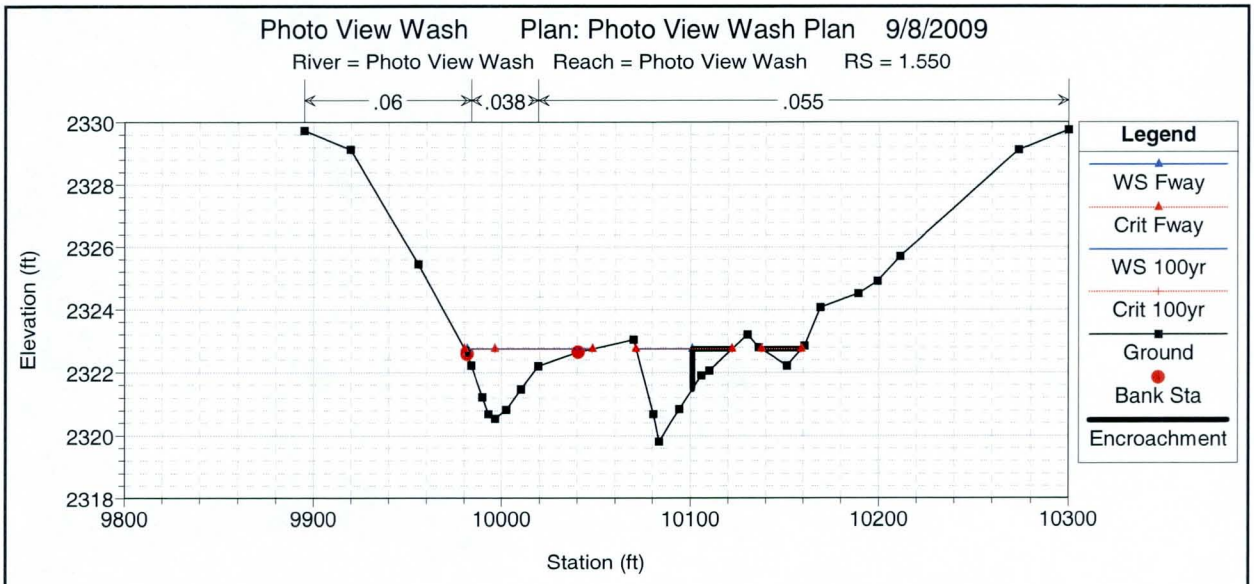


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.550
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

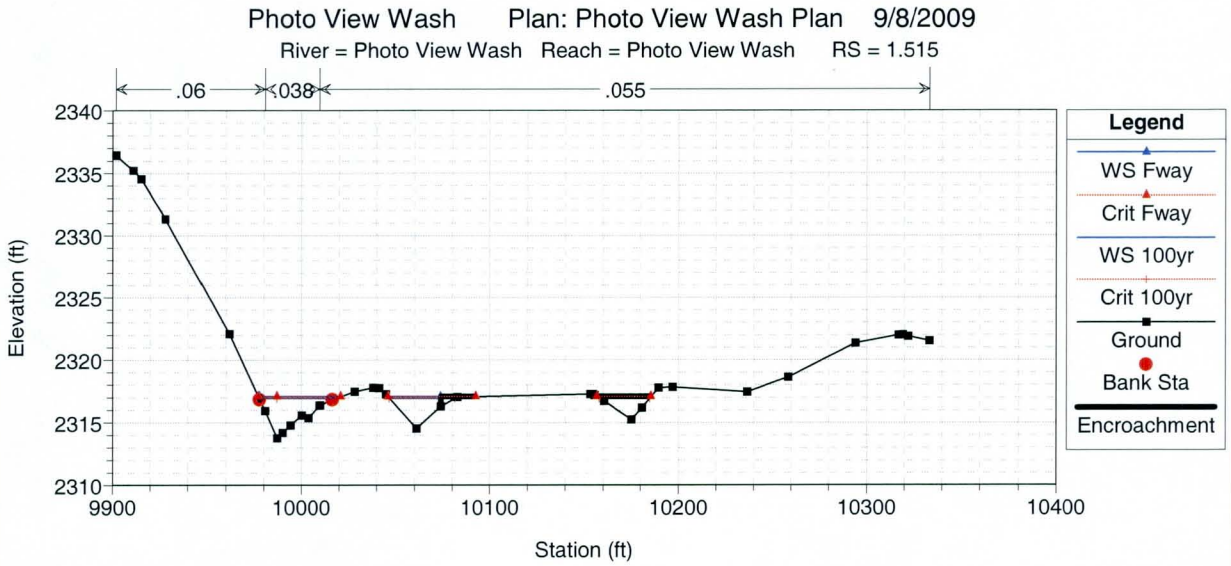


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.515
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

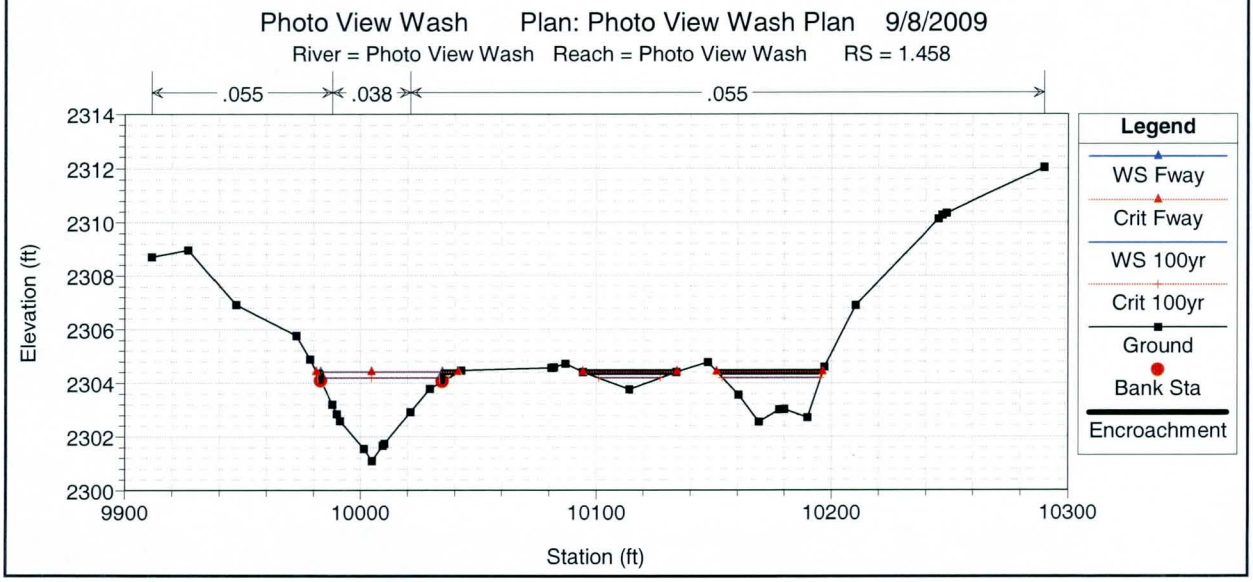


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.458
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

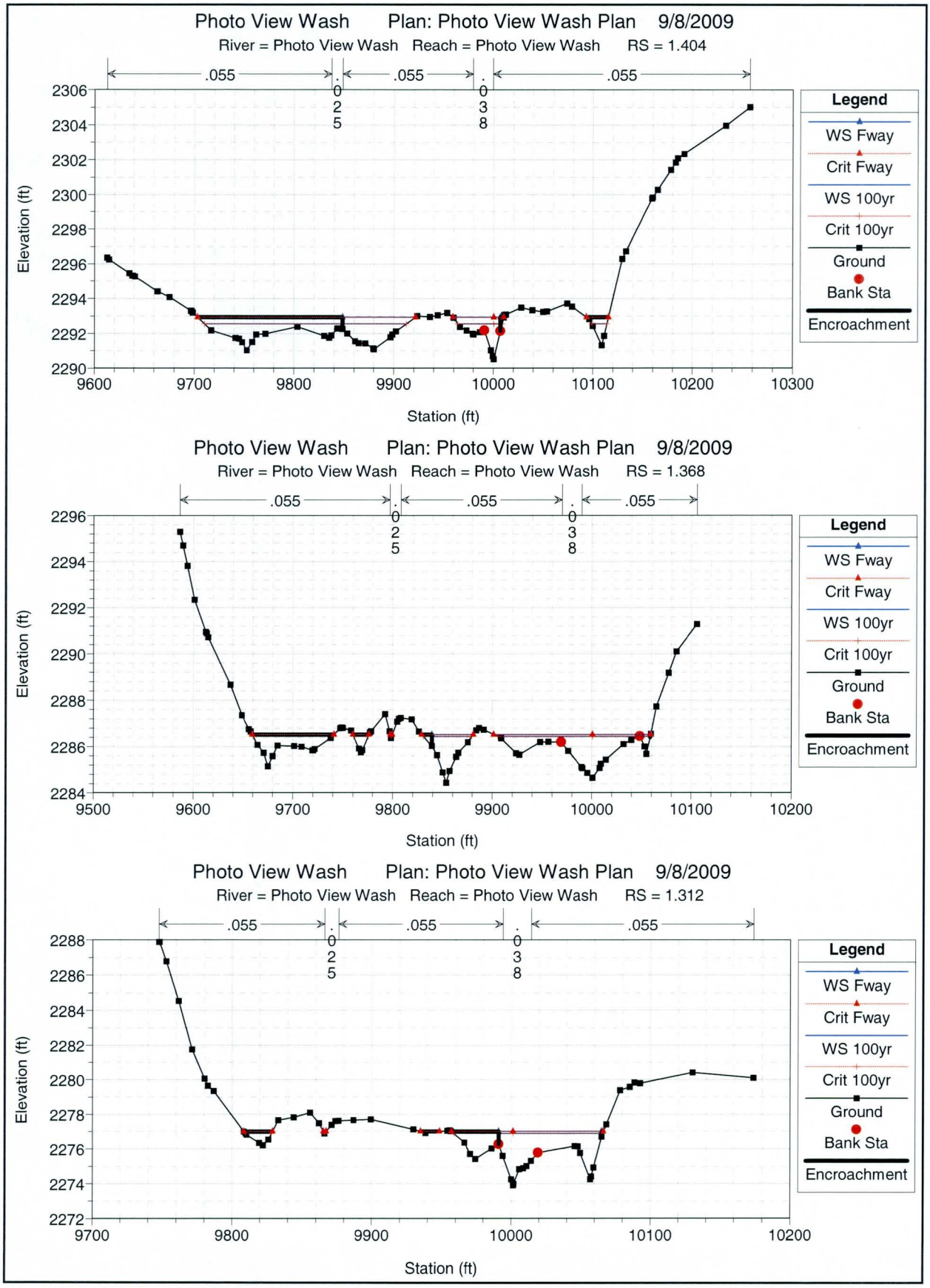


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.404
.055
.025
.038
.055
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.368
.055
.025
.038
.055
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.312
.055
.025
.038
.055
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

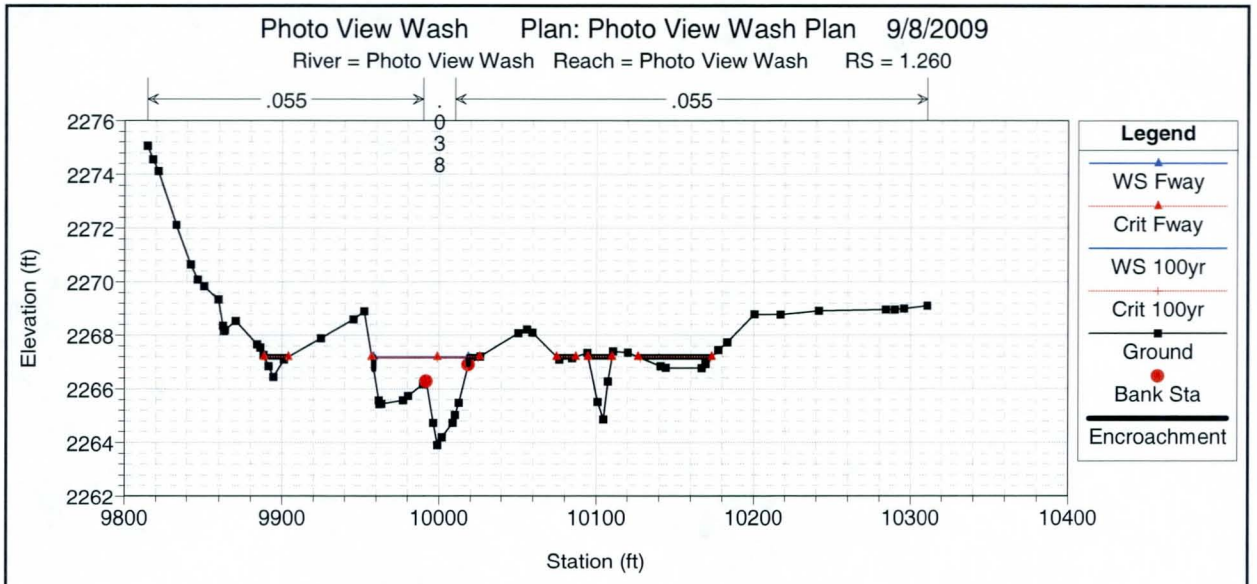


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.260
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

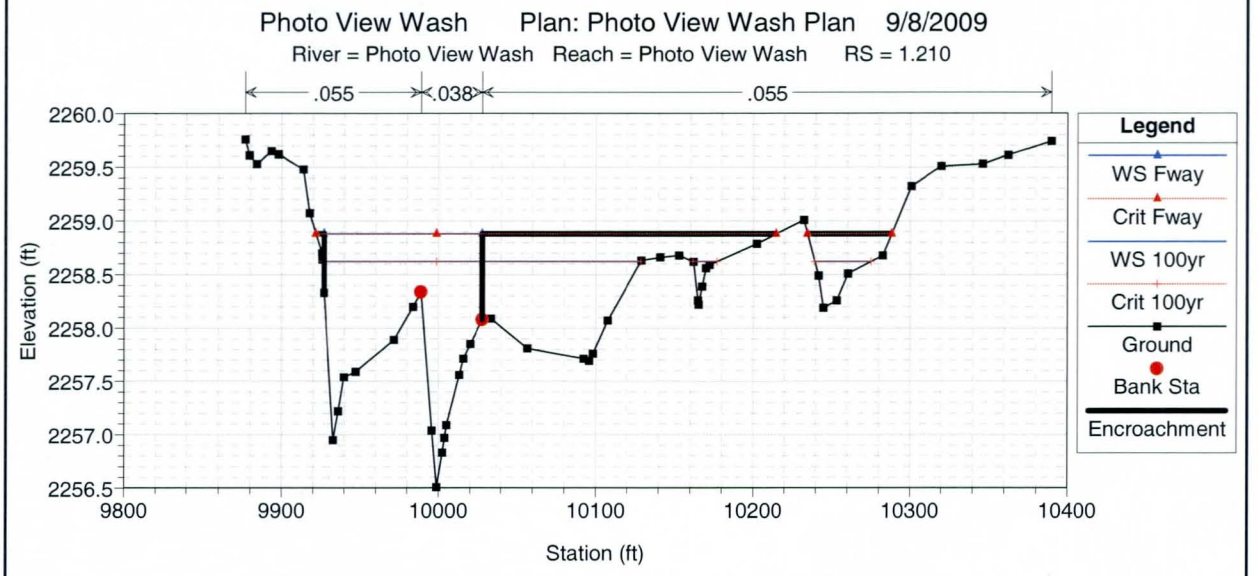


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.210
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

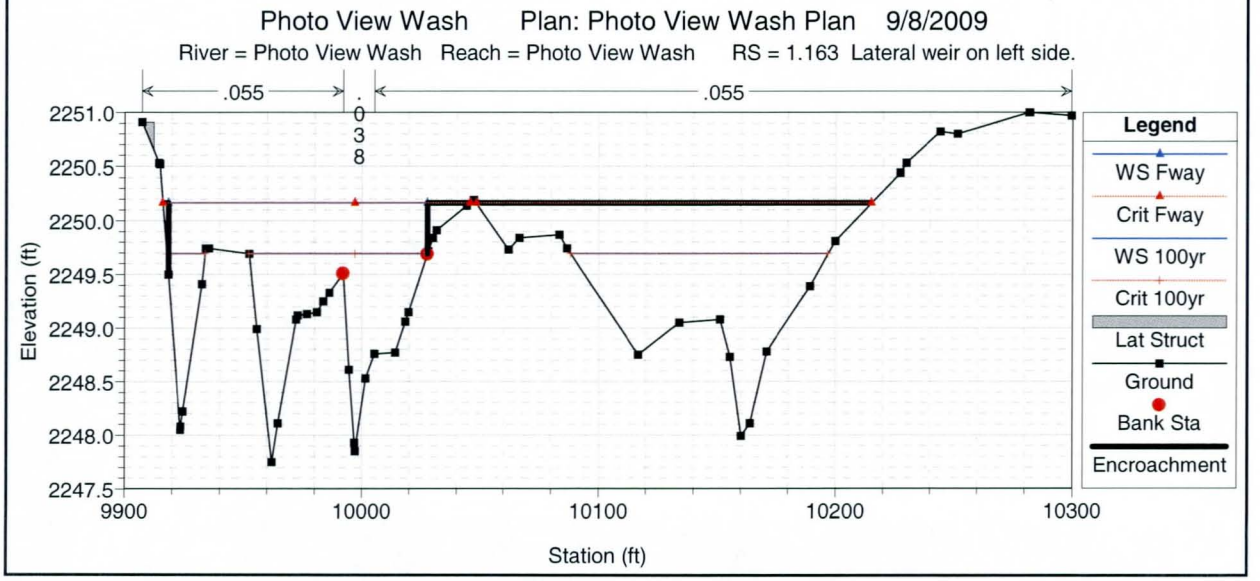


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.163 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

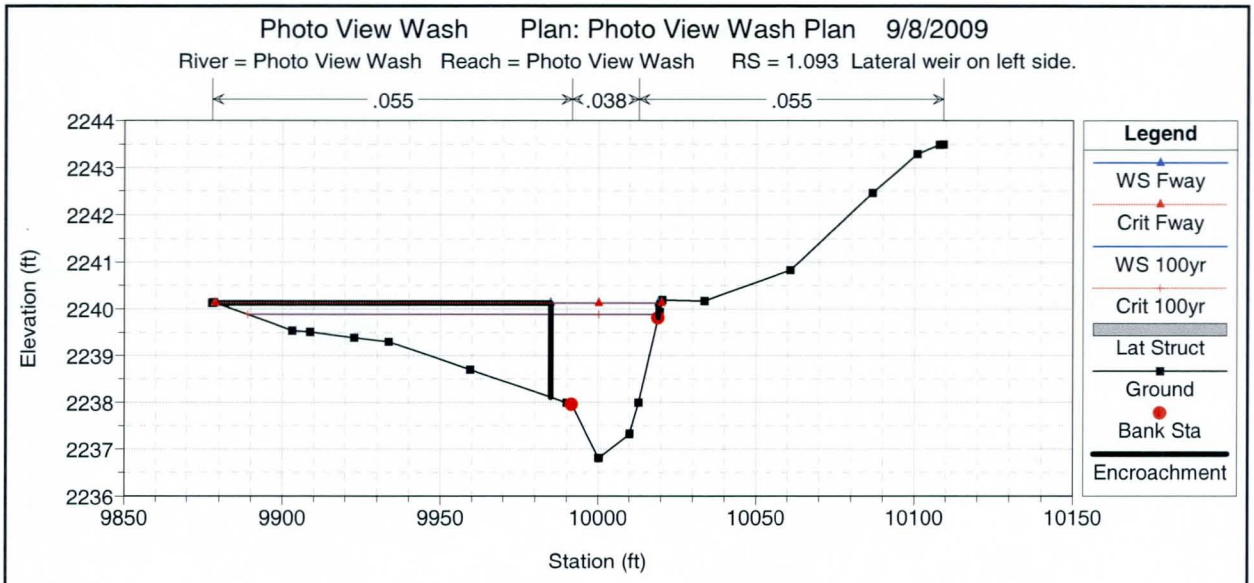


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.093 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

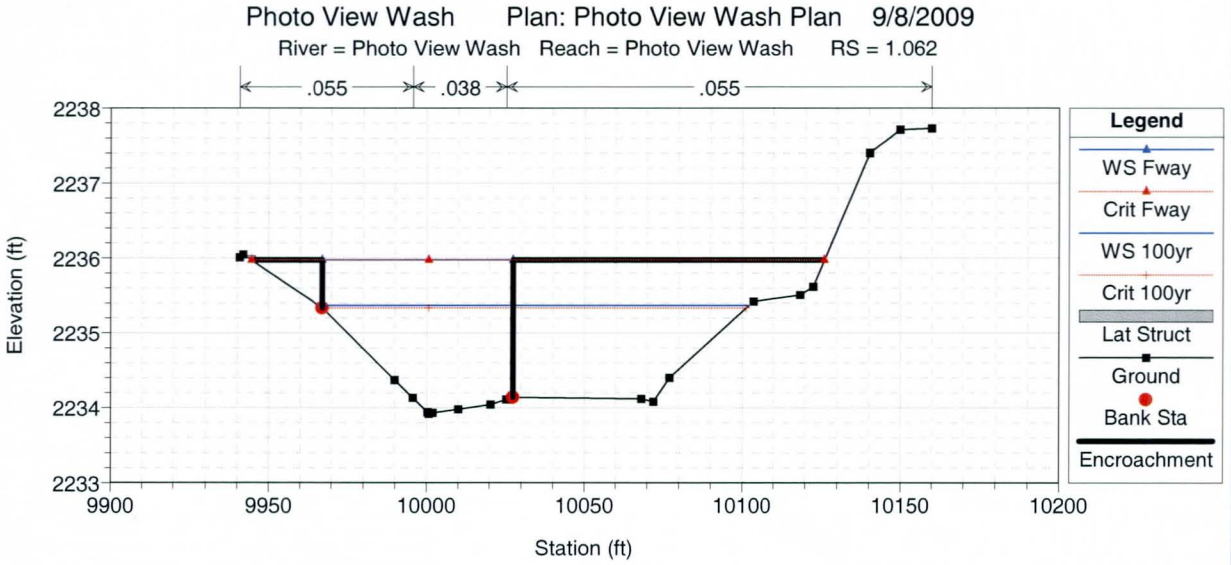


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.062
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

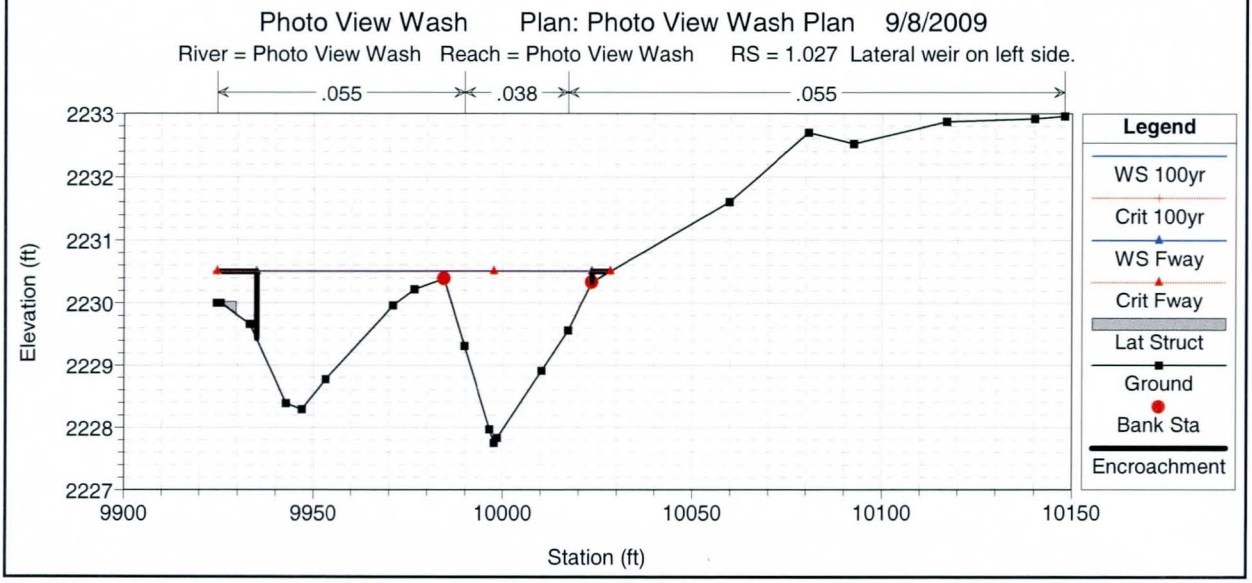


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 1.027 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Lat Struct
Ground
Bank Sta
Encroachment

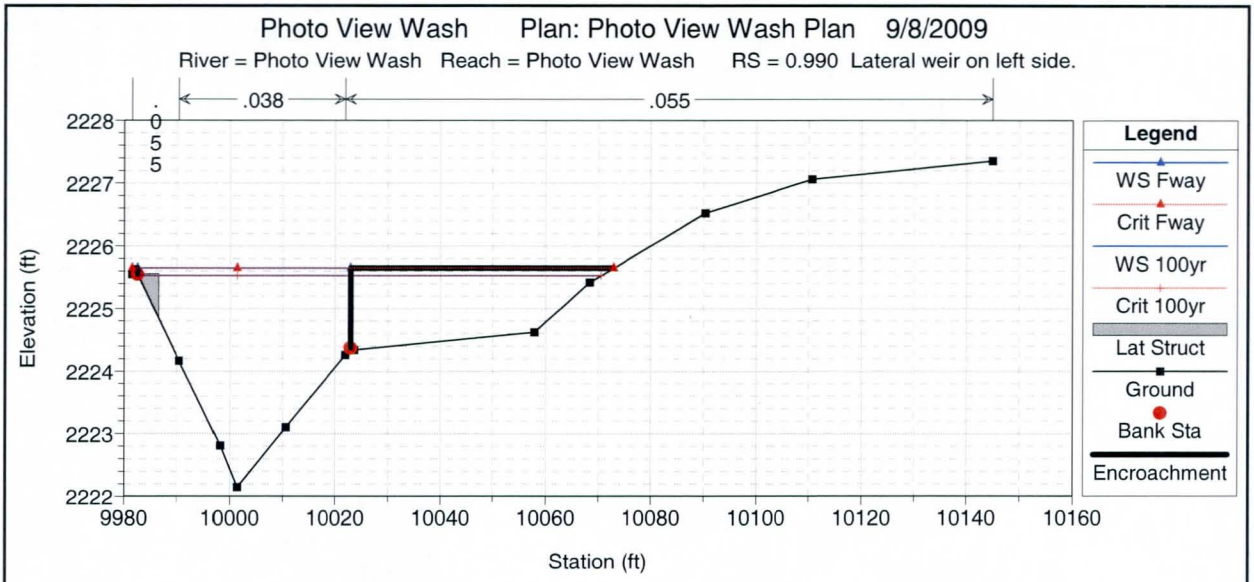


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.990 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

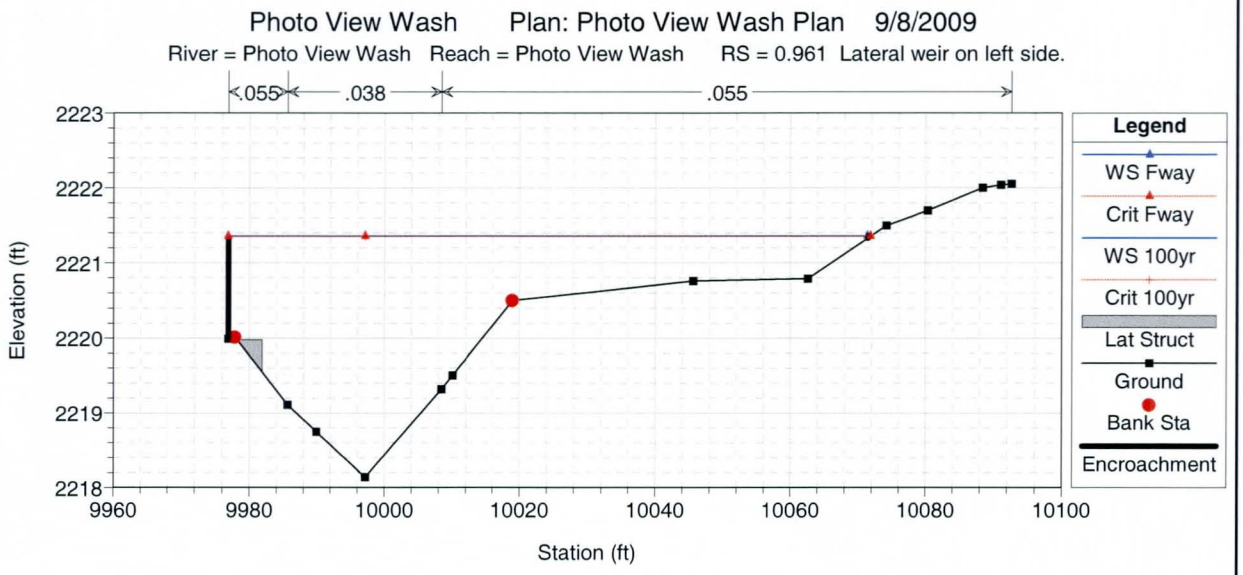


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.961 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

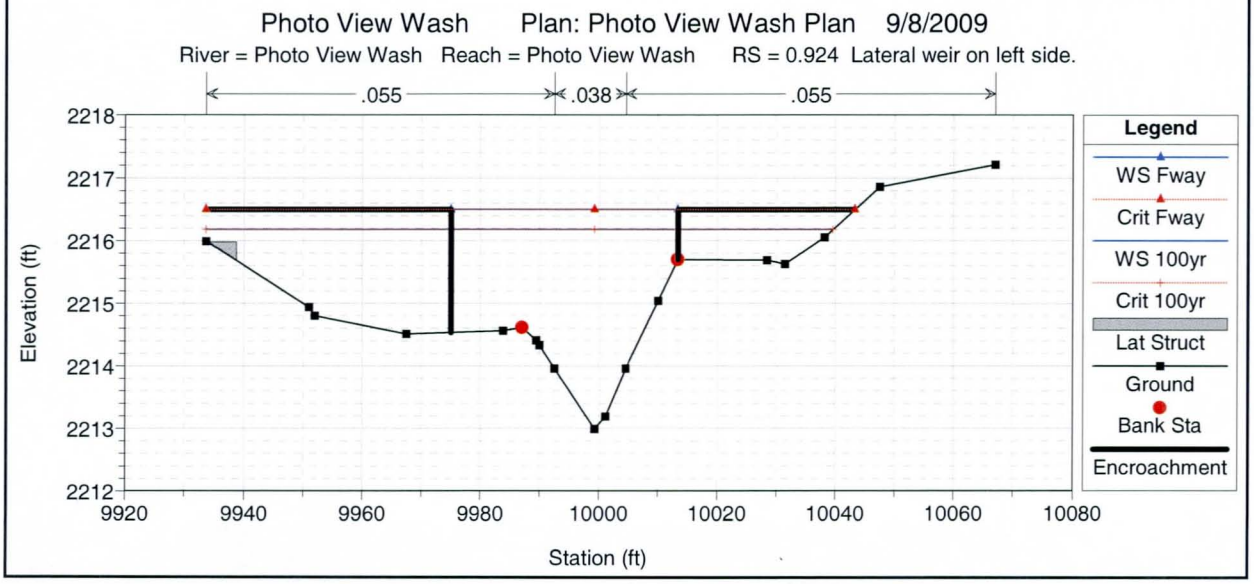


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.924 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

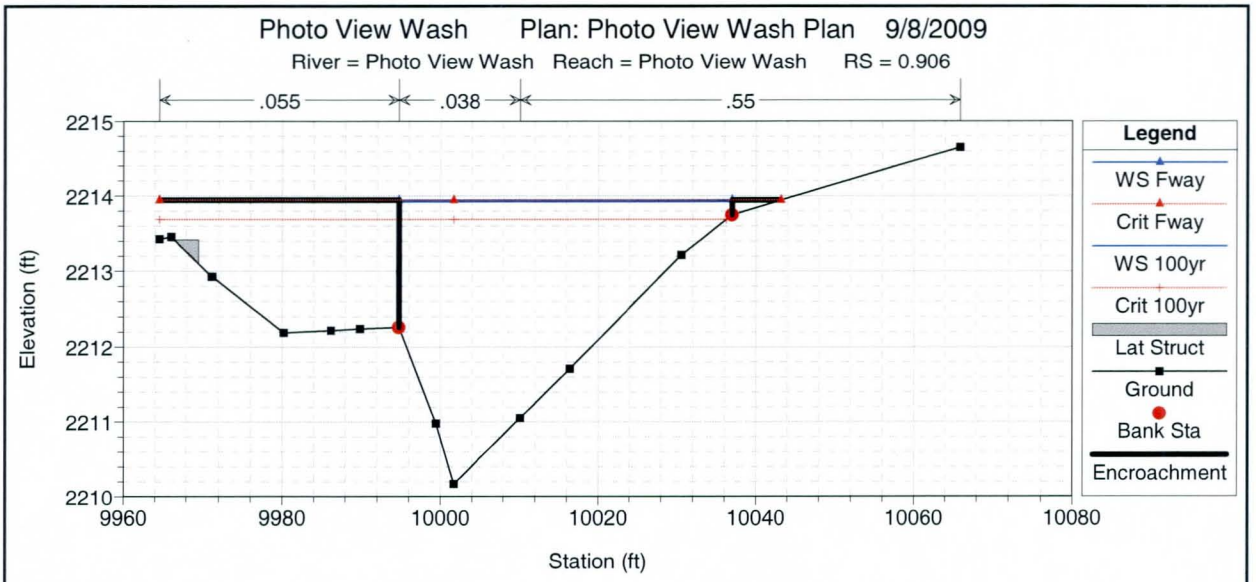


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.906
.055
.038
.55
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

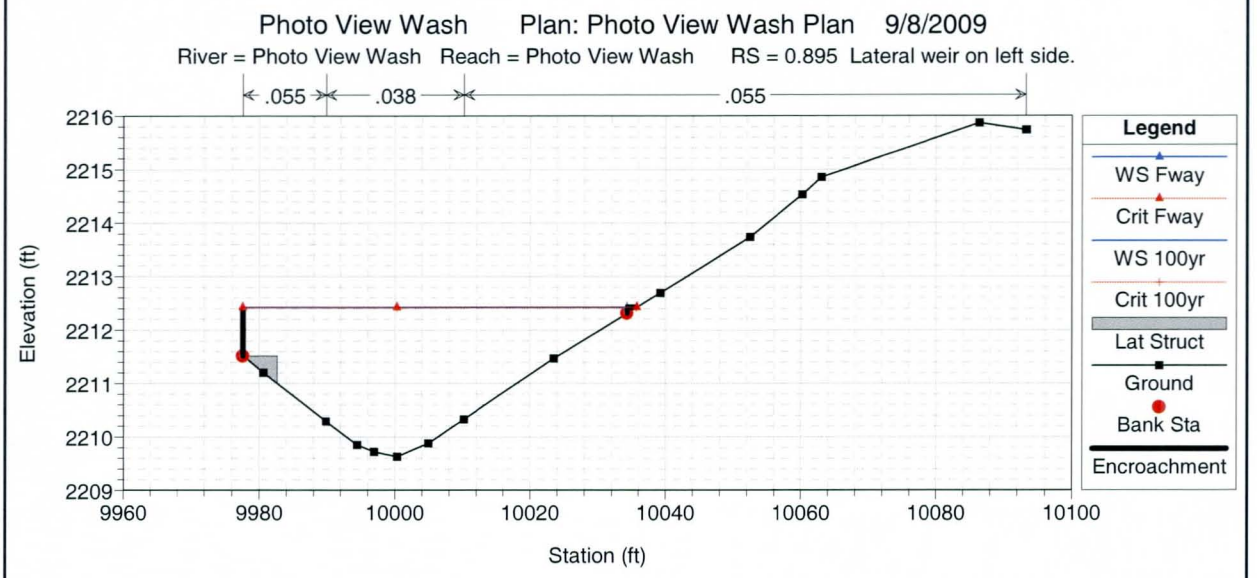


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.895 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

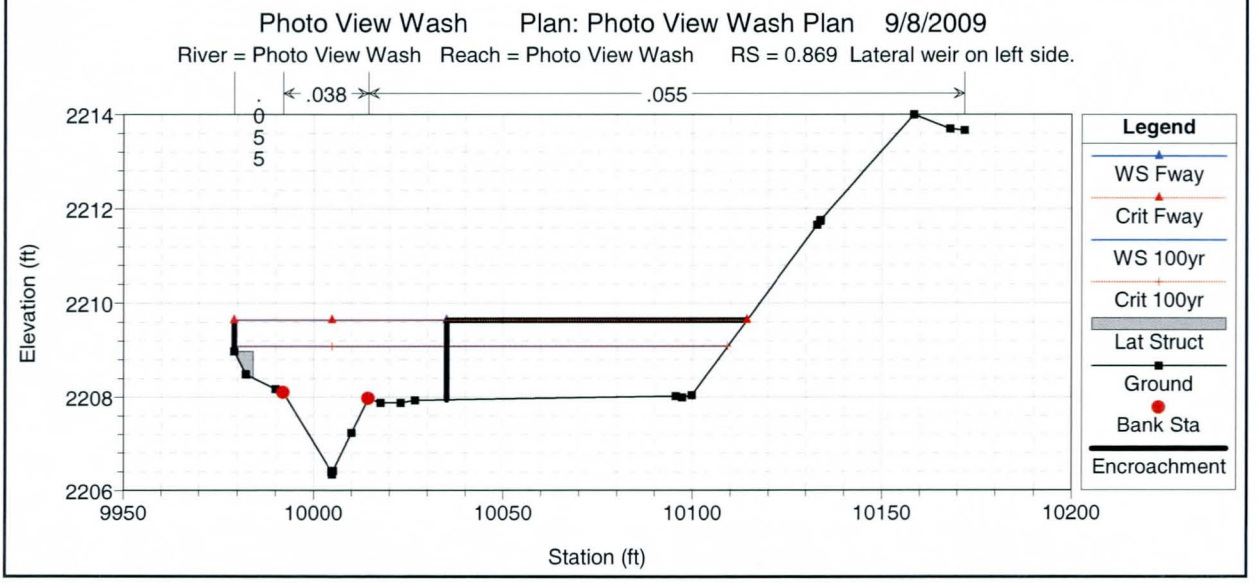


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.869 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

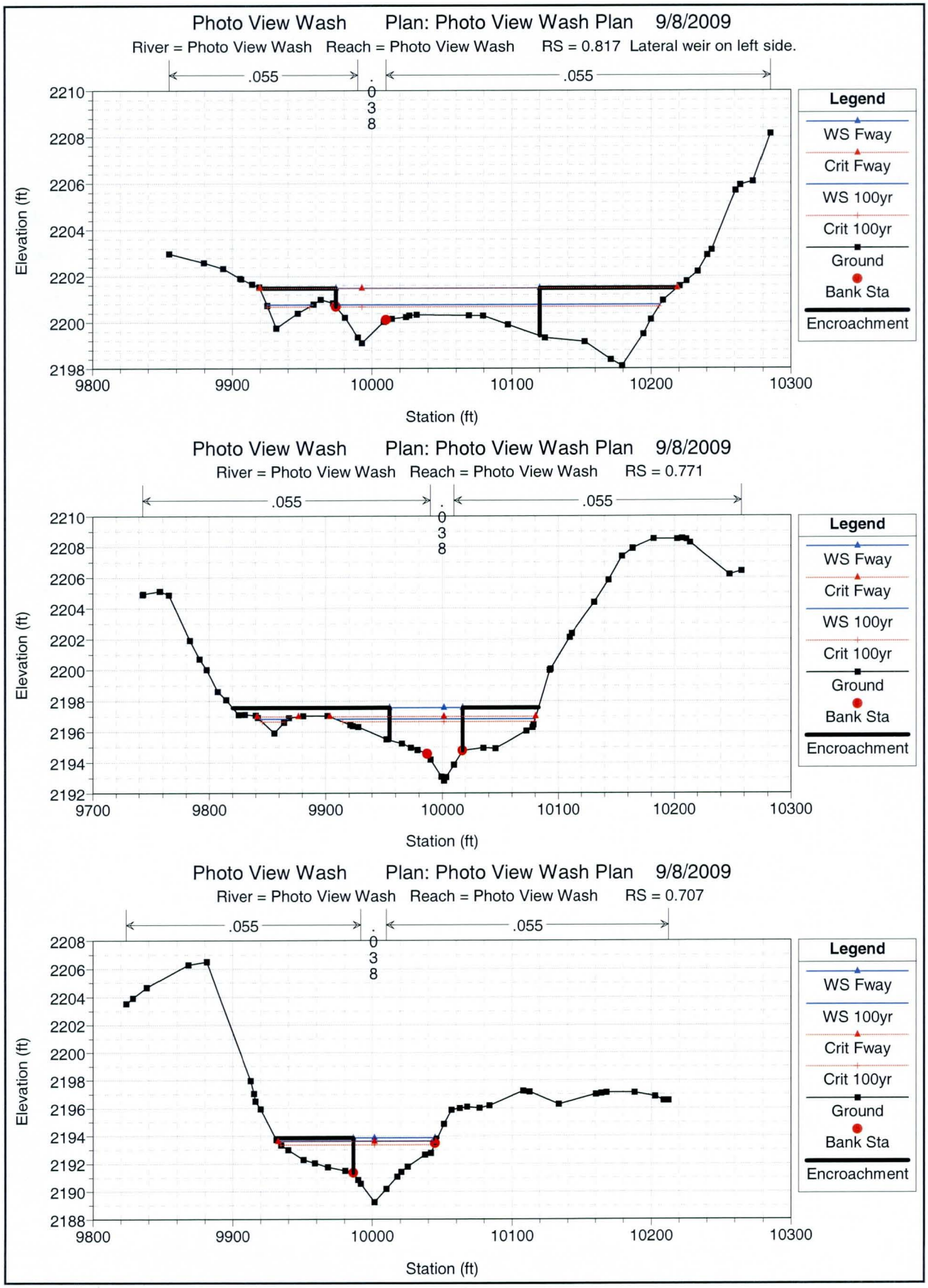


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.817 Lateral weir on left side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.771
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.707
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

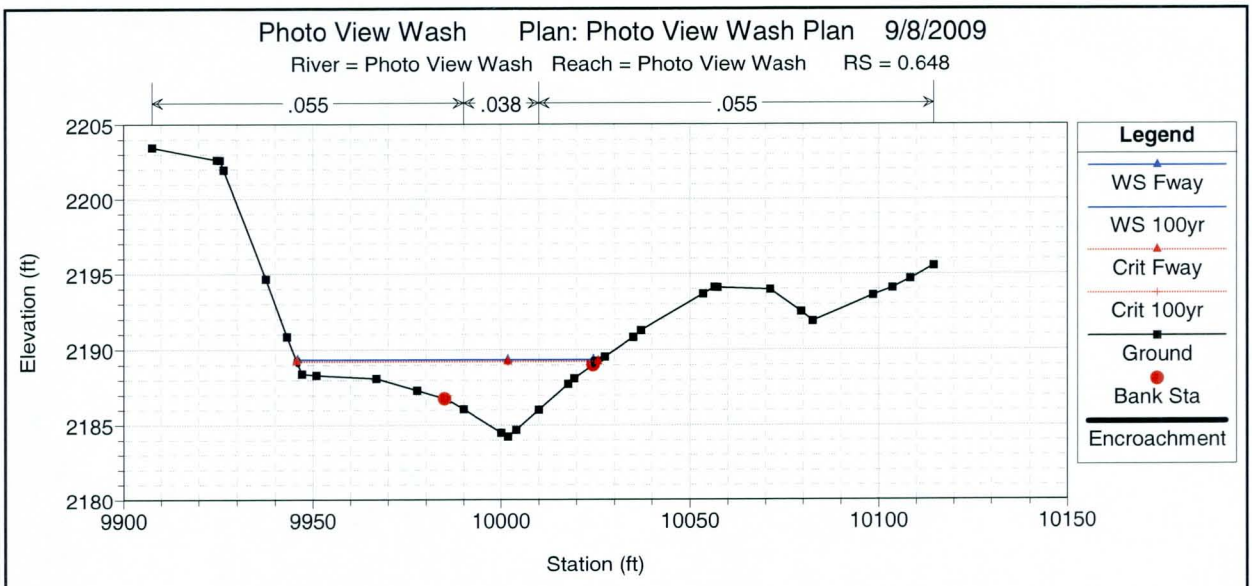


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.648
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

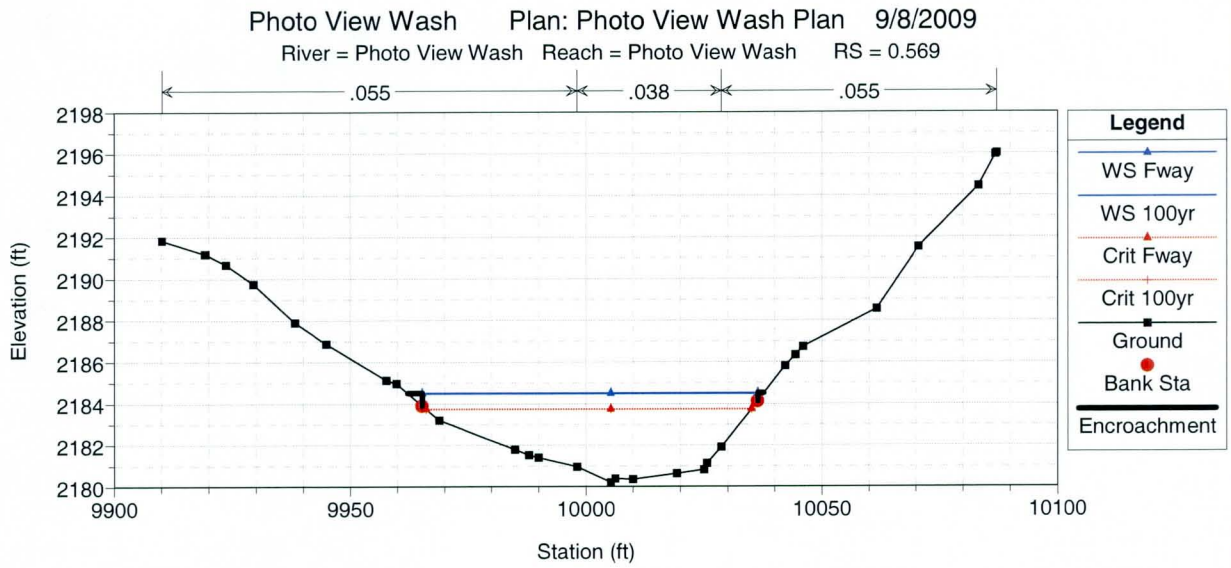


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.569
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

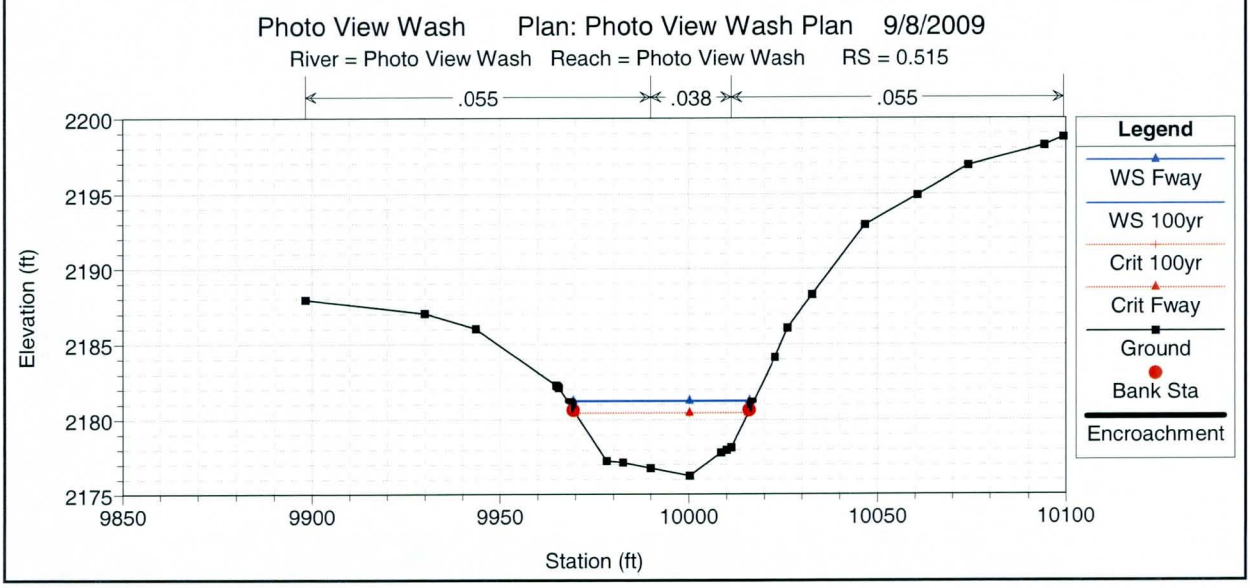


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.515
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

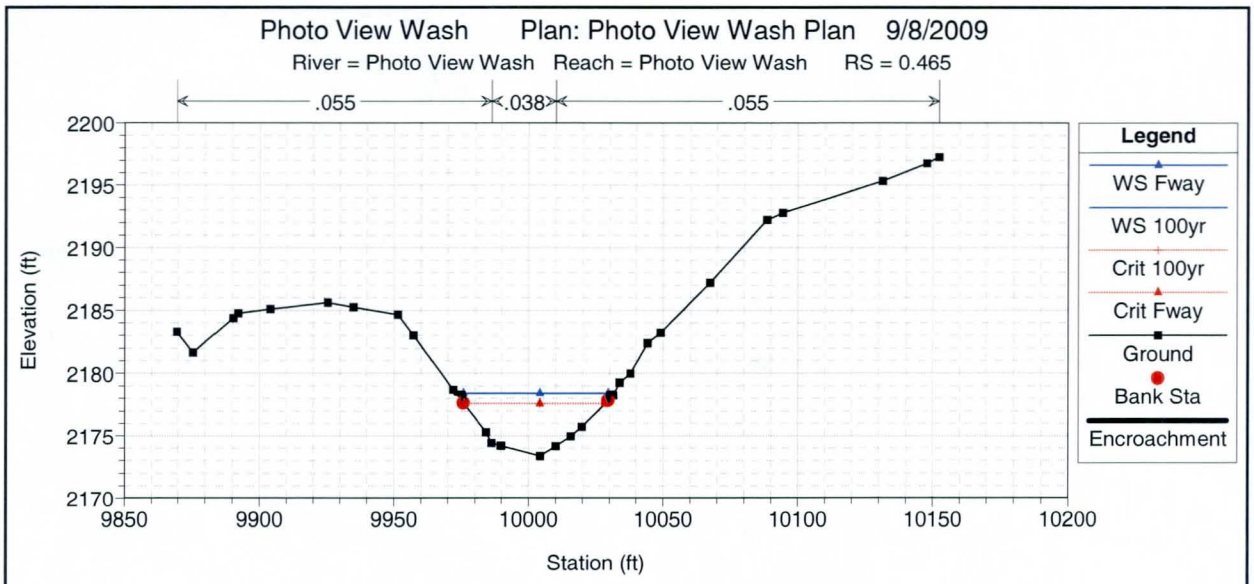


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.465
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

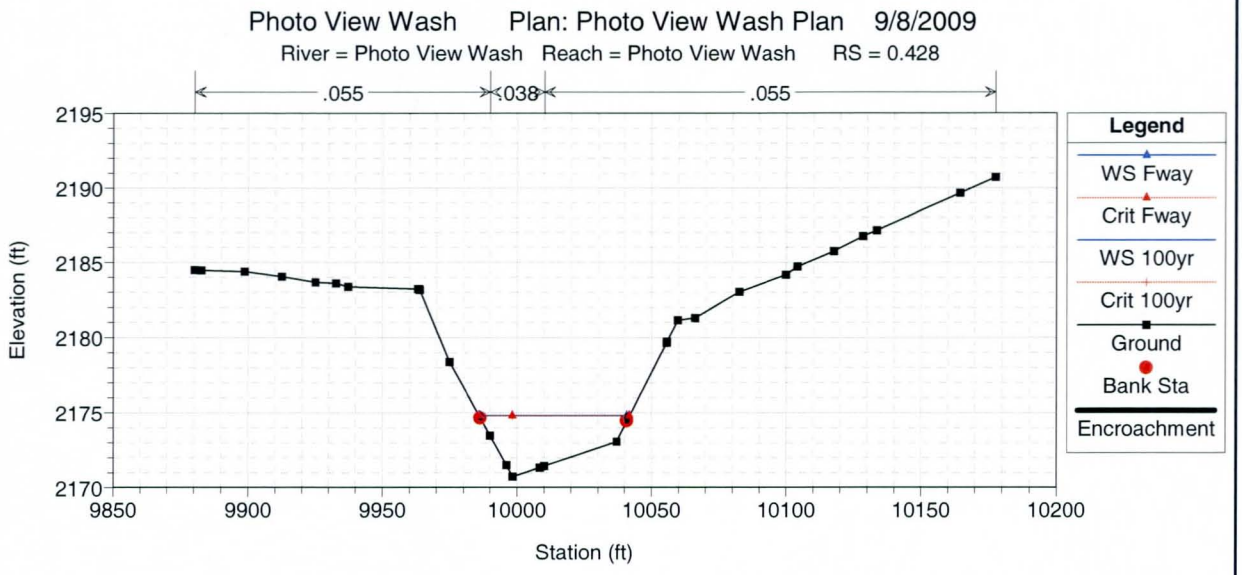


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.428
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

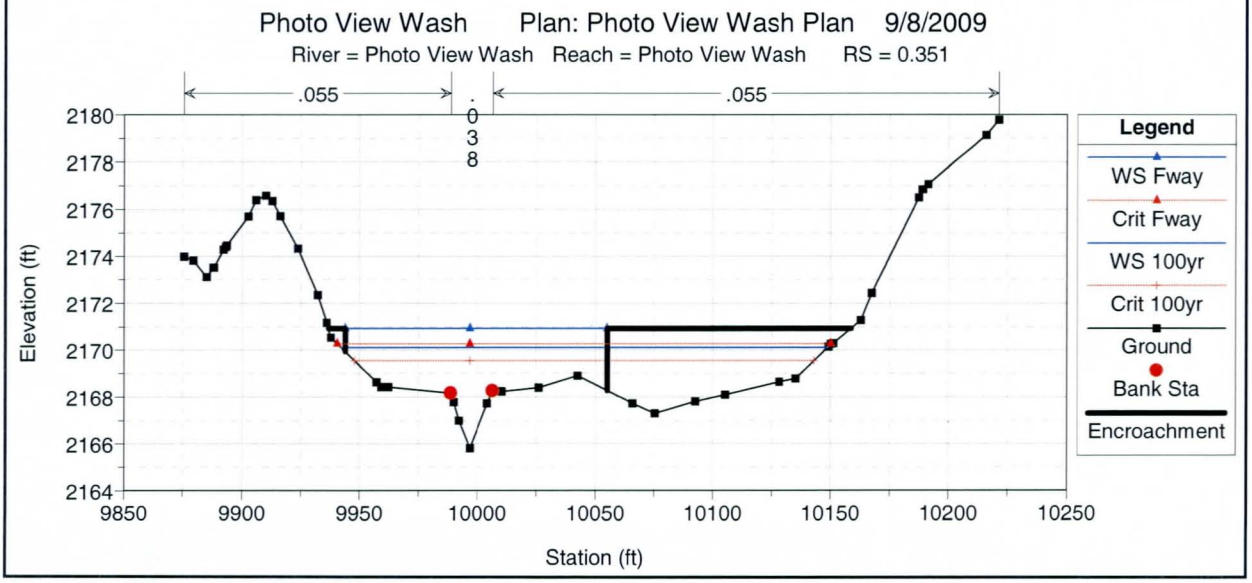


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.351
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

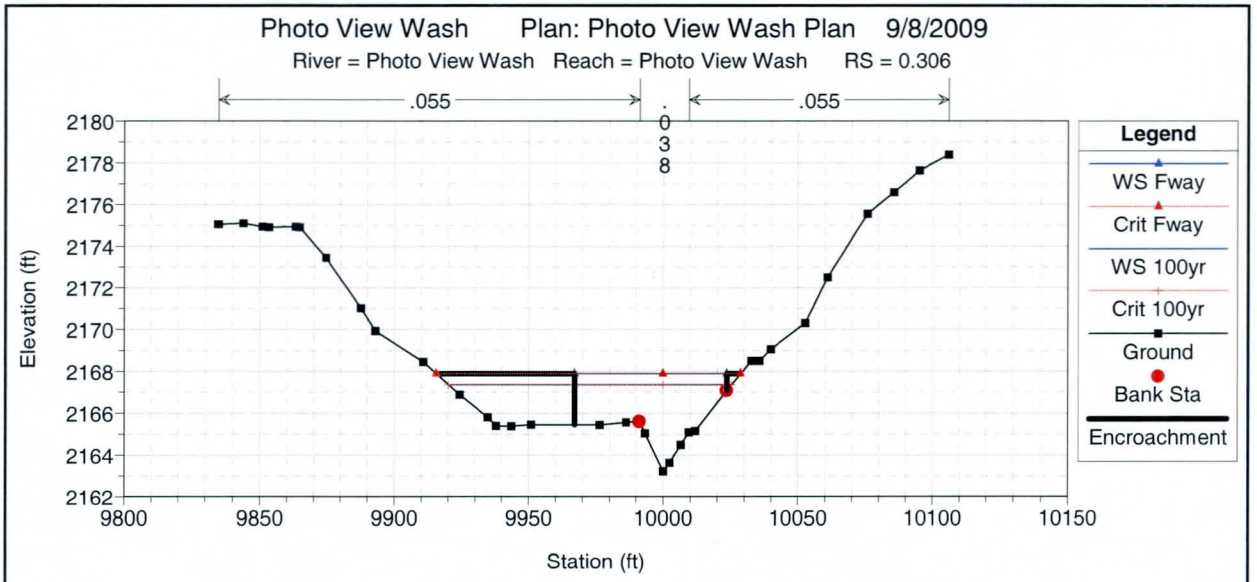


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.306
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

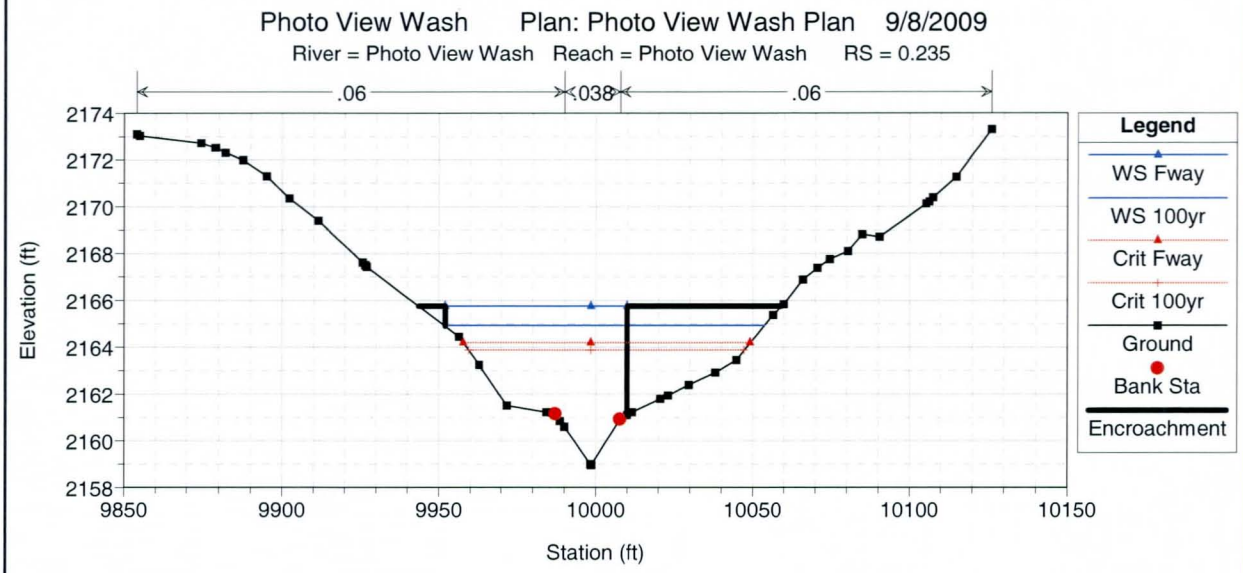


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.235
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

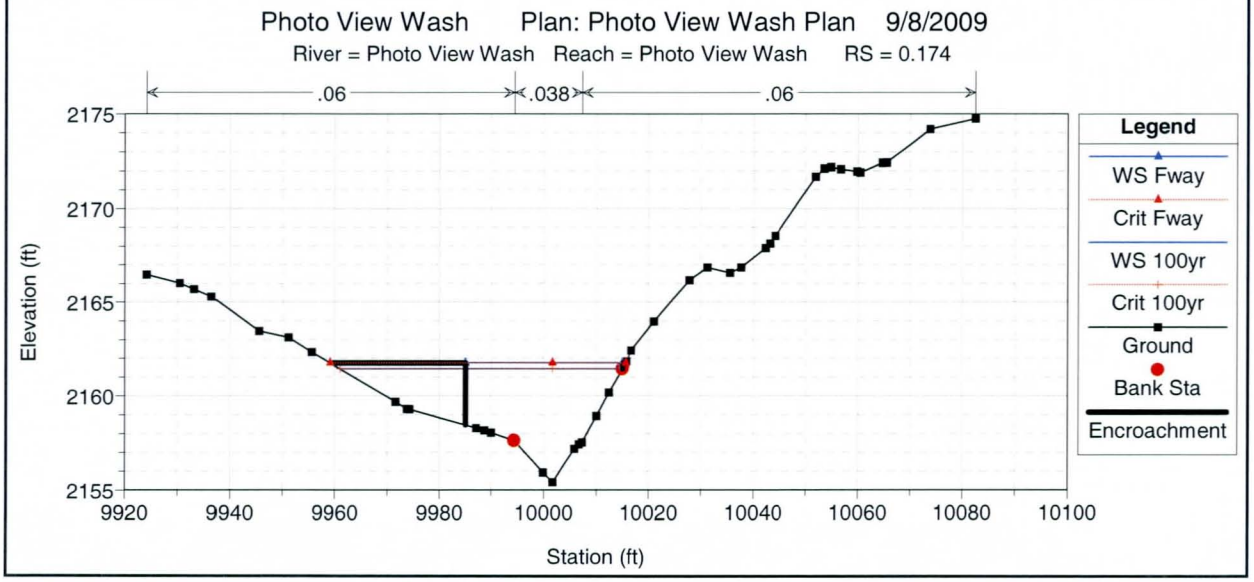


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.174
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

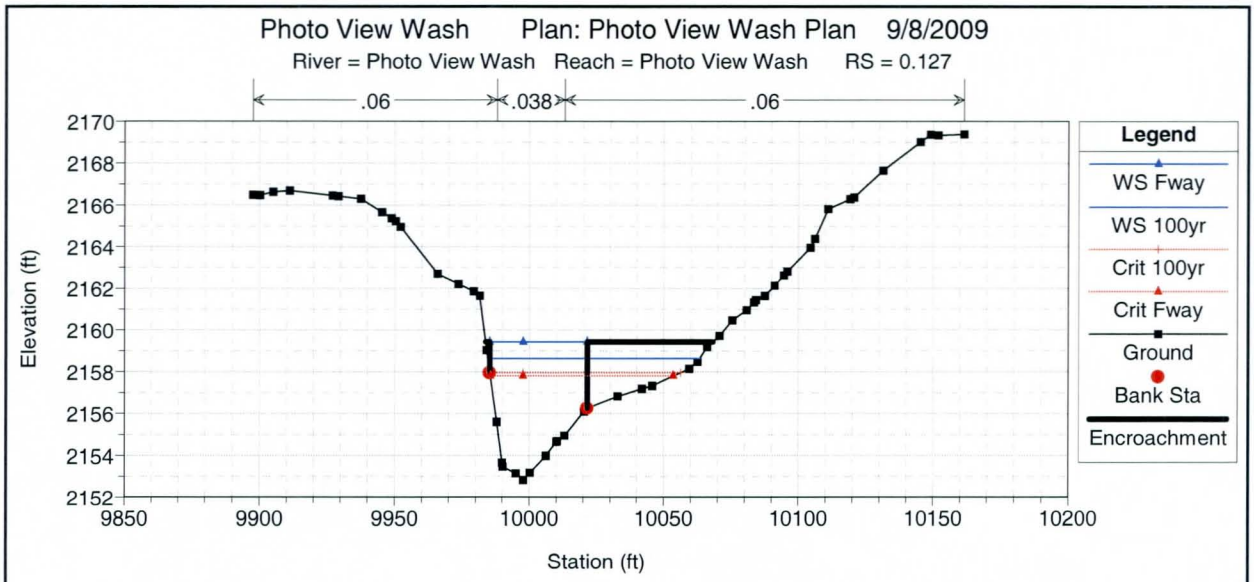


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.127
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

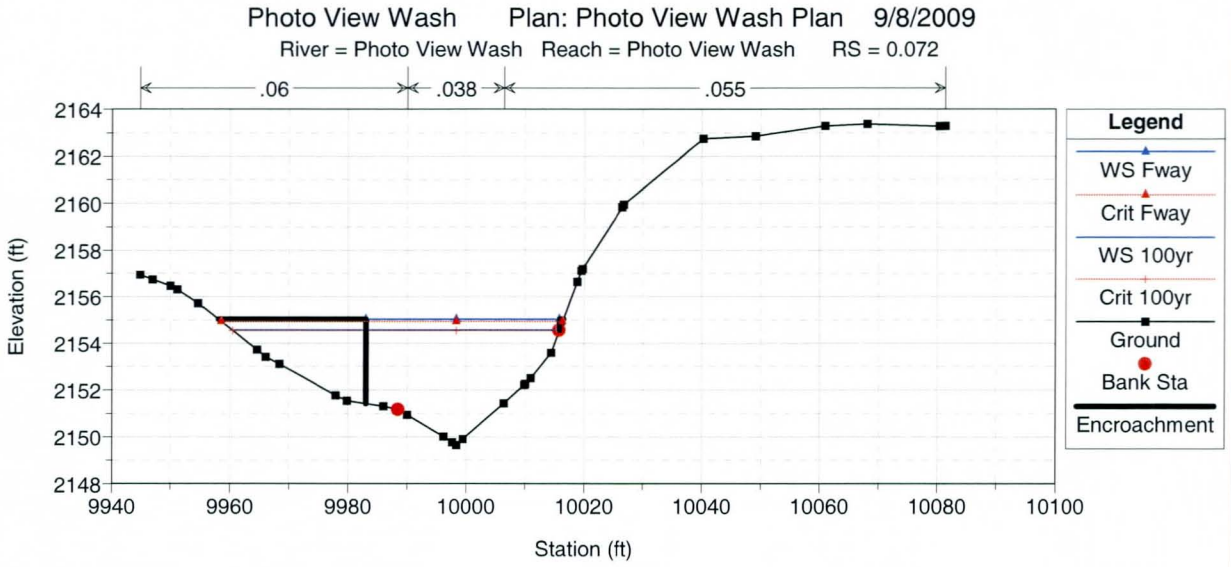


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.072
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

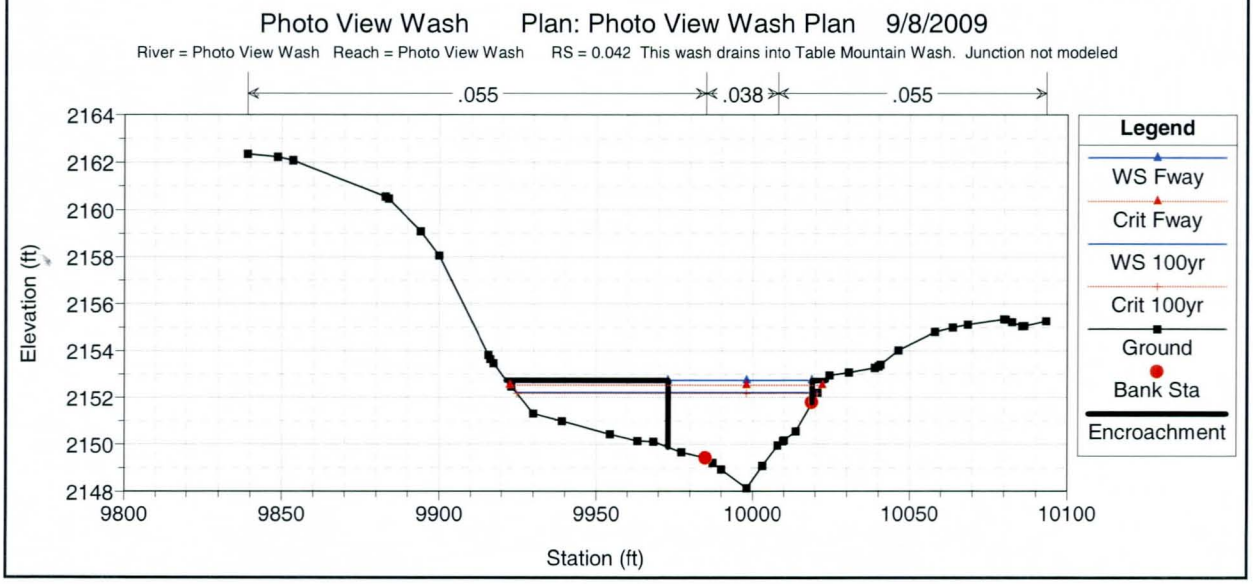


Photo View Wash Plan: Photo View Wash Plan 9/8/2009
River = Photo View Wash Reach = Photo View Wash RS = 0.042 This wash drains into Table Mountain Wash. Junction not modeled
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

CROSS SECTION PLOTS FOR

PHOTO VIEW WASH BREAKOUT #1

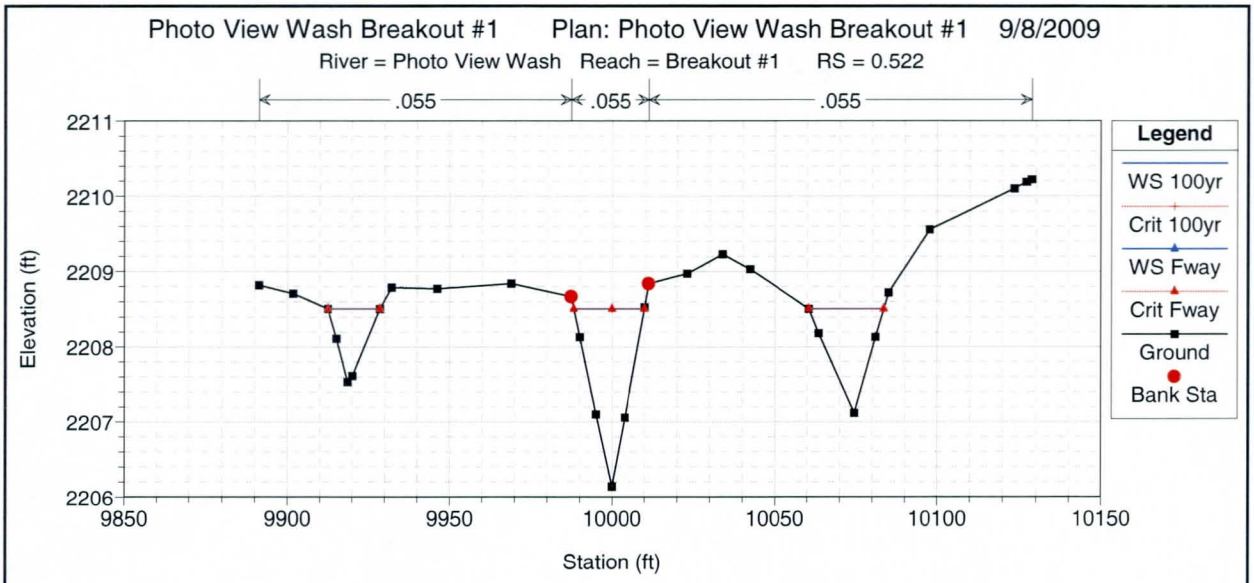


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.522
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

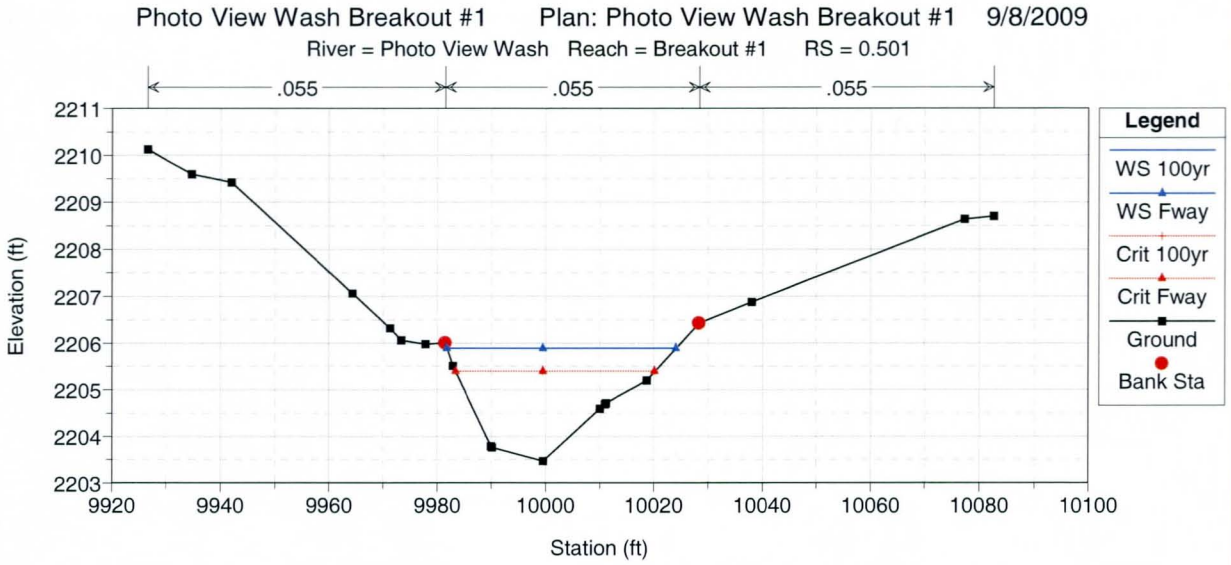


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.501
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

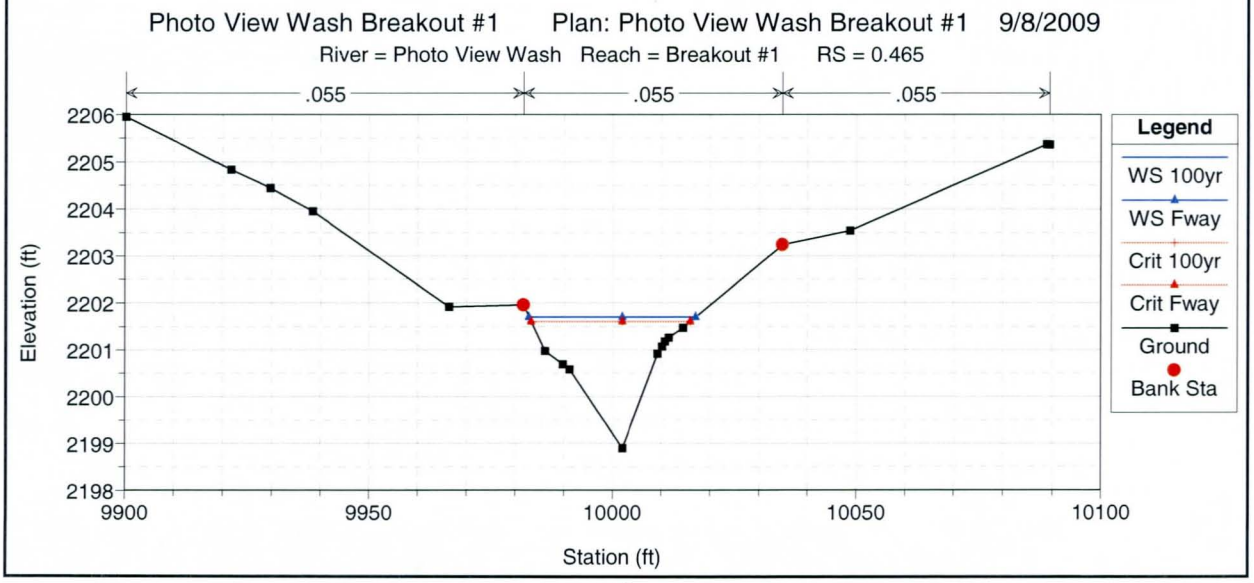


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.465
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

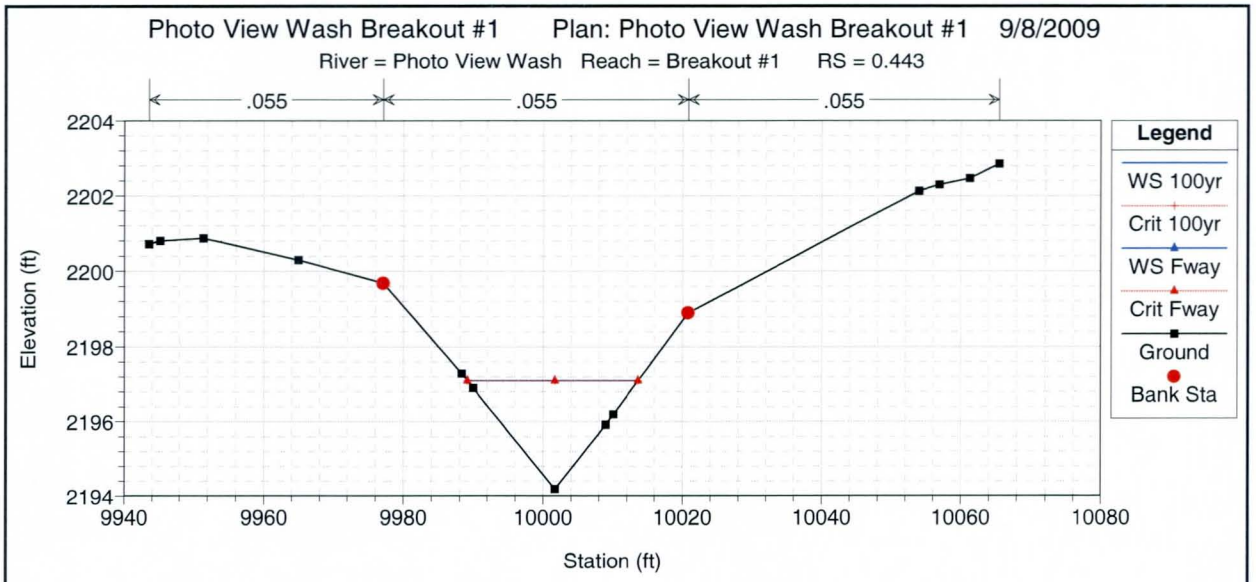


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.443
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

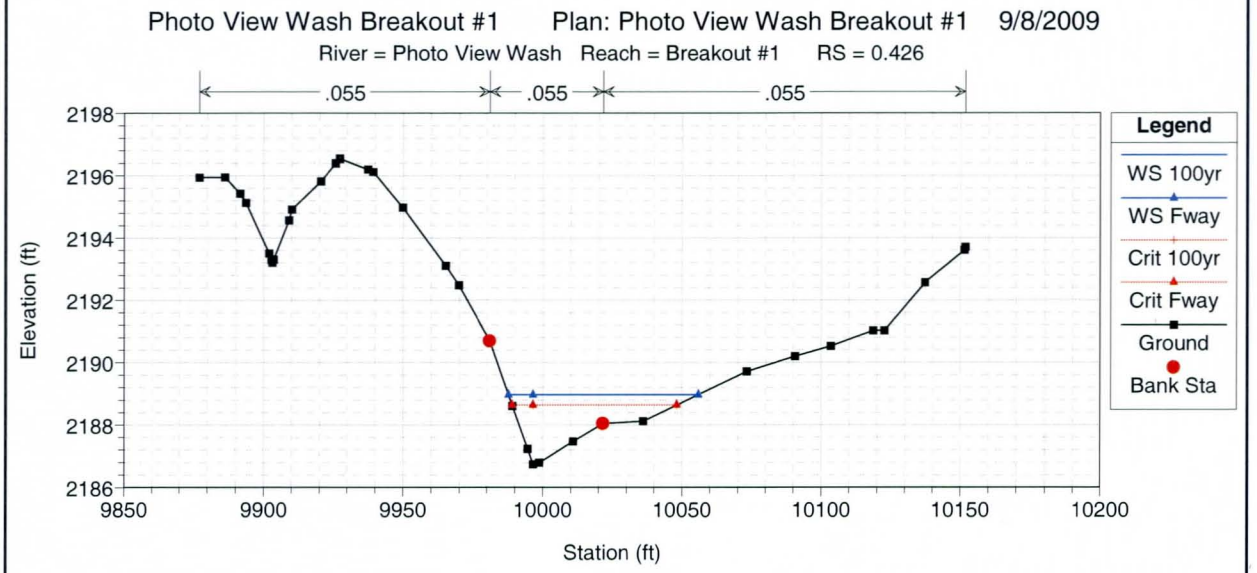


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.426
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

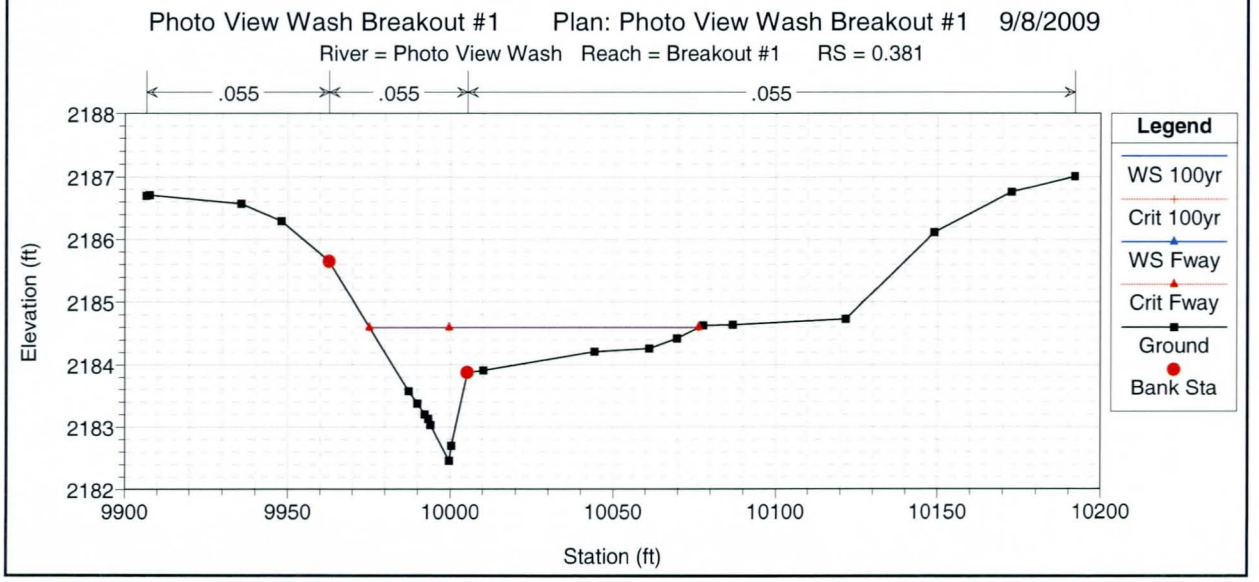


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.381
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

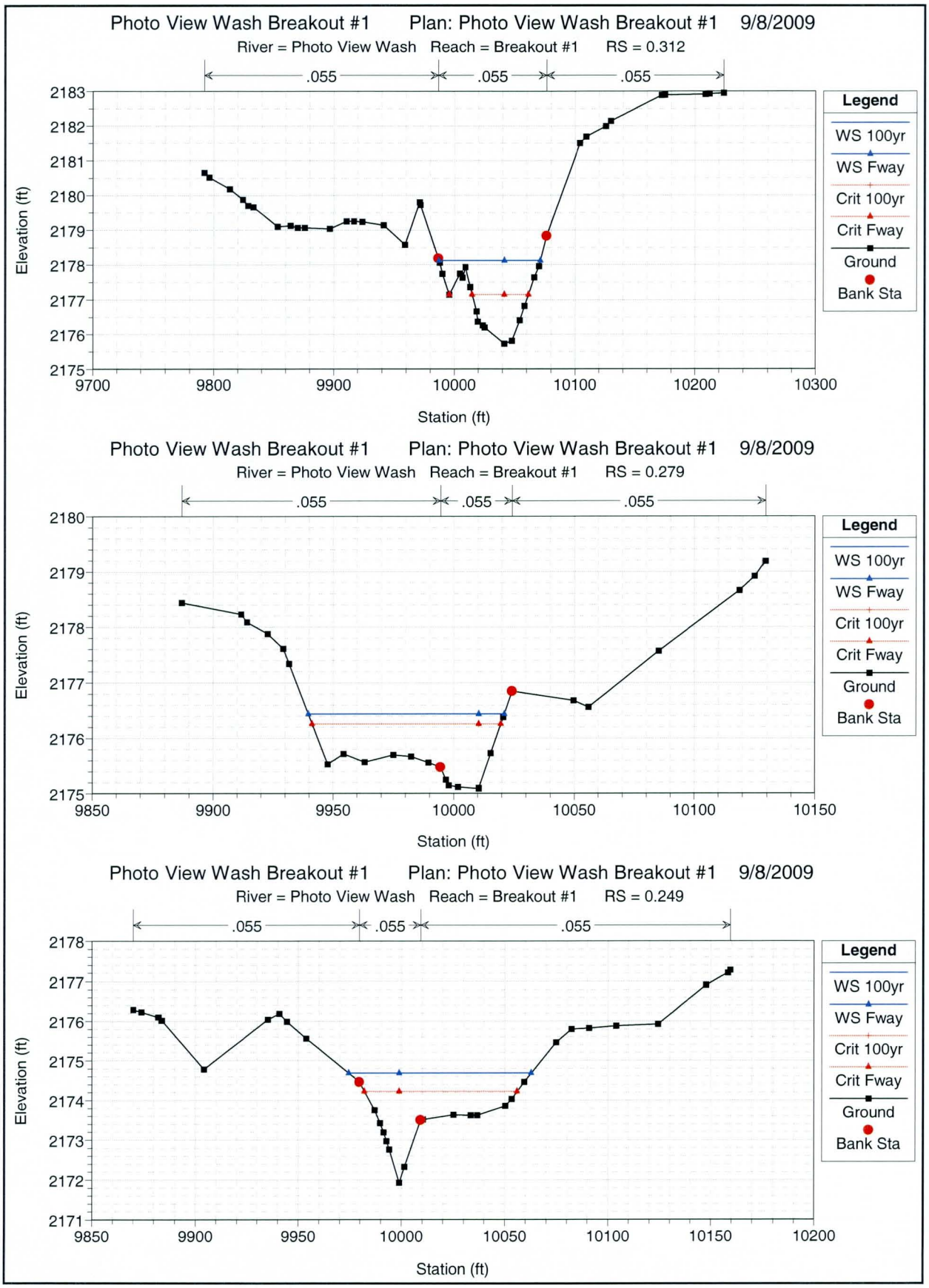


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.312
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.279
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.249
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

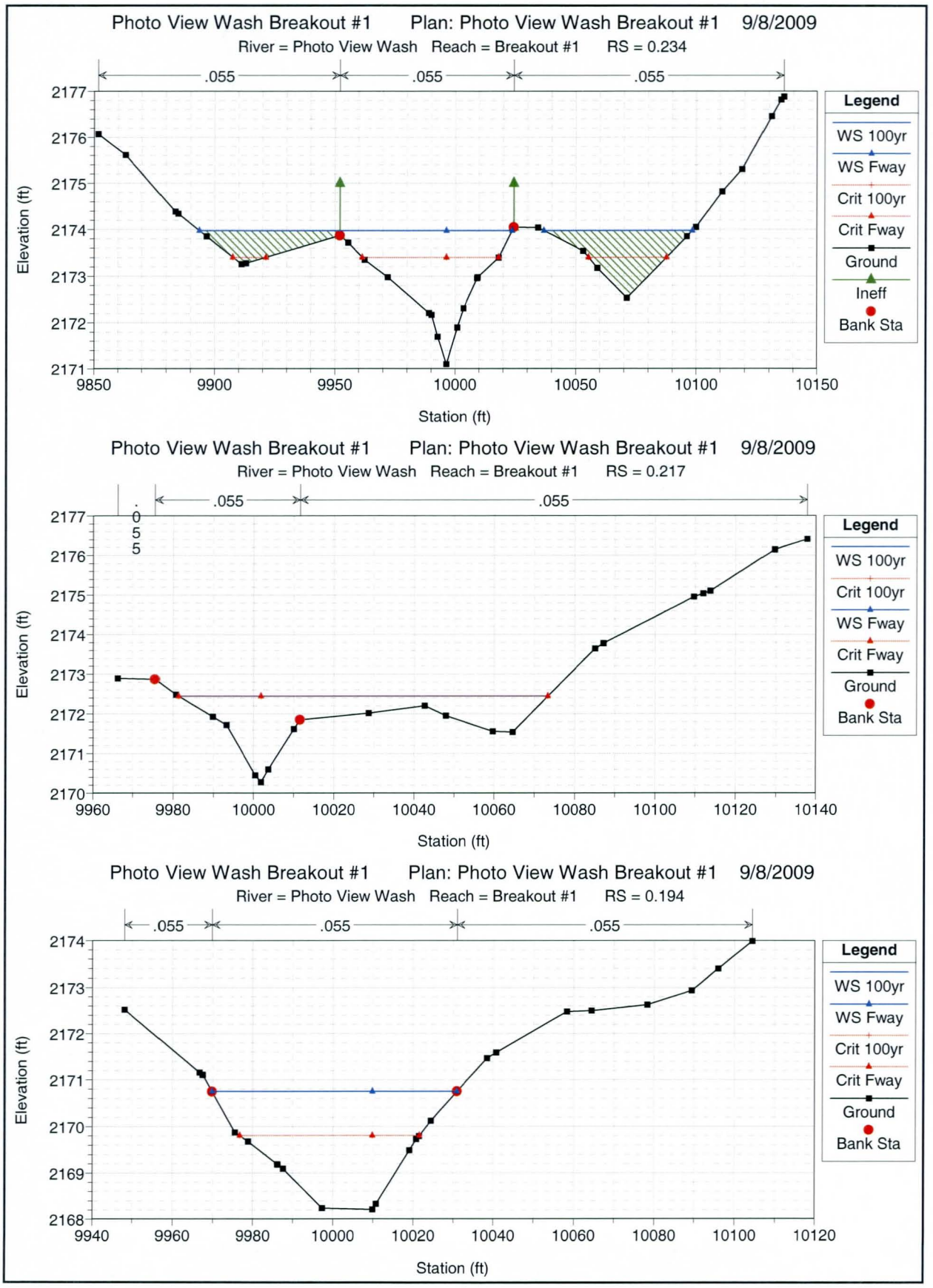


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.234
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.217
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.194
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

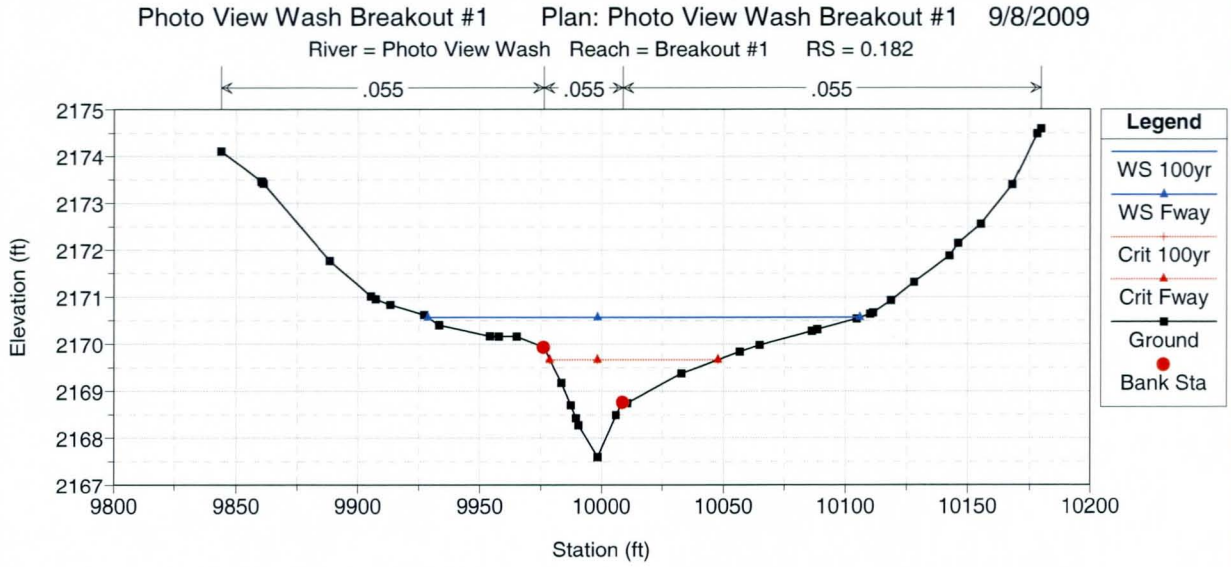


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.182
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

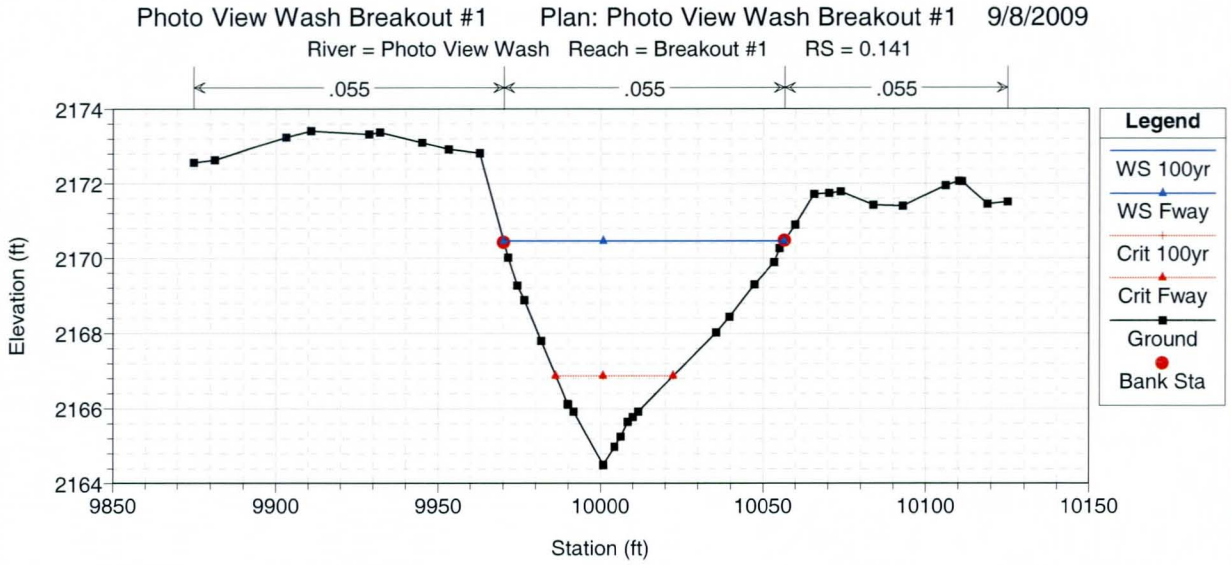


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.141
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

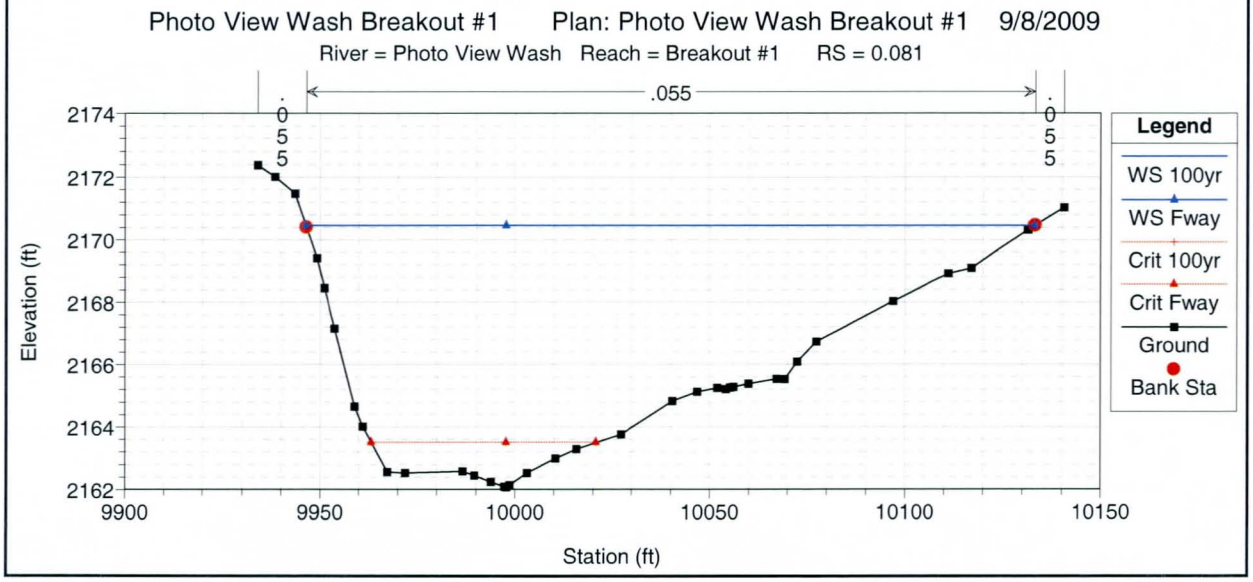


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.081
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

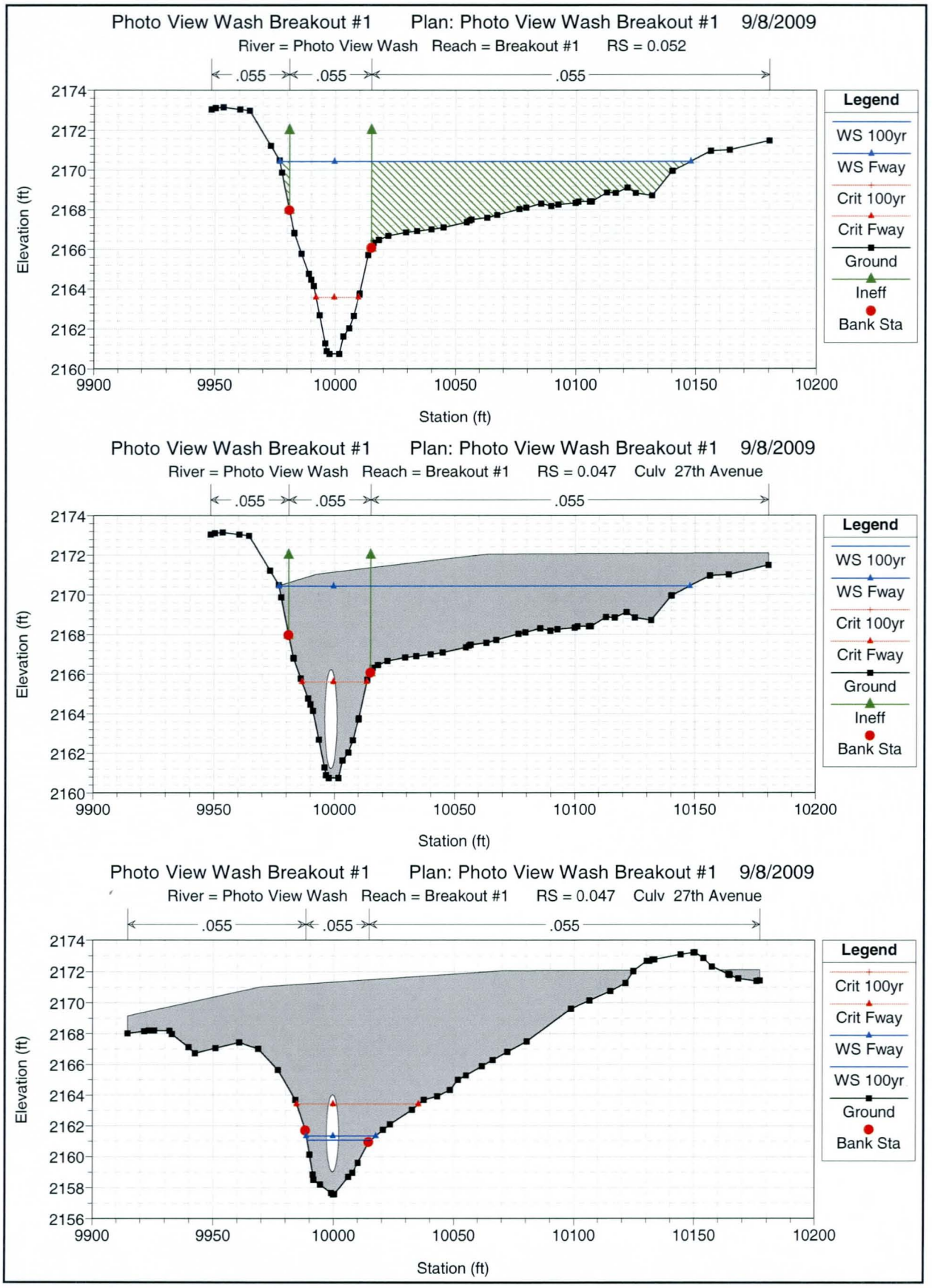


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.052
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.047 Culv 27th Avenue
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.047 Culv 27th Avenue
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
Crit 100yr
Crit Fway
WS Fway
WS 100yr
Ground
Bank Sta

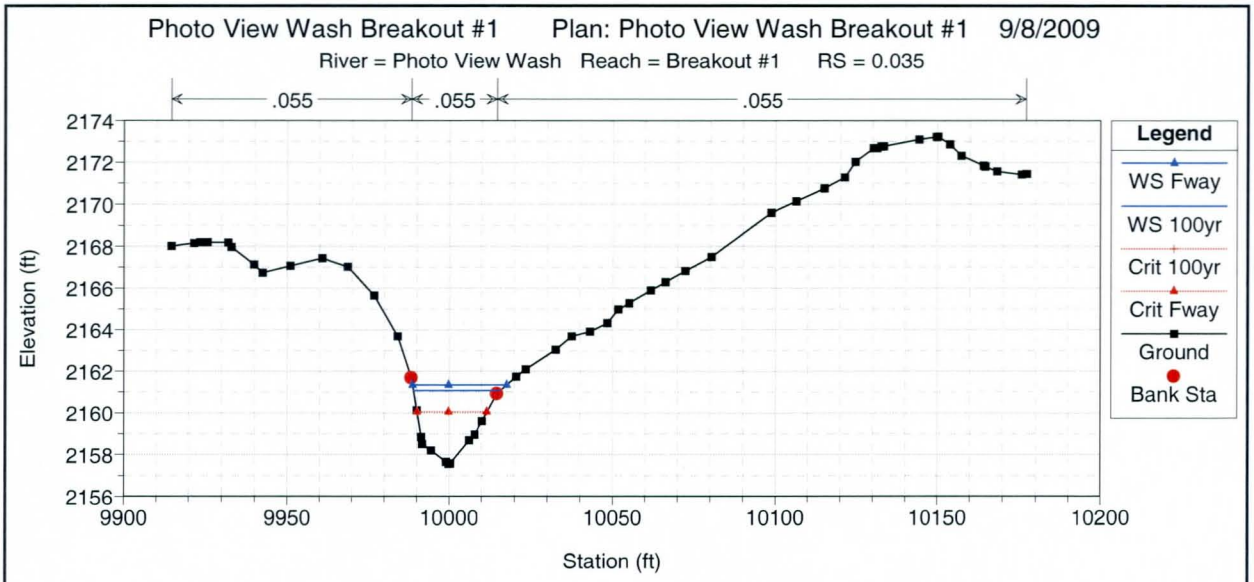


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.035
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta

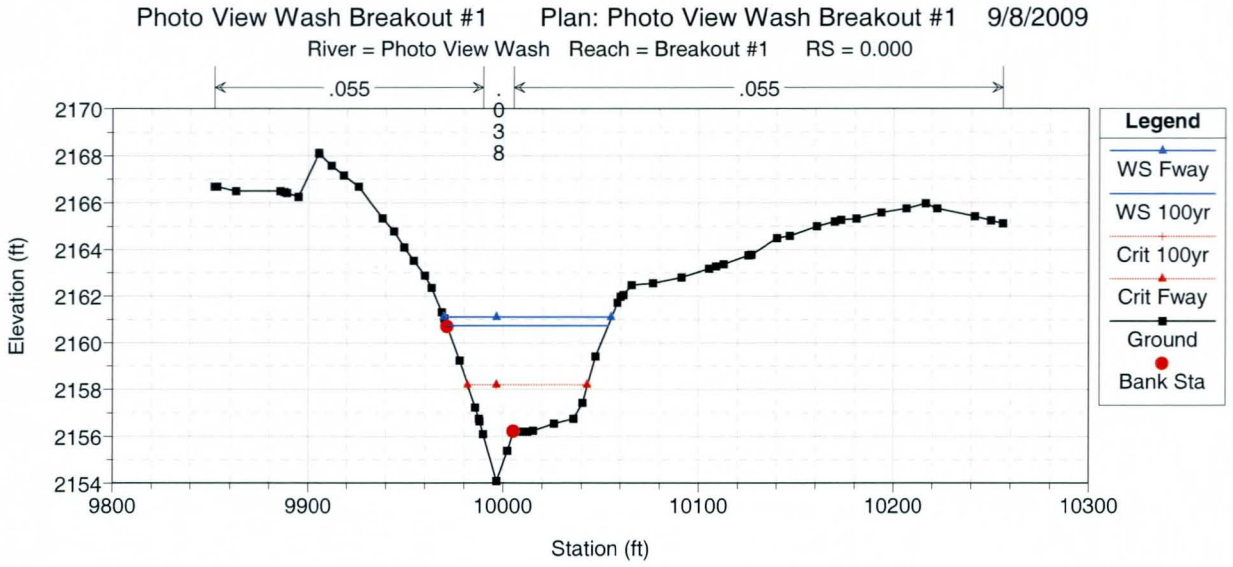


Photo View Wash Breakout #1 Plan: Photo View Wash Breakout #1 9/8/2009
River = Photo View Wash Reach = Breakout #1 RS = 0.000
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta

CROSS SECTION PLOTS FOR

PHOTO VIEW WASH BREAKOUT #2

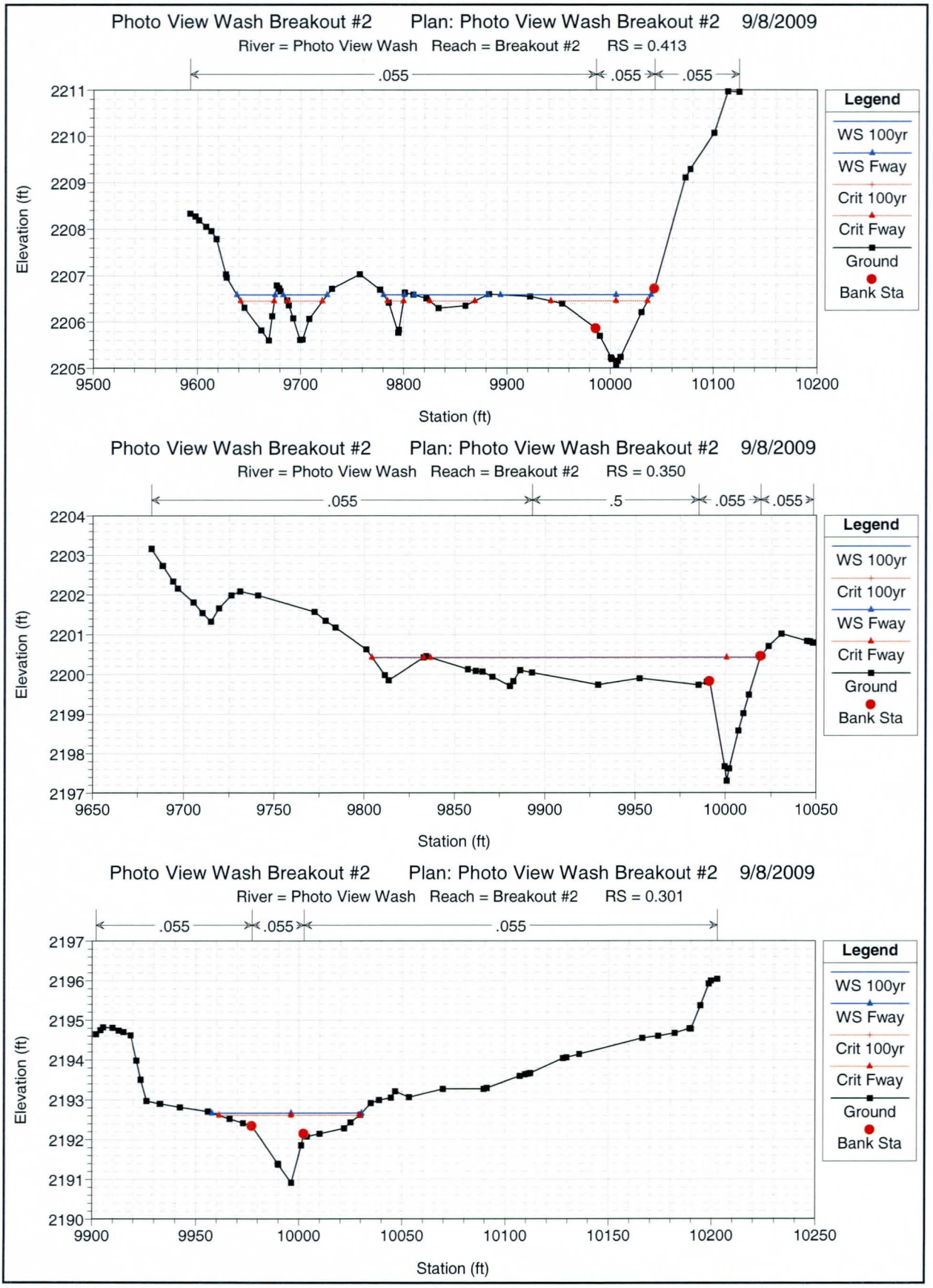


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.413
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.350
.055
.5
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.301
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

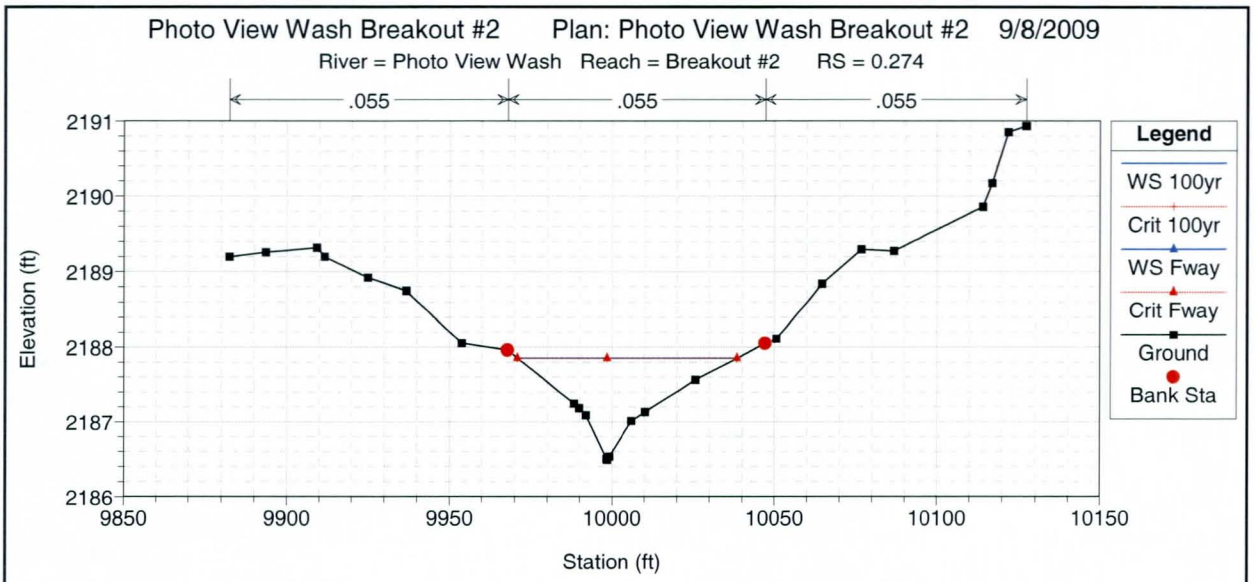


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.274
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

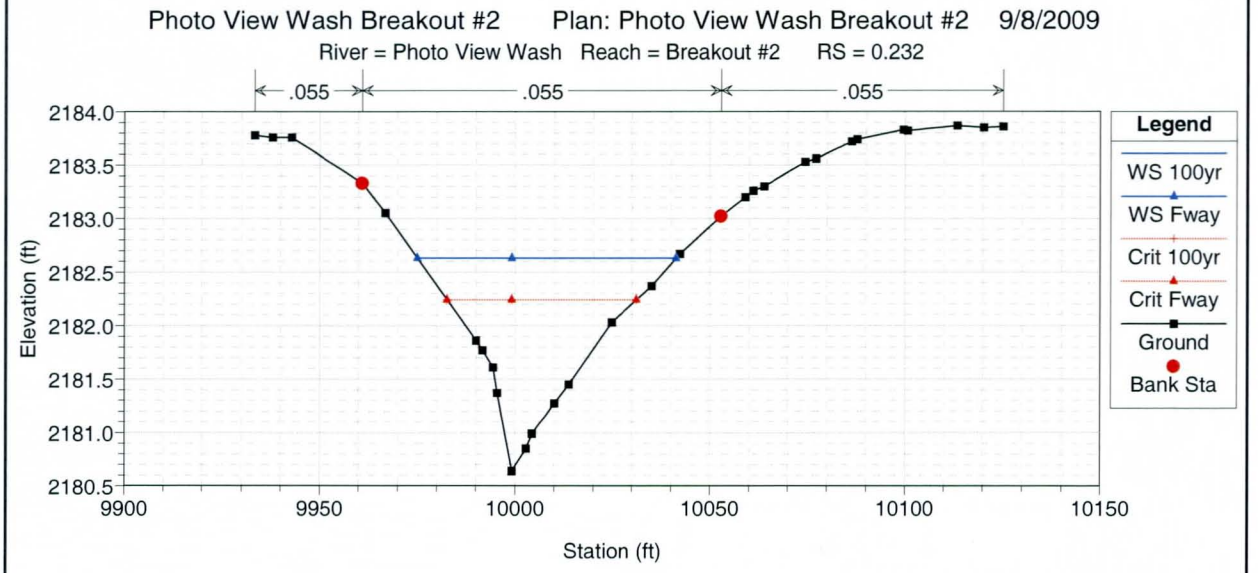


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.232
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

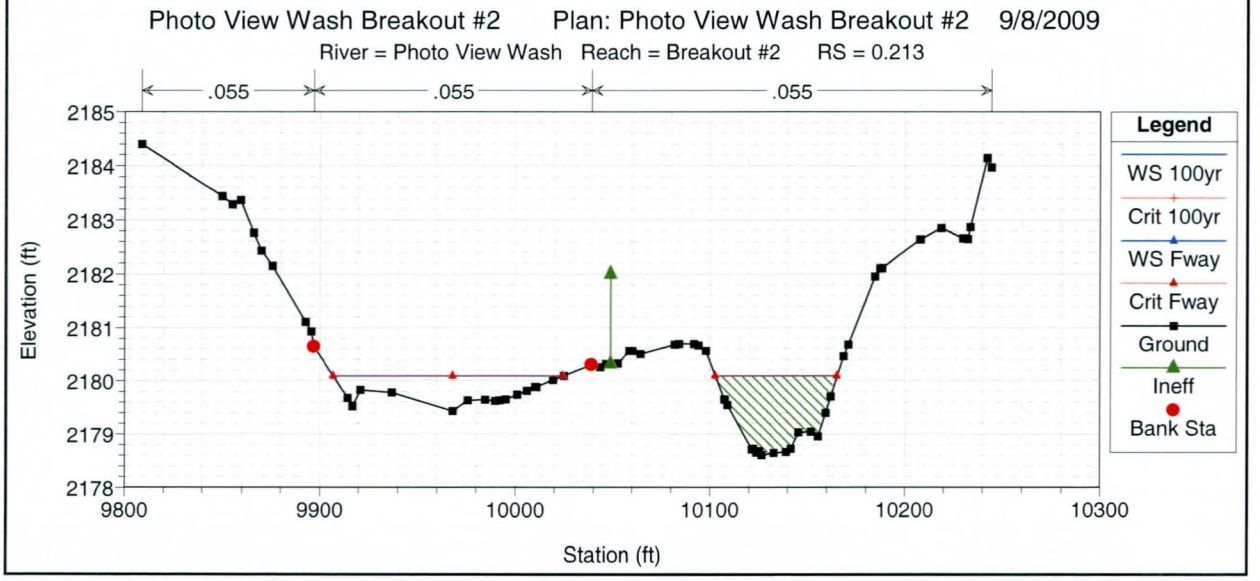


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.213
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Ineff
Bank Sta

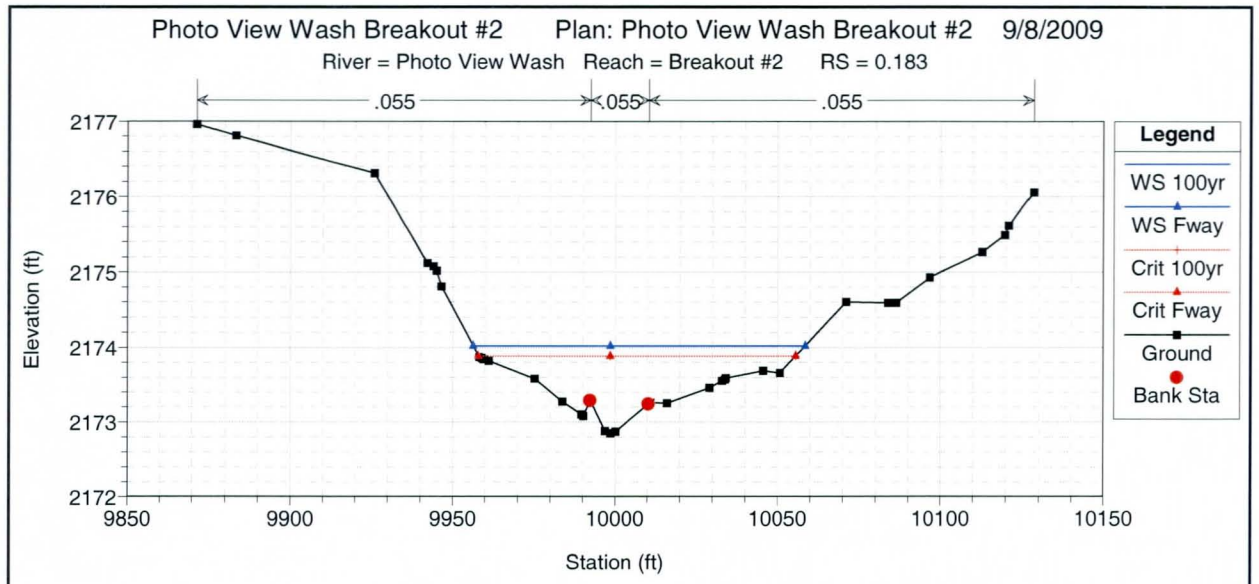


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.183
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

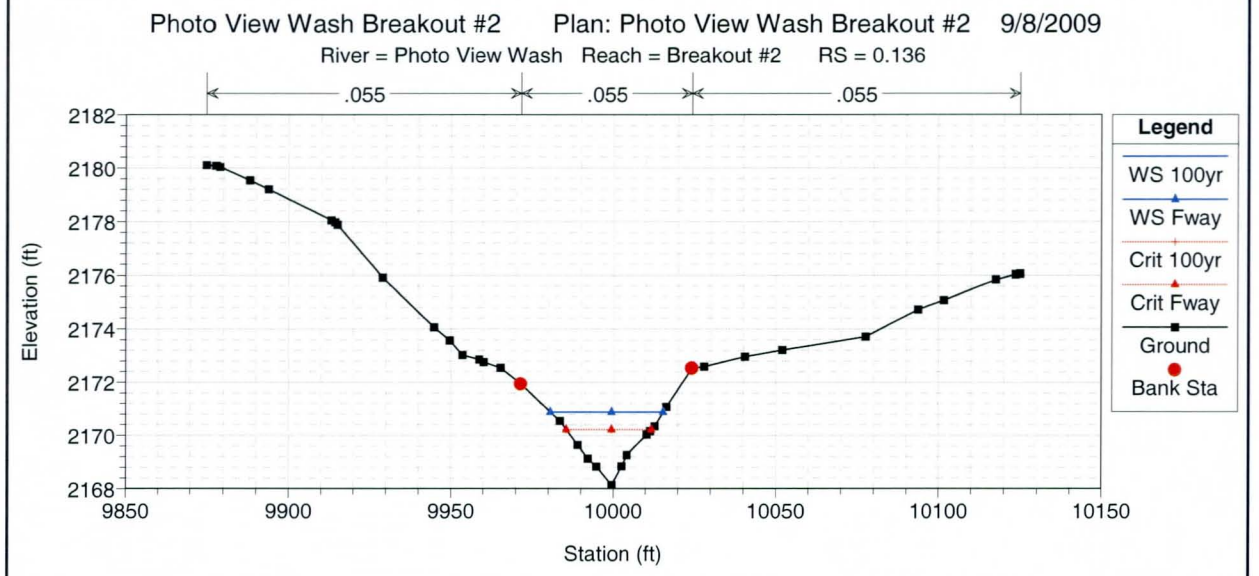


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.136
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

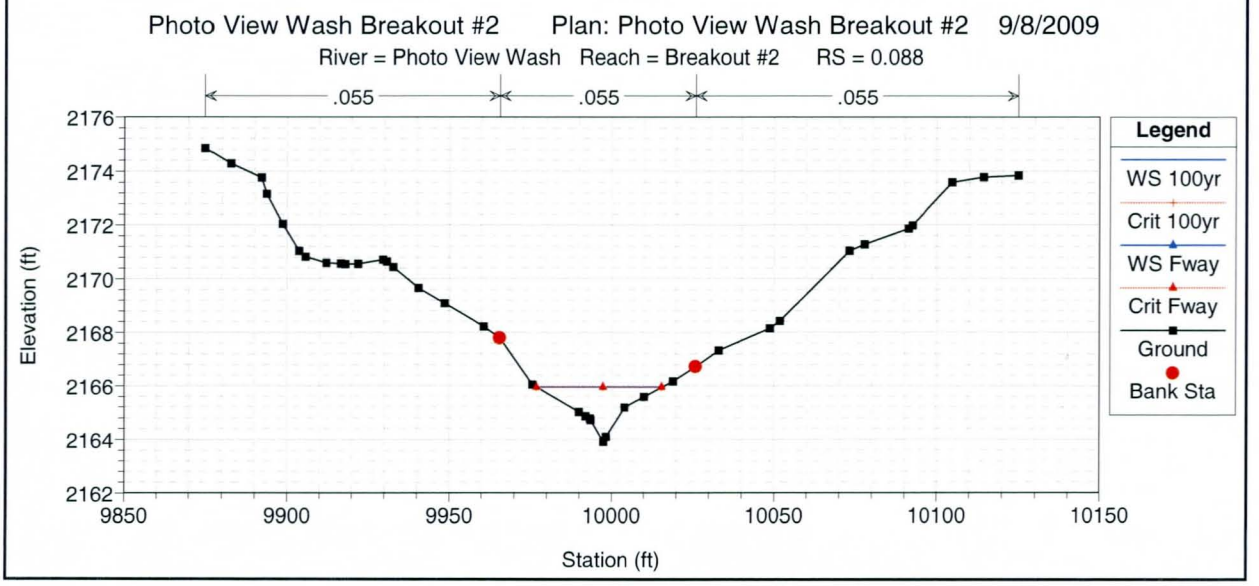


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.088
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

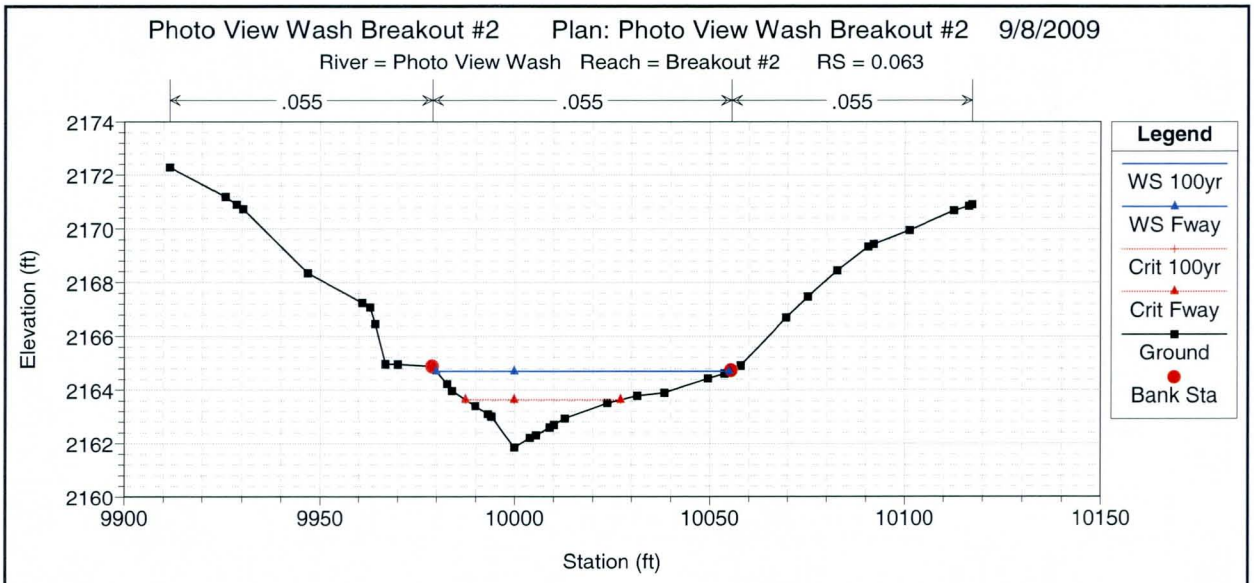


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.063
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

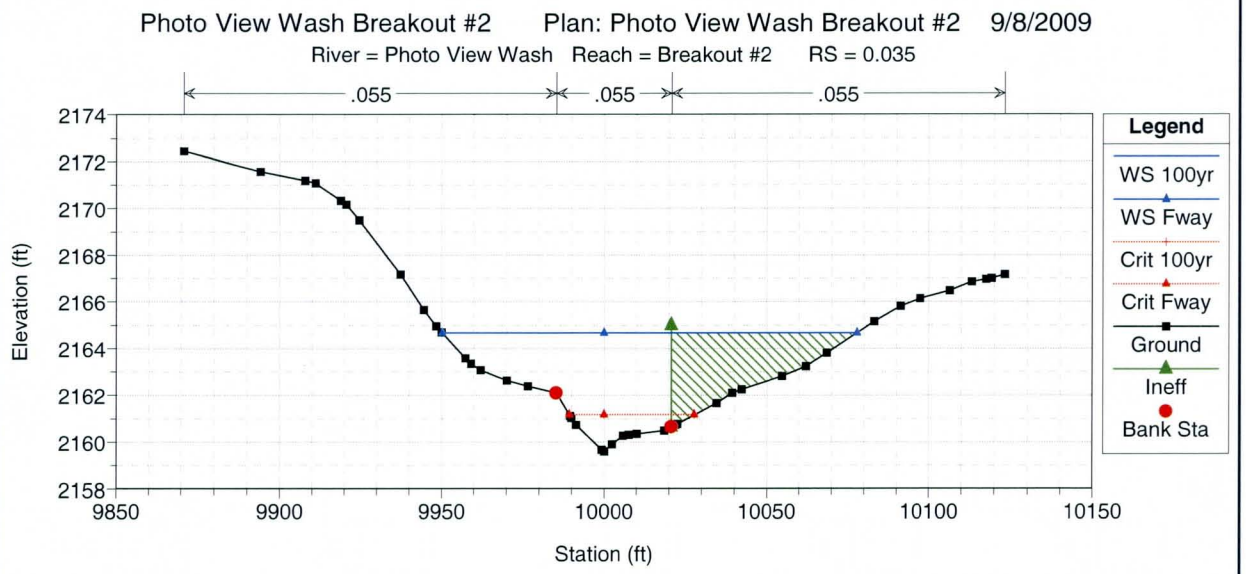


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.035
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta

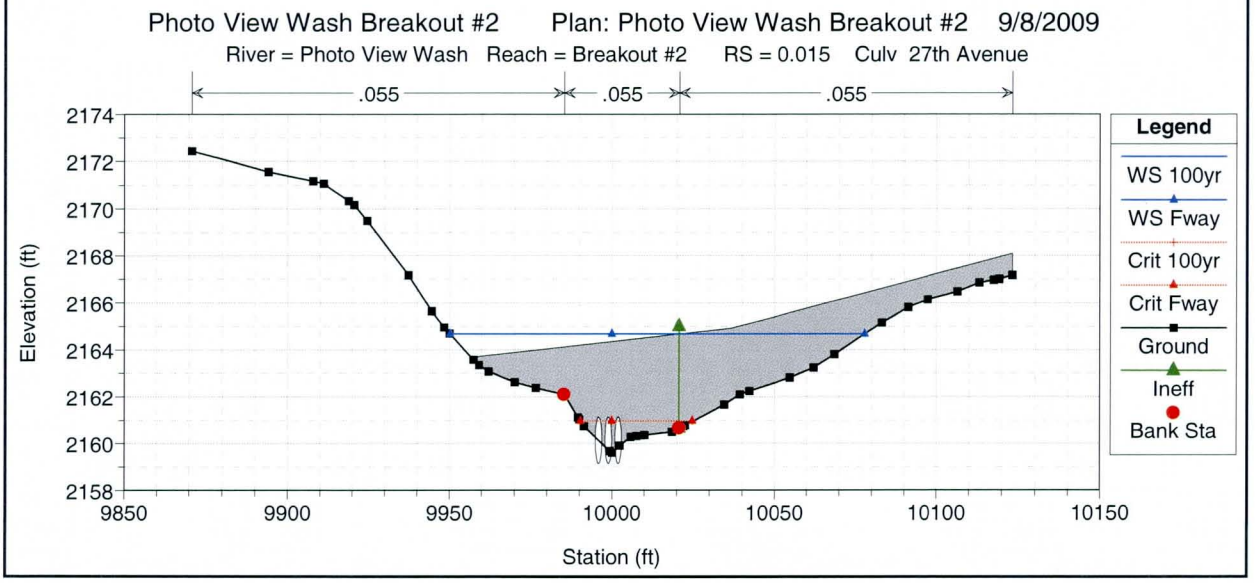


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.015 Culv 27th Avenue
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta

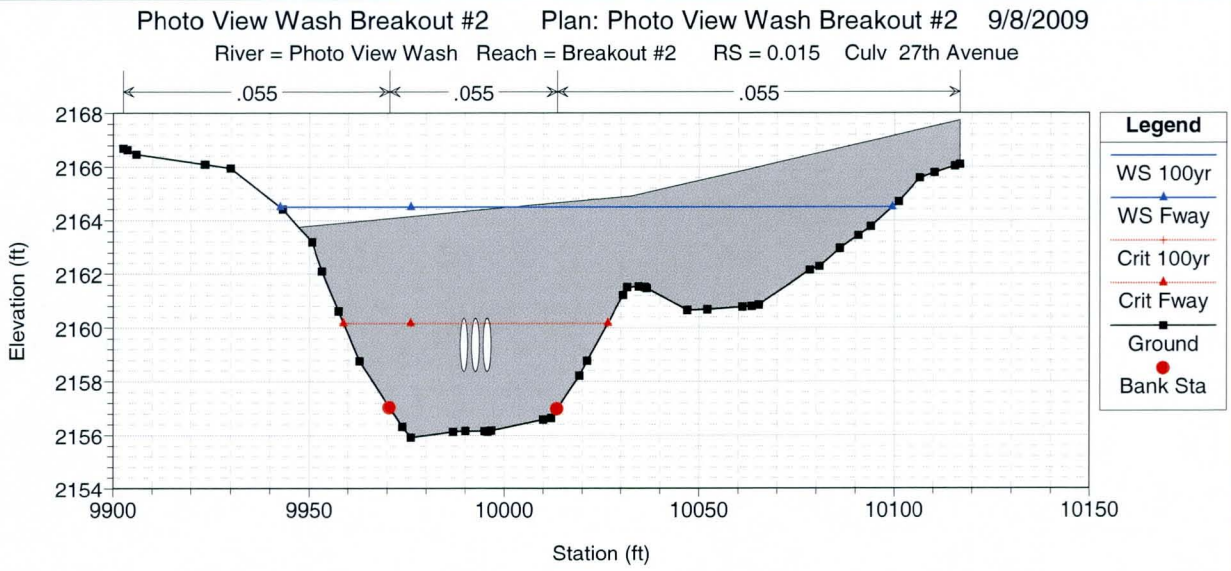


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.015 Culv 27th Avenue
.055
.055
.055
Elevation (ft)
2168
2166
2164
2162
2160
2158
2156
2154
9900
9950
10000
10050
10100
10150
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

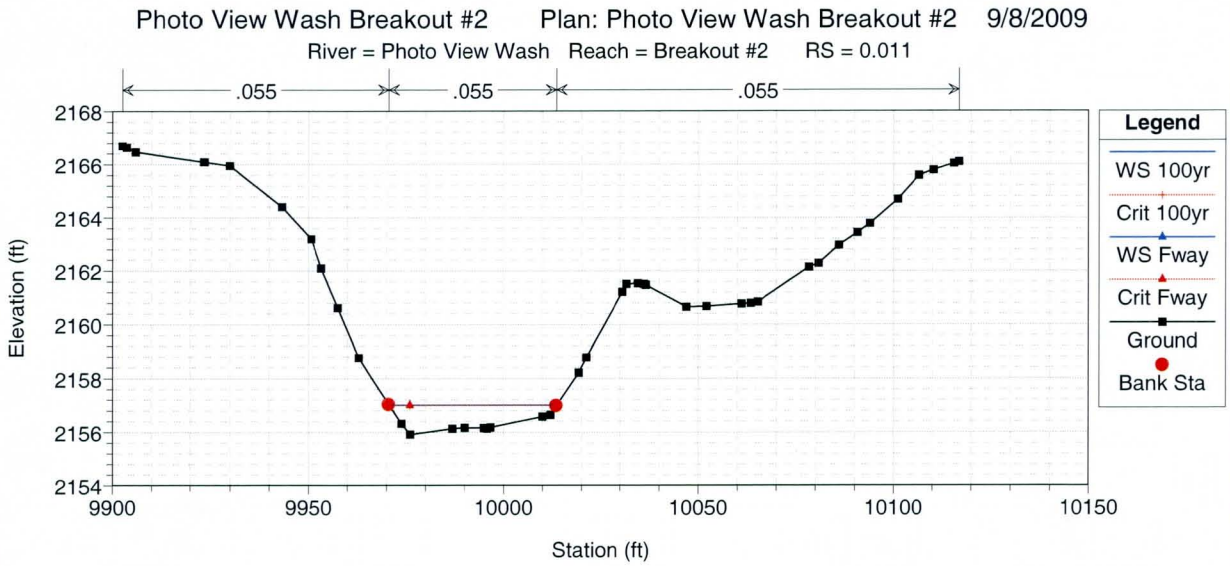


Photo View Wash Breakout #2 Plan: Photo View Wash Breakout #2 9/8/2009
River = Photo View Wash Reach = Breakout #2 RS = 0.011
.055
.055
.055
Elevation (ft)
2168
2166
2164
2162
2160
2158
2156
2154
9900
9950
10000
10050
10100
10150
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

CROSS SECTION PLOTS FOR

PHOTO VIEW WASH BREAKOUT #3

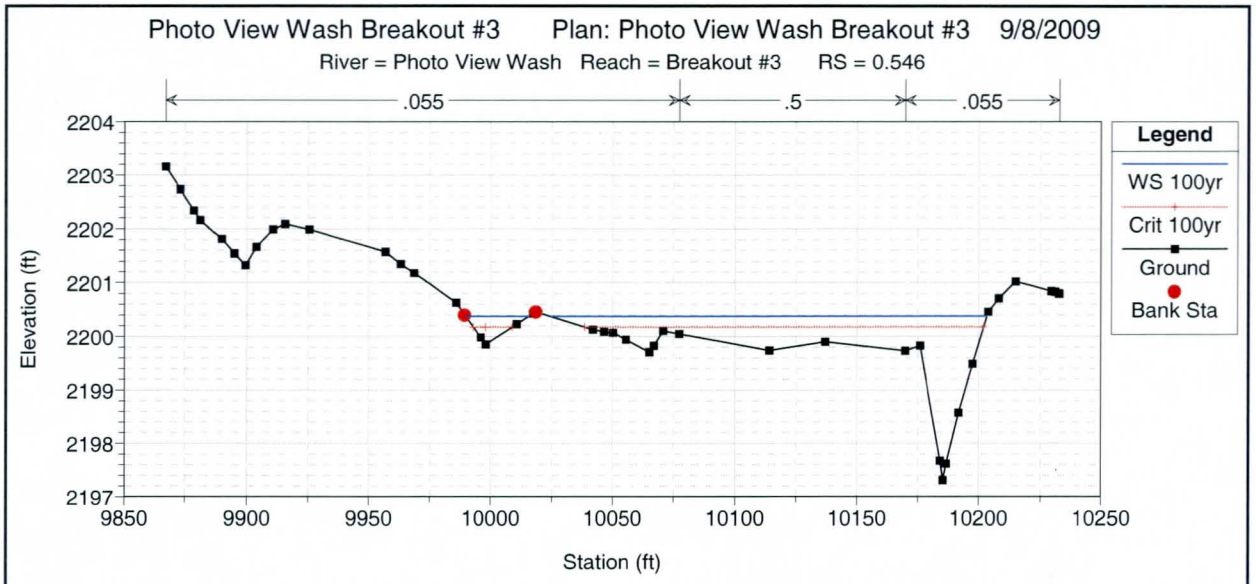


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.546
.055
.5
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

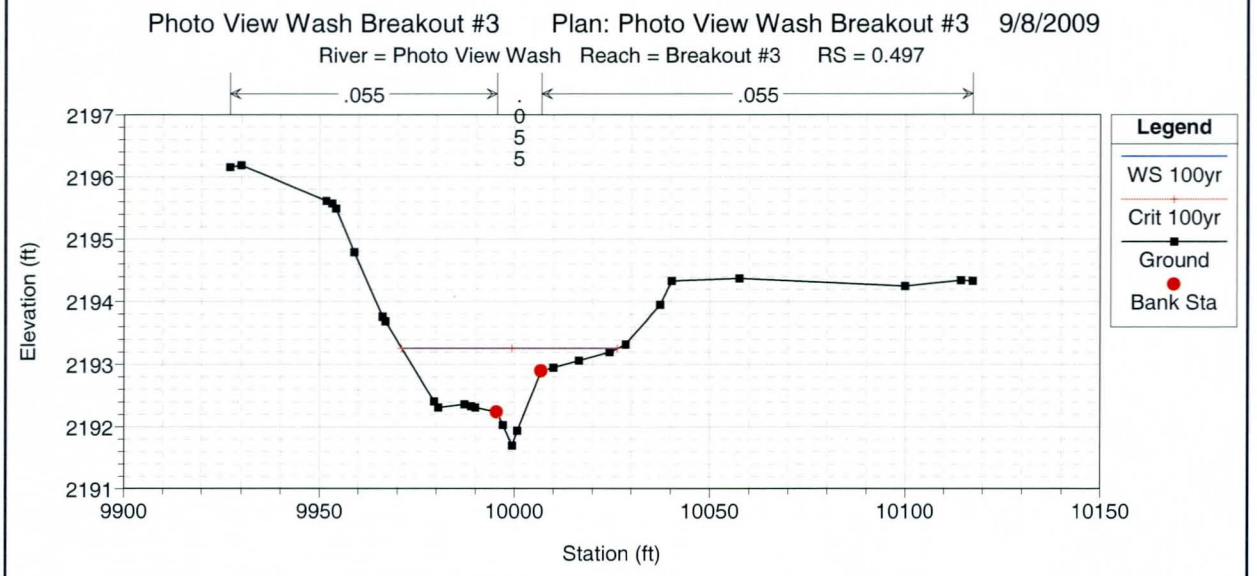


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.497
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

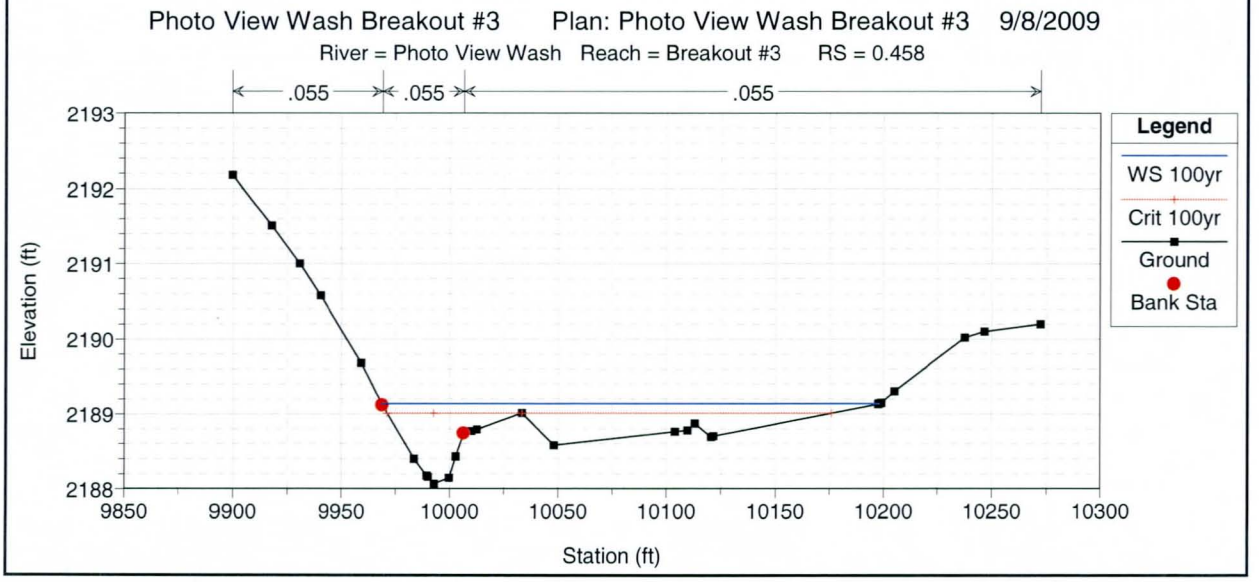


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.458
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

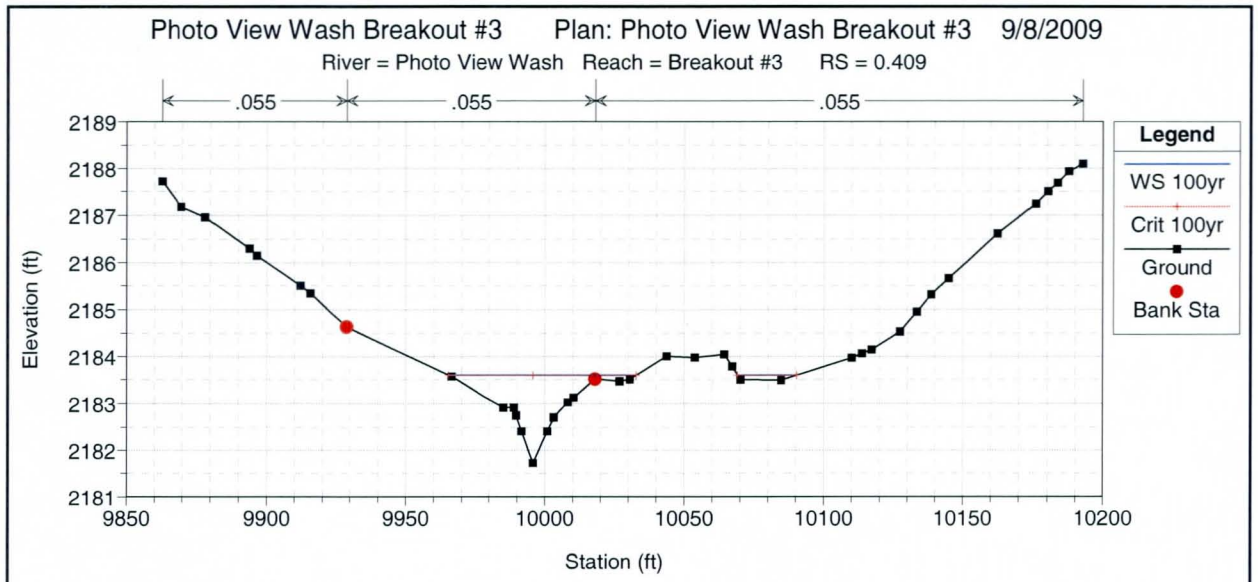


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.409
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

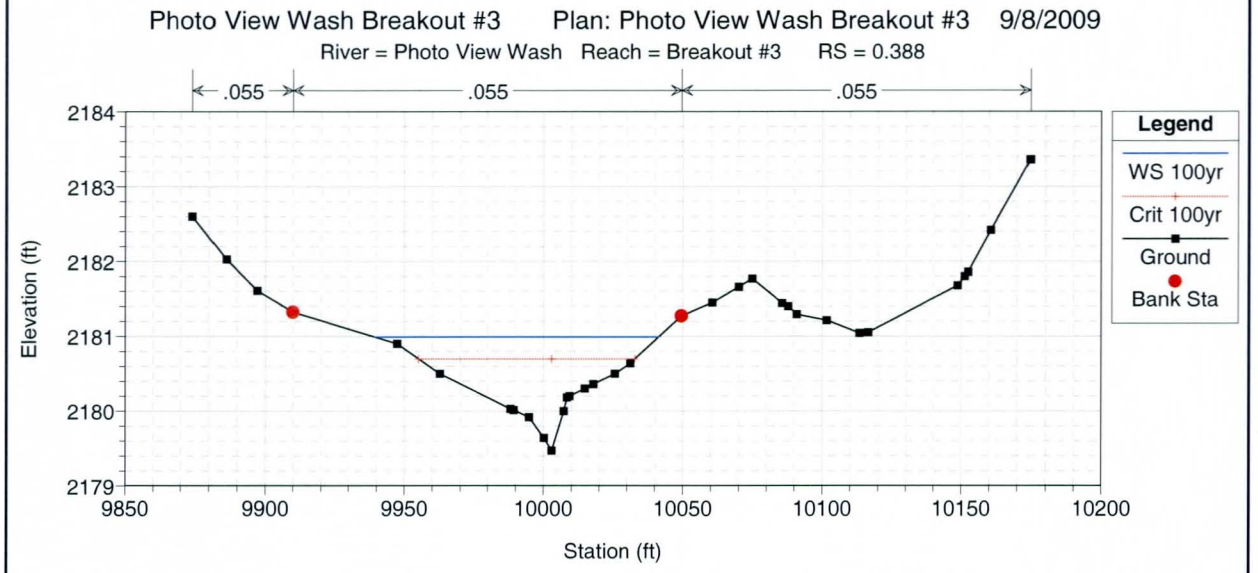


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.388
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

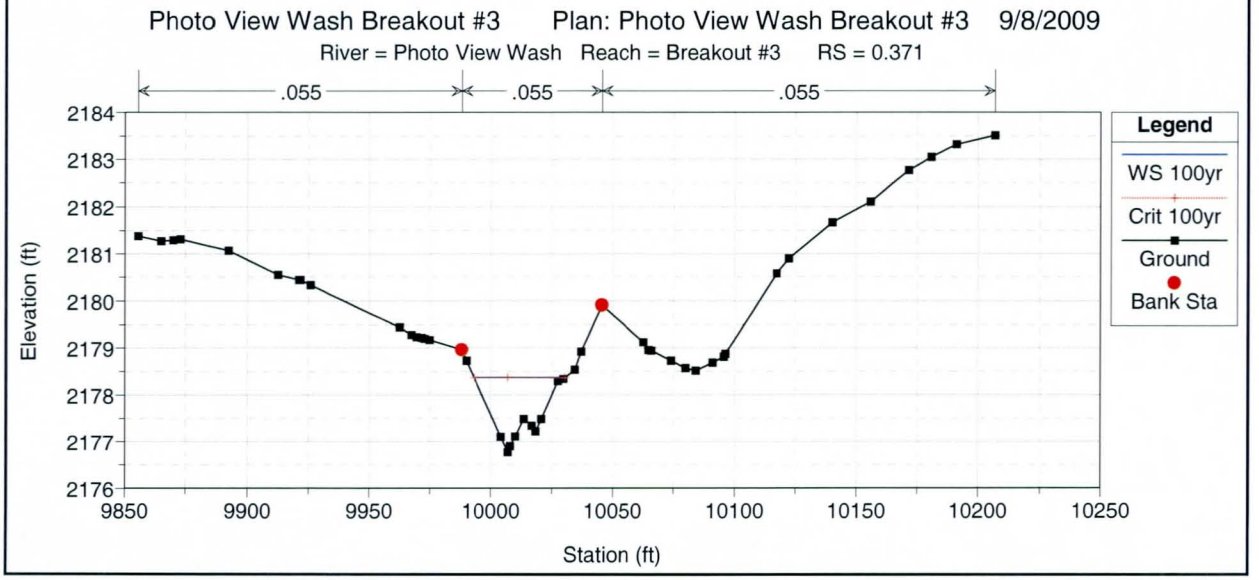


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.371
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

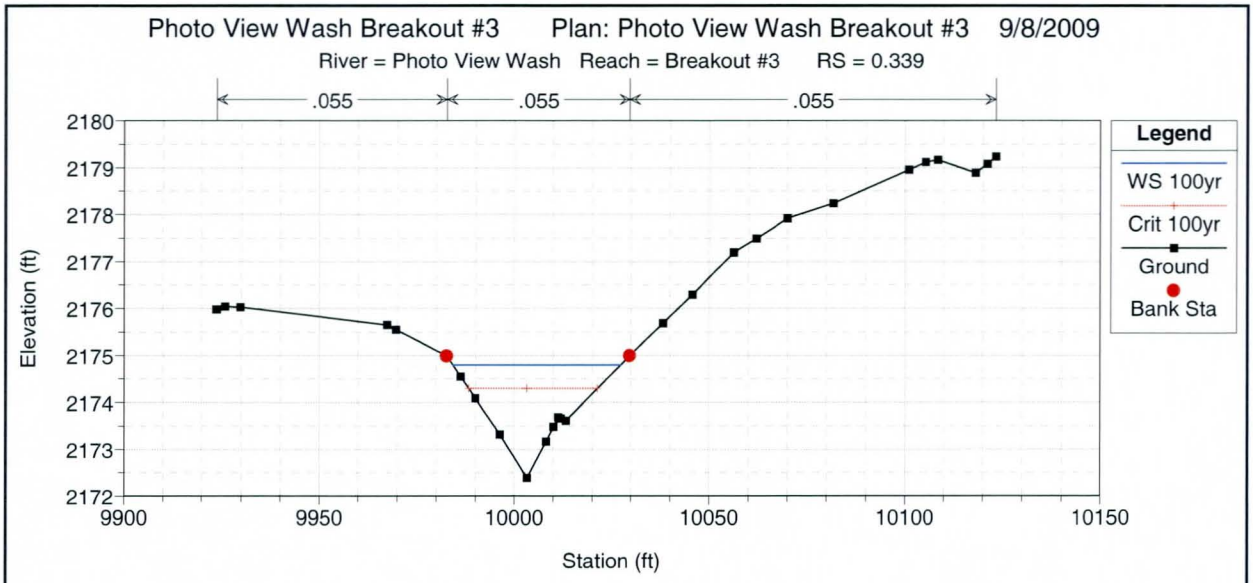


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.339
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

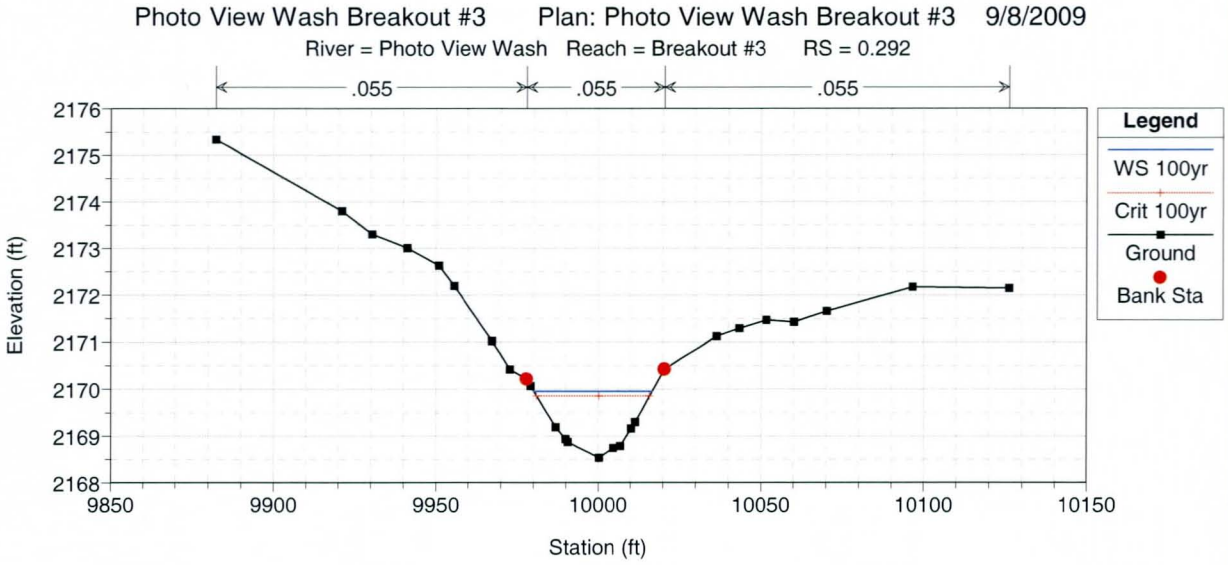


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.292
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

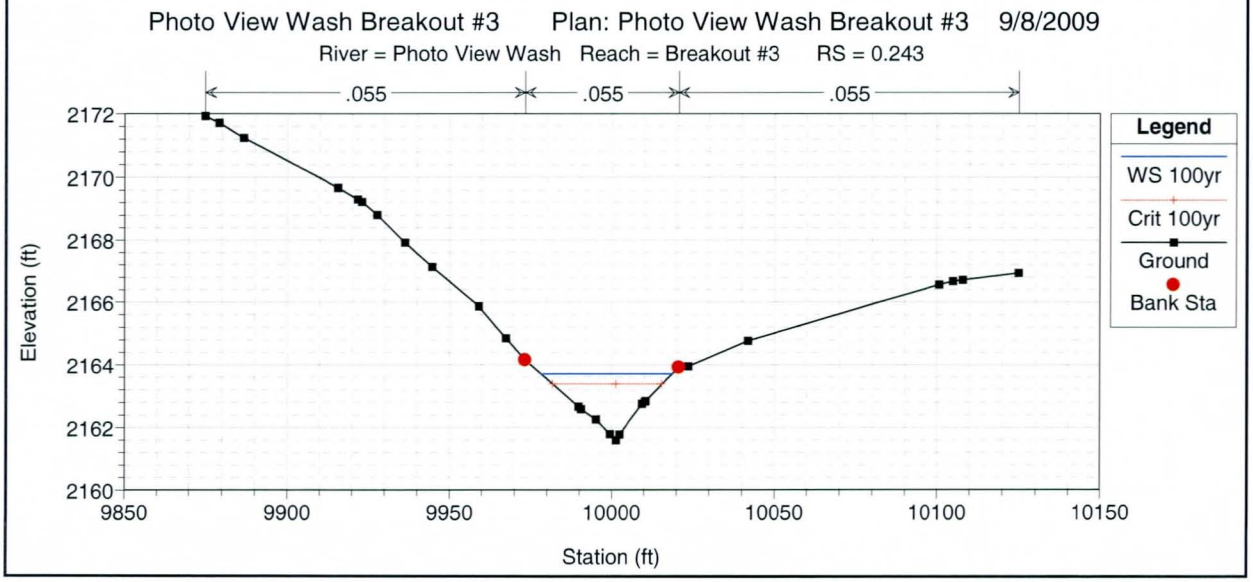


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.243
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

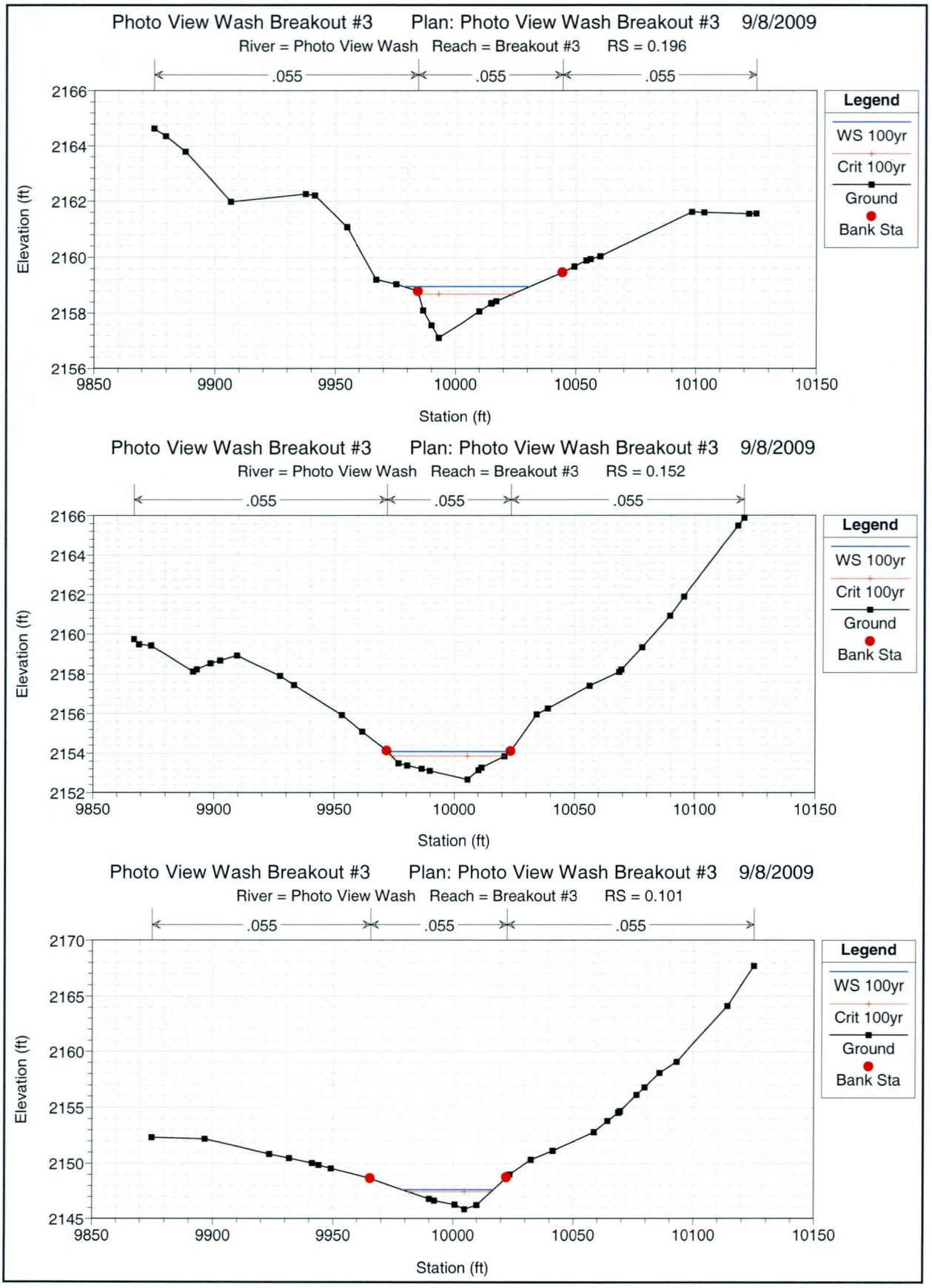


Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.196
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta
Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.152
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta
Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.101
.055
.055
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

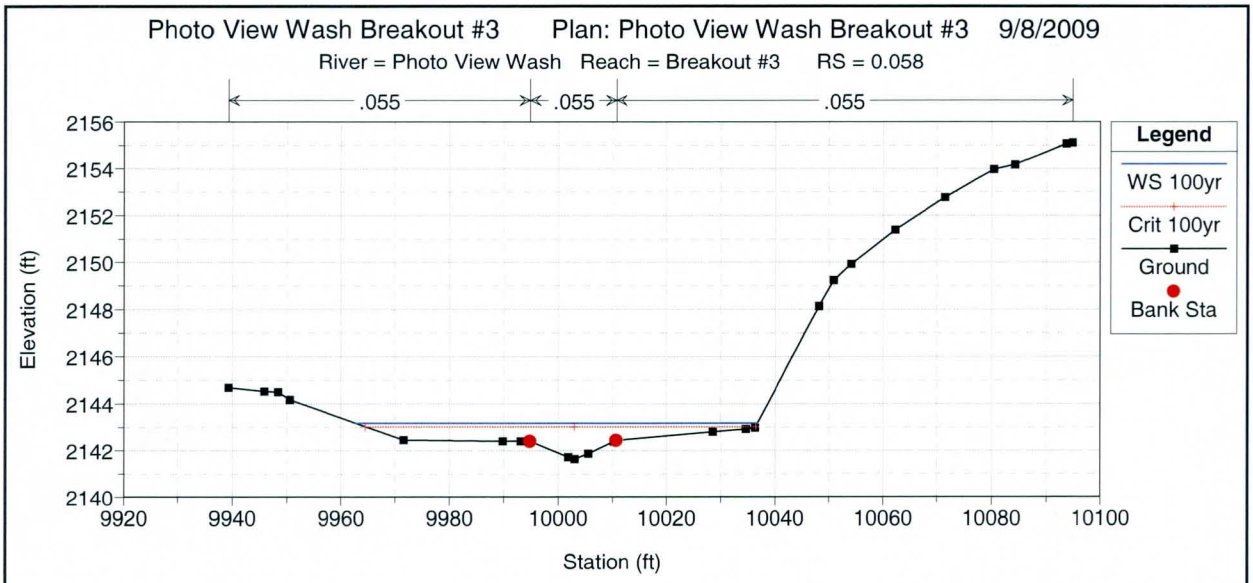
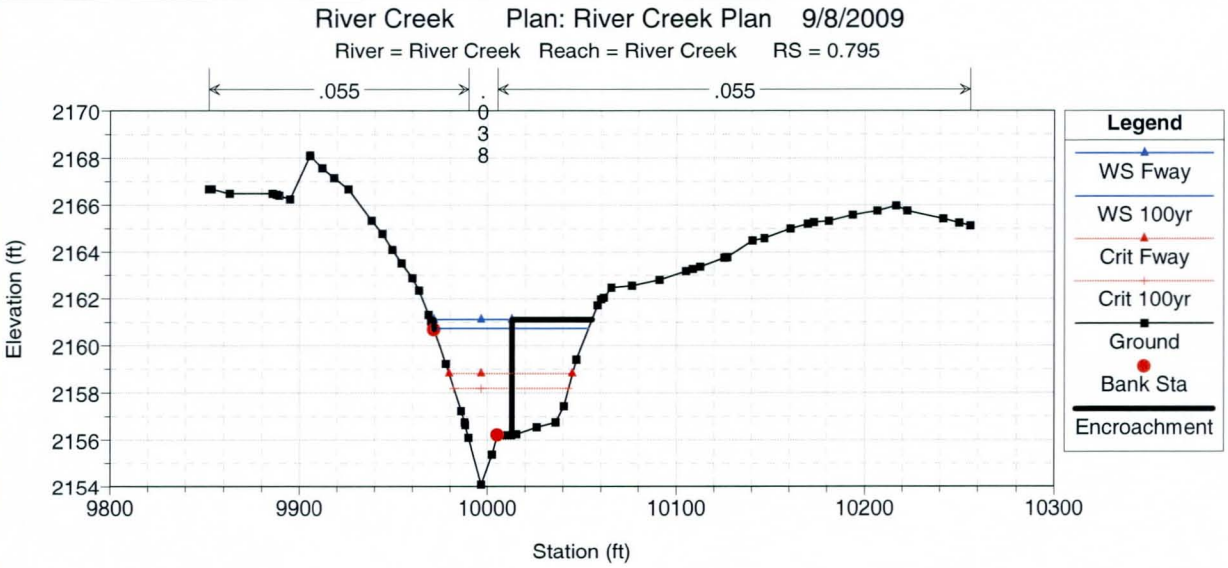
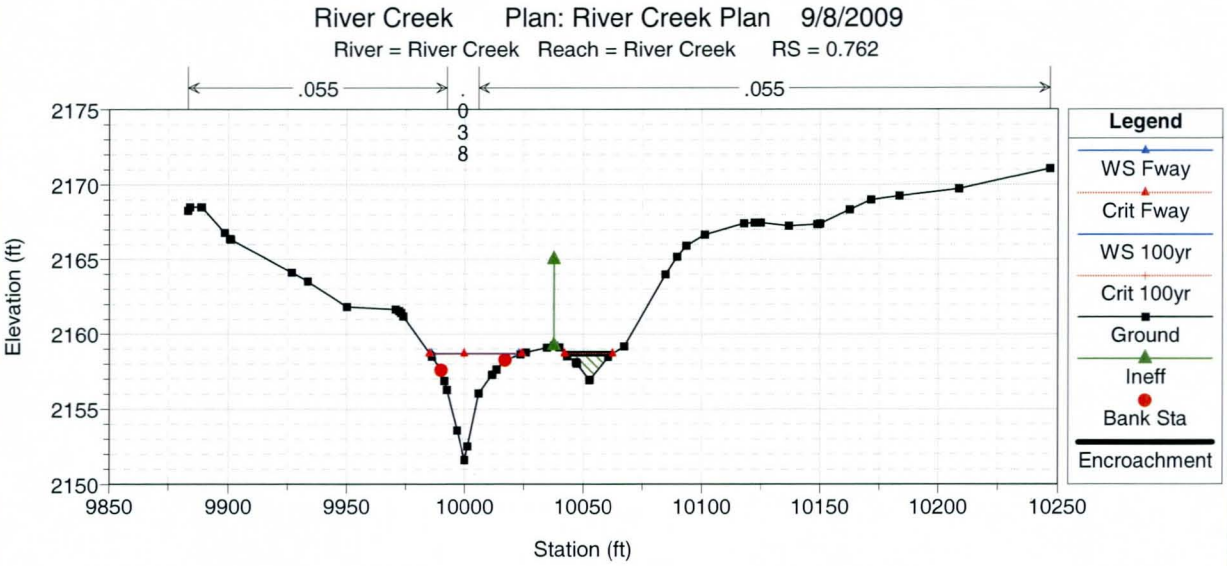


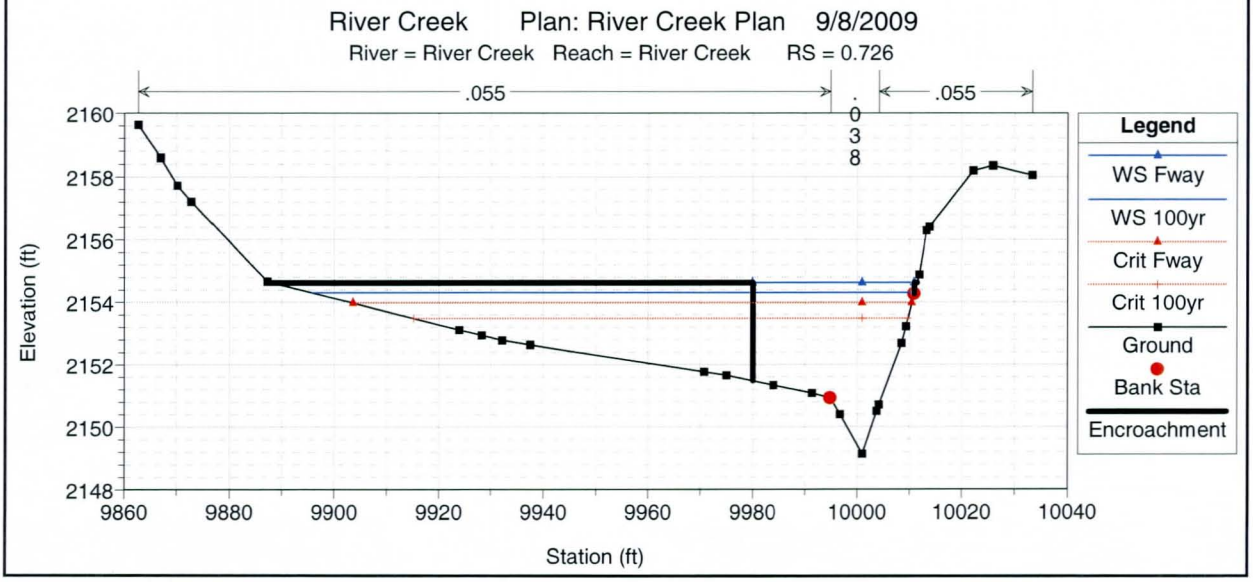
Photo View Wash Breakout #3 Plan: Photo View Wash Breakout #3 9/8/2009
River = Photo View Wash Reach = Breakout #3 RS = 0.058
.055
.055
.055
Elevation (ft)
2156
2154
2152
2150
2148
2146
2144
2142
2140
9920
9940
9960
9980
10000
10020
10040
10060
10080
10100
Station (ft)
Legend
WS 100yr
Crit 100yr
Ground
Bank Sta

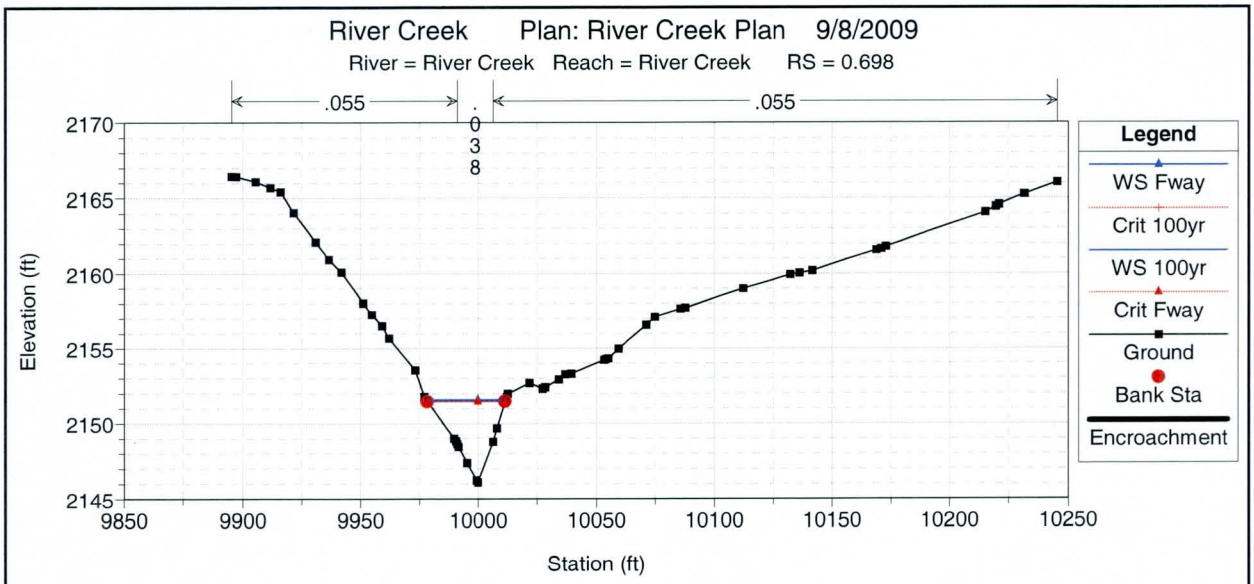
CROSS SECTION PLOTS FOR

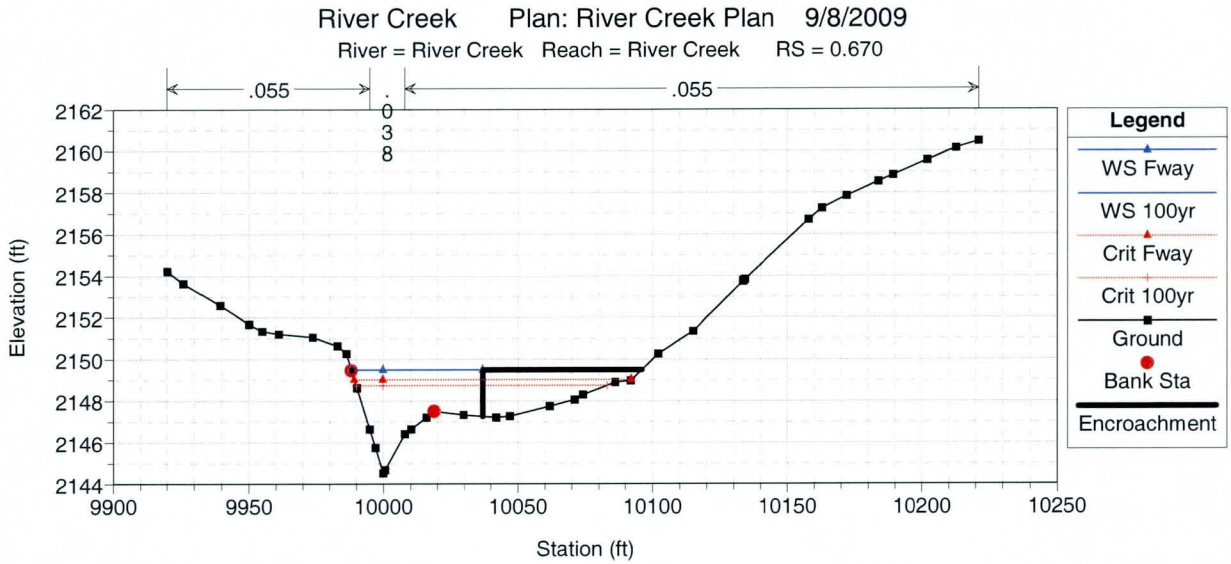
RIVER CREEK

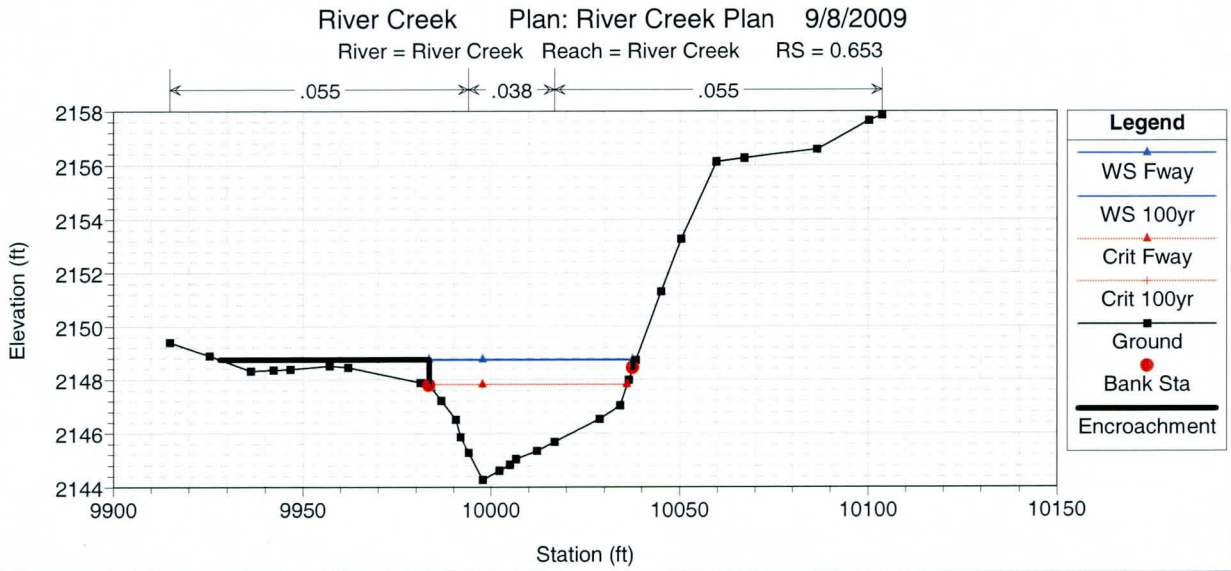

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.795
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

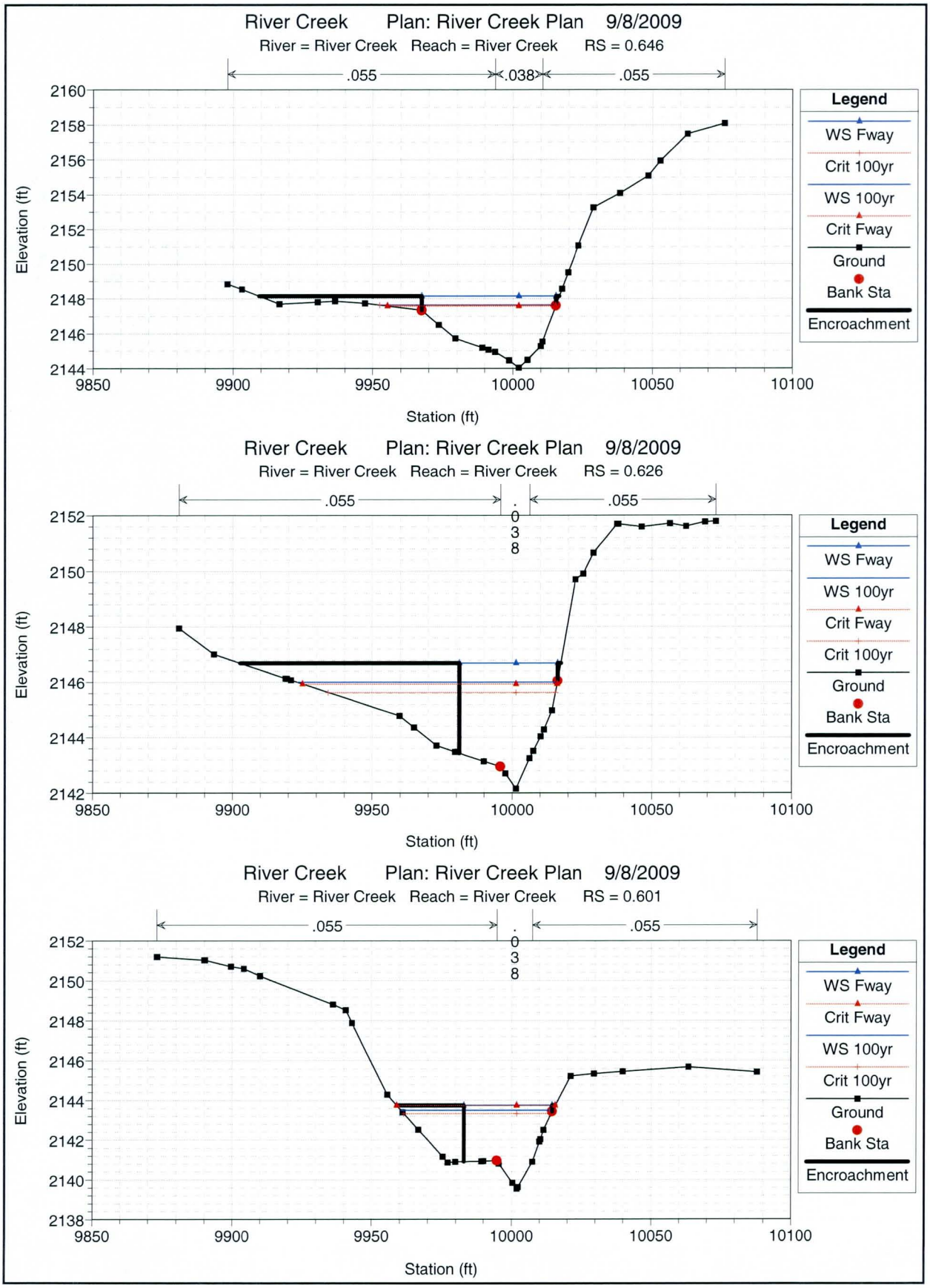

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.762
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

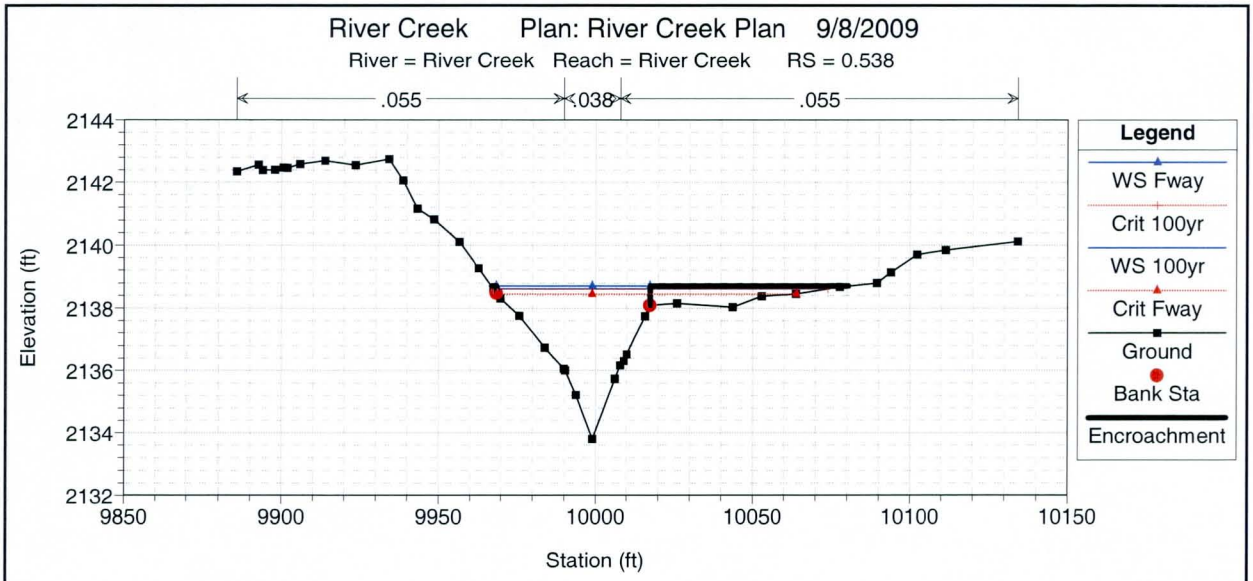

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.726
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

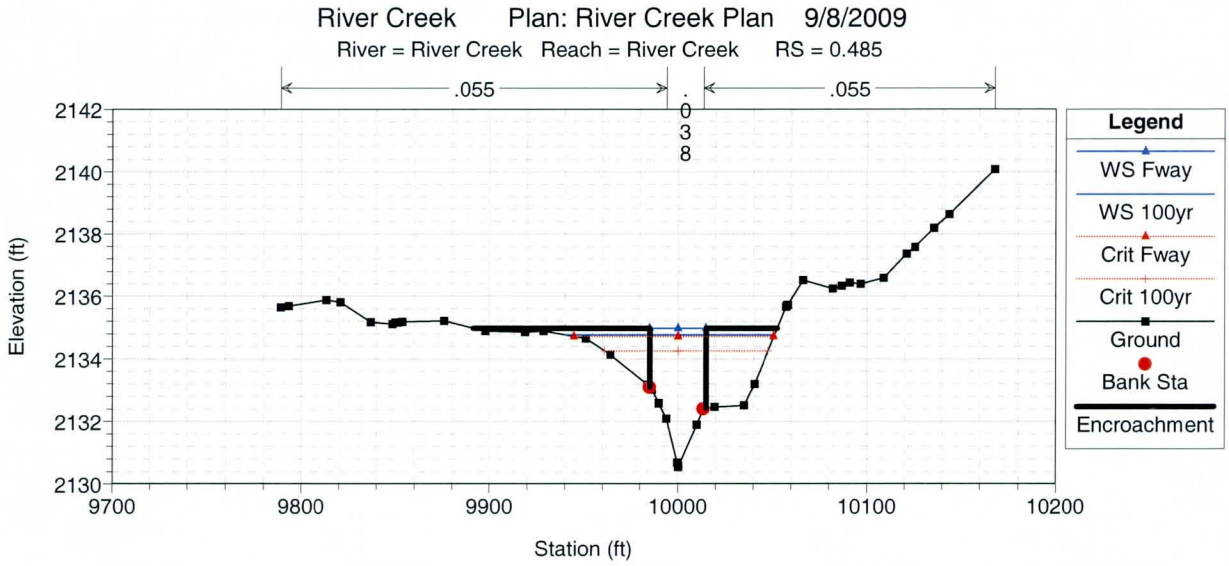

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.698
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

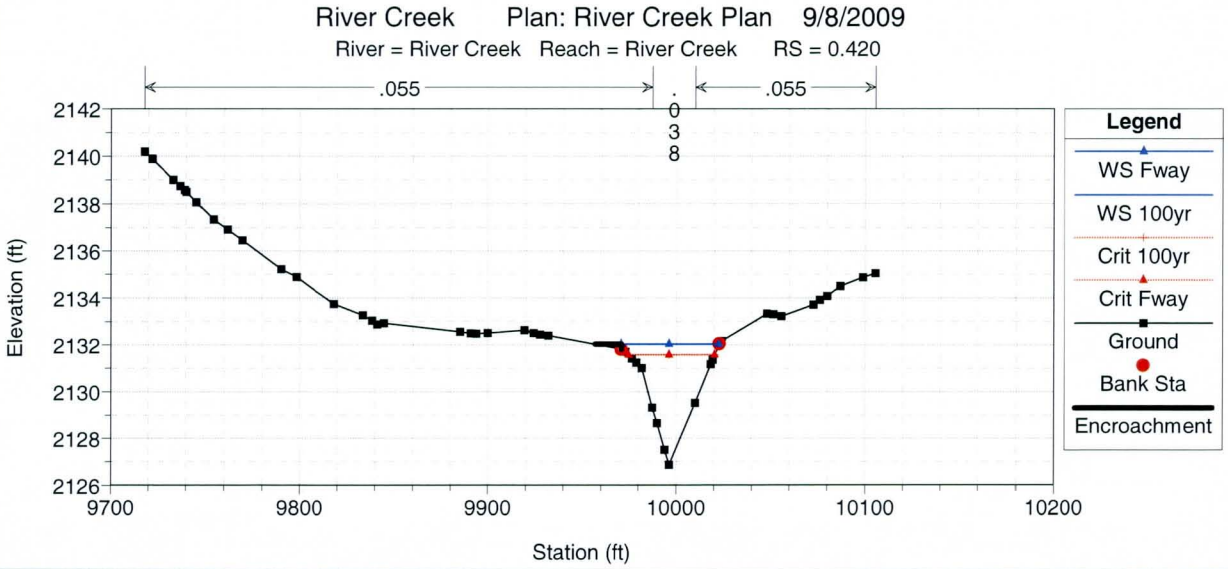

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.670
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

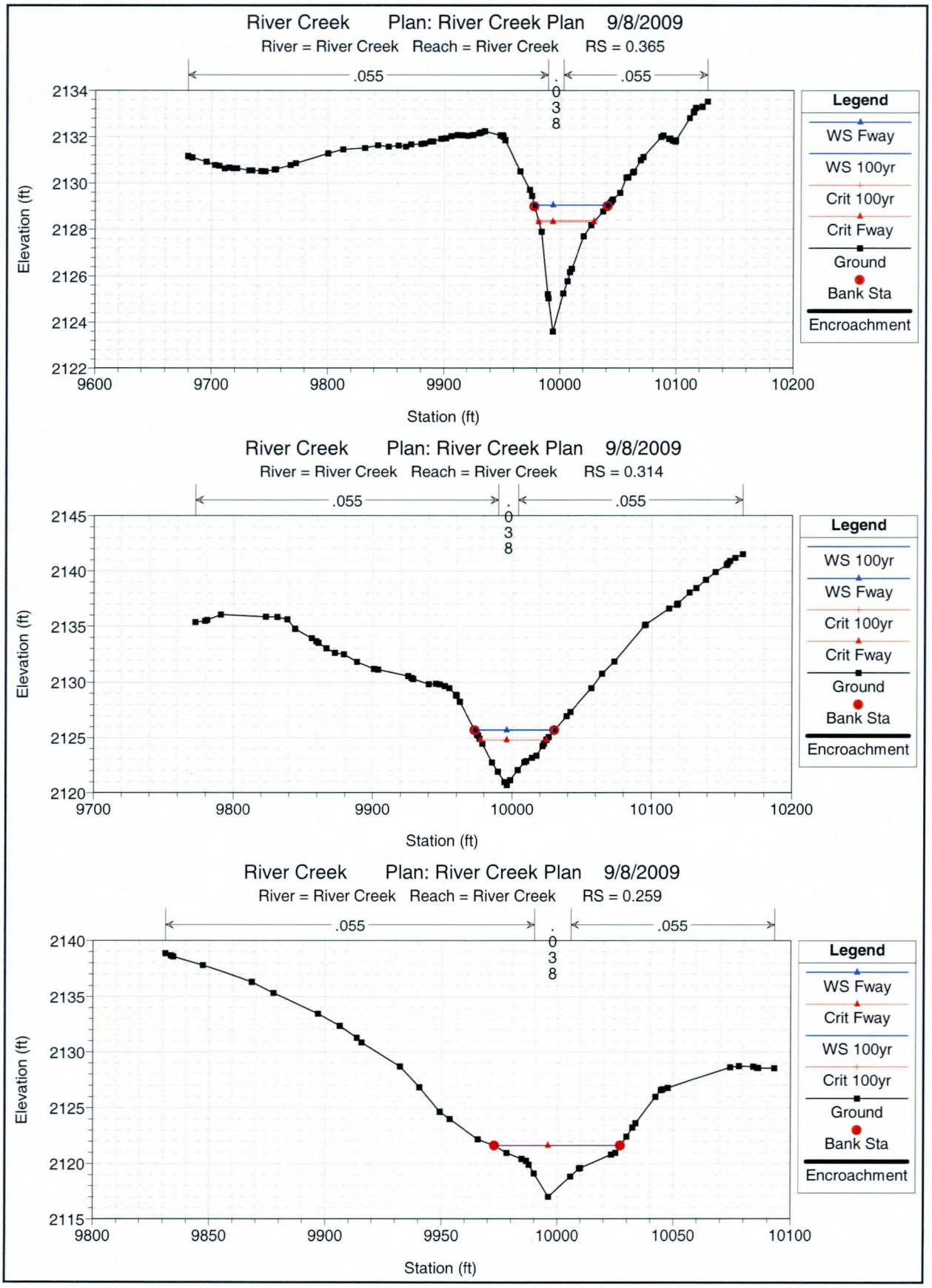

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.653
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

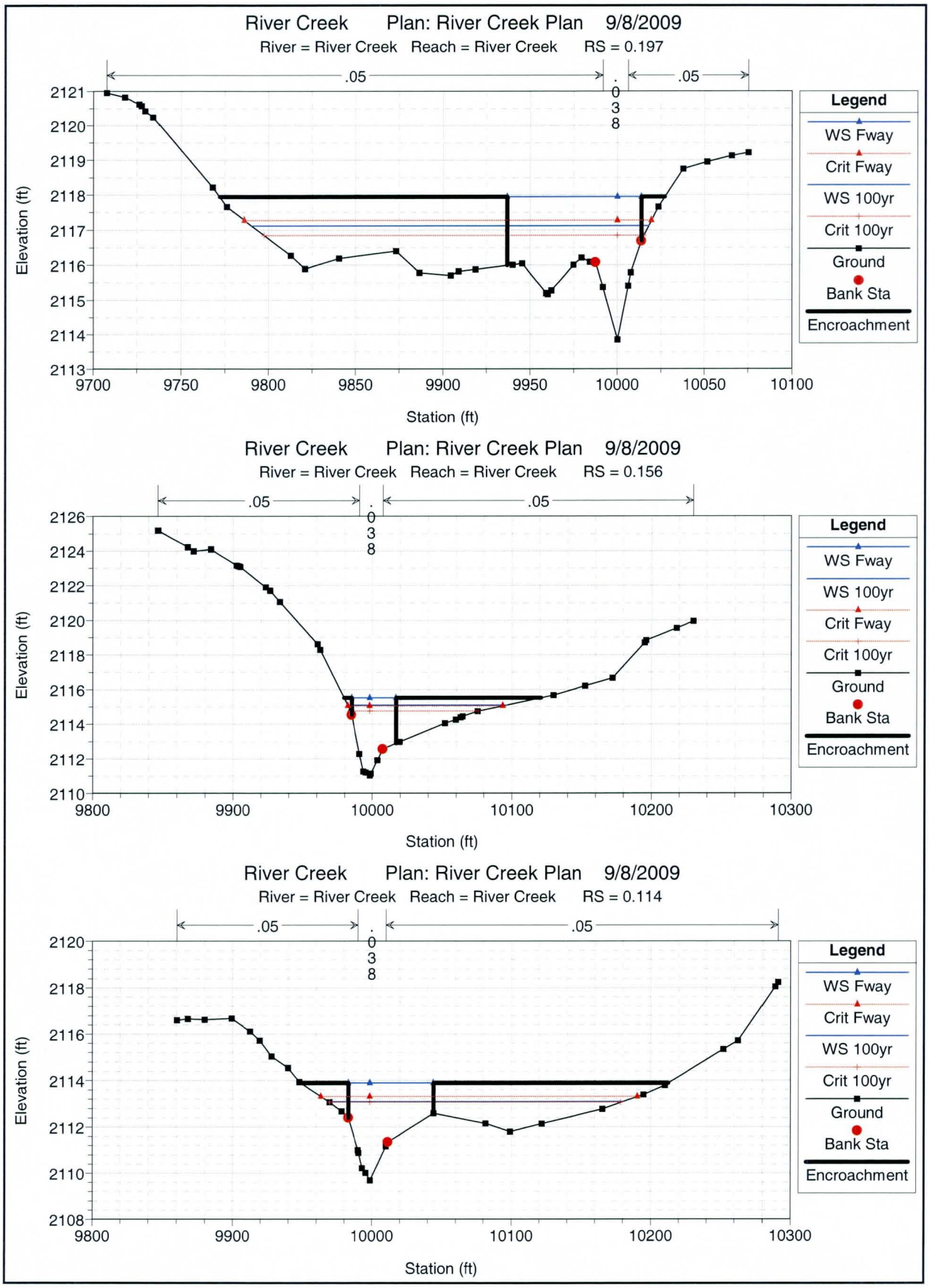

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.646
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.626
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.601
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

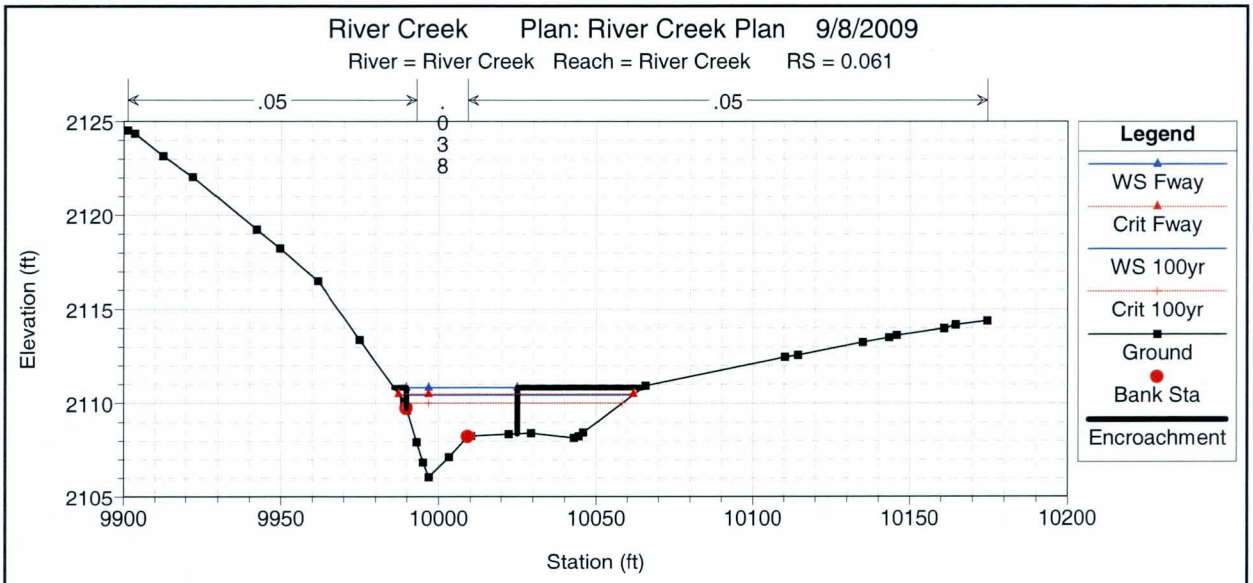

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.538
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

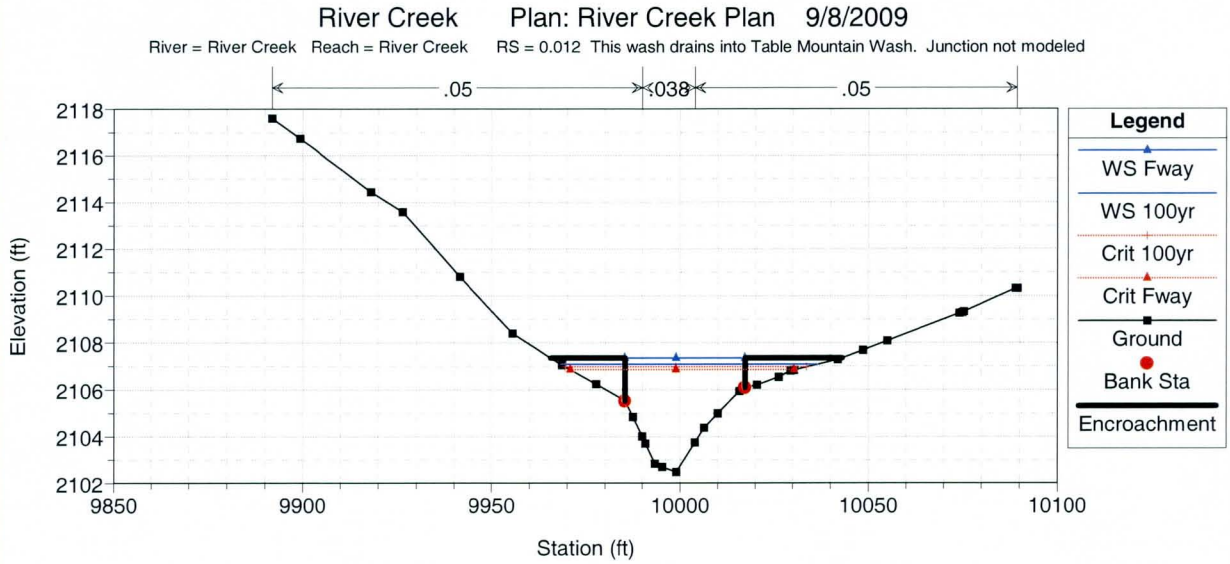

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.485
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.420
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment


River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.365
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.314
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.259
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

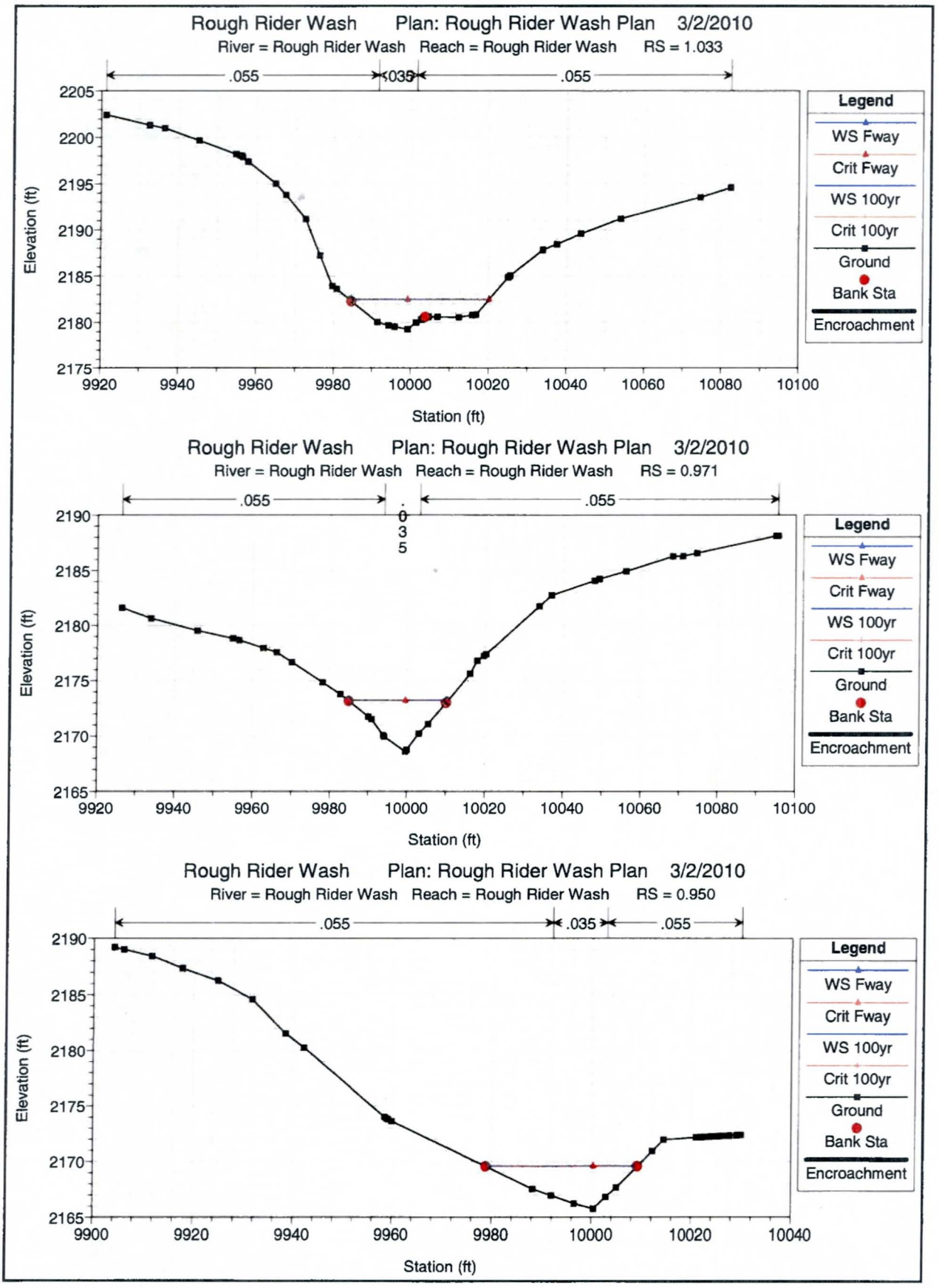

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.197
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.156
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.114
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

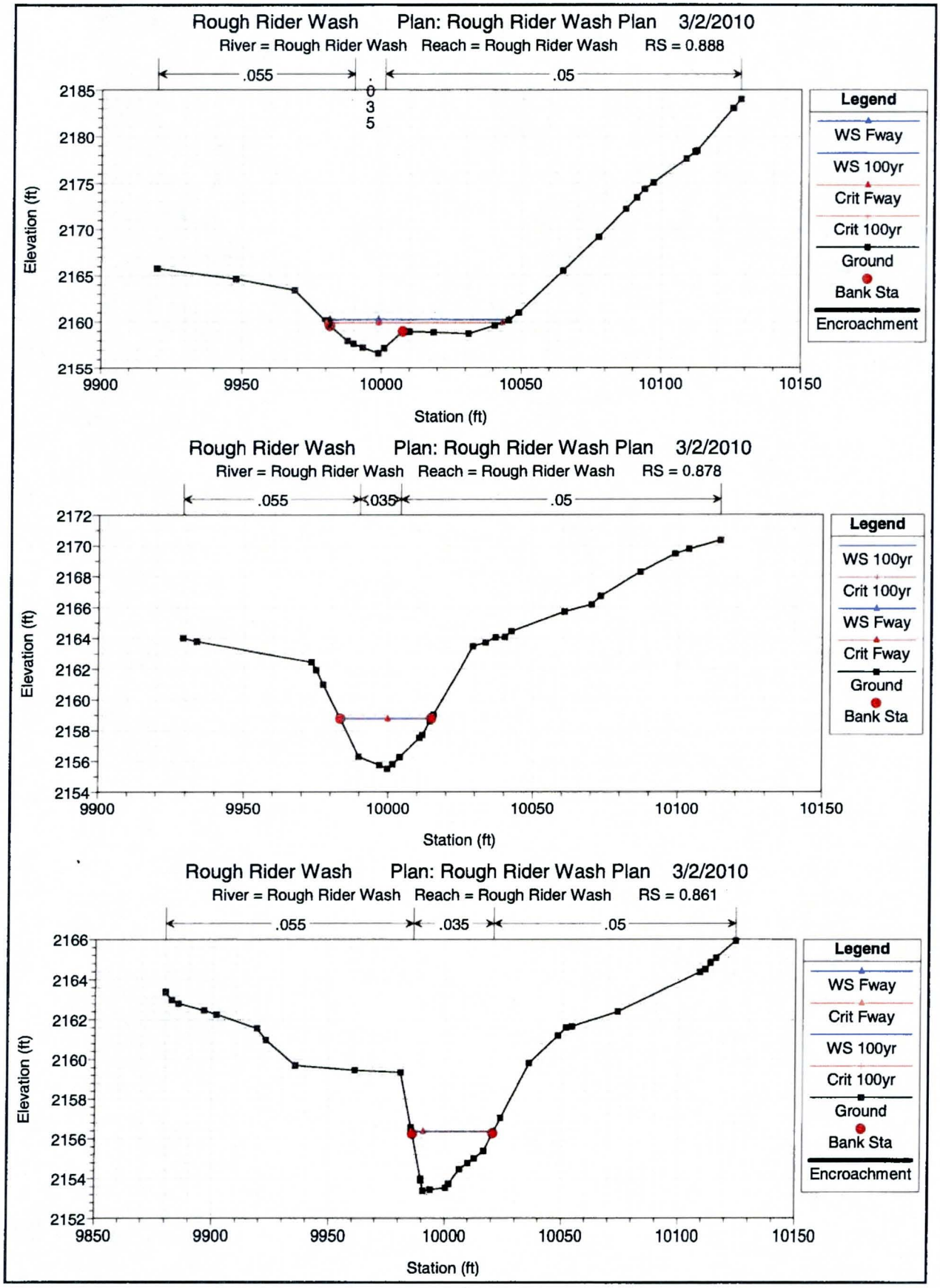

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.061
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

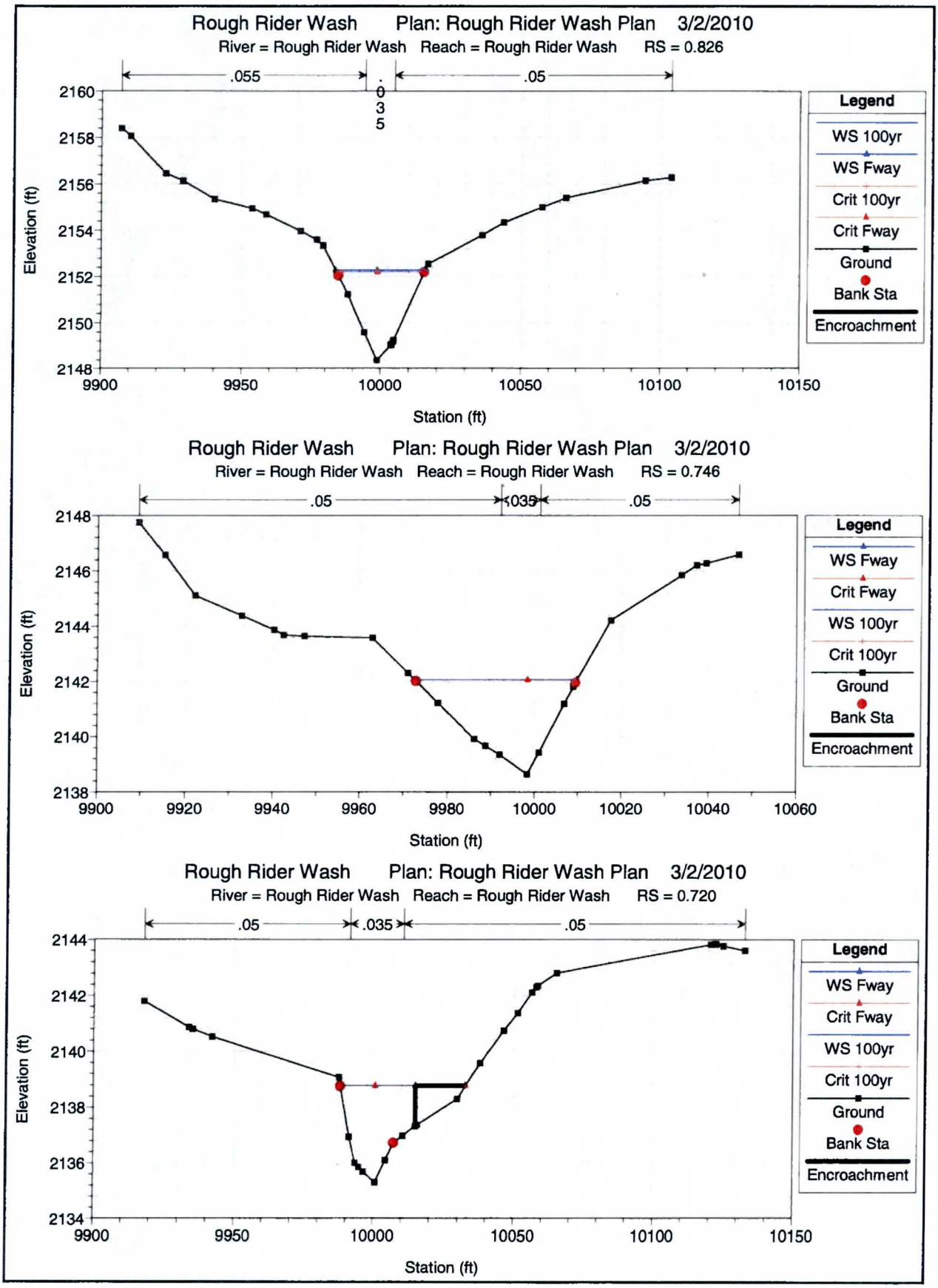

River Creek Plan: River Creek Plan 9/8/2009
River = River Creek Reach = River Creek RS = 0.012 This wash drains into Table Mountain Wash. Junction not modeled
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

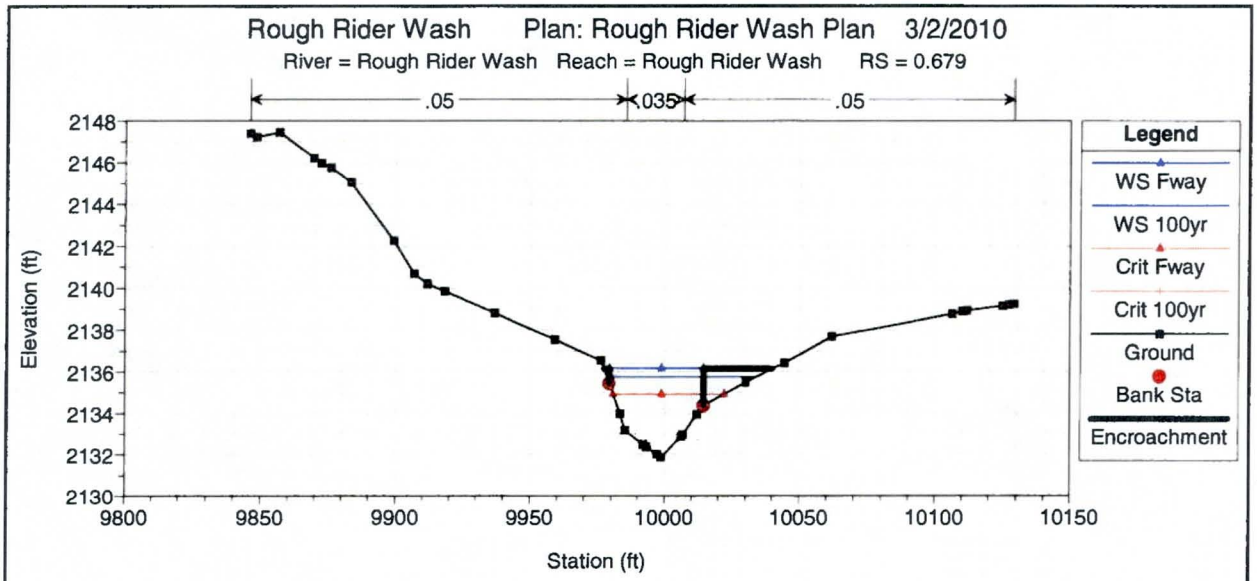
CROSS SECTION PLOTS FOR

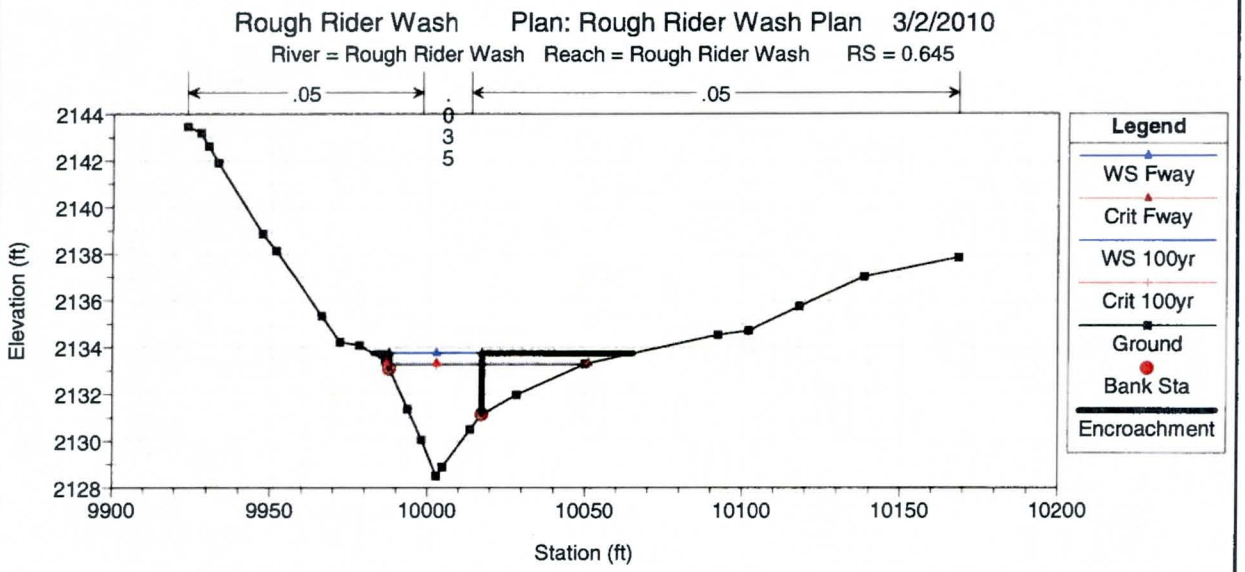
ROUGH RIDER WASH

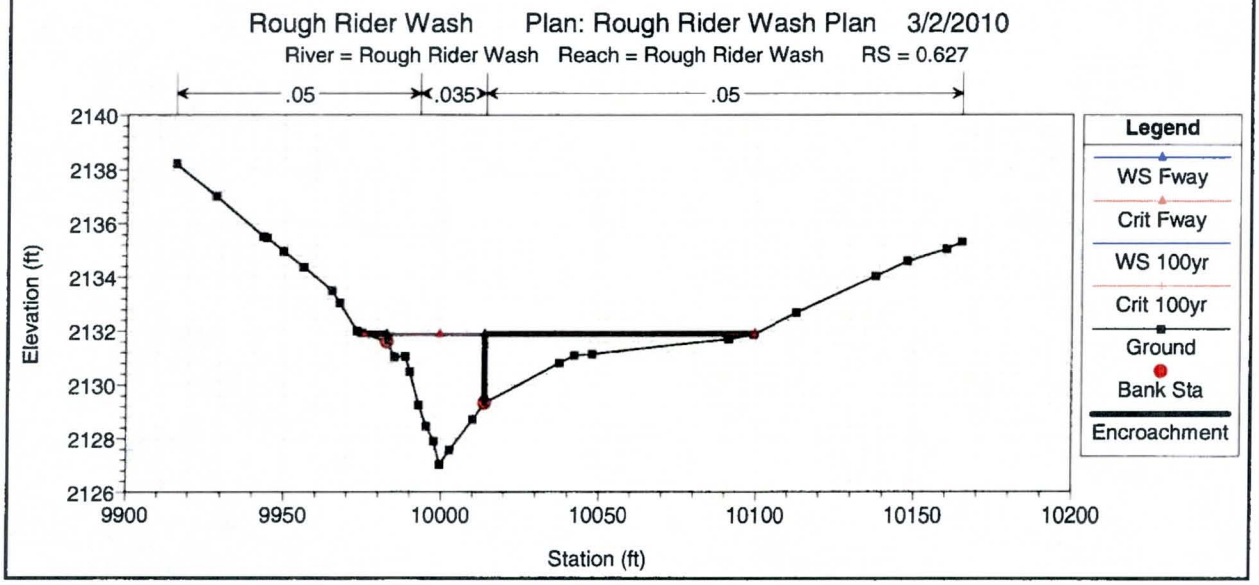

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 1.033
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.971
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.950
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

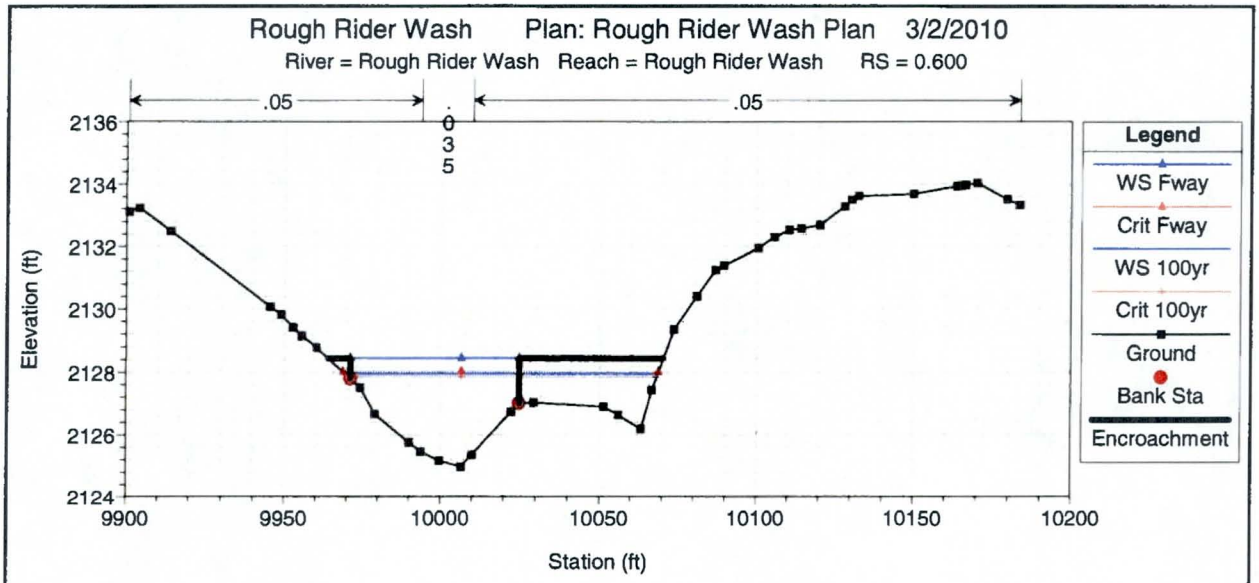

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.888
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.878
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.861
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

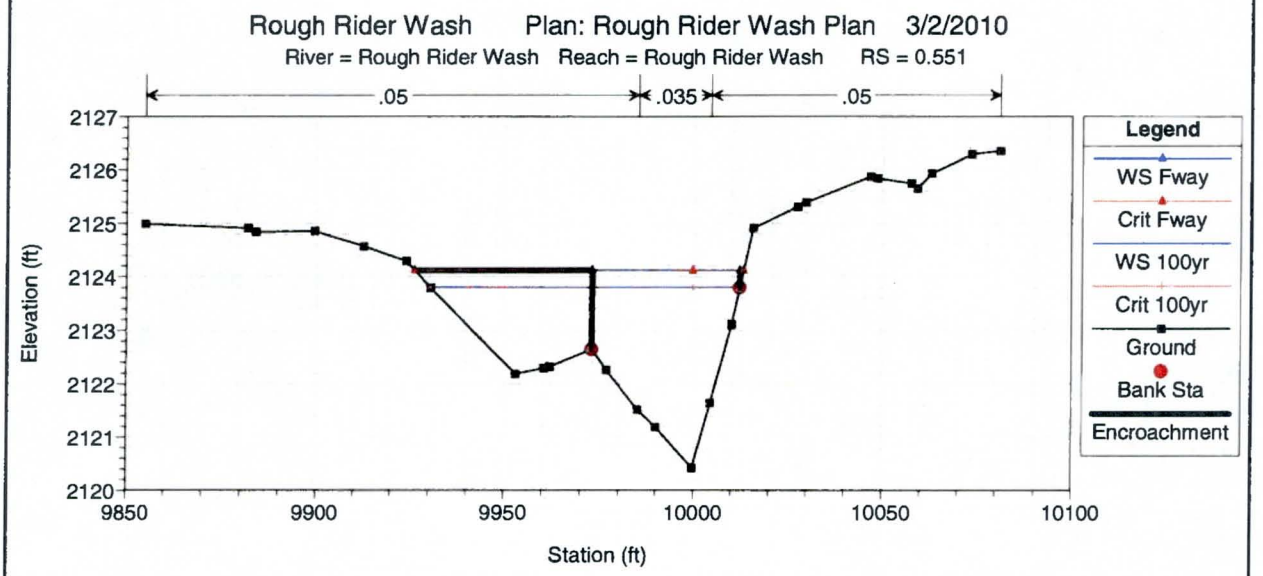

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.826
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.746
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.720
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

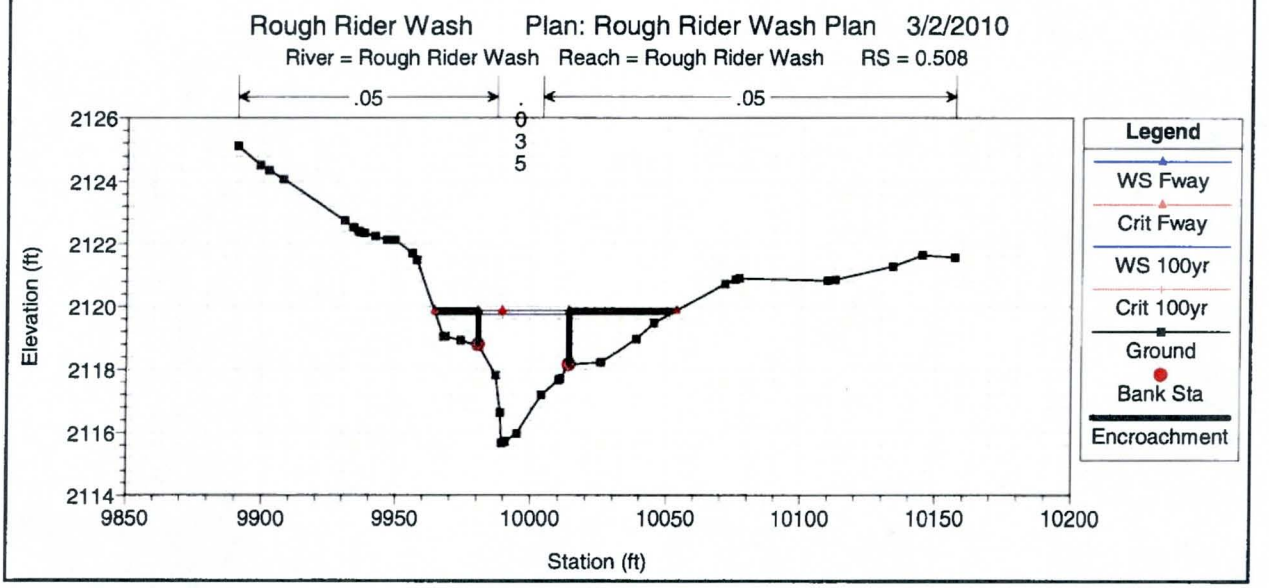

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.679
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

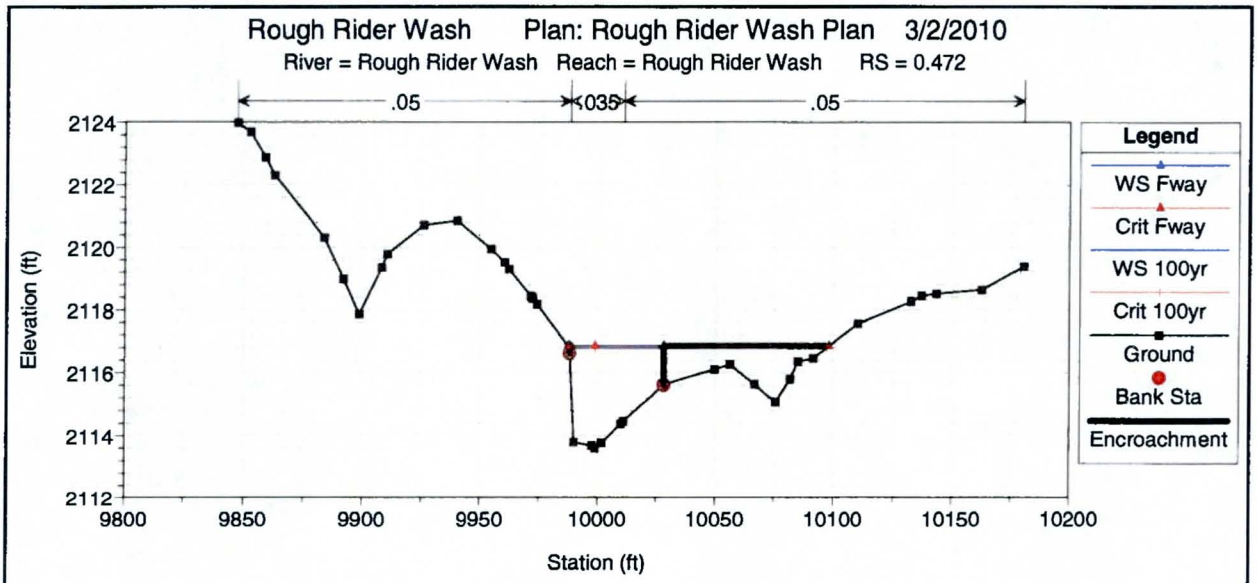

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.645
.05
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

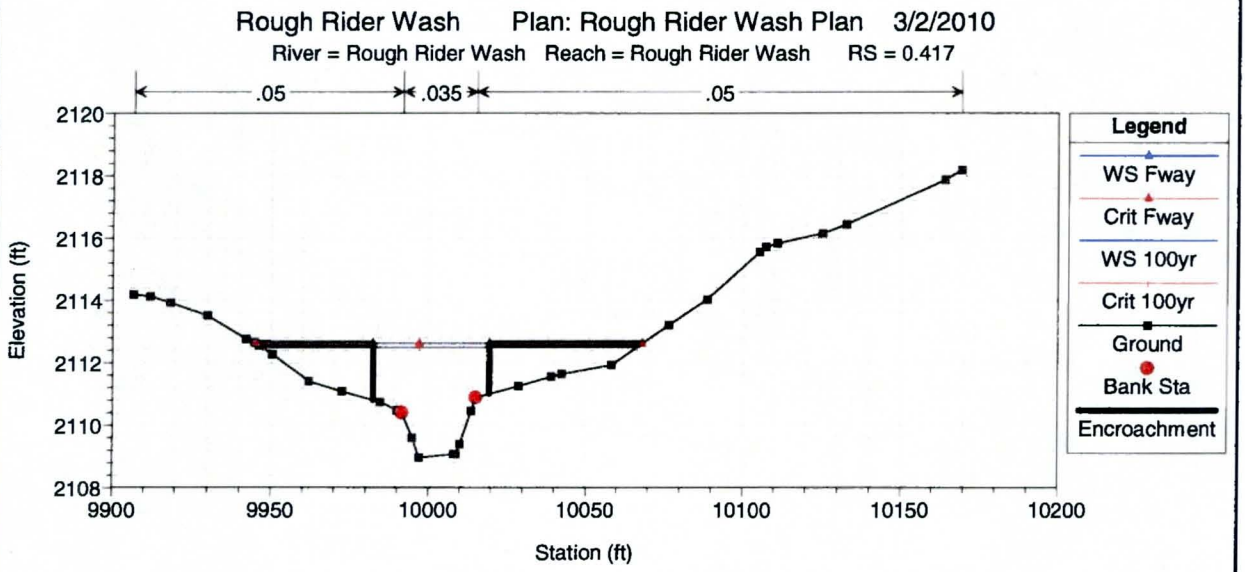

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.627
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

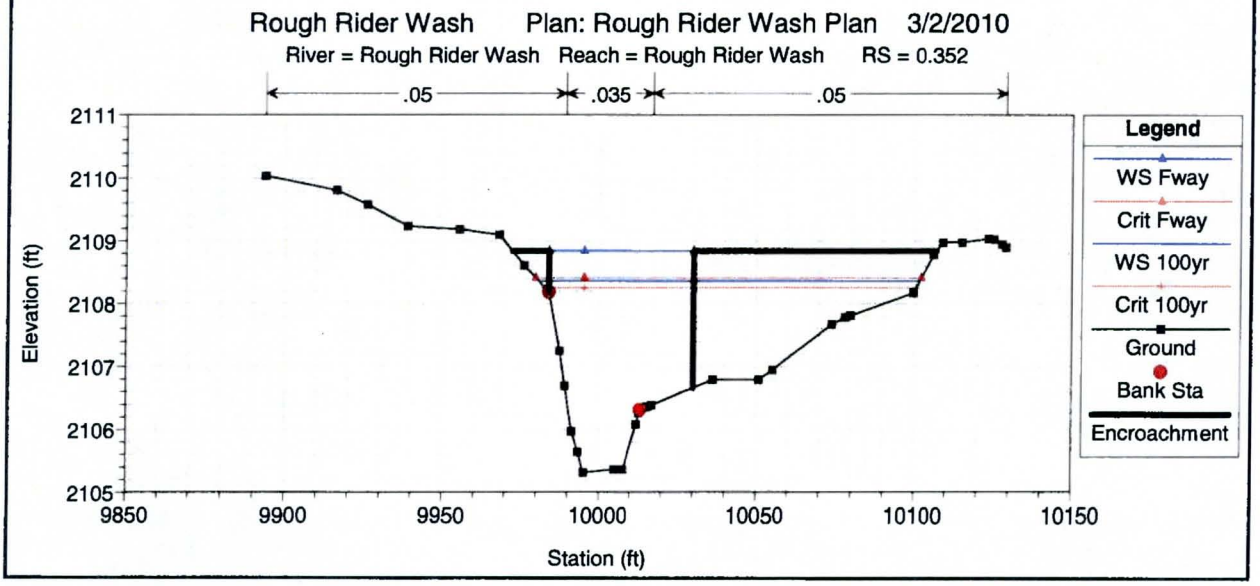

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.600
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

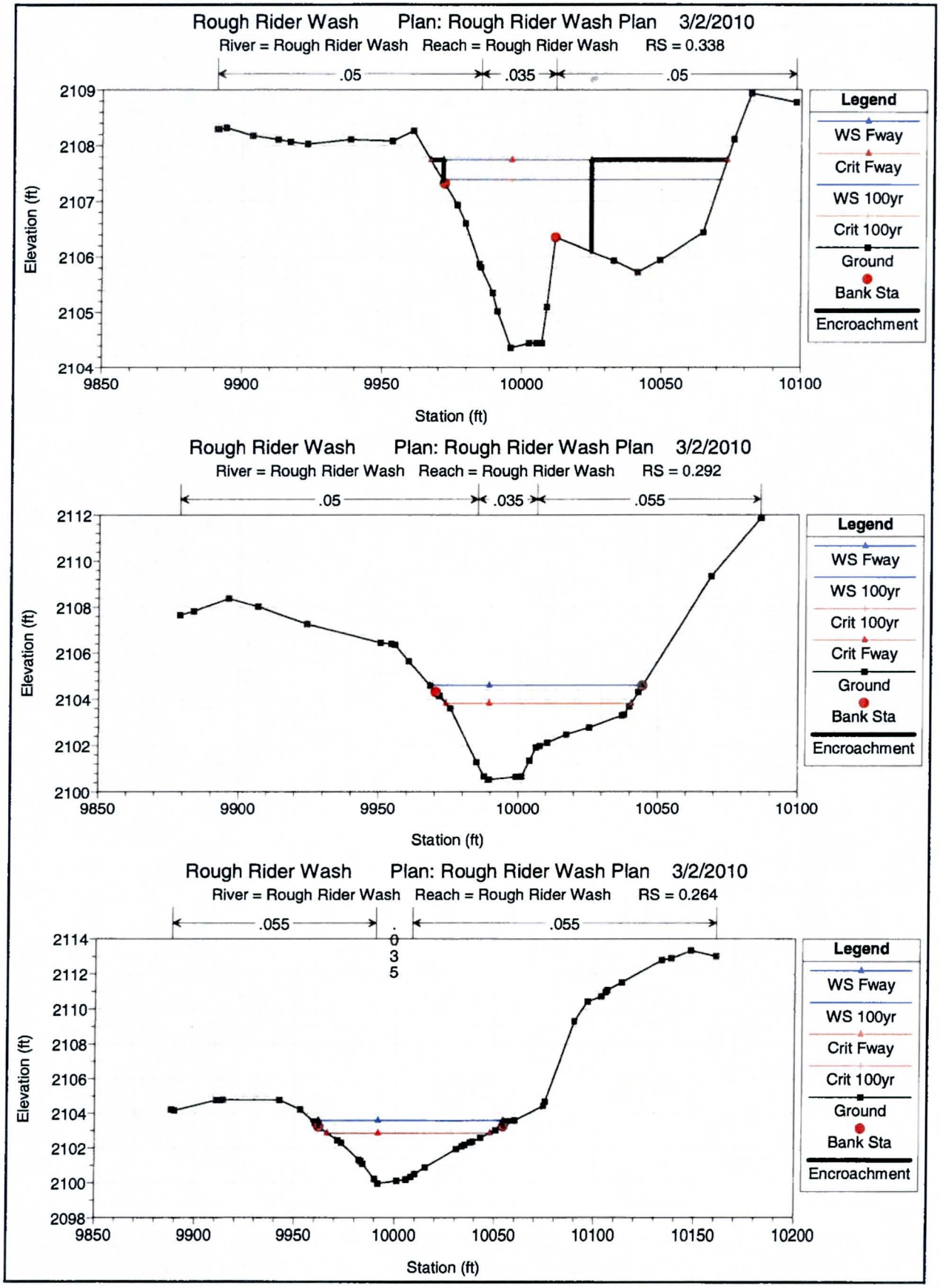

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.551
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

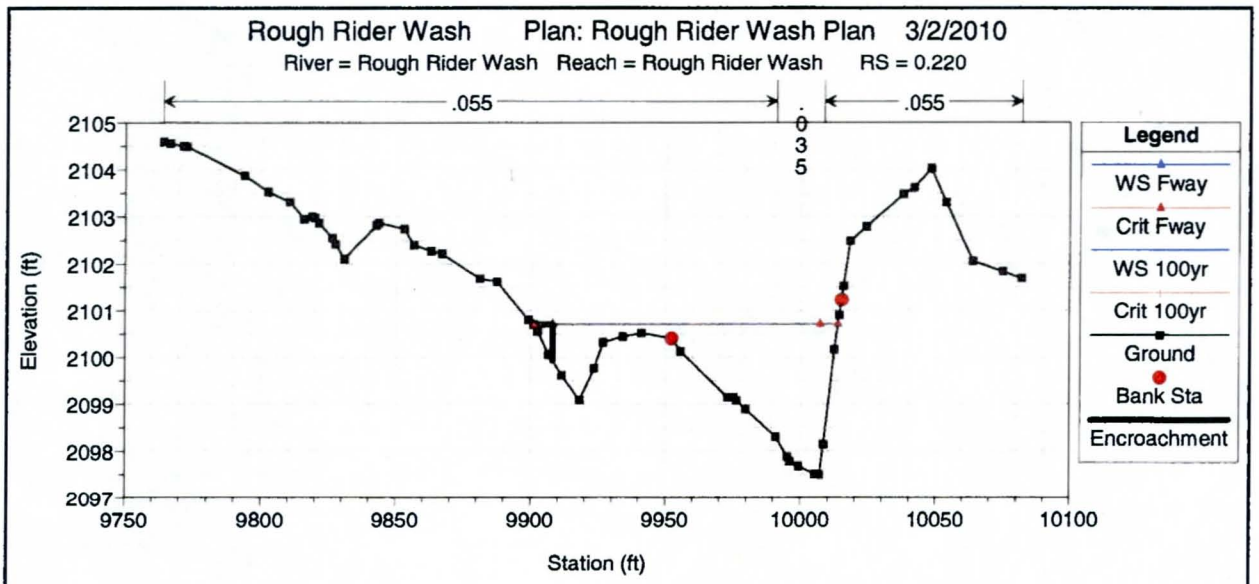

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.508
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

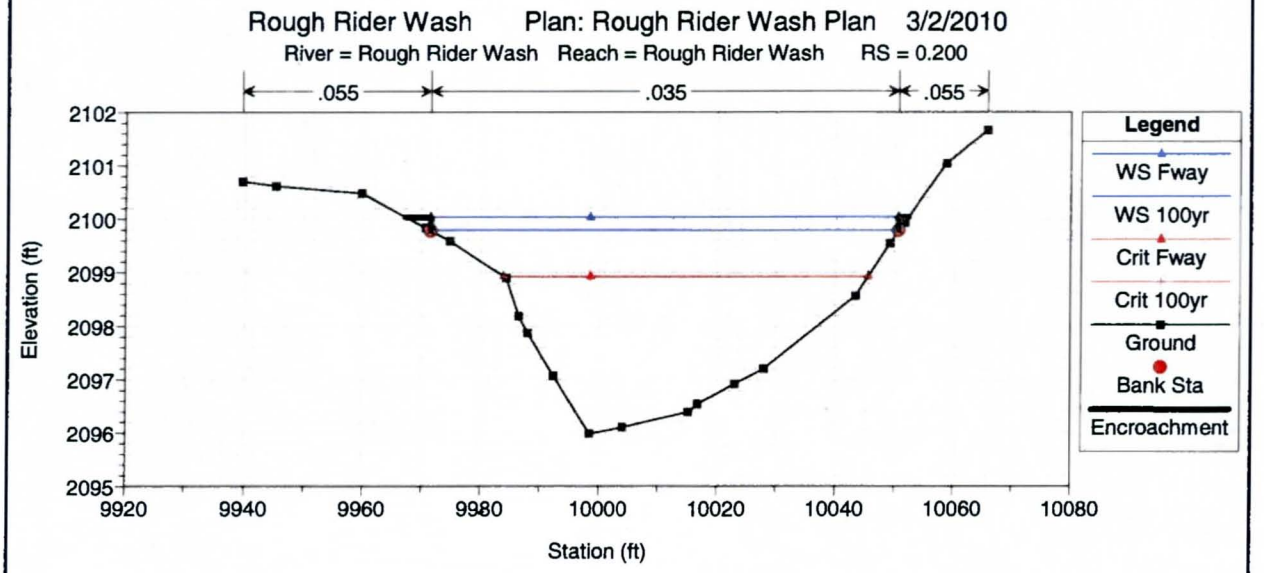

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.472
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

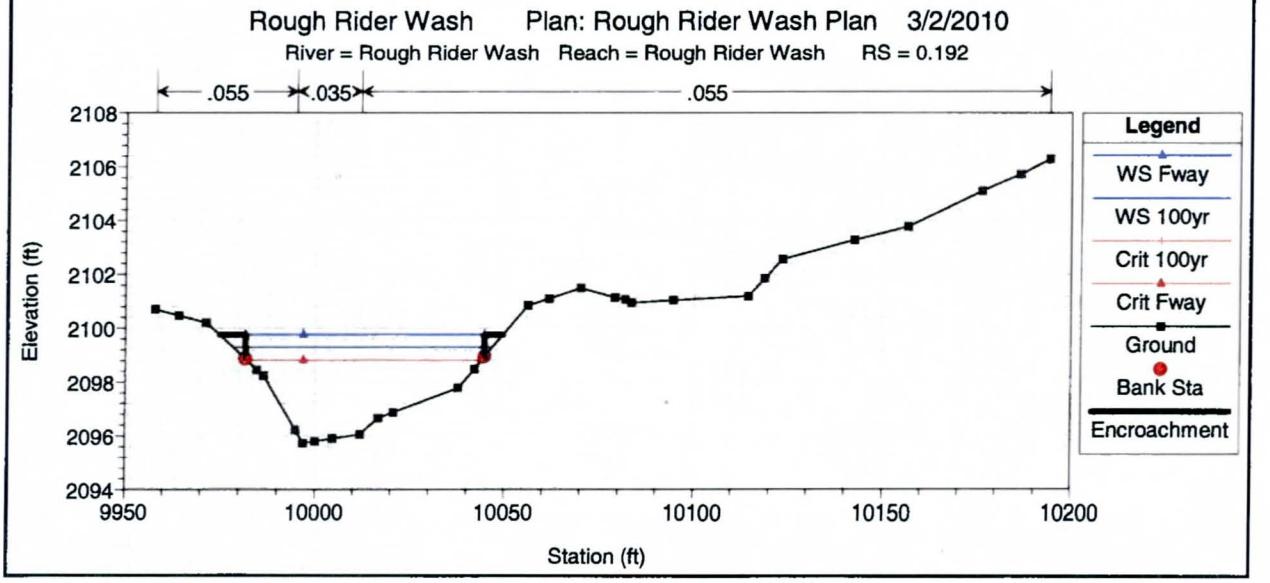

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.417
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

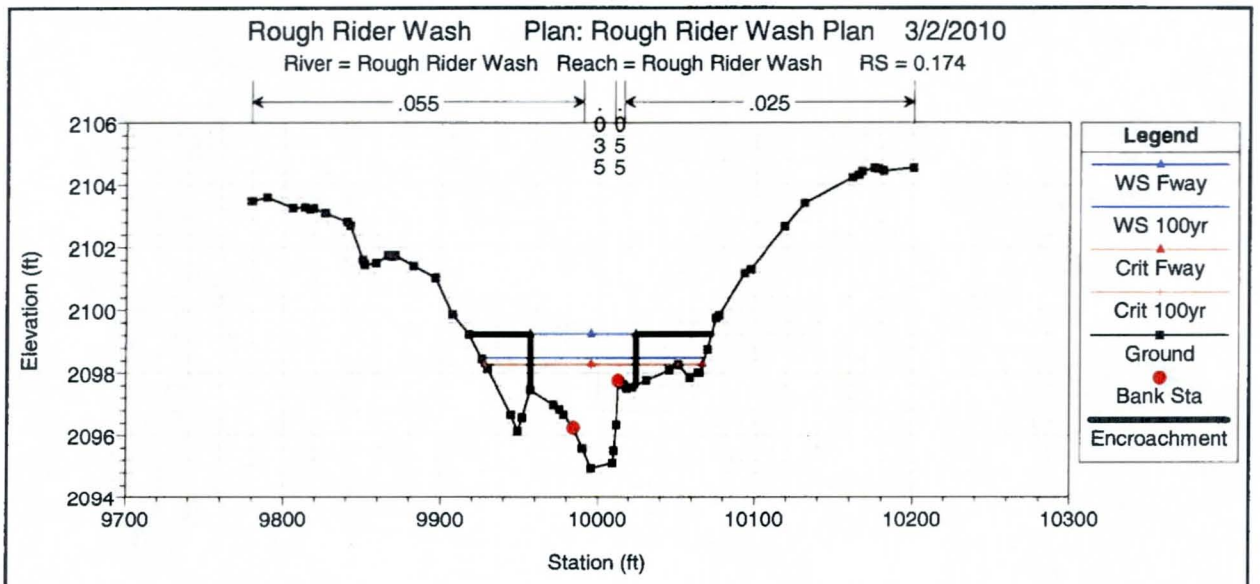

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.352
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

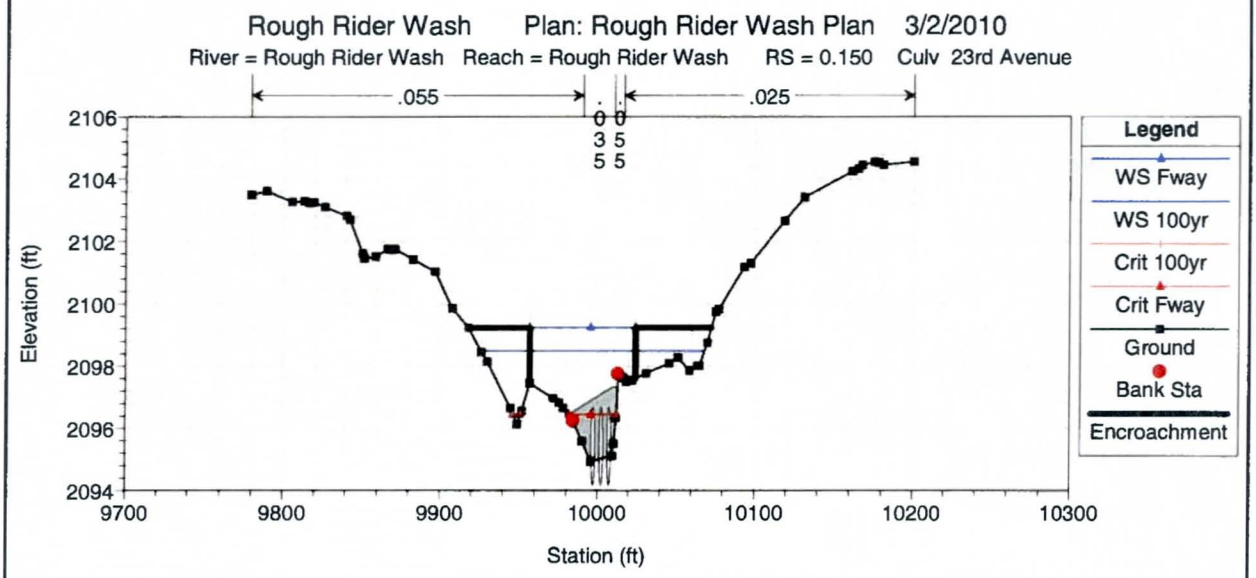

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.338
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.292
.05
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.264
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

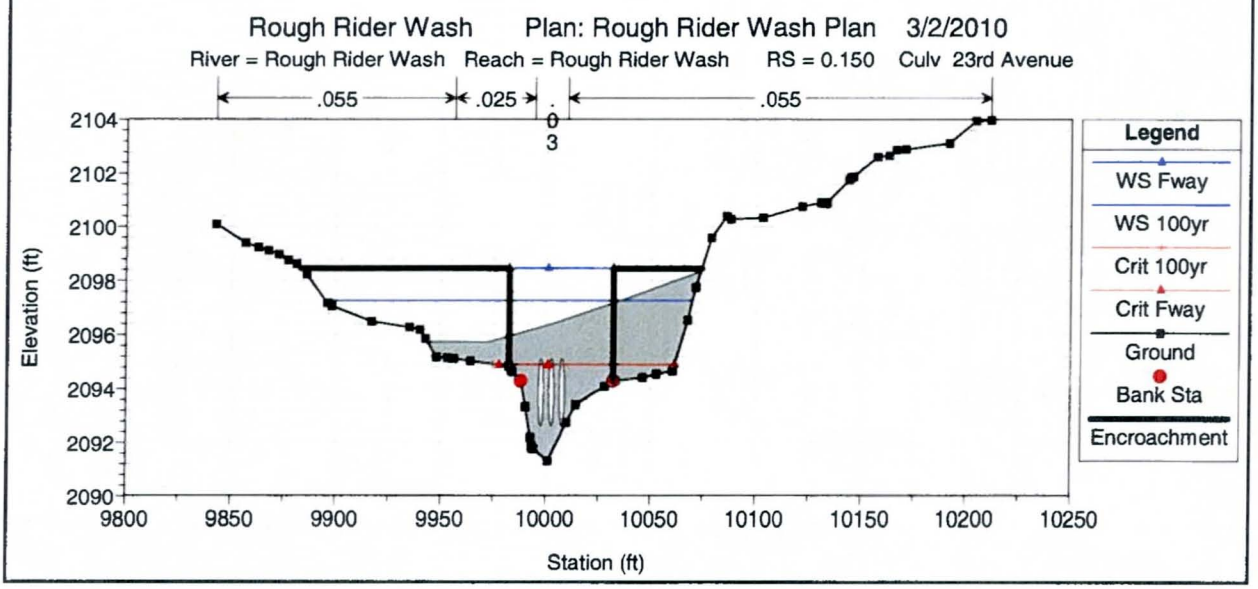

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.220
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

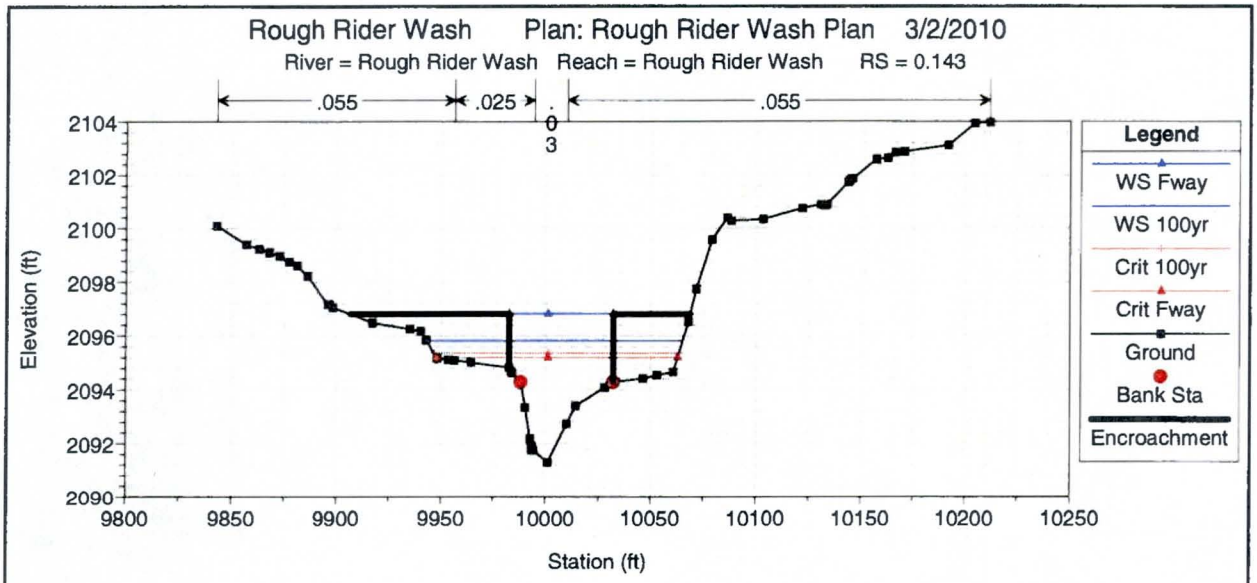

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.200
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

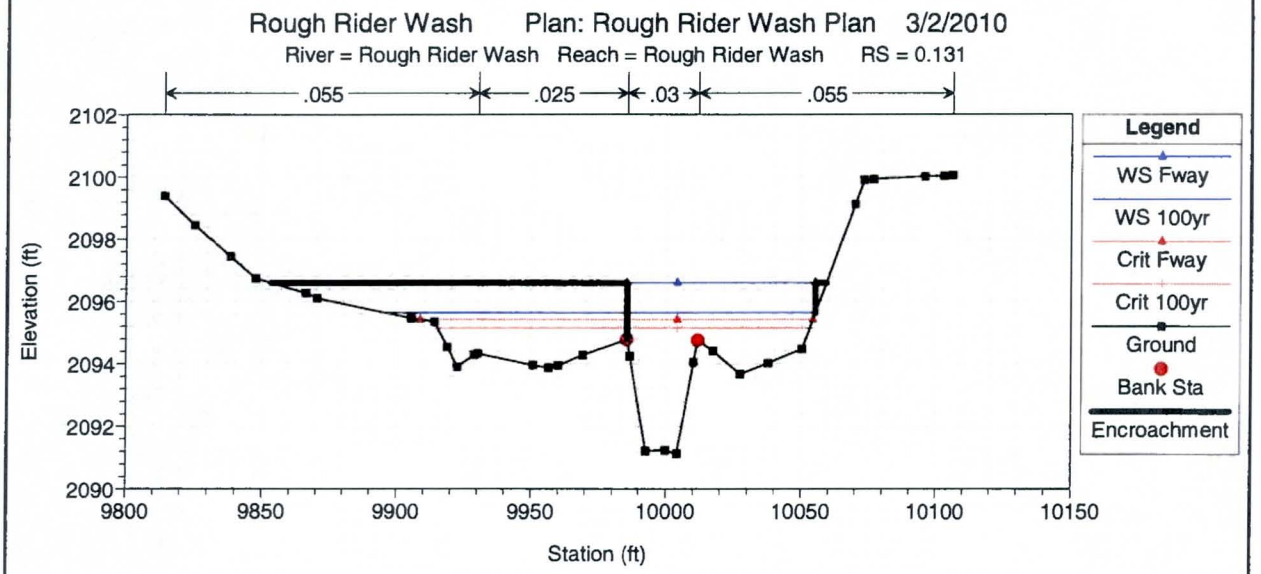

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.192
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

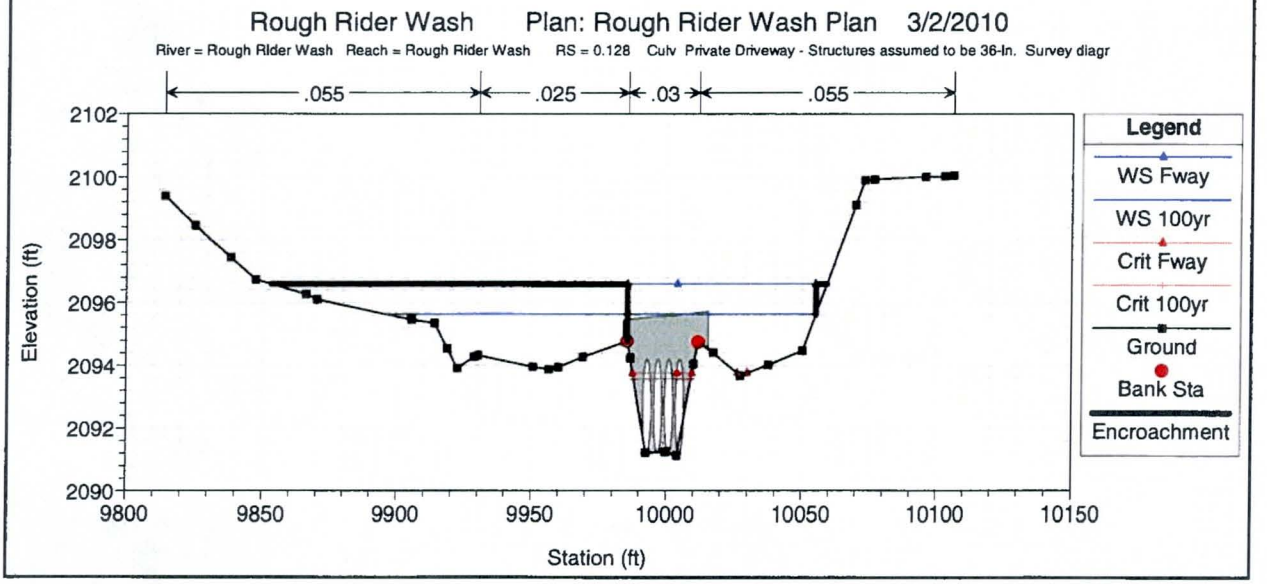

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.174
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

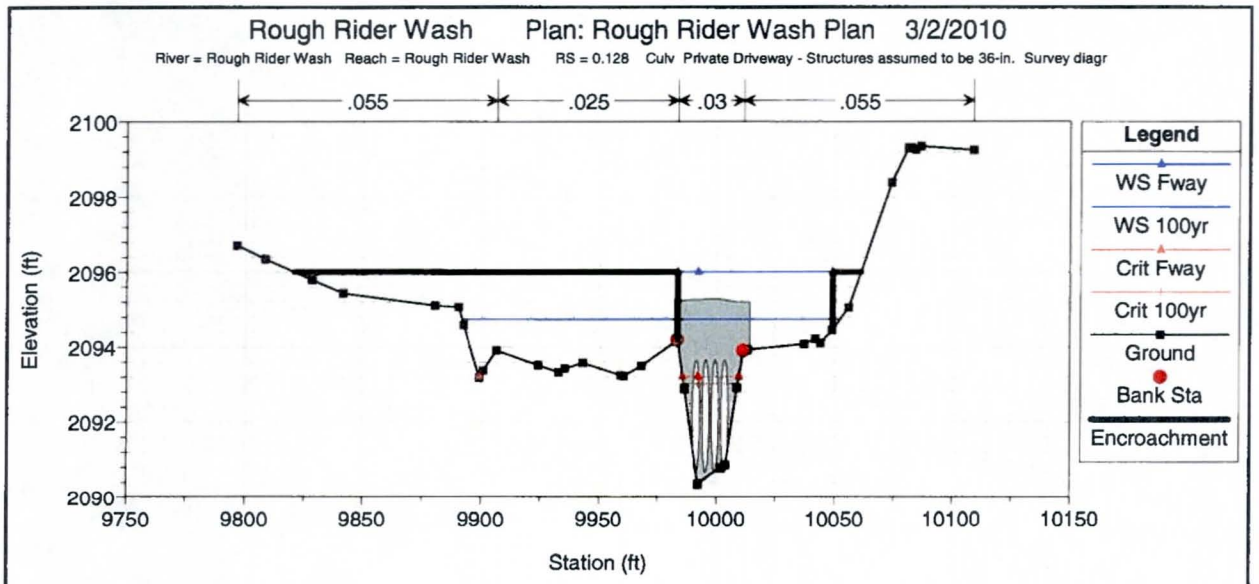

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.150 Culv 23rd Avenue
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

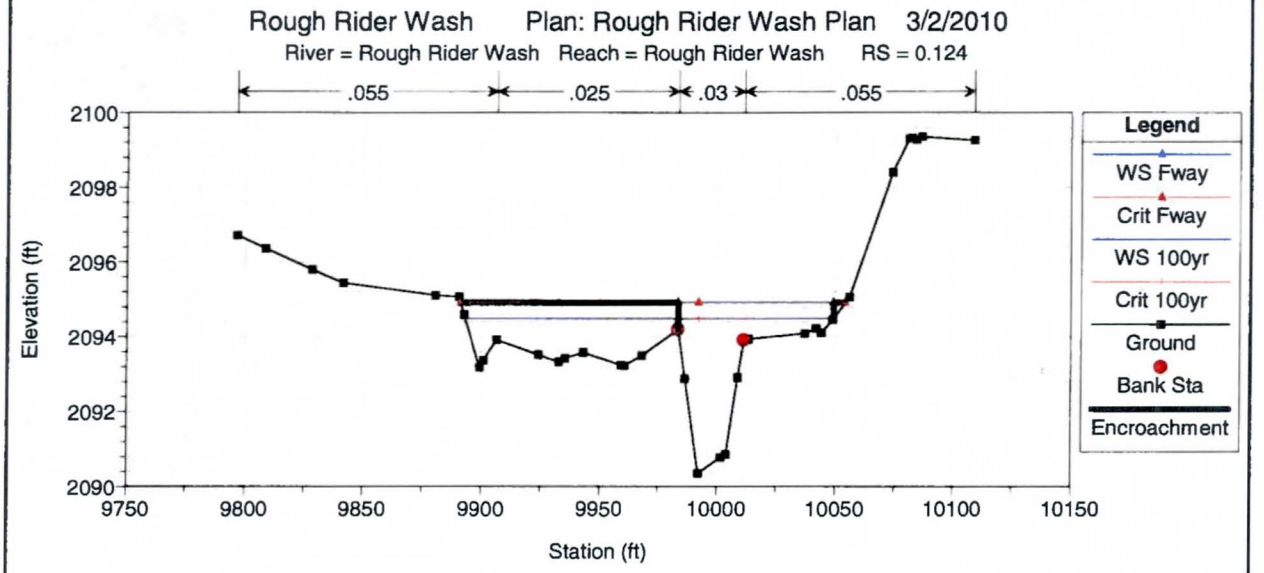

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.150 Culv 23rd Avenue
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

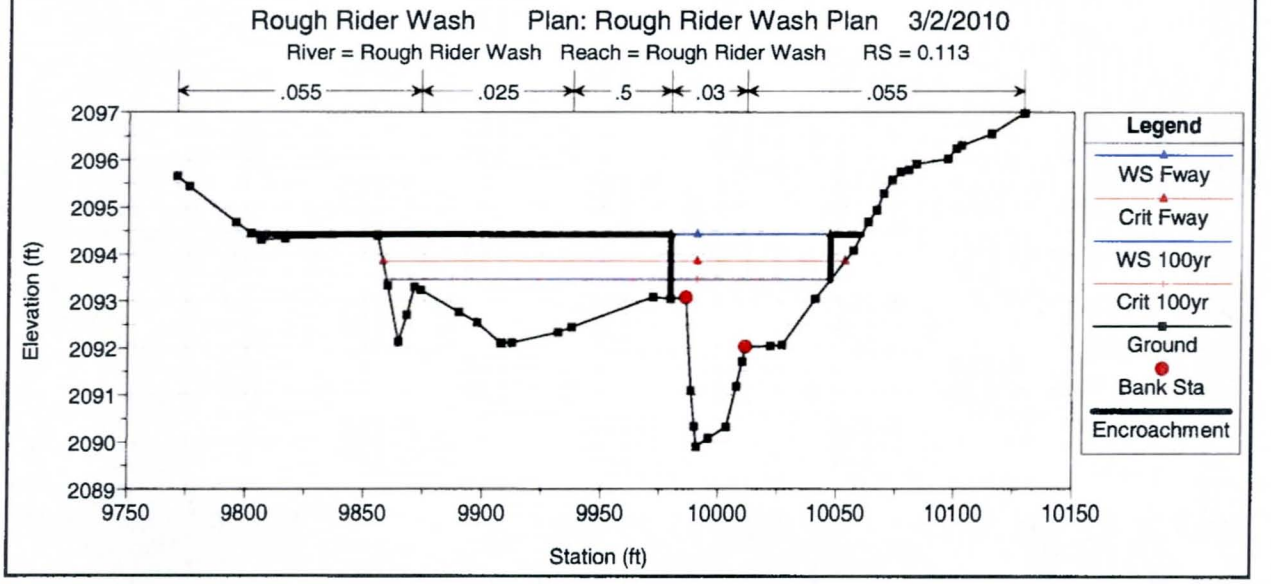

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.143
.055
.025
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

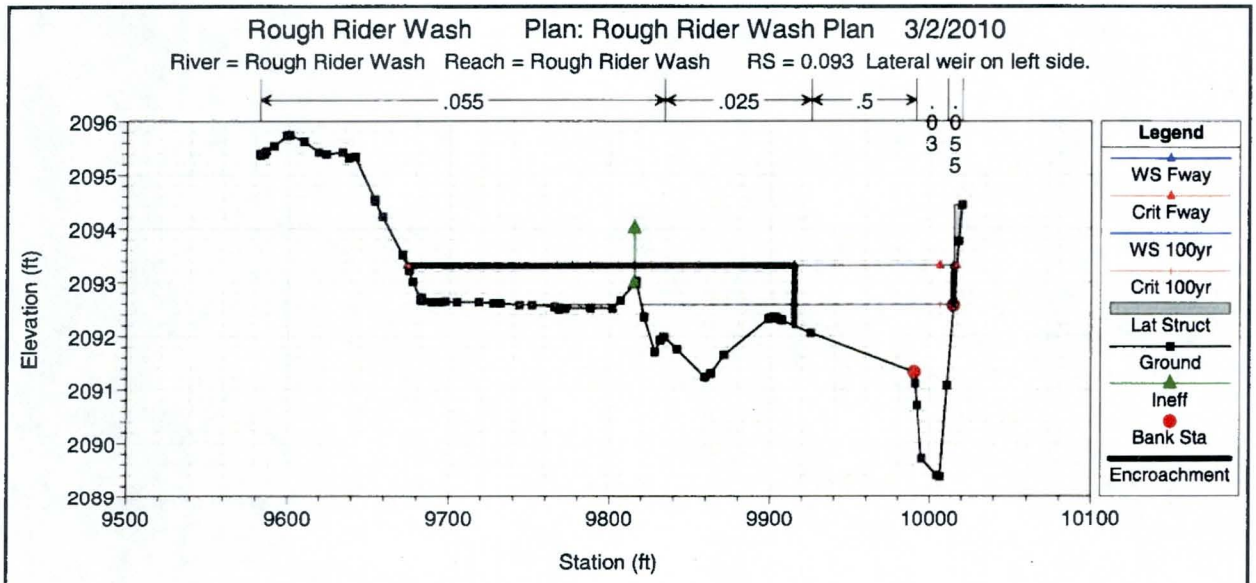

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.131
.055
.025
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

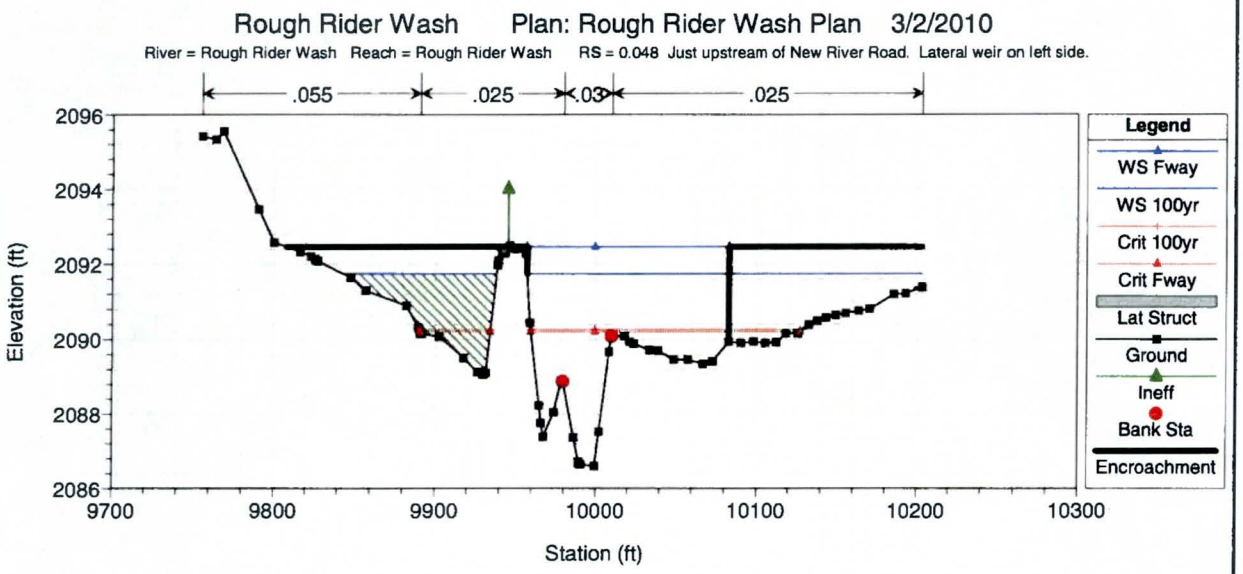

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough RIder Wash Reach = Rough Rider Wash RS = 0.128 Culv Private Driveway - Structures assumed to be 36-In. Survey diagr
.055
.025
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

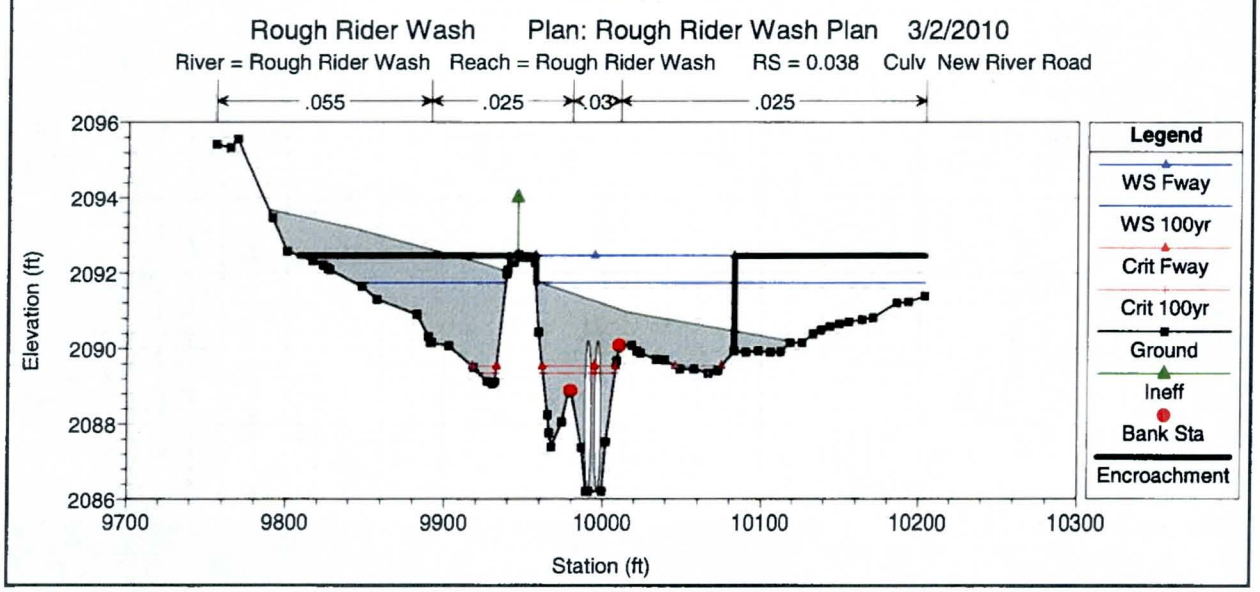

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.128 Culv Private Driveway - Structures assumed to be 36-in. Survey diagr
.055
.025
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

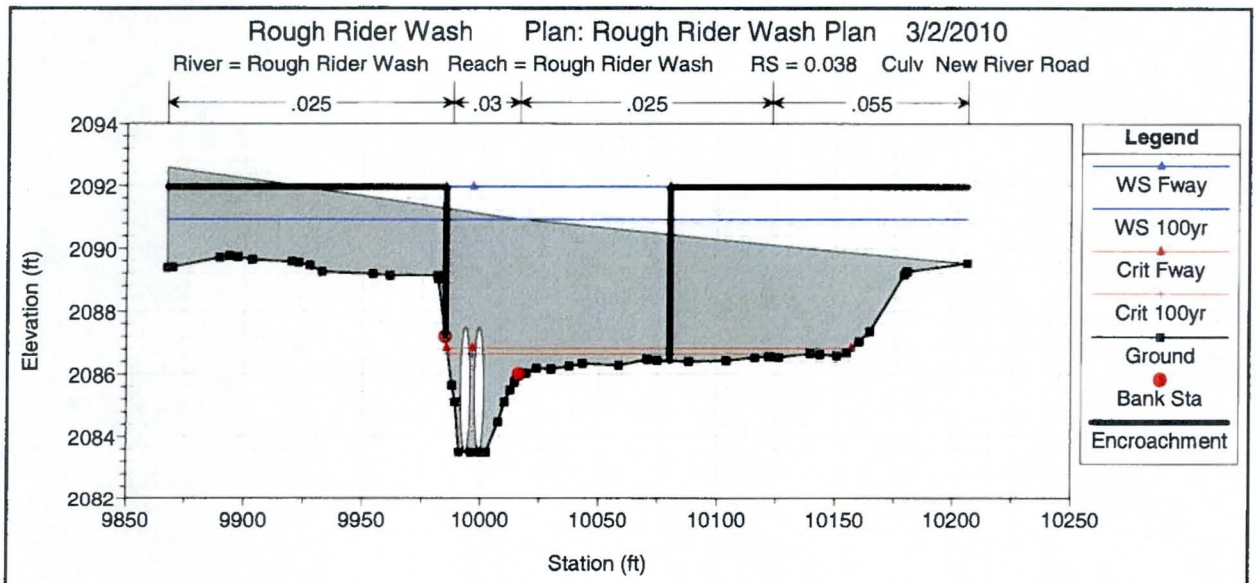

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.124
.055
.025
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

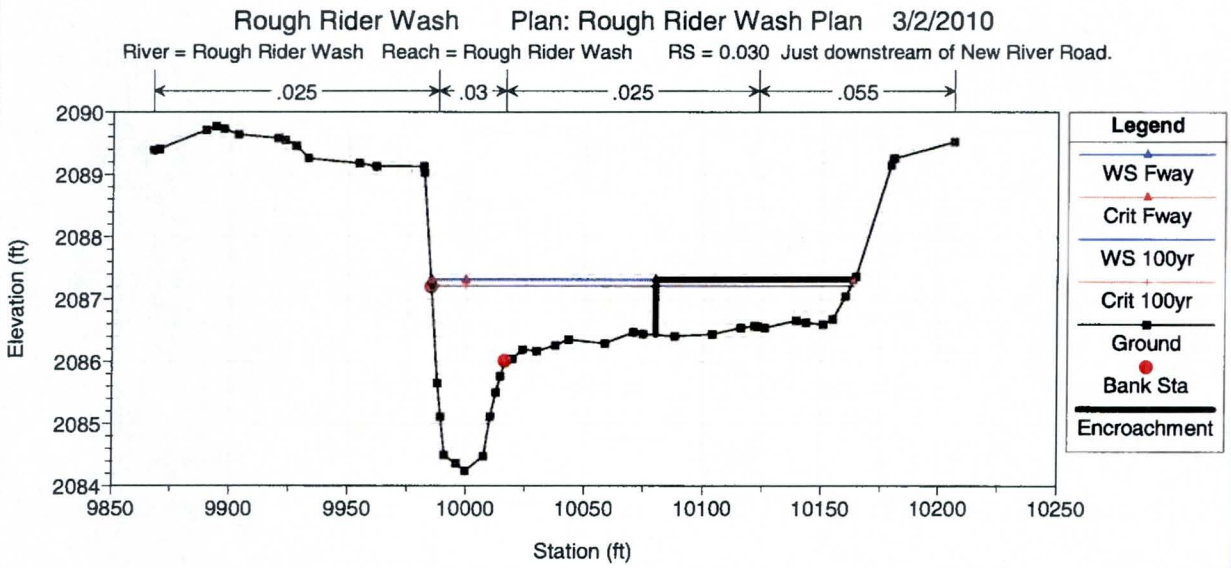

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.113
.055
.025
.5
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

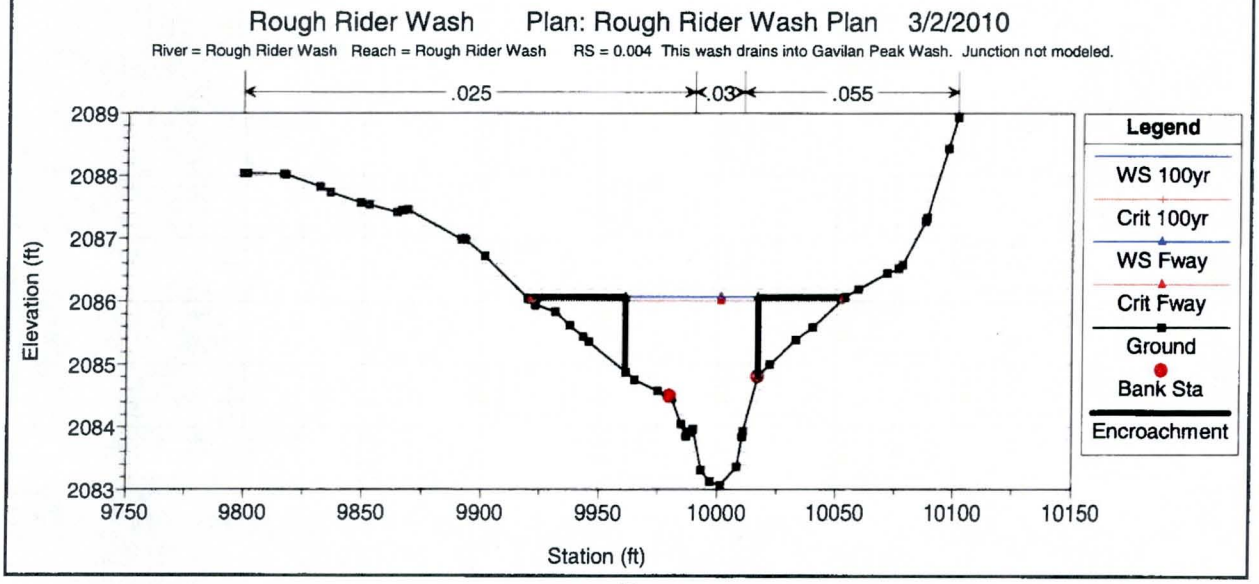

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.093 Lateral weir on left side.
.055
.025
.5
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Ineff
Bank Sta
Encroachment


Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.048 Just upstream of New River Road. Lateral weir on left side.
.055
.025
.03
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Lat Struct
Ground
Ineff
Bank Sta
Encroachment


Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.038 Culv New River Road
.055
.025
.03
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

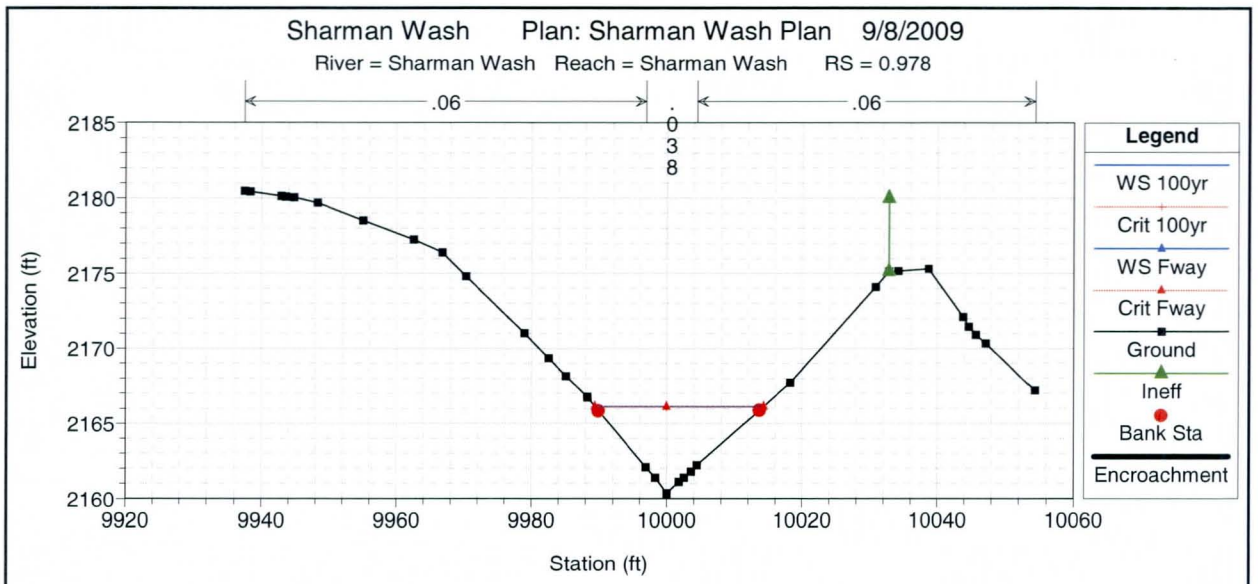

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.038 Culv New River Road
.025
.03
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

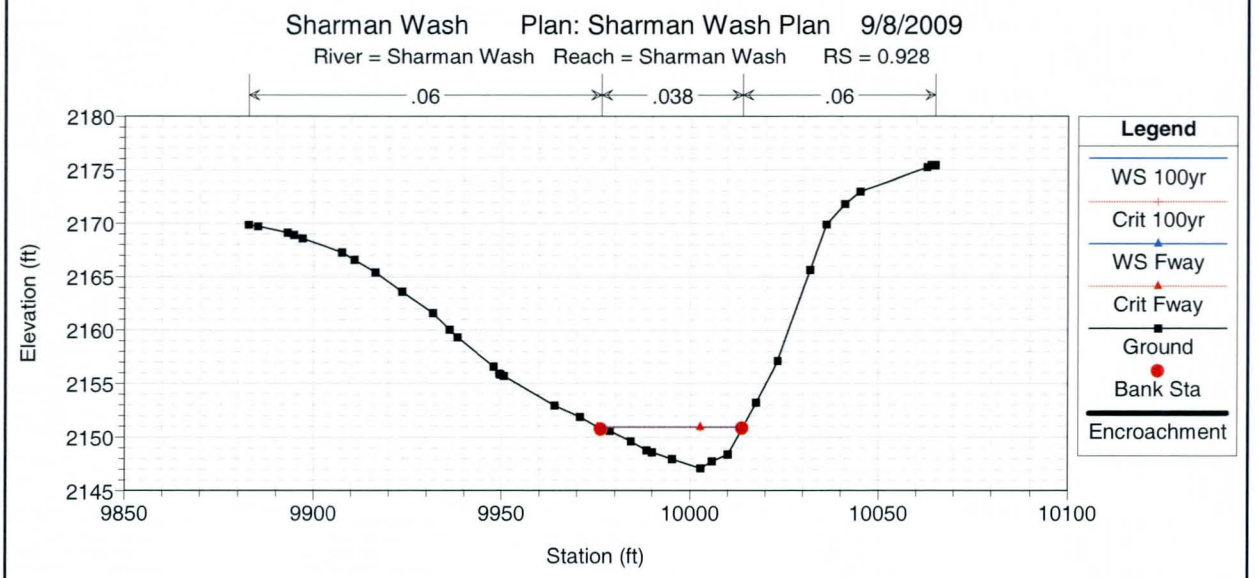

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.030 Just downstream of New River Road.
.025
.03
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

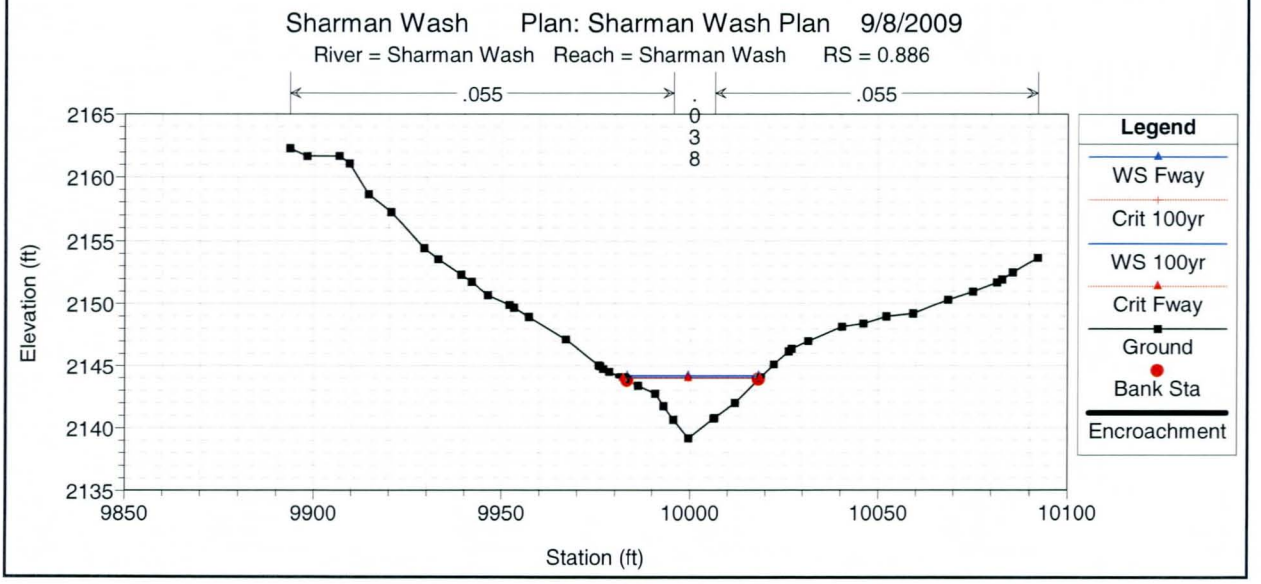

Rough Rider Wash Plan: Rough Rider Wash Plan 3/2/2010
River = Rough Rider Wash Reach = Rough Rider Wash RS = 0.004 This wash drains into Gavilan Peak Wash. Junction not modeled.
.025
.03
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

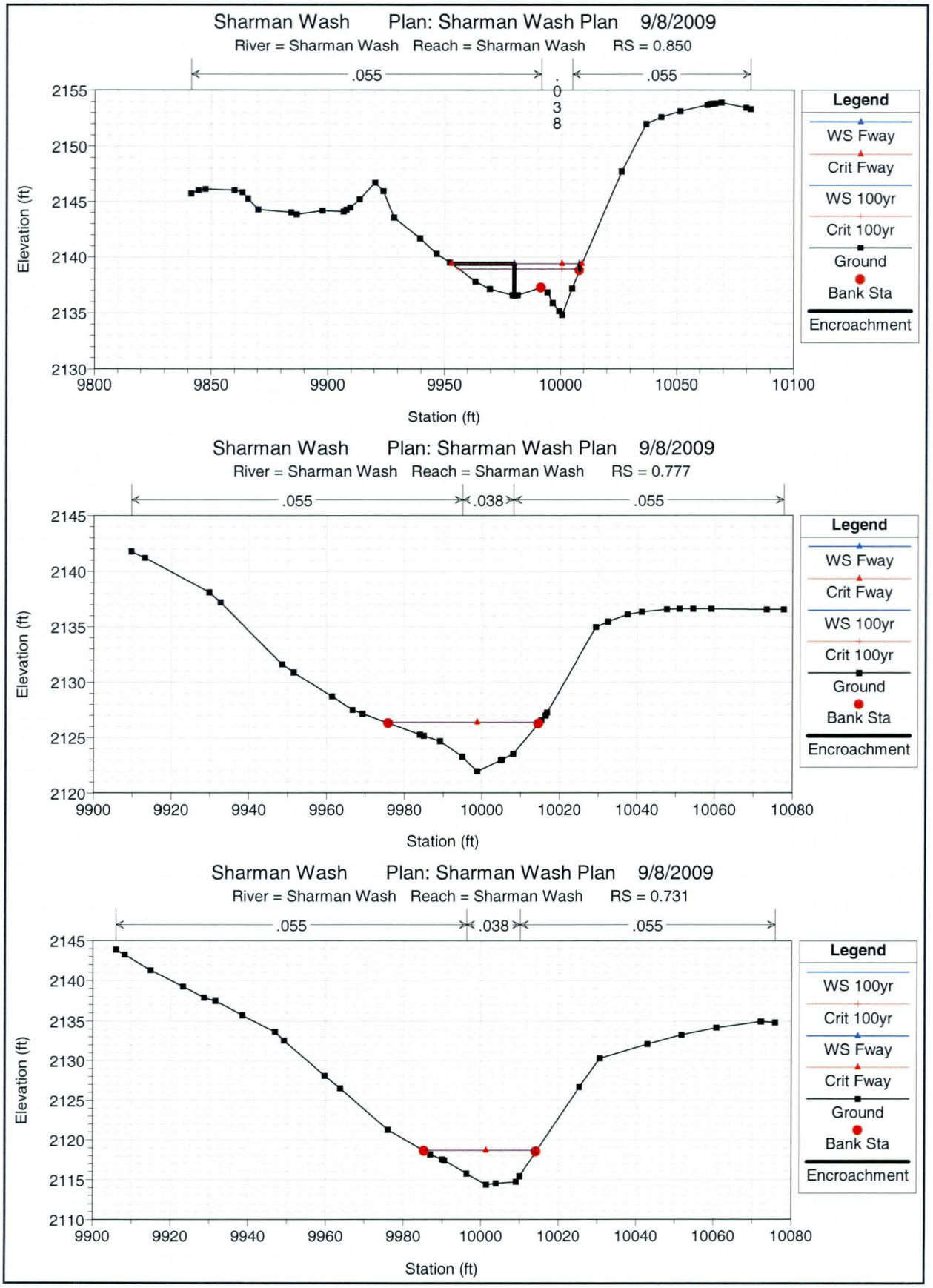
CROSS SECTION PLOTS FOR

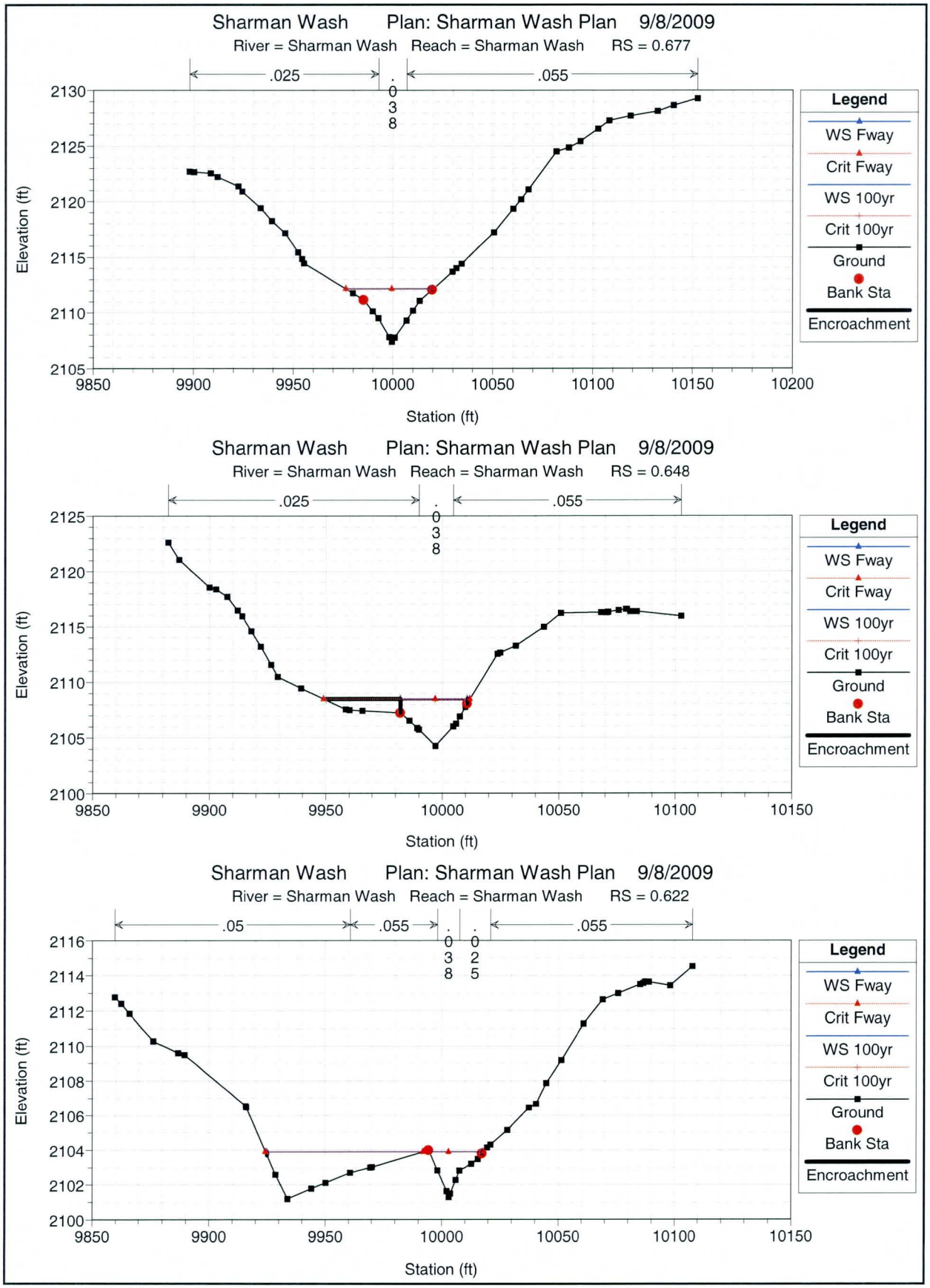
SHARMAN WASH

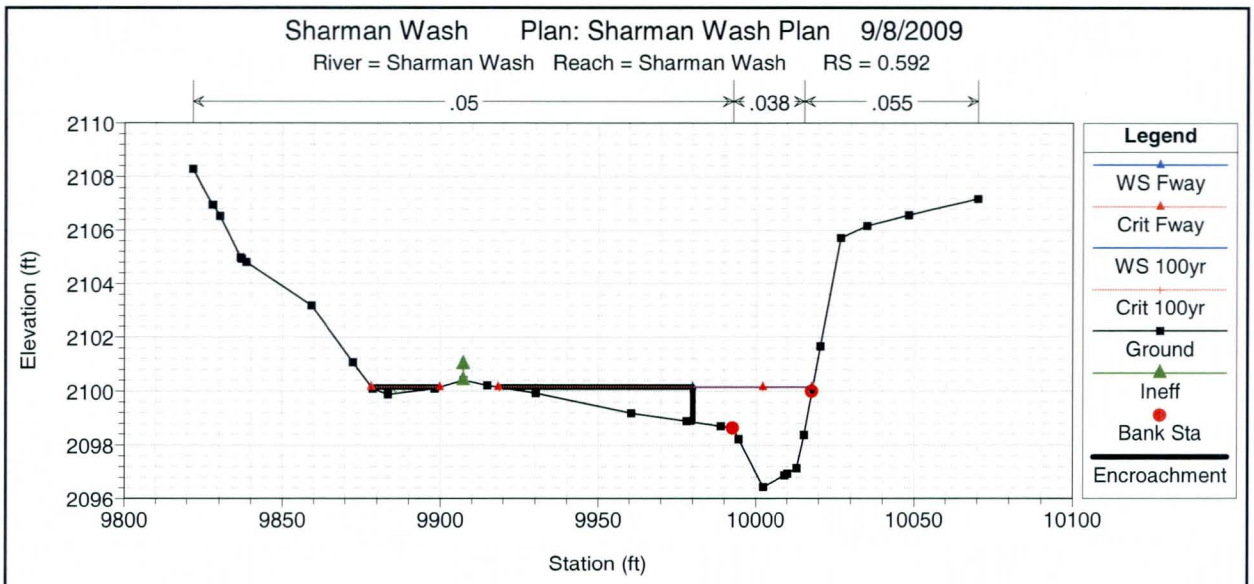

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.978
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

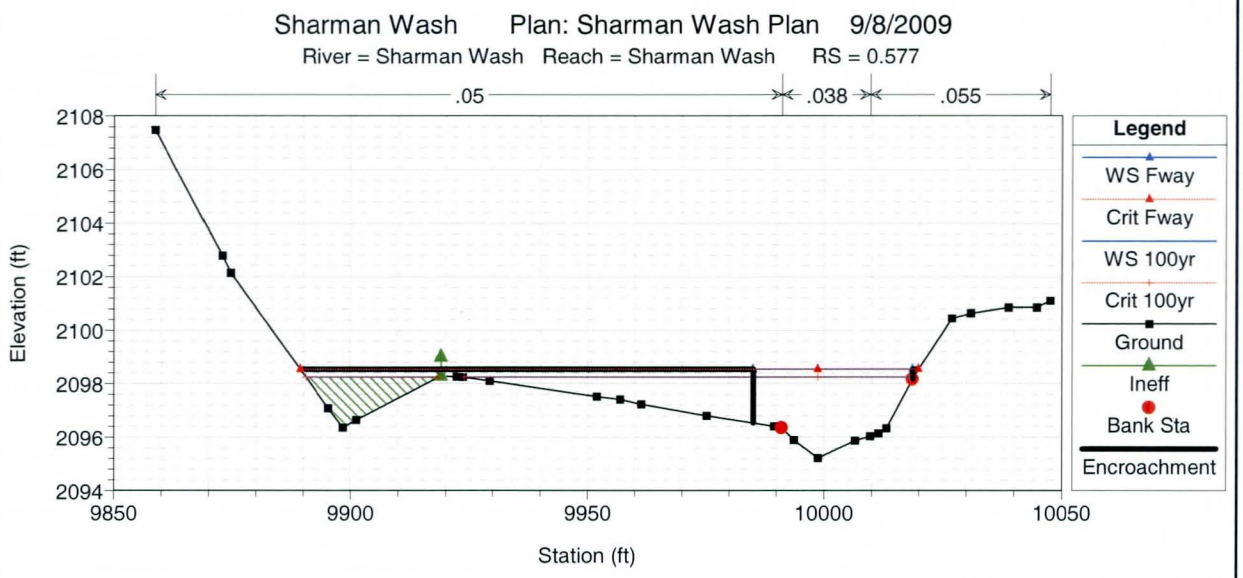

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.928
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

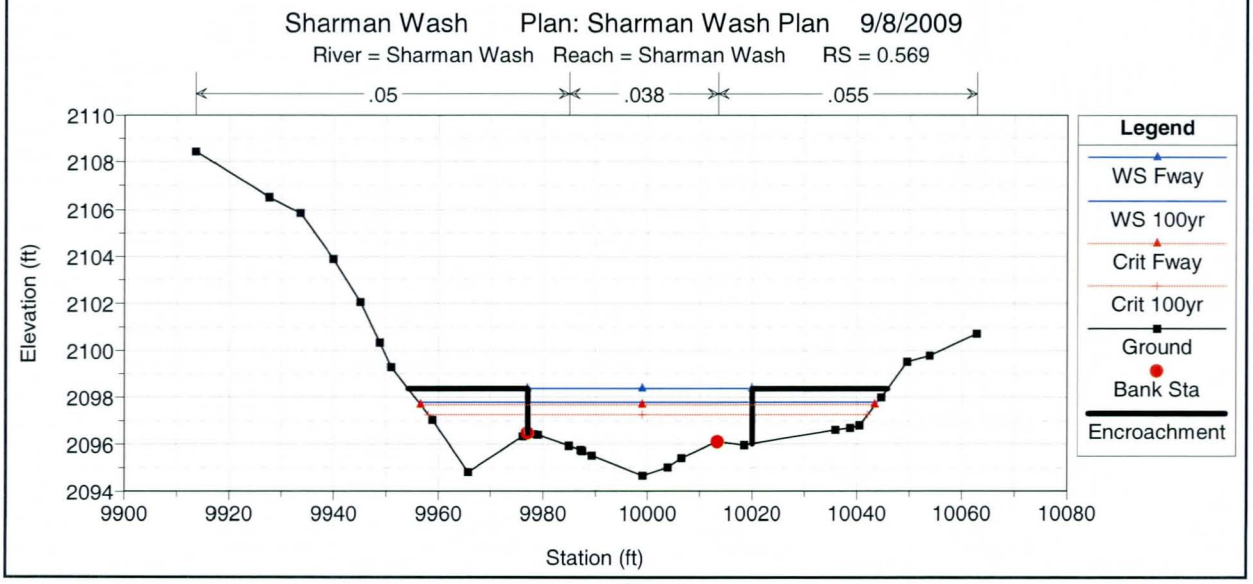

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.886
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

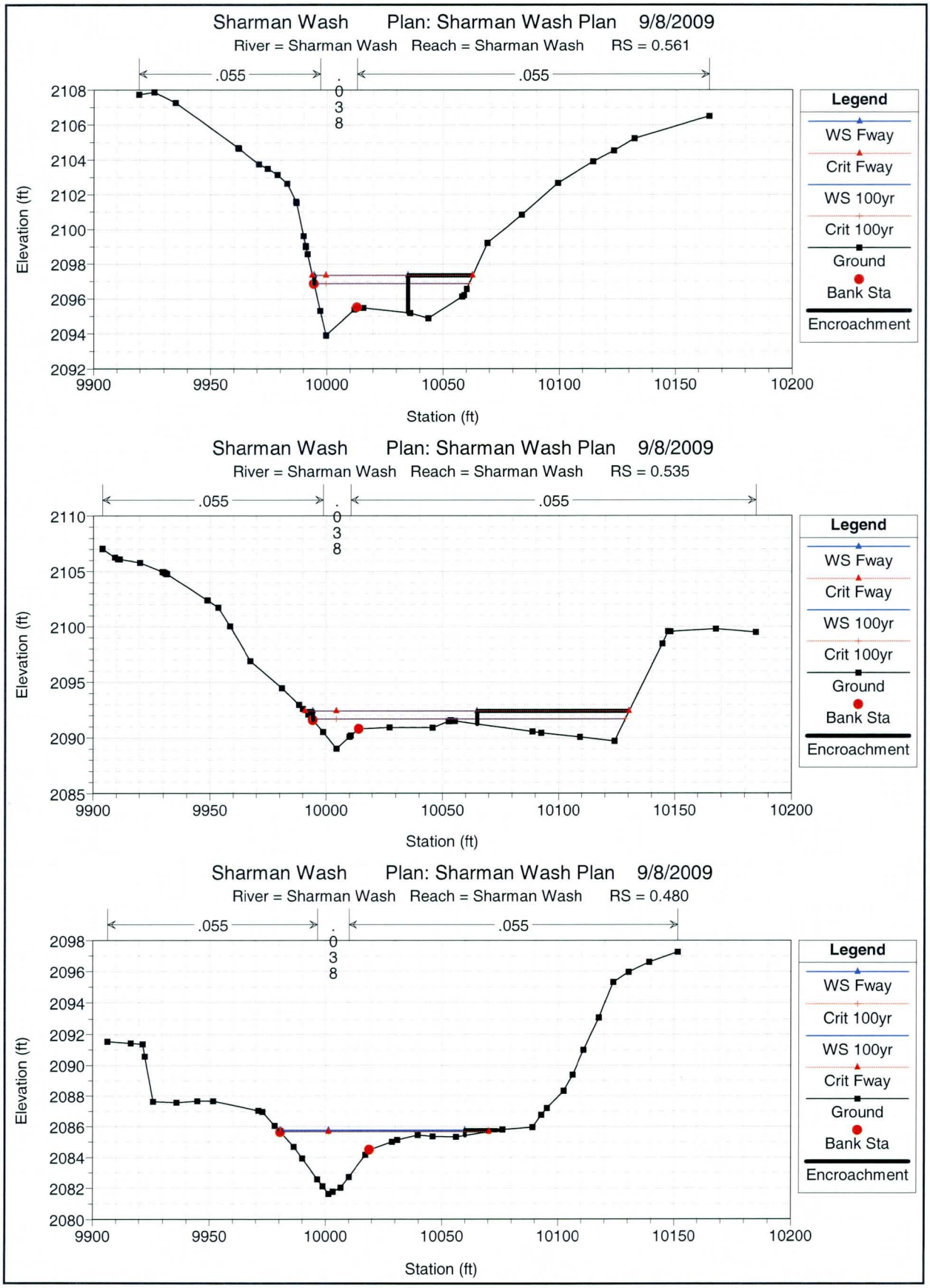

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.850
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.777
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.731
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

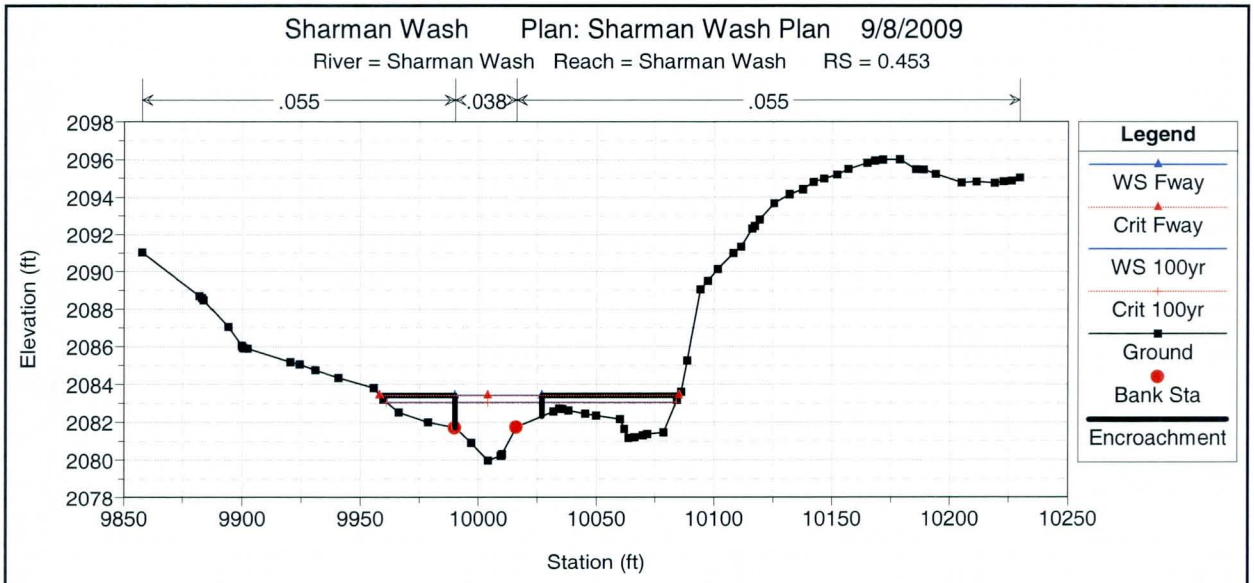

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.677
.025
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.648
.025
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.622
.05
.055
.038
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

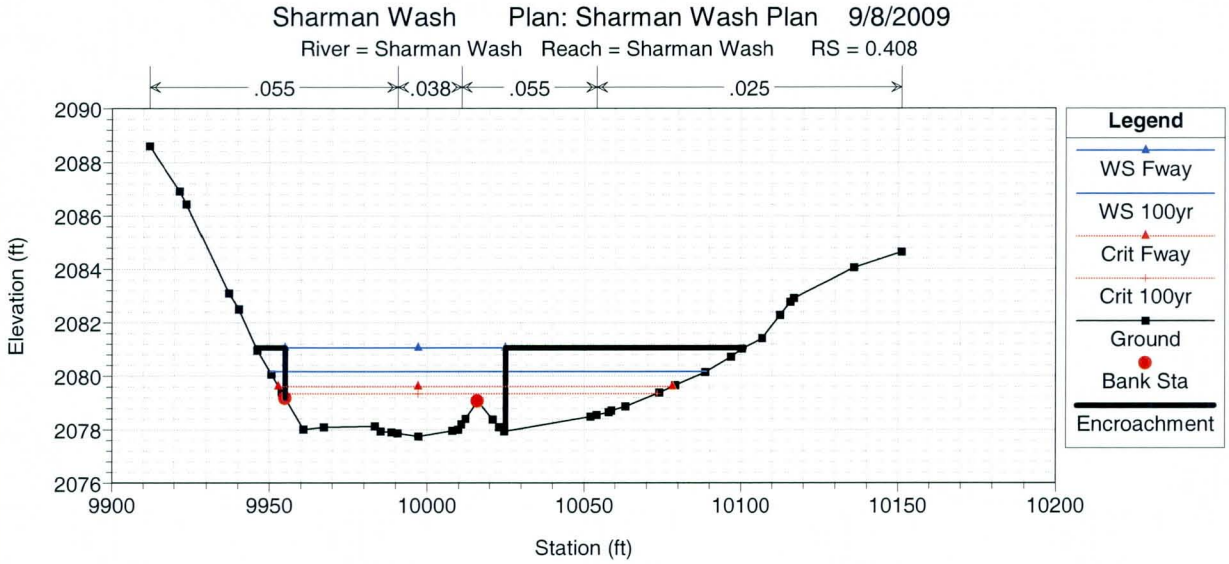

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.592
.05
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

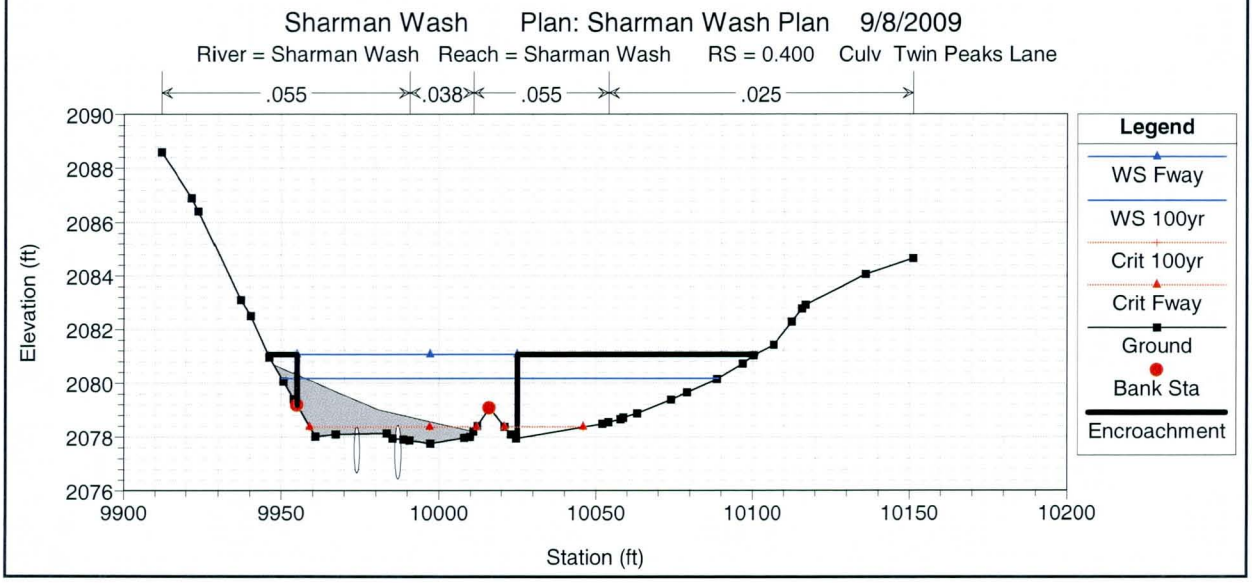

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.577
.05
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

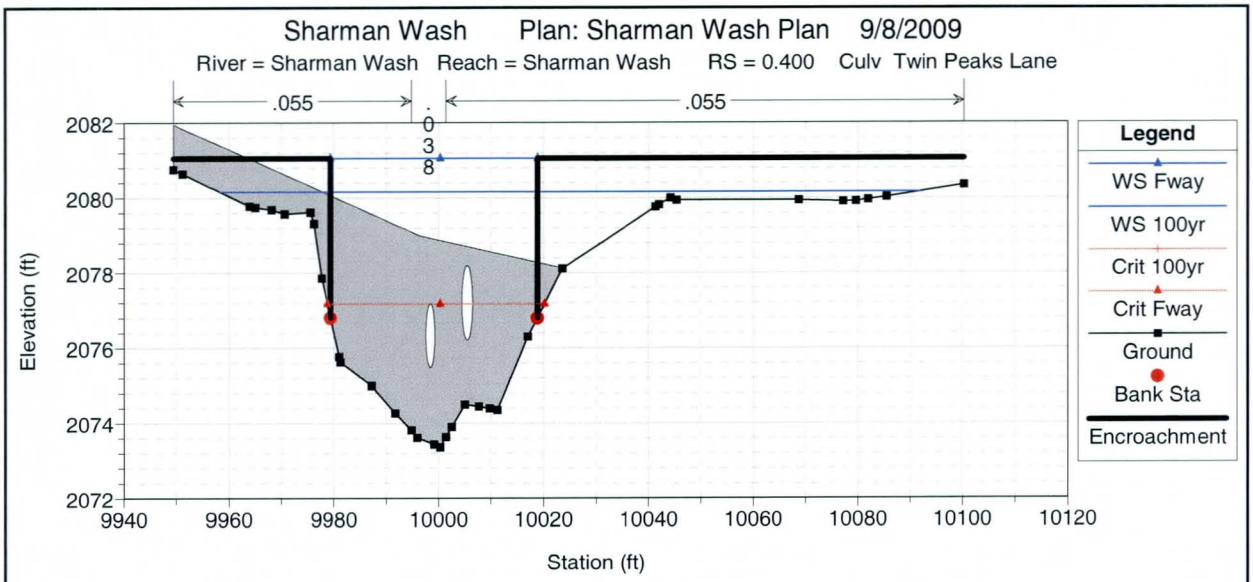

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.569
.05
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

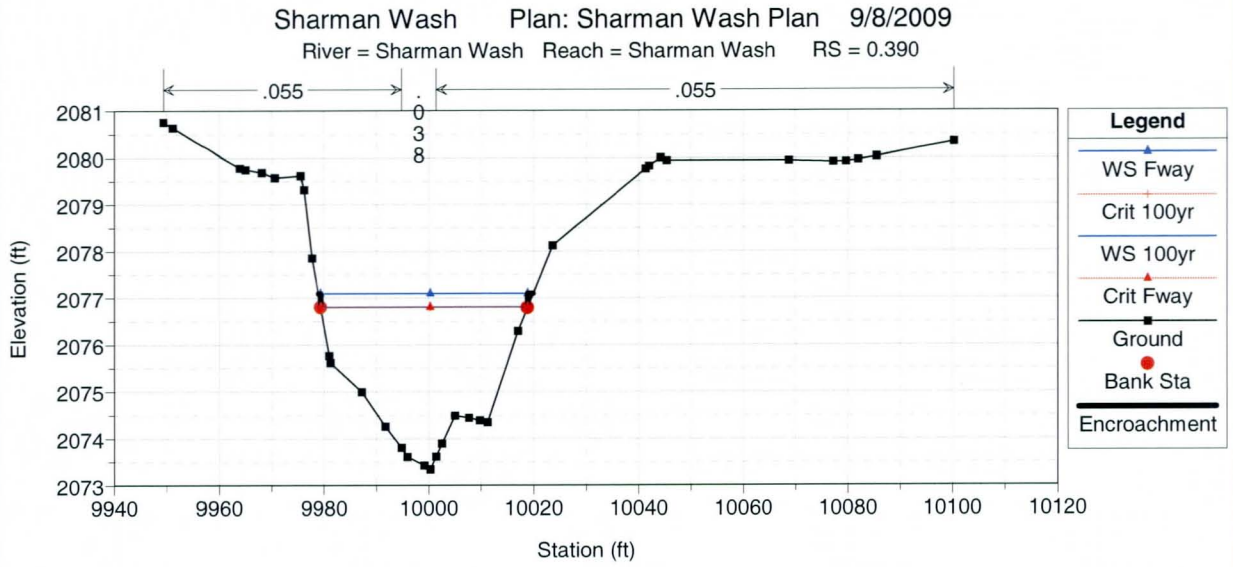

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.561
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.535
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.480
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

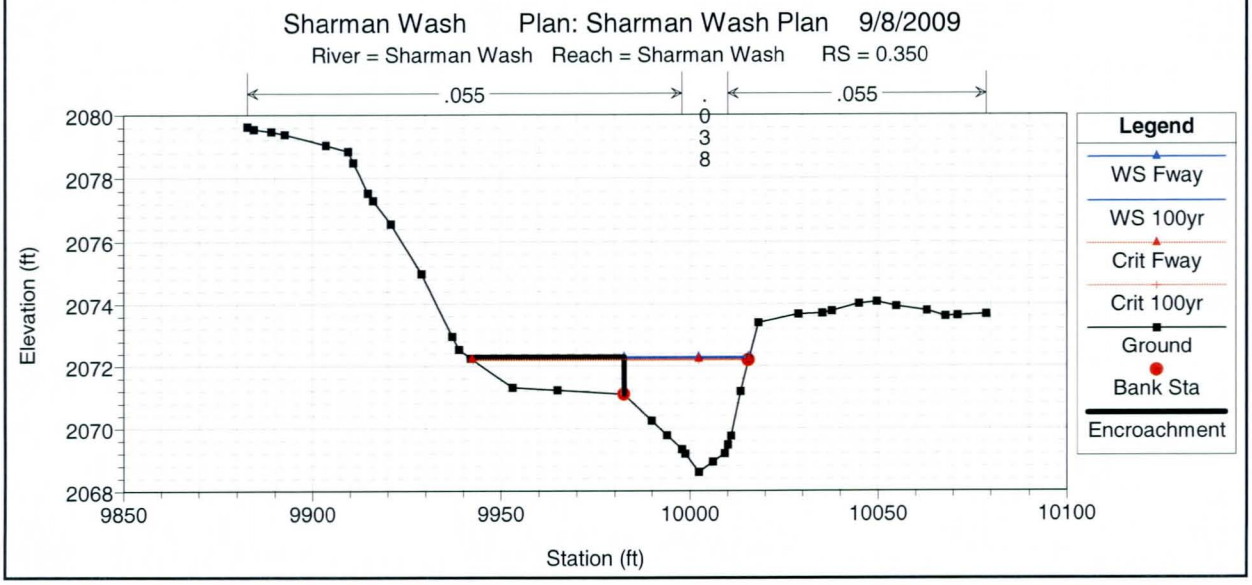

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.453
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

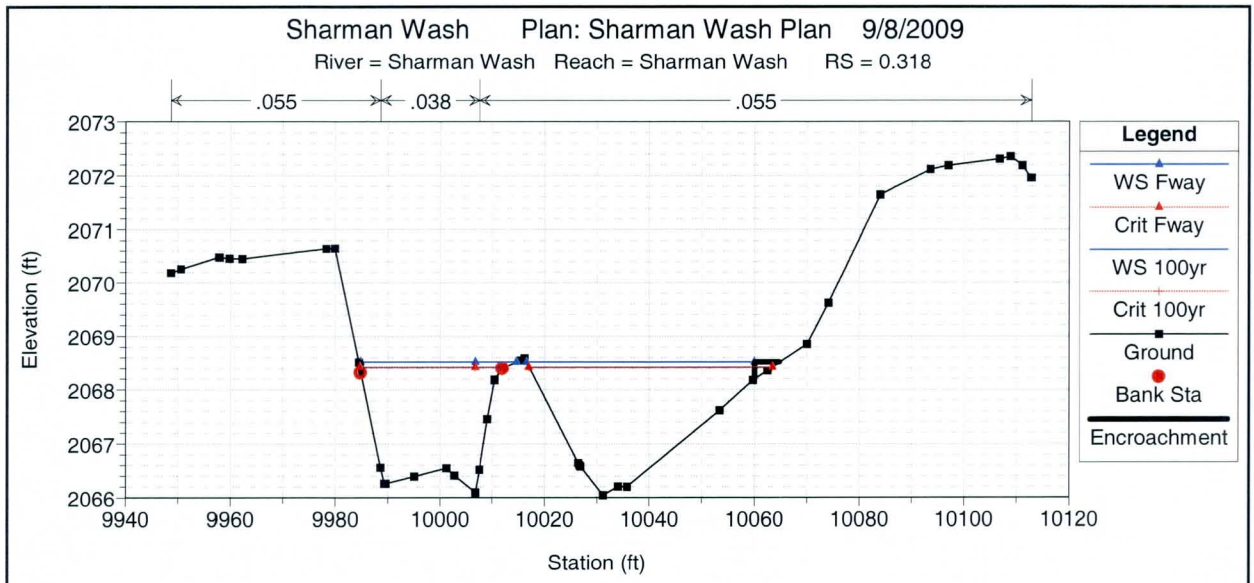

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.408
.055
.038
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

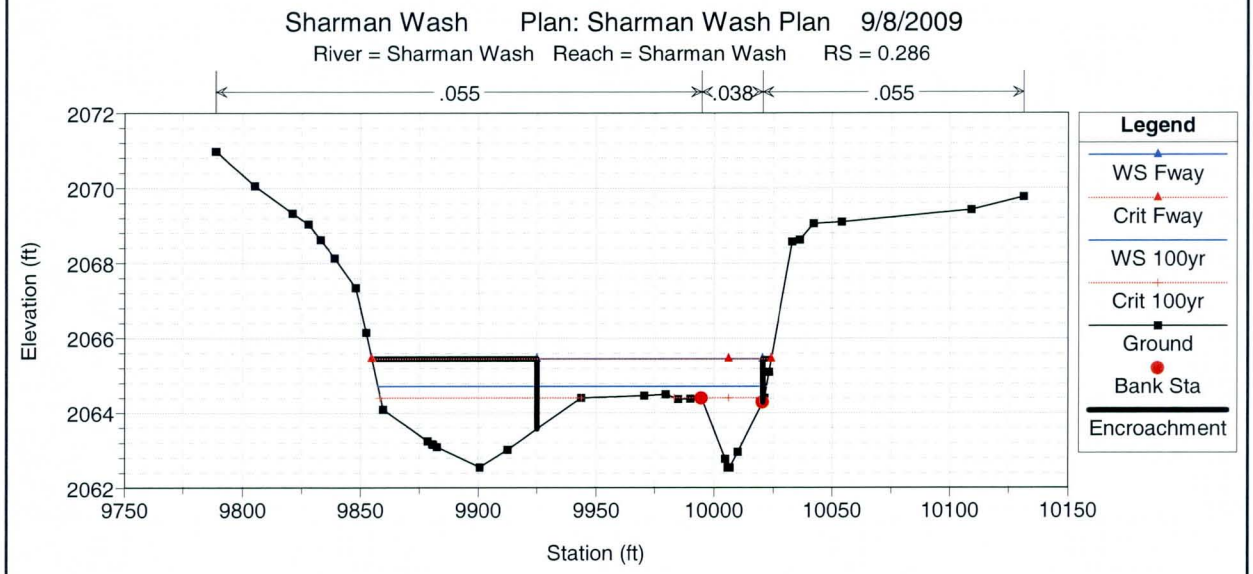

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.400 Culv Twin Peaks Lane
.055
.038
.055
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

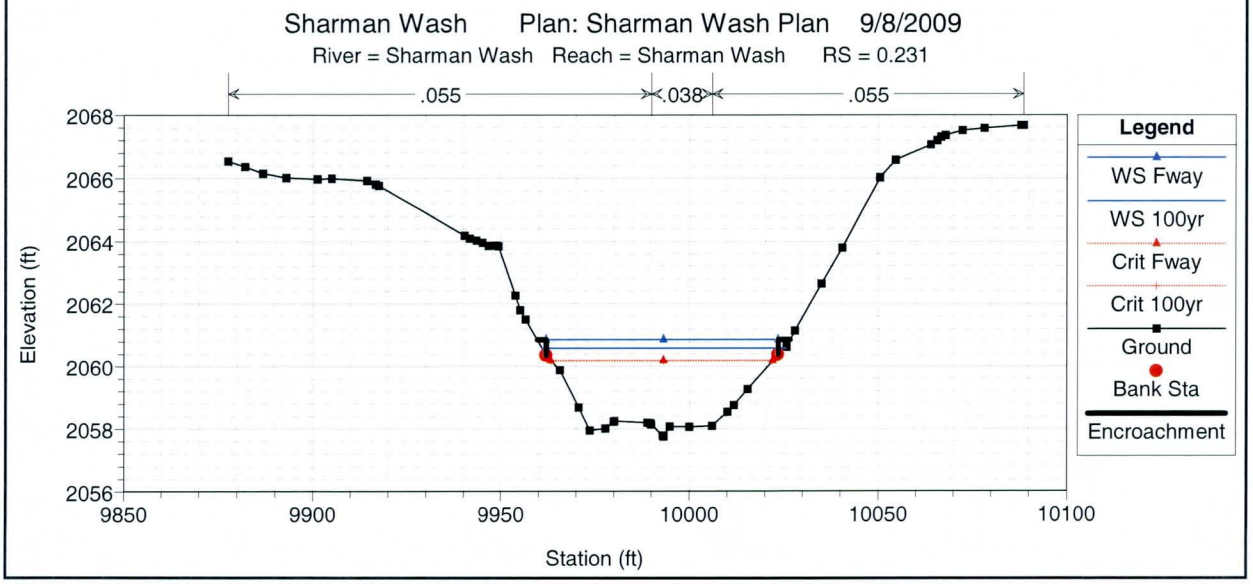

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.400 Culv Twin Peaks Lane
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

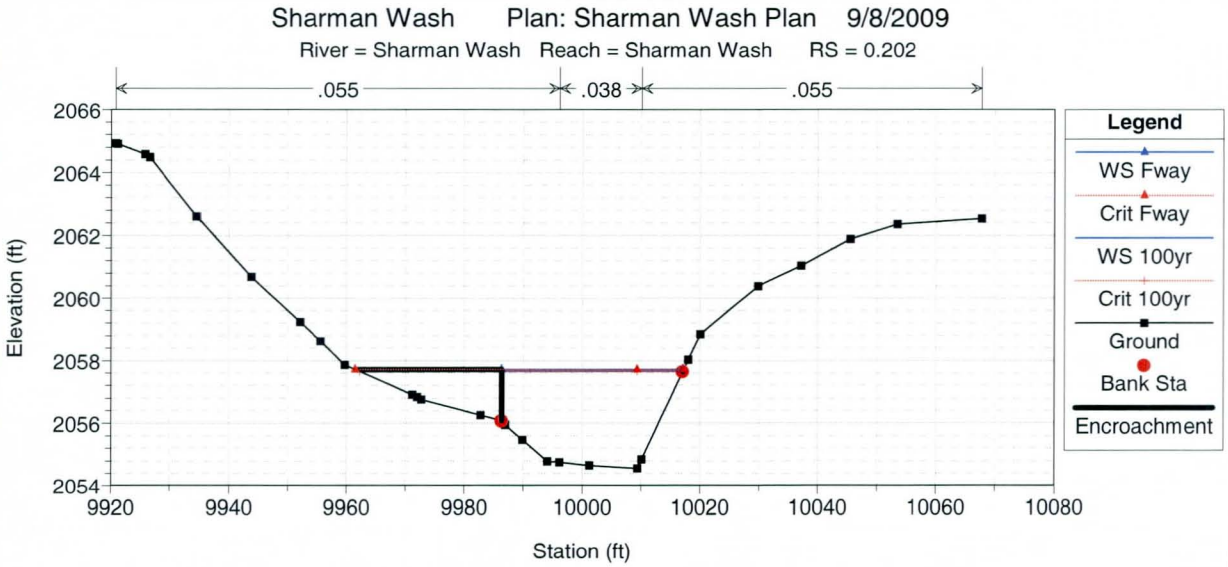

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.390
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

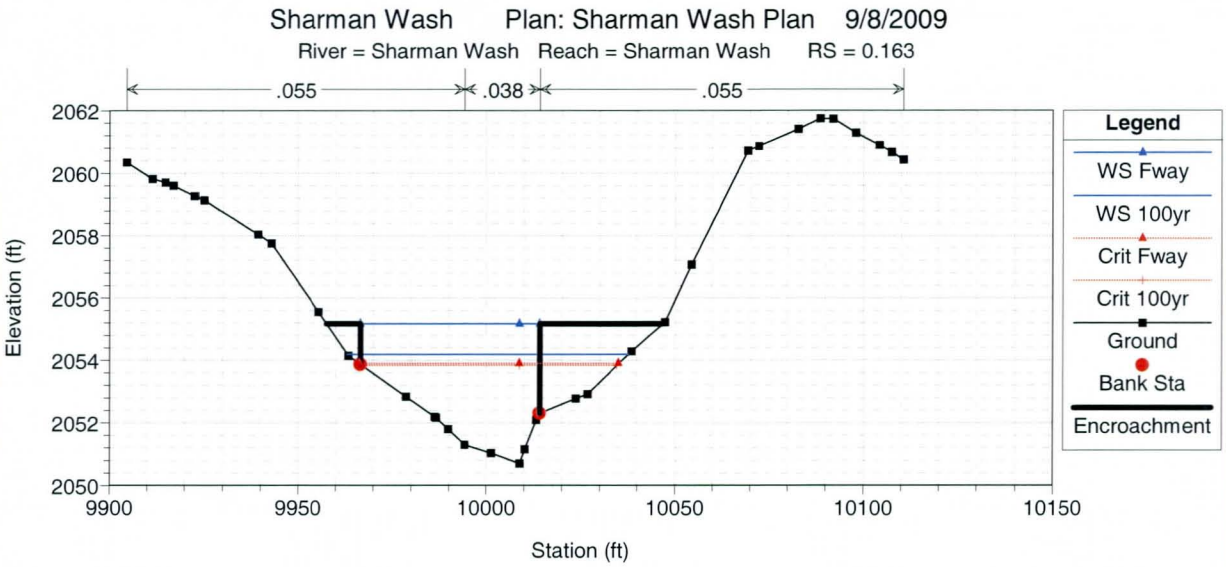

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.350
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

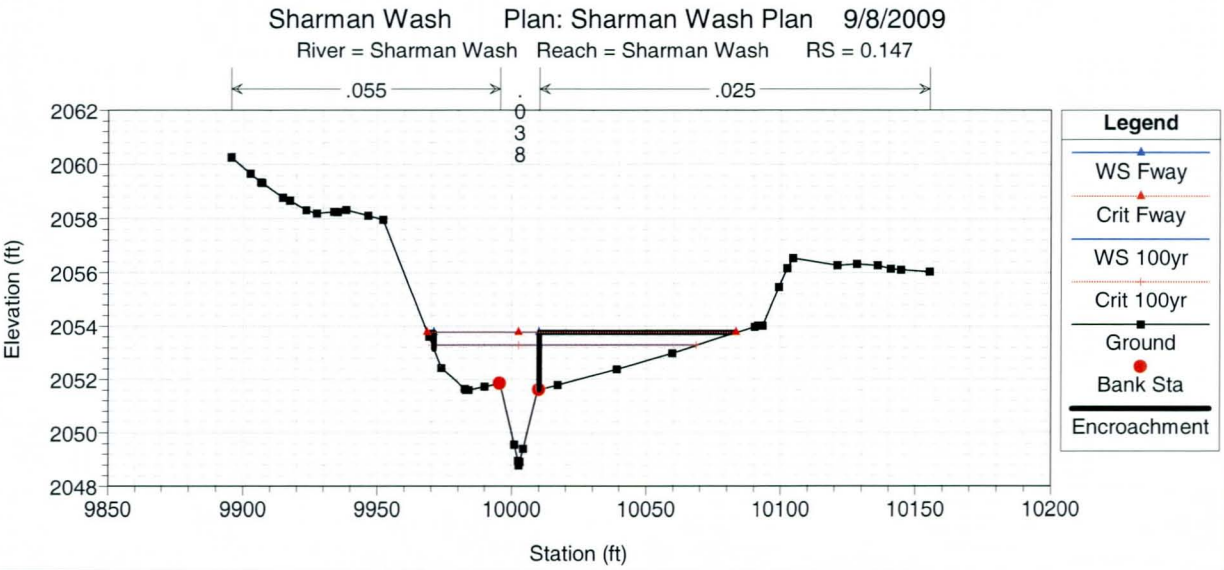

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.318
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

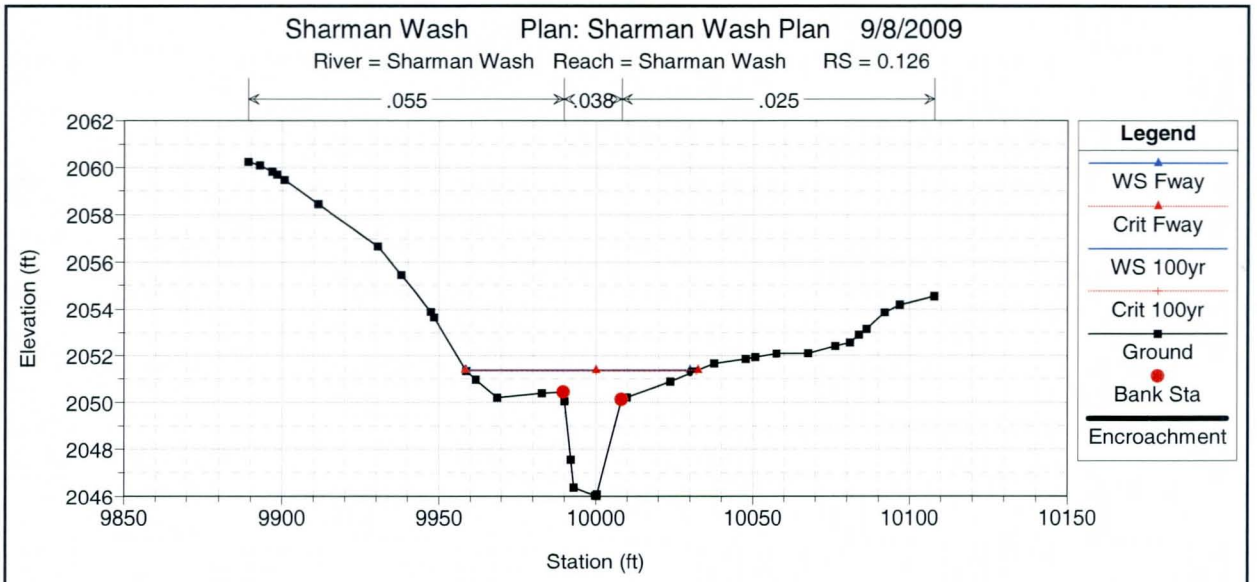

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.286
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

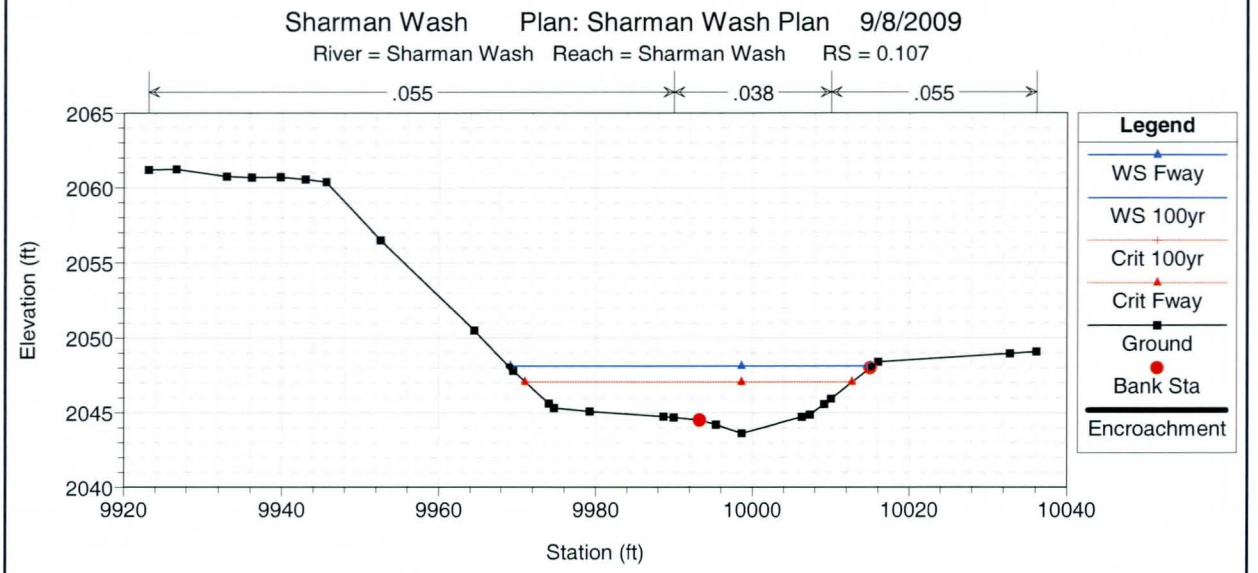

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.231
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

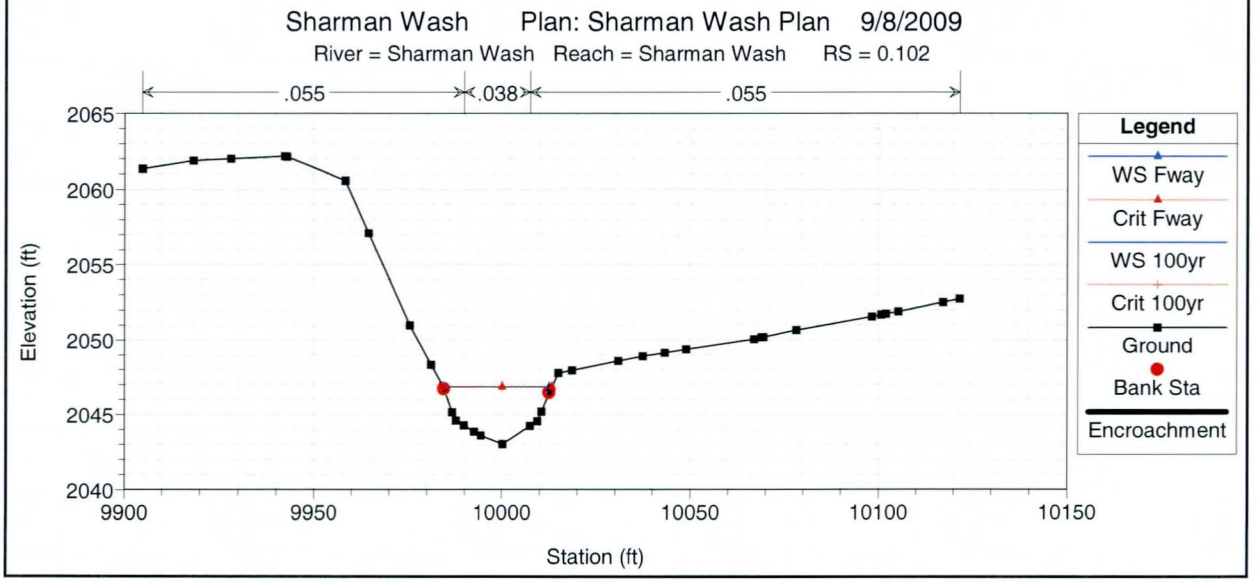

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.202
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

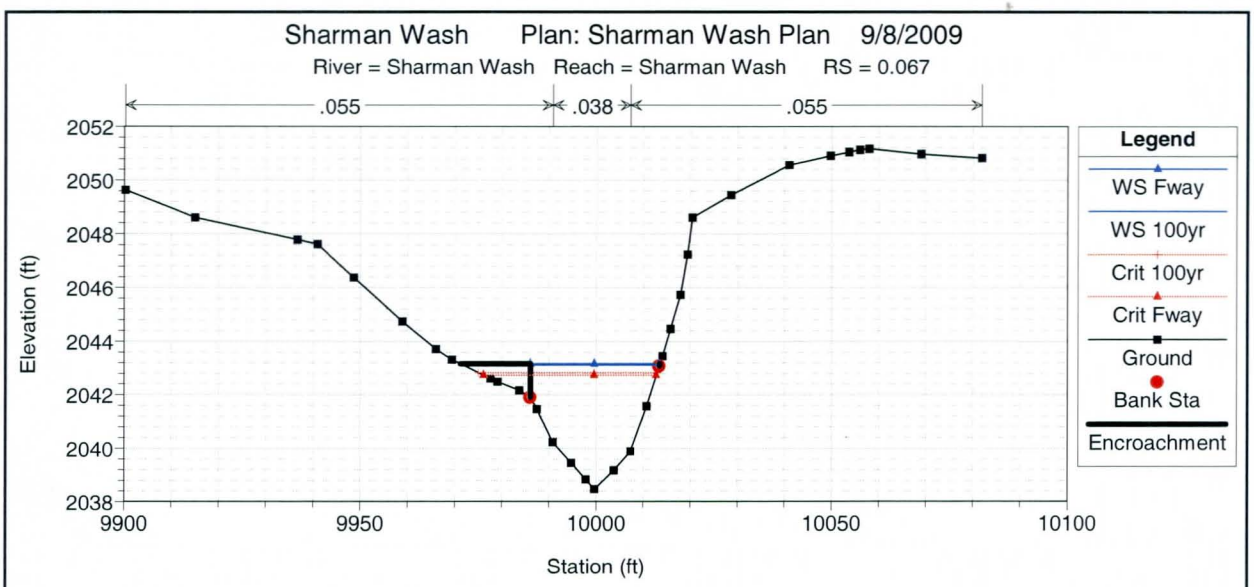

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.163
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

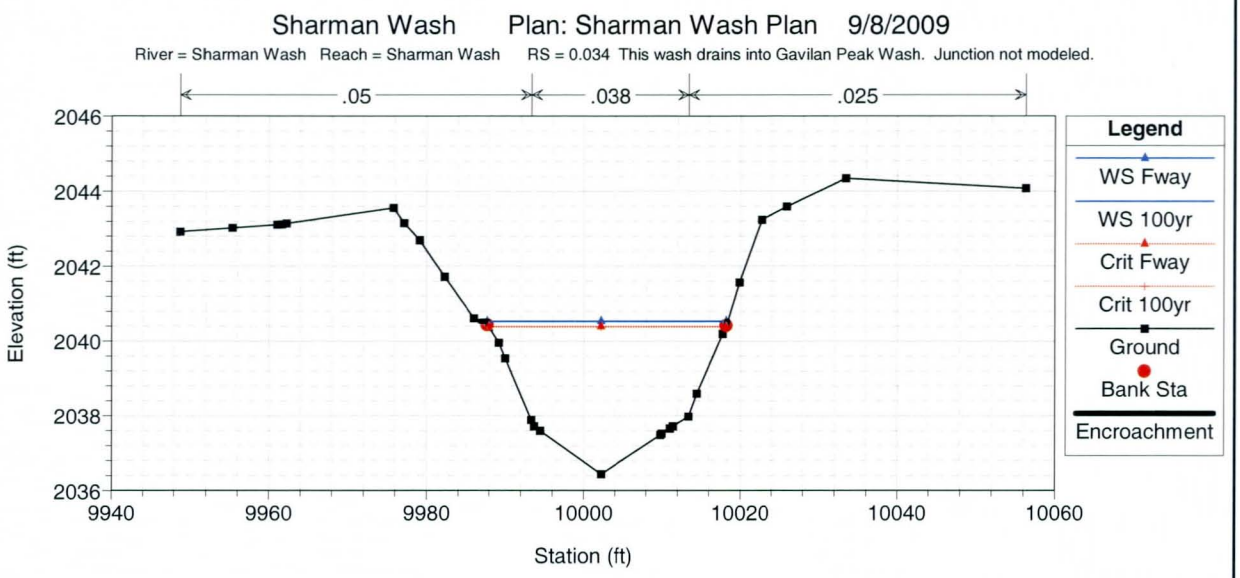

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.147
.055
.038
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.126
.055
.038
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.107
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

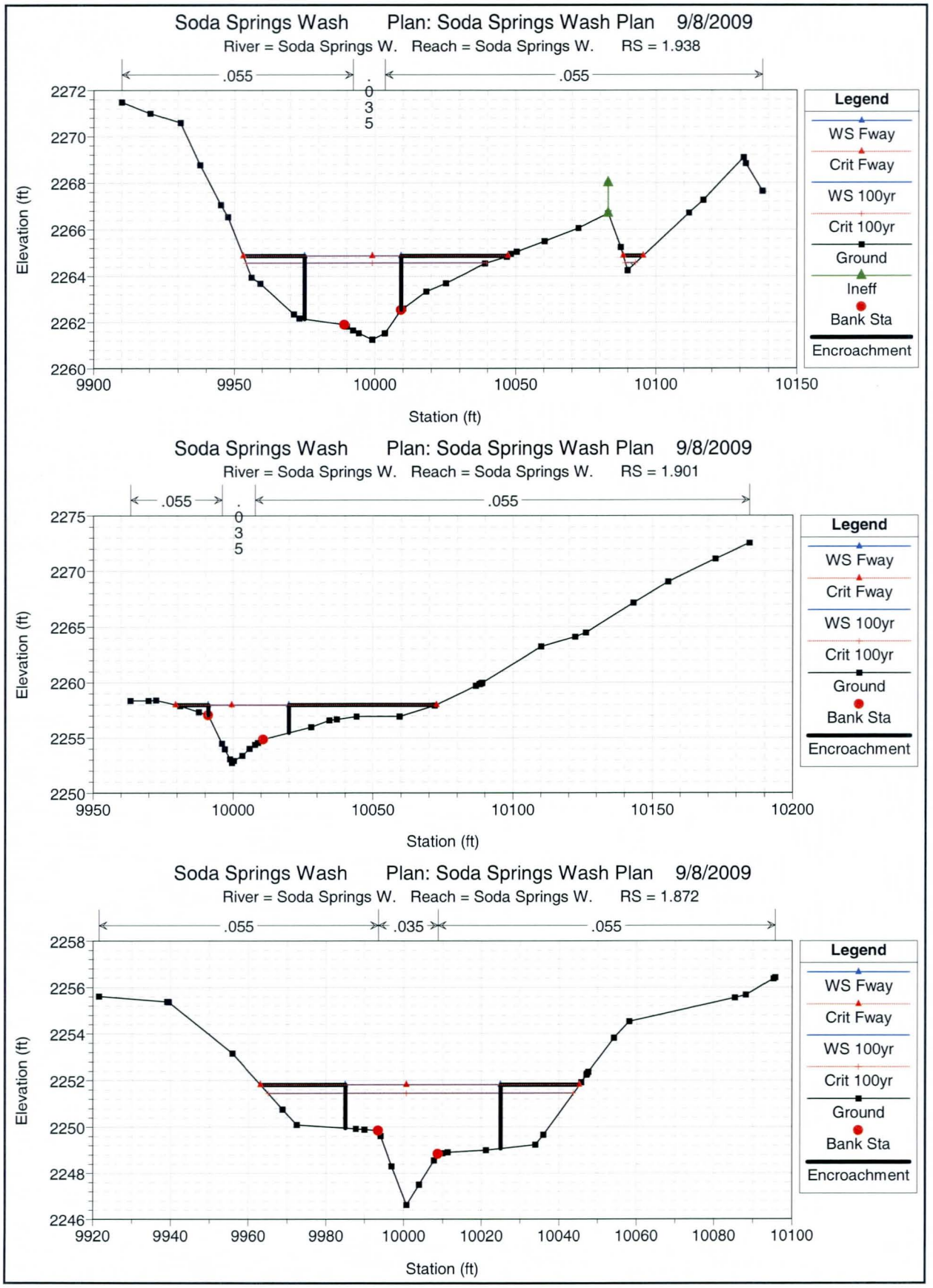

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.102
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

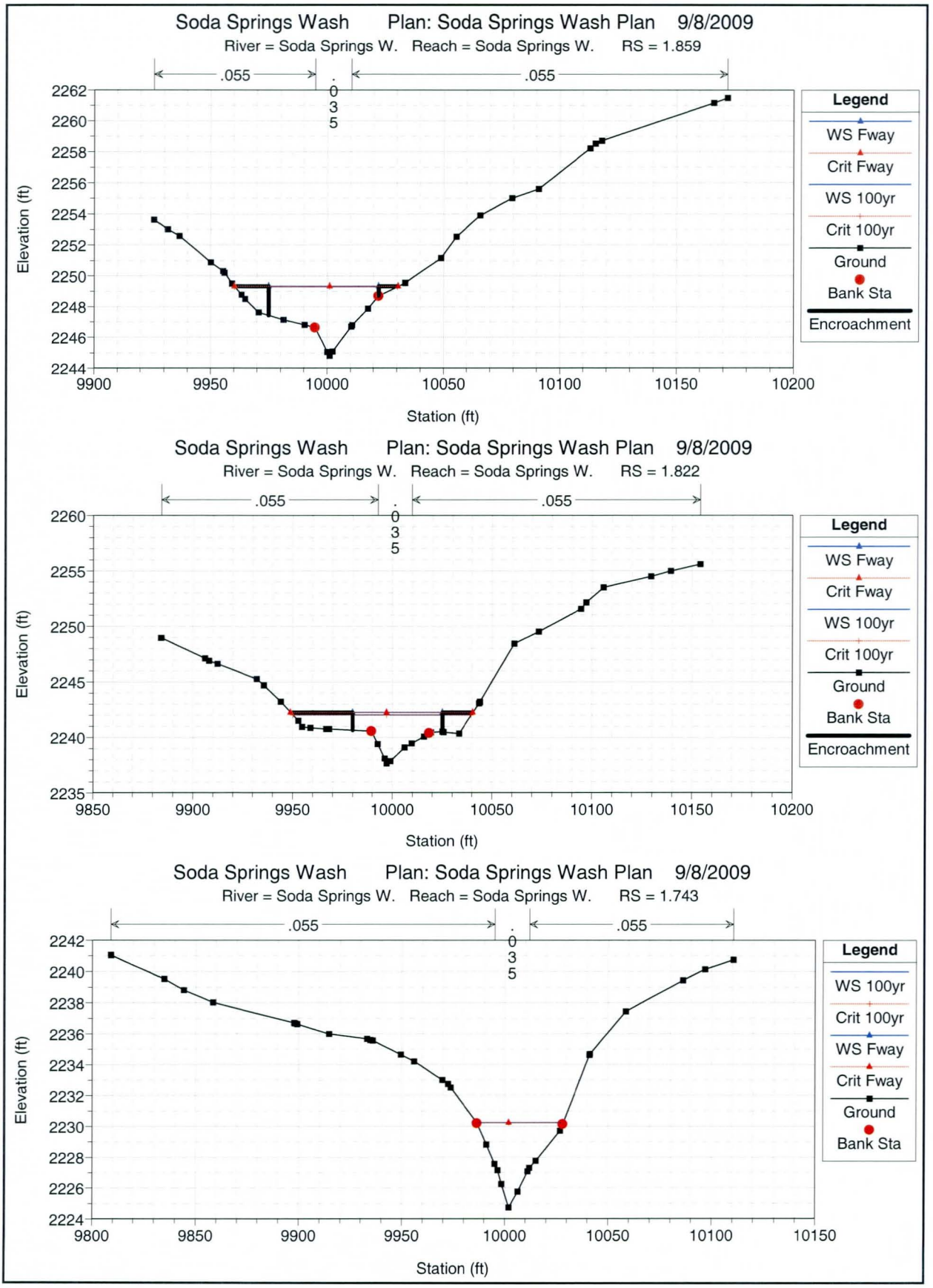

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.067
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

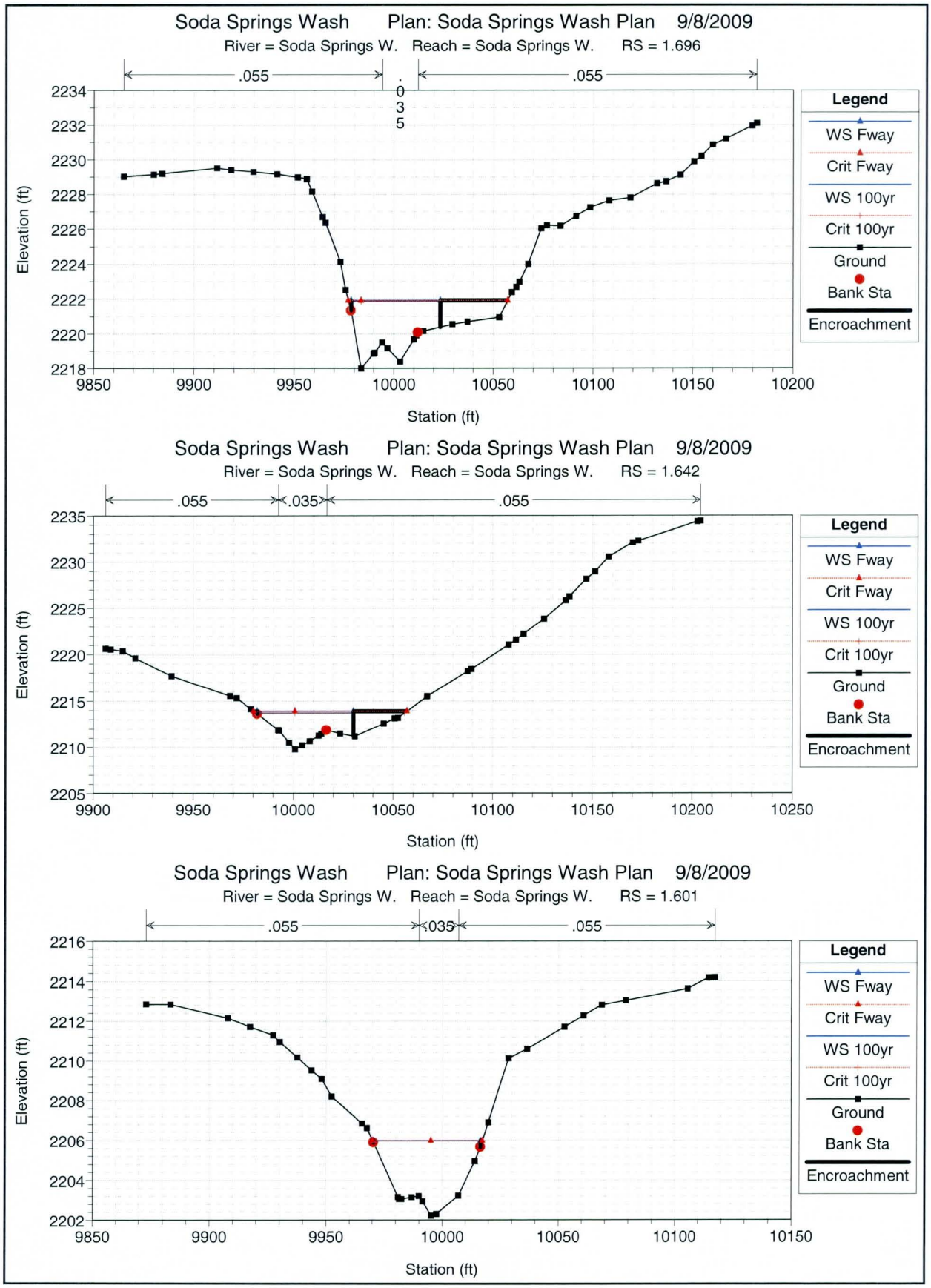

Sharman Wash Plan: Sharman Wash Plan 9/8/2009
River = Sharman Wash Reach = Sharman Wash RS = 0.034 This wash drains into Gavilan Peak Wash. Junction not modeled.
.05
.038
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

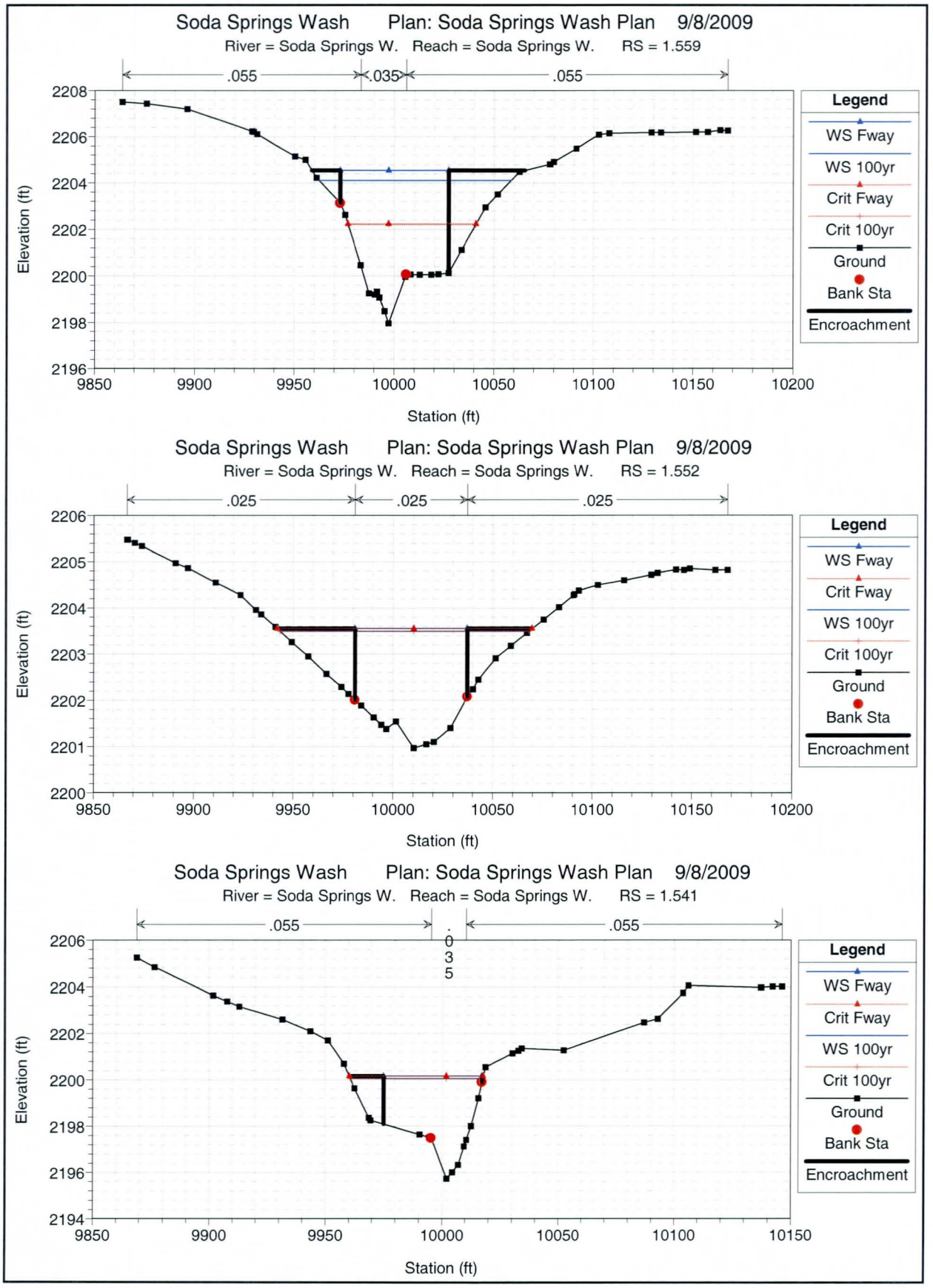
CROSS SECTION PLOTS FOR

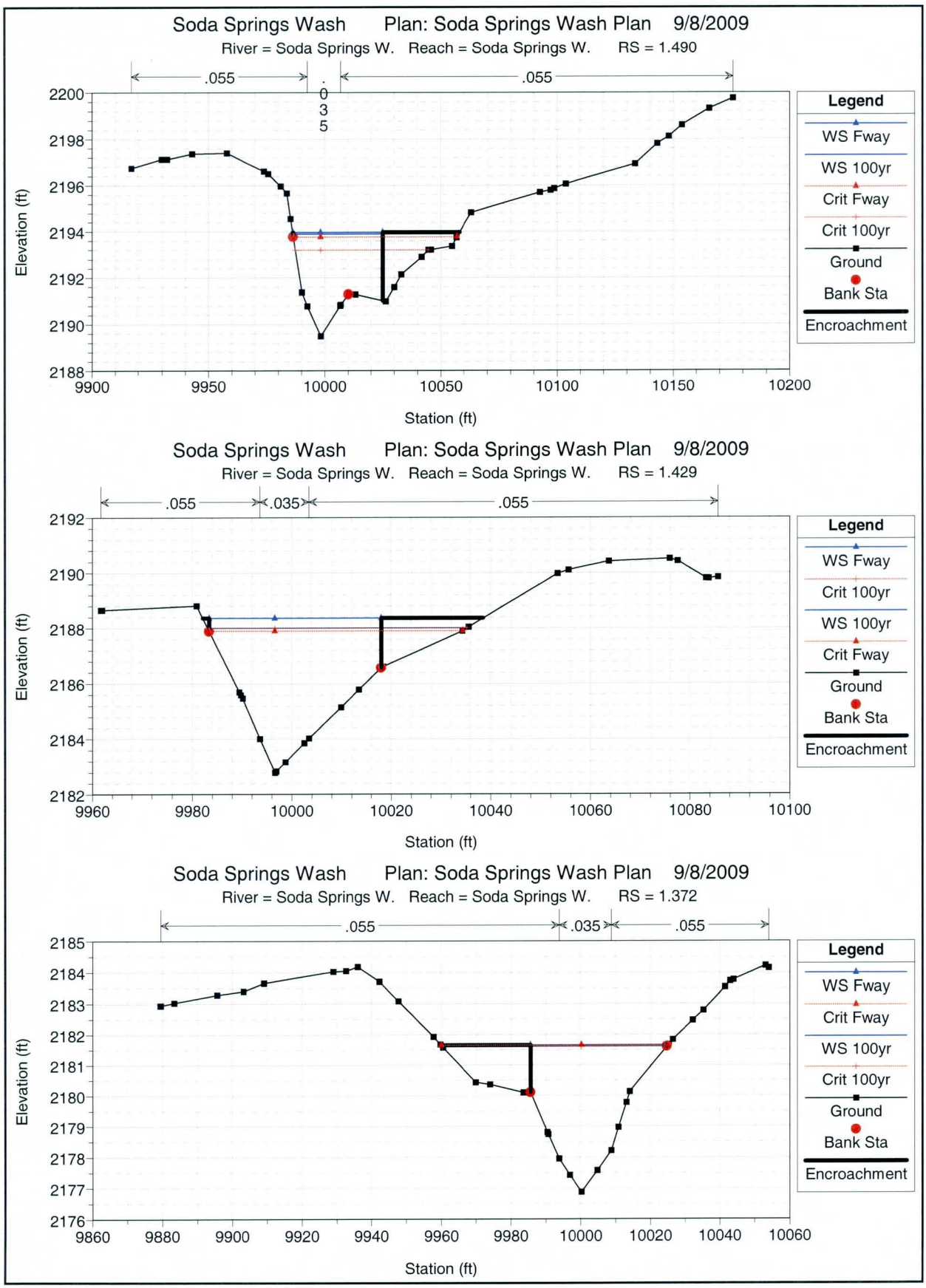
SODA SPRINGS WASH WASH

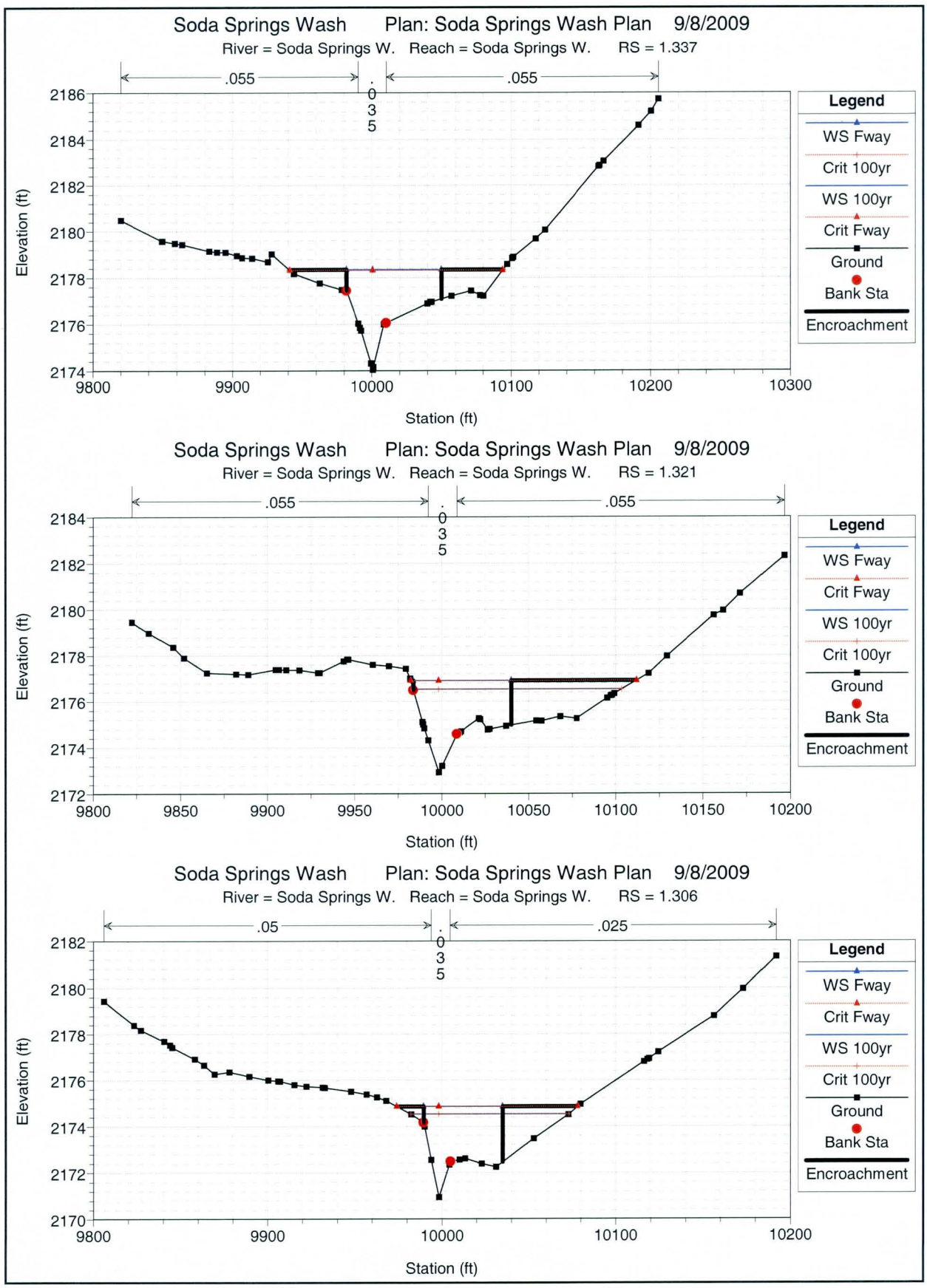

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.938
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.901
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.872
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

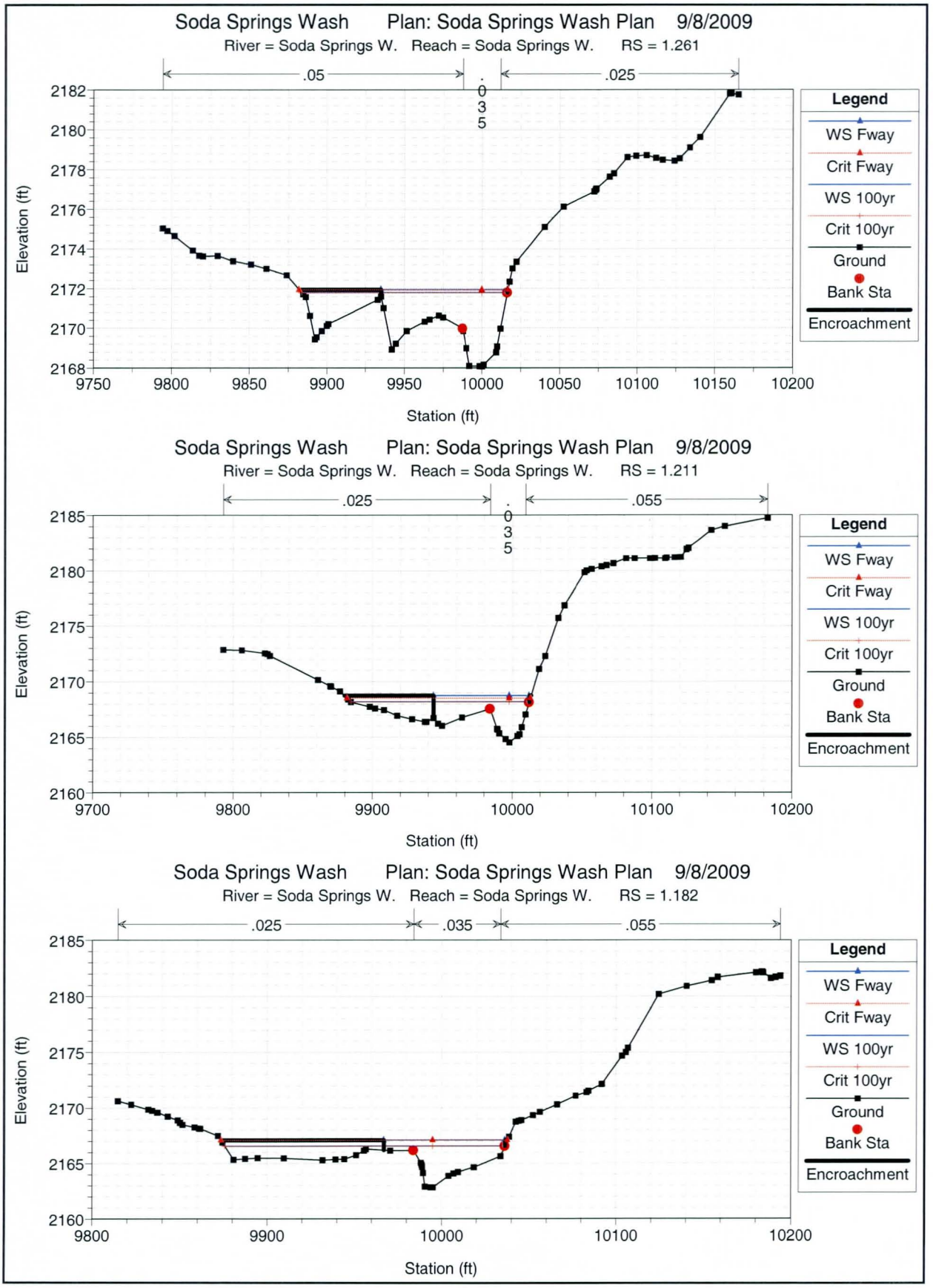

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.859
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.822
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.743
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

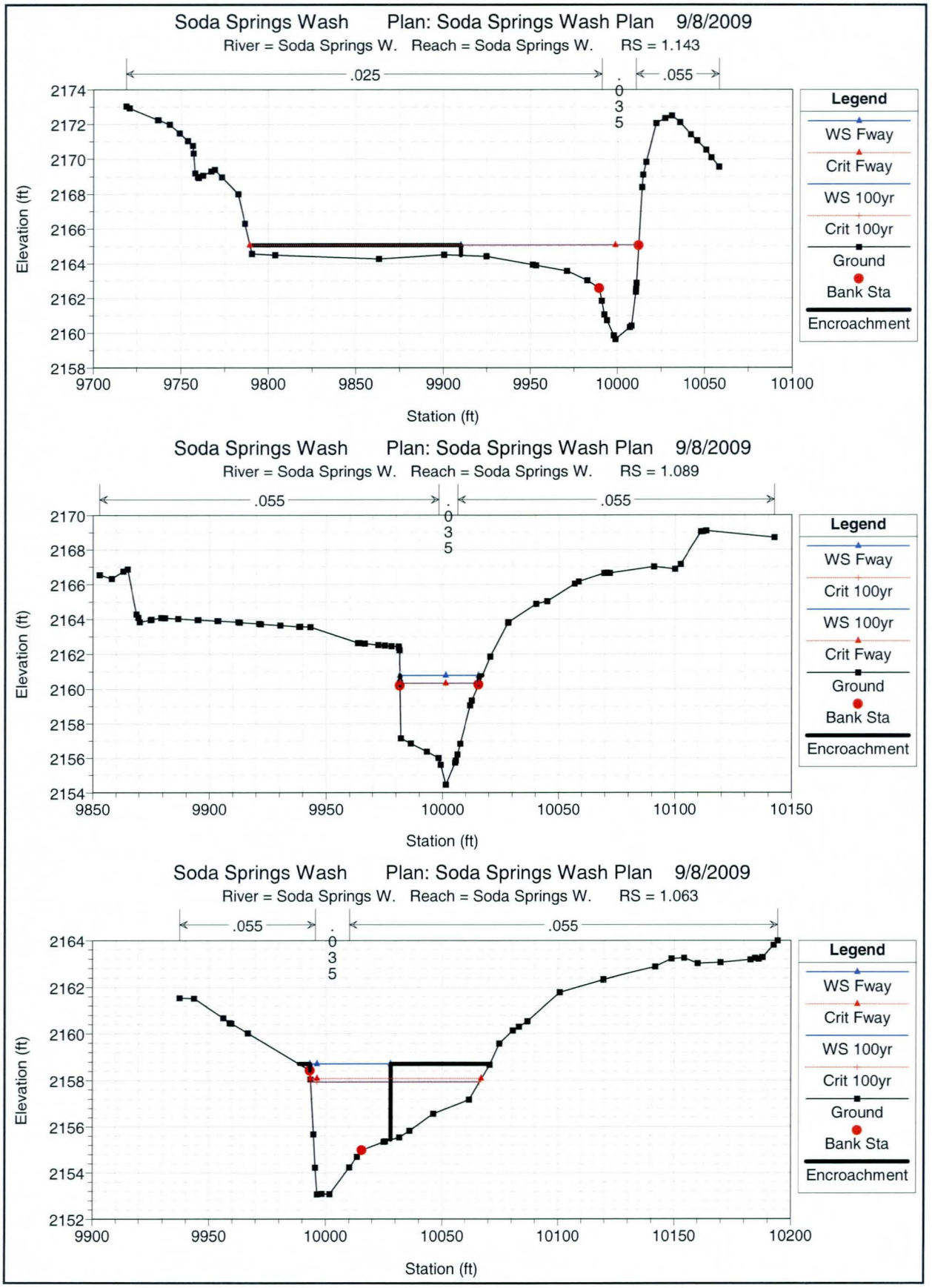

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.696
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.642
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.601
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

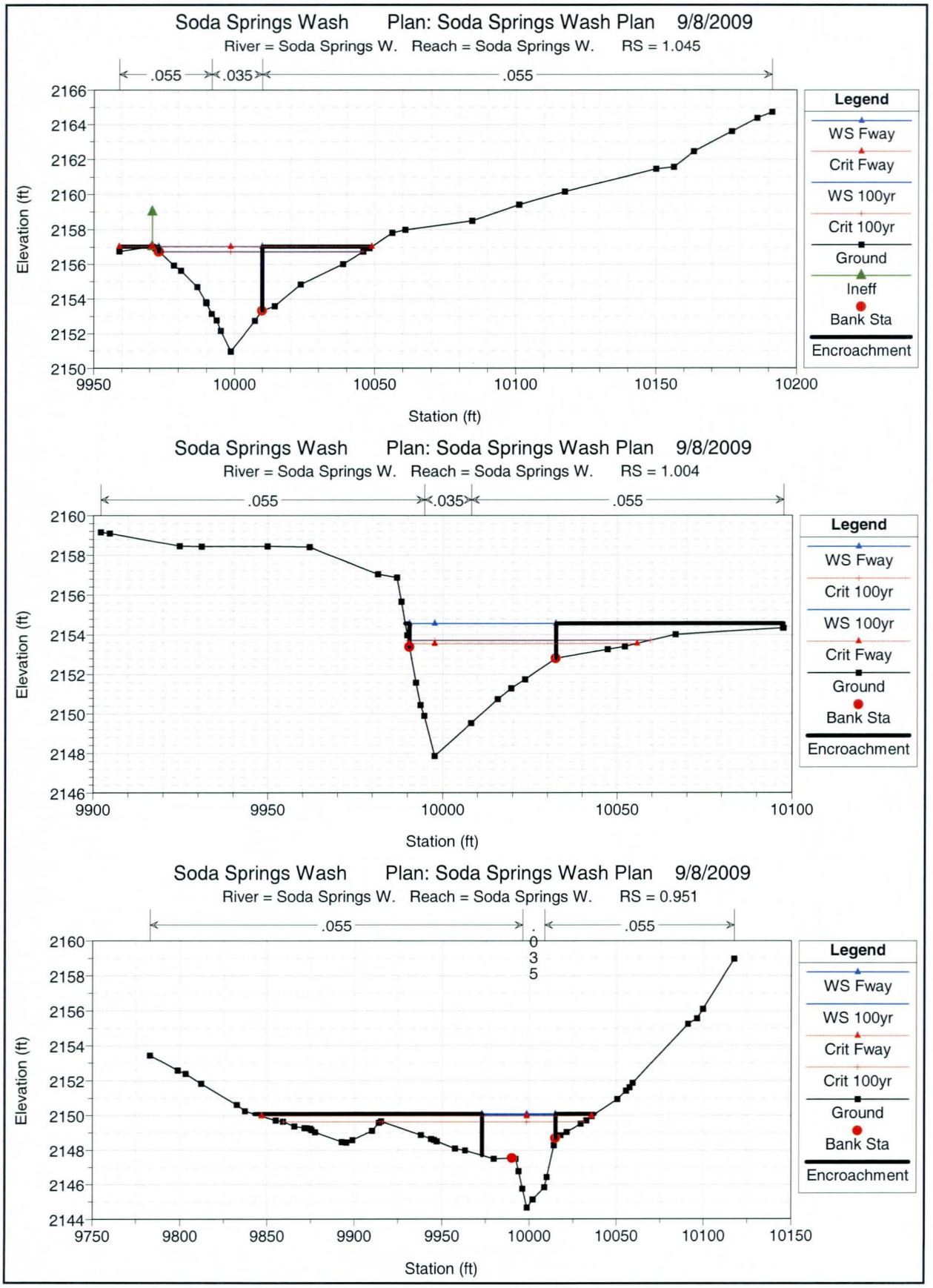

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.559
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.552
.025
.025
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.541
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

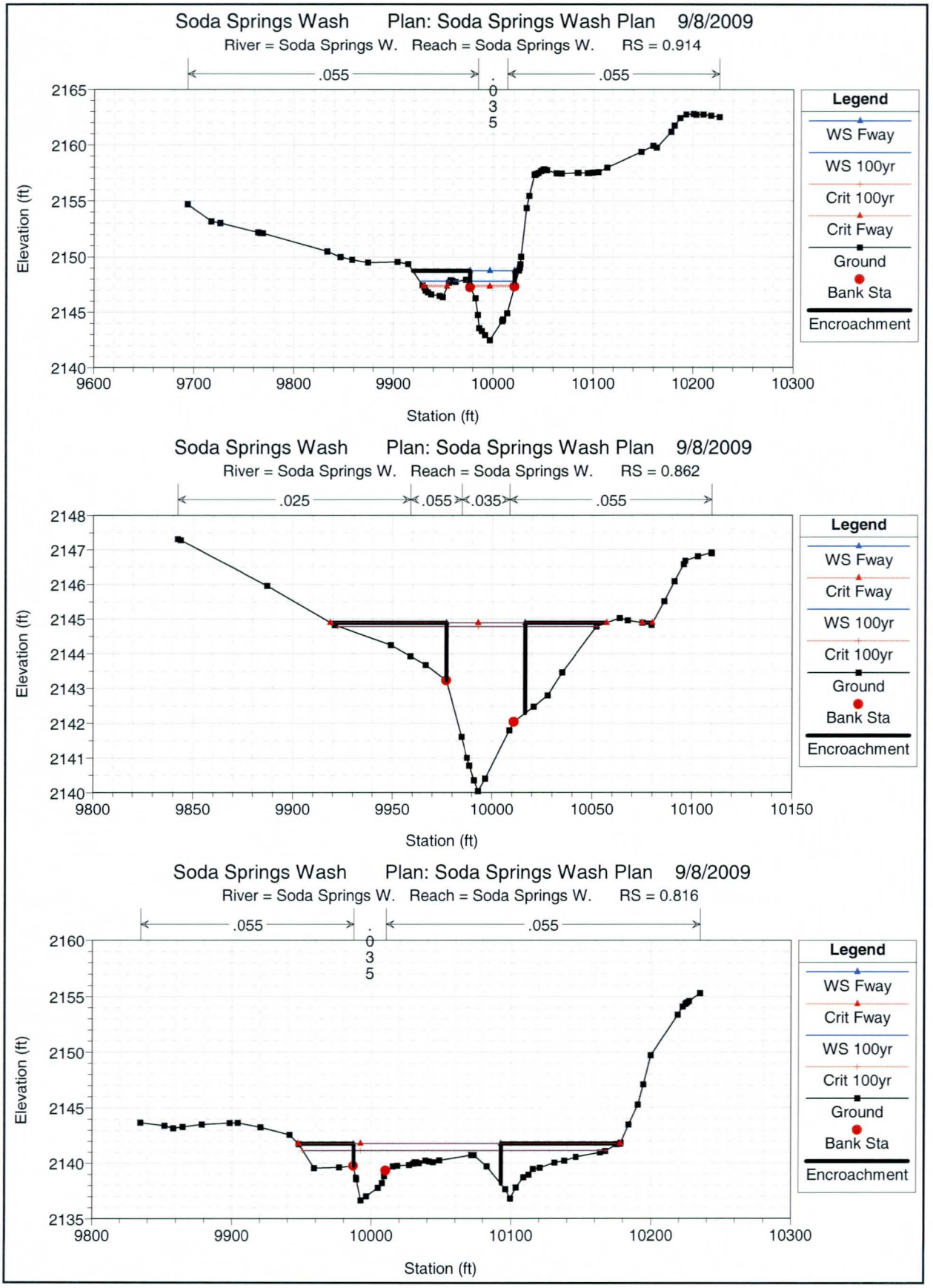

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.490
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.429
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.372
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

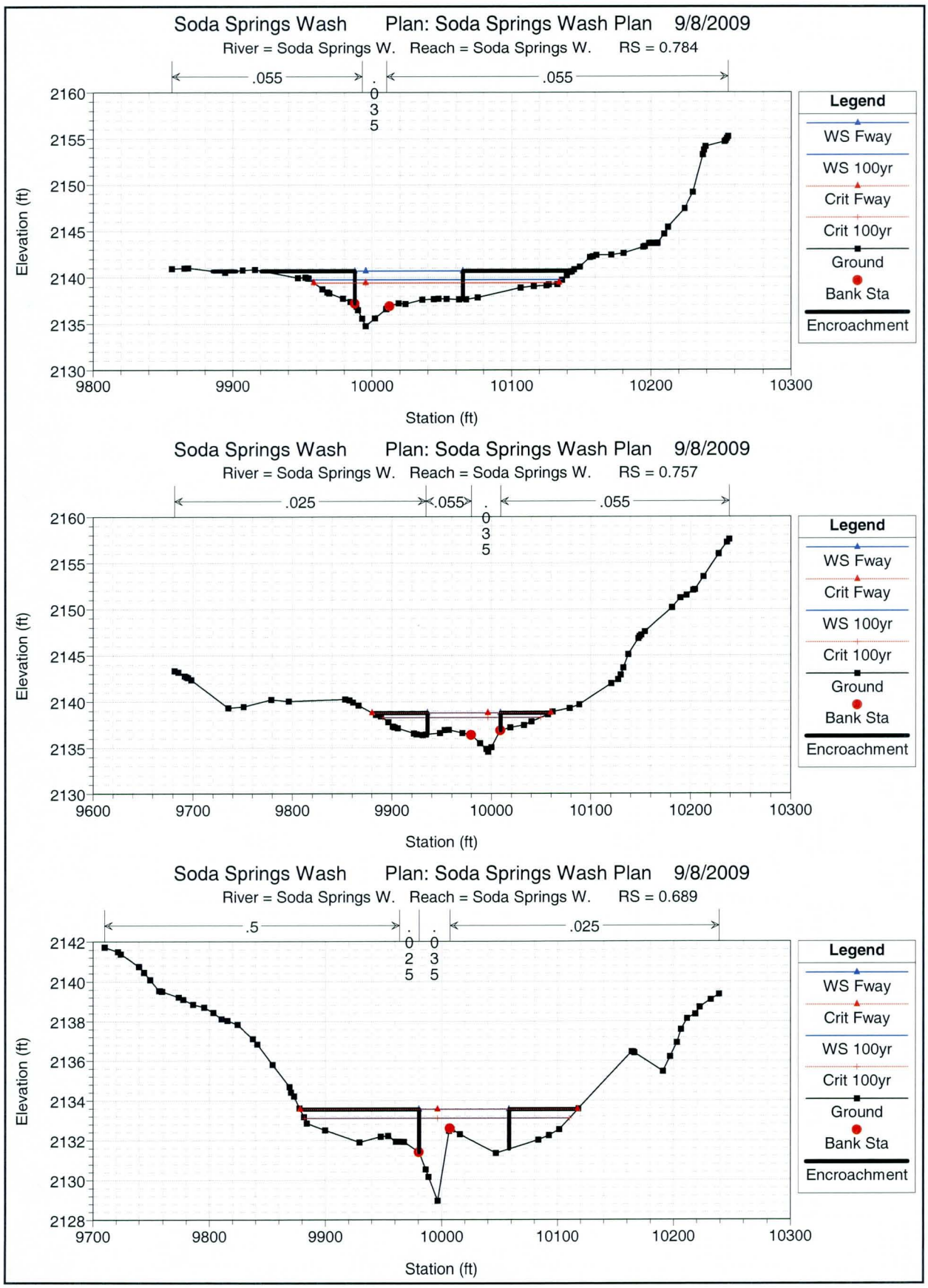

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.337
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.321
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.306
.05
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

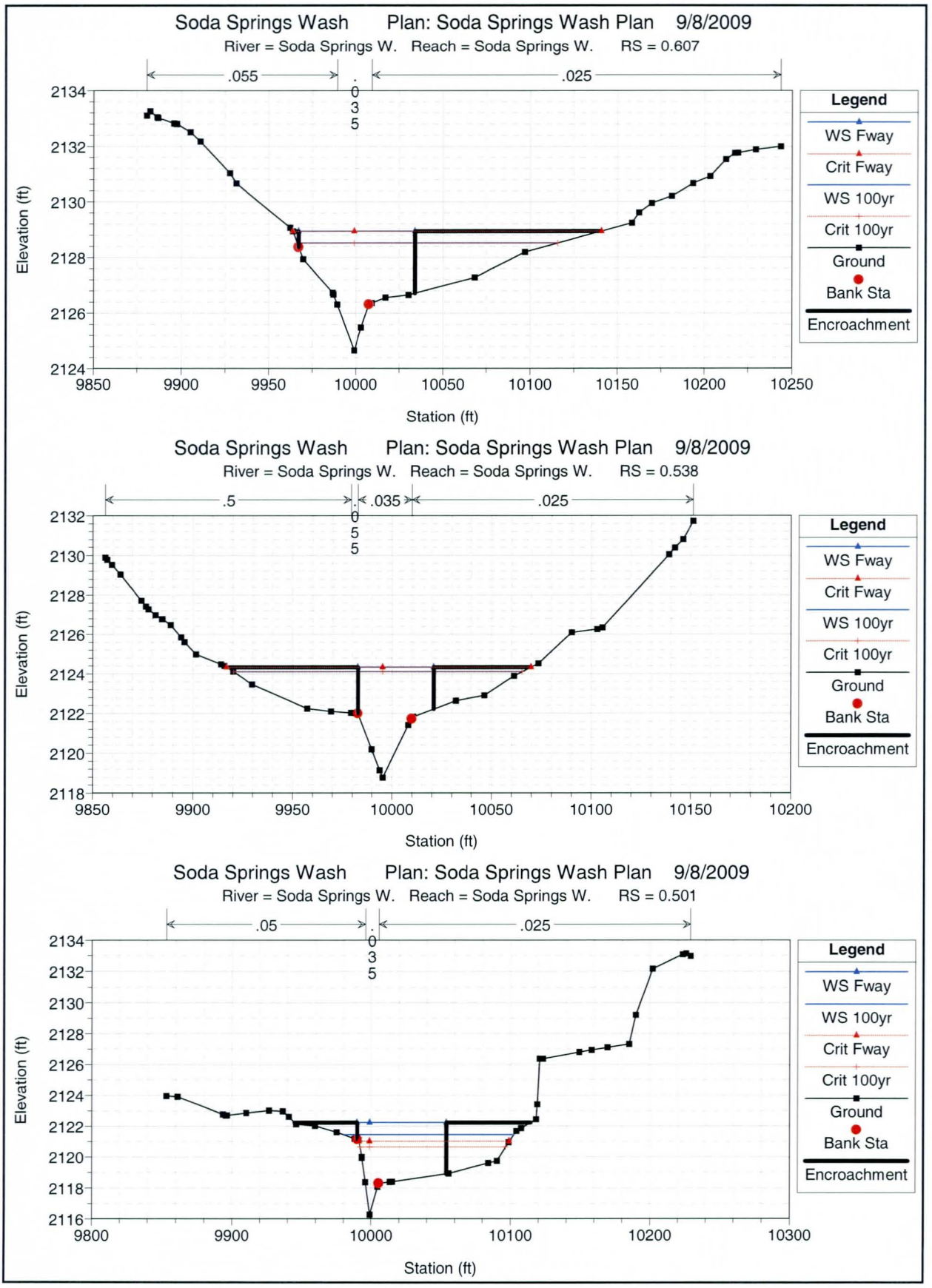

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.261
.05
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.211
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.182
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

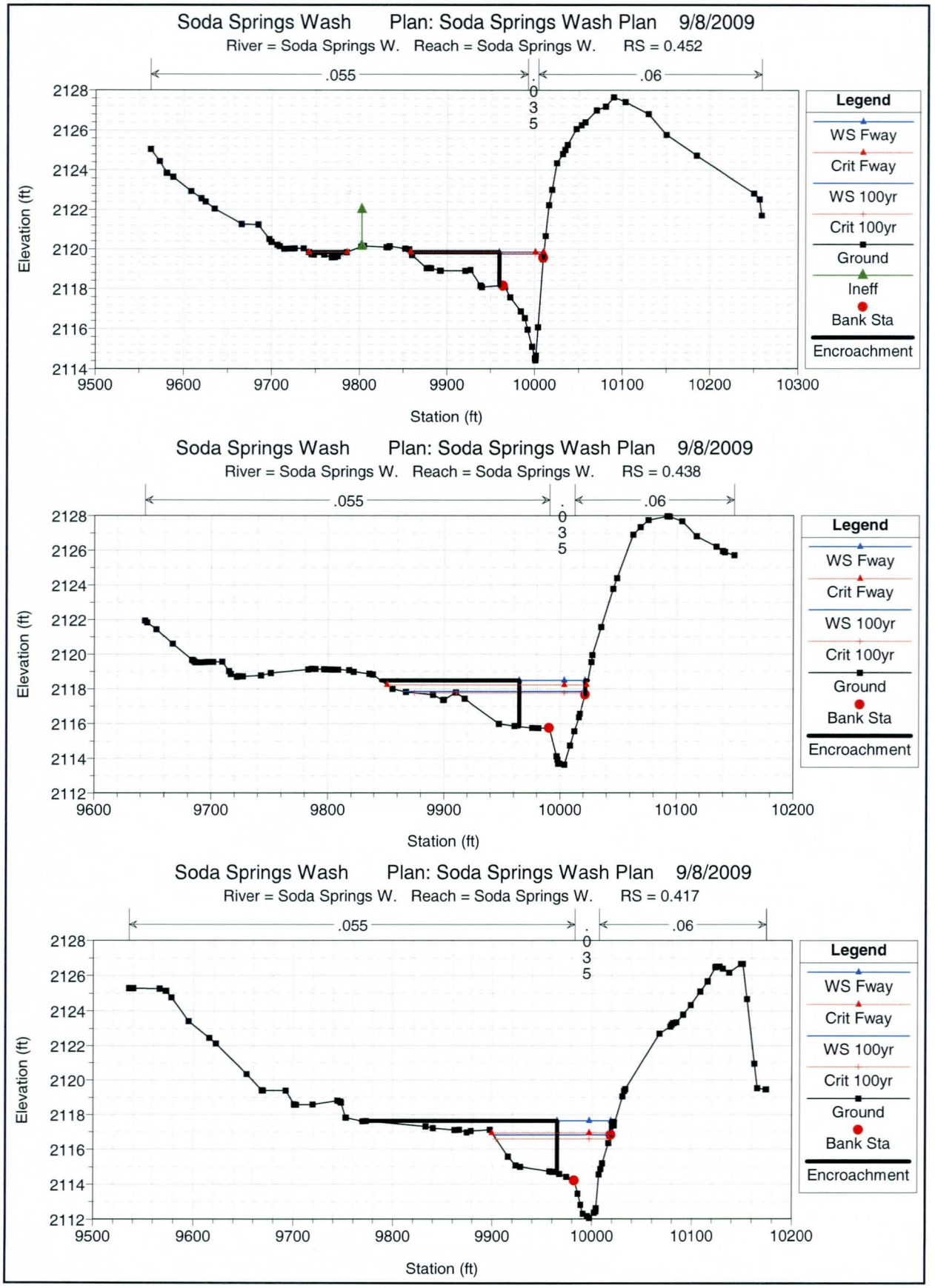

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.143
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.089
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.063
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

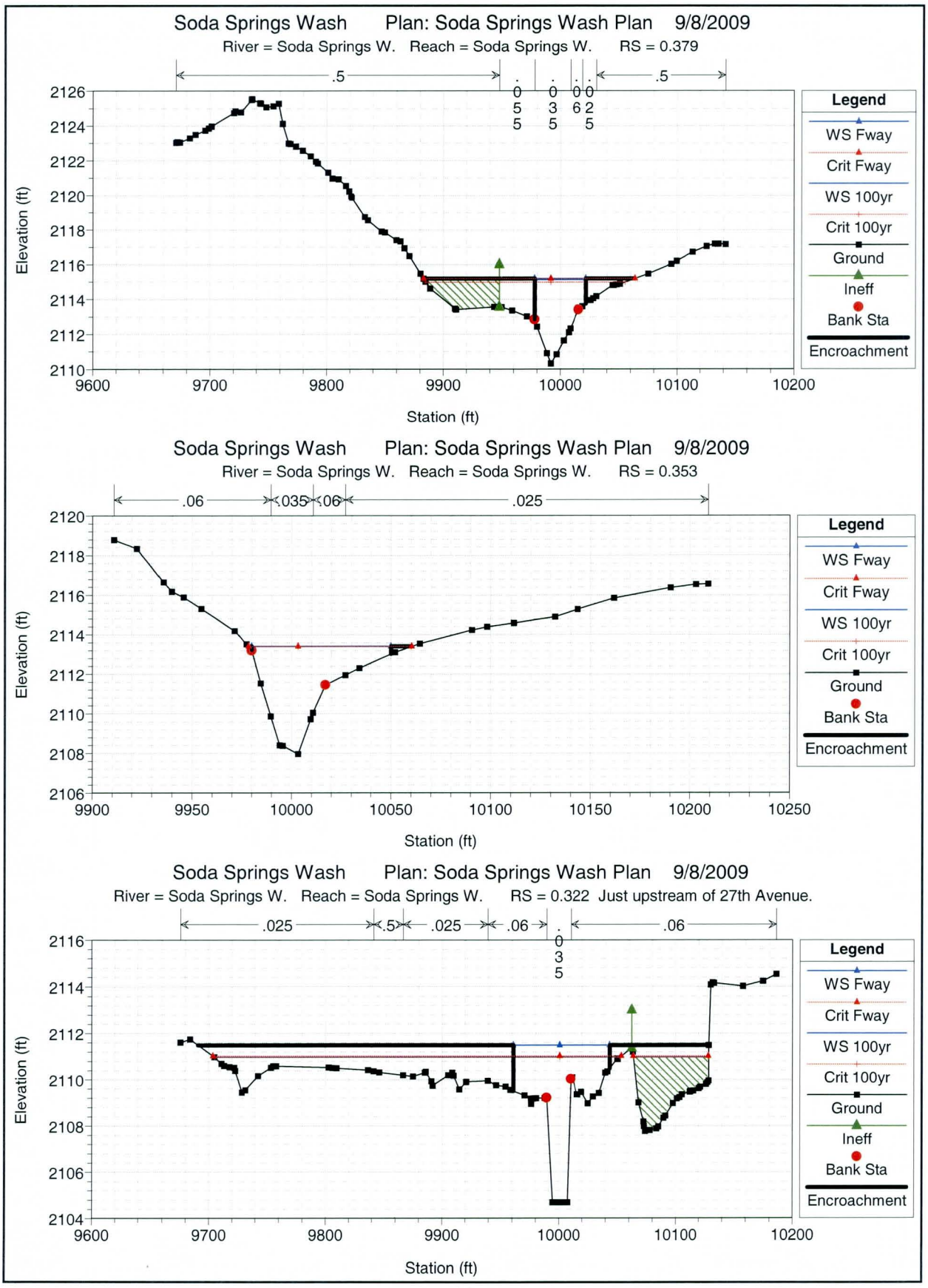

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.045
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 1.004
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.951
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

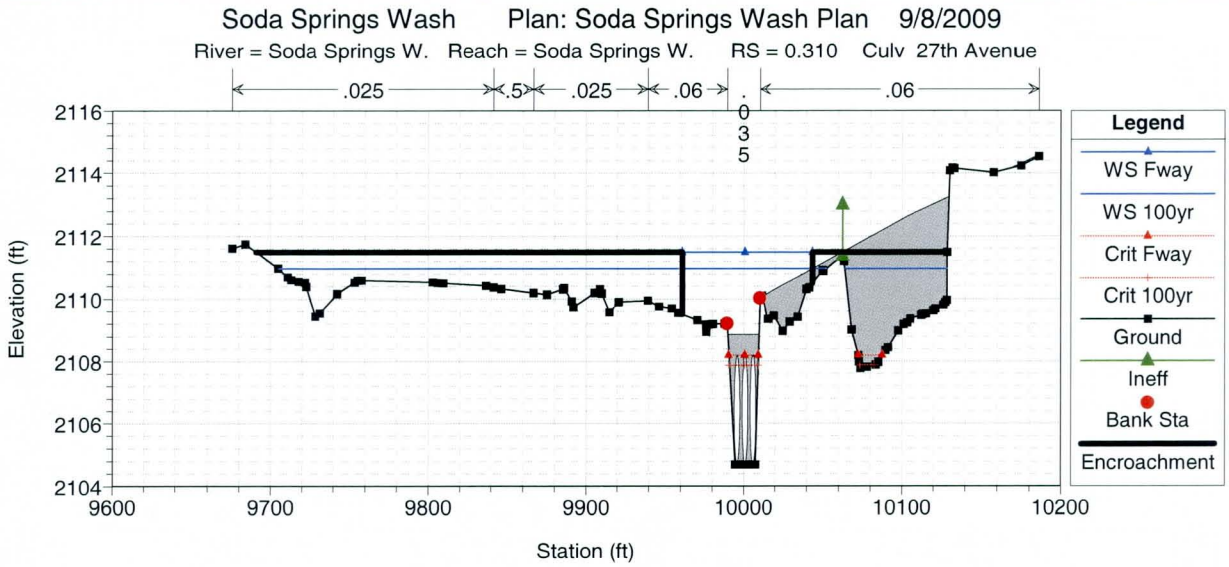

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.914
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.862
.025
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.816
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

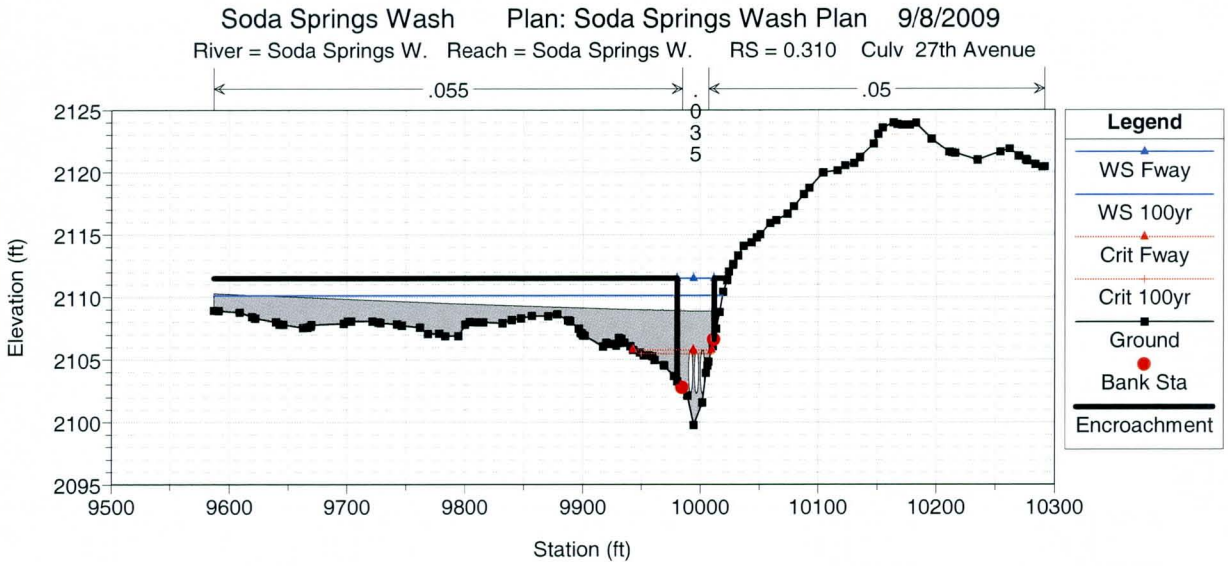

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.784
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.757
.025
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.689
.5
.025
.025
.035
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

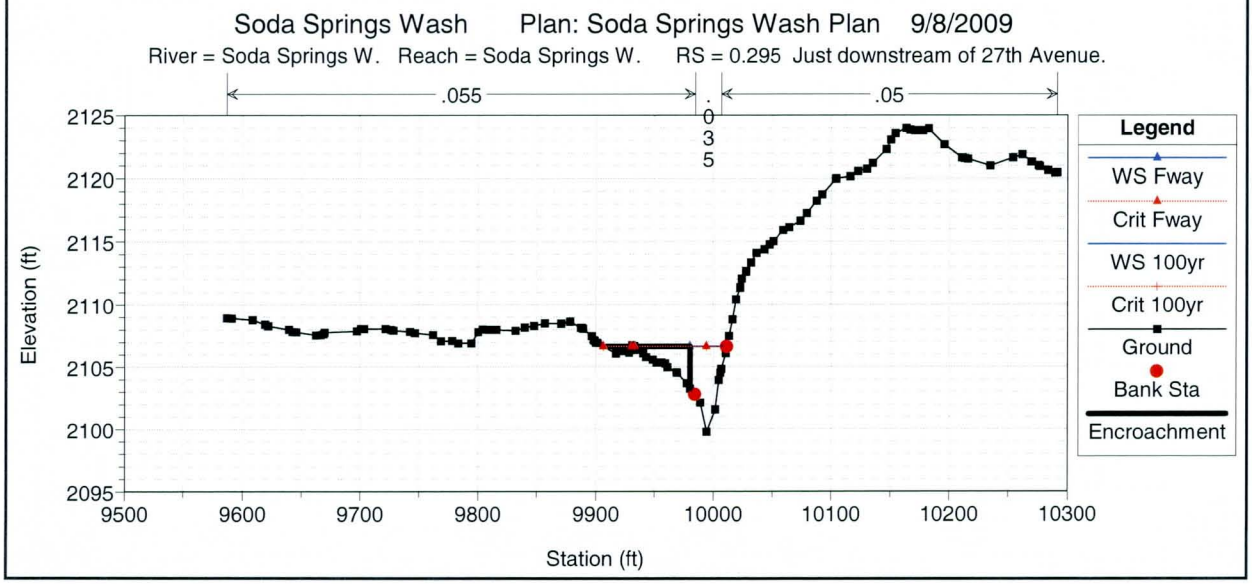

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.607
.055
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.538
.5
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.501
.05
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

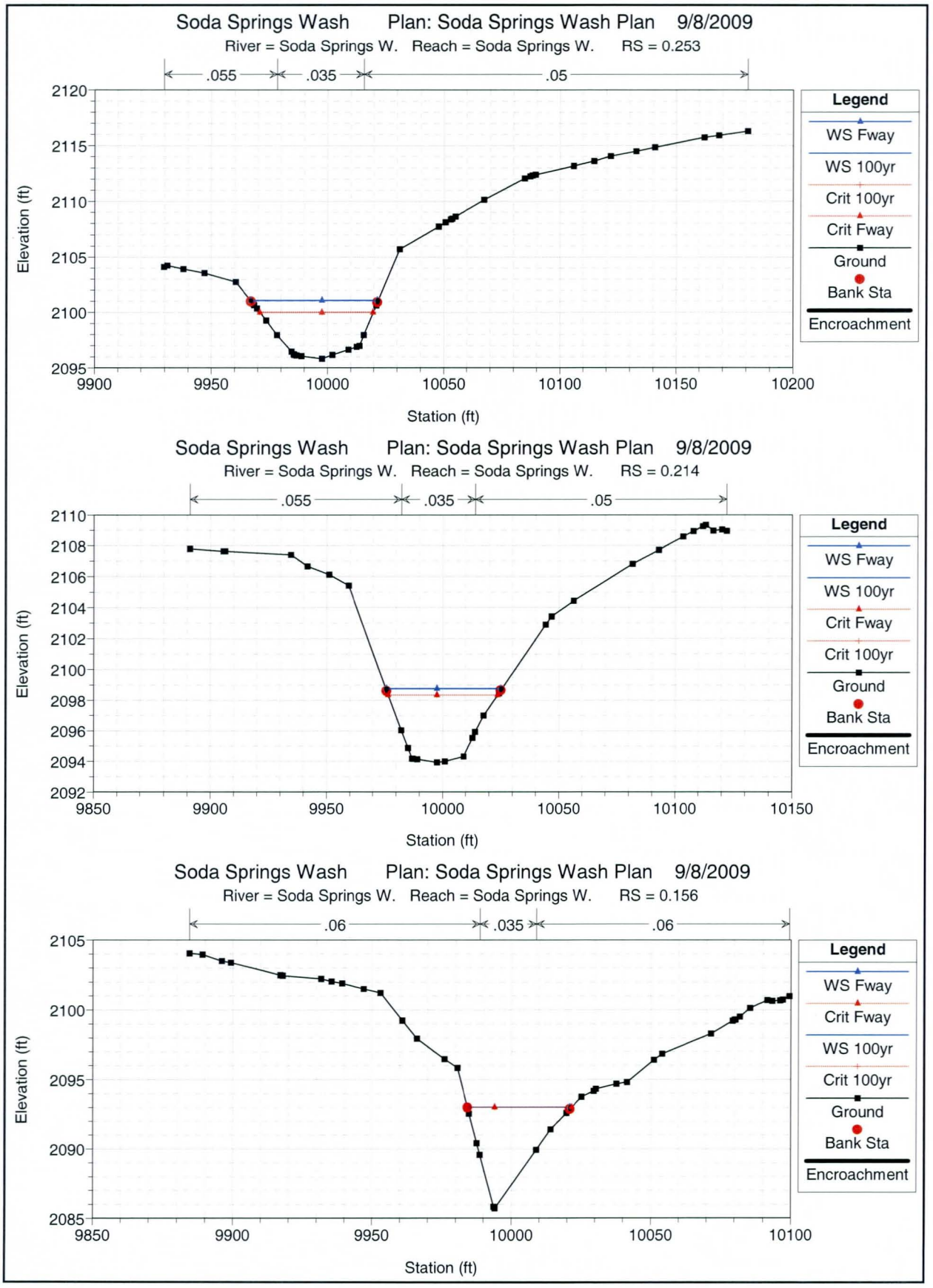

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.452
.055
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.438
.055
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.417
.055
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

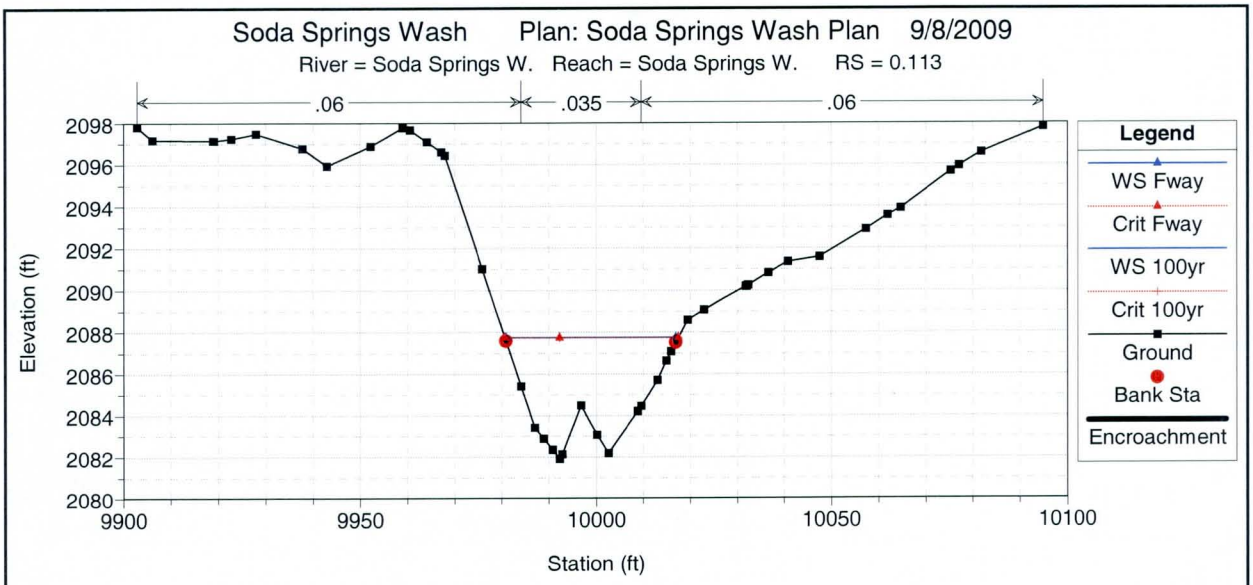

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.379
.5
.055
.035
.062
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.353
.06
.035
.06
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.322 Just upstream of 27th Avenue.
.025
.5
.025
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

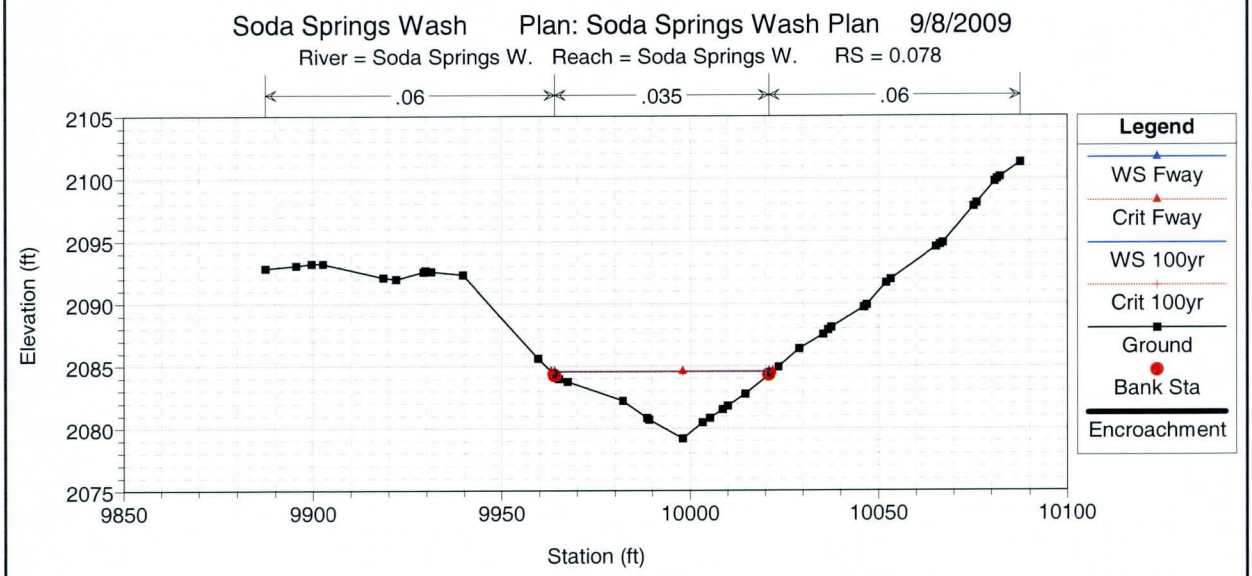

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.310 Culv 27th Avenue
.025
.5
.025
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

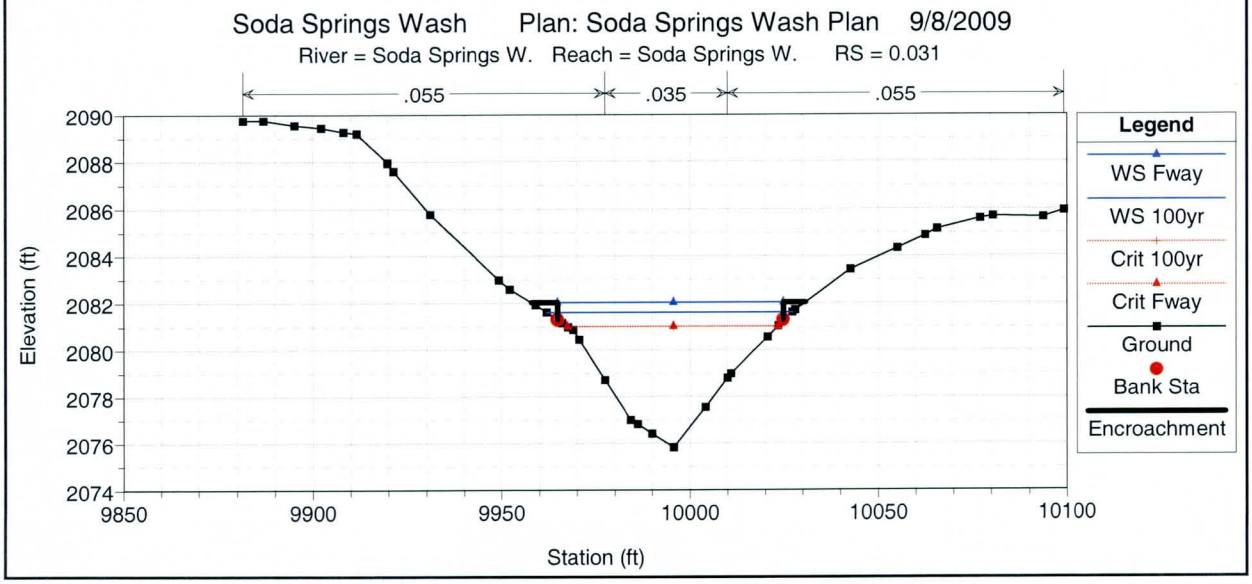

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.310 Culv 27th Avenue
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

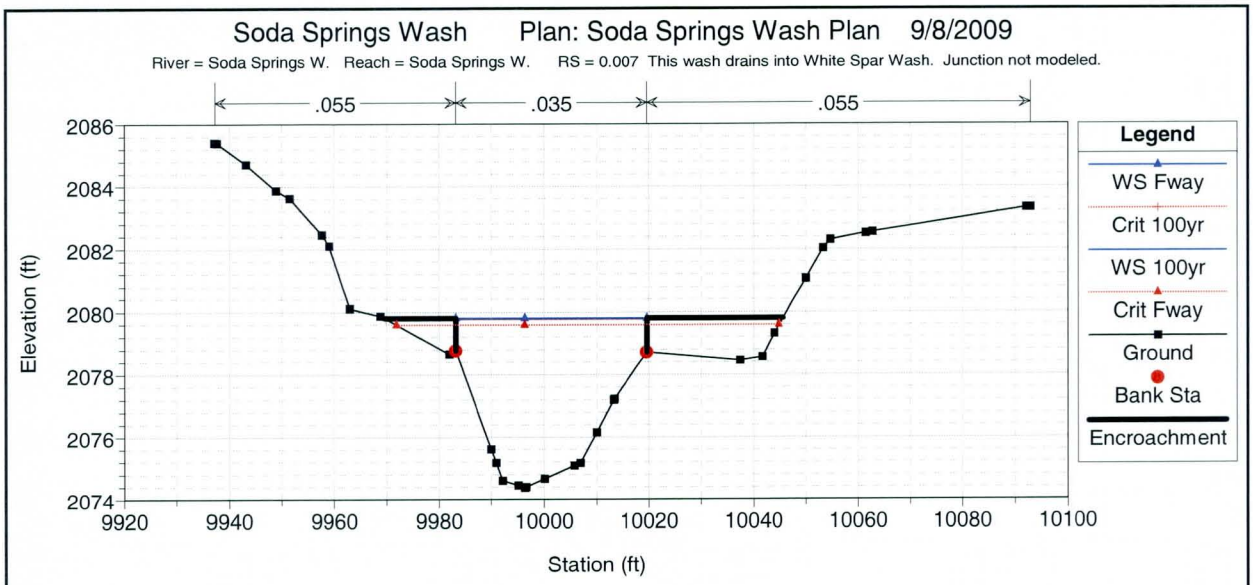

Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.295 Just downstream of 27th Avenue.
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.253
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.214
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.156
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.113
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.078
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.031
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment


Soda Springs Wash Plan: Soda Springs Wash Plan 9/8/2009
River = Soda Springs W. Reach = Soda Springs W. RS = 0.007 This wash drains into White Spar Wash. Junction not modeled.
.055
.035
.055
Elevation (ft)
2086
2084
2082
2080
2078
2076
2074
9920
9940
9960
9980
10000
10020
10040
10060
10080
10100
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

CROSS SECTION PLOTS FOR

TABLE MOUNTAIN WASH

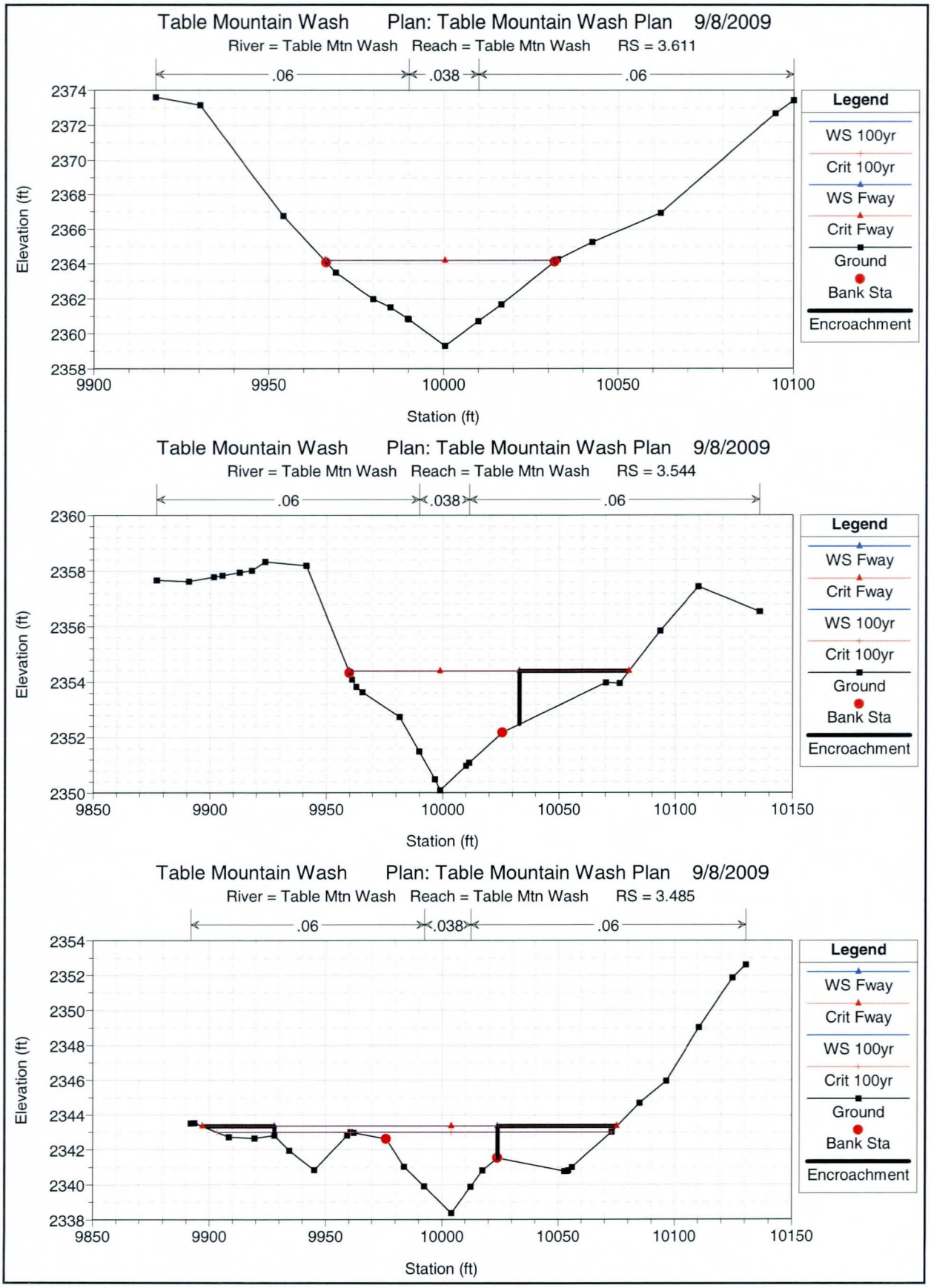


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.611
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.544
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.485
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

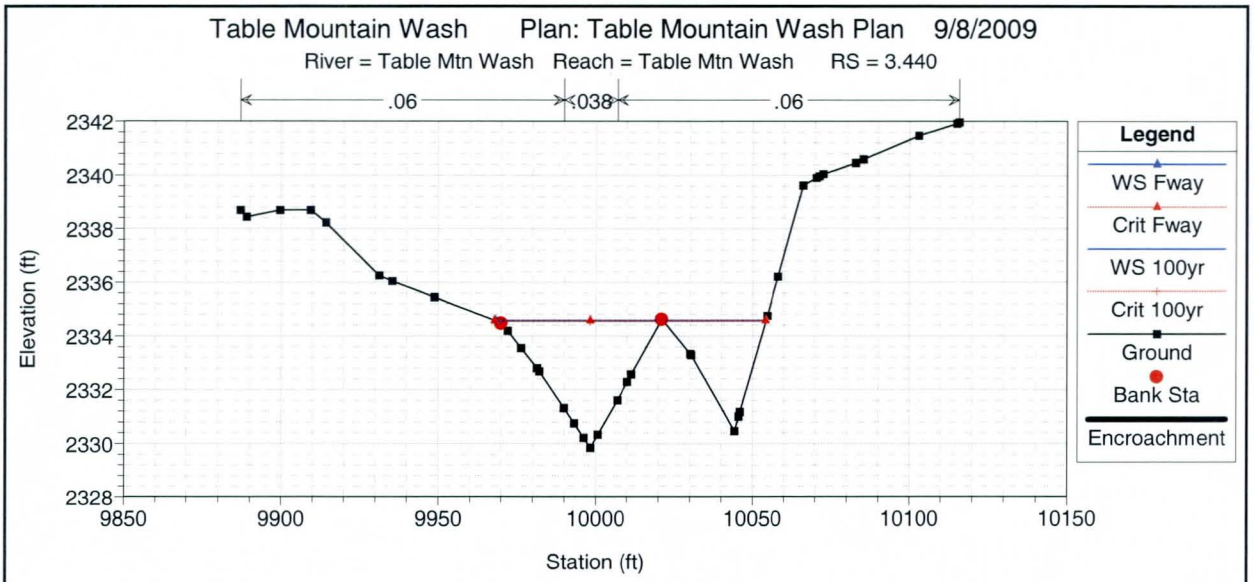


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.440
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

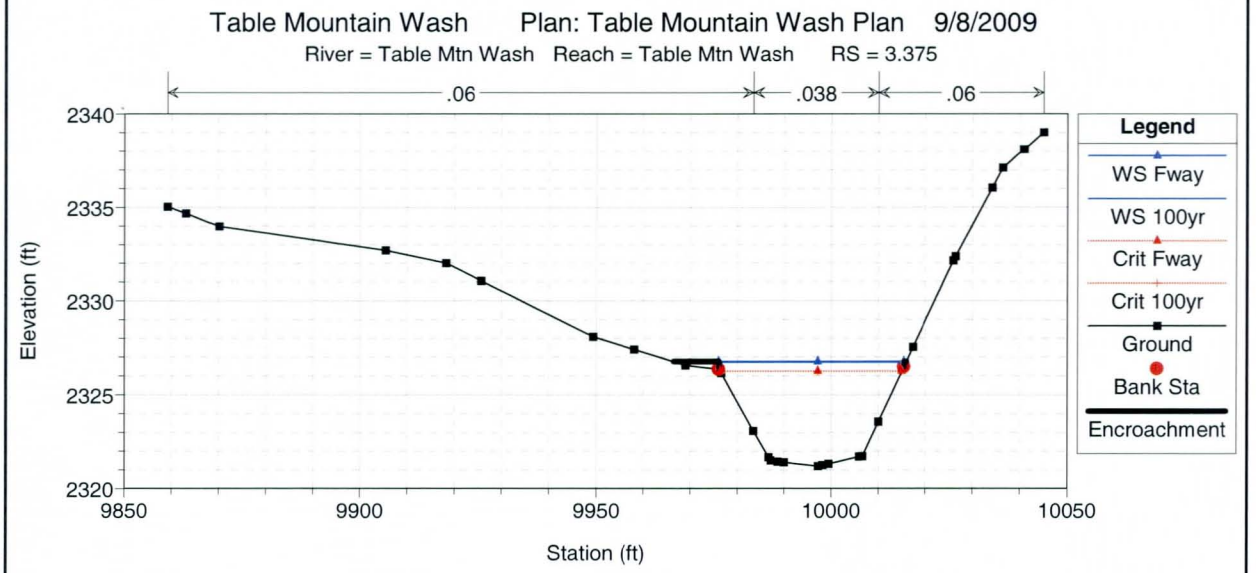


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.375
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

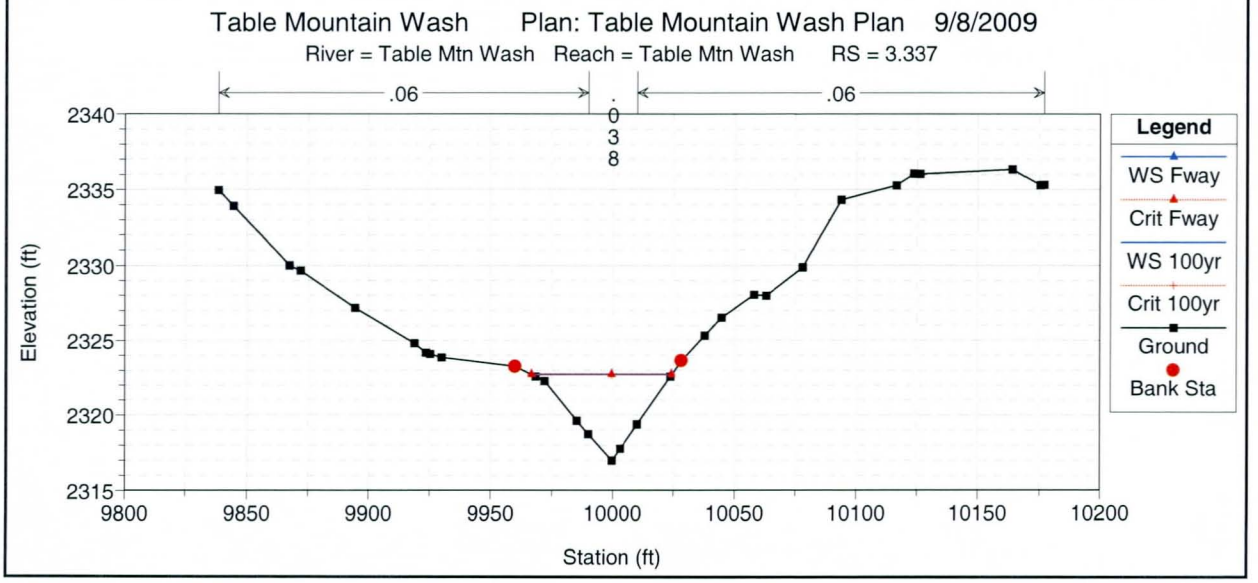


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.337
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta

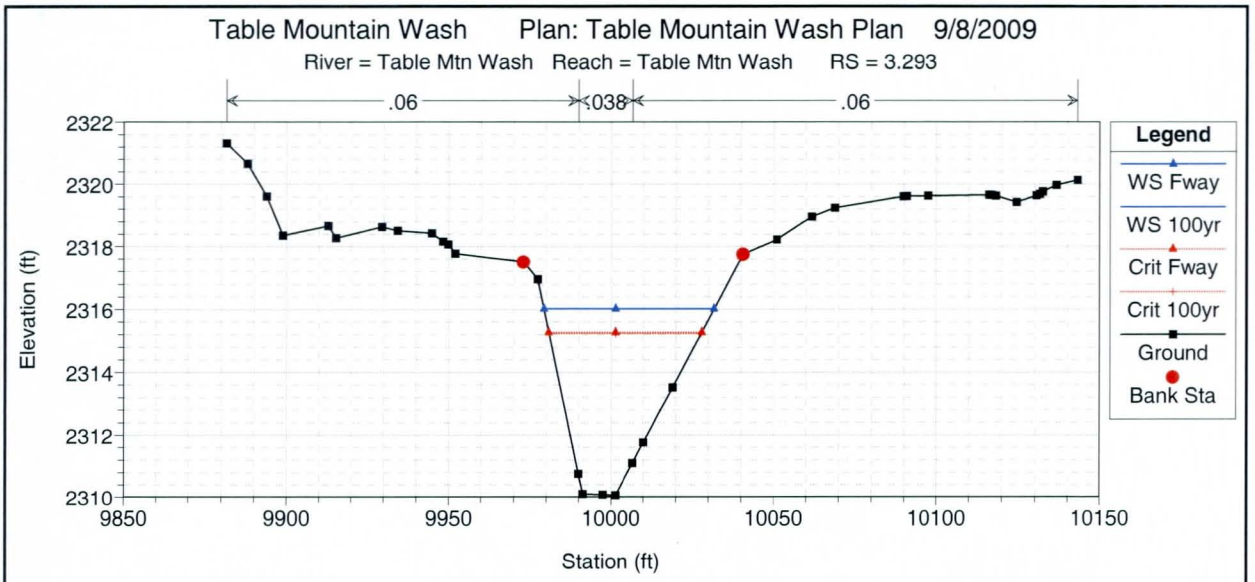


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.293
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta

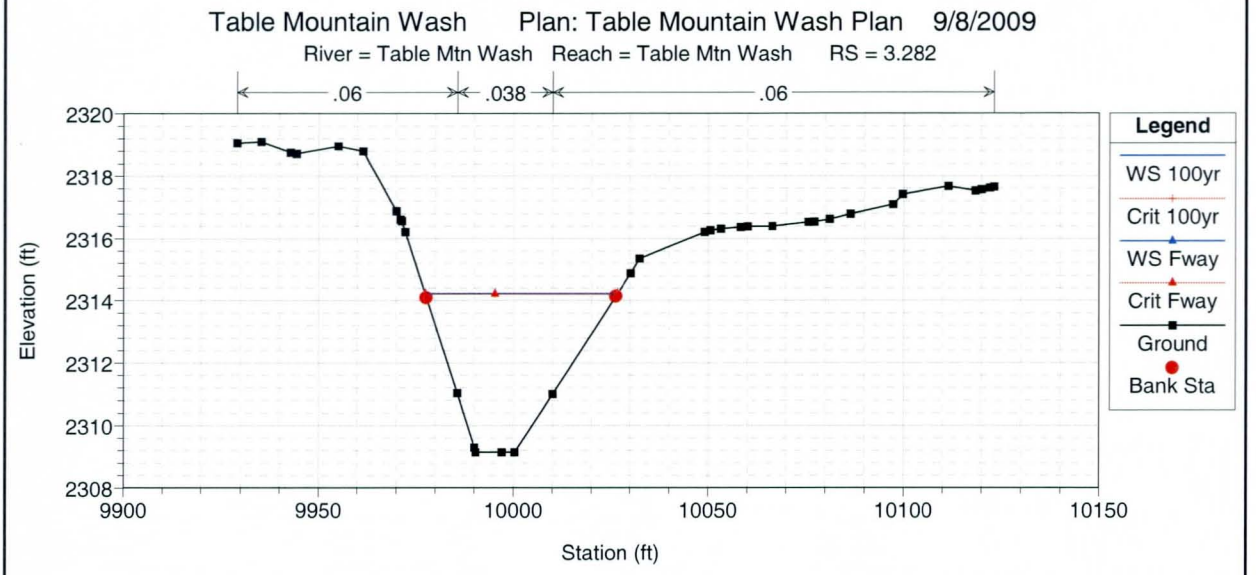


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.282
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

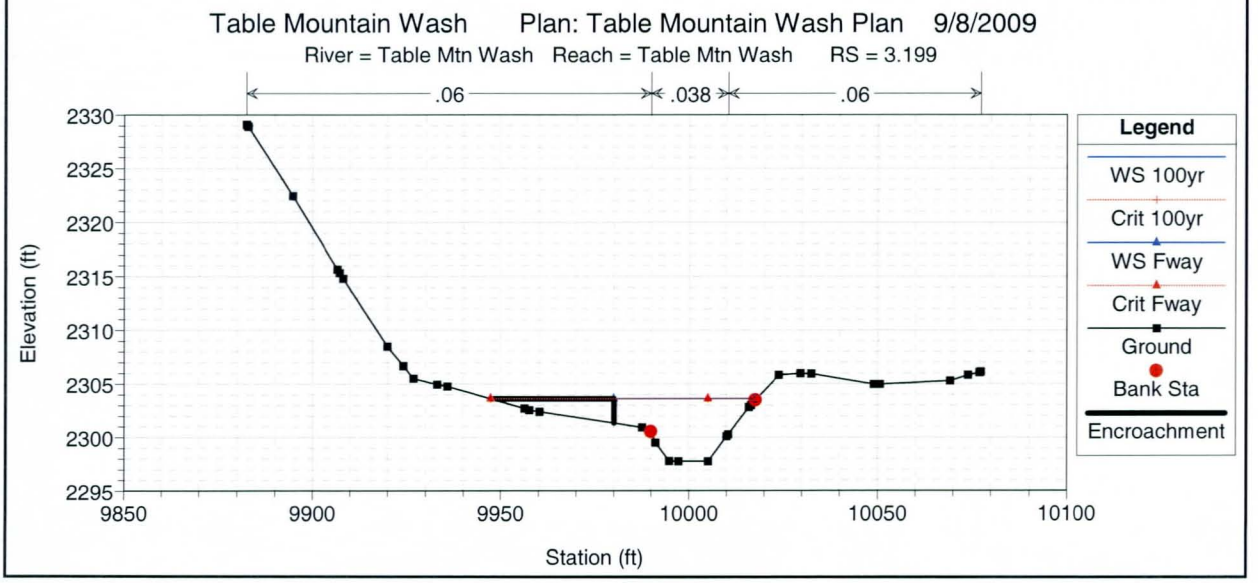


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.199
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

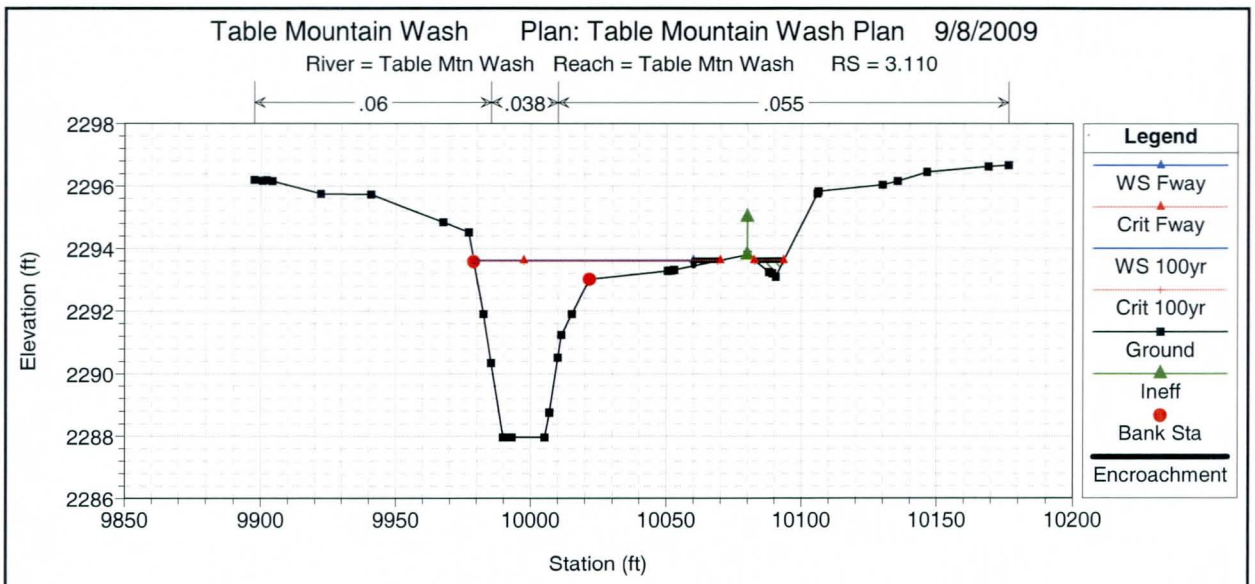


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.110
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

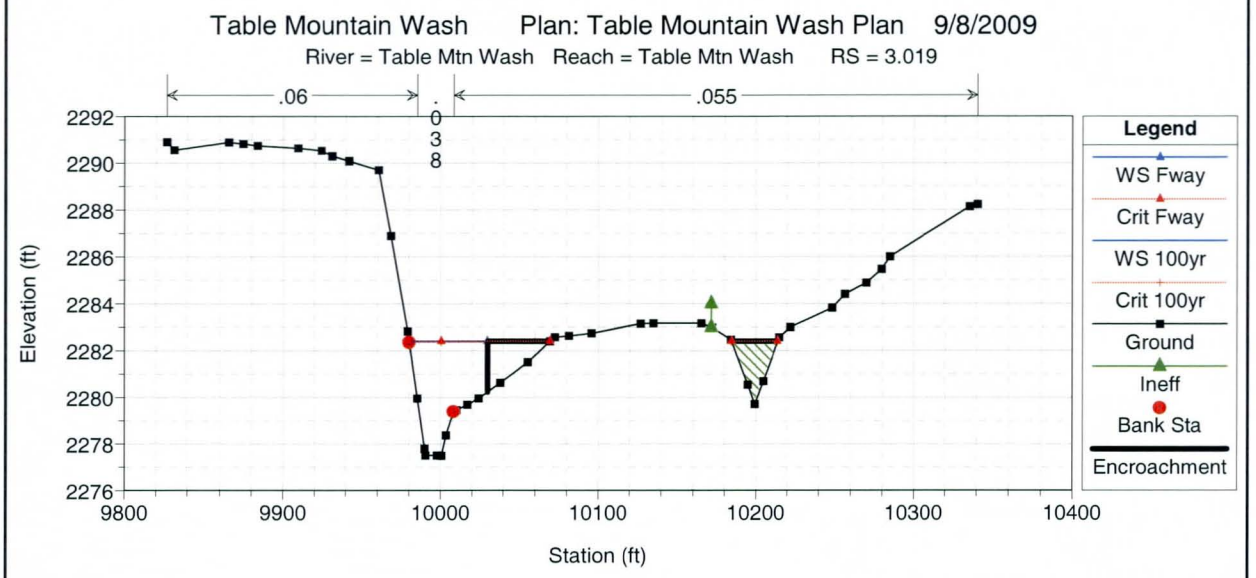


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 3.019
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

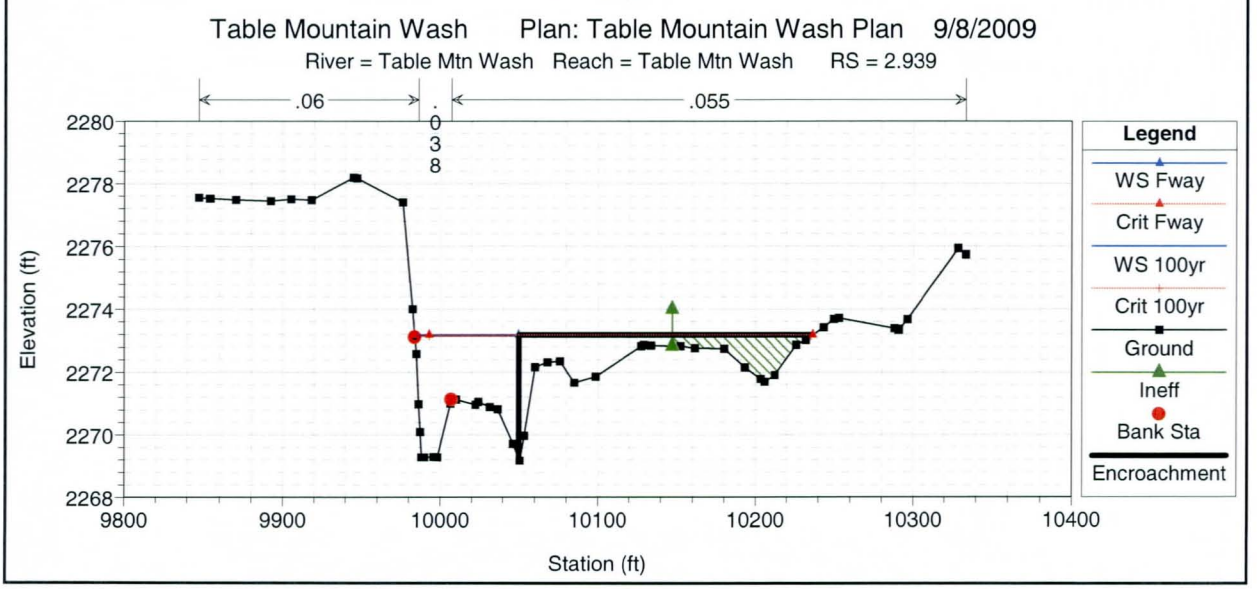


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.939
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

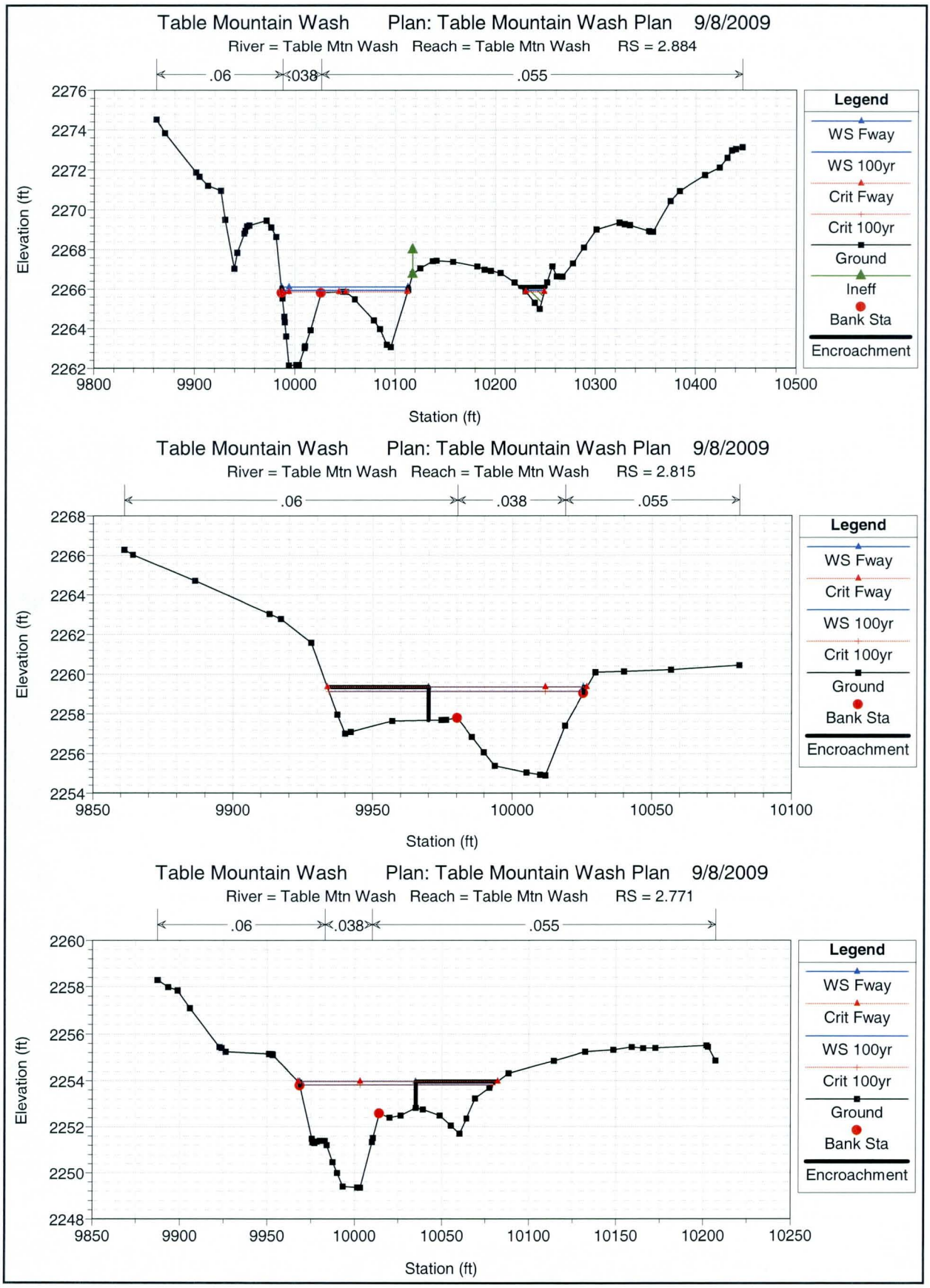


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.884
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.815
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.771
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

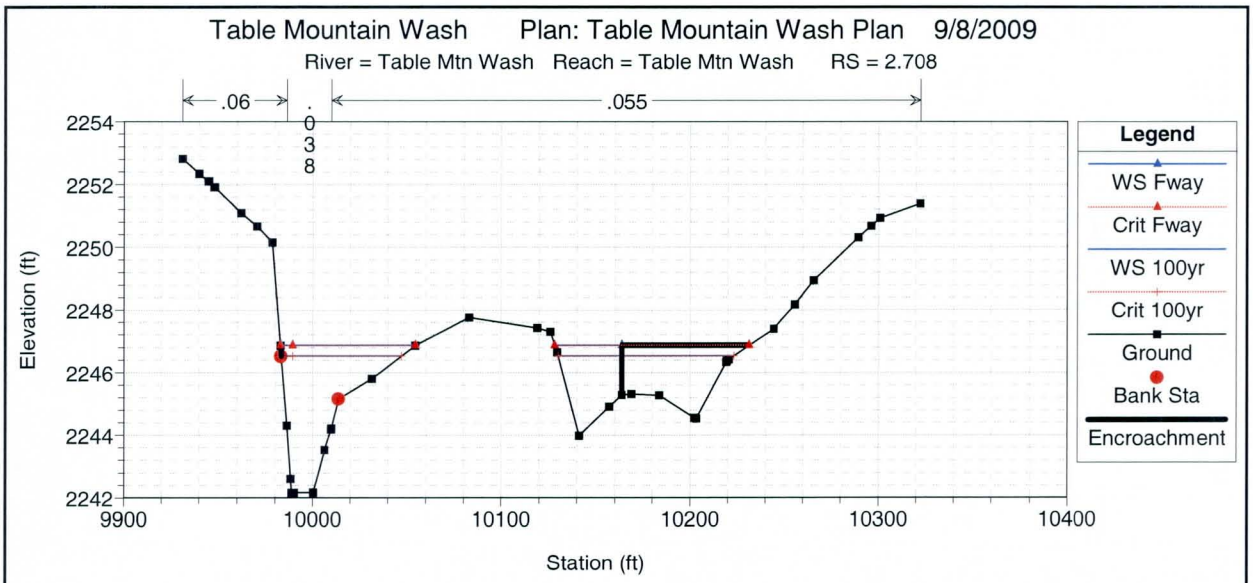


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.708
.06
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

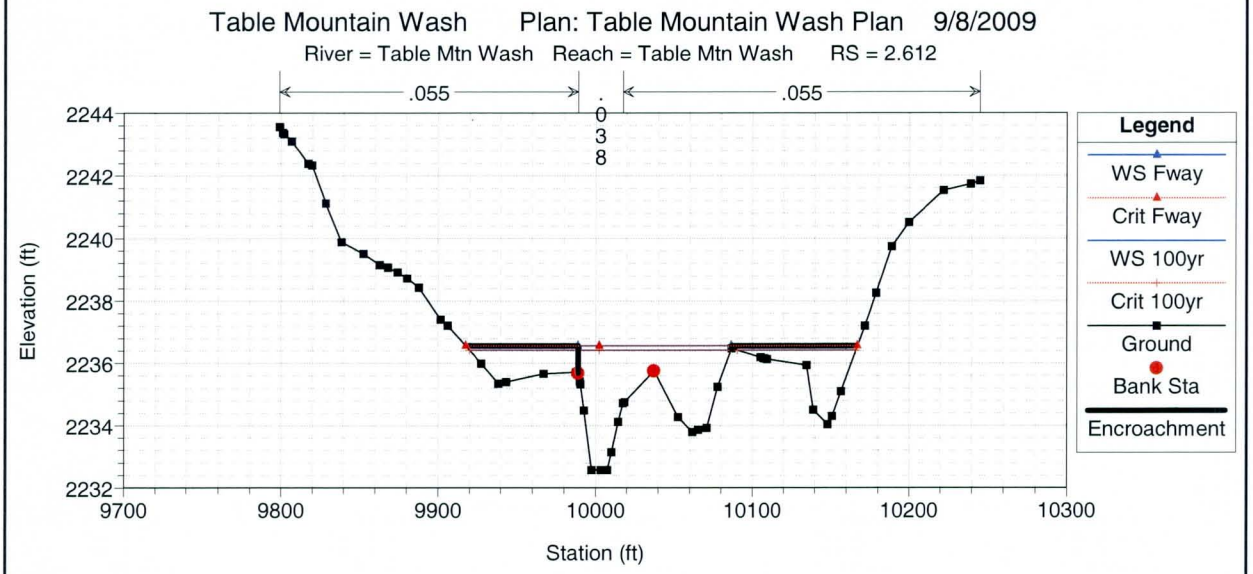


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.612
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

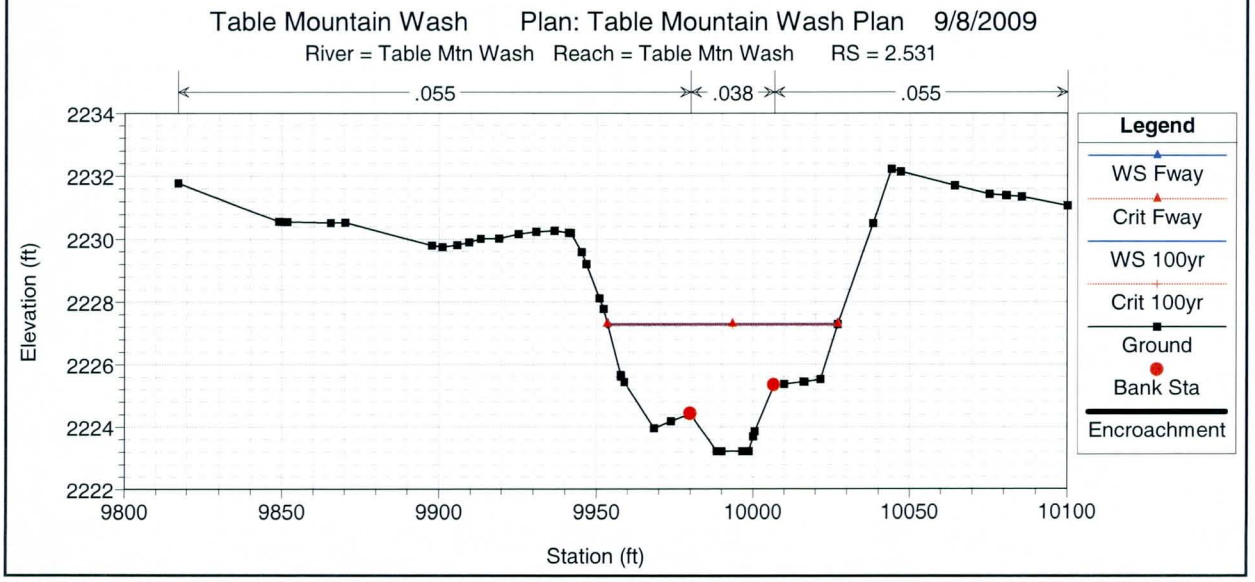


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.531
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

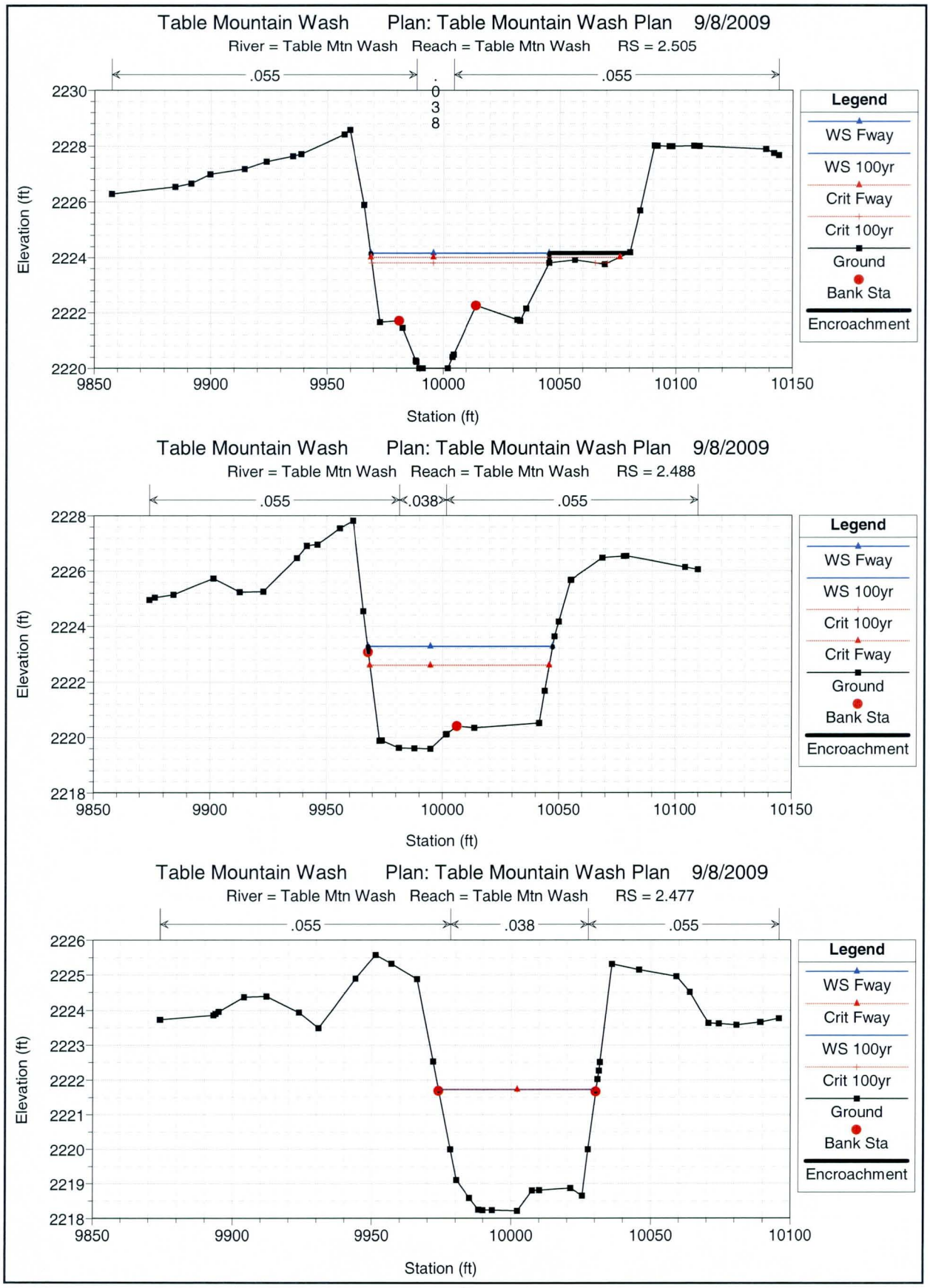


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.505
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.488
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.477
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

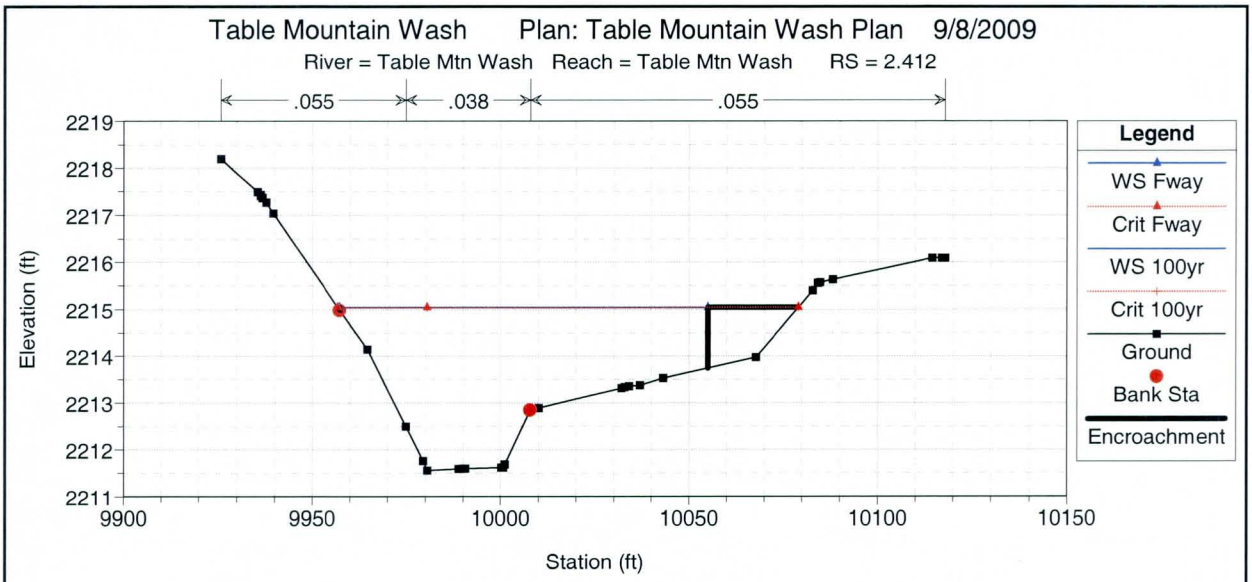


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.412
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

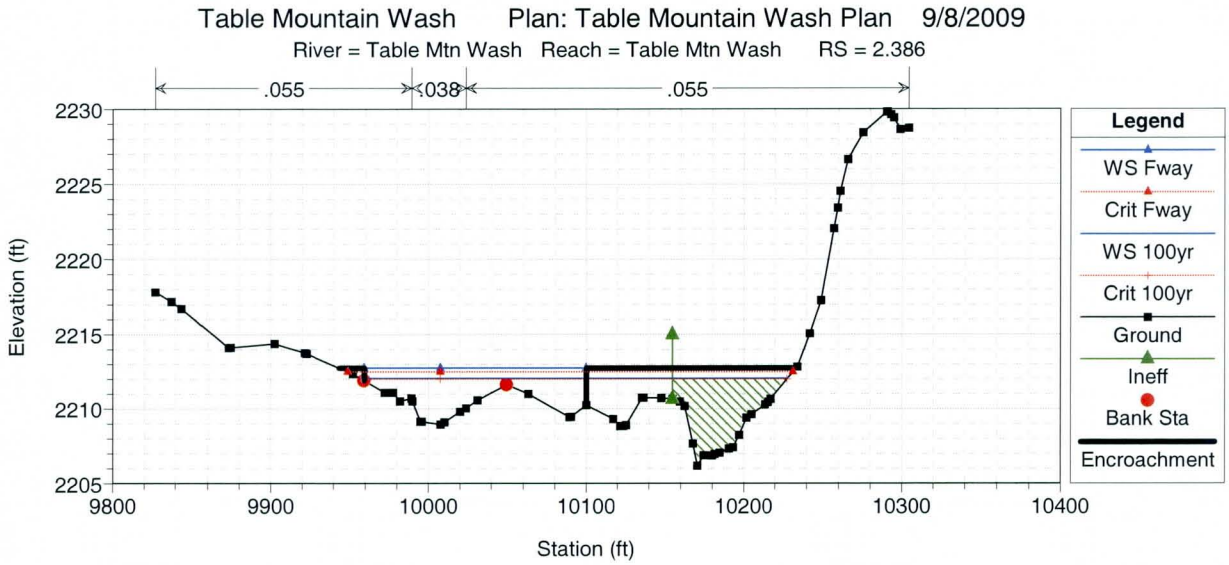


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.386
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

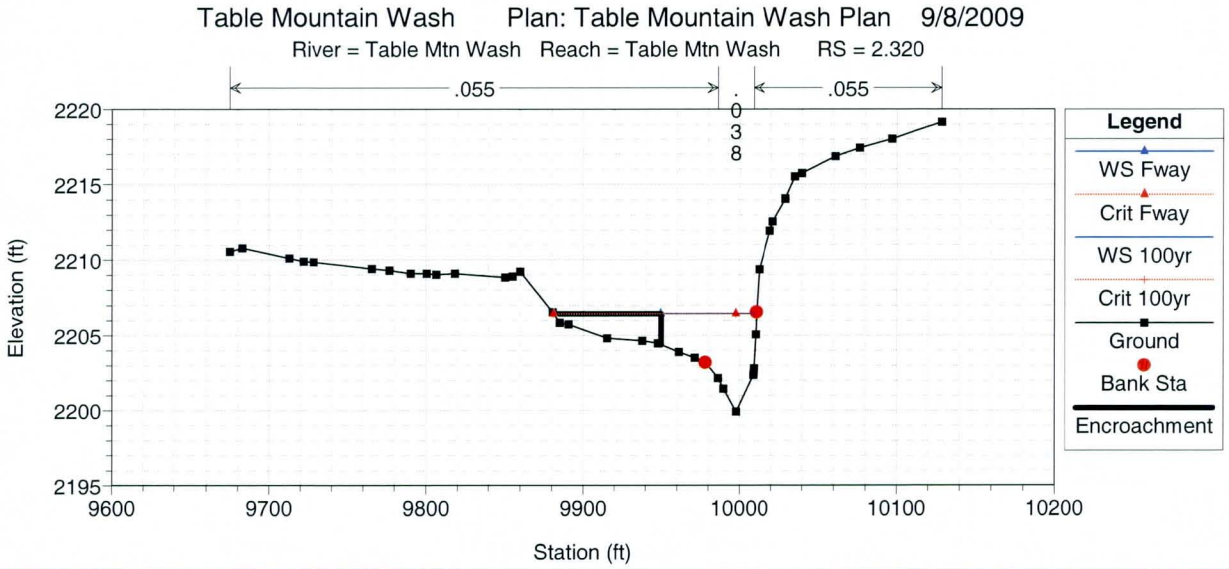


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.320
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

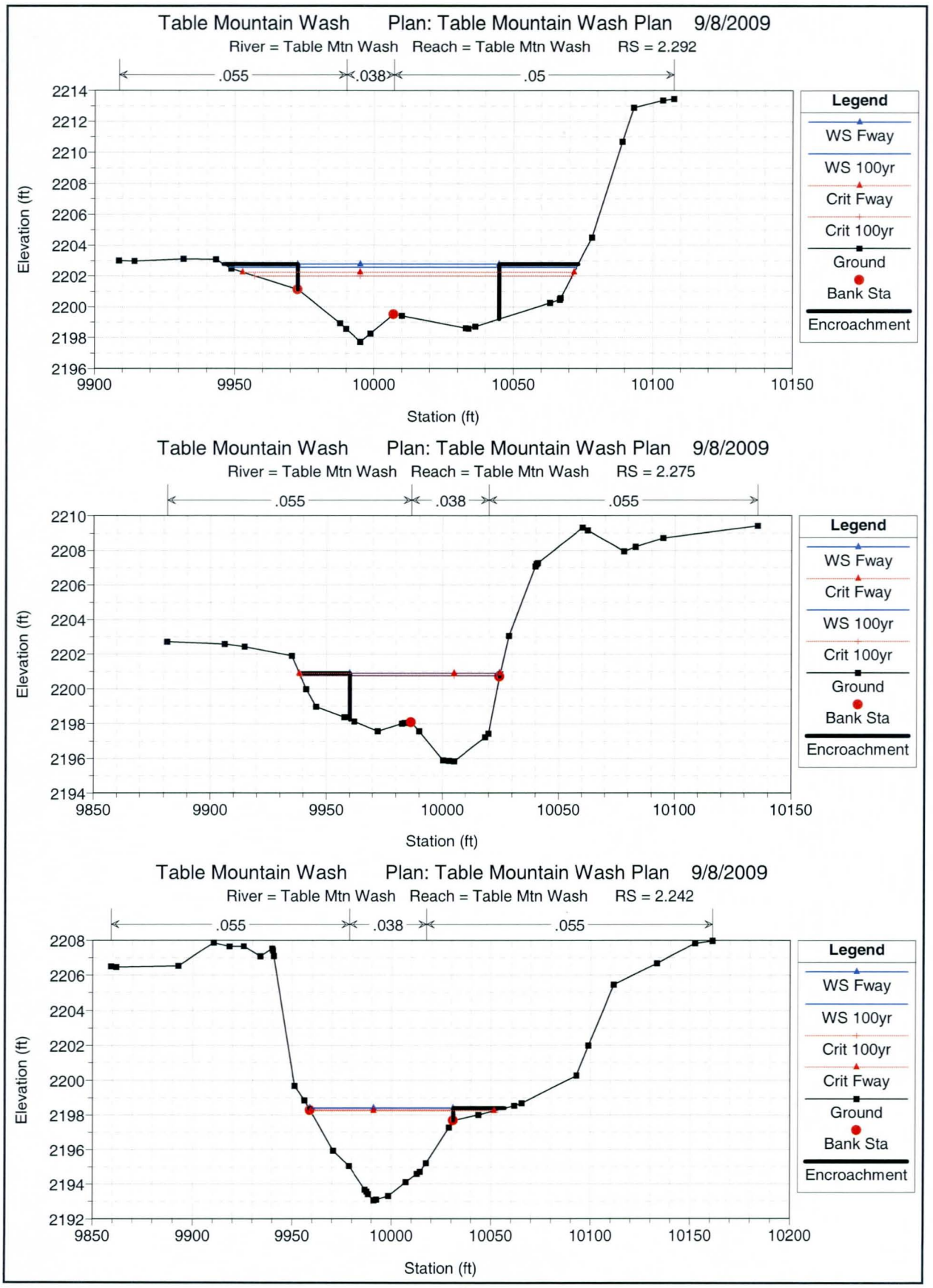


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.292
.055
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.275
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.242
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

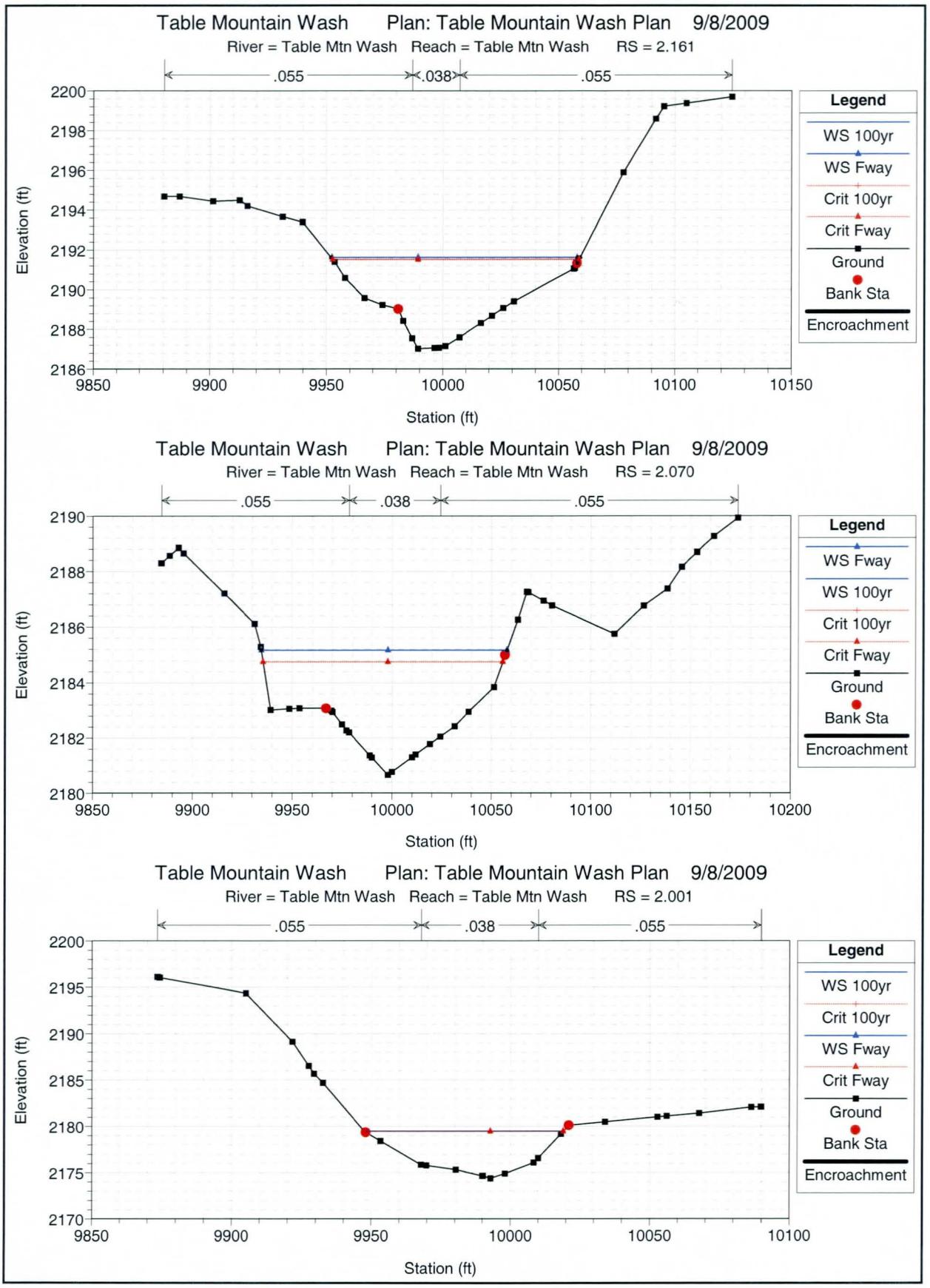


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.161
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.070
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 2.001
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

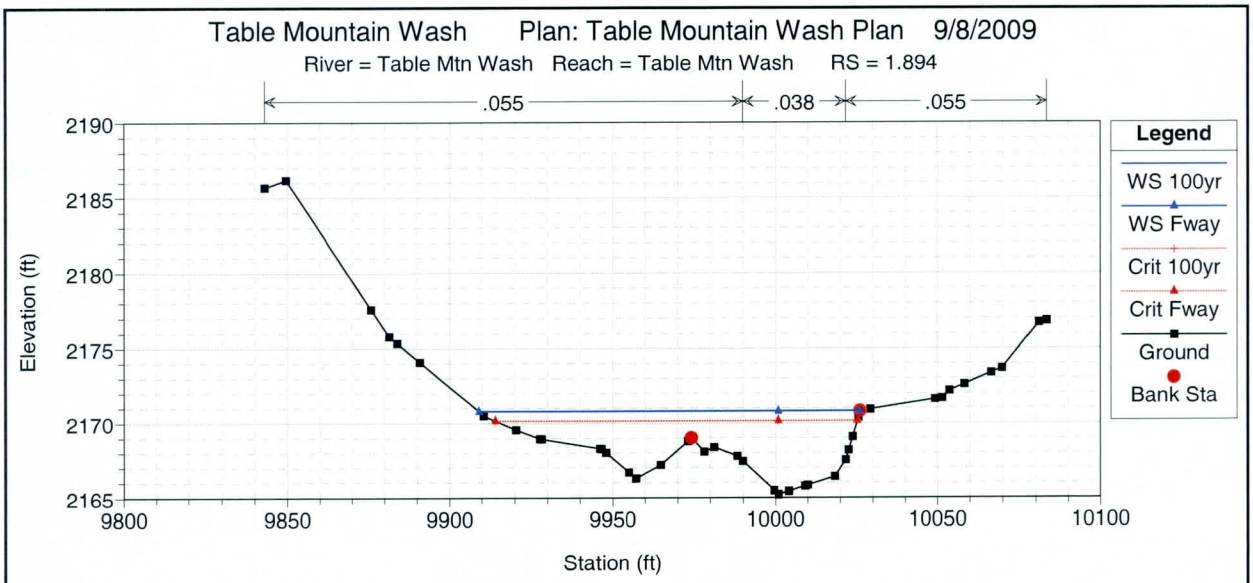


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.894
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

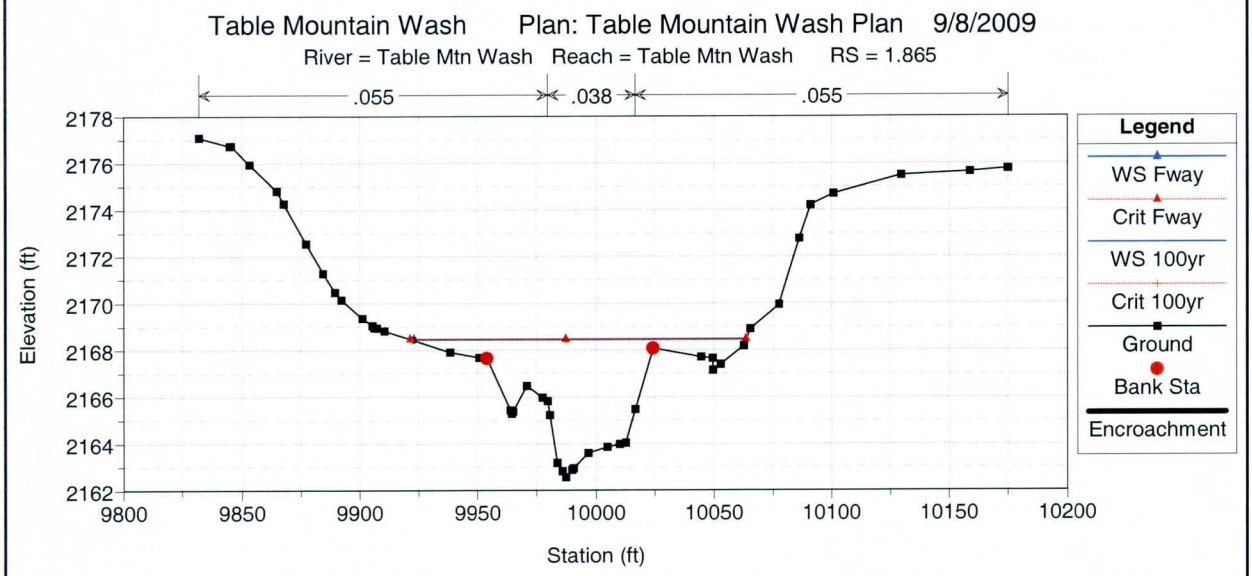


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.865
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

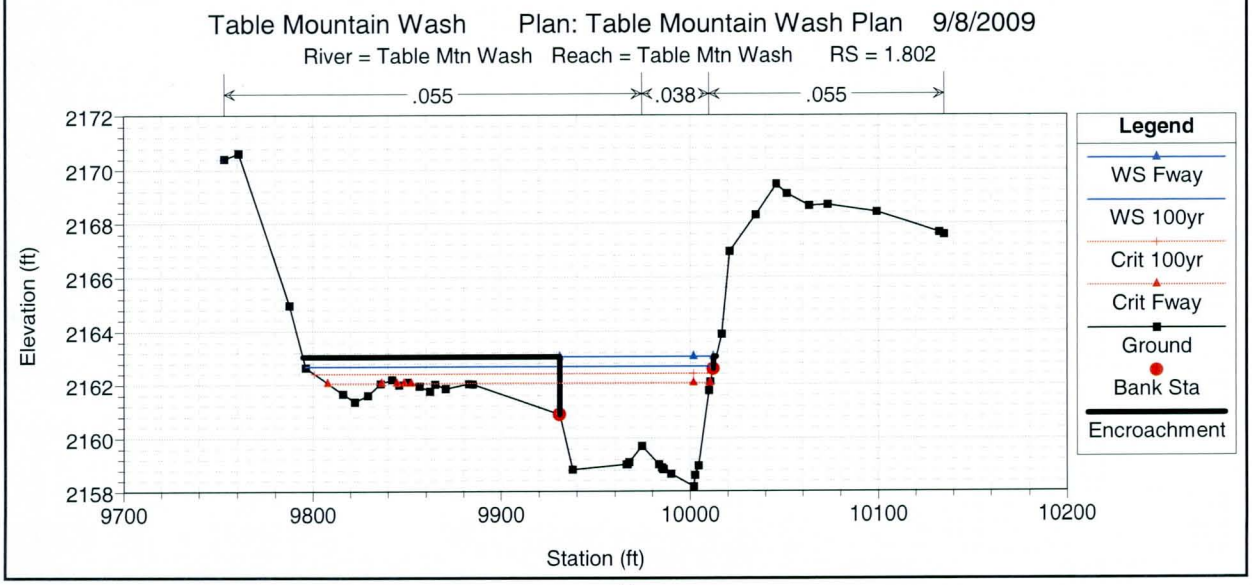


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.802
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

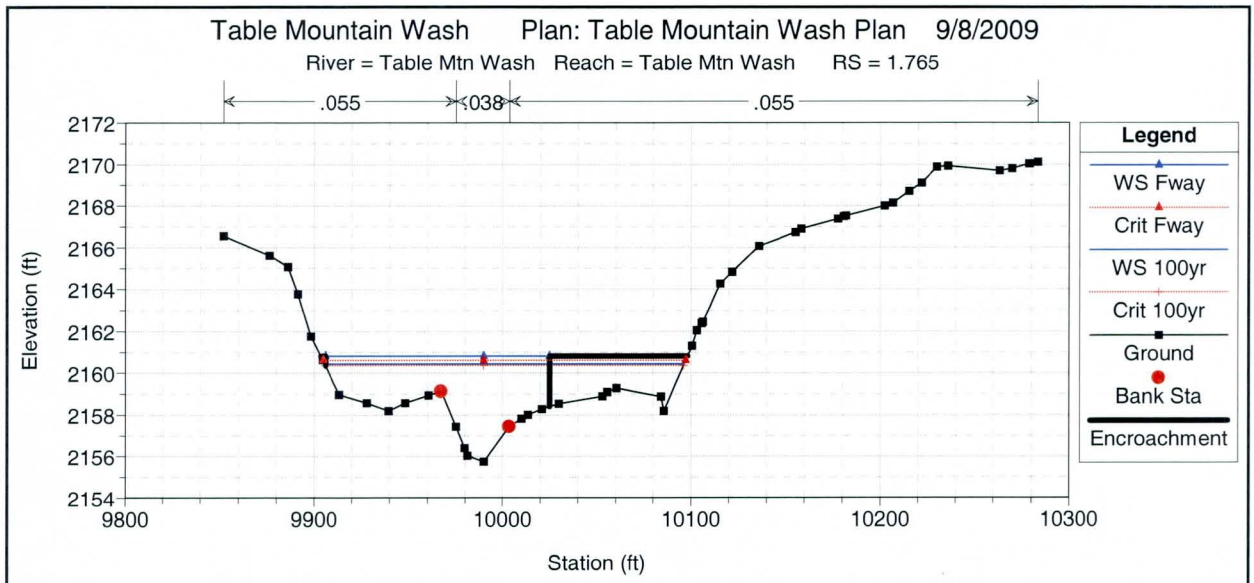


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.765
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

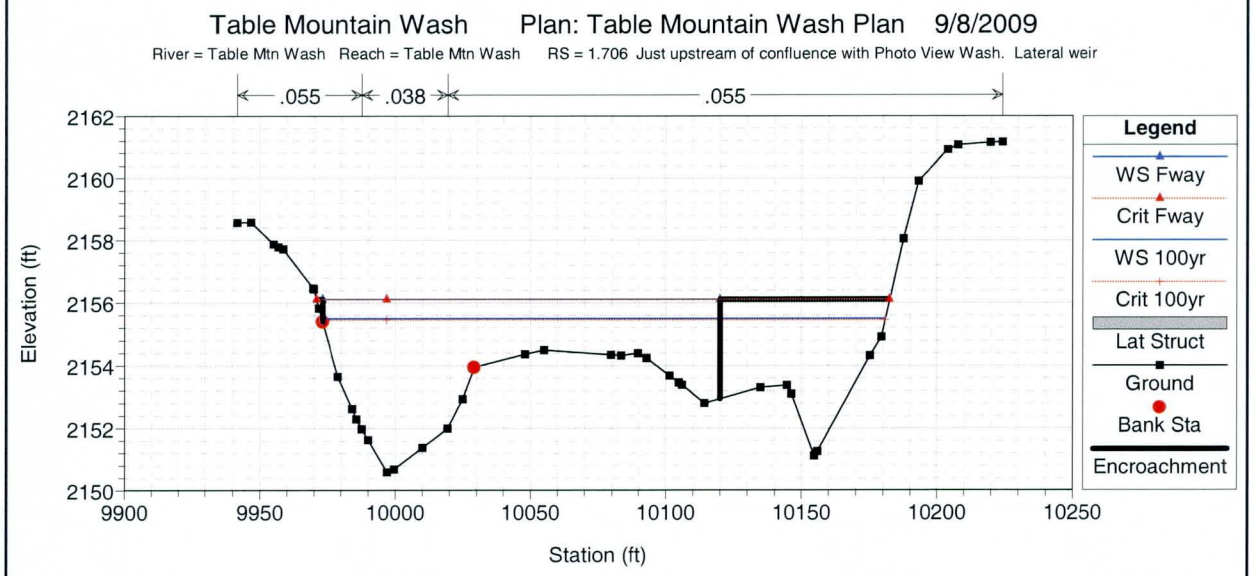


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.706 Just upstream of confluence with Photo View Wash. Lateral weir
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

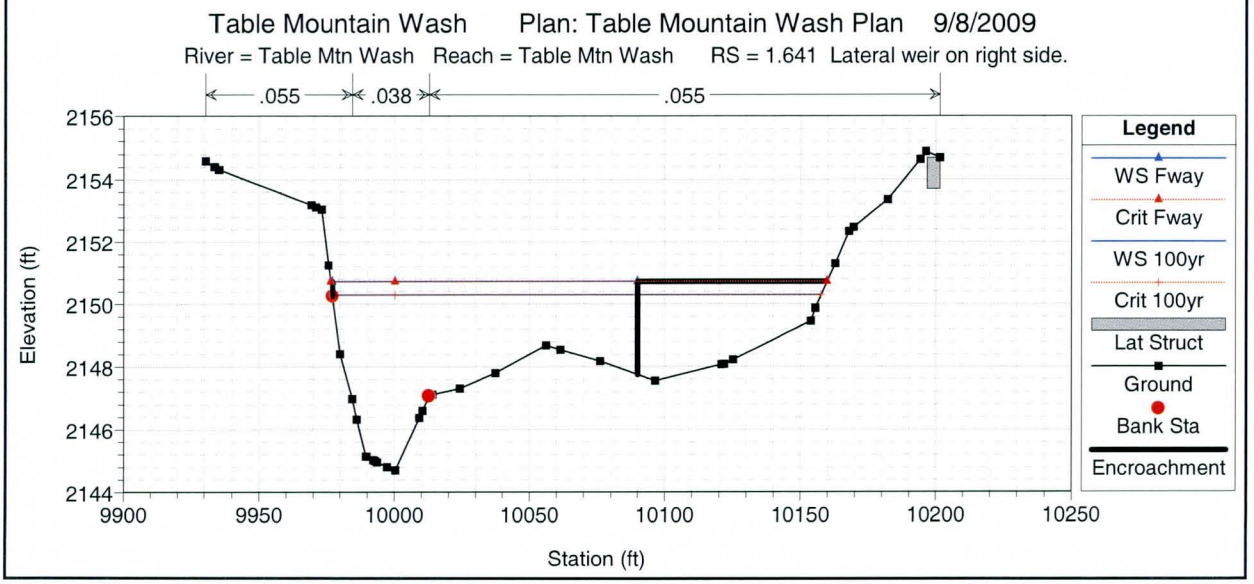


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.641 Lateral weir on right side.
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Lat Struct
Ground
Bank Sta
Encroachment

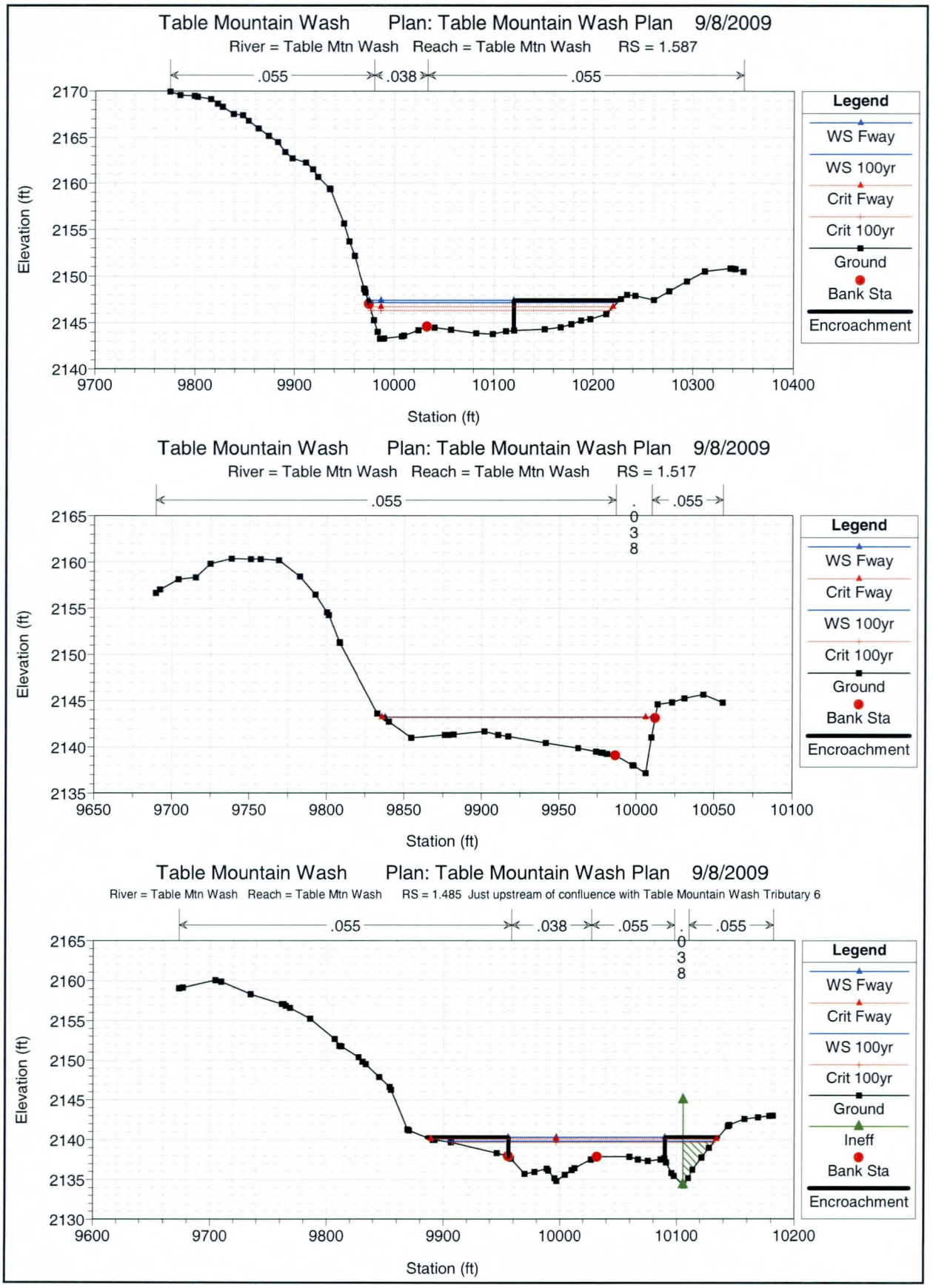


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.587
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.517
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.485 Just upstream of confluence with Table Mountain Wash Tributary 6
.055
.038
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

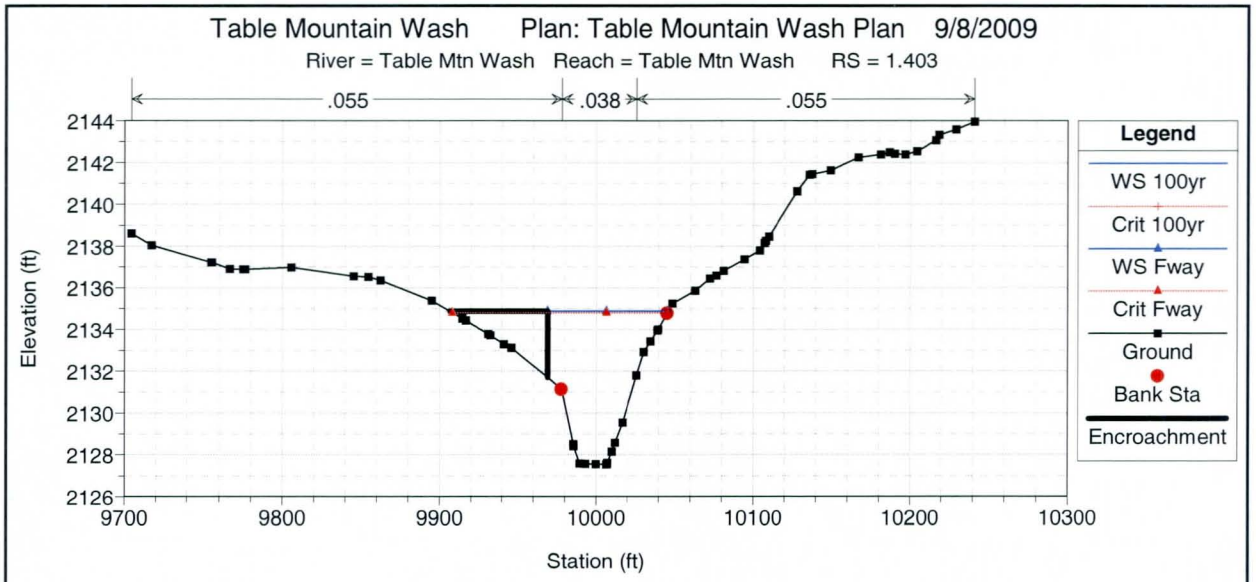


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.403
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

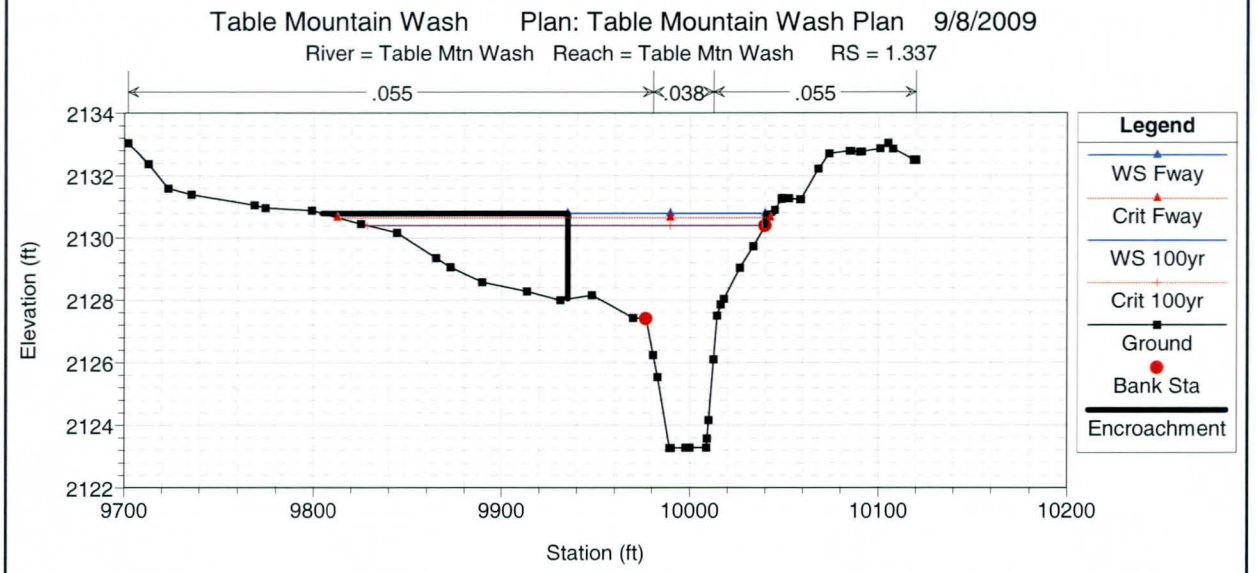


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.337
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

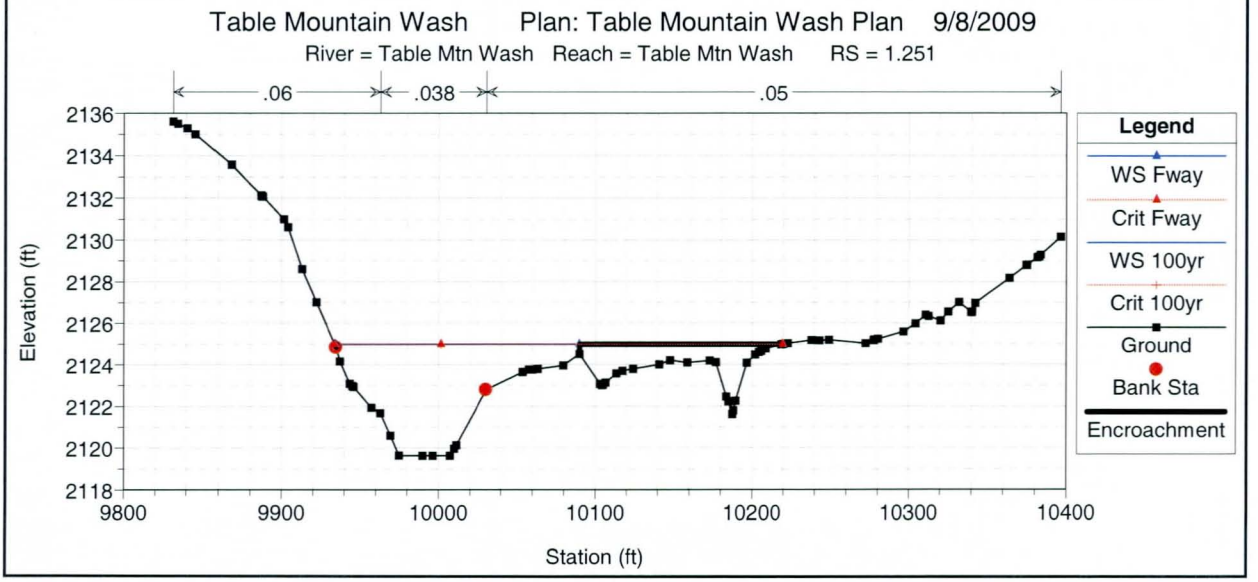


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.251
.06
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

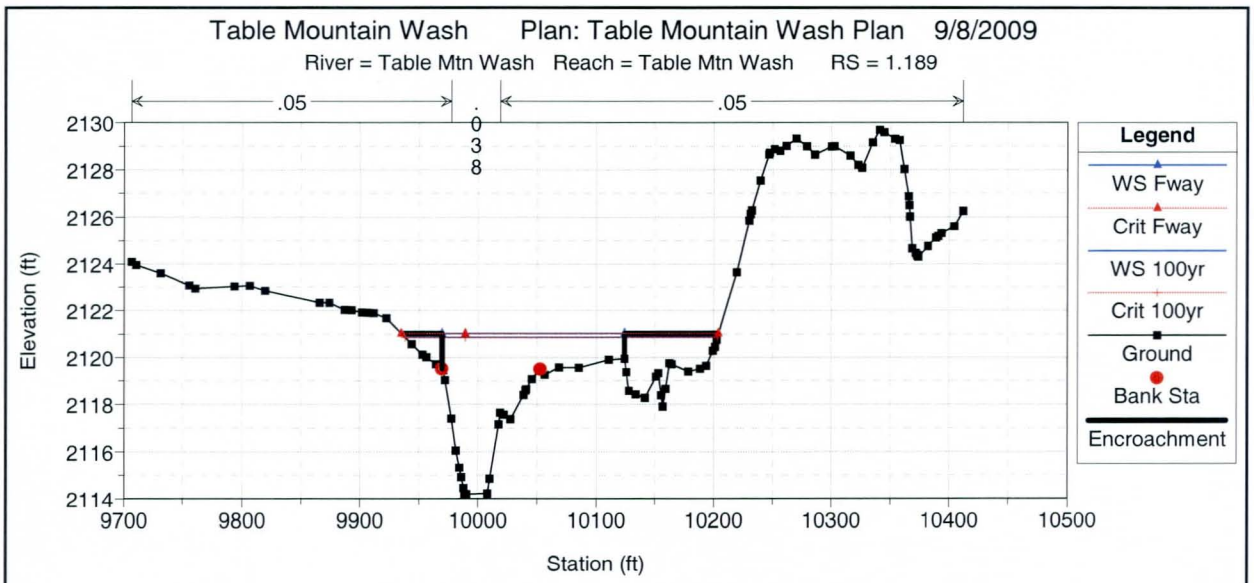


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.189
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

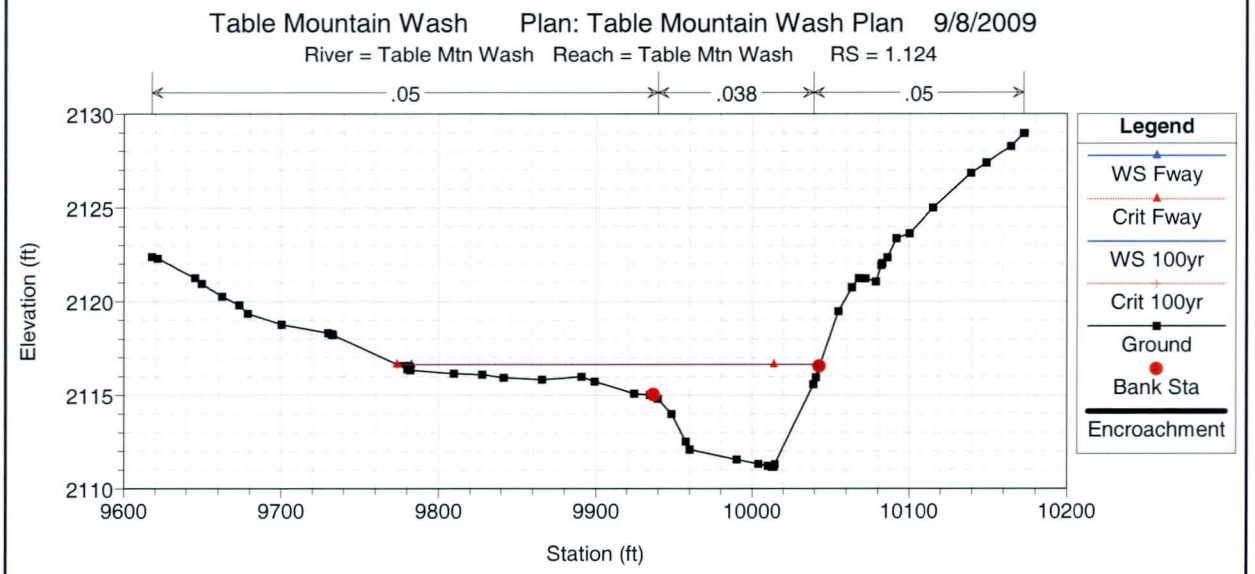


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.124
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

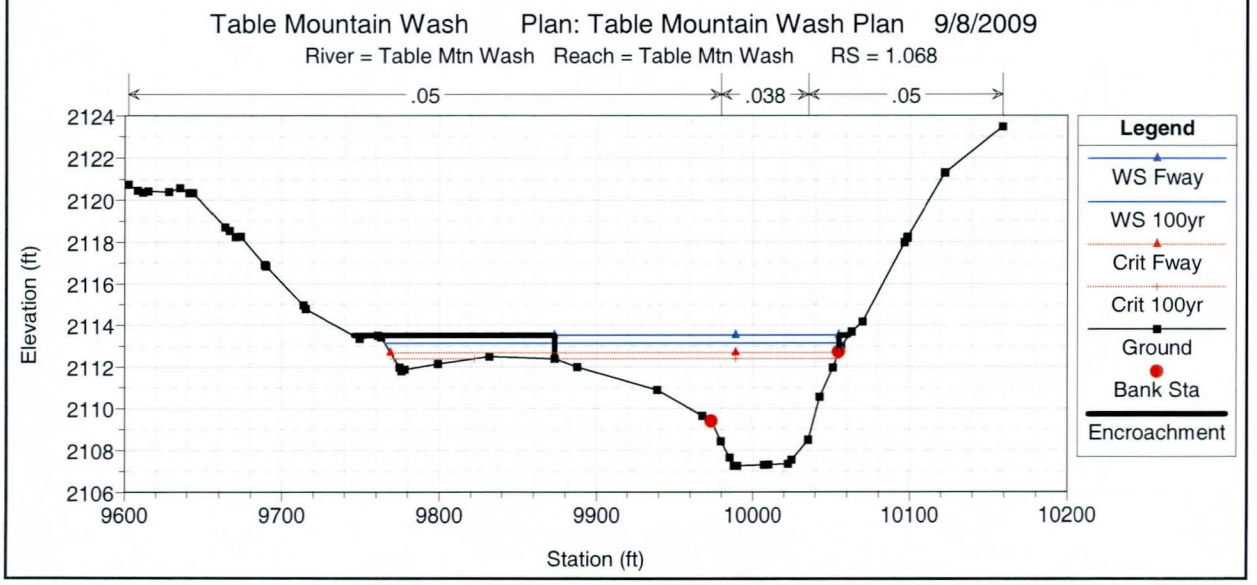


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.068
.05
.038
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

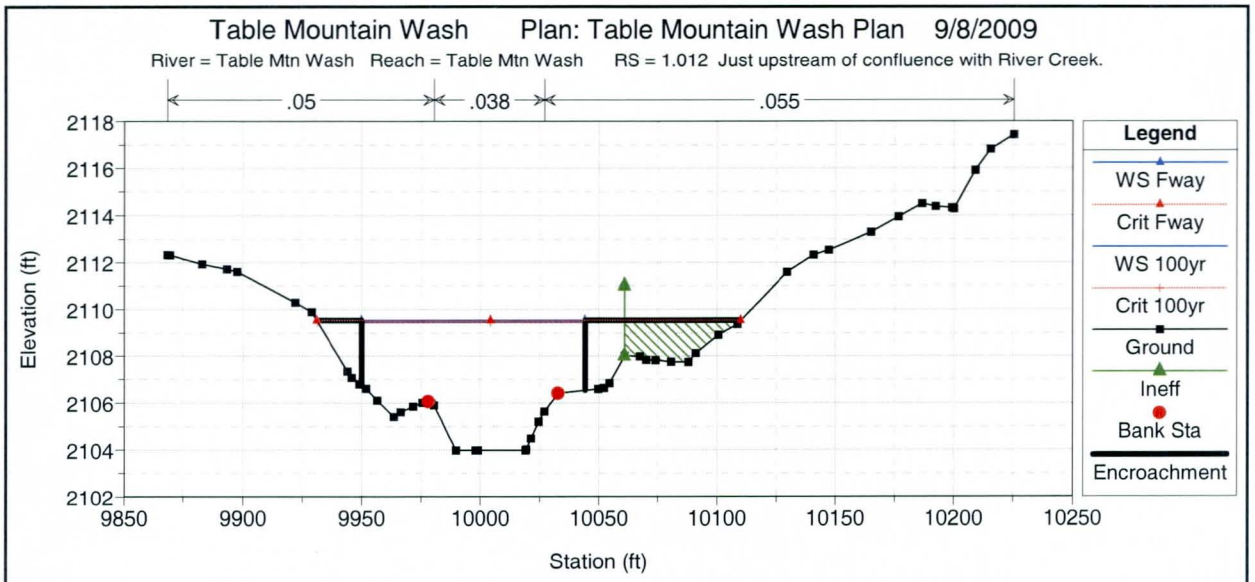


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 1.012 Just upstream of confluence with River Creek.
.05
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

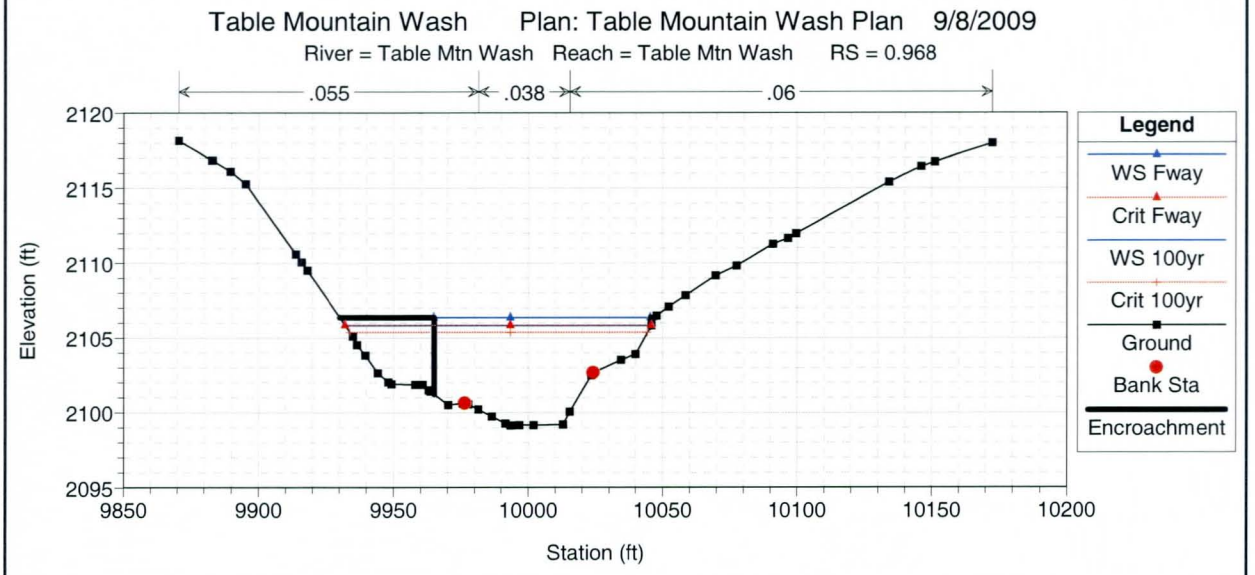


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.968
.055
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

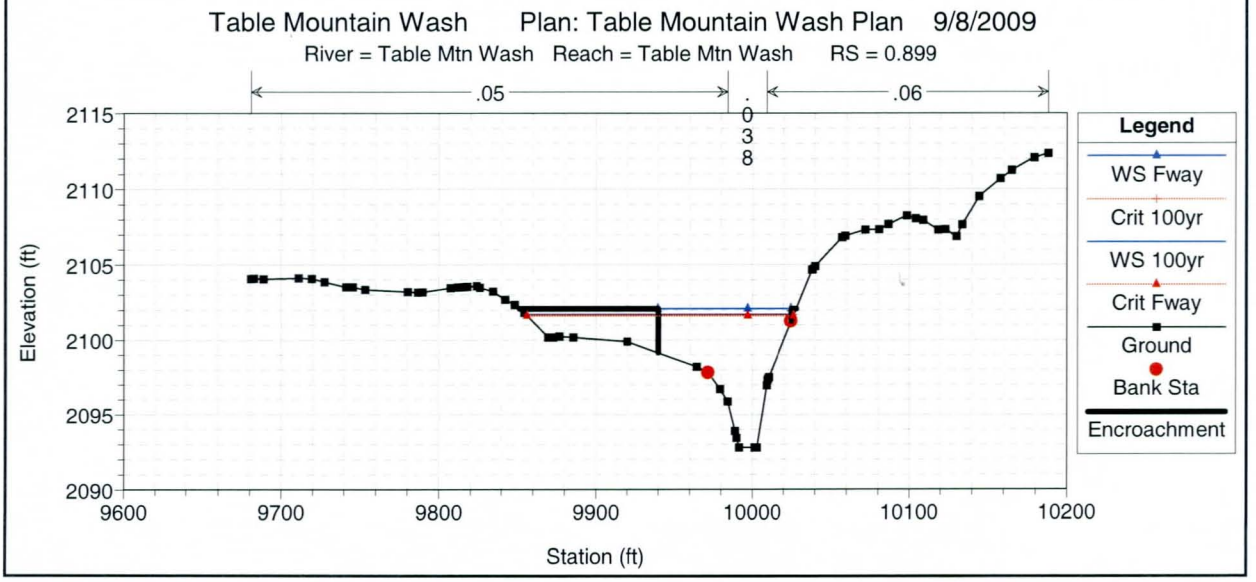


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.899
.05
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

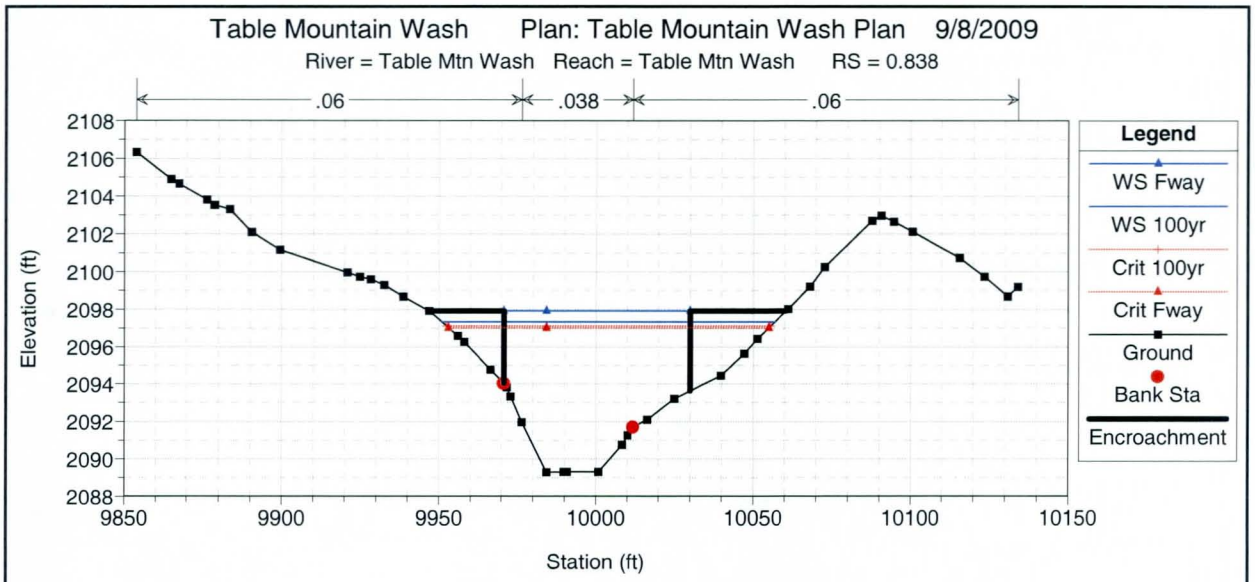


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.838
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

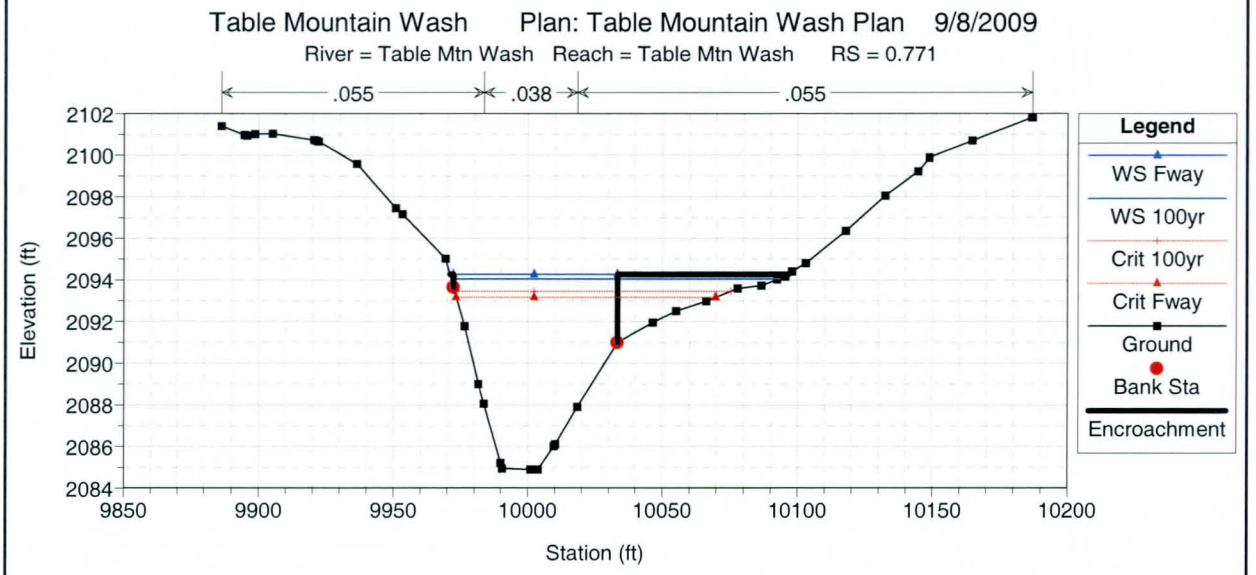


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.771
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

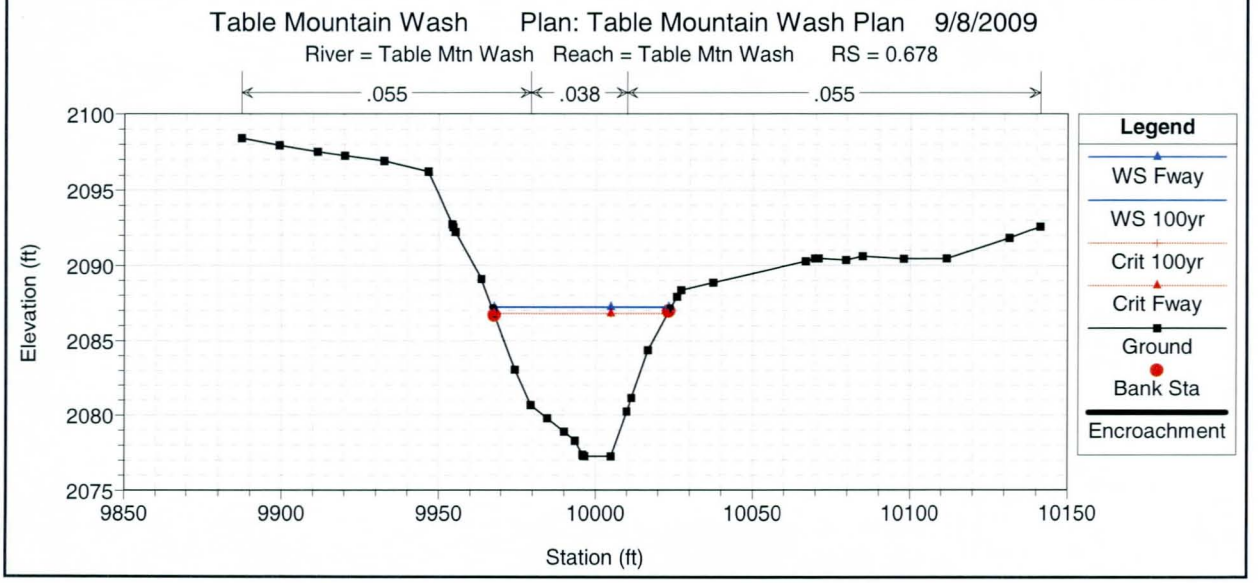


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.678
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

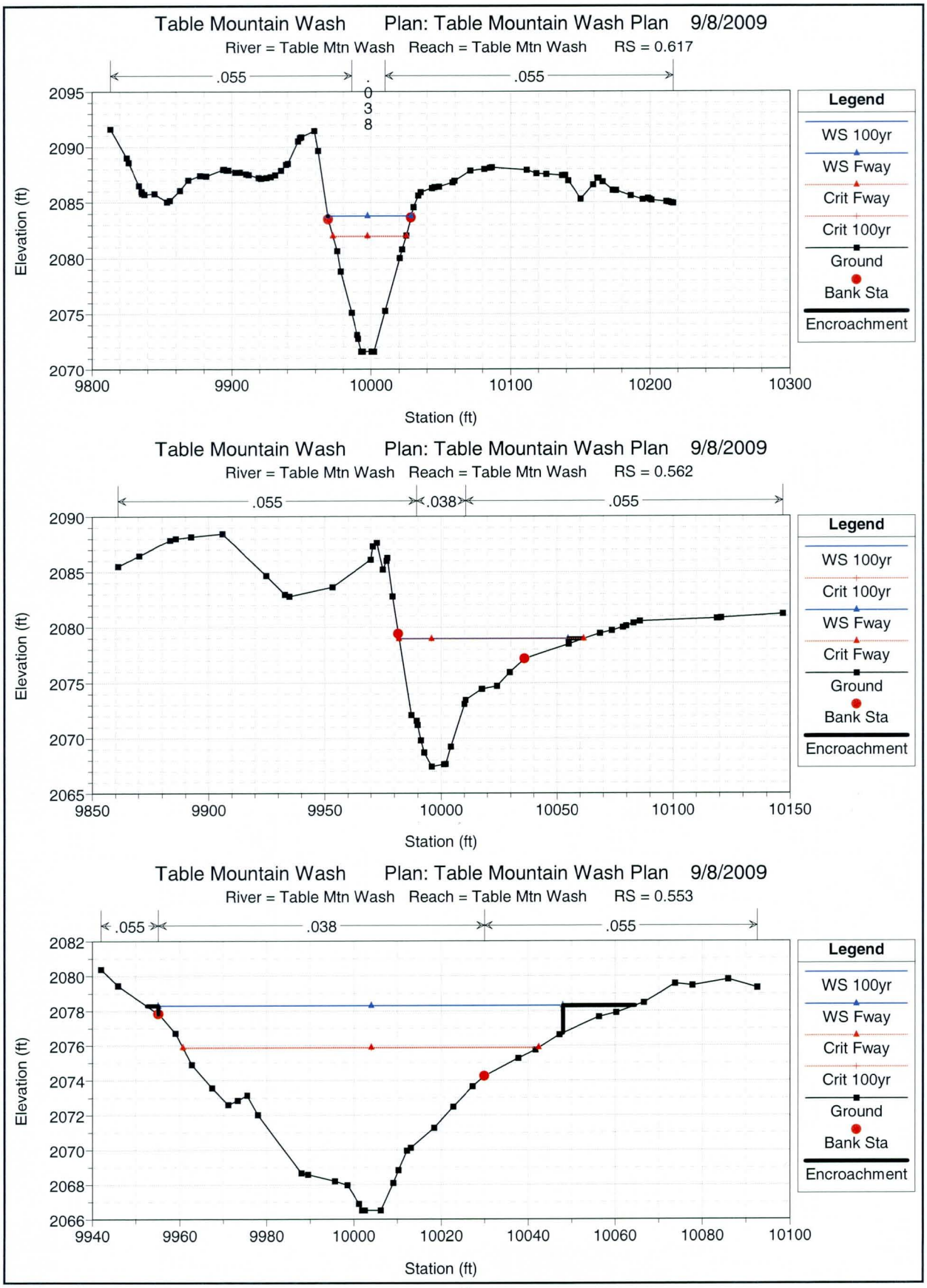


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.617
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.562
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.553
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

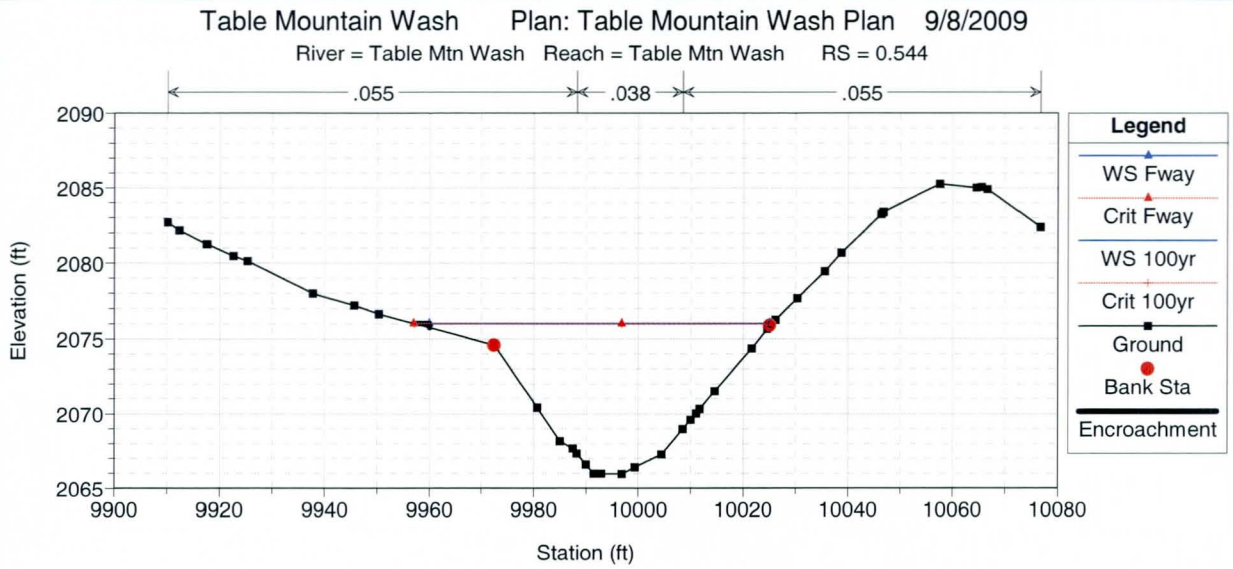


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.544
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

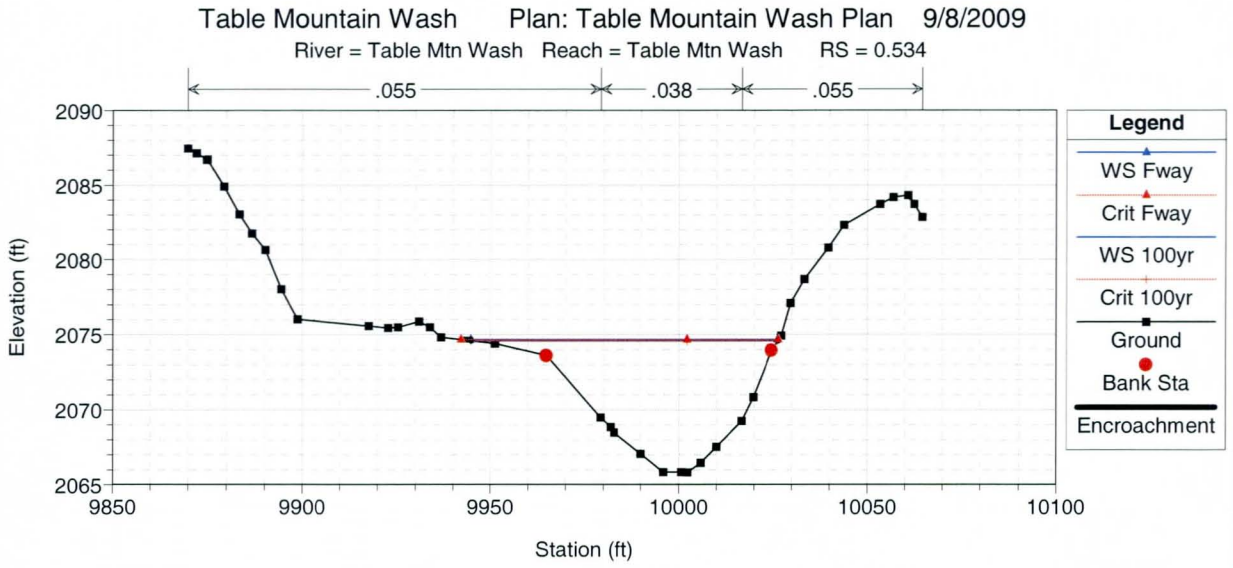


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.534
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

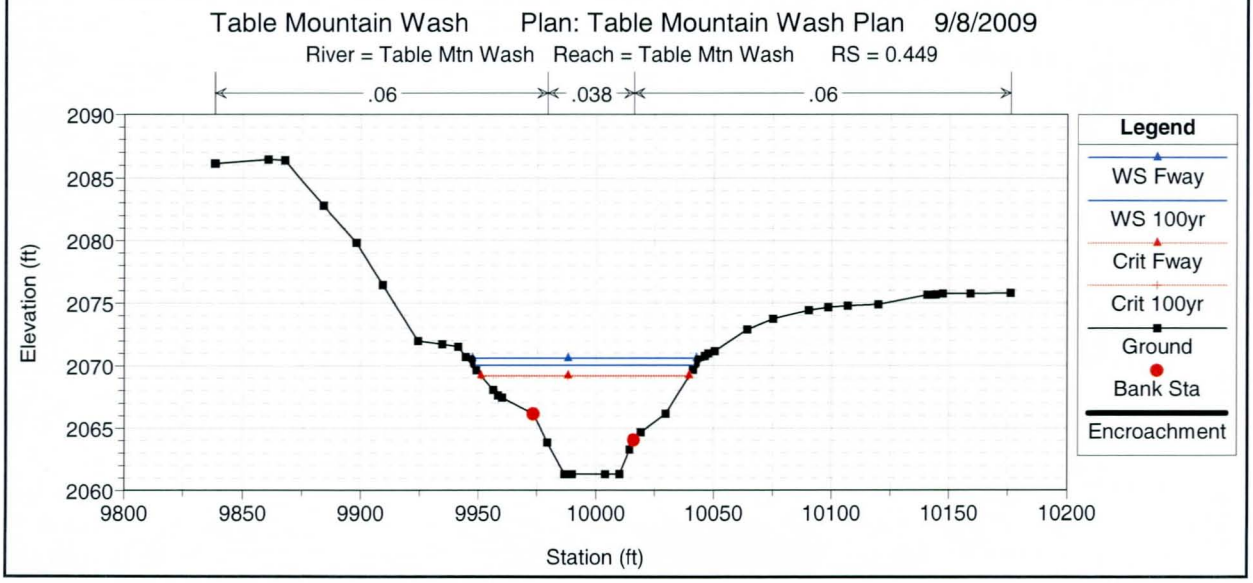


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.449
.06
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

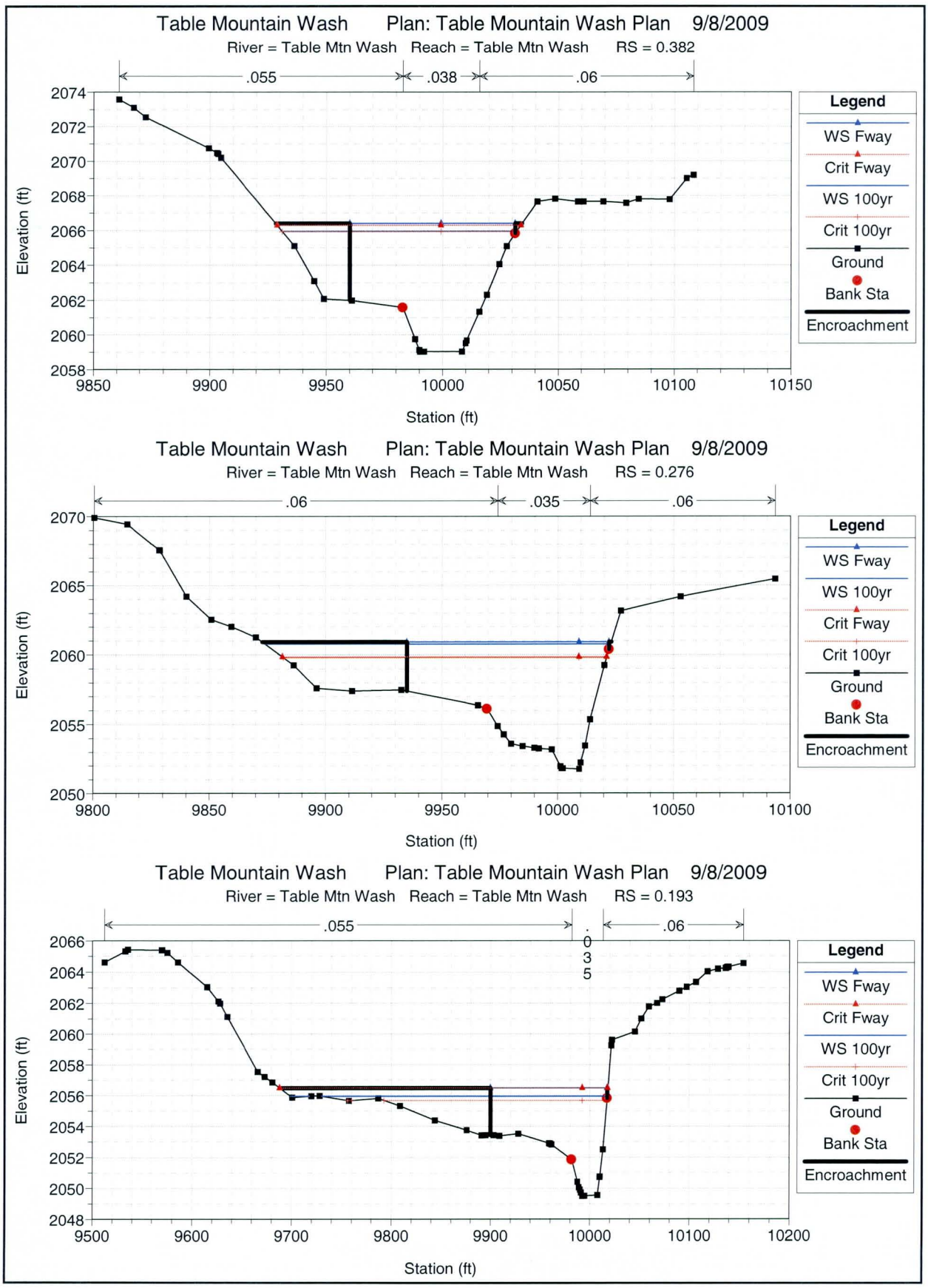


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.382
.055
.038
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.276
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.193
.055
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

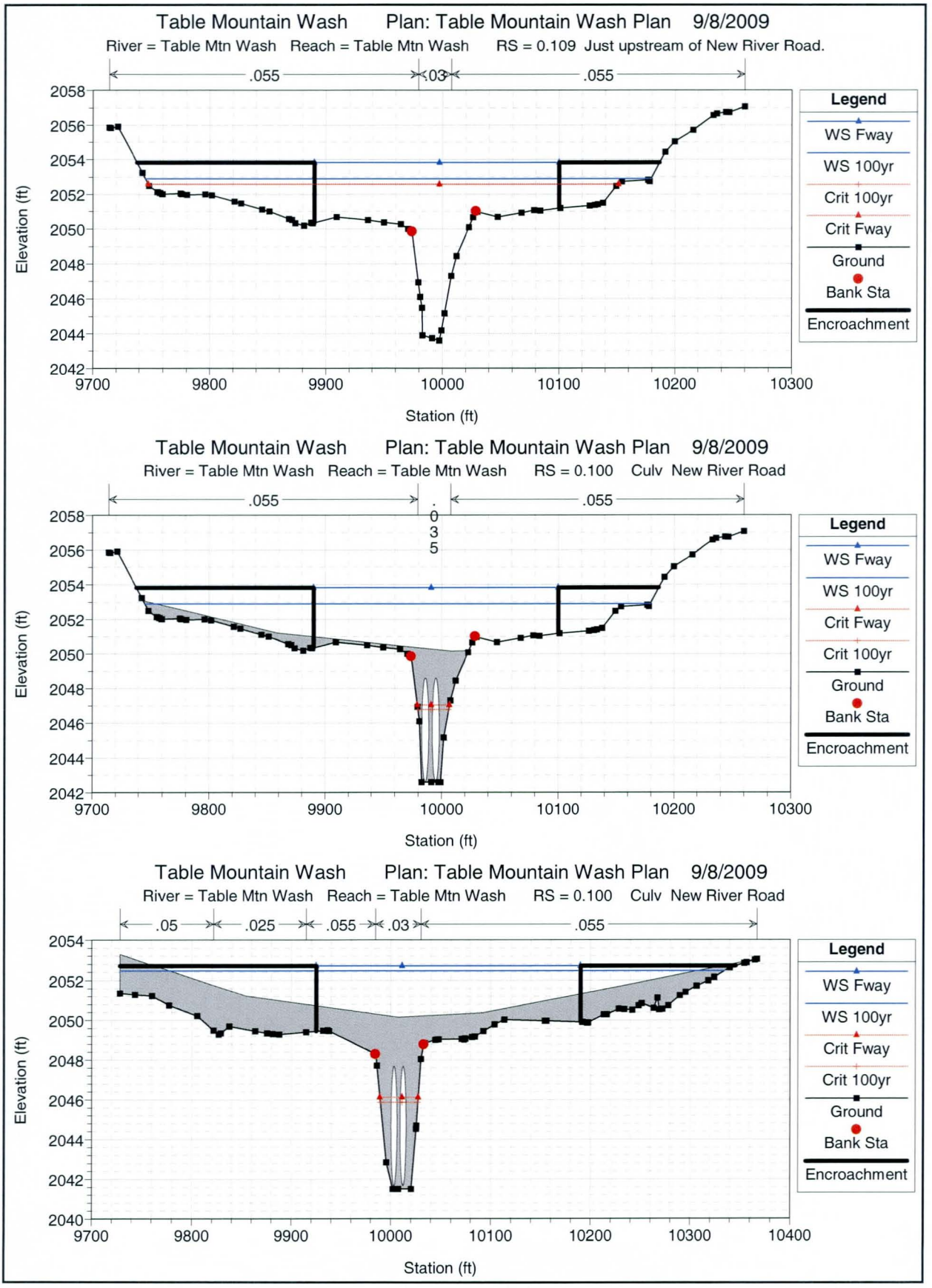


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.109 Just upstream of New River Road.
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.100 Culv New River Road
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.100 Culv New River Road
.05
.025
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

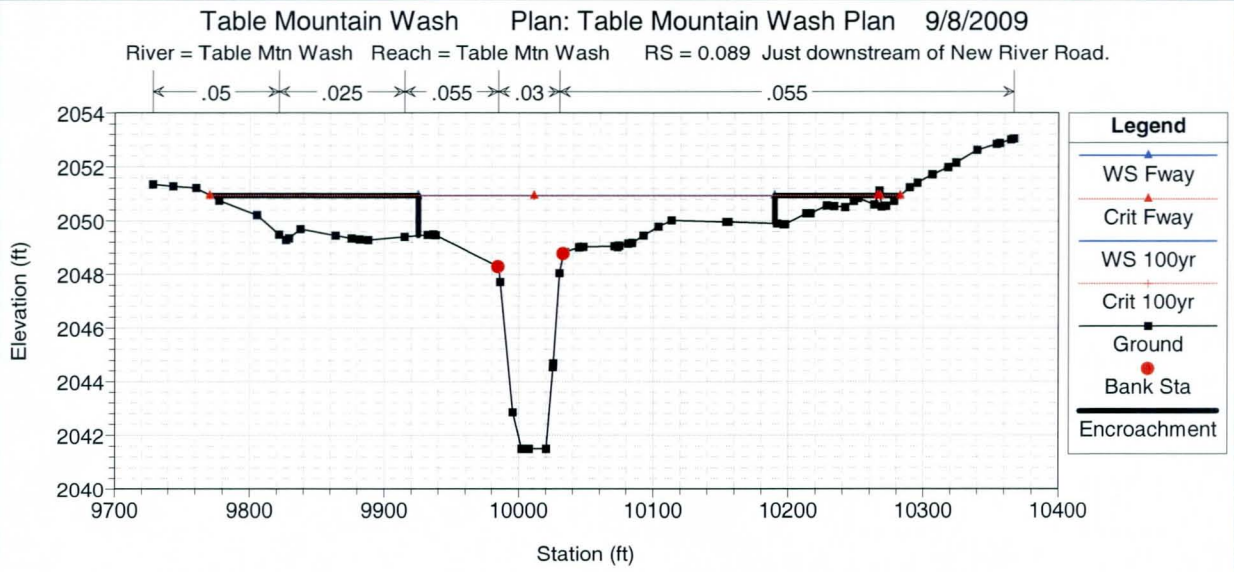


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.089 Just downstream of New River Road.
.05
.025
.055
.03
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

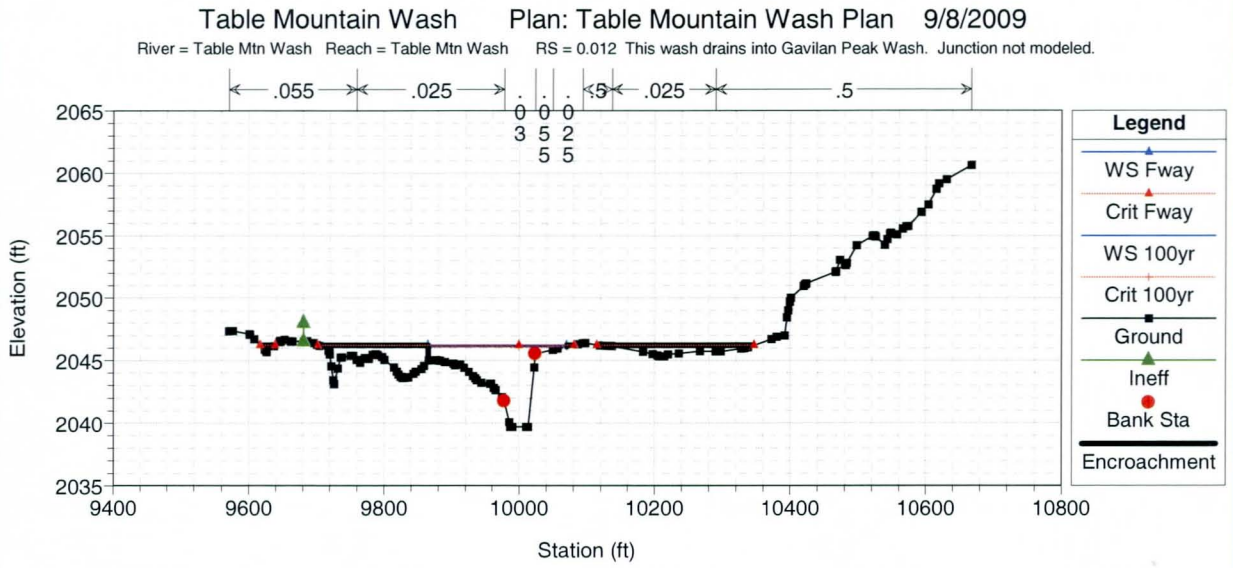


Table Mountain Wash Plan: Table Mountain Wash Plan 9/8/2009
River = Table Mtn Wash Reach = Table Mtn Wash RS = 0.012 This wash drains into Gavilan Peak Wash. Junction not modeled.
.055
.025
.03
.055
.025
.5
.025
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

CROSS SECTION PLOTS FOR

TABLE MOUNTAIN WASH
TRIBUTARY 6

Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009

River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.596

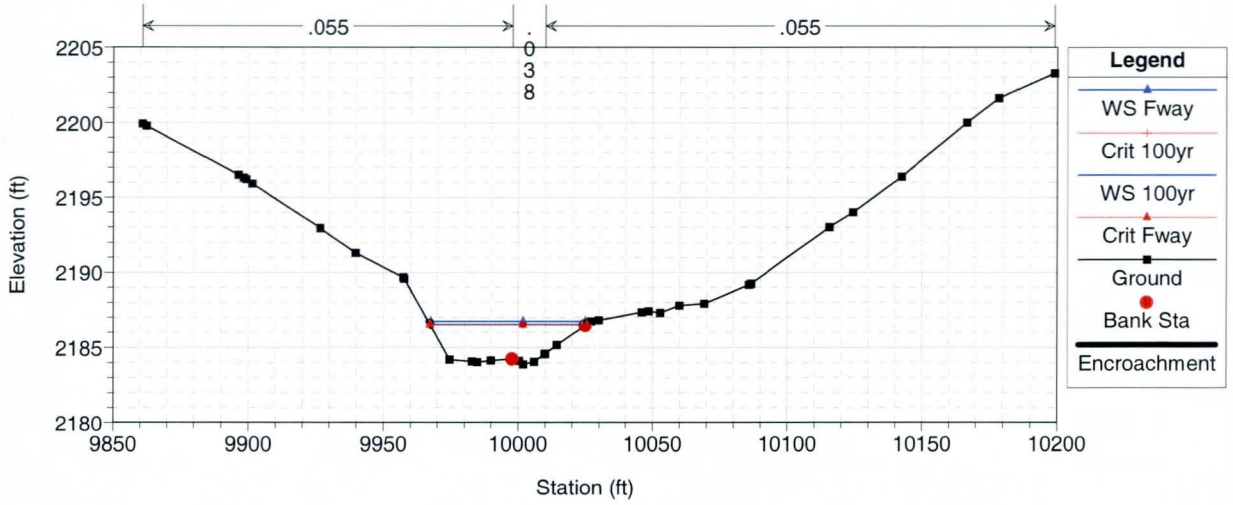


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009

River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.525

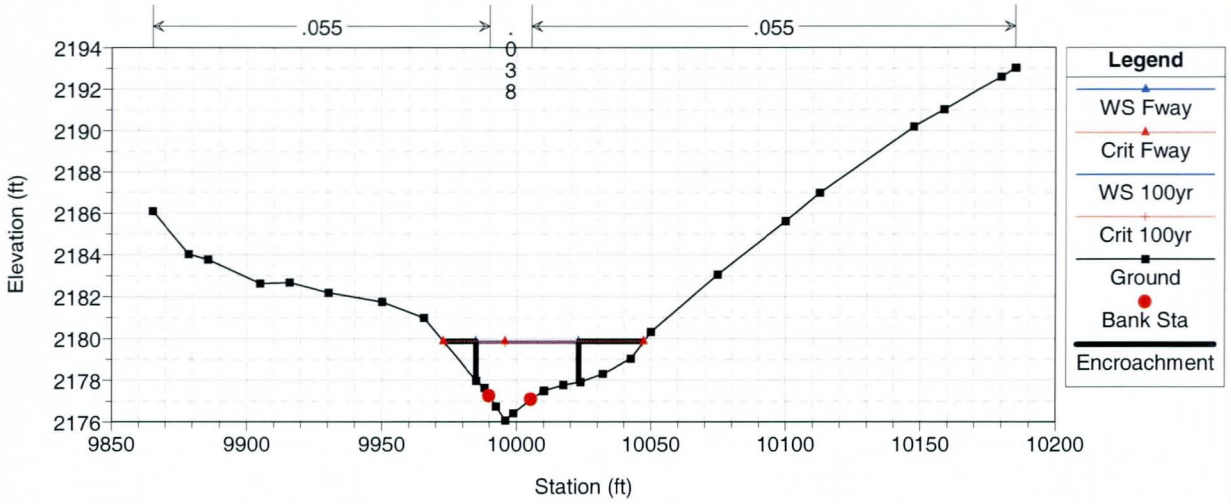
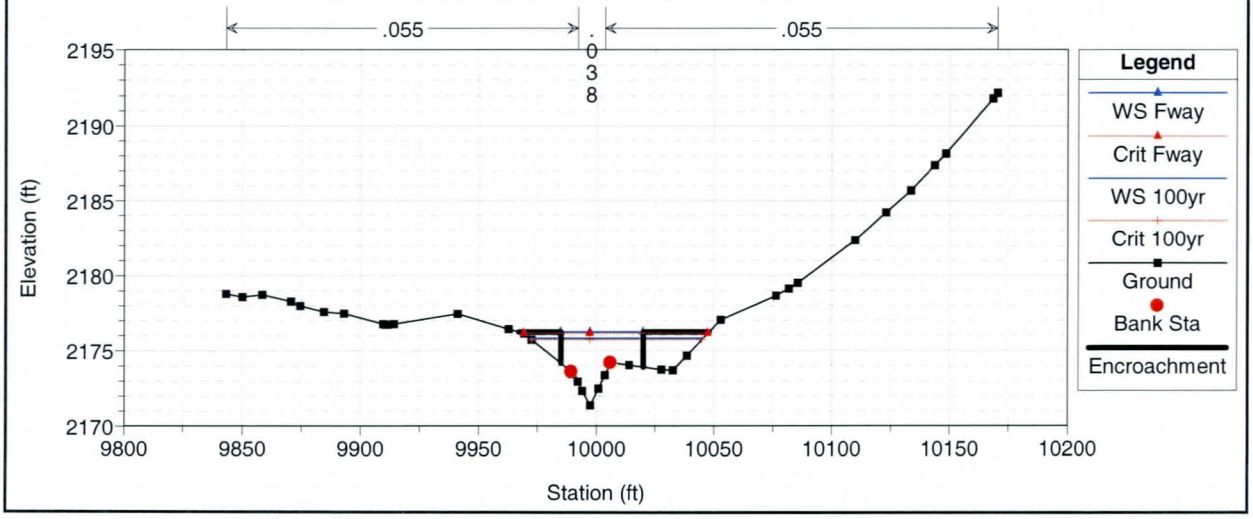


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009

River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.486



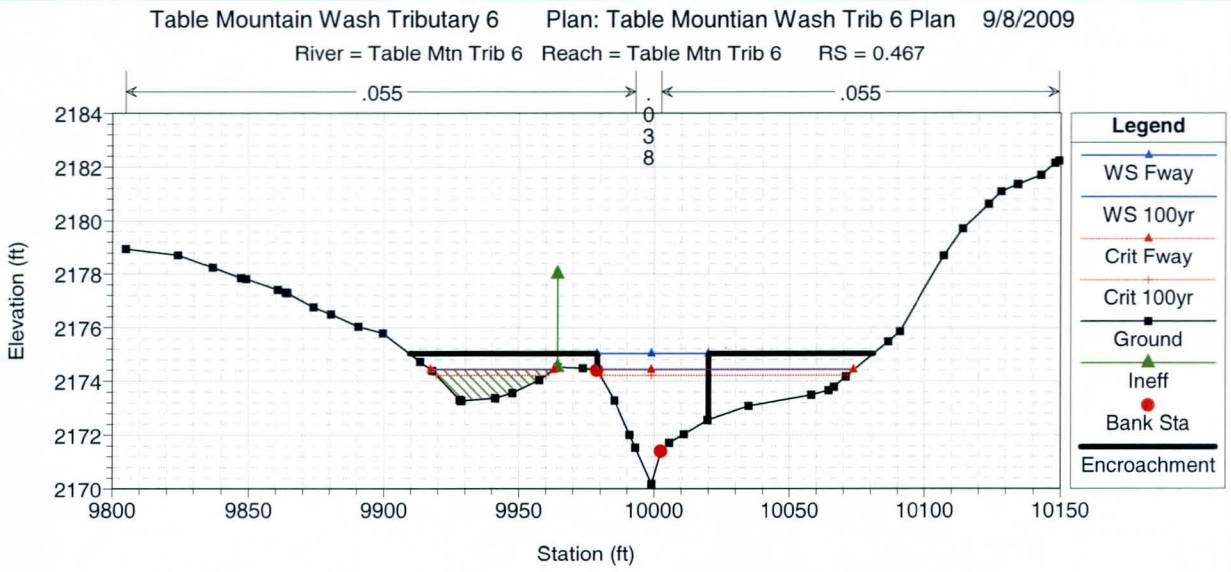


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.467
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

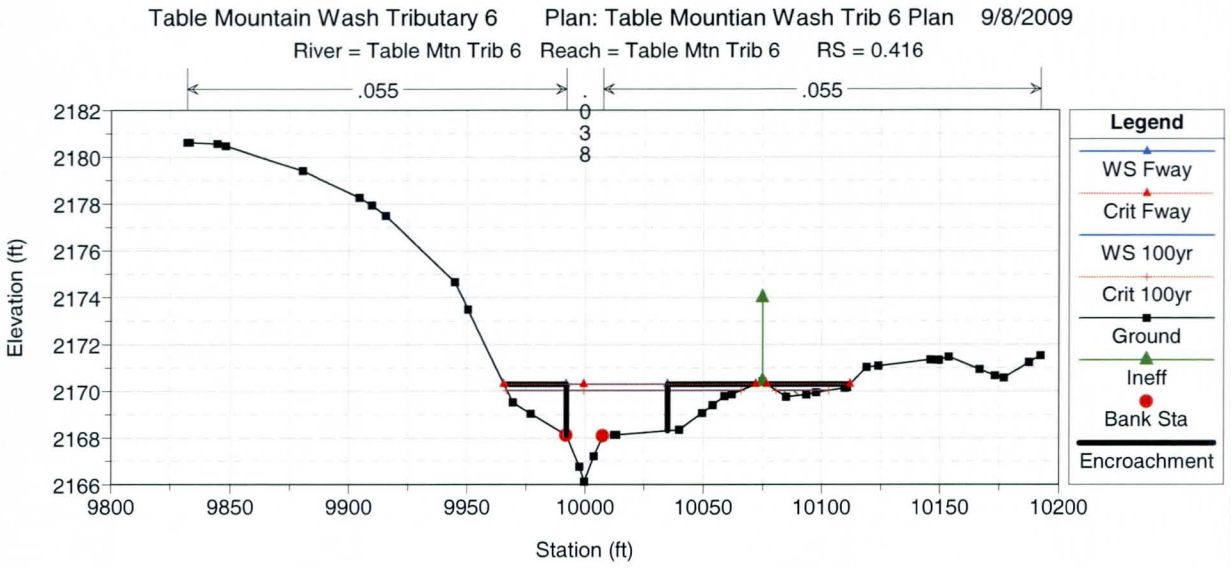


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.416
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

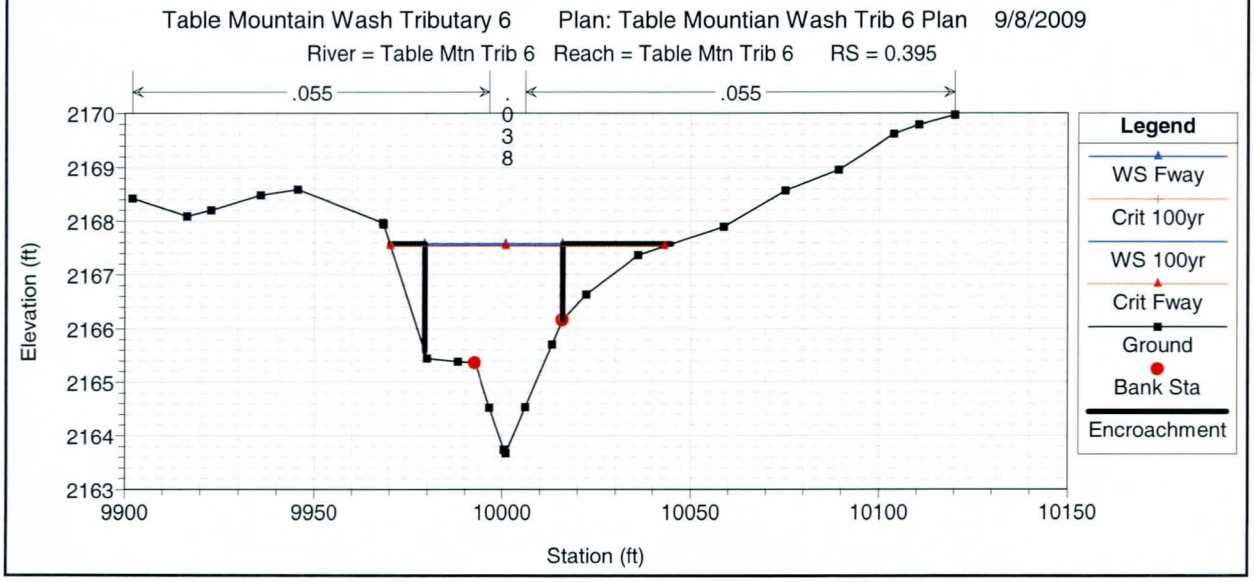


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.395
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

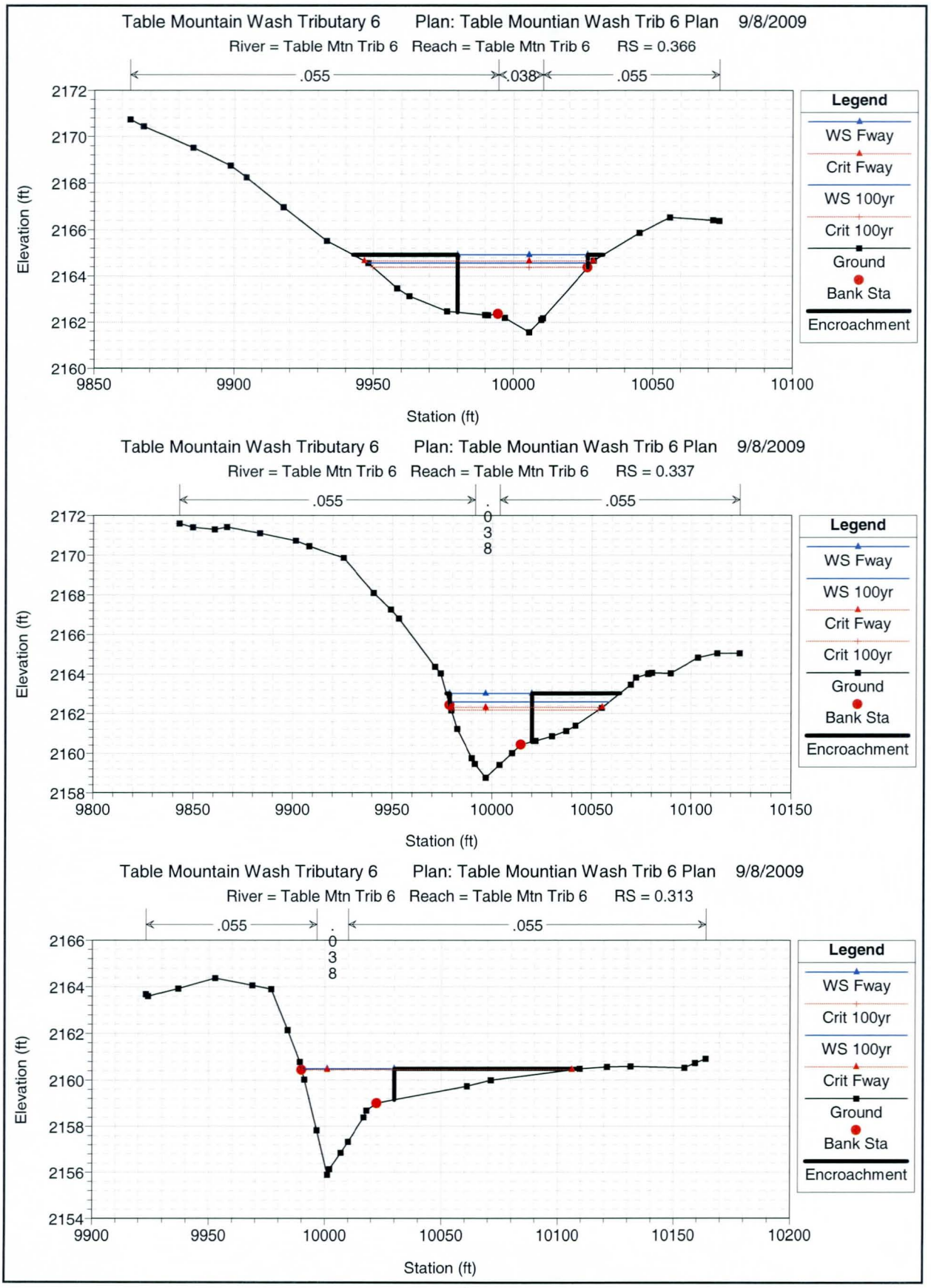


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.366
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.337
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.313
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

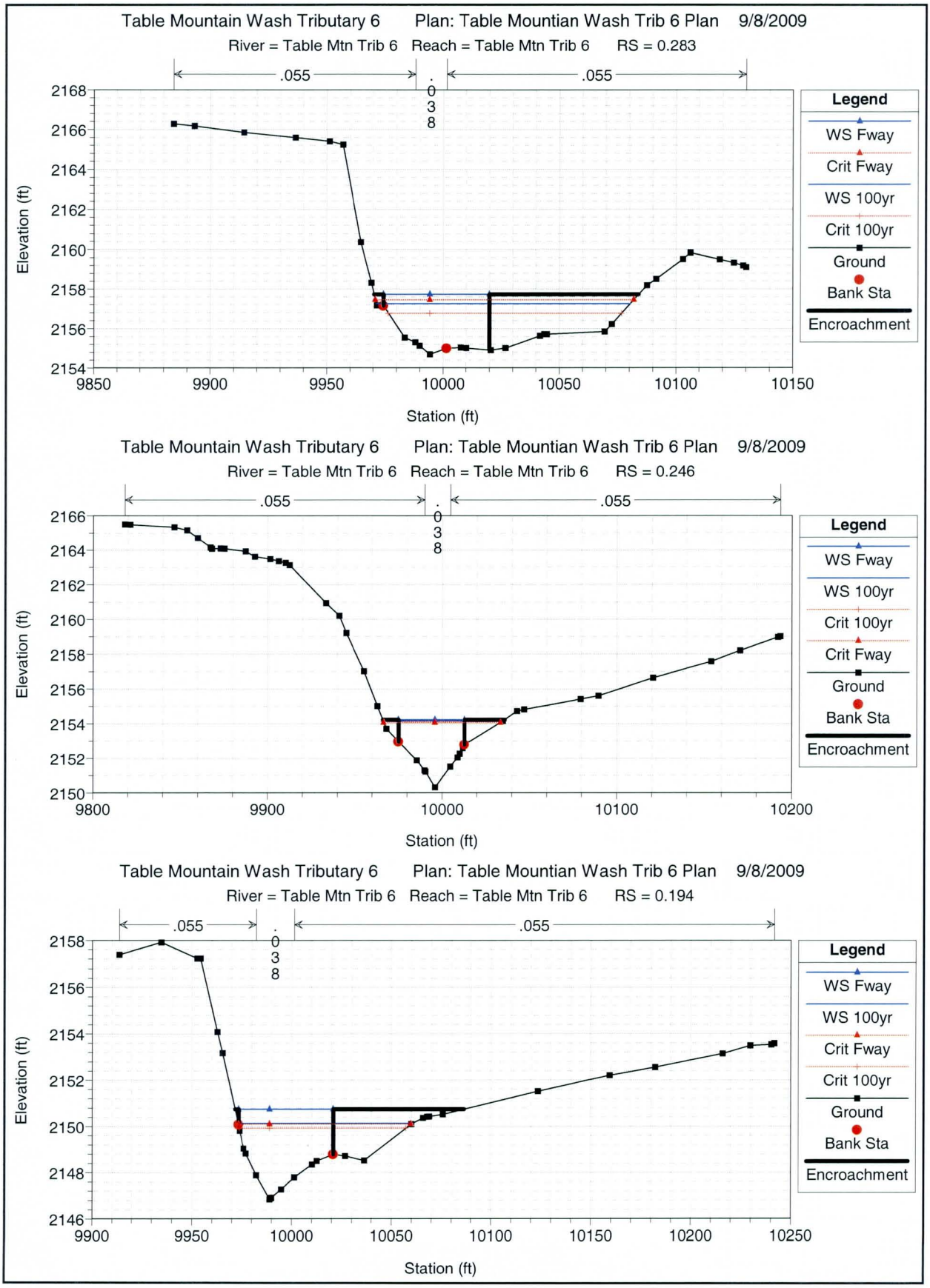


Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.283
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.246
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.194
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

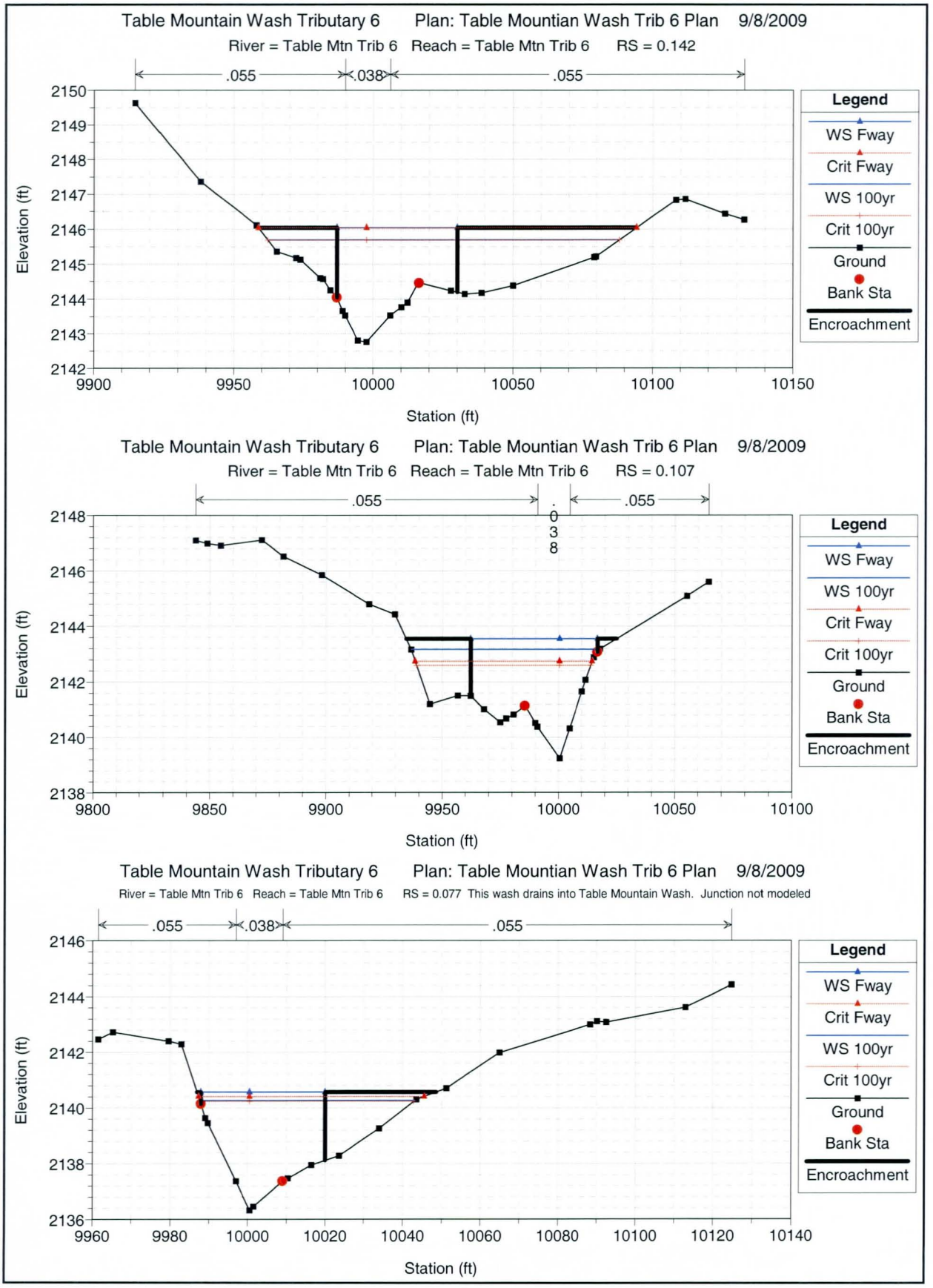
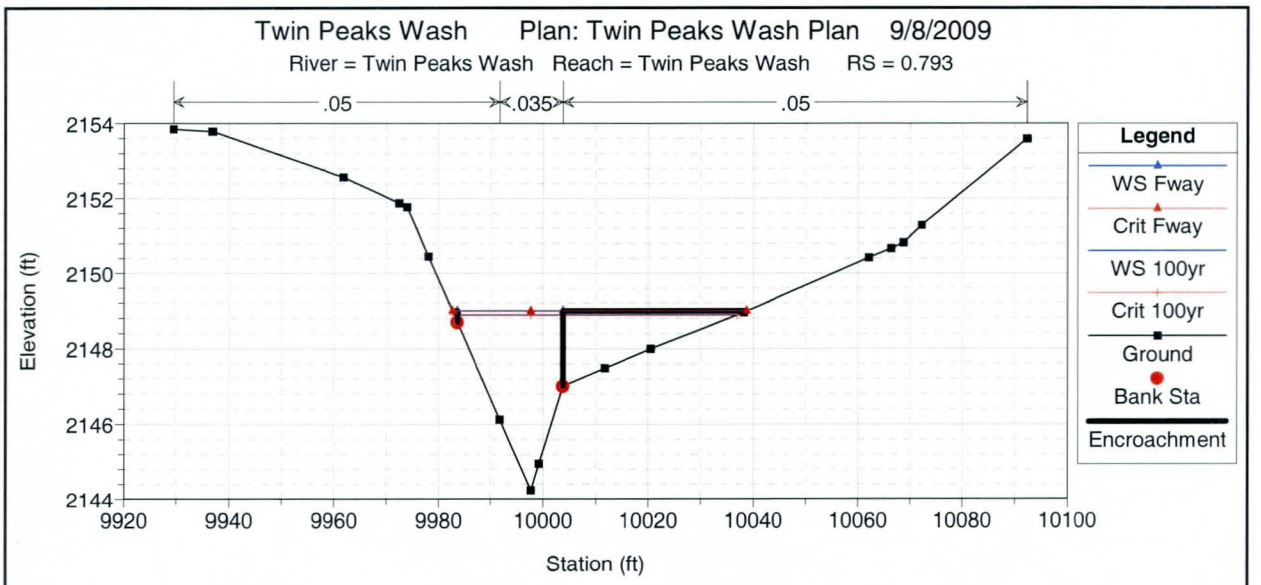
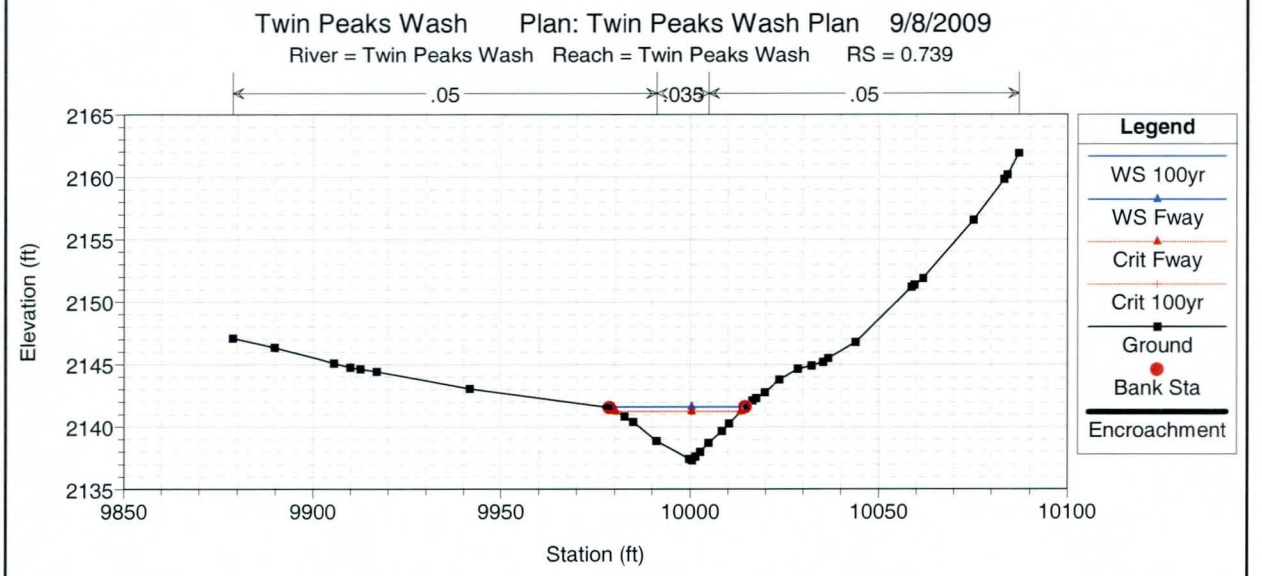


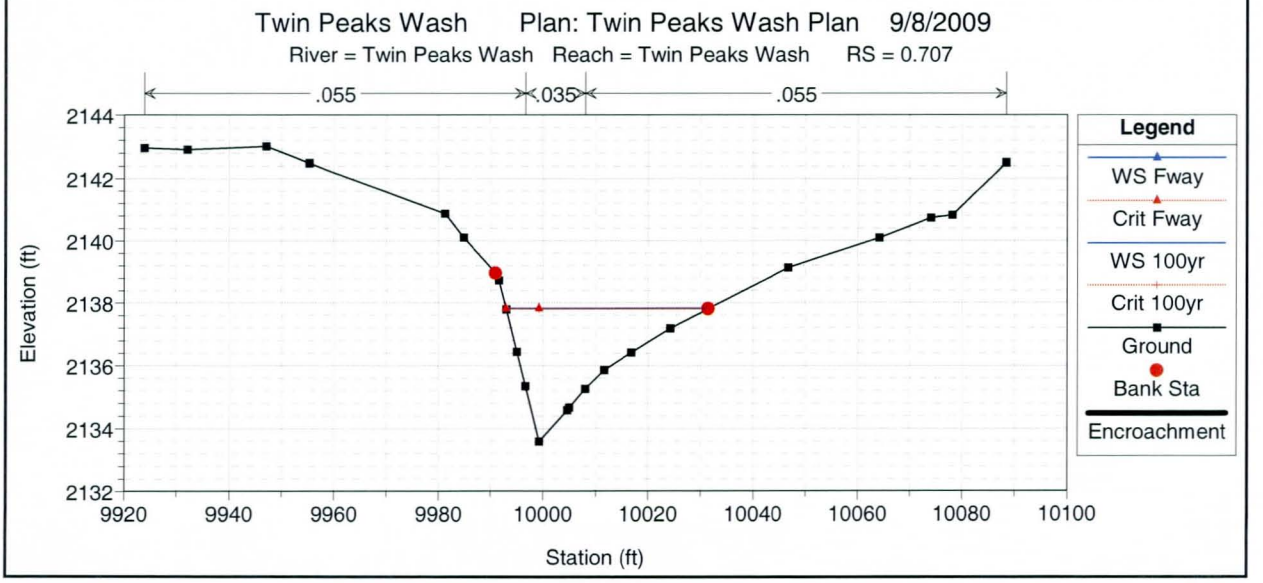
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.142
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.107
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
Table Mountain Wash Tributary 6 Plan: Table Mountian Wash Trib 6 Plan 9/8/2009
River = Table Mtn Trib 6 Reach = Table Mtn Trib 6 RS = 0.077 This wash drains into Table Mountain Wash. Junction not modeled
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

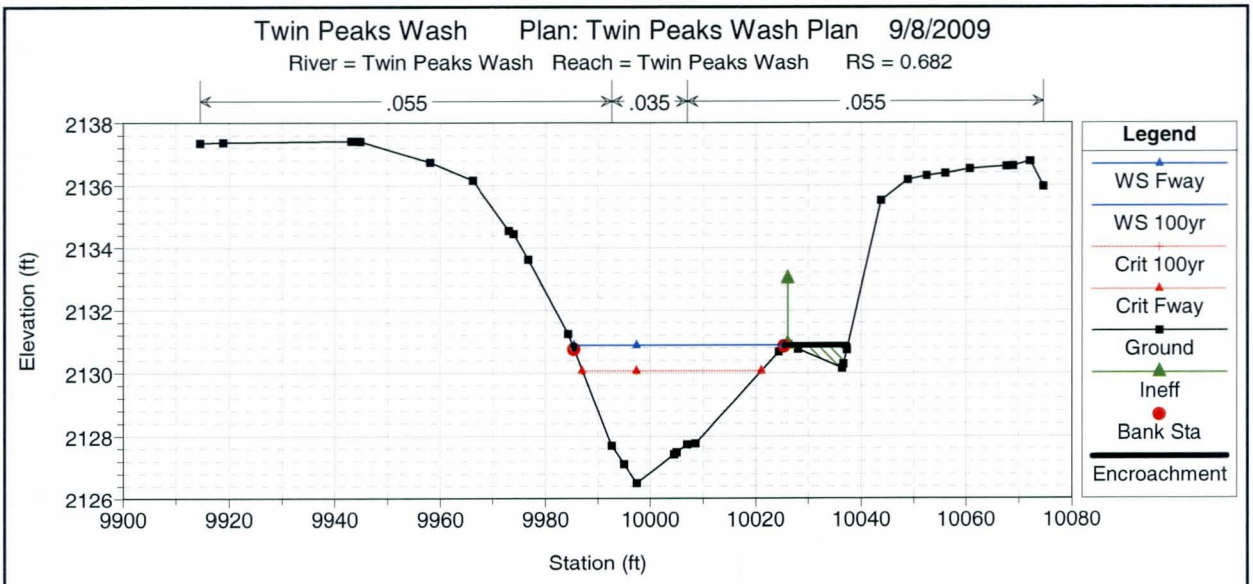
CROSS SECTION PLOTS FOR

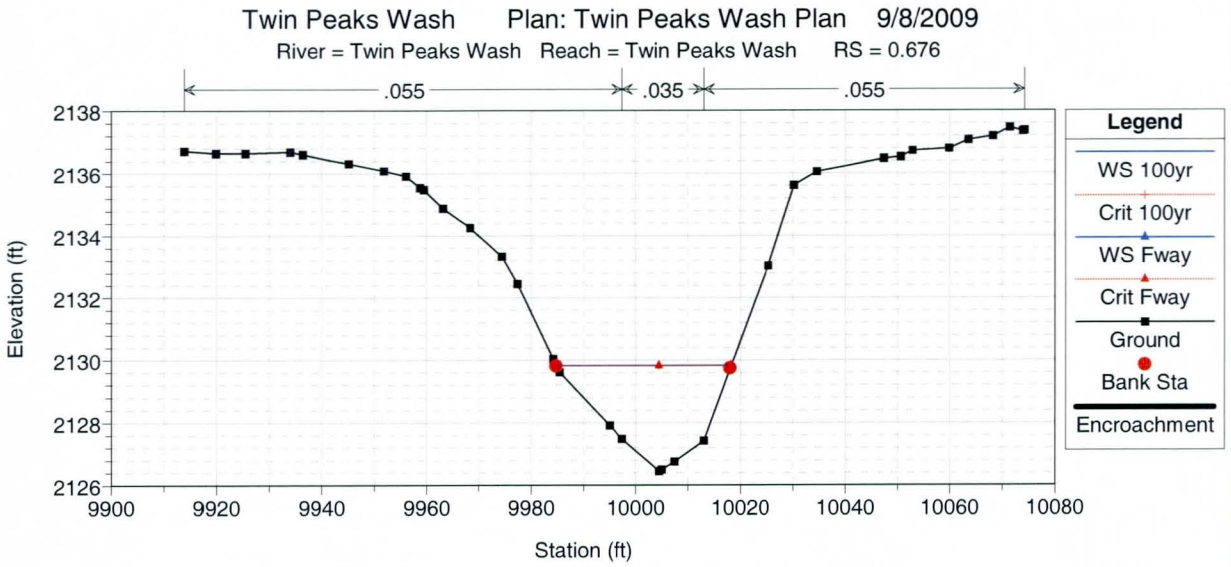
TWIN PEAKS WASH

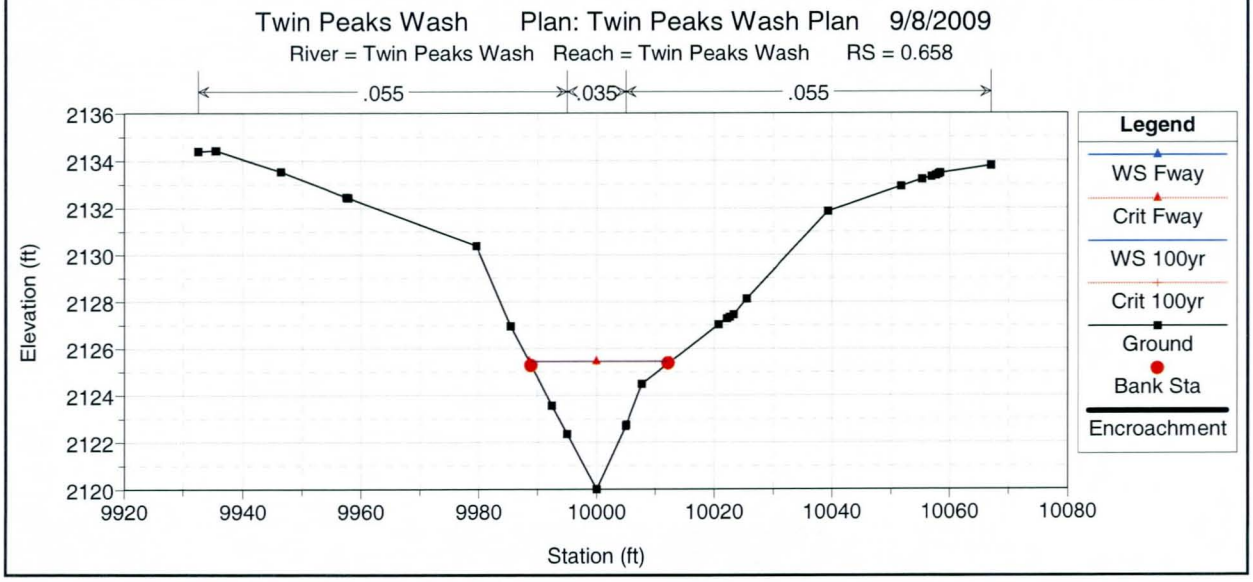

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.793
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

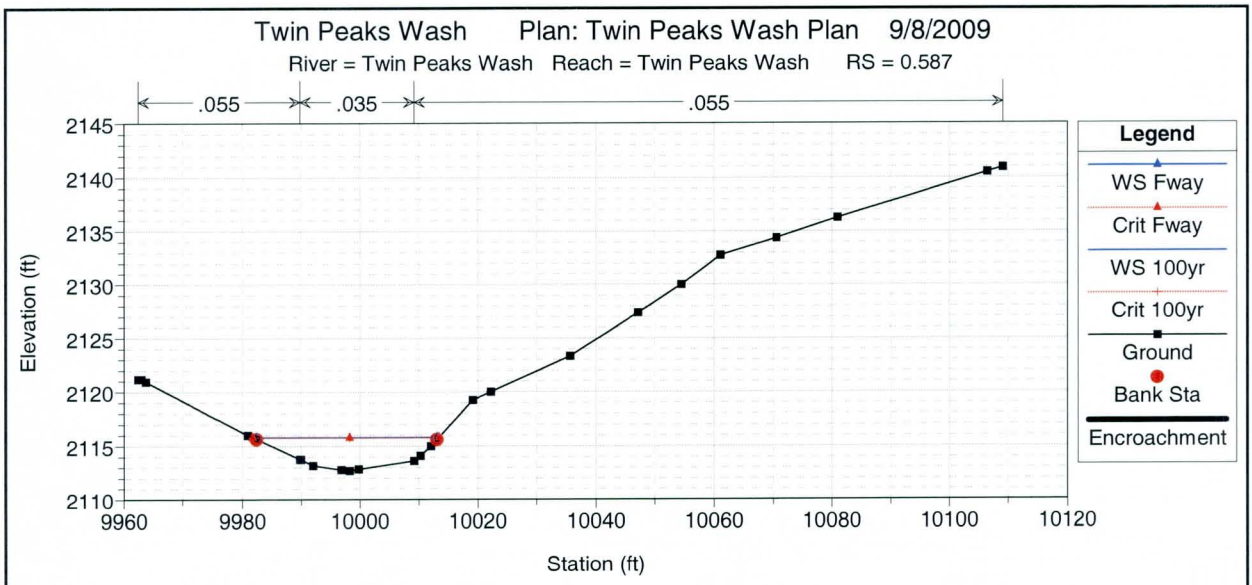

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.739
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

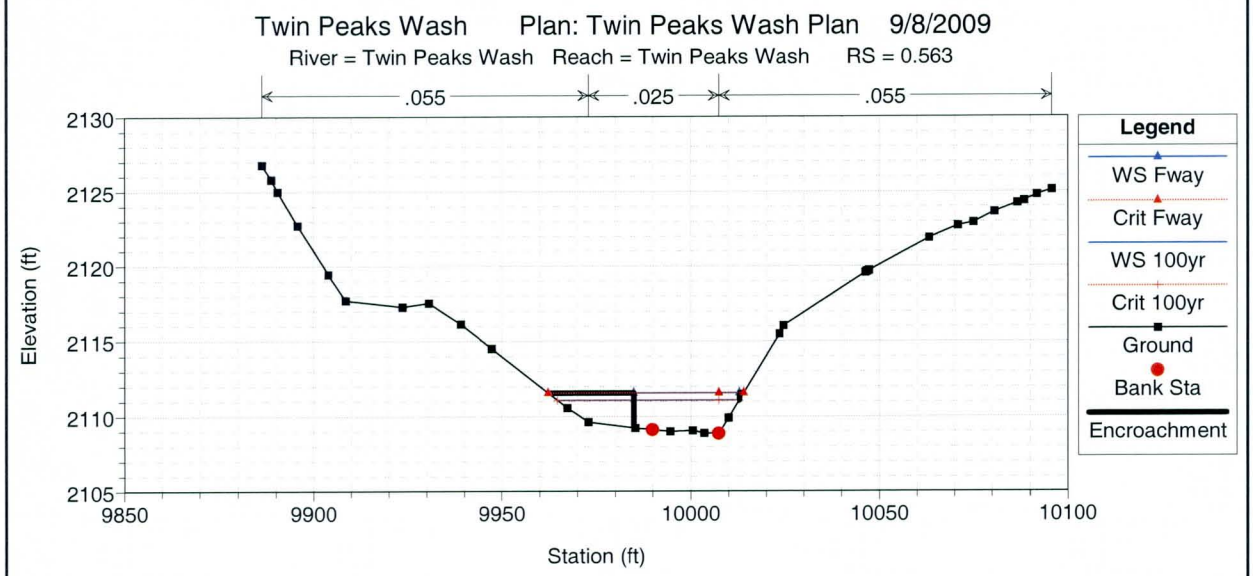

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.707
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

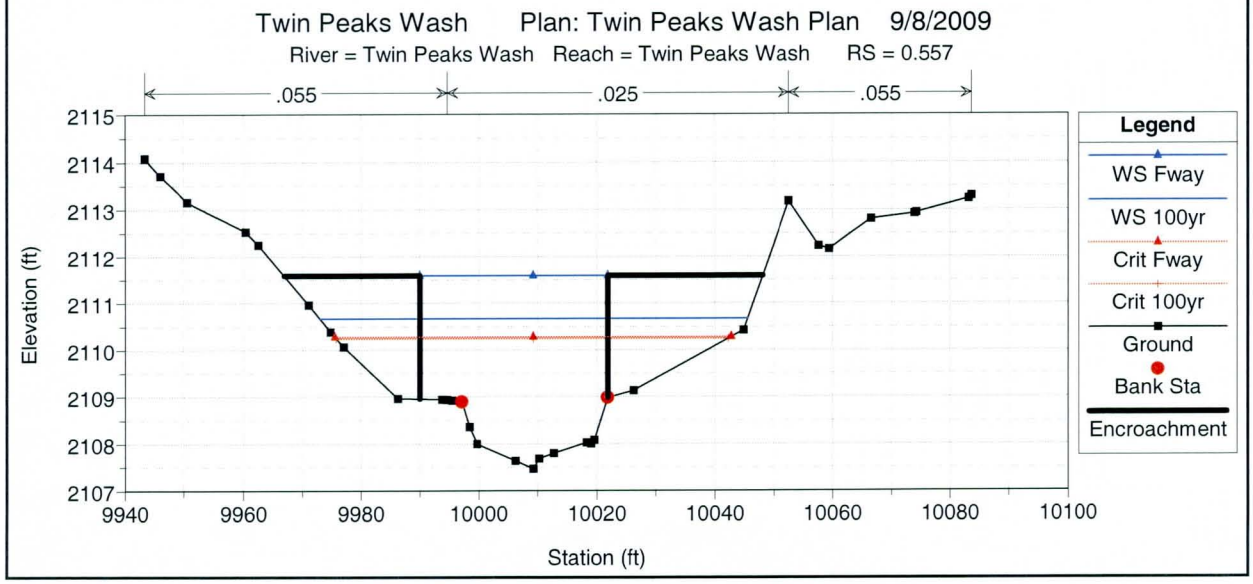

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.682
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

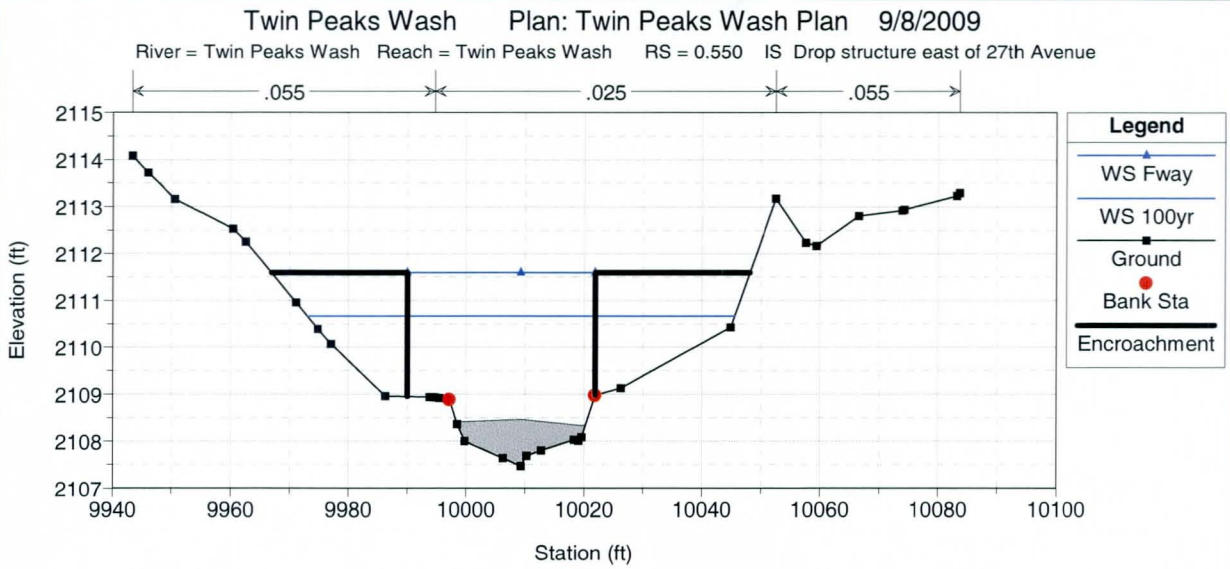

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.676
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

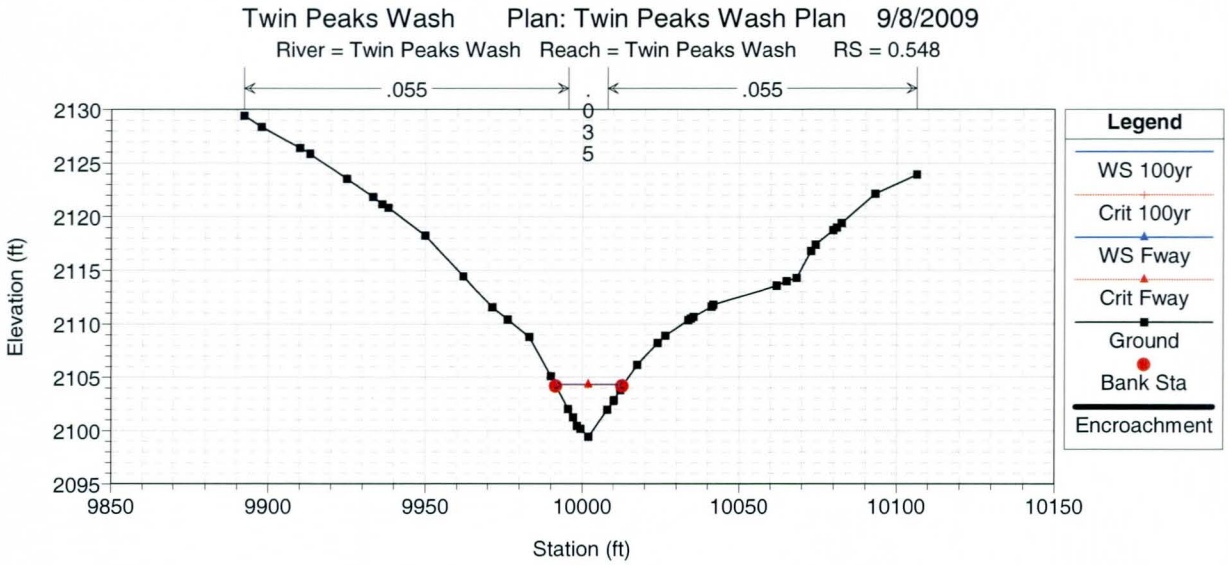

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.658
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

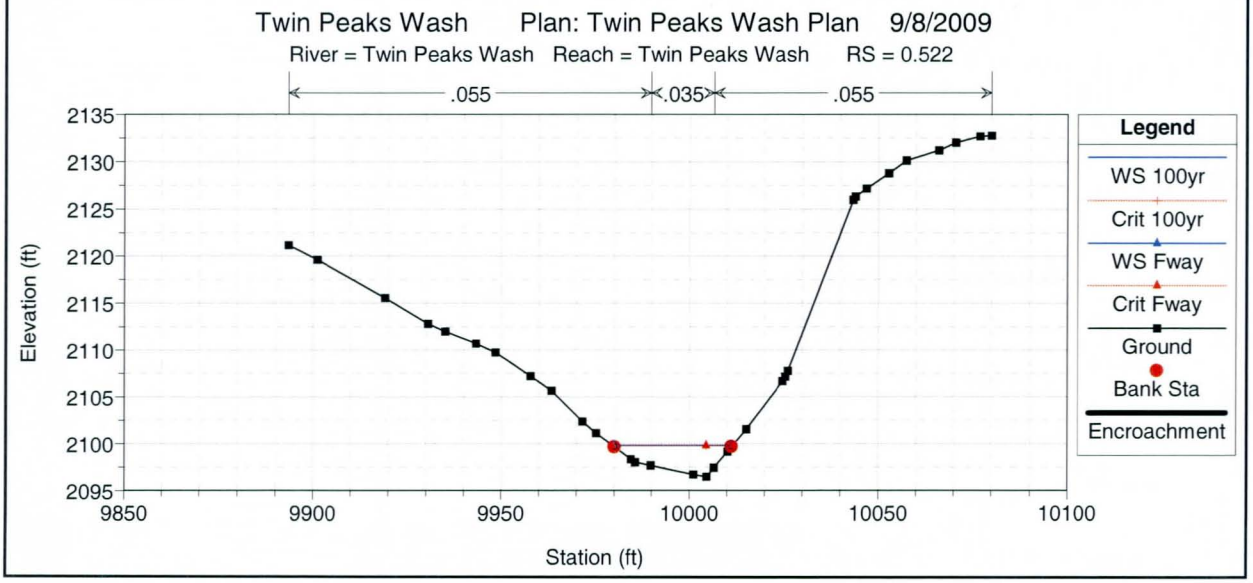

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.587
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

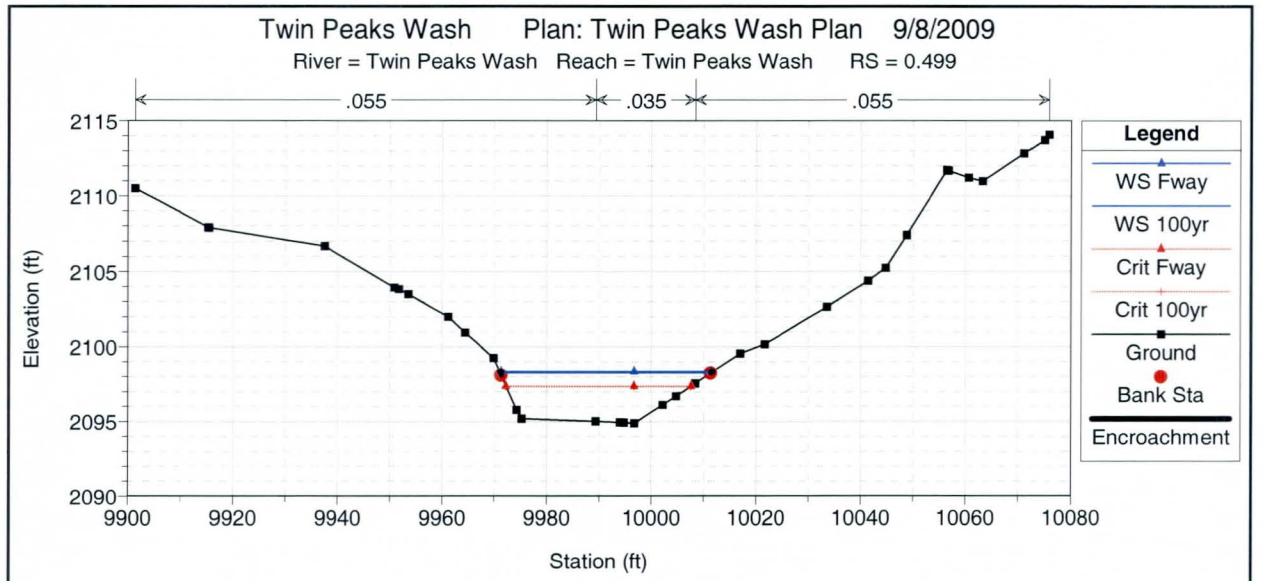

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.563
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

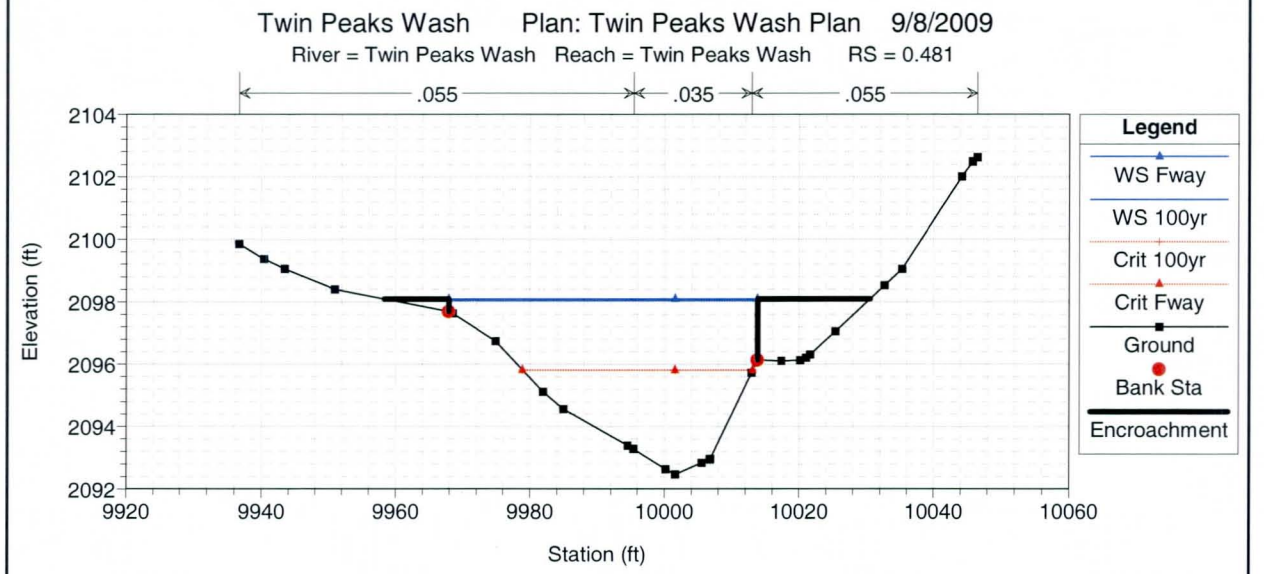

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.557
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

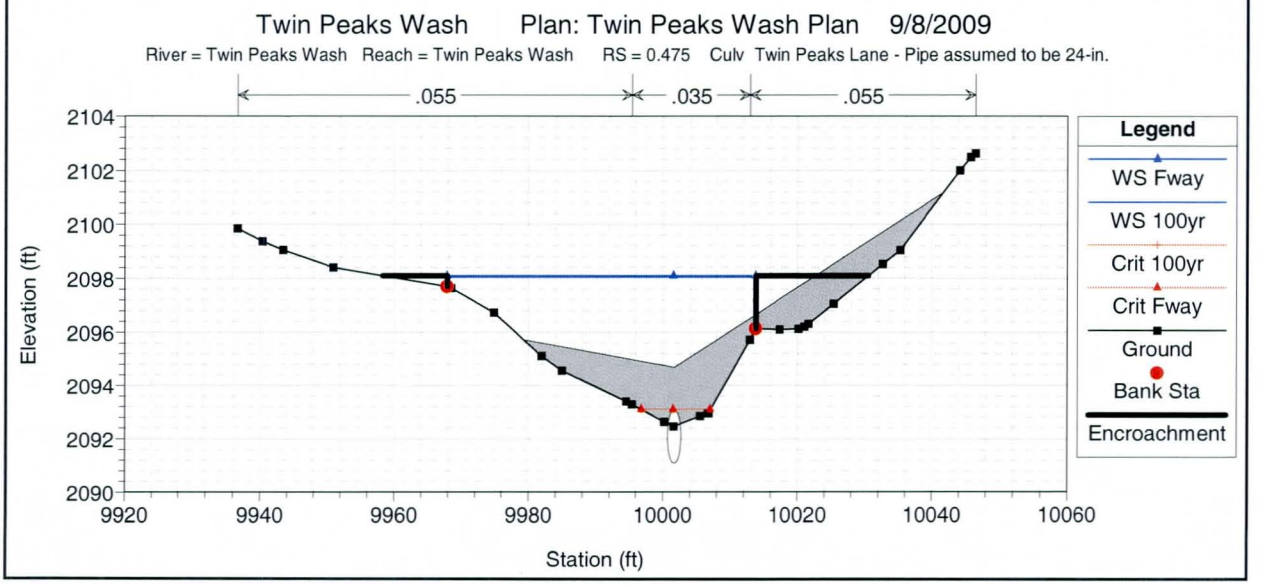

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.550 IS Drop structure east of 27th Avenue
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Ground
Bank Sta
Encroachment

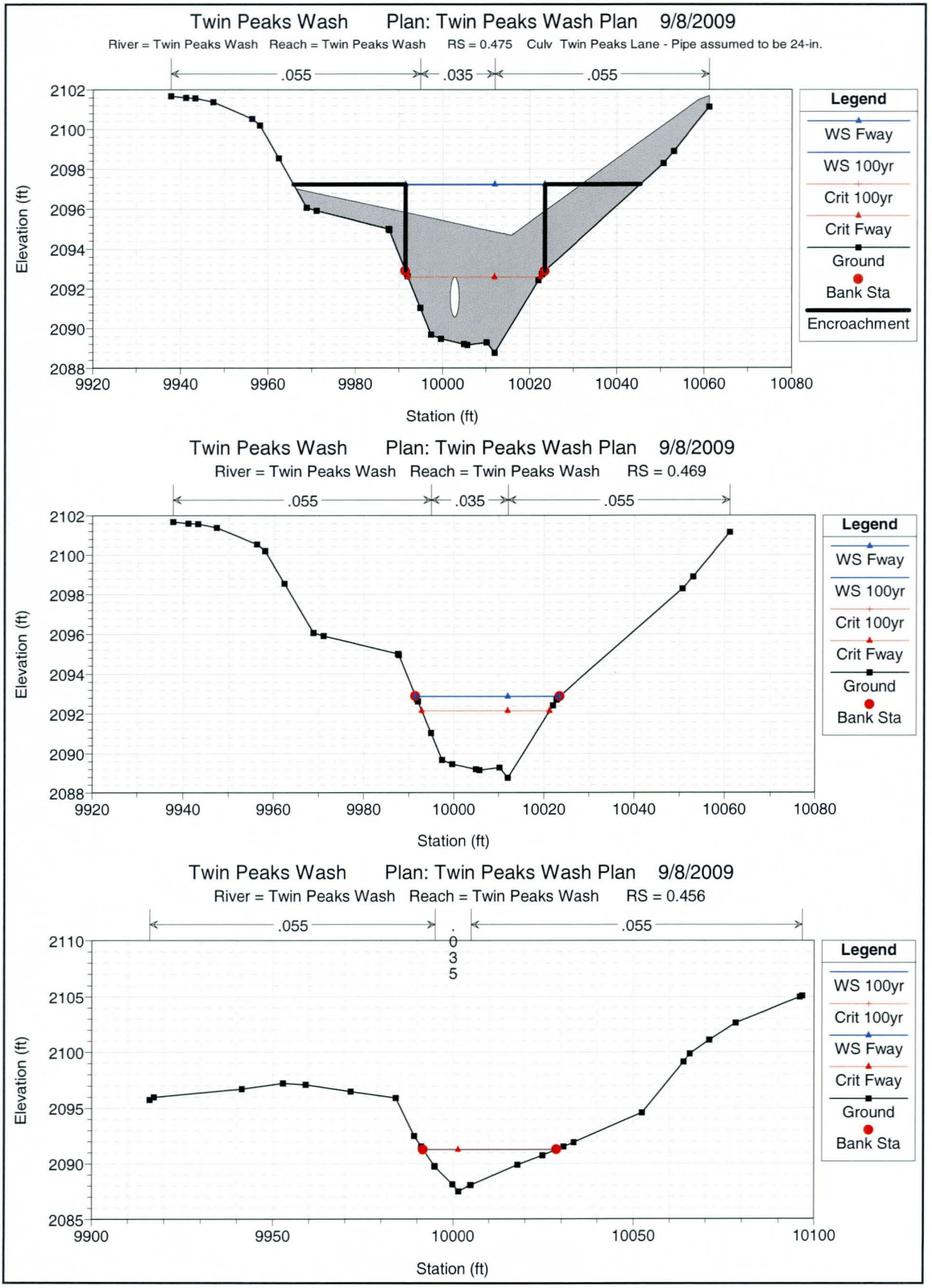

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.548
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

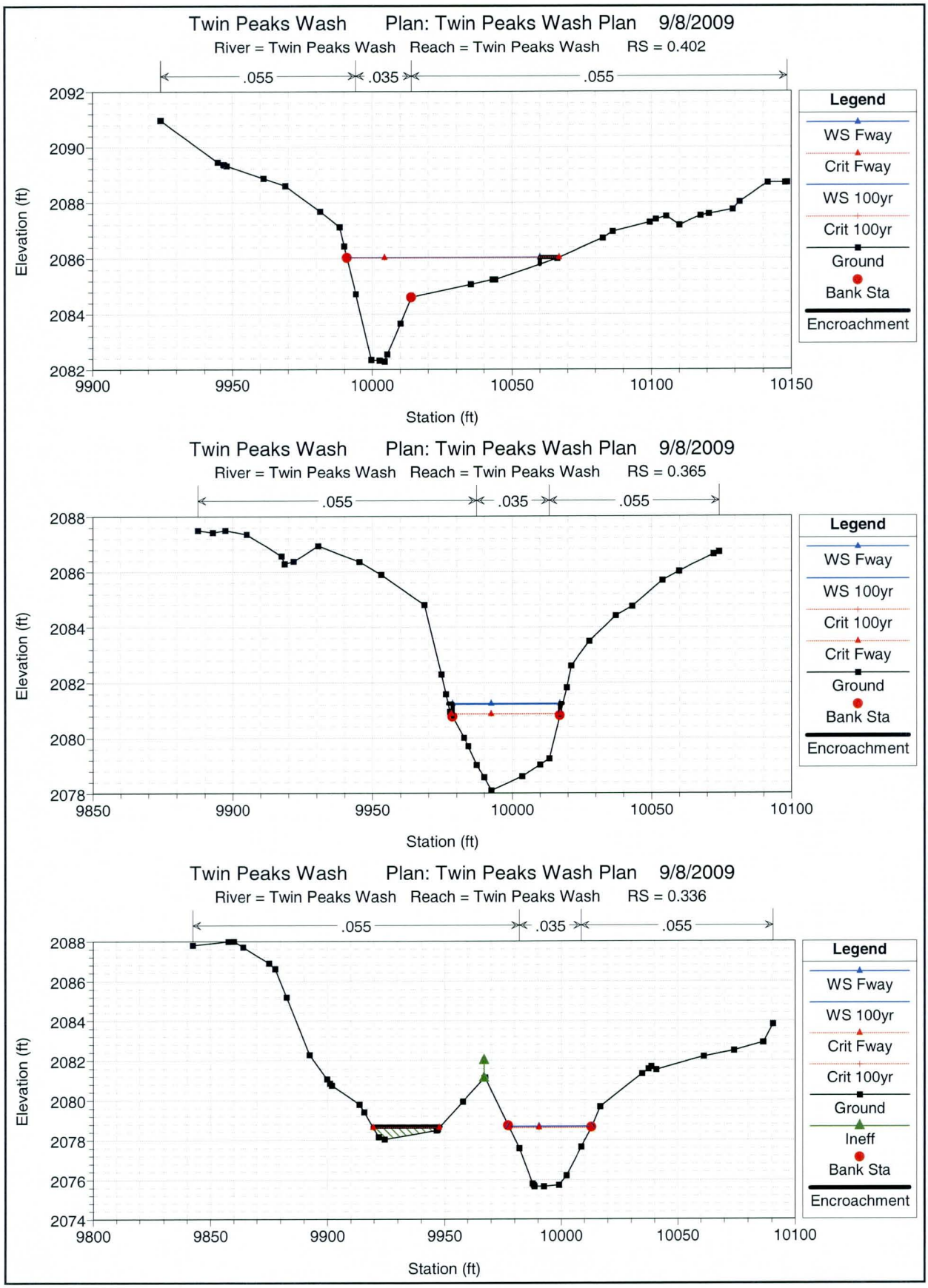

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.522
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment

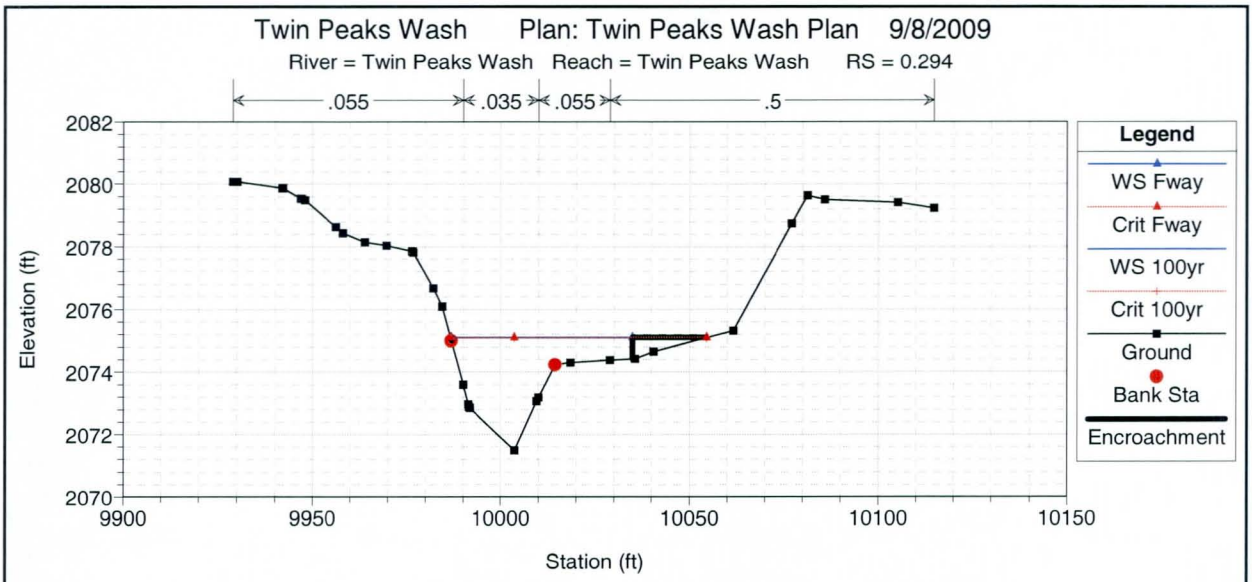

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.499
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

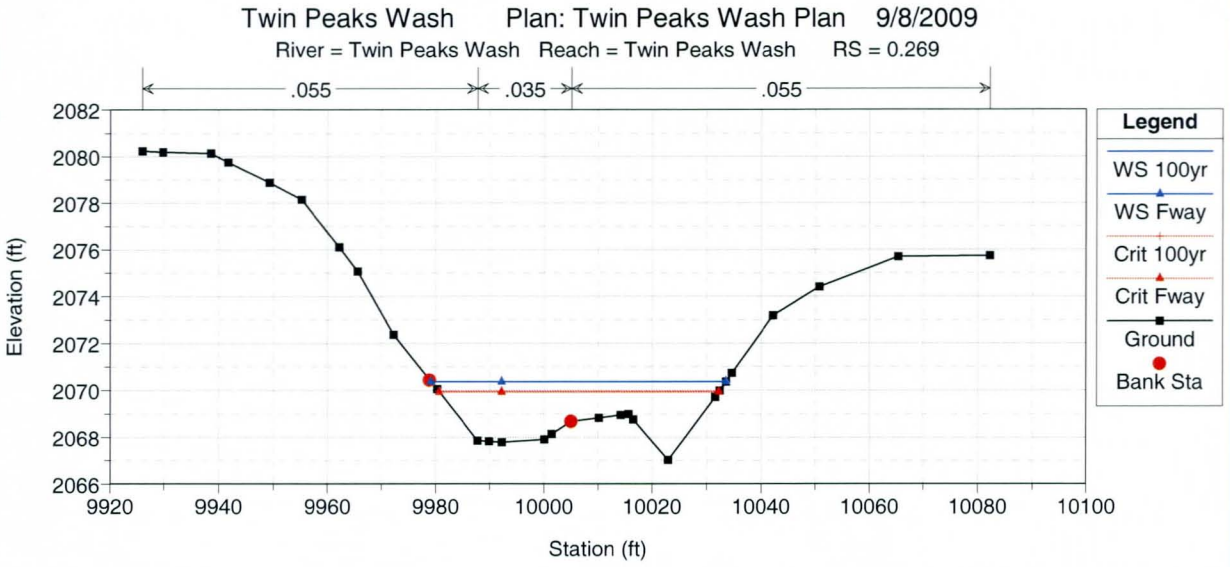

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.481
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

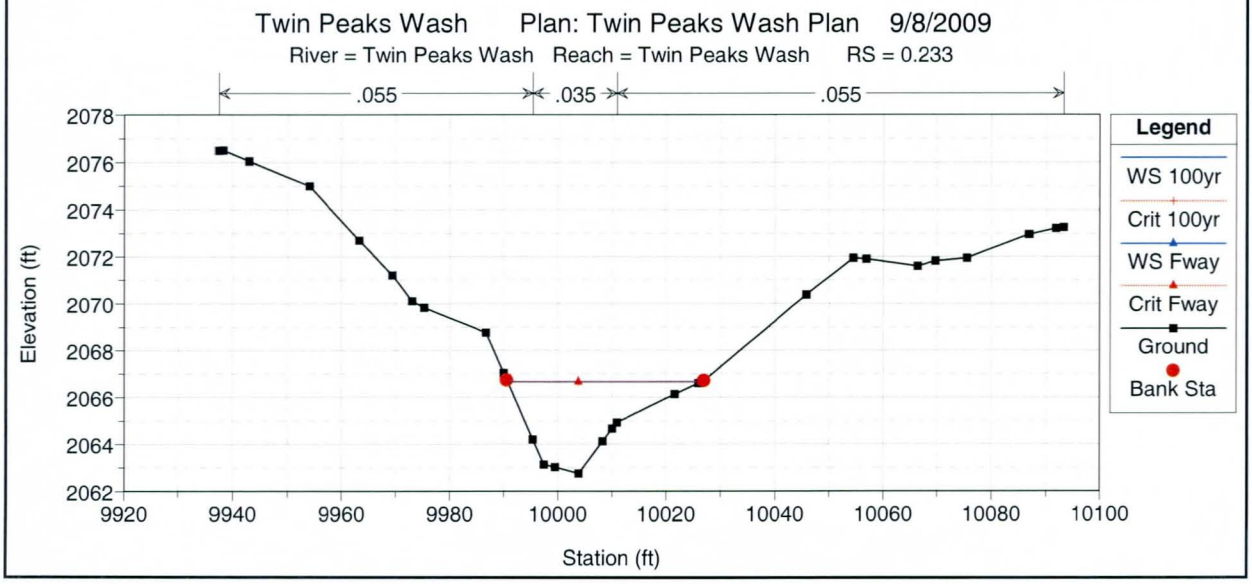

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.475 Culv Twin Peaks Lane - Pipe assumed to be 24-in.
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

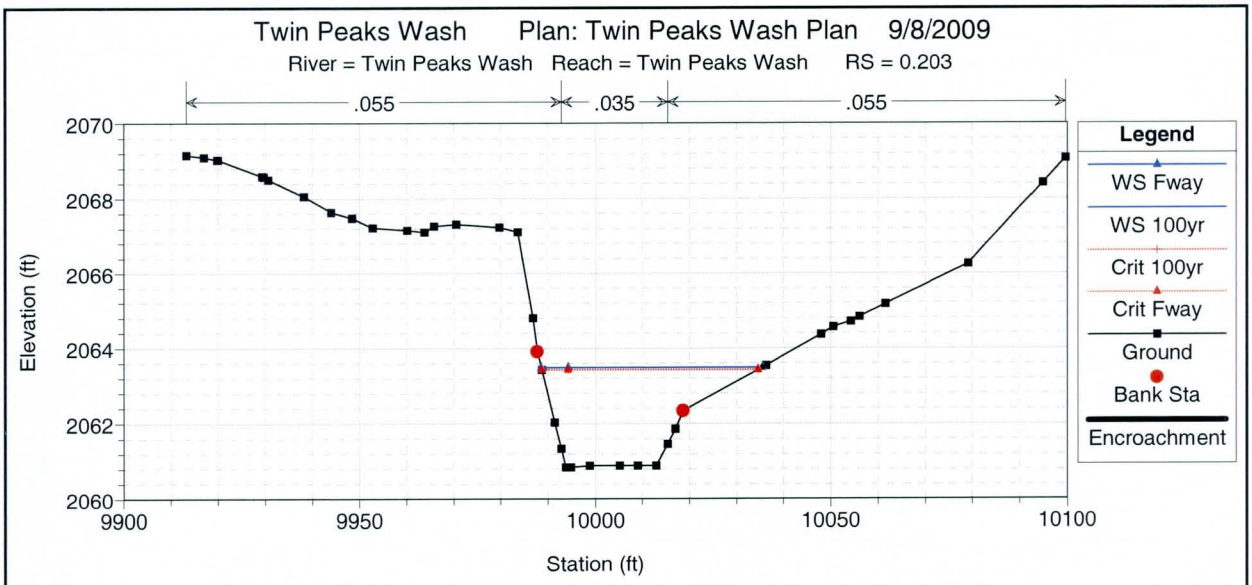

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.475 Culv Twin Peaks Lane - Pipe assumed to be 24-in.
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.469
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.456
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

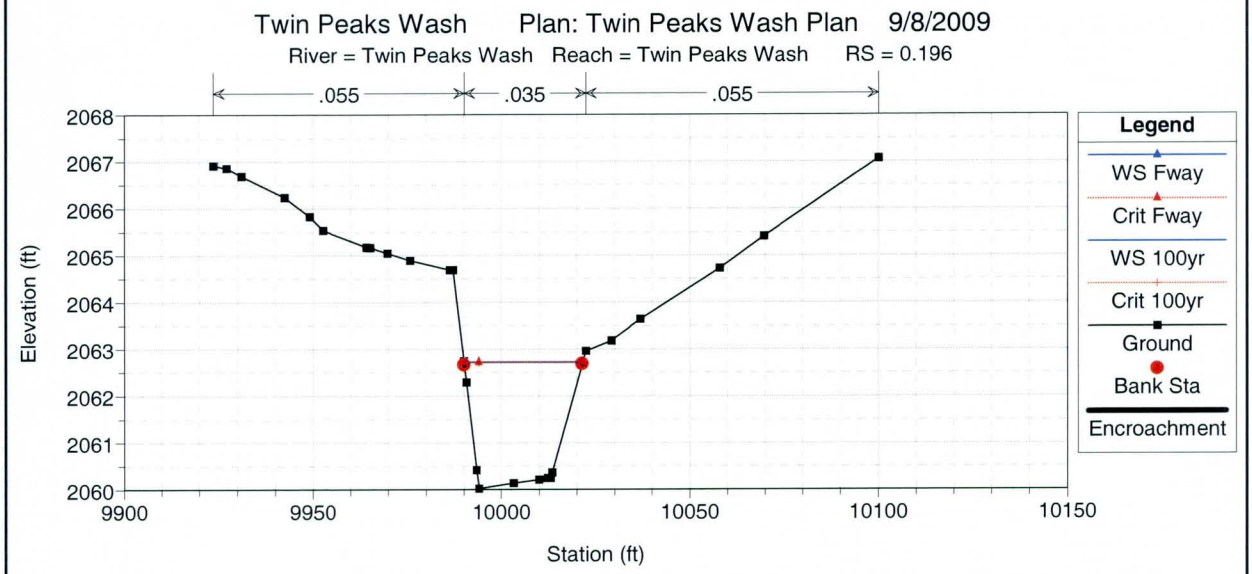

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.402
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.365
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.336
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment

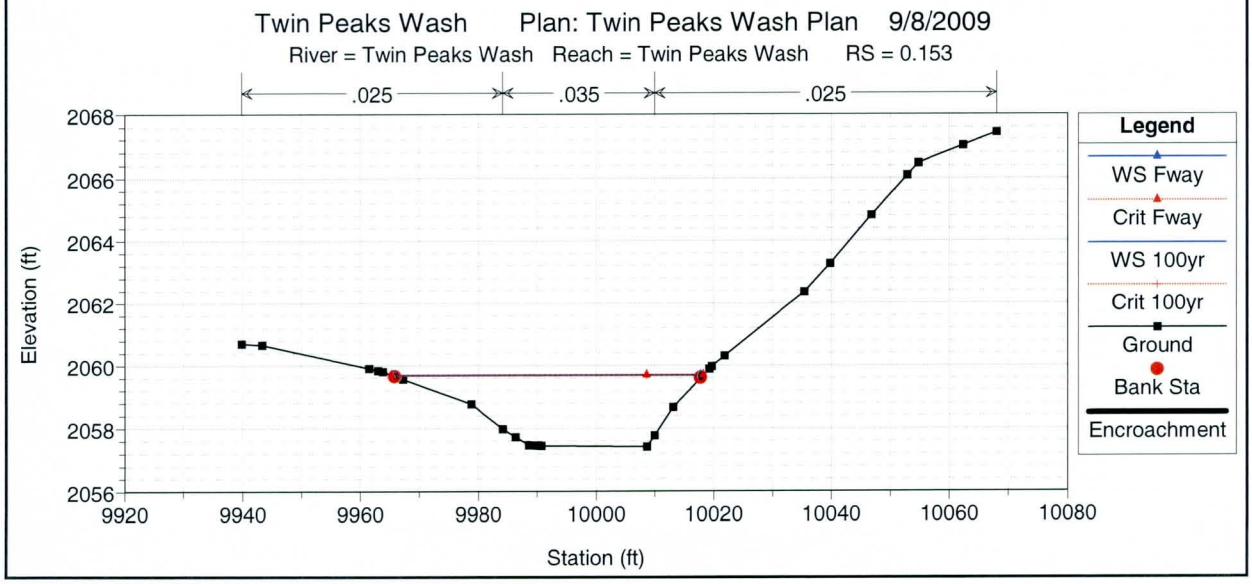

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.294
.055
.035
.055
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

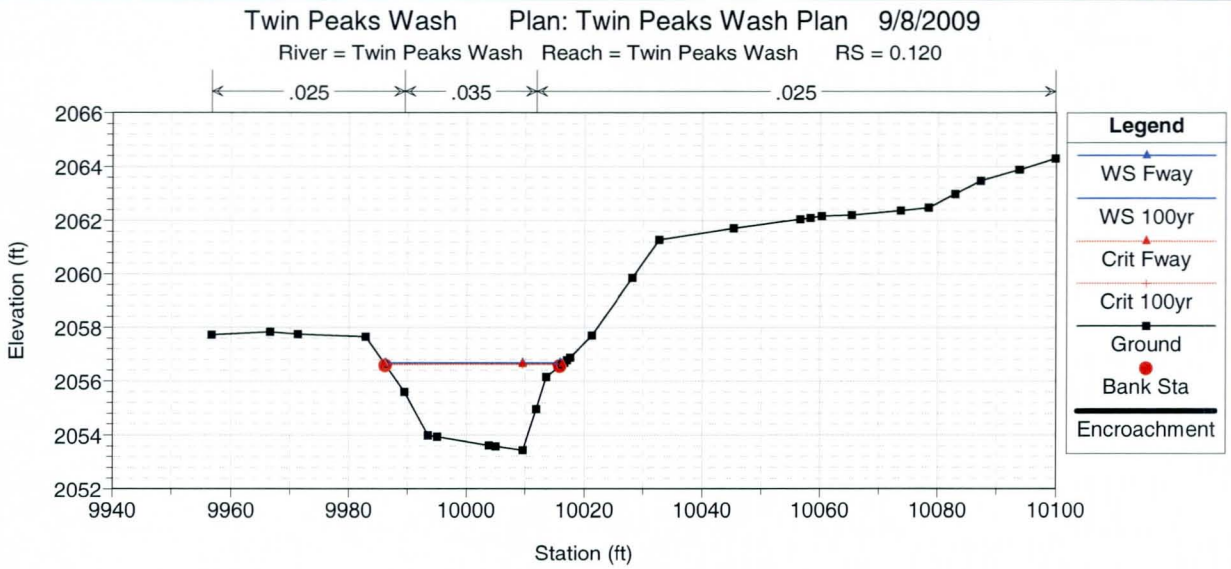

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.269
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Bank Sta

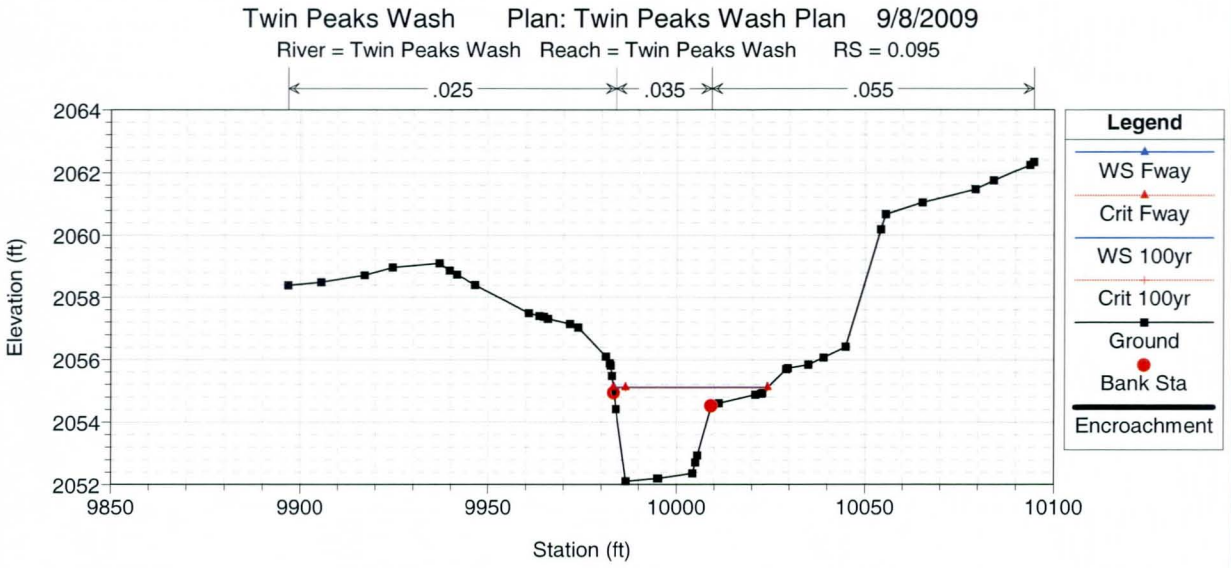

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.233
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

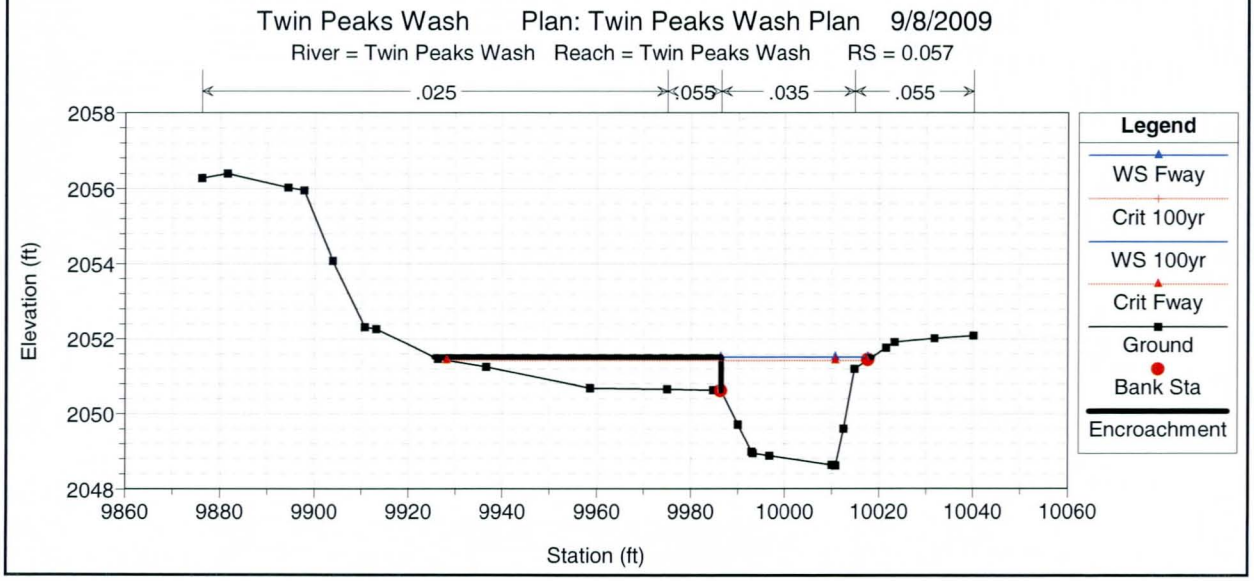

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.203
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

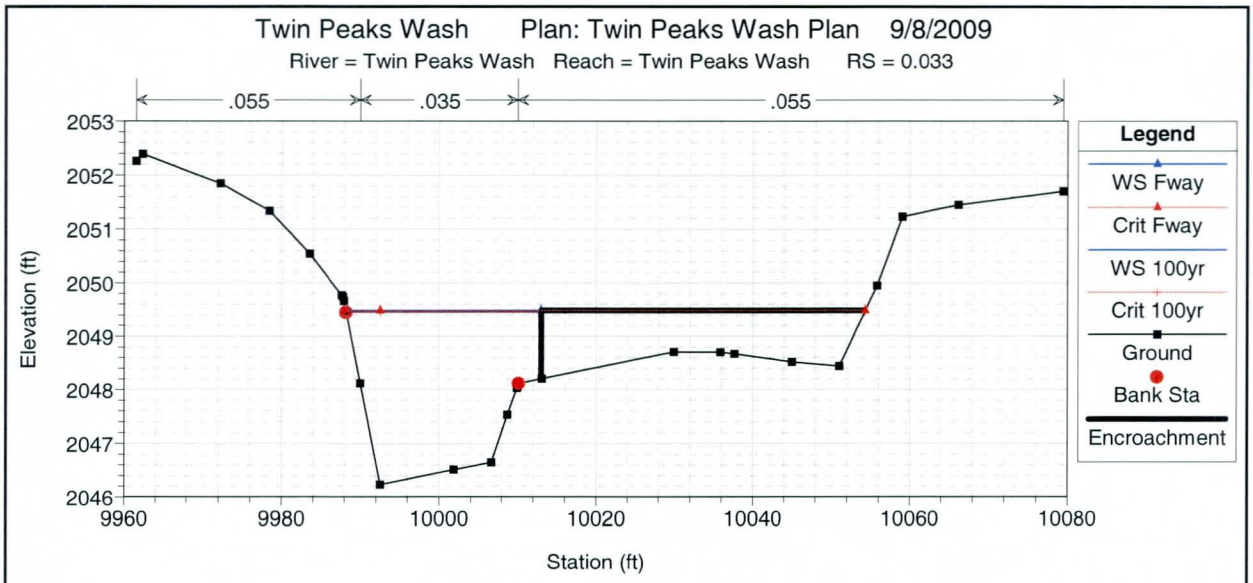

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.196
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

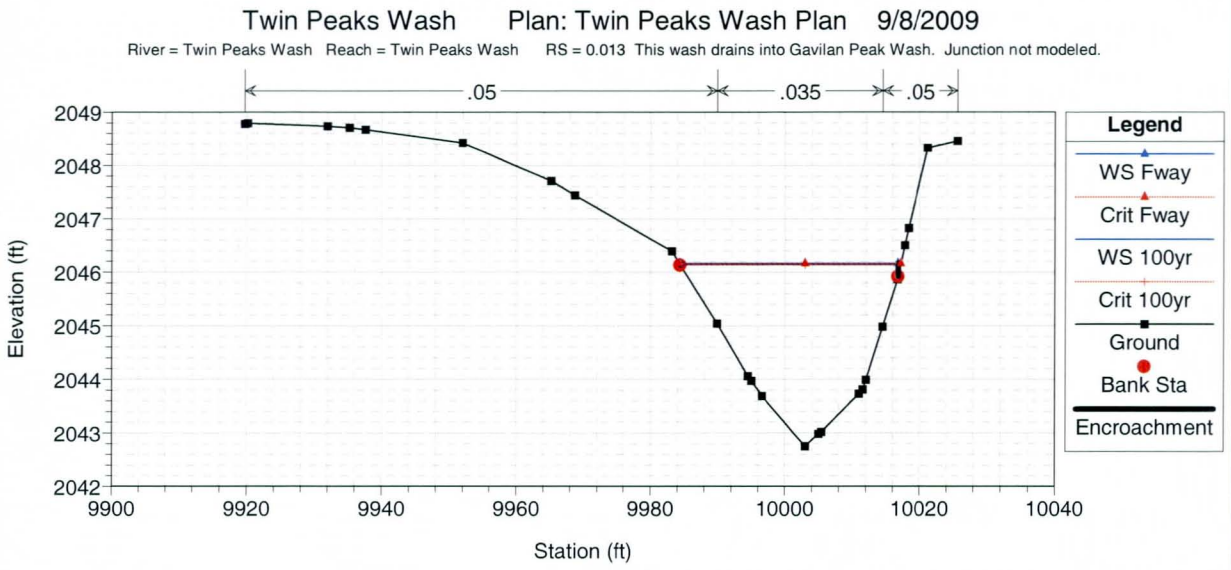

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.153
.025
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.120
.025
.035
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.095
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

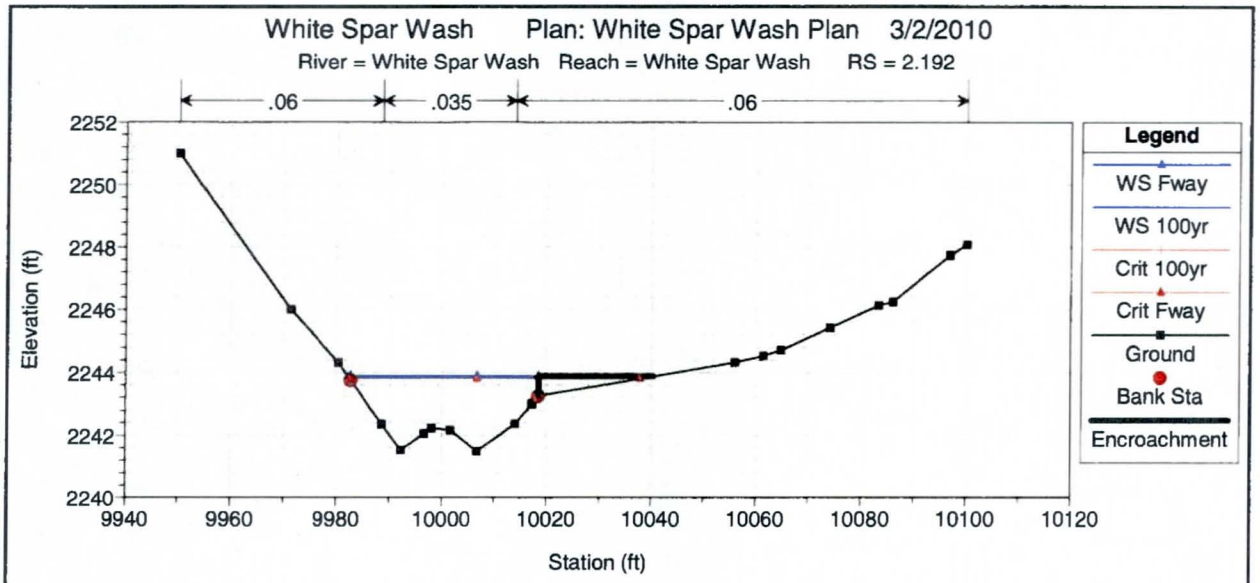

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.057
.025
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment

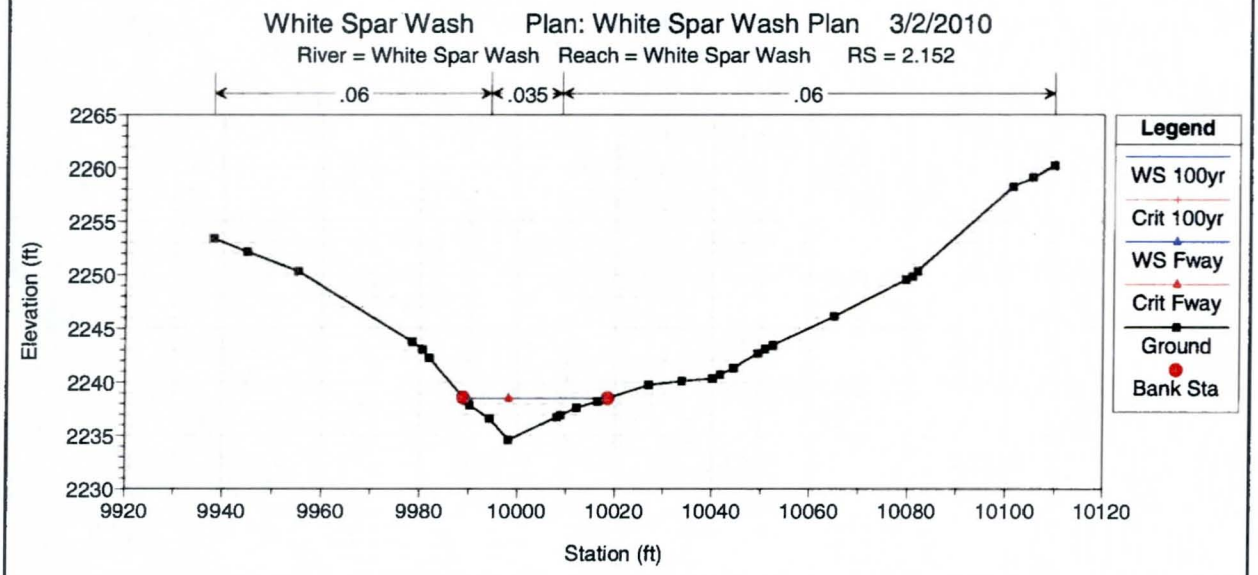

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.033
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

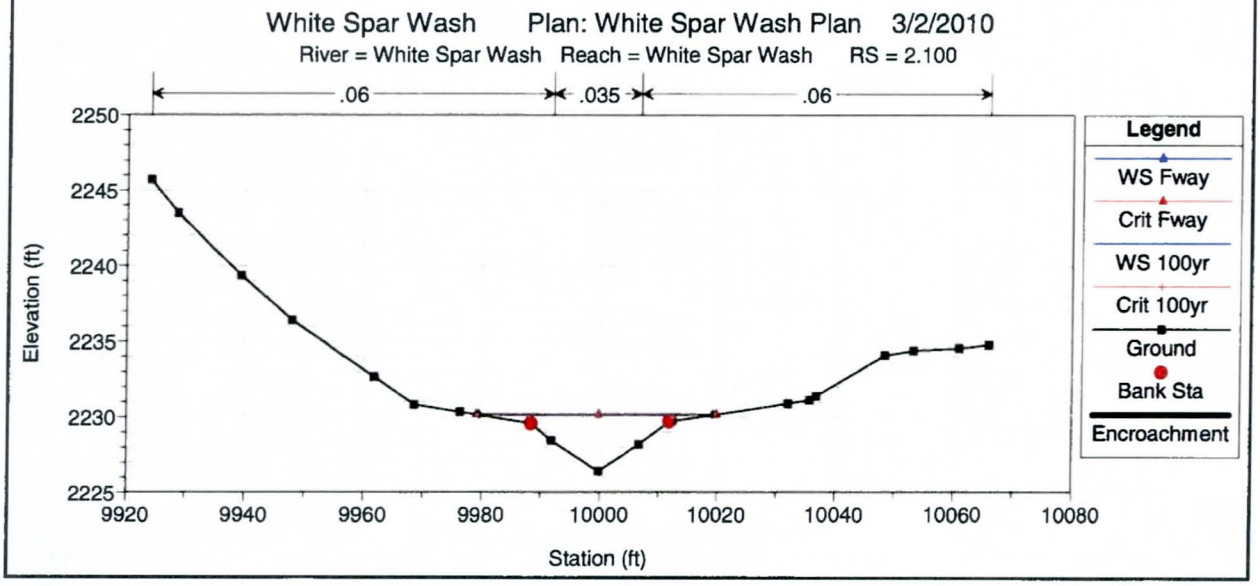

Twin Peaks Wash Plan: Twin Peaks Wash Plan 9/8/2009
River = Twin Peaks Wash Reach = Twin Peaks Wash RS = 0.013 This wash drains into Gavilan Peak Wash. Junction not modeled.
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

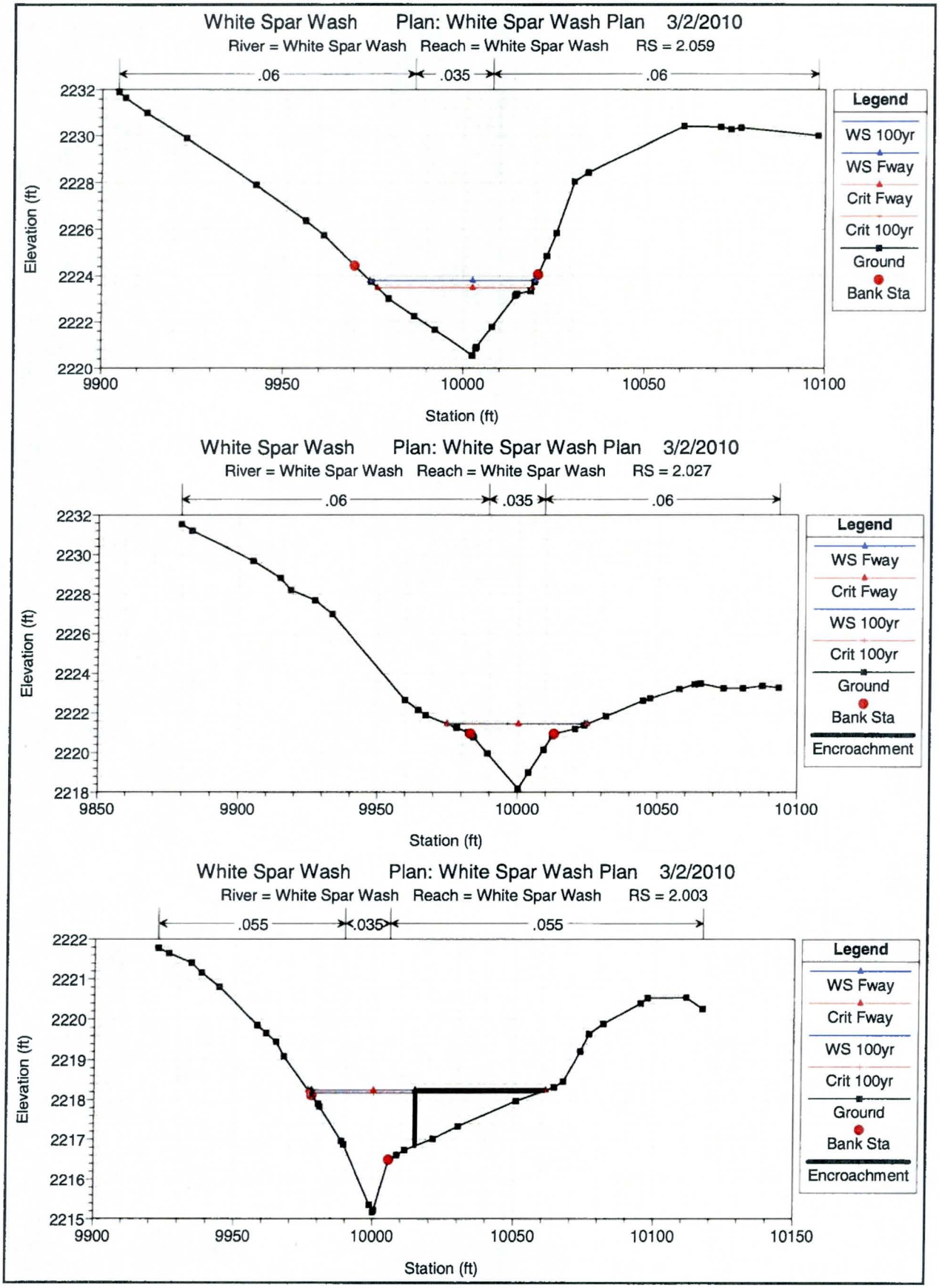
CROSS SECTION PLOTS FOR

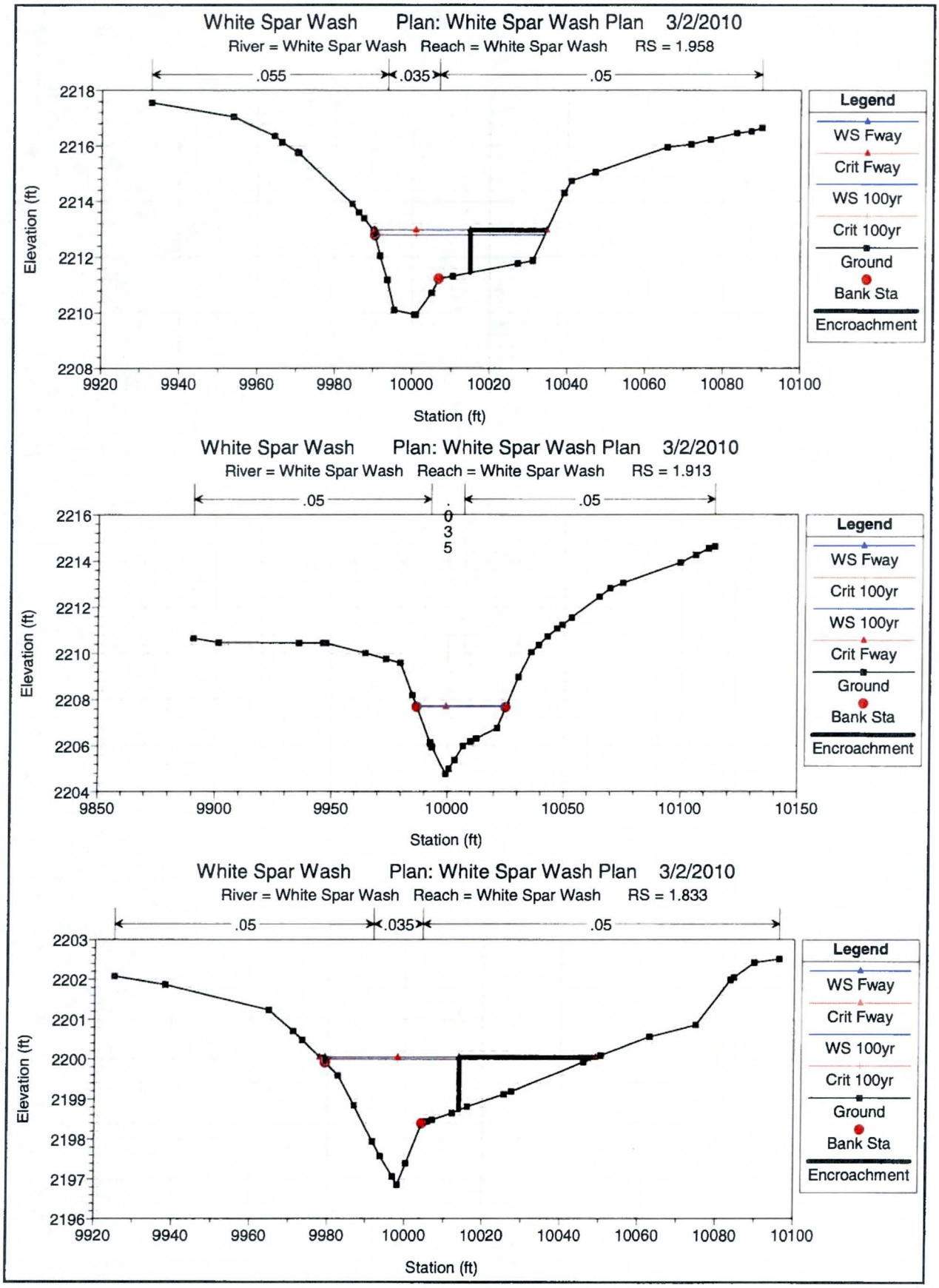
WHITE SPAR WASH

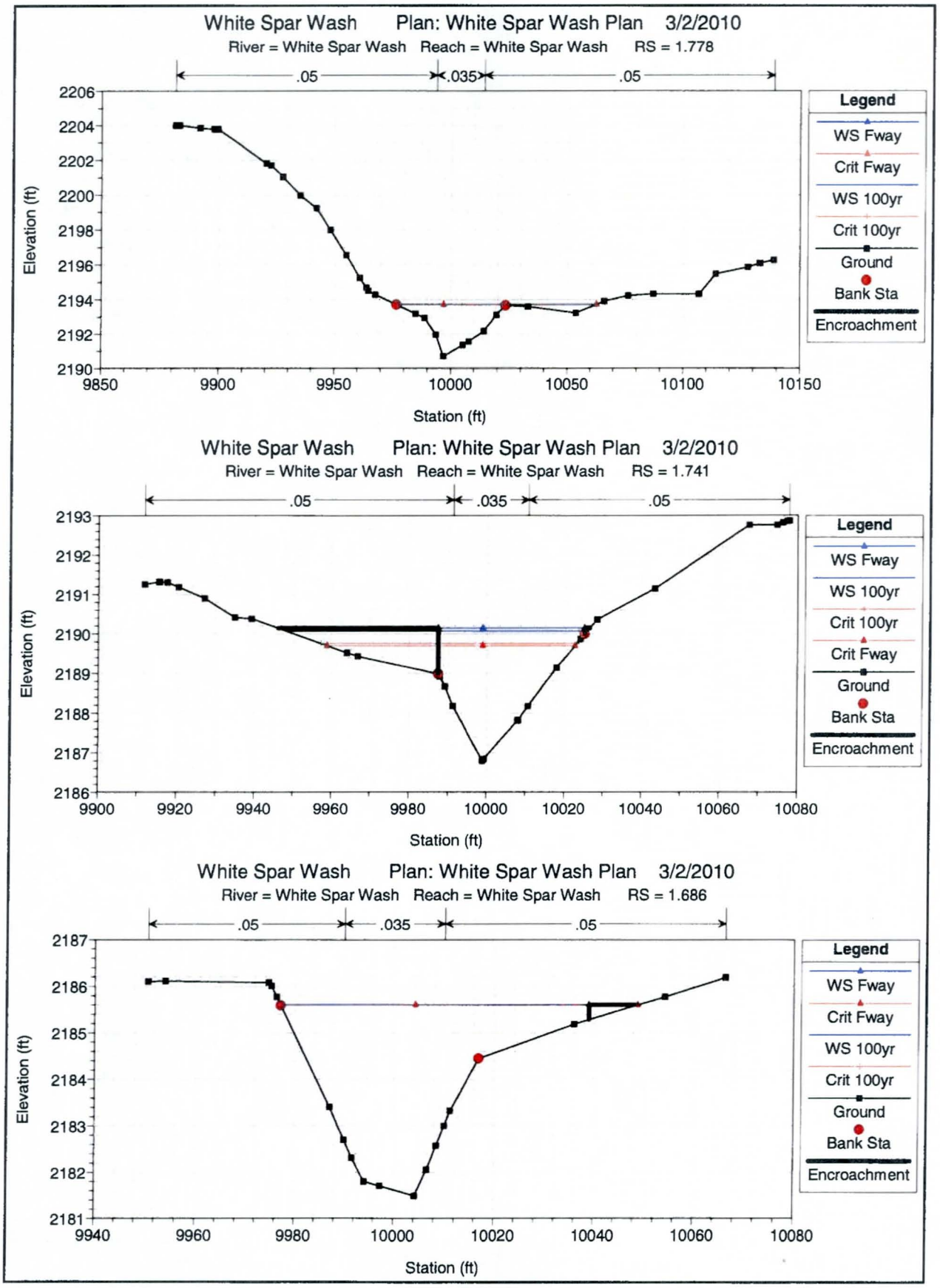

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 2.192
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

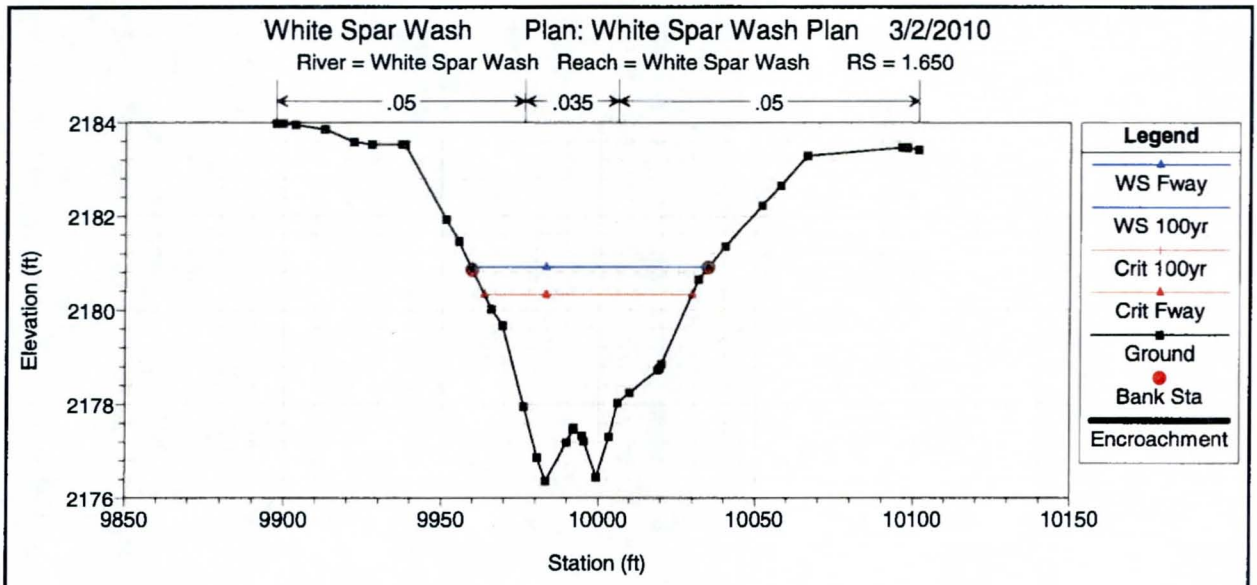

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 2.152
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta

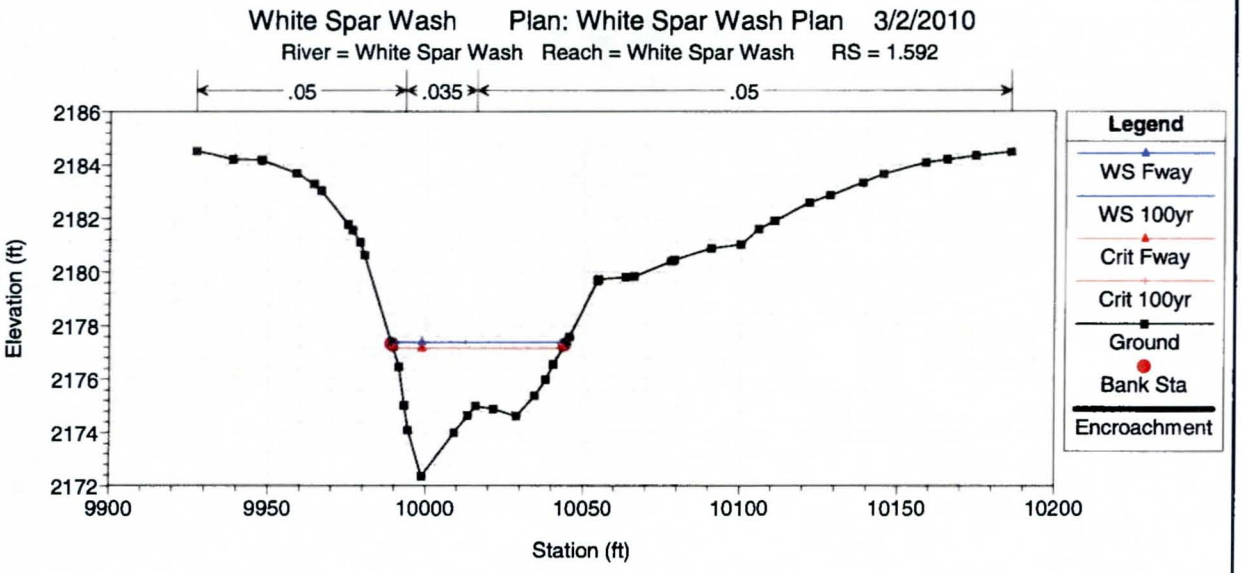

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 2.100
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

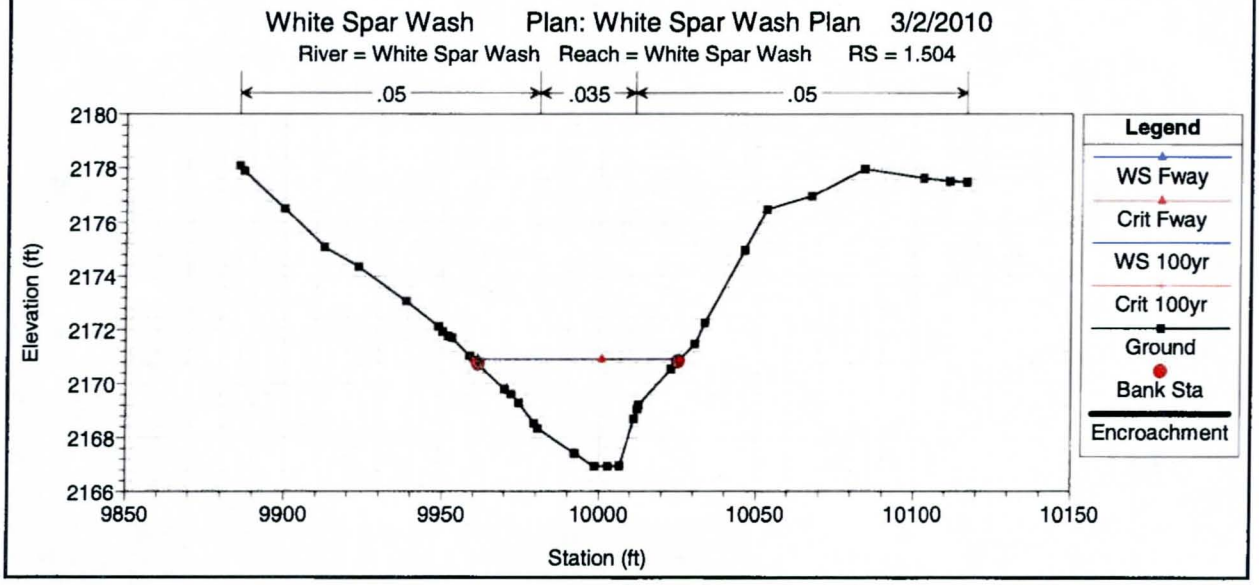

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 2.059
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 2.027
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 2.003
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

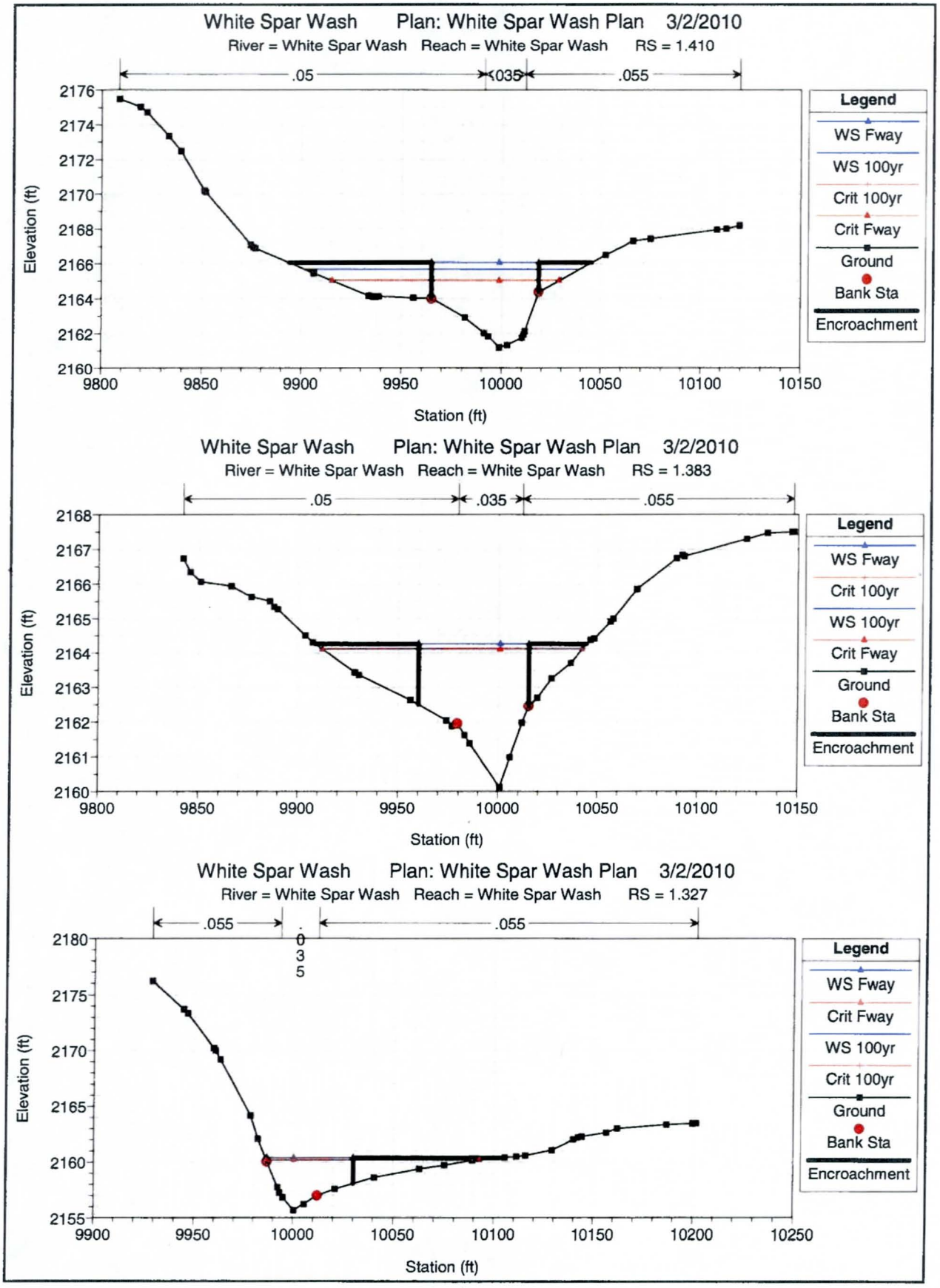

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.958
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.913
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.833
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

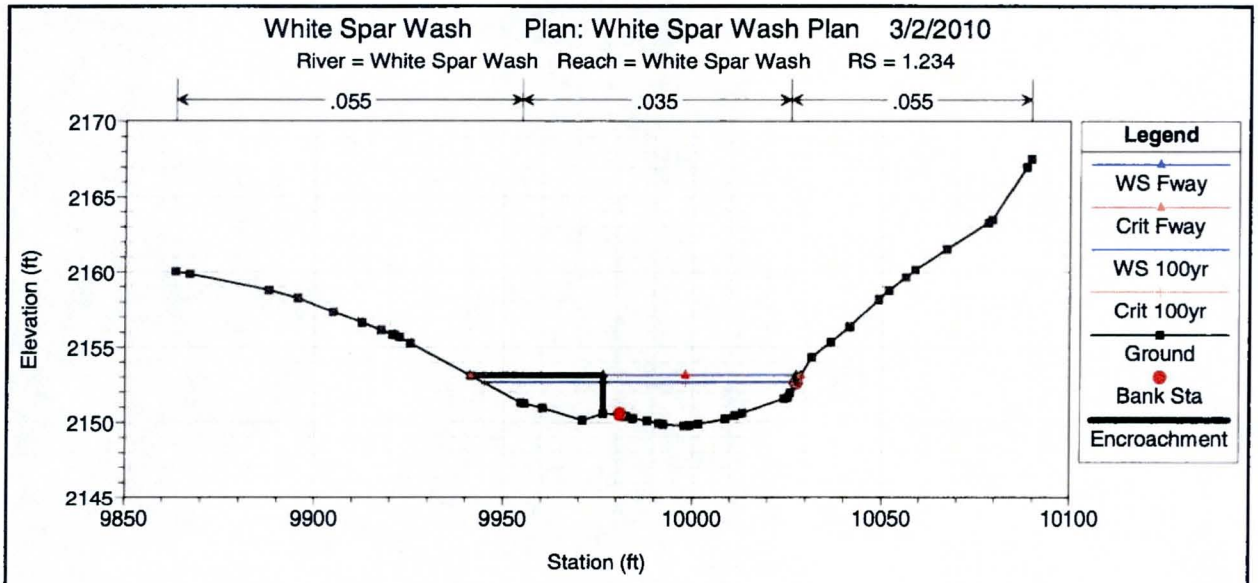

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.778
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.741
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.686
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

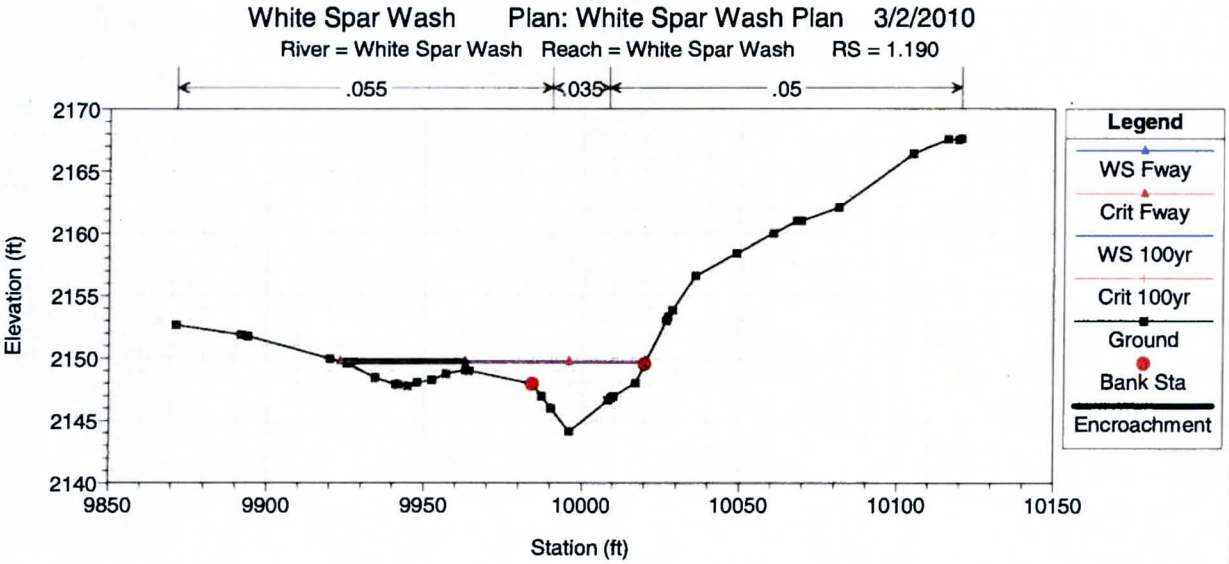

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.650
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

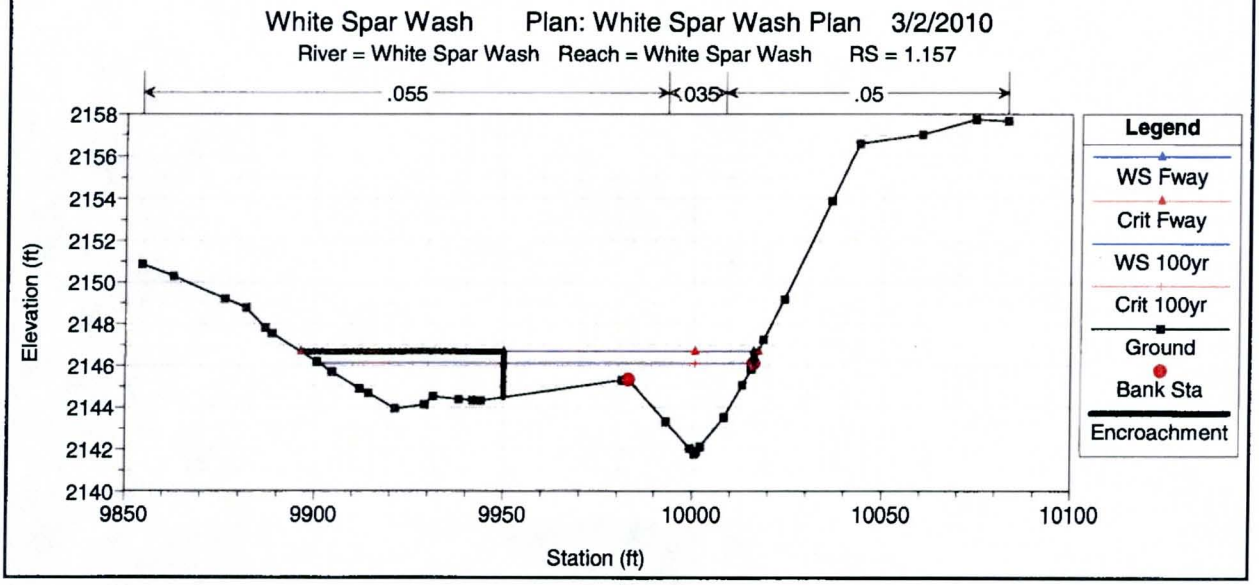

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.592
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

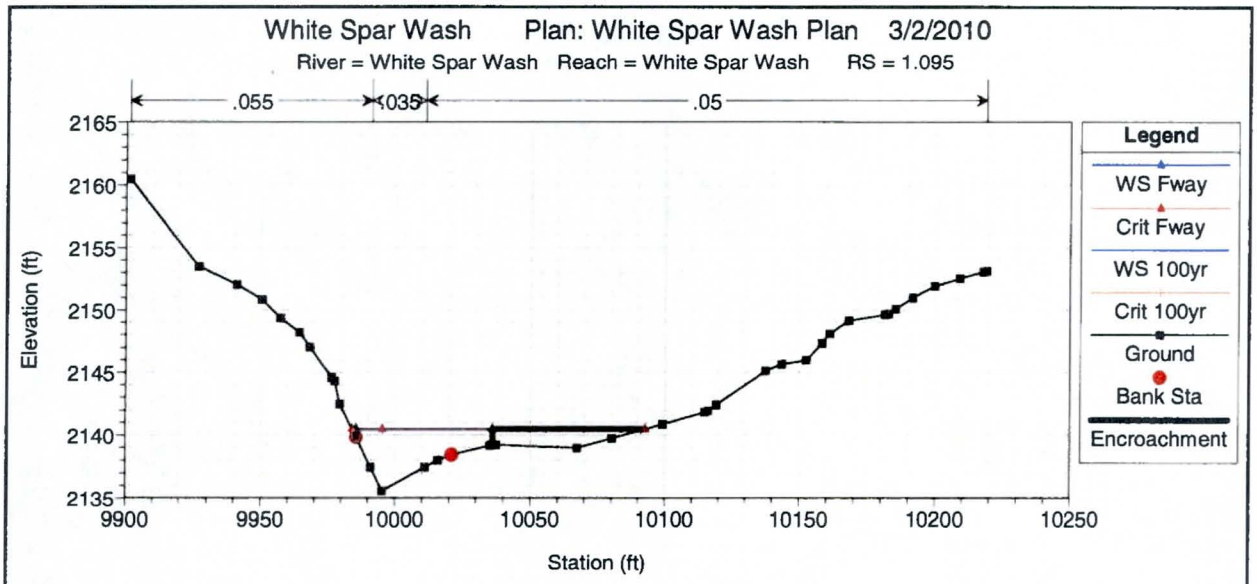

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.504
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

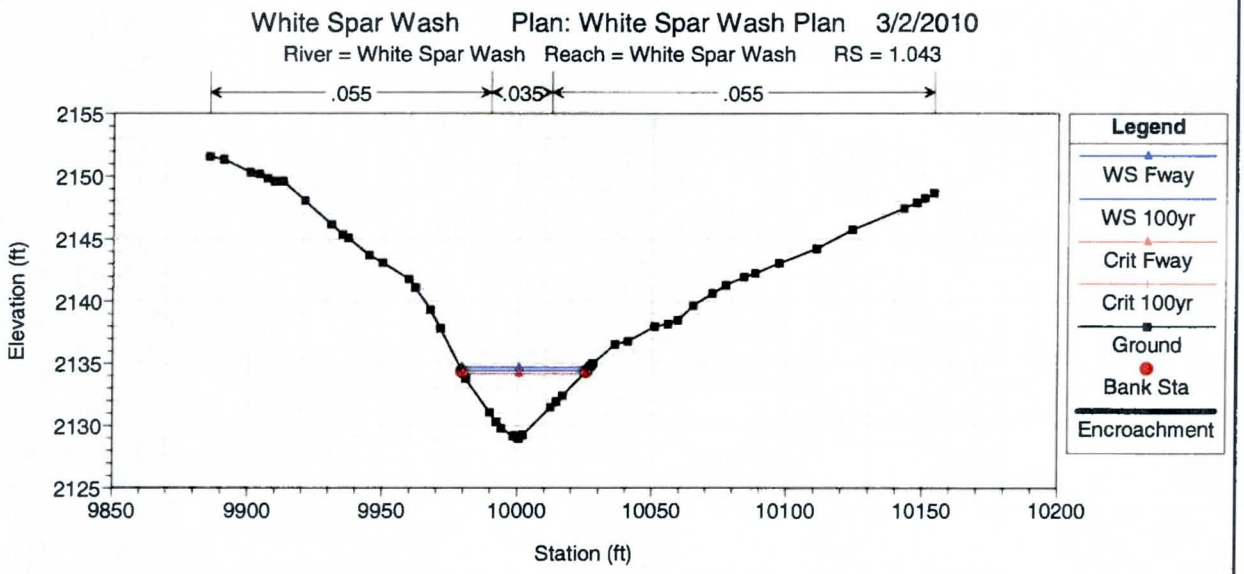

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.410
.05
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.383
.05
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit 100yr
WS 100yr
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.327
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

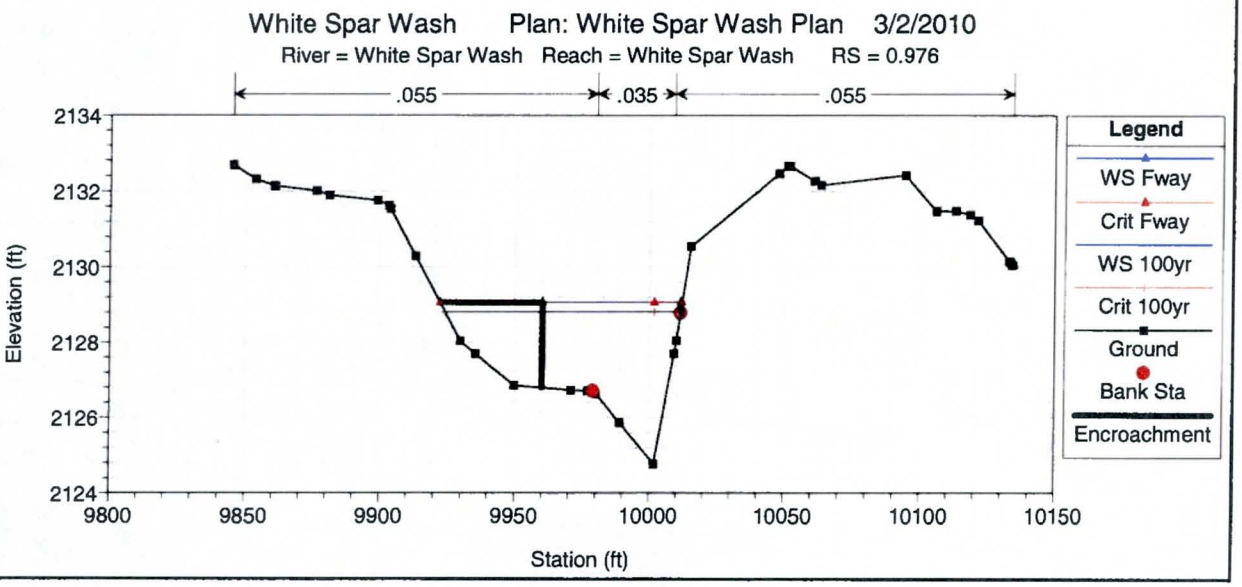

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.234
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

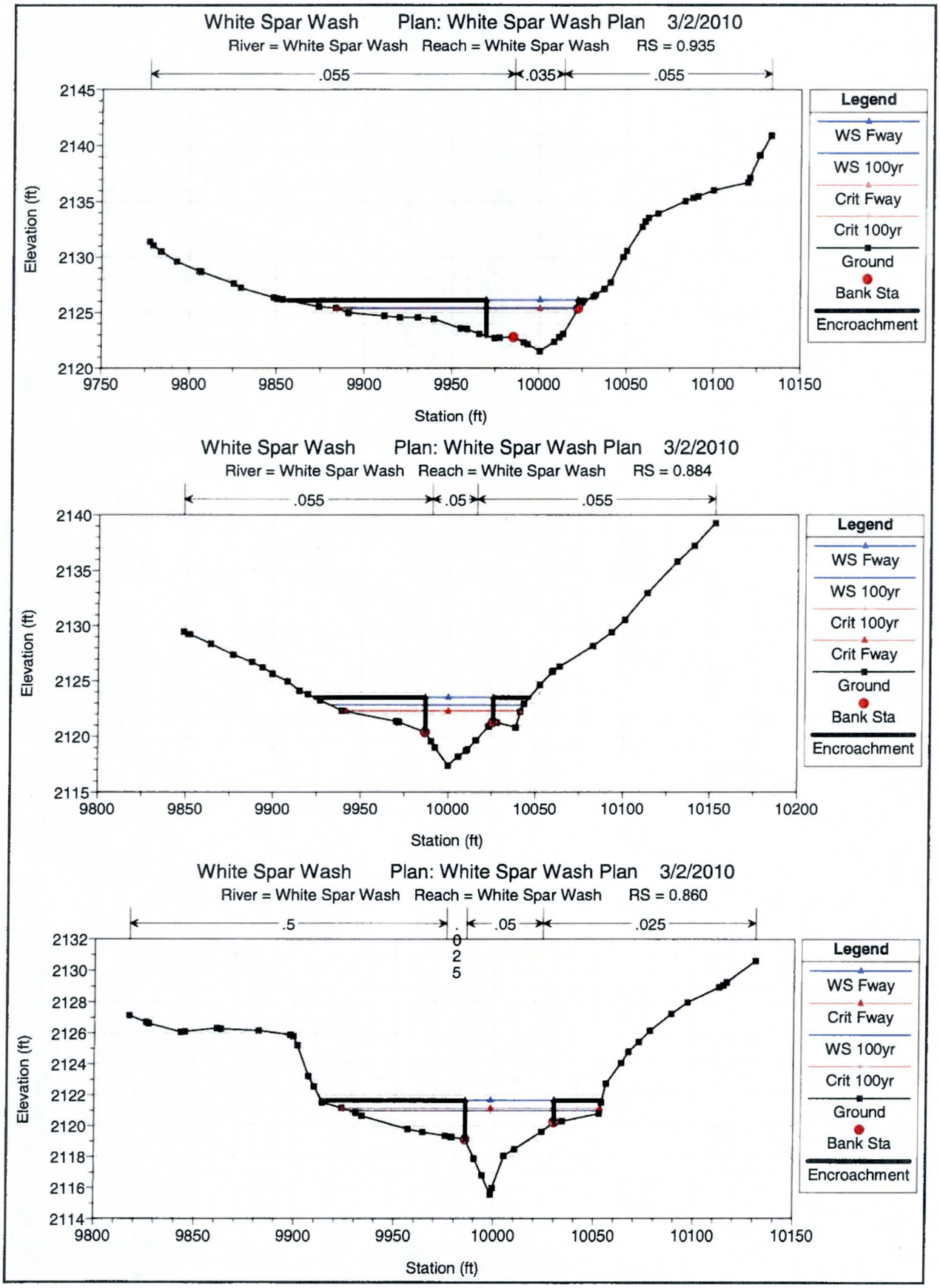

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.190
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

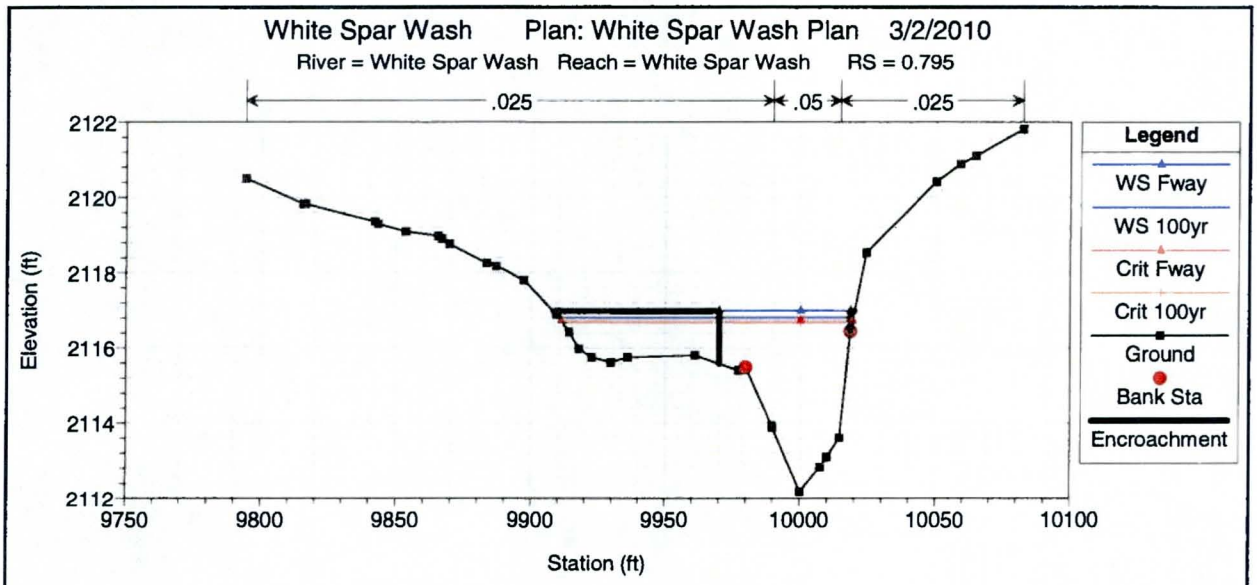

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.157
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

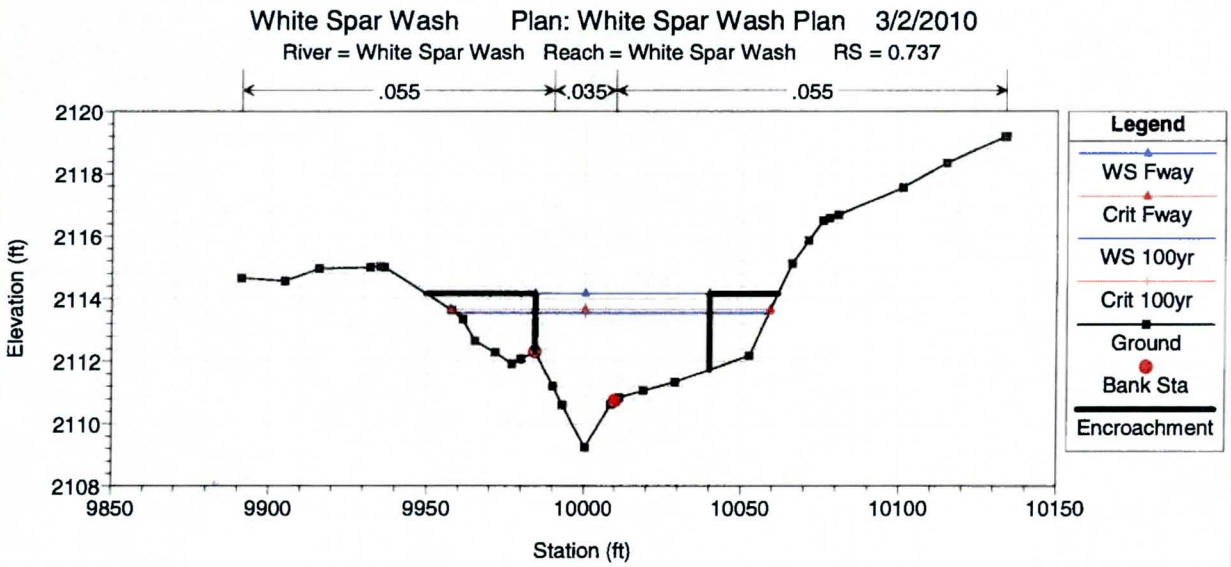

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.095
.055
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

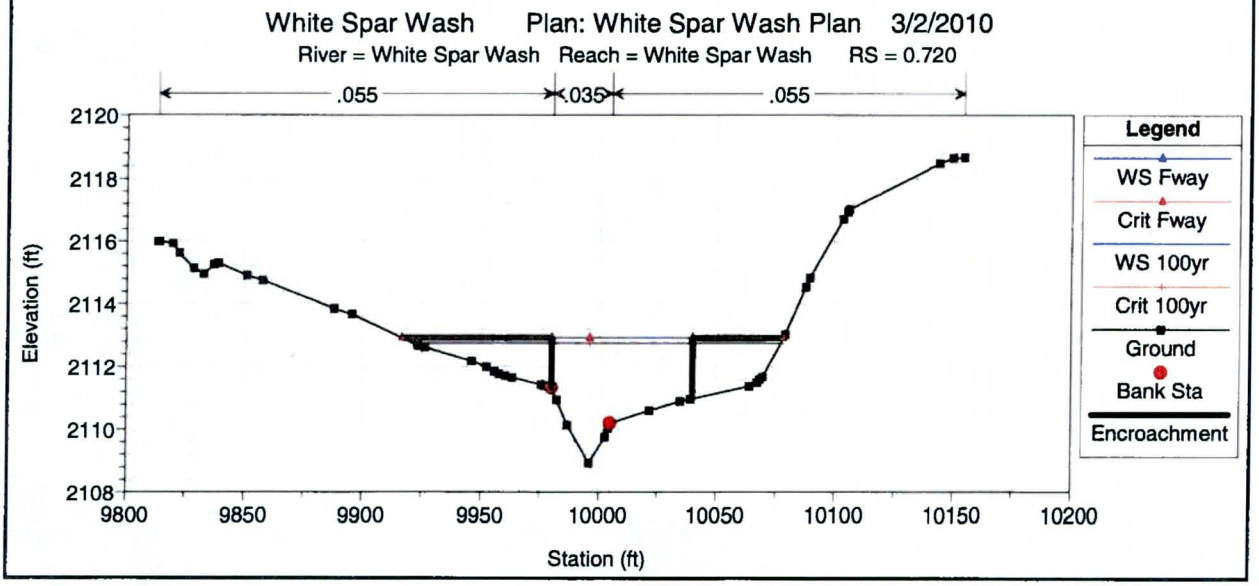

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 1.043
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

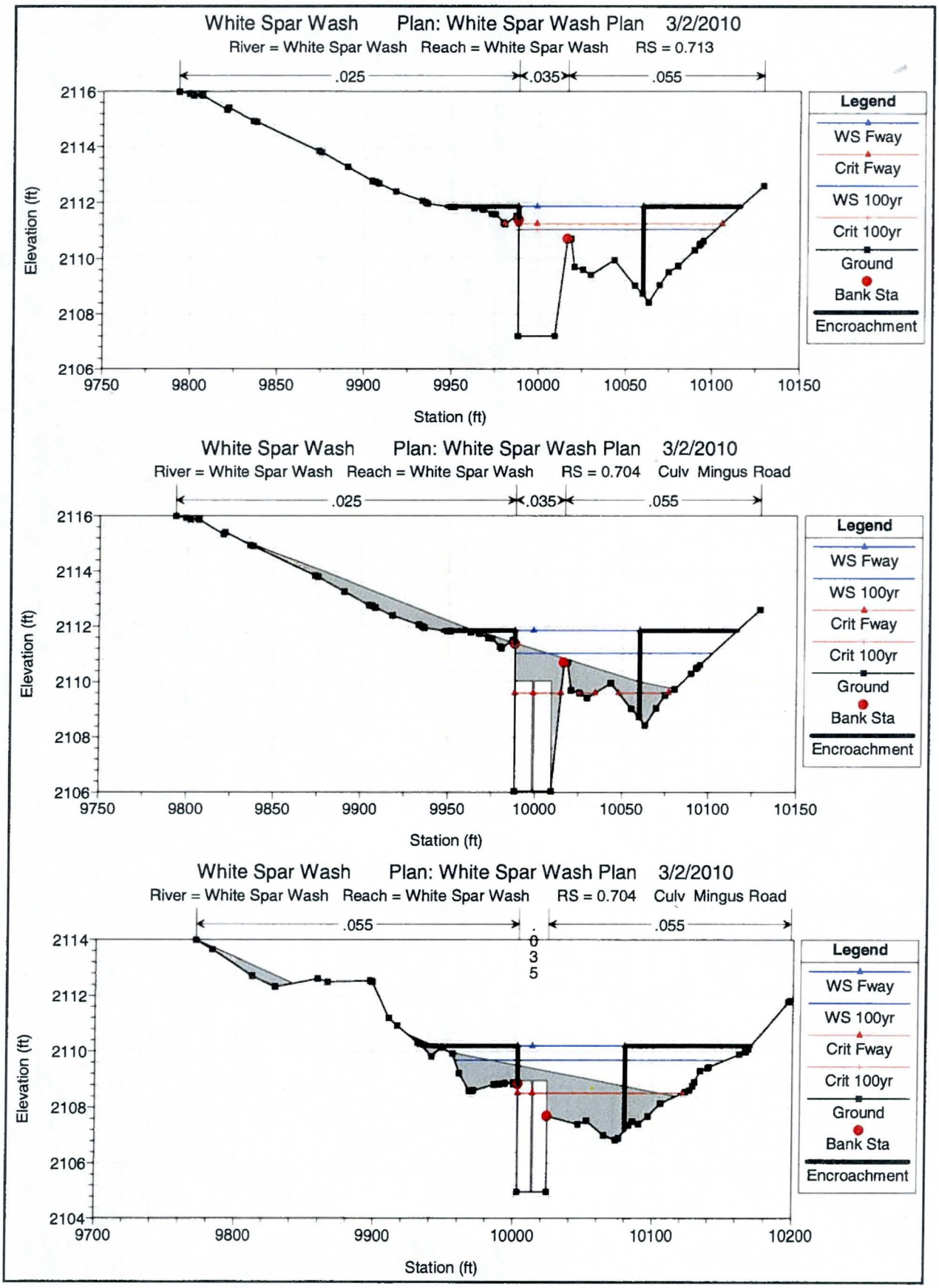

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.976
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

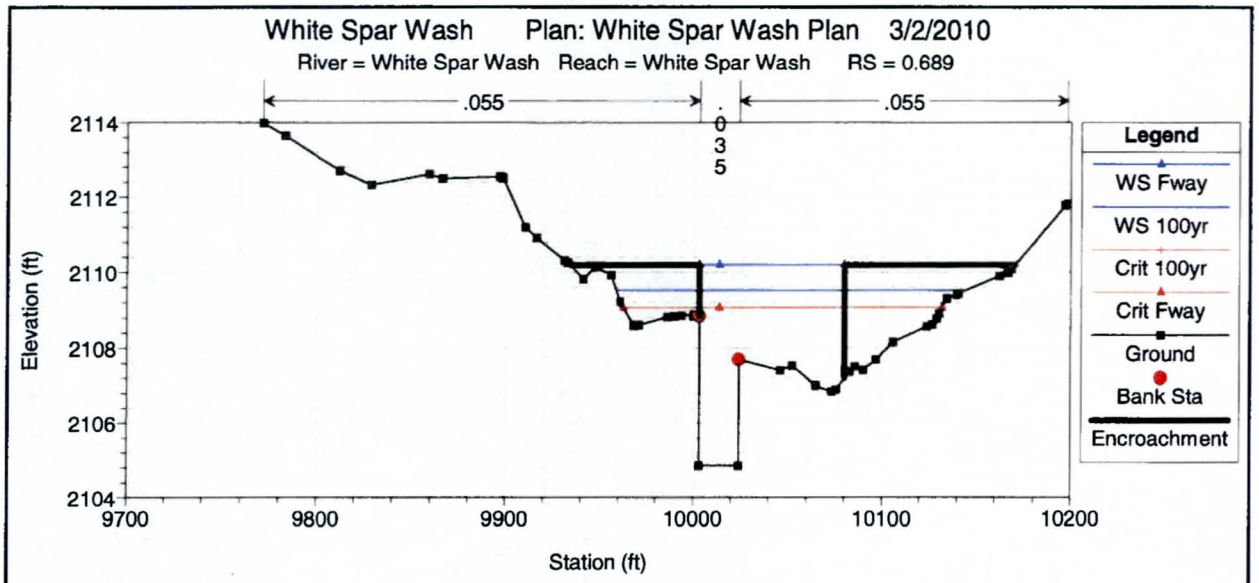

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.935
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.884
.055
.05
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.860
.5
.05
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

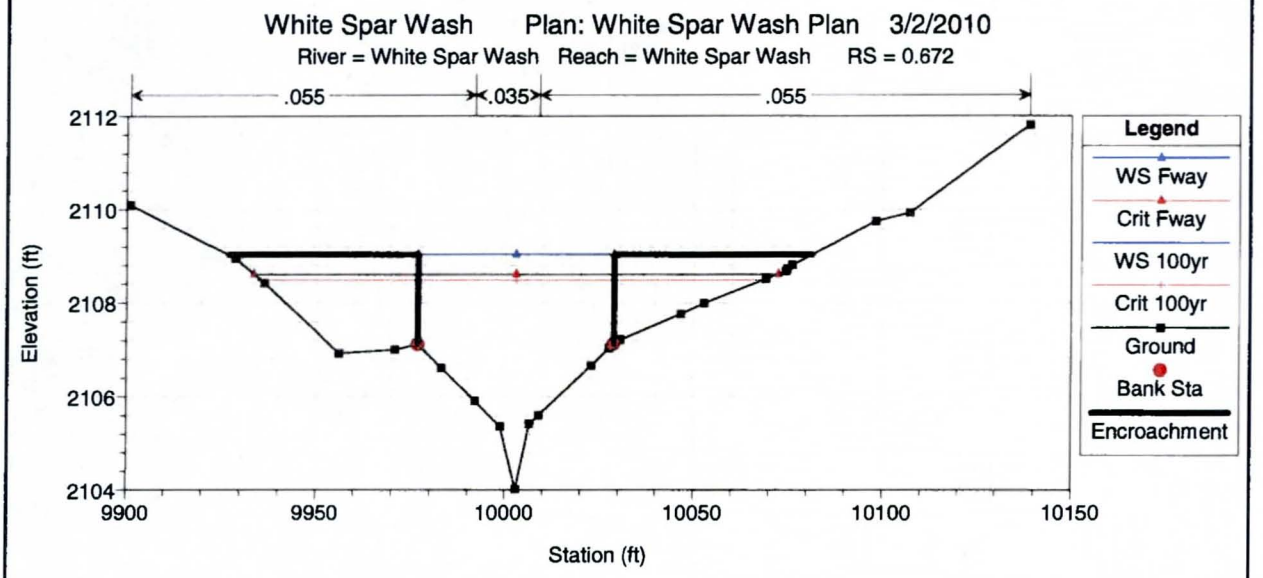

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.795
.025
.05
.025
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

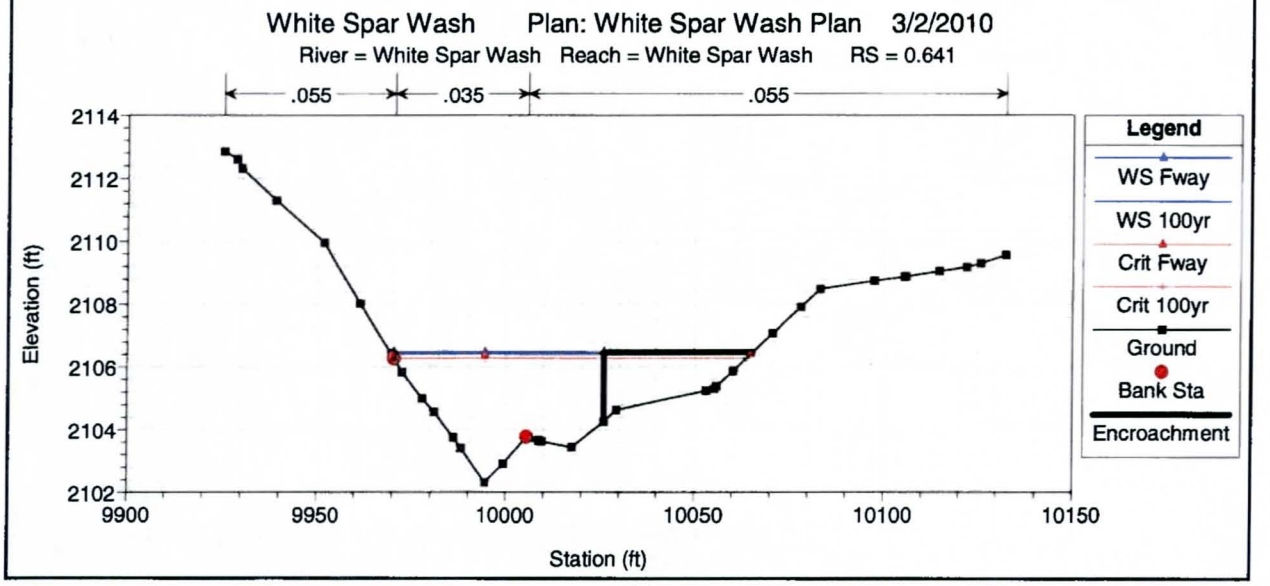

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.737
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

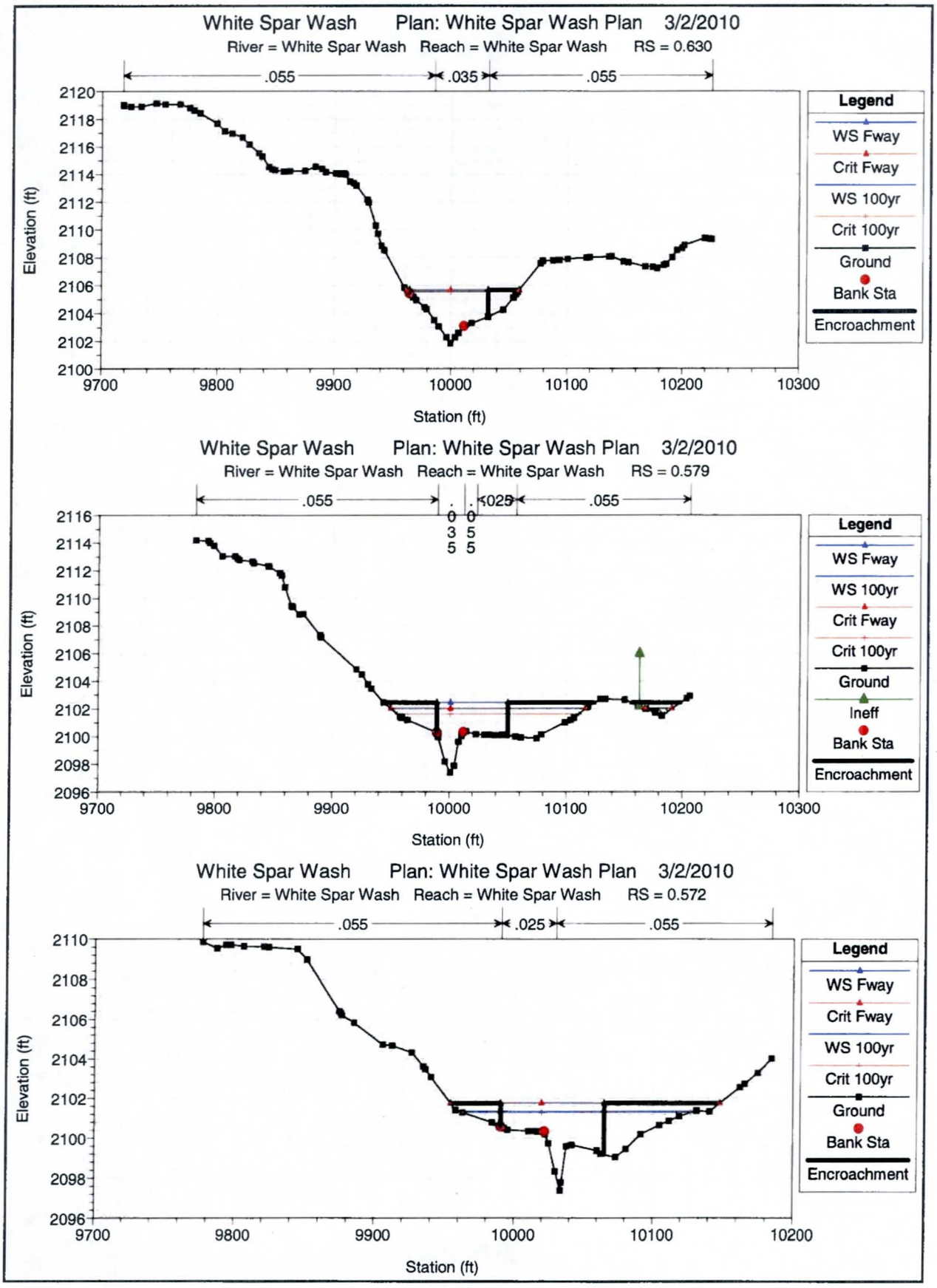

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.720
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

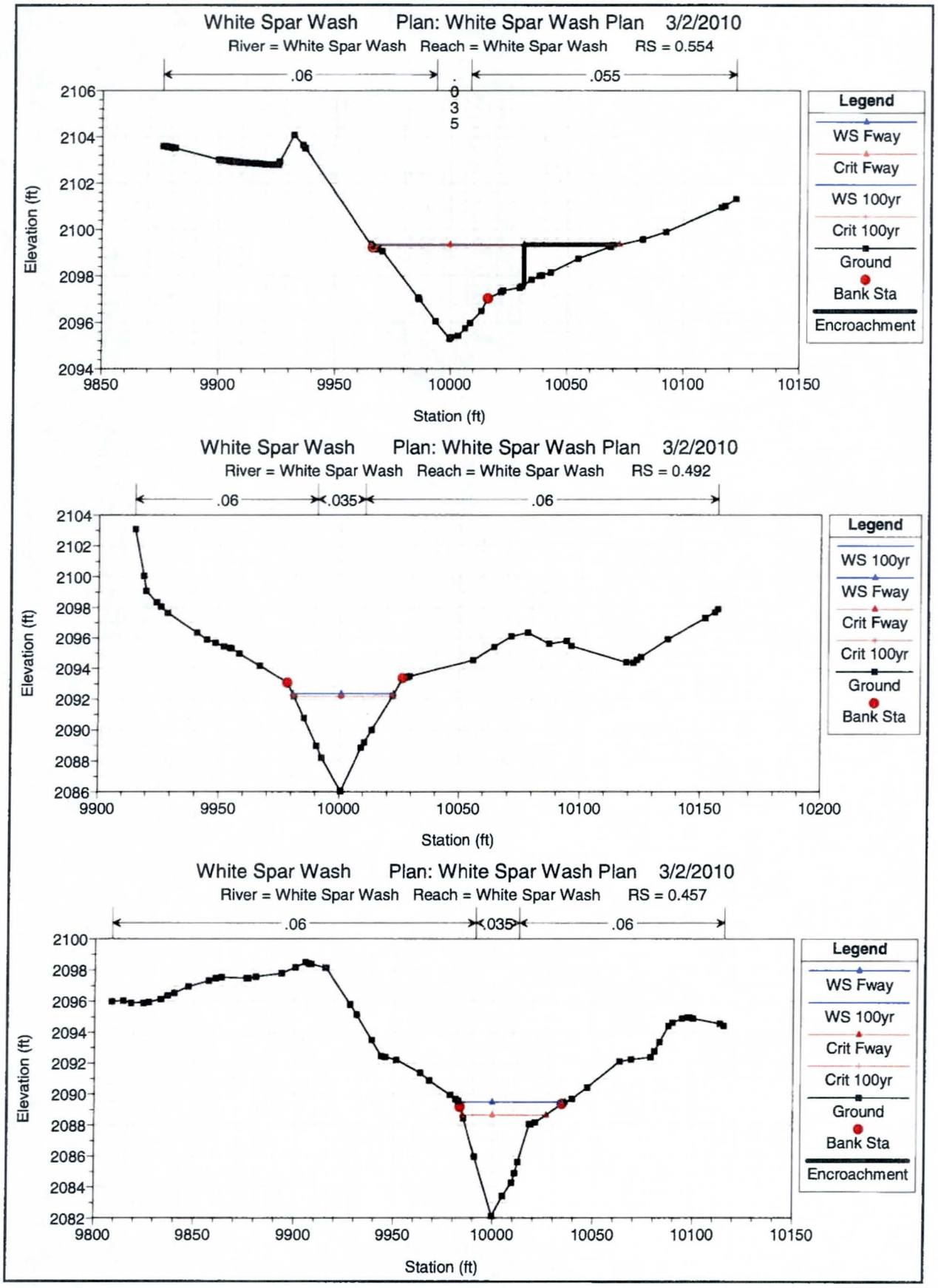

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.713
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.704 Culv Mingus Road
.025
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.704 Culv Mingus Road
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

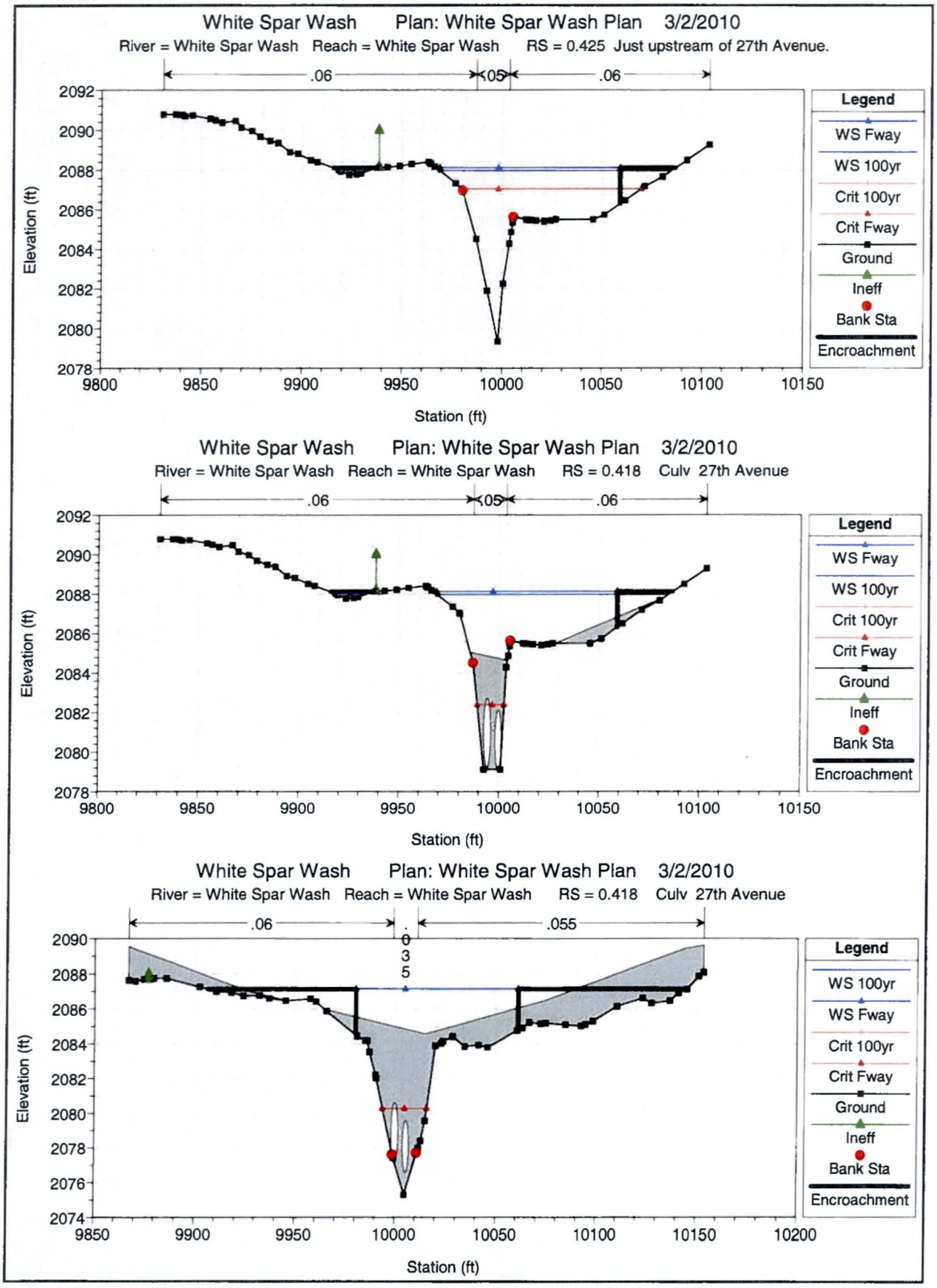

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.689
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment

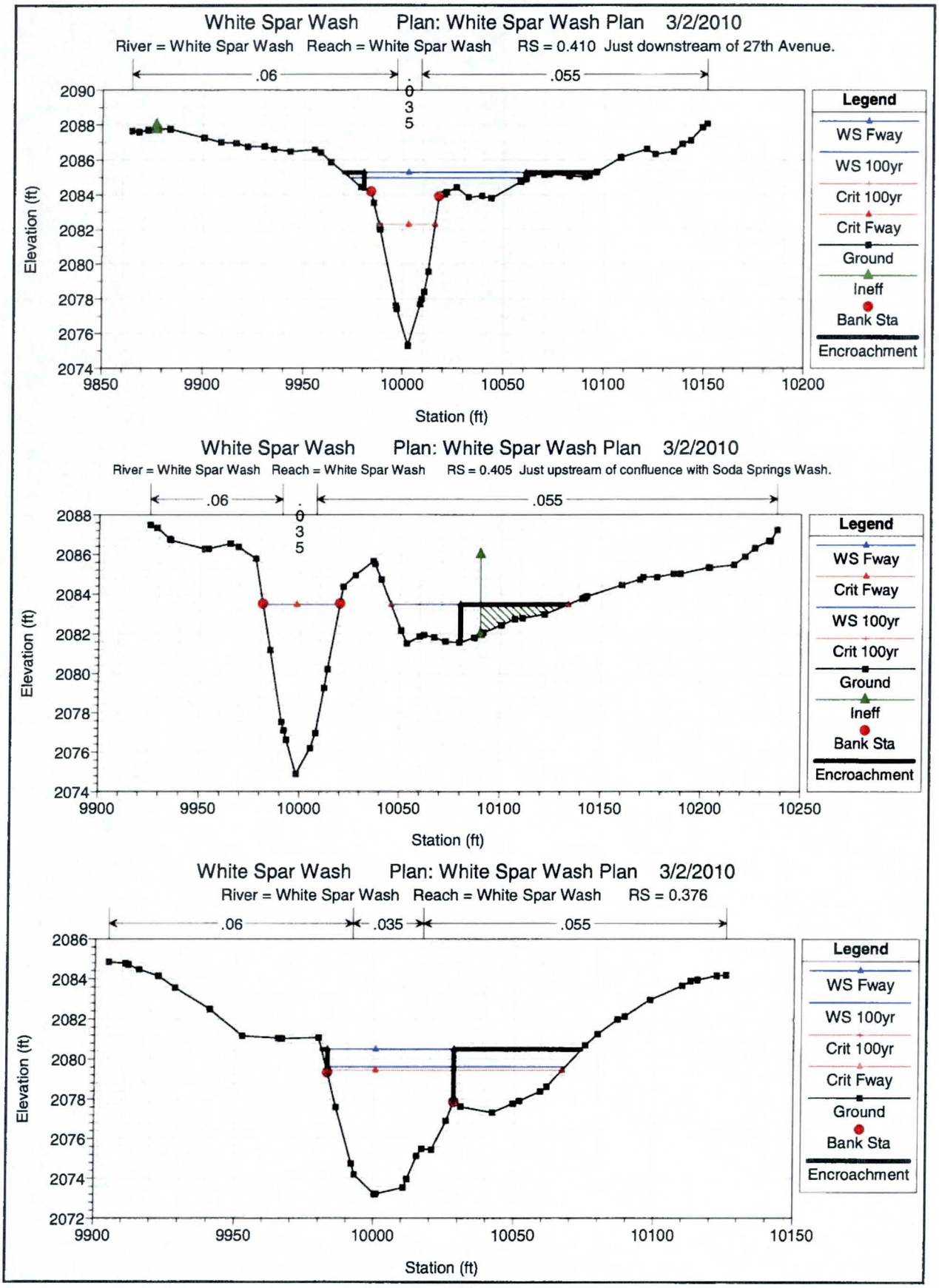

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.672
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

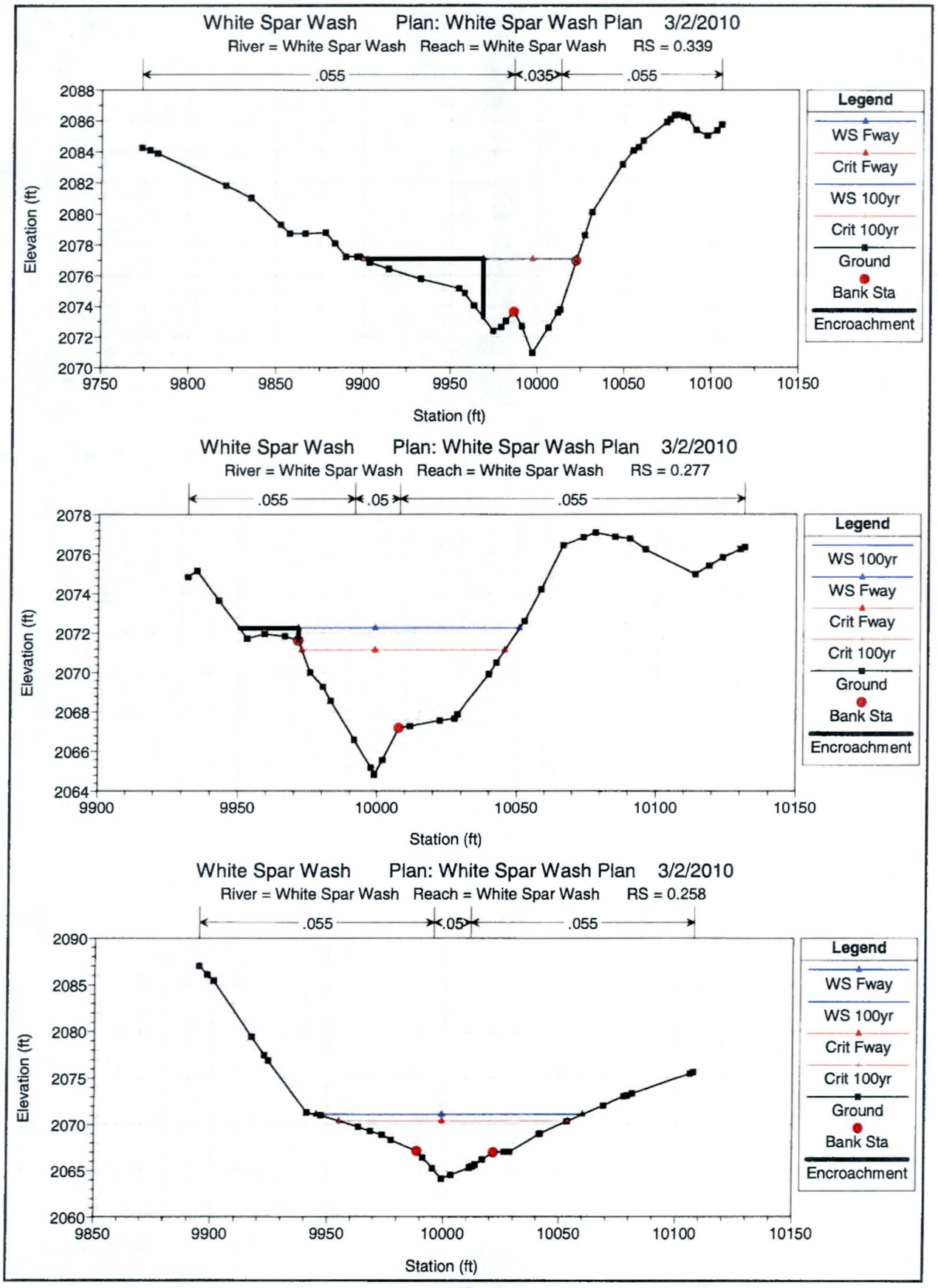

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.641
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

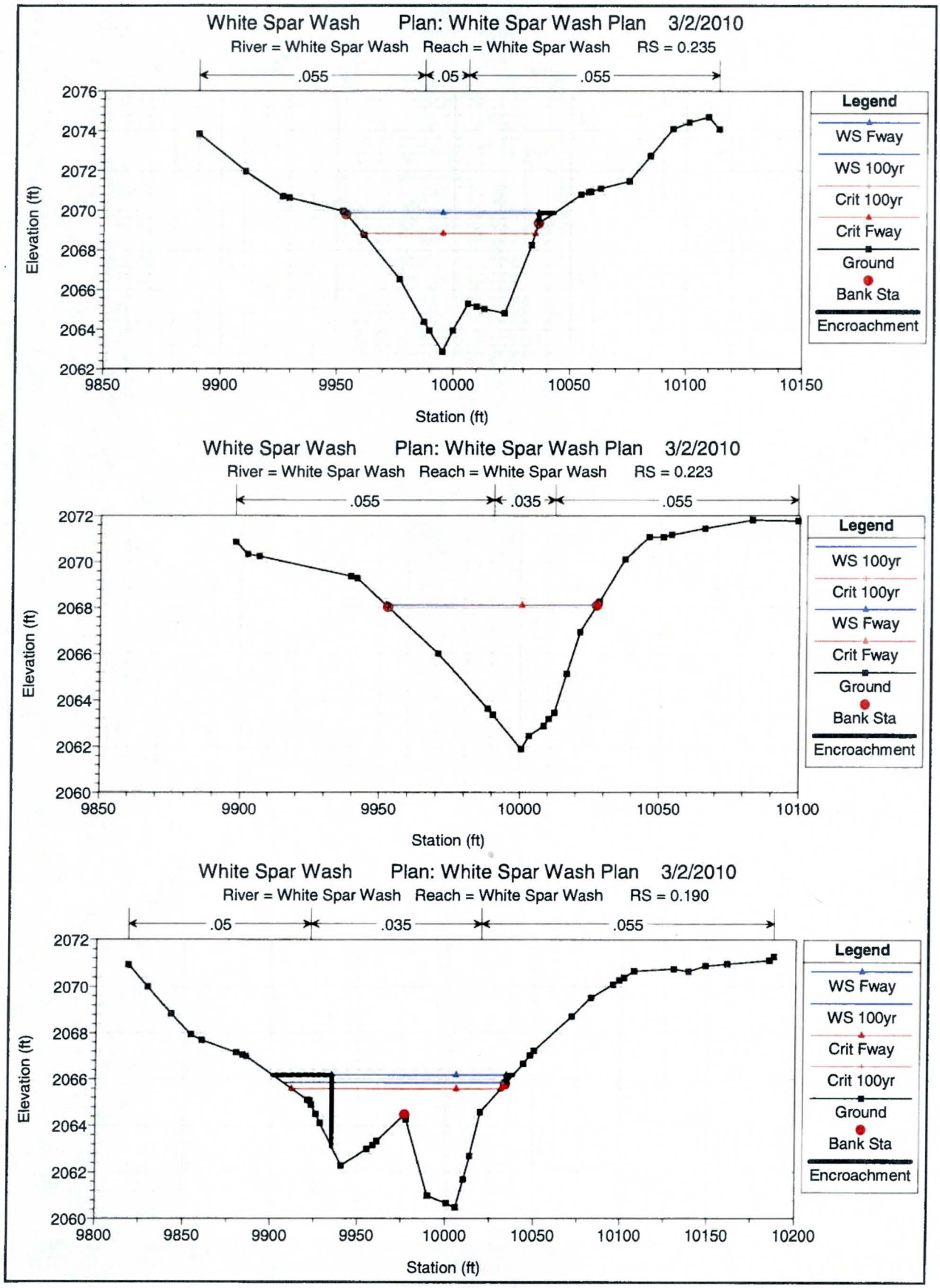

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.630
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.579
.055
.035
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.572
.055
.025
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

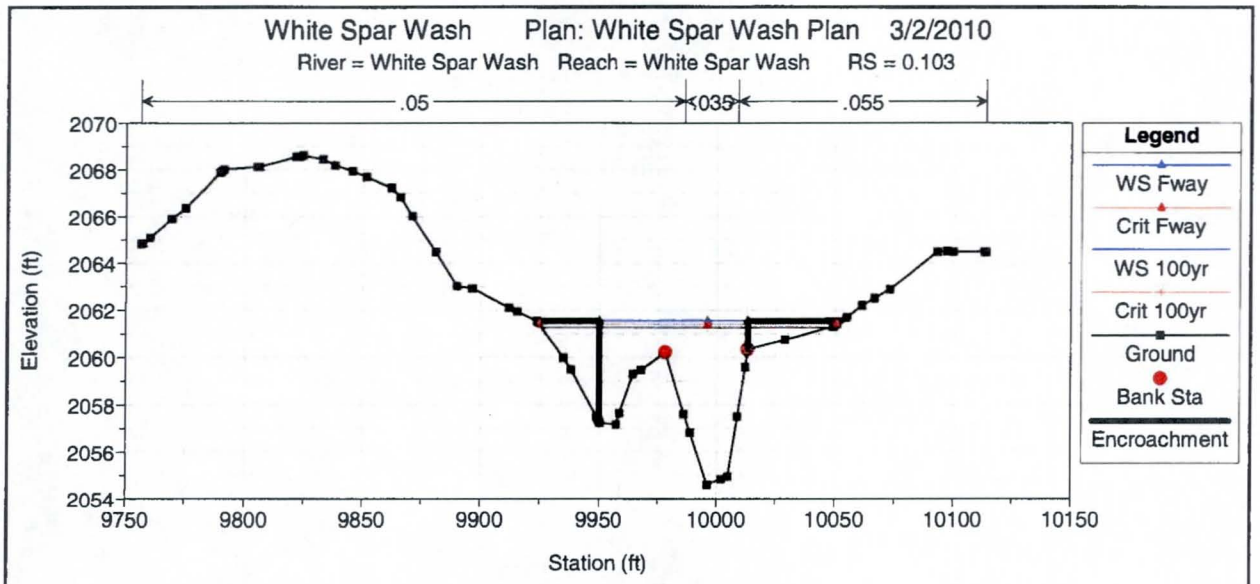

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.554
.06
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.492
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.457
.06
.035
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment

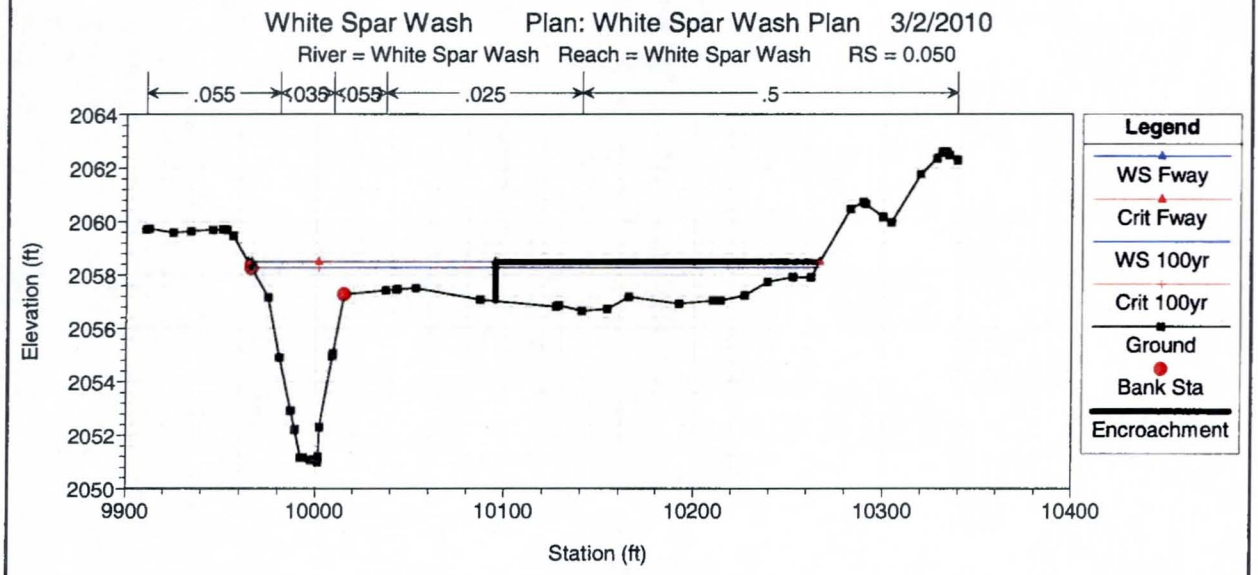

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.425 Just upstream of 27th Avenue.
.06
.05
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.418 Culv 27th Avenue
.06
.05
.06
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.418 Culv 27th Avenue
.06
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment

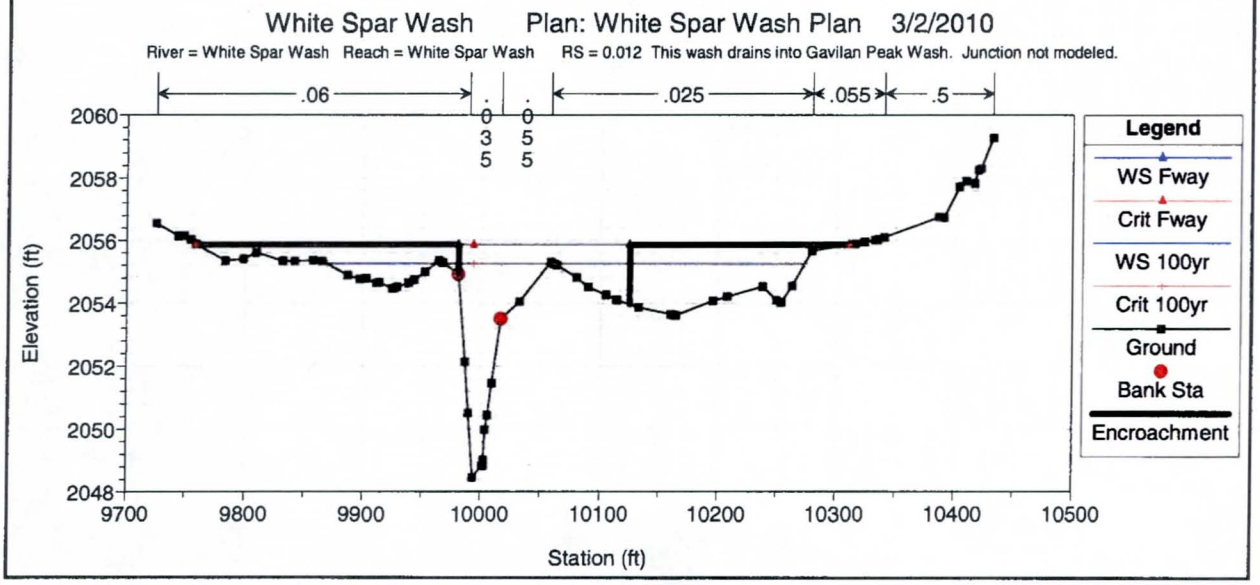

White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.410 Just downstream of 27th Avenue.
.06
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Ineff
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.405 Just upstream of confluence with Soda Springs Wash.
.06
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Ineff
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.376
.06
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment


White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.339
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.277
.055
.05
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS Fway
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.258
.055
.05
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.235
.055
.05
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit 100yr
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.223
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100yr
Crit 100yr
WS Fway
Crit Fway
Ground
Bank Sta
Encroachment
White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.190
.05
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
WS 100yr
Crit Fway
Crit 100yr
Ground
Bank Sta
Encroachment


White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.103
.05
.035
.055
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.050
.055
.035
.055
.025
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment


White Spar Wash Plan: White Spar Wash Plan 3/2/2010
River = White Spar Wash Reach = White Spar Wash RS = 0.012 This wash drains into Gavilan Peak Wash. Junction not modeled.
.06
.035
.055
.025
.055
.5
Elevation (ft)
Station (ft)
Legend
WS Fway
Crit Fway
WS 100yr
Crit 100yr
Ground
Bank Sta
Encroachment

APPENDIX E.3

EXPANSION AND CONTRACTION COEFFICIENTS

EXPANSION AND CONTRACTION COEFFICIENTS

E.3.1 Expansion and Contraction Coefficients

No special data or calibration efforts were made during the course of this study.

APPENDIX E.4

ANALYSIS OF STRUCTURES

ANALYSIS OF STRUCTURES

E.4.1 Analysis of Structures

The analyses of all structures were completed using HEC-RAS. No additional calculations were completed.

APPENDIX E.5

HYDRAULIC CALCULATIONS

Note: Some items that fall under the category of hydraulic calculations (e.g. floodplain shapefiles) have been submitted in digital format only via the enclosed CD. Please refer to the file *Table-of-Contents.doc* on the CD for a list of the items on the CD.

HYDRAULIC CALCULATIONS

EXPLANATIONS FOR REMAINING CHECK-RAS COMMENTS

HYDRAULIC CALCULATIONS

E.5.1 CHECK-RAS Comments

CHECK-RAS was applied to each HEC-RAS model, and the CHECK-RAS output for each model may be found in the *check-ras* folder that accompanies each HEC-RAS model on the CD-ROM. Although PBS&J made some changes to the modeling in response to these comments, CHECK-RAS produced several comments that did not warrant any changes to the modeling. Please see the file *Explanation-of-CHECK-RAS-comments.doc* for a list of the significant outstanding CHECK-RAS comments and explanations for why these comments may be safely ignored. A printout of this file is on the following pages.

E.5.2 Flow Path Shapefiles

A flow path shapefile for each HEC-RAS model has been included for reference. These files may be found on the CD that accompanies this report. Please see the file *Table-of-Contents.doc* on the top level of the CD for a description of the data on the CD and where that data may be found.

E.5.3 HEC-RAS Models

Digital copies of the HEC-RAS models may be found on the CD that accompanies this report. Please see the file *Table-of-Contents.doc* on the top level of the CD for a description of the data on the CD and where that data may be found.

HEC-RAS output tables have been created according to the format specified on page CP – 319 of the *CADD Data Delivery Specifications*. As the combined length of these files approaches 1,000 pages, they have been digitally included on the CD that accompanies this report. Please see the file *Table-of-Contents.doc* on the top level of the CD for a description of the data on the CD and where that data may be found.

The HEC-RAS folders for Coyote Pass Wash, Photo View Wash, and Table Mountain Wash each contain a folder called *optimized-lateral-weir*. In this folder may be found the HEC-RAS model for the wash with the lateral weir optimized. The flow rates that leave this optimized weir appear either on the hydraulic work maps next to the weir (Coyote Pass Wash and Table Mountain Wash) or they are used to determine the flow rates to be used in the Photo View Wash breakout models (Photo View Wash). Please refer to the "Standard Table 1" Standard Output Table to see the flow rates that leave via the lateral weirs during the 100-year event. A copy of this table, with the lateral weir optimized, and a copy of the "Lateral Structures" Standard Output Table have been placed in this Appenidx.

E.5.4 Manning's *n* Shapefile

A shapefile of the Manning's *n* values over the study area may be found on the CD that accompanies this report. Please see the file *Table-of-Contents.doc* on the top level of the CD for a description of the data on the CD and where that data may be found.

E.5.5 Mapping Shapefiles

Mapping shapefiles to built to FCDMC specifications may be found on the the CD that accompanies this report. Please see the file *Table-of-Contents.doc* on the top level of the CD for a description of the data on the CD and where that data may be found.

E.5.6 Normal Depth Calculations

The downstream boundary condition for each wash was determined using a normal depth calculations based on the stream bed slope at the most downstream cross section. Bed slopes were determined by locating the two-foot contours located immediately upstream and downstream of the most downstream cross section in each model, measuring the length along the channel between the two contours, and then dividing four by the length to determine the slope. A spreadsheet of these calculations (*normal-depth-calcs.xls*) may be found in this appendix.

E.5.7 Photo View Wash Breakouts

There was a breakout along the lateral weir in Photo View Wash. See Section 5.5.7 of the main text of the TDN for a detail explanation. To determine the 100-year flow rate along the west breakout, the watershed for River Creek was interpolated. Please see the file *river-crk-basin.shp* for this interpolated shapefile. Please see *PhotoViewWash-Breakout1-Hydrology.xls* for the associated interpolation calculations.

Gavilan Peak FDS
FCD Contract 2009-C006
October 2009
TDN Submittal

Appendix E

This document contains the messages produced by CHECK-RAS after CHECK-RAS processed the HEC-RAS modeling for the Gavlian Peak Wash FDS. PBS&J has organized similar comments into categories. Please see below for PBS&J's explanations regarding why the CHECK-RAS comments in each category do not require any modifications to the HEC-RAS modeling.

Section 1 – BR Comments

Category 1 –Culvert Entrance Loss Coefficients

PBS&J assigned an entrance loss of 0.2 feet to each culvert at RS 1.875 in Gavilan Peak Wash because each culvert has flared wingwalls between 30 to 75 degrees and because the culvert edge is beveled, not square. According to Table 6.4 referenced by CHECK-RAS, 0.2 feet is the proper loss coefficient.

PBS&J assigned an entrance loss of 0.5 to the culvert in Sharman Wash because it is square cut with no headwall. According to Table 6.4 referenced by CHECK-RAS, 0.2 feet is the proper loss coefficient.

Gavilan Peak Wash

CULVERT COEFFICIENT CHECK

RS: 1.875 This is Culvert #1
CV CF 01 Culvert Chart # is 8 and Scale # is 1
Culvert entrance shape is Wingwall flared 30 to 75 deg.
Culvert entrance loss coefficient is 0.2 It should be equal
to 0.4
Please refer to Table 6.3 on page 6-22 and Table 6.4 on page 6-23
of HEC-RAS Hydraulic Reference Manual, September 1998.

RS: 1.875 This is Culvert #2
CV CF 01 Culvert Chart # is 8 and Scale # is 1
Culvert entrance shape is Wingwall flared 30 to 75 deg.
Culvert entrance loss coefficient is 0.2 It should be equal

to 0.4
Please refer to Table 6.3 on page 6-22 and Table 6.4 on page 6-23
of HEC-RAS Hydraulic Reference Manual, September 1998.

CULVERT COEFFICIENT CHECK

RS: 1.345 This is Culvert #1
CV CF 01 Culvert Chart # is 8 and Scale # is 1
Culvert entrance shape is Wingwall flared 30 to 75 deg.
Culvert entrance loss coefficient is 0.2 It should be equal
to 0.4
Please refer to Table 6.3 on page 6-22 and Table 6.4 on page 6-23
of HEC-RAS Hydraulic Reference Manual, September 1998.

RS: 1.345 This is Culvert #2
CV CF 01 Culvert Chart # is 8 and Scale # is 1
Culvert entrance shape is Wingwall flared 30 to 75 deg.
Culvert entrance loss coefficient is 0.2 It should be equal
to 0.4
Please refer to Table 6.3 on page 6-22 and Table 6.4 on page 6-23
of HEC-RAS Hydraulic Reference Manual, September 1998.

RS: 1.345 This is Culvert #3
CV CF 01 Culvert Chart # is 8 and Scale # is 1
Culvert entrance shape is Wingwall flared 30 to 75 deg.
Culvert entrance loss coefficient is 0.2 It should be equal
to 0.4
Please refer to Table 6.3 on page 6-22 and Table 6.4 on page 6-23
of HEC-RAS Hydraulic Reference Manual, September 1998.

Sharman Wash

CULVERT COEFFICIENT CHECK

RS: 0.4 This is Culvert #2
CV CF 01 Culvert Chart # is 1 and Scale # is 3
Culvert entrance shape is Groove end entrance; pipe projecting from f
Culvert entrance loss coefficient is 0.5 It should be equal
to 0.2
Please refer to Table 6.3 on page 6-22 and Tabble 6.4 on page 6-23
of HEC-RAS Hydraulic Reference Manual, September 1998.

Section 1 – BR Comments

Category 2 – Velocity Head Over 0.5 foot

Several comments similar to this one for Coyote Pass Wash appear in the CHECK-RAS output:

RS: 0.11 This is section 2
ST GD 05 Weir flow occurs at Culvert Group 1
The velocity head at Section 2 is more than 0.5 foot and more than the velocity head at Section 1.
Section 2 should be recoded to represent the natural valley cross section.

In each case, the cross section has already been coded to represent the natural valley so no changes are required.

Section 1 – BR Comments

Category 3 – Ineffective Flow Option at Fully Expanded Cross Section

Several comments similar to this one for Gavilan Peak Wash appear in the CHECK-RAS output:

RS: 1.81 This is Section 1
ST IF 07 Ineffective flow option was considered at this section.
However, it should be a fully expanded cross section.
Ineffective flow stations and elevations should be cleared from this section, unless the ares beyond the ineffective flow stations are not within the flow path of the stream.
This message should be ignored if this section is Section 3 of the downstream structure.

In each case, the ineffective flow option was placed for a reason not related to the bridge so no changes are required.

Section 1 – BR Comments

Category 4 – Encroachment Method Not Specified

Several comments similar to this one for Coyote Pass Wash appear in the CHECK-RAS output:

RS: 0.115 This is Culvert
ST FW 01 Encroachment Method was not specified at this river station.

For flood insurance studies Encroachment Methods 4 and 1
should be used.

Each of the cross sections listed with this error is the river station of a pipe or culvert crossing. HEC-RAS does not allow the user to specify encroachment information at pipe/culvert cross sections so errors of this type may be ignored.

Section 1 – BR Comments

Category 5 – Ineffective Flow Areas at Weirs

At the structures in Gavilan Peak Wash, Rough Rider Wash, and Soda Springs Wash, the ineffective flow area is indeed higher than the water surface elevation. However, the ineffective flow area has been placed in the overbank area where the height of the road blocks forward motion of the water. The ineffective areas themselves are not in any area of weir flow. Therefore, no changes are required.

For Kelley Road Wash and White Spar Wash, ineffective flow areas were used to show that certain portions of the cross section just upstream of the structure are unavailable to effective flows. Since these areas are actually ineffective, no changes are required.

INEFFECTIVE FLOW AREAS AT WEIRS

Coyote Pass Wash
INEFFECTIVE FLOW CHECK

RS: 0.129 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2048 between stations 9888.78
and 9968 is equal to or greater than the WSEL of 2046.49
The LMnTpRdU is 2045.735
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

Gavilan Peak Wash

INEFFECTIVE FLOW CHECK

RS: 1.378 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2060 between stations 9695.33

and 9857 is equal to or greater than the WSEL of 2057.5
The LMnTpRdU is 2057.13
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

RS: 1.344 This is Section 2
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2055 between stations 9639.04 and 9870.09 is equal to or greater than the WSEL of 2053.22
The LMnTpRdD is 2056.529 and the MxLoCdD is 2050.98
The ineffective flow elevation should be between the LMnTpRdD and the MxLoCdD
if LMnTpRdD is greater than MxLoCdD. Otherwise, It should be equal to LMnTpRdD.
It should also be less than the WSEL.

RS: 1.888 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2082 between stations 10048.58 and 10292.22 is equal to or greater than the WSEL of 2080.58
The RMnTpRdU is 2080.231
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

Kelley Road Wash

INEFFECTIVE FLOW CHECK

RS: 0.191 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2035 between stations 9660.11 and 9853.11 is equal to or greater than the WSEL of 2033.42
The LMnTpRdU is 2032.236
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

RS: 0.191 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2035.99 between stations 9660.11 and 9660.11 is equal to or greater than the WSEL of 2033.42
The LMnTpRdU is 2032.236
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

Rough Rider Wash

INEFFECTIVE FLOW CHECK

RS: 0.048 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2094 between stations 9755.47 and 9945.47 is equal to or greater than the WSEL of 2091.74
The LMnTpRdU is 2091.308
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

RS: 0.048 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2095.56 between stations 9755.47 and 9755.47 is equal to or greater than the WSEL of 2091.74
The LMnTpRdU is 2091.308
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

Soda Springs Wash

INEFFECTIVE FLOW CHECK

RS: 0.322 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2113 between stations 10062.59 and 9675.77 is equal to or greater than the WSEL of 2110.97
The LMnTpRdU is 2108.87
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

RS: 0.322 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2113 between stations 10062.59 and 9675.77 is equal to or greater than the WSEL of 2110.97
The RMnTpRdU is 2108.87
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

White Spar Wash

INEFFECTIVE FLOW CHECK

RS: 0.425 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2090 between stations 9830.78 and 9938.35 is equal to or greater than the WSEL of 2088.08
The LMnTpRdU is 2084.893
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

RS: 0.425 This is Section 3
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2090.79 between stations 9830.78 and 9830.78 is equal to or greater than the WSEL of 2088.08
The LMnTpRdU is 2084.893
The ineffective flow elevation should be equal to or lower than the MnTpRd
It should also be less than the WSEL.

RS: 0.41 This is Section 2
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2088 between stations 2.04 and 9877.04 is equal to or greater than the WSEL of 2084.96
The LMnTpRdD is 2085.023 and the MxLoCdD is 2079.09
The ineffective flow elevation should be between the LMnTpRdD and the MxLoCdD
if LMnTpRdD is greater than MxLoCdD. Otherwise, It should be equal to LMnTpRdD.
It should also be less than the WSEL.

RS: 0.41 This is Section 2
ST IF 02 Weir flow occurs at Culvert Group 1
However, the ineffective flow elevation of 2088.08 between stations 9864.87 and 2.04 is equal to or greater than the WSEL of 2084.96
The LMnTpRdD is 2085.023 and the MxLoCdD is 2079.09
The ineffective flow elevation should be between the LMnTpRdD and the MxLoCdD
if LMnTpRdD is greater than MxLoCdD. Otherwise, It should be equal to LMnTpRdD.
It should also be less than the WSEL.

Section 1 – BR Comments

Category 6 – Comments Related to the Floodway

Please see the commentary after each cross CHECK-RAS comment to see why the comment may be safely ignored.

Coyote Pass Wash

FLOODWAY CHECK

RS: 0.115 This is Culvert
ST FW 09 The left most weir station of 9968.26 for the floodway profile is equal
or less than the left most weir station of 9968.26 for the natural
profile.
The floodway weir flow boundary is equal to or outside of the
natural profile weir flow boundary.
Encroachment computations should be investigated.

No changes required for this comment because the left side of the floodway has been set to the left side of the floodplain at the structure.

Gavilan Peak Wash

FLOODWAY CHECK

RS: 1.875 This is Culvert
ST FW 09 The right most weir station of 10048.58 for the floodway profile is equal
or greater than the right most weir station of 10048.58 for the natural
profile.
The floodway weir flow boundary is equal to or outside of the
natural profile weir flow boundary.
Encroachment computations should be investigated.

CHECK-RAS states that the floodway encroachments should be inside the limits of the natural weir flow. Even though the right encroachment station is to the right of the right limit of the natural weir flow, this is okay since the right encroachment station is the new right limit of the weir in the floodway profile. The reason that the area of weir flow shifts to the right is because the road deck is sloped and not flat.

RS: 1.344 This is Section 2
ST FW 10 Left encroachment station 9964.43 is more than the left ineffective flow
station 9870.09 and equal to or greater than the right ineffective flow station -9999
The effective flow area is totally blocked by the encroachment
stations.
The encroachment stations should be adjusted.

In this case, there is a bug in CHECK-RAS. CHECK-RAS claims that the effective area is totally blocked by the encroachment stations when visual inspection of the cross sections shows that this is not the case.

RS: 1.378 This is Section 3
ST FW 10 Left encroachment station 9960.01 is more than the left ineffective flow station 9857 and equal to or greater than the right ineffective flow station -9999
The effective flow area is totally blocked by the encroachment stations.
The encroachment stations should be adjusted.

In this case, there is a bug in CHECK-RAS. CHECK-RAS claims that the effective area is totally blocked by the encroachment stations when visual inspection of the cross sections shows that this is not the case.

Kelley Road Wash

FLOODWAY CHECK

RS: 0.191 This is Section 3
ST FW 10 Left encroachment station 9955 is more than the left ineffective flow station 9853.11 and equal to or greater than the right ineffective flow station -9999
The effective flow area is totally blocked by the encroachment stations.
The encroachment stations should be adjusted.

In this case, there is a bug in CHECK-RAS. CHECK-RAS claims that the effective area is totally blocked by the encroachment stations when visual inspection of the cross sections shows that this is not the case.

Photo View Wash – South then West Breakout

RS: 0.015 This is Culvert
ST FW 09 The right most weir station of 10020.8 for the floodway profile is equal or greater than the right most weir station of 10020.8 for the natural profile.
The floodway weir flow boundary is equal to or outside of the natural profile weir flow boundary.
Encroachment computations should be investigated.

In this case the right encroachment has been set to the right edge of where the floodplain crosses the road. Since the right side of the floodway is equal to the right edge of effective flow, this error may be ignored.

Rough Rider Wash

FLOODWAY CHECK

RS: 0.048 This is Section 3
ST FW 10 Left encroachment station 9979.73 is more than the left ineffective flow station 9945.47 and equal to or greater than the right ineffective flow station -9999
The effective flow area is totally blocked by the encroachment stations.
The encroachment stations should be adjusted.

In this case, there is a bug in CHECK-RAS. CHECK-RAS claims that the effective area is totally blocked by the encroachment stations when visual inspection of the cross sections shows that this is not the case.

Soda Springs Wash
FLOODWAY CHECK

RS: 0.321 This is Section 3
RS: 0.322 This is Section 3
ST FW 10 Left encroachment station 9961 is more than the left ineffective flow station 9675.77 and less than the right ineffective flow station 10062.59
Left encroachment station is within the effective flow area.
Left encroachment station should at least be equal to the left ineffective flow station.

This comment does not make any sense as there is no ineffective flow area established at station 9675.77.

RS: 0.322 This is Section 3
ST FW 10 Right encroachment station 10043.54 is less than the right ineffective flow station 10062.59 and greater than the left ineffective flow station 9675.77
Right encroachment station is within the effective flow area.
Right encroachment station should at least be equal to the right ineffective flow station.

This comment does not make any sense as there is no ineffective flow area established at station 9675.77.

White Spar Wash

FLOODWAY CHECK

RS: 0.41 This is Section 2
ST FW 10 Left encroachment station 9980.18 is more than the left ineffective flow station 9877.04 and equal to or greater than the right ineffective flow station -9999
The effective flow area is totally blocked by the encroachment stations.
The encroachment stations should be adjusted.

In this case, there is a bug in CHECK-RAS. CHECK-RAS claims that the effective area is totally blocked by the encroachment stations when visual inspection of the cross sections shows that this is not the case.

RS: 0.425 This is Section 3
ST FW 10 Left encroachment station 9967.32 is more than the left ineffective flow station 9938.35 and equal to or greater than the right ineffective flow station -9999
The effective flow area is totally blocked by the encroachment stations.
The encroachment stations should be adjusted.

In this case, there is a bug in CHECK-RAS. CHECK-RAS claims that the effective area is totally blocked by the encroachment stations when visual inspection of the cross sections shows that this is not the case.

Section 2 – FW Comments

Category 1 – Encroachment Method Not Specified

Several comments similar to this one for Coyote Pass Wash appear in the CHECK-RAS output:

ENCROACHMENT METHOD CHECK

RS: 0.115
FW EM 01 Floodway encroachment method is not selected at this section.

Each of the cross sections listed with this error is the river station of a pipe or culvert crossing. HEC-RAS does not allow the user to specify encroachment information at pipe/culvert cross sections so errors of this type may be ignored.

Section 2 – FW Comments

Category 2 – Bank Station Location

Several comments similar to this one for Coyote Pass Wash appear in the CHECK-RAS output:

FLOODWAY WIDTH CHECK

RS: 0.43
FW FW 03 The right channel bank station may not be at the proper
location.

This note is a flag suggesting to the modeler that the bank stations might not be in proper location. It does not necessarily mean the bank stations are placed incorrectly. Regardless of whether this note is present or not, all bank stations have been placed at a reasonable location.

Section 3 – NT Comments

ROUGHNESS COEFFICIENT CHECK

RS: 1.102
NT RC 02 Right overbank n value is more than 0.20
The n value should be reevaluated if it is not representing the buildings.

There is a building in each area where the Manning's n value exceeds 0.20. More information may be found in Section 5 of the TDN.

Section 4 – XS Comments

There are no unresolved XS Comments in the CHECK-RAS output.

HYDRAULIC CALCULATIONS

NORMAL DEPTH CALCULATIONS

Gavilan Peak Wash FDS
August 2009

This spreadsheet contains the calculations used to compute the normal depth slope at the downstream end of each wash.

Wash	Up Elev (ft)	Down Elev (ft)	Length (ft)	Slope (ft/ft)
Coyote Pass	2036	2034	340	0.0059
Gavilan Peak	1996	1994	300	0.0067
Kelley Road	2018	2016	150	0.013
Lazy G	2108	2106	160	0.013
Photo View	2148	2146	155	0.013
River Creek	2104	2102	140	0.014
Rough Rider	2084	2082	250	0.008
Sharman	2038	2036	140	0.014
Soda Springs	2076	2074	180	0.011
Table Trib 6	2138	2136	90	0.022
Table Mountain	2040	2038	180	0.011
Twin Peaks	2044	2042	90	0.022
White Spar	2050	2048	172	0.012

Photo View Wash Breakouts:

South Then South	2142	2140	127	0.016
South Then West	Starting WSEL is critical depth since first cross section is just downstream over road over which there is weir flow.			
West	Starting WSEL is the WSEL at RS 0.795 in River Creek HEC-RAS model.			

HYDRAULIC CALCULATIONS

PHOTO VIEW WASH
WEST BREAKOUT
HEC-RAS MODEL

CALCULATIONS TO DETERMINE FLOW RATE TO USE IN MODEL

Gavilan Peak Floodplain Delineation Study
Contract FCD 2009-C006
August 2009

This file contains the calculations to determine the flow rate to use in the West Breakout HEC-RAS model.

To determine the flow rate to use, the following procedure was followed:

Step 1 Extract watershed for River Creek from drnbsn.shp.
Step 2 Split to the basin to determine the area that contributes to the upstream point of the detailed modeling for River Creek.
Step 3 Using the subdivided area, pro-rate the100-year flow rate for River Creek. This would be the flow rate from concentration point B35.
Step 4 To the flow determined in Step 3, add the flow rate that breaks out of Photo View Wash and follows the West Flow Path.

Details for each step are below.

Step 1 New shapefile river-crk-basin was created.

Step 2 The total area of the River Creek watershed is 0.32 sq mi.
Of this, 0.072 sq mi drains to the upstream end of the detailed modeling for River Creek.

Step 3 The 100-year flow rate off of basin B35 in the hydrology was 538 cfs. This flow rate is from the 6-hr event.
Pro-rating this flow, results in 538 * 0.072 / 0.32 = 121 cfs

Step 4 The flow rate that leaves Photo View Wash and follows the West Flow Path was 123 cfs.
Combining the two flow rates results in 121 cfs + 123 cfs = 244 cfs.

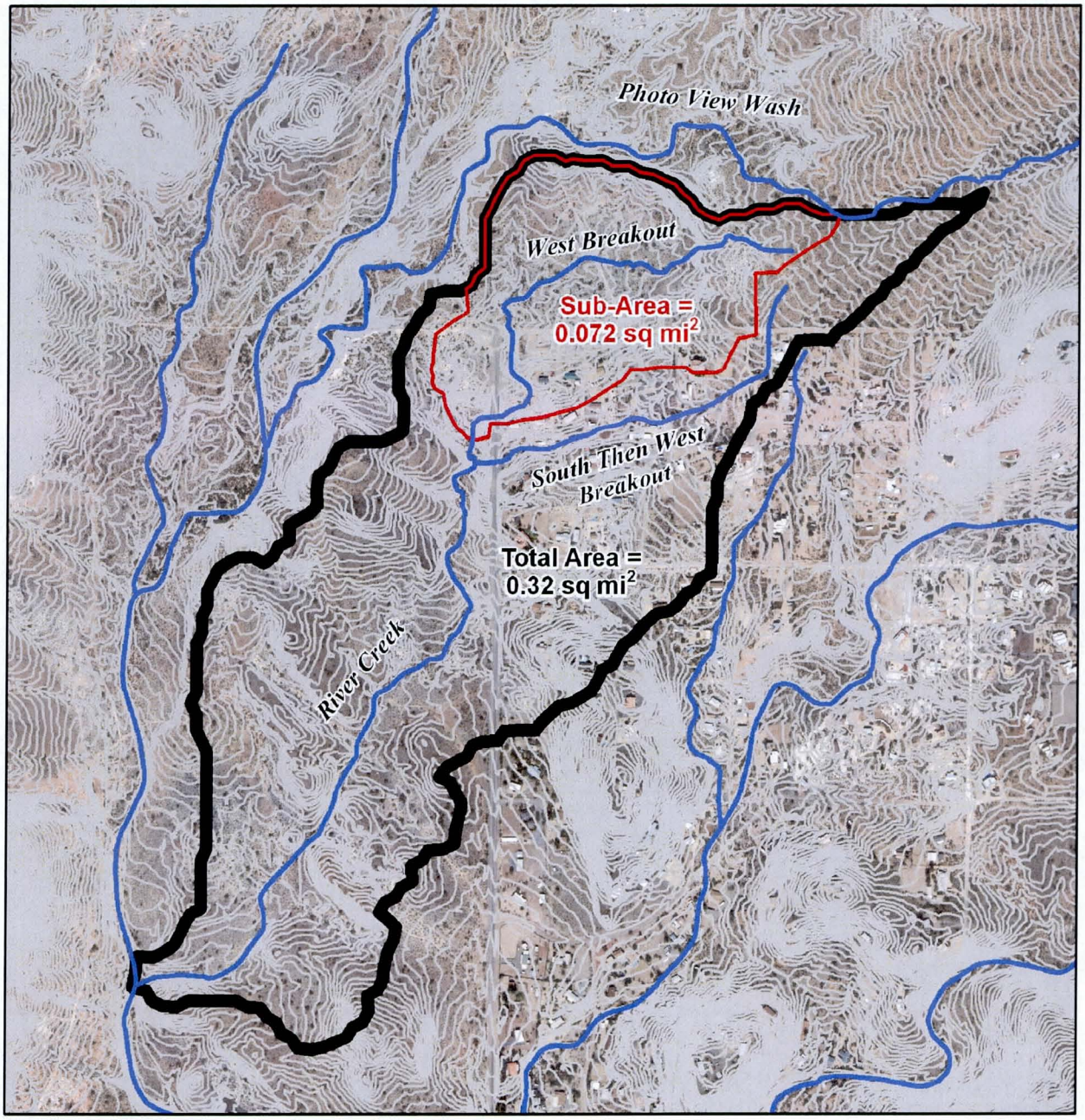


Photo View Wash
West Breakout
Sub-Area =
0.072 sq mi²
South Then West
Breakout
Total Area =
0.32 sq mi²
River Creek
1,000
500
0
1,000 Feet

APPENDIX F.1

FIELD PHOTOGRAPHY

Please see the following pages for a log of the field photographs taken by PBS&J during the FDS. The photographs themselves may be found on the CD-ROM.

The FCDMC Survey Group took some photos as well. Please refer to the Survey Report in the Appendix C folder on the CD-ROM for the complete survey report, including the associated field photography.

FIELD PHOTOGRAPHY

PBS&J PHOTO LOG
APRIL 14 & APRIL 16, 2008
SITE VISIT

Gavilan Peak FDS
FCD Contract 2007-C036

Photo Log

PBS&J visited the Gavilan Peak FDS study area on April 14 and April 16, 2008. Pictures were taken at 32 areas. Please see Table 1 for the list of areas where pictures were taken. Please see Table 2 for a description of each photograph that was taken. "File number" refers to the number in the file name directly before *.JPG.* "Image #" is just the order in which the picture was taken, "Area #" refers to the areas listed in Table 1, and "Description" describes the photograph.

Table 1 -- List of Areas Where Pictures Were Taken

Area	Description
1	Gavilan Peak Wash -- natural drop located not far from the downstream end of the wash.
2	Kelley Wash at New River Road
3	Kelley Wash at Meander Road
4	Gavilan Peak Wash at Meander Road
5	Coyote Pass Wash at New River Road
6	Table Mountain Wash at New River Road
7	Gavilan Peak Wash at New River Road (west crossing)
8	Gavilan Peak Wash at 27th Avenue
9	Gavilan Peak Wash at New River Road (east crossing)
10	Rough Rider Wash at New River Road
11	Gavilan Peak Wash at 23rd Avenue
12	Gavilan Peak Wash at New River Road (just upstream of study limit)
13	Rough Rider Wash at 23rd Avenue
14	Rough Rider Wash at private drive off of 23rd Avenue
15	White Spar Wash at 27th Avenue
16	Soda Springs Wash at 27th Avenue
17	Soda Springs Wash at 26th Avenue
18	White Spar Wash at Mingus Road
19	White Spar Wash at Rough Rider Road
20	Soda Springs Wash at White Spar Road
21	Soda Springs Wash at 25th Avenue
22	Soda Springs Wash at Estrella Road
23	River Creek -- Upstream end of study
24	Sharman Wash -- Near upstream end off of 27th Avenue
25	Twin Peaks Wash at 27th Avenue
26	Sharman Wash at Wander Road
27	Twin Peaks Wash at Twin Peaks Lane
28	Sharman Wash at Twins Peaks Lane
29	Lazy G Wash at Lazy G Ranch Road
30	Photo View Wash at Photo View Road
31	Table Mountain Wash at Photo View Road
32	Tributary 6 of Table Mountain Wash at Photo View Road

Table 2 -- List of Photographs

File Number	Image #	Area #	Description
379	1	1	Skip -- no scale reference
380	2	1	Skip -- no scale reference
381	3	1	Skip -- no scale reference

File Number	Image #	Area #	Description
382	4	1	Skip -- no scale reference
383	5	1	Downstream of drop, looking downstream.
384	6	1	Upstream of drop, looking upstream.
385	7	1	At drop, looking downstream.
387	8	1	Just downstream of drop, looking upstream
388	9	1	Just upstream of drop, looking downstream
389	10	1	Just upstream of drop, looking upstream
386	11	2	Downstream face of 42" CMP under New River Road. 21" HW.
390	12	2	Look downstream from downstream face.
391	13	2	Upstream face, top half. HW = 30".
392	14	2	Upstream face, bottom half. Note blockage.
393	15	2	Looking upstream from upstream face.
394	16	2	Looking upstream from above headwall.
395	17	2	Looking upstream, across road.
396	18	2	Looking to the east from downstream side of road
397	19	2	Looking downstream, across road.
398	20	3	Looking downstream from Meander Road.
399	21	3	Looking upstream, across road.
400	22	3	Looking downstream, across road.
401	23	3	Looking upstream from road.
402	24	4	Standing on Meander Road, looking downstream and left.
403	25	4	Standing on Meander Road, looking downstream and right.
404	26	4	Looking upstream, across road, and left.
405	27	4	Looking upstream, across road, and right.
406	28	4	Looking downstream, across road.
407	29	4	Looking upstream from road.
408	30	5	Looking downstream from the top of the CMP. CMP = 54".
409	31	5	Looking at road while standing on top of outlet of CMP. HW = 69".
410	32	5	Standing above CMP outlet, looking down.
411	33	5	Standing on New River Road, looking downstream.
412	34	5	Looking upstream, across road.
413	35	5	Looking downstream, across road.
414	36	5	Standing on headwall, looking upstream.
415	37	5	Looking upstream from upstream face.
416	38	5	Upstream face.
417	39	5	Upstream face, looking at headwall. HW = 48".
418	40	5	Looking upstream from road.
419	41	6	Downstream face of 2 - 72" CMP under New River Rd. 36" apart. HW = 8". About 18" to top of road.
420	42	6	Looking downstream from inside channel.
421	43	6	Looking upstream across road.
422	44	6	Looking downstream across road.
423	45	6	Upstream face. 36" apart. 8" HW. About 18" to top of road.
424	46	6	Looking upstream from inside channel.
425	47	7	Looking downstream from New River Road.
426	48	7	Looking downstream from inside channel.
427	49	7	Downstream face of 3-12 x 5.5 ft boxes, looking right. 12" spacing. 54" HW. 54" HW. One box clear, one 12" blocked, and one 30" blocked.
428	50	7	Same as previous, but looking left.
429	51	7	Looking upstream across road.
430	52	7	Looking downstream across road.
431	53	7	Upstream face, looking right. HW = 54".
432	54	7	Upstream face, looking left.
433	55	7	Looking upstream from road.
434	56	8	Standing on 29th Av, looking upstream. Barbed wire prevented movement into the channel.

File Number	Image #	Area #	Description
435	57	8	Upstream face, looking left (north). 3 - 54" RCP. 30" spacing.
436	58	8	Upstream face, looking right (south). HW = 16".
437	59	8	Looking downstream across road.
438	60	8	Looking upstream across road.
439	61	8	Looking downstream from road.
440	62	8	Downstream face, looking right. HW = 12".
441	63	8	Downstream face, looking left.
442	64	8	Small weir on south side of RCP outlet.
443	65	8	Looking downstream from inside channel.
444	66	8	Looking at cut on south side of channel.
445	67	9	Standing in channel, looking upstream after walking around bend upstream of crossing.
446	68	9	Looking upstream from upstream face.
447	69	9	Upstream face, looking right. 2 - 10 x 5.5 boxes. 45 " HW. 10" spacing. One clear; one blocked about one foot.
448	70	9	Upstream face, looking left.
449	71	9	Looking downstream across road.
450	72	9	Looking upstream across road.
451	73	9	Looking downstream after walking downstream to get around bend.
452	74	9	Looking downstream from downstream face.
453	75	9	Downstream face, looking left. Opening on left about 57" tall. HW = 42".
454	76	9	Downstream face, looking right. Opening about 52" tall.
455	77	9	View of heavy vegetation just downstream of box outlet.
456	78	10	Downstream headwall of 2 - 48" CMP under New River Road. HW = 40".
457	79	10	Downstream face, looking at right outlet. Opening is clear. Spacing between pipes is 24".
458	80	10	Downstream face, looking at left outlet. Opening height is only 36".
459	81	10	Looking downstream from downstream face.
460	82	10	Looking upstream across road.
461	83	10	Looking downstream from road.
462	84	10	Looking downstream across road.
463	85	10	Looking upstream from inside channel.
464	86	10	Upstream face of CMP's. 15" HW. 24" Spacing.
465	87	11	Looking upstream after walking for a bit upstream of 23rd Av.
466	88	11	Look upstream from road.
467	89	11	Looking downstream across road.
468	90	11	Looking downstream from downstream face.
469	91	12	Looking downstream from upstream Limit of Study.
470	92	12	Outlet of 40" CMP just upstream of upstream Limit of Study.
471	93	12	Upstream end of 40" CMP in previous picture.
472	94	13	Upstream face of 3 - 30" CMP's under 23rd Av. Looking left. Spacing = 24". HW = 27", but water can get around sides of headwall.
473	95	13	Same as previous, but looking right.
474	96	13	Looking upstream from upstream face.
475	97	13	Downstream face. HW = 20". Once again, water can get around HW.
476	98	13	Downstream face, looking on right side.
477	99	13	Looking downstream from downstream face.
478	100	13	Standing north of outlets. Water that flows over the road can enter channel down this concrete drop, about 27".
479	101	14	Upstream face of 4 - 36" RCP's under private driveway off of 23rd Av. 12 " from top of inside of RCP to top of road.
480	102	14	Looking upstream from RCP's.
481	103	14	Looking downstream from RCP's.
482	104	14	Downstream face of RCP's.
483	105	15	Upstream face of 36" RCP and 30" RCP under 23rd Av. 30" spacing.
484	106	15	Looking upstream from inside channel.
File			

Number	Image #	Area #	Description
485	107	15	Looking upstream from road.
486	108	15	Looking downstream across road.
487	109	15	Looking upstream across road.
488	110	15	Looking downstream from road.
489	111	15	Downstream face. 43" HW on CMP, 51" HW on RCP.
490	112	15	Downstream face, looking right.
491	113	15	Downstream face, looking left.
492	114	15	Standing at downstream end of apron, looking downstream. Apron extends 12' to 15' from outlet of RCP.
493	115	16	Looking upstream from inlet under 23rd Av.
494	116	16	Upstream face of 3 - 42" RCP's. One is only 32" wide due to odd design. See next pic. 30" spacing. HW varies from 10" to 14".
495	117	16	Upstream face, left RCP. Note odd design. Opening only 32" wide.
496	118	16	Looking upstream from road.
497	119	16	Looking downstream across road.
498	120	16	Looking upstream across road.
499	121	16	Downstream face. HW varies from 9" to 18".
500	122	16	Downstream face, looking at left pipes.
501	123	16	Drop just downstream of pipes. Drop is about two feet.
502	124	16	Looking downstream from outlet.
503	125	16	Looking downstream from road.
504	126	17	Looking upstream from 26th Av.
505	127	17	Looking downstream across road.
506	128	17	Looking upstream across road.
507	129	17	Looking downstream from road.
508	130	18	New culverts under construction under Mingus Road. Downstream face. 2 RCB's of unknown dimensions.
509	131	18	Downstream of boxes, looking downstream.
510	132	18	Upstream of boxes, looking upstream.
511	133	18	Upstream face of boxes.
1	134	19	Downstream face of 2-30" RCPs under Rough Rider Rd. 15" spacing.24" HW.
2	135	19	Looking downstream from downstream face.
3	136	19	Looking upstream across road.
4	137	19	Looking downstream across road.
5	138	19	Looking upstream from road.
6	139	19	Upstream face. Left opening. 22" HW.
7	140	19	Upstream face. Right opening. Clogged.
8	141	19	Channel just upstream of upstream face. Lots of sediment.
9	142	20	Standing on White Spar Road, looking upstream.
10	143	20	Looking downstream across road.
11	144	20	Looking upstream across road.
12	145	20	Looking downstream from road.
13	146	21	Looking upstream from 25th Av.
14	147	21	Looking downstream across road.
15	148	21	Looking upstream across road.
16	149	21	Looking downstream from road.
17	150	22	Looking upstream from Estrella Road.
18	151	22	Looking downstream across road.
19	152	22	Looking upstream across road.
20	153	22	Looking downstream from road.
21	154	23	Just upstream of River Creek Limit of Study looking downstream.
22	155	23	Just upstream of River Creek Limit of Study looking upstream.
23	156	24	Near upstream end of Sharman Wash, looking upstream.
24	157	24	Near upstream end of Sharman Wash, looking downstream.
25	158	25	Upstream of 27th Av, looking upstream.
26	159	25	Looking upstream across road.

File Number	Image #	Area #	Description

27	160	25	Looking downstream across road.
28	161	25	Looking downstream across road, left side. Water over road will reach here.
29	162	25	Downstream face of drop, left.
30	163	25	Downstream face of drop, center.
31	164	25	Downstream face of drop, right.
32	165	25	Standing downstream of drop, looking at drop.
33	166	25	Looking downstream from road.
34	167	26	Just upstream of Wander Road, looking upstream.
35	168	26	Looking upstream across road.
36	169	26	Looking downstream across road -- west path.
37	170	26	Looking downstream from road along west path.
38	171	26	Looking downstream from road along east path.
39	172	26	Looking upstream across road -- east path.
40	173	27	Just upstream of Twin Peaks Ln, looking upstream.
41	174	27	Upstream face of 30" CMP. HW = 15".
42	175	27	Looking upstream across road.
43	176	27	Looking downstream across road.
44	177	27	Downstream face of pipe. HW = 20".
45	178	27	Looking downstream from road.
46	179	27	Looking downstream from channel.
47	180	28	Upstream of Twin Peaks Ln, looking upstream.
48	181	28	Upstream face of 24" CMP. HW 10".
49	182	28	Upstream face of 20" smooth metal pipe. 8' spacing.
50	183	28	Look upstream across road.
51	184	28	Looking downstream across road.
52	185	28	Downstream face. 17" HW on right pipe. 6" HW on left pipe. 6-ft spacing.
53	186	28	Looking downstream from inside channel.
54	187	28	Looking downstream from road.
55	188	29	Looking upstream from Lazy G Ranch Road.
56	189	29	Looking downstream across road.
57	190	29	Looking upstream across road.
58	191	29	Standing in channel, looking downstream after walking downstream a bit.
59	192	30	Upstream of Photo View Road. Standing in channel, looking upstream after walking upstream around bend.
60	193	30	Same as previous pic, but looking downstream at cut.
61	194	30	Looking at cut in channel.
62	195	30	Looking upstream from road.
63	196	30	Looking downstream from road.
64	197	30	Downstream of road, looking downstream.
65	198	31	Looking upstream after walking a bit upstream from Photo View Road.
66	199	31	Looking upstream from road.
67	200	31	Looking downstream from road.
68	201	31	Downstream of road, looking downstream.
69	202	32	Looking upstream from Photo View Road.
70	203	32	Looking upstream across road.
71	204	32	Looking downstream from road.
72	205	32	Downstream of road, looking downstream.

FIELD PHOTOGRAPHY

PBS&J PHOTO LOG
JUNE 12, 2009
SITE VISIT

Gavilan Peak FDS -- FCD 2009C006 -- Field Photographs -- June 12, 2009
All 6-12-09 photographs are of the culverts along White Spar Wash under Mingus Road.

Photo	File Numbe	Description
1	444	Standing in channel, looking downstream.
2	445	Standing in channel, looking upstream at downstream face.
3	446	Standing in channel, looking upstream at downstream face - west side.
4	447	Standing in channel, looking upstream at downstream face - west side.
5	448	Standing on Mingus Road, looking downstream.
6	449	Standing in channel, looking upstream.
7	450	Standing in channel, looing downstream at upstream face -- west side.
8	451	Standing in channel, looing downstream at upstream face.
9	452	Standing in channel, looing downstream at upstream face -- east side.
10	453	Standing in channel, looing downstream at upstream face -- west side.
11	454	Standing just to north of Mingus Road, looking east at channel upstream of road.

FIELD PHOTOGRAPHY

PBS&J PHOTO LOG
JULY 4, 2009
SITE VISIT

Gavilan Peak FDS -- FCD 2009C006 -- Field Photographs -- July 4, 2009
All 7-4-09 photographs are of the structures under 27th Avenue that the
Photo View Wash breakout models West and South-then-West encounter.

Photo	File Numbe	Description
1	456	South-then-South -- Upstream face of 27th Avenue -- 3 x 24-inch CMPs.
2	457	South-then-South -- 27th Avenue -- looking upstream from road.
3	458	South-then-South -- 27th Avenue -- looking downstream from road.
4	459	South-then-South -- Downstream face of 27th Avenue -- 3 x 24-inch CMPs.
5	460	South-then-South -- Downstream face of 27th Avenue -- 3 x 24-inch CMPs.
6	461	South-then-South -- Upstream face of 27th Avenue -- 3 x 24-inch CMPs.
7	462	West - Upstream face of 27th Avenue -- 60-inch CMP
8	463	West - Upstream face of 27th Avenue -- 60-inch CMP
9	464	West -- 27th Avenue -- looking upstream from road.
10	465	West -- 27th Avenue -- looking downstream from road.
11	466	West - Downstream face of 27th Avenue -- 60-inch CMP